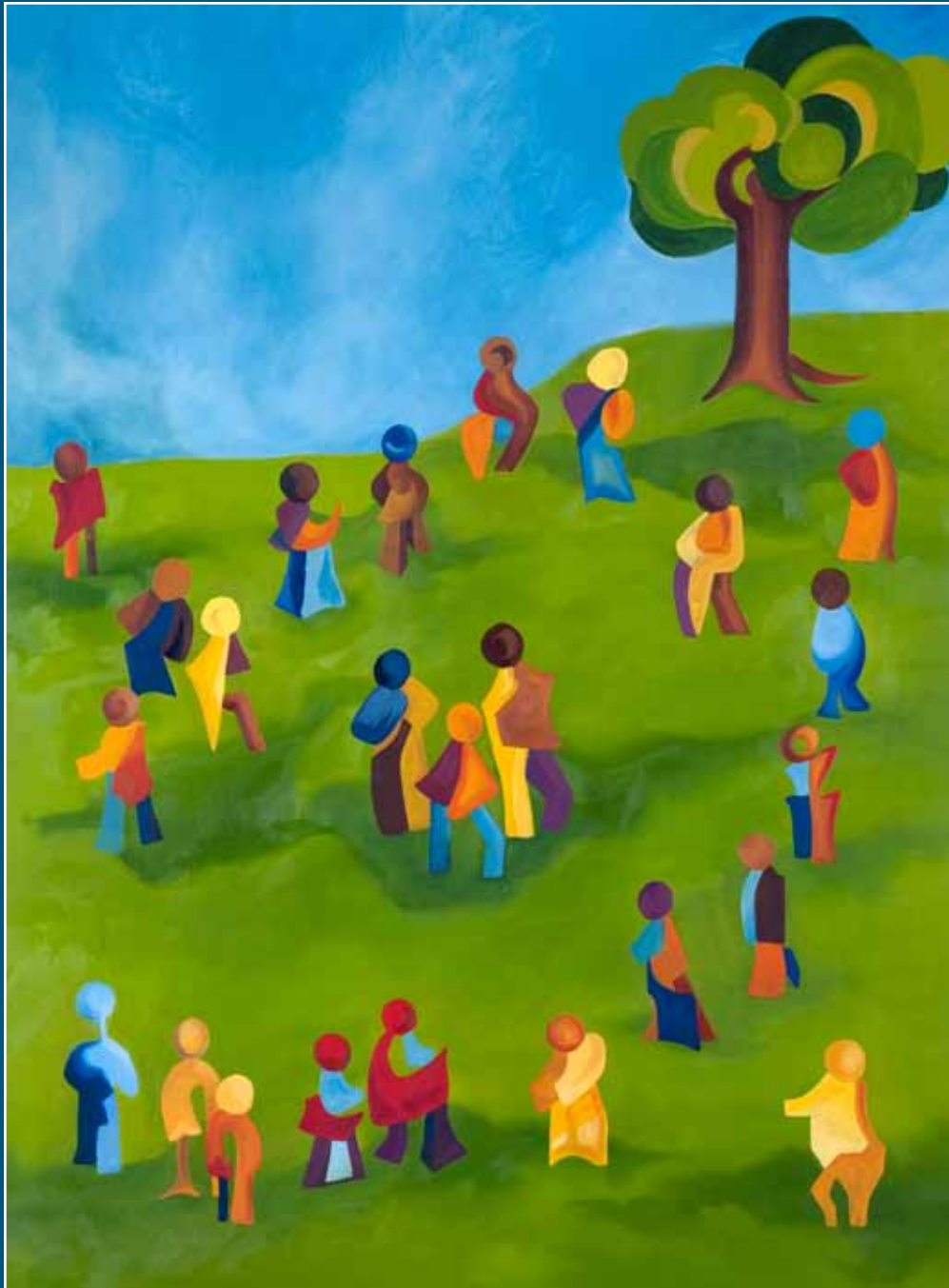


STRENGTHENING GOVERNANCE GLOBALLY **PATTERNS OF POTENTIAL HUMAN PROGRESS**

VOLUME 5



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Timothy D. Sisk
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**STRENGTHENING GOVERNANCE GLOBALLY:
FORECASTING THE NEXT 50 YEARS**

PATTERNS OF POTENTIAL HUMAN PROGRESS

VOLUME 5

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Cover Art

The cover art is a representation of an oil painting by Margaret Lawless, artist for the PPHP series. Ms. Lawless is a contemporary abstract artist whose works in various media portray aspects of the human condition, social relations, and the interaction of humans with nature. This painting represents a community, but one that also values individuality. Historically, gathering under a tree has been a form of collective governance and has come to be symbolic of it. The S-curve in the background is also found in earlier cover art of the series and in the more general symbolism of the Pardee IFs Center. For us, the S-curve represents global transitions, including progress in the human condition.

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University of Denver**



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Preface

Strengthening Governance Globally is the fifth volume in the **Patterns of Potential Human Progress** series. The series explores prospects for human development and the improvement of the global human condition. Each volume considers one key aspect of how development appears to be unfolding globally and locally, how we would like it to evolve, and how better to assure that we move it in desired directions.

The volumes emerge from the Frederick S. Pardee Center for International Futures at the University of Denver's Josef Korbel School of International Studies. The International Futures (IFs) modeling and analysis project has worked for more than three decades to develop and use the strongest possible global, long-term, multiple issue capability for exploring the future of key global issues. Among the philosophical underpinnings of the IFs project are the beliefs that (1) prediction is impossible, but forecasting is necessary to help us understand change and to support policy development; (2) analysis should always be built around alternative possible futures; and (3) the tools for forecasting should be as fully open and transparent as possible.

The earlier volumes in the series are *Reducing Global Poverty* (Hughes et al. 2009); *Advancing Global Education* (Dickson et al. 2010); *Improving Global Health* (Hughes et al. 2011); and *Building Global Infrastructure* (Rothman et al. 2013).

As in the infrastructure volume, *Strengthening Governance Globally* develops our focus on centrally important means as well as ends in the development process. It identifies the provision of security, the building of capacity, and the broadening and deepening of inclusion as three dimensions on which current high-income countries generally made long, halting, and somewhat sequential historical transitions. In contrast, many countries today struggle with all three governance transitions simultaneously and in compressed time during a relative rush to broadly-defined development.

In spite of frequent calls for better governance, there has been remarkably little effort to consider alternative futures for it.

This volume is the first attempt to look forward across half a century at governance for 183 countries and the regions and groupings into which they fall, exploring multiple dimensions of governance and their interactions, and linking that analysis to the dynamics of the larger human development system. The volume maps and uses the growing empirical database on governance variables for understanding change on these dimensions in recent decades and in coming ones. In order to build our own forecasting capability, fully integrated in the larger IFs system, it reviews and extends our understanding of the complex relationships and feedbacks among these dimensions and between them and broader human well-being. Virtuous cycles can facilitate simultaneous advance across dimensions, while vicious ones can hold countries in a weak governance and slow development equilibrium trap.

In our base case analysis, we find that there is great positive momentum globally in both human development and in governance improvement. Our basic long-term forecasts are quite optimistic. A variety of global challenges, however, including global population aging, passage through peaking global oil and gas production, water scarcity, climate change, and power transitions at the global high table could potentially interrupt the virtuous cycles or even potentially ensnare more countries in vicious ones. However, we find it more likely that such challenges will slow human progress than that they will stop it.

Yet, we also find that it takes more than the basic elements of security, capacity, and inclusion to offset global challenges or to substantially accelerate improvements in global human well-being. It also takes packages of development-oriented policies, much like those that we explored in earlier volumes. Strengthened governance is likely to help elicit such policies, but does not inevitably produce them, and our final scenarios explore them explicitly. The largely positive analysis here overall should not lure us into complacency—the balance clearly could tip in the opposite direction.

As the Pardee Center reaches this milestone in the **Patterns of Potential Human Progress** series, we are simultaneously increasing our collaborations with partners around the world on critical development issues. These range widely across geographic levels, time horizons, and substantive focus and include:

- working with the Western Cape Provincial Government in South Africa to imbed IFs in their planning;
- helping the Peruvian government with its envisioning of the country in 2021, 2030, and 2050;
- assisting the African Union's New Partnership for African Development to set the continent's goals for the next 50 years;
- collaborating with the World Bank's Center on Conflict, Security and Development to explore prospects for reducing poverty in fragile states;
- partnering with the Institute for Security Studies in Africa on a wide variety of joint projects;
- contributing working papers and forecasts to the United Nations Human Development Report Office for its 2012 and 2013 Human Development Reports;
- providing a full range of forecasts to all with interest via Google's Public Data Explorer.

While we fully recognize the great uncertainty around our forecasts, we also understand that policy decisions require that we constantly seek to improve them. Those who wish to use IFs or to stay in touch with our efforts—or join us in them—should visit the Pardee Center website at Pardee.du.edu. There you will find the model, the full text of all our volumes and papers, and regularly updated forecasts from our work. We hope they are of use to you.

Acknowledgments

The authors again owe special thanks to Frederick S. Pardee, who conceptualized the **Patterns of Potential Human Progress** (PPHP) series that this volume continues. We much appreciate Fred's ongoing support for the work of the International Futures (IFs) project and his contribution of energy, enthusiasm, and ideas, including the special responsibility he has taken for the country-specific end tables that accompany the PPHP volumes and appear online at the IFs website.

The International Futures simulation modeling system, the core tool of this volume, has been developed over more than 35 years under the leadership of Barry Hughes at the Josef Korbel School of International Studies, University of Denver. Thanks to the support of the University and the Frederick S. Pardee Center for International Futures, the complete system, including both a downloadable version and an online version, is freely available for all to use at Pardee.du.edu.

IFs, developed originally as an educational tool, owes much to the large number of students, instructors, and analysts who have used or reacted to the system over many years and provided much appreciated advice for enhancement. The first three volumes of this series provided names of many of those, and without repeating the listing, we thank them still again (as we do earlier team members, listed also in earlier volumes).

IFs team members who made special contributions to this volume include Mark Eshbaugh, Tinuviel Lathrop, Patrick McLennan, and Allison Terry (data); Eric Firnhaber (data and graphics); Amir Siraj (data and maps); Mariko Frame, Keith Gehring, and Mark Stelzer (background working papers); Eli Margolese-Malin (data, manuscript preparation, and more); Mohammad Irfan (data management); Josiah Marineau (data and help system); Kate McGrath (references and more); and Marc Sydnor (project support on earlier volumes that made this one easier). We also express appreciation to Janet Dickson. She undertook an early manuscript review and in-house editing, contributed

substantially to the writing of Chapter 2, and supervised and participated in the final editing and volume production processes.

We also thank an exceptional group of external reviewers who greatly enhanced this volume through their feedback. They are Thomas Carothers, Vice President for Studies at the Carnegie Endowment for International Peace; Kristian Gleditsch, Professor of Government at Essex University; Evan Hillebrand, Professor at the Patterson School of Diplomacy and International Commerce; Monty Marshall, Director of the Center for Systemic Peace; and Alistair McKechnie, Senior Research Associate at the Overseas Development Institute's Centre for Aid and Public Expenditure.

Most recent funding for IFs has come from Frederick S. Pardee, the United Nations Environment Programme, the U.S. National Intelligence Council, the European Commission, the UK High Commission, the Western Cape Provincial Government of South Africa, and the Center for National Strategic Planning (CEPLAN) of Peru. Other developments within International Futures have been funded in part by the United Nations Human Development Report Office, the World Bank, the SENS Foundation, United States Institute for Peace, Strategic Assessments Group of the U.S. Central Intelligence Agency, the Frederick S. Pardee Center for Longer Range Global Policy and the Future of the Human Condition at RAND Corporation, and the European Union Center at the University of Michigan. Thanks also to the National Science Foundation, the Cleveland Foundation, the Exxon Education Foundation, the Kettering Family Foundation, the Pacific Cultural Foundation, and General Motors for funding that contributed to earlier generations of IFs. Special thanks to our strategic partner in Africa, the Institute for Security Studies, and to its founding director, Jakkie Cilliers, with whom we engage in a variety of projects.

At Paradigm Publishers, Jennifer Knerr, long-term editor and friend of the IFs project, was wonderfully helpful and supportive. At Oxford University Press in New Delhi, we are grateful for

the warm support and partnership of Jai Prasad, Commissioning Editor. We especially appreciate our relationship with Eleanora von Dehsen, who served as outside editor for this volume, and we are also extremely appreciative of the beautiful design and layout work on all of the series volumes by Trevor Bounford and Denise Goodey of Bounford.com. We also thank Margaret Lawless, who created the original cover art for each of the volumes.

Finally, the authors built on tremendous foundations of work directed toward understanding governance and its various dimensions as we conceptualize them

(security, capacity, and inclusion). The hope that motivated our work was that we might contribute something to that ongoing stream of effort by exploring the possible trajectory of governance and its broader human development consequences over the next 50 years. Other than the authors, of course, none of the named individuals or institutions bears any responsibility for the current status of the model or for the analysis presented here. Their support is nonetheless greatly appreciated.

Barry B. Hughes
Series Editor

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Abbreviations and Acronyms

ACI	Armed Conflict and Intervention Project (joint project of the Center for Systemic Peace and the Center for Global Policy, George Mason University)	IPCC	Intergovernmental Panel on Climate Change (UN)
BRICs	Brazil, Russia, India, and China	KPCS	Kimberly Process Certification Scheme
CIDCM	Center for International Development and Conflict Management (University of Maryland)	MAR	Minorities at Risk Project (CIDCM, University of Maryland)
CIFP	Country Indicators for Foreign Policy (Carleton University)	MDG	Millennium Development Goal
CIRI	Cingranelli-Richards Human Rights Data Project and Dataset	MEPV	Major Episodes of Political Violence dataset (Center for Systemic Peace)
COW	Correlates of War Project	MFP	multifactor productivity
CPI	Corruption Perceptions Index (Transparency International)	NATO	North Atlantic Treaty Organization
CSP	Center for Systemic Peace	NBS	National Bureau of Statistics China
CTS	Surveys on Crime Trends and Operations of Criminal Justice Systems (UNODC)	NGO	nongovernmental organization
DF4D	Domestic Finance for Development	ODI	Overseas Development Institute
EIU	Economist Intelligence Unit	OECD	Organisation for Economic Co-operation and Development
EC	European Commission	PITF	Political Instability Task Force
EU	European Union	PPP	purchasing power parity
GDP	gross domestic product	PRIO	Peace Research Institute Oslo
GDPPC	gross domestic product per capita	PRSPs	Poverty Reduction Strategy Papers
GEM	Gender Empowerment Measure (UNDP)	PTS	Political Terror Scale (Purdue University)
GII	Gender Inequality Index (UNDP)	R2P	Responsibility to Protect
GNI	gross national income	SAM	social accounting matrix
HDI	Human Development Index (UNDP)	SFI	State Fragility Index (Center for Systemic Peace)
ICT	information and communication technologies	TI	Transparency International
IFs	International Futures computer simulation model	UCDP	Uppsala Conflict Data Program (Uppsala University)
IGO	intergovernmental organization	UN DESA	United Nations Department of Economic and Social Affairs
IIASA	International Institute for Applied Systems Analysis	UNDP	United Nations Development Programme
IMF	International Monetary Fund	UNEP	United Nations Environment Program
INGO	international nongovernmental organization	UNODC	United Nations Office on Drugs and Crime
INSCR	Integrated Network for Societal Conflict Research Program (Center for Systemic Peace)	US NIC	United States National Intelligence Council
		WDI	World Development Indicators (World Bank)
		WGI	Worldwide Governance Indicators (World Bank)



Understanding Long-term Governance Transitions

At the time of Ghana's independence from Britain in 1956, some observers believed that Ghana had more promise than either North or South Korea (Chang 2007: 3). All three countries were economically poor after suffering decades of colonialism. In addition, Korea had been ravaged and divided by war.

Yet, the fates of Ghana and the two Koreas have diverged radically from each other and from many expectations over the intervening years (Acemoglu and Robinson 2012; Chang 2007; Murphy 2006). Despite great initial promise, Ghana failed to develop an effective government. It fell victim to a series of coups, predatory dictatorships, and democratic reversals. Nearly six decades later, the government of Ghana still displays a high level of corruption. Fortunately, in the mid-2000s, Ghana began to consolidate democracy, and its government performance (including attention to sharing the wealth from new-found oil resources) has begun to improve. Unfortunately,

however, unstable and inefficient governance over most of its post-independence history has significantly stunted its national development. As a result, in 2012, nearly a third of the country's population was illiterate, about one out of every 14 children died before reaching age 5, and life expectancy was only 64 years.¹

Since the 1950s, North Korea has had a government that is effective only in very limited respects and is also brutally undemocratic. Although North Korea had initial successes in development and repressed overt domestic conflict over several decades, it ran into serious problems with the collapse of the Soviet Union in 1991 and the death of its founding leader, Kim Il Sung, in 1994. In the 1990s, it experienced a major famine that killed over a million people (Noland, Robinson, and Wang 2001), and it has maintained a totalitarian system of government into the 2000s. As a result, hundreds of thousands of North Korean refugees have fled the country.² Although North Korea reports universal literacy

■ Good domestic governance can facilitate development, resolve social conflict, and provide a strong foundation for even better governance. ■

■ Governance that ensures security, demonstrates capacity, and functions with widespread and deep inclusion matters greatly to the future of peace, prosperity, and attendant happiness in our world. ■

and life expectancy of 68 years, in many respects the situation in North Korea is now worse than in Ghana.

South Korea, on the other hand, has developed a government that is generally both effective and democratic. It has successfully built on several centuries of administrative competence in the Confucian tradition, reducing corruption and developing a modern, meritocratic civil service. It has developed a free press, an active civil society, and since the 1990s has held competitive multiparty elections. The country has been able to avoid famine and now attracts hundreds of thousands of migrant workers and immigrants from other Asian countries who come to work in its thriving industries. Its per capita income of over \$22,000 (in 2005 dollars at market exchange rates) in 2012 dramatically outstrips that of either North Korea (\$1,600) or Ghana (\$700), and South Korea is now one of the 34 (mostly) rich industrialized democracies that together form the Organisation for Economic Co-operation and Development (OECD).³ University attendance rates in South Korea are now among the highest in the world, and life expectancy is over 80 years.

As do populations in these three countries, we all look to our governments—formal and recognized authorities—to enhance our well-being as individuals and to help us enjoy healthy and fulfilling lives. Governance, a broader concept than government, is the manner in which societies manage themselves; governance emphasizes the critical two-way interaction of governments and society. Good domestic governance can support the creation of public goods that facilitate development, in particular the provision of reliable systems of market regulation, infrastructure, and education and health care (Stasavage 2005). Such governance also provides institutional and enduring means of resolving social conflict, contributing further to development opportunities and strengthening the foundation for even better governance. In very sharp contrast, poor governance can have the kinds of consequences that Ghanaians and North Koreans have suffered.

This volume explores the character of national governance around the world and the implications of differences in that character. Although we direct some attention to governance across countries, our overwhelming

focus is within them. In particular, this volume looks at how well governance of countries performs in terms of *security*, *capacity*, and *inclusion*. It considers changes in governance in recent decades, the differences that alternative long-term future patterns could have for human development, and how societies might be able to shift away from weak governance with associated insecurity and social stagnation. As the comparisons of Ghana, North Korea, and South Korea indicate, strengthened governance (by which we mean governance that ensures security, demonstrates capacity, and functions with widespread and deep inclusion) matters greatly to the future of peace, prosperity, and attendant happiness in our world.

Thinking About Human Futures Including Governance

Pessimists and optimists regularly offer their opinions about human futures. Not surprising, the balance of prognostications tends to swing with contemporary events. The Great Recession, which began in 2008, gave extra voice, at least temporarily, to the pessimists. Pessimists point to deep and long-lasting problems that we face globally, including those of human relationship to the environment (Intergovernmental Panel on Climate Change 2007; Meadows et al. 1972; Stern 2007); globally aging populations (Goldstone, Kaufmann, and Toft 2012); and a forthcoming global power transition from the United States to China (Brzezinski 2012). For optimists, technological progress draws special attention (Simon 1981), as do interacting forces of modernization (including income, education, and governance advance; see Inglehart and Welzel 2005); the advance of international organizations (Goldstein 2011); and cultural progress (changes in individual and collective understandings and patterns of interaction; see Pinker 2011). Those looking at the forces of globalization tend to hold varying mixtures of pessimistic and optimistic views, both with respect to the character of globalization's impact and its future (Fischer 2003; Held and McGrew 2007).

So what can this volume add to the plethora of predictions about global futures, including those (somewhat limited as we shall see) about governance? First, we will be taking a very broad approach, looking across the issue areas and countries on which both pessimists and optimists

tend to focus more selectively and geographically. The International Futures (IFs) forecasting system on which we draw is an integrated global modeling system that links dynamic representations of demographics, economics, infrastructure, education, health, sociopolitical systems, technology, energy, agriculture, and elements of the natural environment. It also separately represents 183 countries and many of their interactions, such as trade and financial flows. In short, using IFs, we can cast a wide net in thinking about the future.

Second, forecasting is often undertaken in a rather non-transparent manner, relying on implicit and badly communicated mental models. Here we attempt to make the bases of our forecasts as transparent as possible, an effort augmented by much additional information that is available about the IFs system and its use (see Pardee.du.edu). In addition, we draw on, and make available with the model, a very large database, used in our own analysis and open to others.⁴

Third, a great deal of available forecasting, especially around governance variables, is short term, in part because of the near-term horizons of elected policy makers. For instance, political risk analysis seldom looks beyond one-to-three years (e.g., Hewitt, Wilkenfeld, and Gurr 2010), and most social science analysis focuses on developing models that fit historical data rather than forecasting future years (Ulfelder and Lustik 2007). Exceptions, like the forecasts of Bueno de Mesquita (2002), Busby et al. (2010), and Hegre et al. (2013), are very few, and we shall review them in Chapter 4.

Longer-term forecasting differs from that with shorter time horizons. Instead of focusing on events driven by individuals or on immediate contagion effects, we look to deep underlying dynamics. Longer-term global governance forecasting is important for several reasons. It helps us understand the drivers of human action and development in the broad sweep. It provides insights into the resilience and stability of current trajectories and their underlying systems. And, at least potentially, it also could assist us in making difficult choices about trade-offs in uses of scarce resources (Lomborg 2009).

Fourth, we admit to our uncertainties. We prefer the word “forecasting” to “prediction” and believe in presenting alternative forecasts. Those

who tell us what the future will bring, whether short- or long-term, are perhaps wrong as often as they are right (Tetlock 2005). Our approach is to attempt to identify the key uncertainties in our understandings and forecasts and to use scenario analysis to explore them.

In the rest of this introduction, we briefly survey the broad sweep of change in governance over the last two centuries, doing so both to provide a substantive foundation for, and to better define, our conceptualization of governance. We conclude with a quick look at how the story of this volume will unfold.

The Contemporary Global Political Environment: A World of States

Human polities evolve and function in regional and global political environments that are constantly changing. The contemporary Western-based international structure of states (polities with territorial control and sovereignty recognized by other states) and the modern state system is one that first began to emerge in Europe after the Peace of Westphalia (1648). Although this system originated in Europe, the colonization of most of the Americas, Africa, and Asia—including the actual or attempted disruption of important existing non-European states such as China, Ethiopia, Japan, and Thailand—by European states over the following three centuries gradually brought about a globalization of the state as the dominant form of political organization.

Counting states is not without controversy, and Gleditsch and Ward (1999) discussed the issues that arise in attempts to establish and apply appropriate criteria for inclusion in the international system of states.⁵ In Figure 1.1 (on p. 4), we show two estimates in addition to our own of the growth in state numbers from 1816 through 2011. The IFs project estimates that in 1816, following the Napoleonic Wars, there were 42 states in the international system. In the late nineteenth and early twentieth centuries, most of the rest of the world consisted of colonies. Colonization was particularly rampant in Africa and Asia, where only a small number of territories were independent and free from control by foreign powers.

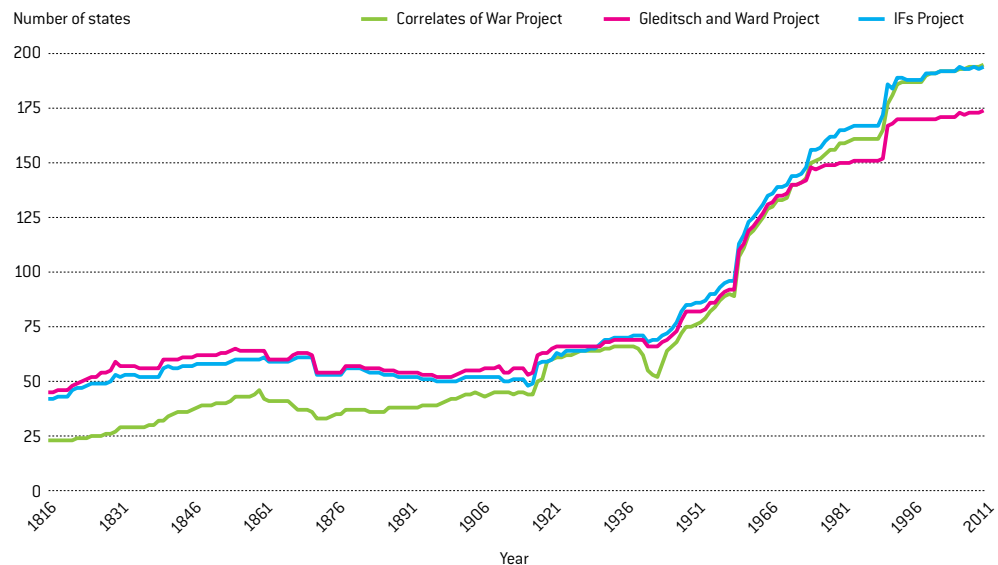
In 1946, after World War II, there were still only approximately 50 states in the world (mostly concentrated in Europe and the

■ The integrated and global nature of IFs enables us to take a broad approach to the subject of governance. ■

■ Long-term forecasts of global governance can help us better understand the drivers of human action and development and can provide insights into the resilience and stability of societies. ■

■ In 1946, there were still more than 100 colonies globally. Today, the majority of states are post-colonial. ■

Figure 1.1 Number of recognized states in the world between 1816 and 2011



Note: Although all three projects show a similar trend, they have methodological differences that result in different counts, particularly prior to 1920 and after about 1990. The criteria for inclusion by the Correlates of War (COW) Project are: prior to 1920, the entity must have had a population greater than 500,000 and diplomatic missions at or above the rank of charge d'affaires with Britain and France; after 1920, the entity (1) must have been/be a member of the League of Nations or the United Nations, or (2) have a population greater than 500,000 and receive diplomatic missions from two major powers. The Gleditsch and Ward list begins with the COW list, but then excludes some entities and adds others based on an assessment of whether they have relatively autonomous administration over some territory and a population greater than 250,000. In distinction from both COW and Gleditsch and Ward, the International Futures (IFs) project includes entities of any size, even very small ones, as long as they are recognized by sovereign states that, in aggregate, represent at least half the world's power as measured by their share of GDP at market exchange rates.

Source: Correlates of War Project State System Membership Data set (v2011); Gleditsch and Ward List of Independent States; International Futures State List. Compiled by the authors.

■ In addition to decolonization, the global system has experienced increasing political liberalization and democratization, the spread of government professionalization, and much development in the international political order. ■

Americas) and over 100 colonies, controlled by approximately a dozen imperial states. Due to a post-war burst of decolonization, including the establishment of 17 new African states in 1960 alone, there were 113 recognized states in the world by that year, and the number of states almost doubled again to 194 in 2011. Thus, after this long process of system transformation, the majority of the world's states are post-colonial. Decolonization has slowed considerably, but there are still many self-defined groupings of people who have not gained statehood for themselves and who live a semi-colonial existence within a state.⁶

Nations are self-defined collectivities of people associated by some combination of language, religion, culture, and historical experience. In spite of the common misuse of the concept "nation-state," state borders often do not coincide with the borders of nations,

especially in Africa, where colonial powers drew the state borders with limited regard for nations. This lack of correspondence between state and national borders is a key reason for conflict and lack of security both within and between states. Many members of nations whose boundaries are not consistent with those of states continue to desire their own states (e.g., Kurds).

States also face challenges from regional integration (such as that of the European Union) and from forces such as the much broader Islamic community of believers (the *umma*). Even so, it seems unlikely that the state order will be overthrown in at least the next several decades. Thus, in this volume, we presume that states will continue as the pre-eminent form of global political organization in the twenty-first century (while admitting that this form may at some point decline or even disappear [Wendt 2003]).

Nonetheless, we recognize major patterns of change in the state system. A fundamentally important transformation in the character of states toward political liberalization and democratization has accompanied the increased number of states. For the most part, this trend began in European states, as well as in states comprised primarily of European settlers. Especially just after World War I and World War II, many countries democratized their political systems to a degree never before seen in history, including the introduction of universal suffrage via the secret ballot (Huntington 1991: 16). This trend has since spread to many former European colonies in the Americas, Asia, and Africa. Changes in global norms, reinforced by the Universal Declaration of Human Rights (1948) and subsequent international human rights agreements, have also led to rising expectations that states should serve the interests of their populations, now defined as citizens with rights as opposed to subjects of a monarch or despot. The majority of the world's domestic governments now claim to be democracies, although admittedly the depth of democracy is not strong in many states, which we might more properly label semi-democracies, quasi-democracies, or facade democracies.⁷

Another major transformation has been the worldwide professionalization of governments within states. With the global expansion of wealth and education, those working in state administration have generally moved toward higher levels of skill and training. States have also utilized advanced technologies and organizational forms to increase their capacity and efficiency and to expand the share of national income that they mobilize and manage.

A third major transformation has been the evolution of a world political order based on the state system. That order gained strength after World War I with the founding of the League of Nations (1919), the first worldwide attempt at international organization with an explicit charge to prevent international war. Although not all countries joined the League or followed its precepts, the presence of an international coordinating body gave nations a forum for potentially resolving interstate disputes in a peaceful manner. Though the League's members were unable

to prevent the outbreak of conflicts such as the Japanese invasion of Manchuria (1931) and eventually World War II (1939–1945), the norm of international coordination had been established, giving impetus to the creation of the United Nations (1945) and the promotion of a liberal international order by the victors of World War II. As Ikenberry (2001) has argued, the settlements between great powers to conclude major international wars have had a major influence in shaping the international political order of post-war eras.

The international political system established after World War II has continued to evolve since the end of the Cold War (1948–1991). Although the state as developed in 17th century Europe continues to be the overwhelmingly dominant formal political organization, the end of the Cold War and dramatic expansions in suffrage and in attention to human rights have brought significant systemic change and some erosion of supposedly (but never completely) iron-clad sovereignty (Krasner 2004). The international community has begun to be much more involved in the domestic affairs of states, especially in conditions of humanitarian intervention.

The landmark recognition in the Outcome Document⁸ of the 2005 World Summit on the state's responsibility to protect its citizens from genocide, war crimes, and crimes against humanity or face action by the international community further illustrates that today sovereignty is sometimes shared and that international authority, emanating from the UN Security Council, may at times trump domestic authority. In the twenty-first century, a variety of other transnational issues, such as the needs to stabilize globalized financial systems, to manage multicountry watersheds, and to address global warming, also appear increasingly likely to impinge on state sovereignty.

In spite of the important transformations occurring in global governance, our focus in this volume is on domestic governance. That focus has much to do with the development orientation of the **Patterns of Potential Human Progress** series (to which this volume belongs) and the central role that state governments play in the development process. Chapter 7 does, however, devote some attention to global governance and the support it can provide to state efforts.

■ The expansion of suffrage, increased attention to human rights, and the end of the Cold War have further contributed to systemic change. ■

■ Transnational issues—like the need to stabilize globalized financial systems, manage multicountry watersheds, and address climate change—are likely to increasingly impinge on state sovereignty. ■

■ Three fundamental transformations characterize the formation of modern modes of governance: transitions toward greater security, stronger capacity, and broader and deeper inclusion. ■

■ In the past, the transitions to greater security, capacity, and inclusion tended to occur sequentially; they now proceed more simultaneously and in mixed and varied patterns. ■

Developmental Transformations of Domestic Governance

Although the term *governance* can be defined in many ways, we follow the World Governance Assessment project's broad conception of governance as "the formation and stewardship of the formal and informal rules that regulate the public realm, the arena in which state as well as economic and societal actors interact to make decisions" (Hyden et al. 2008:3). In other words, governance refers to the way in which society manages itself.⁹ Primarily, it refers to government activities, but it also incorporates "the interaction between formal institutions and those in civil society" (Mander et al. 2004: 11).

When we talk about *government*, we refer to the recognized body of authority in which power is formally vested to regulate society. Governments generally include a body of public administration and a military and police apparatus to defend public order (and the state). Governments are engaged in processes of accumulating and distributing resources (for example, tax collection and public expenditure) for purposes determined by their leaders. Governments may also operate at different levels of society (for example, national, provincial, and local).¹⁰

In this book, we focus on three fundamental transitions that typically characterize the development of the modern state. Just as the process of modernization involves economic, demographic, and education transitions, it also involves governance transitions toward greater *security*, stronger *capacity*, and broader and deeper *inclusion*. Our observation of the current international climate, the product of evolution over decades and even centuries, suggests that there is a strong normative push and empirical movement toward the creation of a world of states governed by increasingly more effective and inclusive governments with more sustained physical security. (See Box 1.1 for a discussion of an alternative conceptualization to that of our three governance dimensions.)

We will now introduce the nature of the fundamental security, capacity, and inclusion transitions that modern states typically experience in order to enhance the prospects of their survival against external and internal threats and to build a peaceful society with

Box 1.1 The authority, legitimacy, and capacity perspective on governance

The concepts of authority, legitimacy, and capacity (Skocpol 1985) provide a common lens for analyzing governance. These concepts are closely related to our three transitions (security, capacity, and inclusion) but do not map fully to them. For instance, inclusion often contributes to legitimacy. Yet citizens can also accord legitimacy to ruling monarchs. Our concept of inclusion adds a very different and more democratic element to governance, in part via the accountability it fosters. Similarly, authoritarian governments may not accord citizens true security of person and may, in fact, intrude on it. In general, we find that the perspective of our three transitions helps us better conceptualize and study the dimensions of change in the recent history and probable future of governance.

shared prosperity.¹¹ The discussion of each transition will provide some elaboration of the governance concept and some information about the struggles of states over time to make and secure the transition. Although these transitions have historically been somewhat sequential (and we present that sequence here), they now proceed much more simultaneously, in mixed and varied patterns, for many of the newly post-colonial states.

Security: From conflict-ridden anarchy to state-centric sovereignty with security

Historically, the first transition states usually have made begins with overcoming anarchy through the consolidation of territorial governing authority to establish sovereignty. (Of course, some modern states, notably former colonies, have come into being with clear territorial definition and sovereignty, often following a struggle for independence rather than against anarchy.) Securing sovereignty involves a single government's achievement of exclusive territorial control and rule over a clearly demarcated physical space, a process studied in depth by Charles Tilly, a prominent scholar of European political history (Tilly 1985).¹² According to Tilly, states are able to develop a legitimate monopoly on the use of military force when their war-making capacity is sufficiently advanced that they can bring about the cessation of warfare (i.e., defeat of all competitors). A government can then maintain its exclusive authority by blocking the importation and circulation of weapons and

defeating or negotiating with rebel groups in its territory to achieve a monopoly on authority that other states then recognize.

The creation of the state obviously does not end the process of establishing and maintaining greater security—official state formation often precedes even the security-establishment aspects of state building. In order to reduce internal conflict and exercise exclusive and unchallenged control, governments generally rely on three mechanisms: coercion, co-optation, and legitimacy (Hurd 1999: 379). Although our analysis in this volume will not elaborate or forecast these mechanisms, some additional explanation is useful.

Coercion involves state use of power to intimidate or repress those opposed to the government in power in order to maintain political stability. A common means to effectively repress armed dissidents is through the deployment of a loyal, cohesive, trained, and adequately equipped military and/or security force to all parts of the national territory. As Rubin (2005: 98) noted, it is easiest to maintain stability when only one group (i.e., the state) possesses weapons, and most difficult when there are many different competing groups, all of whom are heavily armed (e.g., consider the multiple militias in Libya after the overthrow of Colonel Muammar Gaddafi in 2011). While democratic states are more likely to choose subtle and indirect means to control their populations, some states, particularly authoritarian ones, use violent means to repress opponents. Repression typically involves human rights violations such as beatings, torture, imprisonment, and assassinations, as well as control of media, limits on what people are able to speak and learn, and restrictions on rights to assembly.

Co-optation is used when the state's leaders seek out potential challengers and bring them into the fold through material gifts or status accolades in order to neutralize possible opposition. Co-optation often requires guaranteeing a certain amount of material well-being, at least for elites in a position to challenge the government.

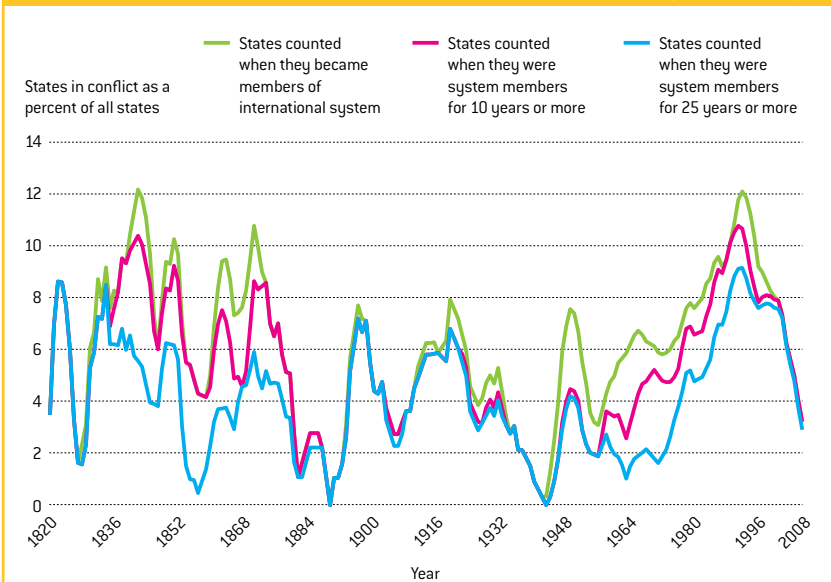
The third approach to building and maintaining social stability is to build the legitimacy of the governance system beyond co-opted subgroups to the broader population.

A state gains legitimacy when its population accepts the government's rule without contesting it. The state may acquire legitimacy through ideology (including popular support for inherited leadership) or through actions that benefit its citizens. Countries whose governments have fostered high levels of social, educational, and economic development tend to have more peaceful and stable political systems, whereas countries that are poor or in the process of modernizing tend to have more political disorder (Collier 2007; Huntington 1968). An orientation toward development and success in the development process help confer legitimacy, particularly in an increasingly democratic world.

While governments endeavor to preserve security within their territory, they do not always succeed. Figure 1.2 shows the percentage of states that have experienced intrastate conflict in each year between 1816 and 2008. Although there was no upward trend during this period, there was no significant downward trend either. In fact, over the last two centuries, conflict has ebbed and flowed over time, suggesting a cyclical nature of intrastate conflicts with international contagion effects.

■ Countries with high levels of human development tend to have more peaceful and stable political systems; those that are poor or in the process of modernizing tend to have more political disorder. ■

Figure 1.2 Percentage of states experiencing intrastate conflict (1820–2008)



Note: Using a five-year moving average of values. Separate representation of states 10- and 25-years of age or older removes much of the conflict associated with state creation and/or securing independence, and is a potentially better measure of enduring patterns of intrastate conflict in periods with significant state creation. For information and analysis regarding this data series, see Sarkees and Wayman 2010.

Source: Intra-State War Data (v4.1) from Correlates of War Project. Compiled by the authors.

■ Conflict has ebbed and flowed over the last two centuries, suggesting a cyclical nature of intrastate conflicts with international contagion effects. ■

■ A modern, effective state hinges on the strength of its public administration, four basic components of which are civil service, taxation, rule of law, and public safety. ■

Another interpretation of the cause of ebbs and flows of intrastate conflict could be that the addition of clusters of new states to the international system over time introduces ones that are less consolidated and more vulnerable to conflict. For example, the addition of many new states shortly after World War II and again after 1960 could account for the upward cycle of intrastate conflict following these surges of decolonization. Figure 1.2 suggests that possibility (especially in peak conflict periods of the nineteenth century), since the rate of conflict is lowest for states that are 25 or more years of age and highest for the grouping that includes all states from the time they were first recognized. Yet, age of states clearly does not easily explain many of the peaks of conflict, including that of the late 1980s and early 1990s (one would need to consider other explanations for that peak, including use of proxy forces by Cold War superpowers in countries around the world).

It is worth emphasizing that our focus is on intrastate conflict, not interstate warfare, even as we recognize the often close interaction between the two, and that all three mechanisms of maintaining security (coercion, co-optation, and legitimacy) require the development of state capacity to implement and enforce (Levitsky and Way 2010). We will now turn to the general issue of increasing state capacity, not only for security but also for development.

Capacity: From weak to strong state capacity

The second transition to improve governance refers to the process of professionalization through which a state becomes more competent and effective, thereby attaining the ability to “formulate and implement strategies to achieve economic and social goals” (Kjaer, Hansen, and Thomsen 2002: 7) and build consistency and continuity over time. Max Weber, a prominent scholar of modernization in the early twentieth century, studied this process (also labeled “state capacity development”) in great depth. According to Weber, for a state to become effective, meaning that it can accomplish what it sets out to do, it must develop a system of public administration that supports the goals of the state. There are several elements of public administration that enable a modern state to be more effective and

to enjoy “performance legitimacy” (OECD 2008: 17). Four basic components are civil service, taxation, rule of law, and public safety.

First, states increase their competence by *developing a skilled and capable public administration or civil service* that is loyal to the state. Without trained, loyal, and honest personnel dedicated to the civil service vocation, states can accomplish little. The civil service is based on “monocratic” office hierarchy (that is, rule by a single person), specialized jurisdictional competence, maintenance of extensive written files and documents, and separation of official activity from private life (Weber 1978: 957). According to Weber, an effective civil service must apply unbending adherence to rules and meritocracy in the selection and promotion of personnel through procedures such as standardized examinations to enter public administration (1978: 999) and regular evaluations to determine advancement, retention, or dismissal. Civil service loyalty is obtained through a combination of material (rank-based fixed salaries, raises, promotions, job security, and old age pensions) and ideational/symbolic incentives, including uniforms, a sense of duty, status, social esteem, and *esprit de corps* (Weber 1978: 959, 963).

Second, state competence is a function of financial as well as human resources. Public finance systems support the allocation of revenues to fund public goods and services, including public safety and maintaining the rule of law. Therefore, states must *develop an effective system of taxation and revenue collection*. As Weber argued, “a stable system of taxation is the precondition for the permanent existence of bureaucratic administration” (1978: 968). Weber viewed systematic budgeting as crucial to public finance:

A firm estimate of revenues, and correspondingly of expenditures, can take the place of the hand-to-mouth living from the immediate but unpredictable inflows which is so typical of all early stages of public finances. (1978: 965)

Typically, state fiscal capacity increases in tandem with economic development, providing

the resources necessary for collective goods and services that improve well-being by reducing poverty, disease, and conflict. Much of the prosperity of a country and increase in personal incomes is based on public infrastructure, public education, public safety, and public investments in science and technology that increased public revenue makes possible.

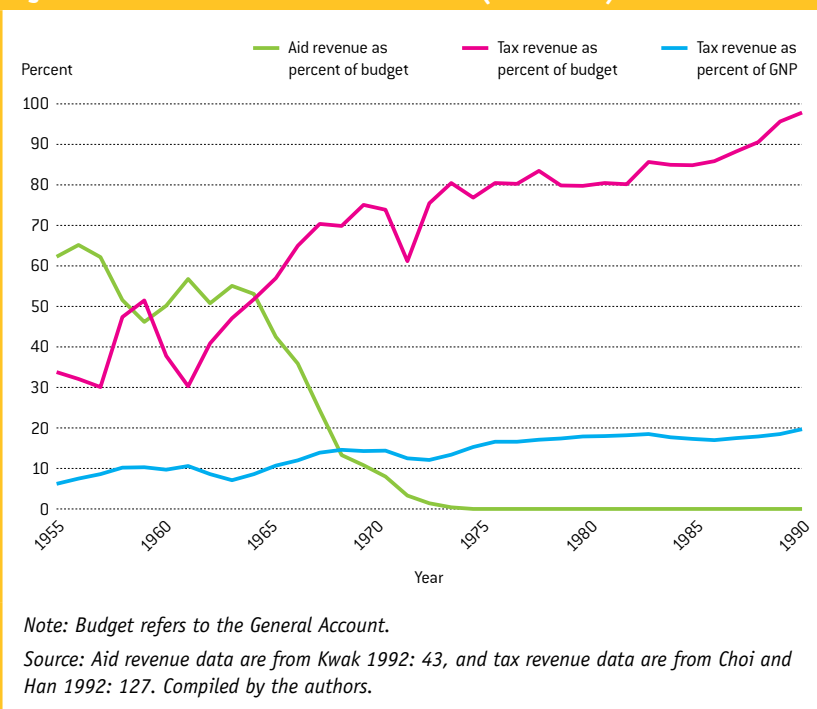
As Figure 1.3 illustrates, in the case of South Korea, a country that was successful in making the transition to effective governance within only a half-century, tax revenue collection increased significantly over time. Whereas in 1955 the South Korean state collected just over 5 percent of GNP in tax revenue, its share increased almost fourfold to 20 percent in 1990. At the same time, tax revenue grew from being the source of only 30 percent of the government budget to 98 percent, while foreign aid declined from over 60 percent of the budget in 1955 to 0 percent in the early 1970s.

Unfortunately, many post-colonial countries have not been as successful in building their domestic tax bases and freeing themselves from dependence on foreign aid. For instance, in the early 1980s, Ghana's government revenues remained below 10 percent of GNP, and although that number rose sharply in the 1990s, even in 2010 the government was dependent on foreign aid at a level above 5 percent of GNP.

Third, states benefit from *developing a set of rules that are applied consistently, transparently, and equally* to create a social and economic environment that is perceived to be relatively fair and predictable. This is often called “the rule of law,” and is an outgrowth of having a bureaucracy that adheres to a system of rules and regulations rather than to arbitrariness, prejudice, or favoritism in its operations (Weber 1978: 975). The rule of law means not only that the government follows rules, but that society is subject to rules (laws), and that these laws apply equally to all—as opposed to a patrimonial system, in which those people with elite or family connections are able to get special favors denied to others (Weber 1978: 958).¹³

Fourth, as mentioned earlier, state capacity is both demonstrated and enhanced through the maintenance of security, that is, ensuring public safety and political stability and preventing internal disorder and foreign invasions. Maintaining security requires *developing a*

Figure 1.3 Tax and aid revenue in South Korea (1955–1990)



professional police force and military, or their equivalents, to keep peace and protect the operations of the government.

More generally, states demonstrate capacity through the provision of public goods (Weimer and Vining 2005; World Bank 1997). Such goods include not just internal and external defense, but the protection of property rights and the provision of well-functioning markets, infrastructure, basic education, and environmental protection. Such goods have one (impure public goods) or both (pure public goods) of the characteristics that (1) access by one individual does not, in the absence of congestion, limit access by others (a characteristic called non-rivalry); and (2) it is very difficult or impossible to exclude individuals from access to them (non-excludability).

Because individuals cannot fully provide or control them, market mechanisms alone tend to underprovide public goods. Governmental action is needed because production or consumption of such goods creates positive or negative benefits (externalities) that reach beyond those who consume them. It is for these reasons that the ability of states to adequately provide public goods can be a core basis on which to assess

■ Much of a country's prosperity is made possible by public investments in infrastructure, education, safety, and science and technology. ■

■ The rule of law means not only that governments follow rules, but also that society is subject to rules that apply equally to all. ■

■ A well-functioning government provides public goods such as property rights, infrastructure, basic education, environmental protection, and regulated markets. ■

■ A major trend over the last 200 years has been large-scale increase in the number of countries with competitive electoral processes. ■

their capacity. Different social actors have somewhat varying understandings of which goods have public characteristics, but the set is substantial.

One could go a step beyond key functions of governments and focus on the specific policies governments adopt in fulfilling those functions. Securing national defense can be accomplished in different ways, including building a large army or creating a strong alliance system. Environmental quality can be enhanced domestically by regulating industry, subsidizing desired actions, or exporting polluting industries to other countries. Economic growth can be advanced by protecting contracts and free markets and/or by creating educated and healthy populations.

Governments also vary in their definitions of key functions and related policies; for example, whereas some place considerable weight on limiting income and wealth inequalities, others do not. This volume is not primarily about policies, however, but about essential dimensions of governance, including capacity. It is that capacity that motivated former British Prime Minister Tony Blair to become very involved in assisting African development. Blair said he created the Africa Governance Initiative in 2008 because

I came to the conclusion at the end of my time in office that aid was very important, but actually governance was as important—and governance not simply in the sense of honesty or transparency, but governance in the sense of effectiveness, of capacity. . . . With any of these countries, you can get a thousand consultancy reports that tell you what to do; that's essentially not very hard to work out. The question really is how to do it.¹⁴

A similar orientation motivated the United States in 2004 to establish the Millennium Challenge Corporation, a much larger effort to target governance quality rather than specific policies. So, too, the World Bank and the overseas development agencies of many countries insist that recipients of funds utilize Poverty Reduction Strategy Papers, meant to reinforce the processes of inclusive and

capable governance in recipient countries. The philosophy behind such initiatives is that governments with high levels of security, capacity, and inclusion (and hence also accountability and responsiveness) will appropriately identify and implement development-oriented policies.

Inclusion: From exclusive to inclusive government

A third historical and ongoing transition in governance involves the process of states becoming broadly and deeply inclusive and participatory—in other words, more democratic. Robert Dahl, a prominent political scientist of the late twentieth century, emphasized the need in democracy for healthy competition and contestation to support broad and deep inclusion. His work (Dahl 1971) documented how difficult that is to achieve in the real world.

At least three issues of importance are connected to this third transition. The first is conceptual: clarifying what we mean by democratic or inclusive governance. The second and closely related issue is empirical and focuses on assessing the progression of the transition across countries and over time. The third, and most complex, is normative and analytical and refers to the value of inclusive, democratic governance relative to other forms. We consider these issues briefly here; subsequent chapters will extend the discussion of each.

The progression of formal democracy

The most basic conceptualizations of democracy focus on the presence of contested elections and their success in replacing leaderships over time. The main trend over the period between 1800 and 2010 has been the increase in the number of countries in which designation of political chief executives involves a competitive electoral process, as opposed to closed selection processes, such as inheritance, or some hybrid form.

The Polity Project (Chapter 2 describes it and the Polity scales more fully; see especially Box 2.5)¹⁵ focuses conceptually and empirically on executive recruitment, constraints on political authority, and political competition—a narrower conceptualization of democracy than that of Dahl (below we will return to issues around broader inclusion). Using the project's schema and the Polity 21-point composite autocracy/

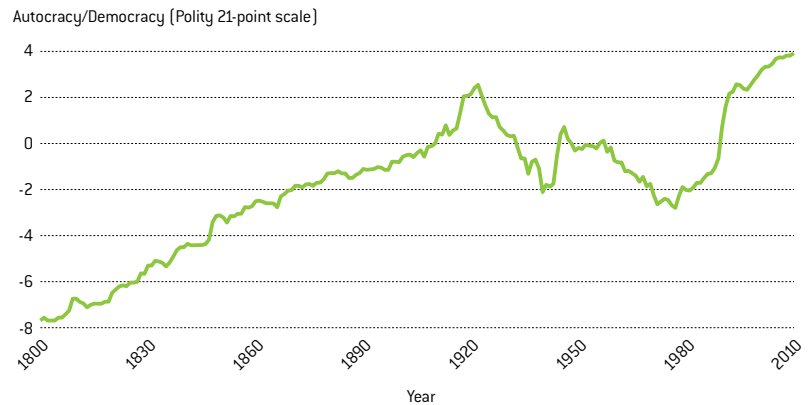
democracy scale, Figure 1.4 shows the progress of the world toward democracy and the decline of autocracy. The figure suggests a story, similar but not identical to that told by Huntington (1991), of global advance that has occurred in three waves.

The first long wave of democratization occurred roughly between 1800 and 1922. This wave had its roots in the American and French Revolutions of the late eighteenth century, although the actual emergence of national democratic institutions is a nineteenth century phenomenon. The democracy of the first wave was restricted to a limited portion of the population, such as white male property owners.

The first reverse wave appeared between 1922 and 1940, roughly beginning with Benito Mussolini's disposal of Italy's fragile democracy (Huntington 1991: 17). The drivers of this reverse wave included hyperinflation and economic depression; challenges to traditional social and political norms from the Great Depression and from the process of industrialization that mobilized masses of population both economically and politically (Kornhauser 1959); and war related to the same disruptions and causing still more of them.

The turmoil of the period brought about abandonment of liberal democratic forms by both the right and the left across much of Europe. The shift away from democracy involved a combination of return to traditional forms of authoritarian rule and the introduction of new forms of totalitarianism that often drew support from mass mobilization processes. On the right, fascism proposed strong national identity and authoritarian leadership as an alternative to liberal democracy. On the left, communism pointed to sharp economic, political, and social inequalities, and justified authoritarianism by arguing that liberal democracy and capitalism were both controlled by capital owners and did not represent the interests of the working class. Very violent reversals occurred in many countries, including Germany, Italy, and Spain, which had taken at least some steps toward democratic forms fairly recently and where often the state, and even the nation, were relatively new (with respect to the new nations, many Germans, Italians, and Spanish members of them thought, and even still now think, of themselves primarily as Bavarians, Sicilians, or Catalonians).

Figure 1.4 Average autocracy/democracy in the world of sovereign states (1800–2010)



Note: The graph includes contemporary states only during the years in which they have been sovereign, and world values are simple averages of state values (not population-weighted). The measure of autocracy/democracy is the Polity Project's composite 21-point Polity Score (the Project's democracy scale score minus its autocracy scale score). A completely autocratic state would be represented by -10, while a completely democratic state would be represented by +10. For further explanation of the measure, see <http://www.systemicpeace.org/polity/polity4.htm>.

Source: IFs Version 6.68 using Polity data.

The second, short upswing in democratization began at the end of World War II with the Allied occupation and promotion of democratic institutions in West Germany, Italy, Austria, Japan, South Korea, Turkey, and Greece. Argentina, Colombia, Peru, and Venezuela also moved toward democracy during this wave. Meanwhile, the beginning of the end of Western colonial rule produced many new states in Africa and Asia, but democracy was tenuous in them because many former colonizers made no consistent effort to prepare for democratic transitions or to facilitate them.

The second reverse wave occurred between 1958 and 1972. One could argue that a major driver of this reversal was the lack of an adequate foundation for modern democracy in many of the states that had participated in the second upward swing. The reversal was exacerbated by lack of support for democracy by the superpowers of the Cold War era. By the 1960s, the second reversal had begun to affect Greece, Pakistan, and several states in Latin America, including Argentina, Brazil, Panama, and Peru. More numerically significant, the vast bulk of countries in Africa became independent as nominal democracies in the 1960s, but many quickly became dictatorships or one-party

■ Many countries have suffered violent reversals in the process of democratization, usually when the process was still young and often when the countries themselves were quite new. ■

■ Major drivers of post-World War II democratization reversals were inadequate democratic foundations and lack of superpower support for democracy in the Cold War era. ■

states; in fact, according to Polity Project data, the only newly independent African countries to maintain somewhat democratic practices through the century were Botswana and Mauritius.¹⁶ Thus, even as decolonization ultimately freed colonized peoples from European domination, it quickly generated an exceptional rise in authoritarian governments.

The third, and current, wave of democratization began around 1974 with the “Carnation Revolution” in Portugal. During this wave, which included the collapse of communism in most of the world after decades of suppressing democratic movements (as in Hungary and Czechoslovakia), democracy replaced authoritarian regimes in states across Central and Eastern Europe, Asia, Latin America, Africa, and perhaps (the movement is still too young to allow certainty) the Middle East. In other countries, movements promoting democracy gained strength and legitimacy. One might usefully supplement the wave metaphor with one involving multiple “cascade[s] of democratization” (Marshall and Cole 2011: 16–18), including those in South

America in the late 1970s, Eastern Europe following the collapse of the Soviet Union in the late 1980s, sub-Saharan Africa following the end of the Cold War in the early 1990s, and then North Africa and the Middle East in the 2010s.

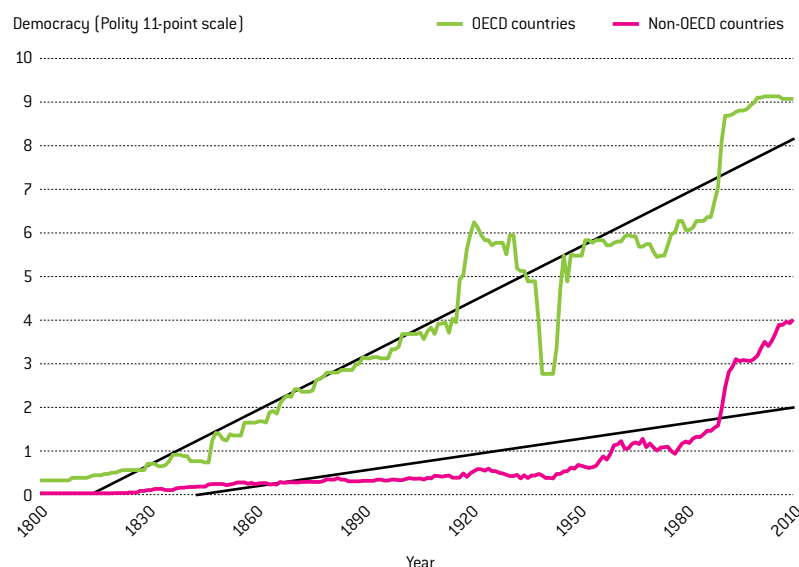
Overall, movement toward democracy has been a global one, and the most striking result of this wave is that we now live in the most democratic and least authoritarian world in the history of the modern state system.

Somewhat surprising, in this rendition of the spread of democracy over the last two centuries, little progress has been apparent in the portion of states that are democratic since the peak of the first wave shortly after World War I. Since that time, the waves are pronounced but there is no clear trend (see again Figure 1.4), suggesting a rather bleak conclusion about democratic advance and reversal.

Such a conclusion almost certainly misrepresents the reality of change in recent decades and longer, however, because the addition of new states to the system over time has created a distorted picture. Large numbers of contemporary states that were not sovereign in earlier years were colonies or were directly incorporated into authoritarian empires. It is common practice in discussions and analyses of democracy to add these states to the analysis only when they became sovereign, as does Figure 1.4. Yet, newly sovereign states are often authoritarian or tenuously democratic and quite frequently revert to authoritarian status in short order. Thus, adding them to the analysis only at the time of independence rather artificially reduces the number of authoritarian polities in earlier eras and then tends to augment the number as they emerge over time. The effect is most striking after the decolonization of Africa, especially in the early 1960s. Some newly independent African states were nondemocratic and others that greeted independence as democracies became authoritarian by the end of the 1960s—but they clearly had not been democratic under colonialism.

Figure 1.5, again using Polity data, portrays the system in a different manner, representing all contemporary states across the entire period. The figure uses only the 0–10 point democracy scale so as to allow a different treatment of the absence of democracy. When the Polity dataset includes a “null” (empty) value, suggesting

Figure 1.5 Extent of democracy in the world: OECD and non-OECD countries (1800–2010)



Note: Using the Polity Project’s 11-point (0–10) democracy scale; higher values represent greater democracy. Contemporary states are included in the graph across all time, but are assigned a value of 0 (nondemocratic) when they were not sovereign states (that is, null values are treated as 0s), and values are simple averages of state values (not population weighted). R-squared values for linear trends fit to the historical data are 0.92 for OECD countries and 0.59 for non-OECD countries.

Source: IFs Version 6.68 using Polity Project democracy scale data.

the lack of state existence or sovereignty in an earlier era, the graphic assigns those missing states a zero on the democracy scale, the value typical of an autocracy. In contrast to Figure 1.4, this inclusion of contemporary states across all years (including those before sovereignty) will somewhat exaggerate the absence of democracy in earlier years, but it is almost certainly a less-distorting treatment than omitting them from the analysis until emergence as independent states. Further, Figure 1.5 divides the world into two subsets of countries: (1) today's mostly rich and developed members of the Organisation for Economic Co-operation and Development; and (2) the rest of the world.

This alternative treatment largely removes the second wave of democratization.¹⁷ It also shows the first reversal to be linked to a kind of post-World War I overshoot relative to the trend line in the otherwise rather steady advance of democracy in the OECD countries. Figure 1.5 further shows that the third wave resulted from a significant increase in democratization of the non-OECD countries. It therefore raises the obvious question as to whether that recent surge is another and potentially temporary overshoot or whether there is some transformation occurring in the developing world.¹⁸ Chapter 2 will return to the analysis of the developing world in more detail.

The advance of inclusion

To look at inclusiveness more broadly, both conceptually and empirically, than the Polity Project approach allows, we can consider several dimensions of inclusion: the free flow of information, freedom of association, extensive participation in political decision-making, and a cooperative culture of political behavior. We briefly comment here on each of these, especially participation, while Chapter 2 will elaborate quantitative attempts to extend the measurement of inclusion.

The *free flow of information* among people in society and between government and society allows people to be aware of what is happening, making them better prepared to adjust to changing circumstances. It also allows people to share different perspectives with each other and with the government, facilitating adjustments in beliefs and policies. Laws guaranteeing freedom

of the press and transparency of government help to sustain this flow (Sen 1999b: 38–40).

The *ability for people to freely form and join associations* for purposes of political organizing, religious expression, social activism, leisure pursuits, and economic activities gives them a space to articulate their views and build solidarity with others with similar interests or experiencing similar deprivations. For this reason, modern states often protect and support the development of a civil society, including business associations, labor unions, and religious organizations that are relatively free from government interference and surveillance (Putnam, Leonardi, and Nonetti 1993).

One of the most common ways to *expand political participation* is through the formation of political parties, although different types of election laws and systems lead to very different degrees and character of participation and inclusion. Electoral procedures like automatic voter registration, for example, facilitate voting access. Some political scientists argue that proportional representation systems are more democratic than single-member district electoral systems (Lijphart 1999; Norris 2004; 2008), but one can also point to societies, such as Israel, in which proportional systems have provided great leverage for those with more extremist views. Other avenues to expand participation beyond the simple activity of voting include public meetings, boycotts, lobbying, demonstrations, and protests (Diamond and Morlino 2005).

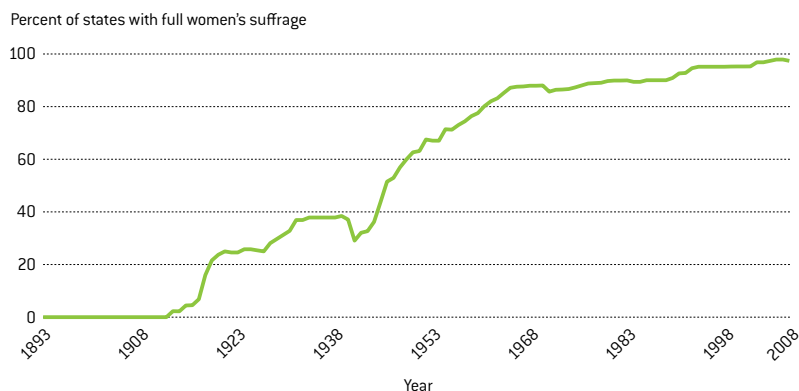
Women, young people, low- and middle-income earners, indigenous groups, transient and migrant populations, and racial, ethnic and religious minorities customarily have been left out of political decision-making in traditional societies as well as in many modern states. Although these groups—and generally women alone—make up the majority of the population in every country, the process of substantively incorporating them into political leadership roles has generally been slow. In recent years, women in particular have made political gains in many countries, although they are still heavily underrepresented, especially in political leadership.¹⁹ Figure 1.6 displays the percent of states in which women have full suffrage, one of the most basic opportunities for women to participate politically. The percentage of countries granting universal suffrage has

■ We now live in the most democratic and least authoritarian world in the history of the modern state. ■

■ Dimensions of inclusion encompass free-flow of information, freedom of association, extensive participation in political decision-making, and a cooperative culture of political behavior. ■

■ The process of incorporating women into political leadership roles has been slow; despite gains in recent years, women are still heavily underrepresented. ■

Figure 1.6 Percent of independent states with full women's suffrage (1893–2008)



Note: Some countries granted women the right to vote or to be candidates in local elections before giving those rights in national elections; the figure represents full rather than partial suffrage rights.

Source: United Nations Development Programme 2009a: 186–189. Compiled by the authors.

■ **Members of society generally benefit from and support inclusive government. The future likely holds a continuation of the historical movement toward greater inclusion.** ■

increased significantly over the last century. Primary exceptions are now in the Middle East.

Although extensive participation in political decision-making is foundational to inclusiveness and democracy, we should not ignore the importance of participation in other sectors of society. For instance, the social corporatism of countries like Austria, Germany, Norway, and Sweden can open up decision-making in institutions such as corporations to participation by representatives of labor as well as of capital and government.

Finally, a government becomes more inclusive when it develops a *culture and institutions that nurture cooperation and trust*. In a cooperative political system, participants with different interests or perspectives have an incentive to develop mutually beneficial (win-win) compromises that peacefully resolve differences (Lijphart 1999).

There are many and great societal pressures for the expansion of various forms of inclusion and democracy, even in countries that do not hold competitive elections (Levitsky and Way 2010). These pressures come from a variety of forces, including increasing incomes and the associated growth of the middle class, rising education, and an aging population. In fact, these factors are not only pressures, but also foundations for successful expansion of inclusion. (Obviously some states, especially fragile ones, will not have these pressures

or foundations.) Chapter 3 will discuss our understanding of the relationships of such variables with inclusion; Chapter 4 will lay out our approach to forecasting them.

Governments themselves have reasons for being receptive to increased inclusion (as well as reasons for wanting to limit it, such as desire to maintain unfettered freedom of action). For example, governments become more inclusive in order to gain more accurate information, knowledge, and understanding of their territory. Inclusion also improves the “process legitimacy” of the government (OECD 2008: 17) as people from different regions, backgrounds, and perspectives participate in both the general government apparatus as well as in leadership positions. In addition, as inclusion expands widely, presumably most will benefit and be more supportive of government. Thus, as we shall see, the future likely holds a continuation of the historical movement toward greater inclusion.

Democracy's strengths and weaknesses

Historically speaking, government effectiveness has usually preceded and been a pre-condition for expanding political inclusion and participation (Dahl 1971; Lipset 1959), but since decolonization, an increasing global trend has been to encourage greater social participation in government in earlier stages of state capacity-building. Even in societies with relatively ineffective governments, governmental and nongovernmental international organizations often act in the hope that democratization will reduce state predation and corruption and enable state-building, peace, and improved social and human development. The merits of an emphasis on democratization while state capacity is still quite weak are a matter of debate, and it is reasonable to question whether there can be premature democratization (for example, when societal foundations such as literacy and education are lacking), thereby undercutting security, capability, and good policy (Somit and Peterson 2005).

Lack of democracy does not preclude very capable governance. In fact, the developing countries that sustained rapid growth over multiple decades in the post-war period were most often either authoritarian regimes or one-party states (Joshi 2011b; Leftwich 1996; World

Bank 1993). The absolute monarchy in Bhutan was highly popular and provided competent, clean administration. However, King Jigme Singye Wangchuck recognized the dangers of continuing an absolute monarchy and therefore introduced a democratic constitution and abdicated in 2006 so that his son became the first constitutional monarch. Similarly, in spite of the highly authoritarian system of China, more than a thousand years of bureaucratic tradition that involves merit-based selection has helped produce remarkable human development and economic advance.

Of course, democracy may not always provide good governance, even in more developed states. Olson (1984) skillfully documented how the provision of benefits to multiple segments of a society can lead to rigidities via the progressive layering of expectations and even entitlements to the point that the society may no longer have financial or other policy flexibility. The recent unfolding of governance crises in Europe and North America demonstrated the difficulty democracies have in tackling the shorter-term challenges of deep recessions with fiscal imbalances, much less the longer-term requirements of restructuring in the face of rapid population aging. Moreover, we know that elected governments can secure their positions based on financial contributions from elites and a well-funded propaganda machine. In addition, elections sometimes lead to tyrannies or are won by arguments of ethnic or religious exclusion.

Fundamentally, however, the rule by an autocratic subset of the broader population almost always leads to the “bad emperor” problem and the use of state machinery to satisfy personal greed or that of special subpopulations, often in campaigns that emphasize racism or other social division, almost inevitably leading to significant injustice, if not to oppression and terror. We cannot forget Winston Churchill’s famous statement that democracy is the worst form of government except all the others that have been tried. In this volume, we both recognize the strong long-term global trend toward greater democracy and endorse democracy’s generally positive contributions to governance—in spite of its limitations—in association with greater security and capacity.

Transforming Anarchic Environments into Developmental States

We have discussed the three transitions toward security, capacity, and inclusion that characterize improved governance in modern states, and we have seen the generally positive trajectory of global change with respect to them. Over the last 200 years, the number of recognized sovereign states in the international system has increased more than eightfold, greatly reducing the number of societies living in colonial status. On the other hand, while the frequency of intrastate conflicts has fluctuated over time and declined in the last two decades, the surge in the 1970s and 1980s, heavily influenced by conflicts in Africa, makes it difficult to see a clear global trend across two centuries. Security continues to be a crucial issue in the twenty-first century, especially in newer and poorer states and in conflict zones where violence can also more easily spill over into neighboring countries.

States around the world have been developing stronger capacity to effectively implement, enforce, and administer the rule of law. Progress on this front has been uneven, however. Older states tend to have stronger capacity in their systems of public administration, taxation, and the rule of law, while building state capacity in newly decolonized states continues to be a challenge.

States are very clearly becoming more inclusive over time. The majority of states now hold competitive elections for the selection of the chief political executive, and almost all states claim to have universal suffrage for both female and male citizens (with Islamic states of the Middle East being the dramatic outliers). At the same time, older states have tended to develop more inclusive governments than newly decolonized states when it comes to sharing information, expanding participation, and promoting cooperation.

This generally upward trajectory in strength of governance has been coincident with, and almost certainly associated with, a phenomenal increase in global economic growth in the last two centuries. The world has experienced a dramatic rise in material living standards and huge improvements in public education and health.

■ Lack of democracy does not preclude very capable governance. And it is reasonable to ask whether there can be premature democratization when societal foundations such as literacy and education are lacking. ■

■ In this volume, we recognize the strong long-term global trend toward greater democracy and endorse its generally positive contributions to governance. ■

■ **Security, capacity, and inclusion can be mutually supportive and reinforcing, driving a virtuous development cycle with shared prosperity and well-being.** ■

■ **We believe that leverage needs to be applied consistently and at multiple points in order to put and keep societies in a virtuous cycle of advance in governance and development.** ■

The triangle in Figure 1.7 depicts the *potentially* mutually supportive or positive relationships of the three pivotal dimensions of governance: security (with peace and without heavy repression), capacity, and inclusion. When the state is secure, it can more easily develop capacity and inclusion. When the state has strong capacity, it is more able to maintain security and foster inclusion. In turn, greater inclusion may lead to both greater capacity and security.

When all three pivotal governance dimensions are strong and mutually reinforcing, we also expect to see another virtuous development cycle emerge that gives impetus to shared prosperity and well-being. Certainly, well-being also drives (as well as responds to) good governance in this second positive feedback loop. In fact, we have seen this larger positive feedback system generate mostly virtuous patterns over recent centuries as many countries have become more peaceful, politically effective, democratic, and wealthy, in spite of many disruptions in their progression.

Of course, positive feedback relationships may give rise to vicious cycles as well as to virtuous ones. Countries with predatory elites, lack of accountability measures, or persistent domestic instability and conflict have typically experienced both poor governance and little advance in well-being (Collier 2007). In a vicious-cycle system (as in the virtuous version), it is very difficult to know whether there is actually one primary driver or a particularly crucial leverage point that can shift the cycle from vicious to virtuous, and vice versa. Throughout this volume, we refer to many studies that focus on one point or another

in the triangle of interacting dimensions of governance, or that give differential weight to them and their impact on governance and development. However, we believe that leverage needs to be applied consistently at multiple points, and that there is no single approach to shifting societies onto a path of virtuous development dynamics or keeping them there.

At the same time, we note that there is no automatic congruence or consistency across these three dimensions of governance, and there are occasions when performance on these dimensions may appear unrelated or even at odds. Table 1.1 depicts patterns of congruence or incongruence with example countries. In the upper left box and consistent with congruence across dimensions is Cameroon, an example of a state that (as of late 2013) was politically exclusive with low state capacity. A single political party holding dishonest elections has long run the country; President Paul Biya began ruling in 1982 and concentrated power in his own hands, using it to appoint Supreme Court judges and remove presidential term limits in the constitution (Albaugh 2011); the country has not developed well. In the lower right box is Finland, a state with high capacity that is also highly inclusive.

Yet in the upper right box is Saudi Arabia, a country that has relatively high state capacity but a government that is exclusive in many important respects, being ruled by a hereditary monarchy and excluding women from even the basic forms of democracy.²⁰ It suffers from the mixed blessing (if not outright curse) of high natural resource revenues. A number of countries in that “inconsistent” position of high capacity and low inclusion (such as other Gulf states) similarly have high natural resource revenues contributing to such inconsistency.²¹

The Philippines, a country that holds nominally democratic elections but has had a high level of corruption and mismanagement, is generally situated in the inversely inconsistent position of the lower left box, exhibiting low capacity and relatively broad inclusion (although the Moro people have been a clear exception to that inclusion). Many factors have put the Philippines in that position, including the negative orientation toward inclusion that U.S. colonial rule supported and the damage done to capacity by a landed elite. Having weathered

Figure 1.7 Three interacting dimensions of governance

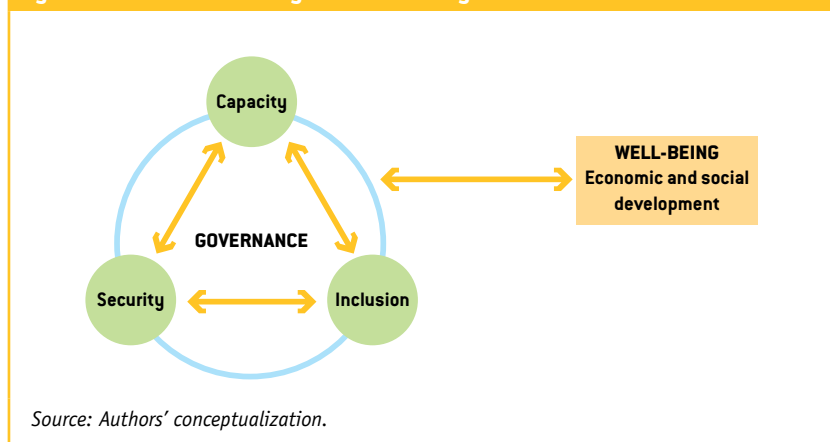


Table 1.1 Four categories of domestic governance with example countries

	Low state capacity	High state capacity
Exclusive government	Cameroon	Saudi Arabia
Inclusive government	Philippines	Finland

Source: The authors.

the recent global recession better than most members of its region, and having addressed some basic fiscal problems, the Philippines' capacity may now be rising (along with more complete inclusion).

Turning to the second positive feedback loop, both congruence and incongruence are again possible, this time between governance quality and levels of well-being. For example, with respect to congruence, the presence of wealth and advanced social development in Finland is both font and fruit of good governance; it is the most peaceful and universally prosperous of these four example countries. Similarly, countries with state capacity as low as that of the Philippines over most of its history struggle greatly with raising adequate state revenues and balancing budgets; tend to underinvest in human development; and suffer slow growth (the good performance of the Philippines in the Great Recession may illustrate change on this dimension also). And in Cameroon, where the state is neither inclusive nor effective, a large portion of its population lives in poverty.

By contrast, nondemocratic countries like Saudi Arabia may, on average, also enjoy prosperity (it has a high GDP per capita) but, especially as prosperity flags, face the prospect of discontent with the reality that a single political grouping enjoys exclusive control over the government and an extremely large portion of the wealth. Thus, its level of democratization is inconsistent with both other elements of governance development and its average level of well-being, suggesting nearly inevitable repositioning on one or more of these variables at some point.

Good Governance and Improved Human Well-being: The Volume Plan

Belief in the fundamental importance of governance for improved development and prosperity is now deep and widespread. It may seem surprising that there has been little effort to forecast the longer-term prospects for, and

impacts of, governance. However, there are several good reasons for this. These include the fact that patterns of governance do not change in consistent fashion over time (they are not "well-behaved" historically)—although sadly and cynically one might argue that in fragile states recurring cycles of violence and broader governance failure are relatively predictable (World Bank 2011). The reasons for scarcity of forecasting also include considerable debate among analysts about the nature of the relationships within our governance triangle and between it and human well-being. These debates are exacerbated greatly by the complex bidirectional causality of the relationships in question.

Nonetheless, we believe that more and better forecasting can be done. It requires several steps. To begin, Chapter 2 reviews the empirical governance and broader human development databases available to us and uses them to explore historical patterns, generally narrowing our temporal focus from the long sweep of this chapter to the last 50 years and expanding our geographic focus to the major regions of the world. We will see that over those 50 years there has been relatively clear-cut, but also often highly irregular, improvement in multiple indicators of governance and in many indicators of economic and social well-being. There also has been much advance in the databases themselves.

In Chapter 3, we turn our attention to what we know and do not know about causality. That is a great deal on both counts. Fortunately, the literature on which we can now draw is huge. Unfortunately, it is also often contentious. We add some of our analysis to the discussion.

Chapter 4 turns to forecasting. It begins by looking at the degree to which the literature has included forecasting efforts (as indicated, these are very sparse). And, of course, we need tools for forecasting. The central tool for our analysis, as for that of previous volumes in this series, is the International Futures forecasting system,

■ A challenge to forecasting governance is that the relationships among and between its three dimensions and well-being are complex and bidirectional. ■

■ The many interacting models of IFs and its very large database will facilitate our forecasting and scenario analysis. ■

which Chapter 4 describes with special attention to its newer representations of governance. Although this volume draws especially on IFs forecasting of sociopolitical change, the many other models of the system, such as those for demographics, economics, and education, will contribute much to our analysis.

IFs also includes and builds on a very large database (to our knowledge, the most extensive database freely available) across time and countries for not just the three central governance dimensions of this analysis, but across all of its component systems. The IFs database and forecasting systems sit within interactive software that facilitates their use, including the development of alternative scenarios of the complex if-then character that underlies the IFs name. This ability to create alternative scenarios will considerably enhance our efforts in later chapters.

Chapter 5 presents a Base Case forecast, a discussion of where countries, regions, and the world as a whole appear to be going with respect to governance and its key functional dimensions. Even though data are improving, and even though understandings of relationships among our central concepts have strengthened steadily over time, forecasting is always subject to great uncertainty. Systems that experience shocks and disruptions, as governance often does, pose special difficulties for forecasting. The Base Case scenario focuses on the overall and greatly smoothed trends of the system, and we therefore recognize it to be somewhat simplifying. It is nonetheless a uniquely integrated forecast for governance and other human systems, elaborated by geographic region, subregion, and country in the end tables of this volume.

In this volume (especially in Chapters 6 and 7), we also rely heavily on the scenario analysis capability of the IFs system to ask selected what-if questions around the Base Case. We begin in Chapter 6 by considering the possibility that the world might prove much more challenging for both governance and human development than in the Base Case portrayal. We face a rapidly aging global population that will take us where we never have been before demographically. We face a peaking of global oil and gas production that will very likely occur within our forecast horizon, as well as increasing

pressures on water supplies and an interrelated global warming. All of this will occur in a world with the rise of China and other emerging powers and a reconfiguration of the global high table. Chapter 6 will therefore elaborate a future scenario—a Global Challenges scenario—in which these challenges are especially pronounced, and then consider how such challenges might disrupt our current trajectory of governance and well-being.

There are, however, many forces that now work to tip the balance in societies around the world toward a Strengthened Governance scenario (by strengthened we mean improved on all dimensions, not overbearing or repressive). Chapter 7 reviews those forces, which function at the global level as well as within societies, and considers how much such improved governance might enhance global, regional, and country-specific well-being. Such strengthening could contribute to systemic resilience, the capacity to cope and rebound in the face of challenges like those posed by the Global Challenges scenario of Chapter 6. In the course of this analysis, however, we discover that Strengthened Governance by itself will not likely improve the human condition to the extent we might wish relative to the Base Case, and it almost certainly will not compensate for the travails of a Global Challenges future. We therefore explore an additional scenario, Strengthened Governance and Development Policies (SG and DP) on top of both the Base Case and the Global Challenges scenario. SG and DP reaches back to the earlier volumes of this series and draws out the kinds of policies that those volumes suggested were aggressive but reasonable approaches to reducing poverty, advancing education and health, and building infrastructure. In combination with Strengthened Governance, from which some or most of the development policies would logically flow, those policies do have a very positive impact on human well-being.

Conclusion

Humans come together in communities because we are social animals and because mutual support confers benefits. We put in place governance systems (or tolerate others doing so) because we believe they will increase our

physical security and our broader economic and social well-being. The character of our communities has changed dramatically over time, in large part because deep drivers, such as technological advance, have allowed us to interact more easily across distance and facilitated economic and population growth. The character of our governance has changed with that of our communities.

We are also intelligent animals. We reflect on our governance and analyze it critically.

We have developed mental models of what constitutes better or worse governance, models that have altered over time with both changing circumstances and the evolution of our thought. We know that our governance systems are never perfect, and we constantly strive to improve them. This volume is about that learning and evolution in thought and practice. It seeks to advance the thought and thereby to make some small contribution to improving the practice.

- 1 Unless otherwise noted, contemporary values in this section are estimates for 2012 from IFs version 6.68 forecasts, which draw on data of earlier years from the World Bank's World Development Indicators and various other sources.
- 2 Life Funds for North Korean Refugees, a nongovernmental organization dedicated to the support of North Korean refugees, estimates there are between 100,000 and 400,000 North Korean refugees (see <http://www.northkoreanrefugees.com/attach7.html>).
- 3 Estimates for 2012 again are IFs forecasts based on recent data from the World Bank's World Development Indicators and the International Monetary Fund.
- 4 Nordhaus (1973) criticized earlier world modeling efforts for being inadequately data-based, although, to be fair, the availability of data series in earlier decades was greatly limited compared to what it is today.
- 5 With respect to determining autonomy, for example, Gleditsch and Ward (1999: 404–405) pointed out that even the European political system was “a complicated amalgamation of several hundreds of states, cities, and duchy,” that was not relatively stable until after the Franco-Prussian War of 1870–1871. State-building was actually a process that often consolidated large numbers of existing units, shrinking rather than expanding the system. Griffiths and Butcher (2012:1–2) suggested that the pattern of state numbers over time was actually concave, with a high of 131 states in 1816, then falling before rising again.
- 6 Examples include Palestine, Western Sahara, and numerous regions throughout the world inhabited by indigenous or tribal peoples.
- 7 Bogaards (2009) reviewed hybrid regime types that are neither fully democratic nor classic authoritarian.
- 8 The Outcome Document is available at <http://www.who.int/hiv/universalaccess2010/worldsummit.pdf>.
- 9 Definitions of governance widely emphasize the interaction of government and society in what the Organisation for Economic Co-operation and Development (1995: 14) called the “use of political authority and exercise of control in a society in relation to the management of its resources for social and economic development.” Consider also the definition of the Commission on Global Governance (1995: 2): “the sum of the many ways individuals and institutions, public and private, manage their common affairs. It is the continuing process through which conflicting or diverse interests may be accommodated and co-operative action may be taken.”
- 10 Sometimes authors refer to the combination of these different levels of domestic governments, together with the military apparatus, as “the state,” but we reserve that term for the broader polity.
- 11 See Acemoglu and Robinson 2012, Fukuyama 2011, Olson 2000, and Rothstein 2011 for some of the many broad-sweep historical analyses that cover similar ground, albeit more qualitatively.
- 12 So, too, did such political philosophers as Thomas Hobbes, who advocated the reliance on a strong sovereign to create order, a relationship seen to be rooted in a social contract with the population.
- 13 Nobel-laureate Douglas North (1990) elaborated the importance of a consistent and fair rule of law for the development of a modern, dynamic economy.
- 14 Paige McClanahan, “Mr. Blair Goes to Africa,” *The Christian Science Monitor*, August 24, 2011, unpaginated, available at <http://www.csmonitor.com/World/Africa/2011/0824/Mr.-Blair-goes-to-Africa>.
- 15 See also <http://www.systemicpeace.org/polity/polity4.htm>.
- 16 In spite of its democratic characterization in Polity data, Botswana has been ruled continuously by a single political party (the Botswana Democratic Party) since independence, and many Botswanans do not consider their government to be democratic due to the many obstacles placed in the way of opposition political parties and freedom of speech and assembly (Good 2008).
- 17 On this issue, see also Doorenspleet 2000 and Hughes and Hillebrand 2006.
- 18 The concept of overshoot suggests the possibility that agency (such as a systemic leadership push for democracy) might have been involved in both instances. That is certainly possible and generally consistent with the historical eras, but in the absence of deeper analysis, we use the term more mechanically here simply to indicate variation from the trend line.
- 19 For example, in 2010, in only one country—Rwanda—did women constitute at least 50% of parliament members, and that parliament was not a strong one.
- 20 In 2011, King Abdullah announced that women would be able to vote in municipal elections in 2015 and be appointed to his advisory Shura Council.
- 21 High levels of earnings from natural resource exports create what is sometimes called a “honey pot,” an available income stream that elites wish to monopolize and divert to private purposes. Those earnings thus tend to generate both low levels of inclusion and high levels of corruption, as they have in Nigeria, the Democratic Republic of the Congo, and many other states.

2



Assessing the Evolution of Governance

■ *The global evolution of governance has been toward greater security, capacity, and inclusion; yet, such improvements have rarely progressed smoothly.* ■

The evolution of governance over nearly 200 years of global history has been generally toward greater sovereignty and domestic security; toward closer attention by leaders to the functional demands of populations and higher levels of effectiveness in meeting those demands; and toward competitive, democratic elections and growing social inclusion. Yet, countries, regions, and even the world in aggregate have seldom, if ever, progressed smoothly through the security, capacity, and inclusion transitions that Chapter 1 sketched at the global level. State formation did not preclude revolutions and civil wars in England, France, or the United States, and it certainly has not done so in Asia or Africa. Incompetent and corrupt leadership too often disrupts or even destroys foundations that predecessors slowly and laboriously constructed. Democracies are not panaceas for all social ills, and they frequently have gone through cycles of reversion to authoritarianism.

The purpose of this chapter is to analyze regional and country-level governance trends over recent decades in order to better understand contemporary patterns of the unfolding and interaction of the security, capacity, and inclusion transitions. In the process, we also introduce the major empirical data series and indicators that help us assess the condition of countries on each dimension. Understanding something about these series and their strengths and weaknesses with respect to empirical assessments of governance will also help us lay a foundation for Chapters 3 and 4, in which we explore understandings of the drivers of governance transitions and our efforts to model and forecast them.¹

Governance Transitions in Historical, Empirical Perspective

Although the emergence of the modern state system is often said to be coincident with the Peace of Westphalia in 1648, in many respects a stable core of states did not develop until after

Box 2.1 Quality of governance data and indicators

Cross-country data on governance are a relatively new phenomenon, and collecting them poses many challenges. Governance data-gathering (mostly data-making and indicator-building) projects seldom date back further than the 1980s (the Correlates of War Project and the Polity Project, both with roots in the 1960s and 1970s, respectively, are among the oldest). Contrast that longevity with, for instance, economic data such as those on national income, which began to appear several decades earlier.

Whereas economic data have the distinct advantages of a currency metric and of standardized national accounting and reporting systems, among governance data series few beyond those that track battle deaths have a similarly clear metric, and even the reports of such deaths frequently involve not always trustworthy assessments by journalists (Rosenberg 2012). Most governance data series also involve judgments on often complex concepts, either by project-based coders or by external experts. Even when projects use methods to enhance inter-coder reliability, the judgments not only introduce subjectivity, but also can lead to reduced consistency over time.

Further, many governance measures are not single data series, but rather indices across multiple series,

sometimes even indices of indices. Given the variation over time in availability of many underlying series, the index creators struggle further to maintain consistency and comparability across time. Weightings of multiple series in indices commonly involve still further judgments. No external benchmarks exist against which to assess the validity of data series or indices, although developers often do comparative analyses.

Although there are exceptions like the Worldwide Governance Indicators project, most governance data and indicators have originated from academic work or from nongovernmental organizations such as Freedom House, not from financially well-endowed governments or international organizations. This means that graduate students frequently find themselves drafted to build the data. Continuity over time in expertise and interest, and the availability of project leaders to effectively oversee and evaluate work, become difficult to assure.

We will see some of the results of these challenges in the short historical sequences, somewhat erratic country coverage, and temporally variable conceptualization and measurement schemas that characterize the historical data in this chapter. In spite of all of these problems, we remain greatly appreciative of these significant and often pioneering efforts.

the 1814–1815 Congress of Vienna. Globalizing that initially European system unfolded with waves of decolonization across Latin America, Asia, and Africa over the next century and a half. Because of its importance, the Congress of Vienna also marks the beginning year of a number of datasets that focus on tracking change in aspects of governance—such as regime type—that help us empirically explore the three transitions. However, most data are available only for the much more recent period of the post-World War II era.

We wish to describe the three transitions quantitatively as a foundation for studying their dynamics, modeling them, and forecasting their future patterns. However, moving from concept to measurement is seldom easy in social science. Measurements often distort concepts by capturing only parts of them or by bleeding over into related concepts. Pre-existing series can be difficult to adapt to the concepts at hand, and building a new data series or indicator can be frustratingly time-consuming and expensive (Box 2.1 suggests some of the special problems associated with governance data and indicators.) Nonetheless, we will at least mention most of the more widely utilized data series related to

each transition and then use a number of them to consider the recent evolution of governance in major global regions. Many of the data series are foundational to our analysis and modeling in subsequent chapters, and we will describe these in some detail as we introduce them here. Except when otherwise noted, these series have been incorporated into the International Futures (IFs) database. Note, too, that throughout this volume, we generally use the World Bank's country groupings for analysis by geographic region and/or income level (see Appendix I for lists of regional member states and their income classifications).

Security

In this section, we consider three components of state security or its lack: (1) intrastate armed conflict; (2) state fragility and vulnerability to state failure; and (3) intrastate terror and repression.

Intrastate armed conflict

Figure 1.2 of Chapter 1 showed the percentage of the world's states struggling with violent internal conflicts between 1820 and 2008. We saw a generally cyclical pattern around a

■ **The end of the Cold War was accompanied by a notable decrease in intrastate armed conflict globally and a rise in proactive international engagement.** ■

■ **From World War II through the mid-1970s, regionally the largest portion of the world's intrastate conflict was in East Asia and Pacific; since then it has been in sub-Saharan Africa and South Asia.** ■

■ **The highest country-average intensities of conflict have not been in sub-Saharan Africa, but in East Asia and Pacific into the 1970s and in South Asia since the 1980s.** ■

slightly downward-sloping long-term trend; however, a cycle of increased intrastate war emerged in the 1960s that grew quite steadily and rapidly to a peak in 1991–1992, at which point the conflict rate was the highest since 1870. Since then, the global trend has been downward, and intrastate armed conflict has declined noticeably. This decline is related to the end of the Cold War and, therefore, of the global competition between the superpowers following the collapse of communism in Central and Eastern Europe. In fact, after 1990, instead of superpowers adding motivation (and weapons) to conflicts, there have appeared “notable increases in proactive international (global) engagement (particularly, conflict mediation, election monitoring, accountability guarantees, NGO activity, direct investment, and foreign assistance)” (Marshall and Cole 2009: 12).

Figure 1.2 drew on data from the Correlates of War (COW) Project, founded by J. David Singer at the University of Michigan in 1963. Following Singer’s retirement and his death in 2009, COW has remained active through a dispersed network of researchers who create, and make publicly available, datasets on interstate and intrastate war and the correlated drivers of each. Other ongoing intrastate conflict databases and research projects include:²

- the UCDP/PRIO Armed Conflict Dataset provided jointly by the Uppsala Conflict Data Program at Uppsala University and the Peace Research Institute Oslo;
- the Major Episodes of Political Violence dataset from the Armed Conflict and Intervention Project (ACI) under the joint auspices of the Center for Systemic Peace (CSP) and the Center for Global Policy, George Mason University;
- the work of the Political Instability Task Force (PITF) established by the U.S. government. PITF is hosted by the Center for Global Policy, George Mason University; the Center for Systemic Peace plays an important role in developing and managing the PITF State Failure Problem Set conflict event database.

These projects distribute intrastate conflict data beginning in 1816 (COW), 1946 (UCDP/PRIO and ACI), and 1955 (PITF’s own data, with data compiled from other sources taking it back to

1946), and they add data for most recent years fairly regularly. Although each project is unique in its conceptualizations and coding rules, the data from all tend to provide similar insights into the patterns of security within countries over recent decades.

In subsequent chapters, we build especially on the PITF State Failure Problem Set data and approach for our own analysis and forecasting, and so provide summary information about that project in Box 2.2. To provide some regional detail on historical conflict patterns, however, we draw here on the Major Episodes of Political Violence dataset to explore not just the frequency of such conflict but also its magnitude or intensity. Figure 2.1 presents the magnitude trends summed across countries by region for what the Center for Systemic Peace’s Conflict, Governance, and State Fragility reports refer to as *societal warfare*—defined as intrastate civil, ethnic, and communal warfare (Marshall 2002b; Marshall and Cole 2011: 3). From World War II through the mid-1970s, the largest portion of the world’s intrastate war was in East Asia and Pacific (including the Vietnam War and its

Box 2.2 Political Instability Task Force

In 1994, the U.S. government established the State Failure Task Force with funding from the Central Intelligence Agency and with experts drawn from academia and think tanks. In 2003, it became the Political Instability Task Force (PITF), and in 2005 the public access website for the PITF moved from the University of Maryland to the Center for Global Policy at George Mason University. Monty Marshall and others affiliated with the Center for Systemic Peace continue central roles in the collection and analysis of PITF data.

Following original work by Ted Robert Gurr, the PITF project has defined state failure in terms of four different types of events with specific magnitude thresholds: adverse regime change (non-constitutional change such as coups); revolutionary wars; ethnic wars; and genocides or politicides (Esty et al. 1998). It has also looked at consolidated or integrated events across these types, and it explores event onset, continuation, and magnitude. In five phases, the project has produced reports analyzing the causes of state failure and models fit to historical data both globally and by world region. Chapter 3 will report on some of the results of that analysis, while Chapters 4 and 5 will discuss the manner in which the IFs project has built on it.

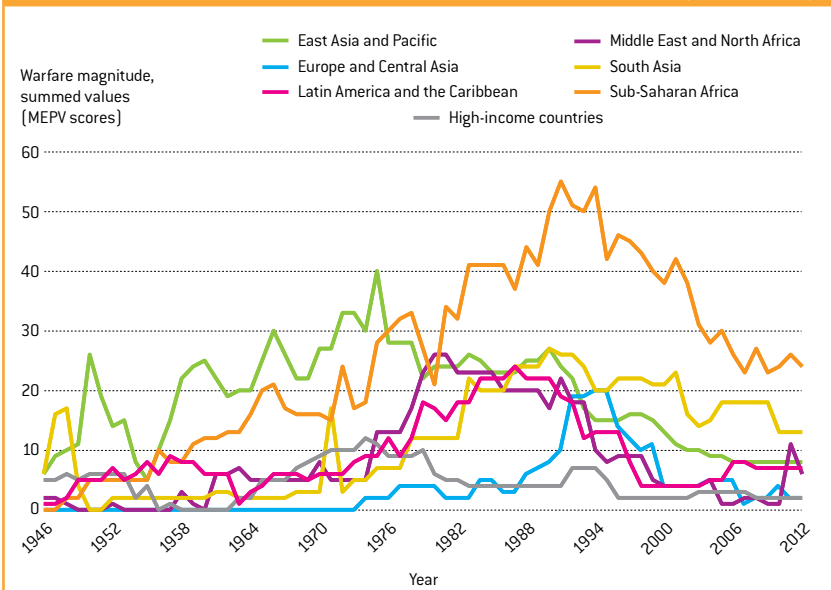
See <http://globalpolicy.gmu.edu/pitf/> and also <http://www.systemicpeace.org/inscr/inscr.htm>.

spill-over in Southeast Asia), but since then the largest portion has been in sub-Saharan Africa, with a significant amount since the 1990s also in South Asia.

The regional sums shown in Figure 2.1 help us understand why many people might believe that African countries are constantly in conflict. As we are especially interested in implications at the country level, we also look at magnitudes for the average country within each region, as shown in Figure 2.2. It is interesting to note that in sub-Saharan Africa, where IFs tracks 47 countries, the average magnitude of conflict per country has been considerably lower than most readers might assume (of course, the fact that most of these countries are demographically smaller than the average country in South Asia introduces its own perspective distortion—there is no perfect way to undertake cross-country or cross-regional comparisons). The highest average magnitudes or intensities at the country level have been in East Asia and Pacific through the mid-1970s and in South Asia since the early 1980s. Until the early 1990s, Latin America and the Caribbean had average country magnitudes comparable to those of sub-Saharan Africa, while, especially between 1975 and 1995, the countries of the Middle East and North Africa often had average magnitudes comparable to or higher than those of sub-Saharan Africa. With the Arab Spring beginning in 2011, this pattern has appeared again.³

We can draw additional insight from the regional analyses presented in Figures 2.1 and 2.2, which indicate that the coincidence of the end of the Cold War and the peak of global intrastate warfare in 1990–1991 (see again Figure 1.2) is somewhat misleading. Across all developing regions, the peak in magnitude occurred during that period only for sub-Saharan Africa, which by that time was the location for about one-third of the global total sum of intrastate warfare, and in South Asia, where it subsequently has not declined nearly as rapidly. The peaks in intrastate warfare in the developing countries of East Asia and Pacific and in the high-income countries were in the mid-1970s; the earlier peak for the Middle East and North Africa was in the early 1980s. That for Latin America was actually a plateau in the late 1970s and the 1980s, during and related to the “lost decade” of growth and development,

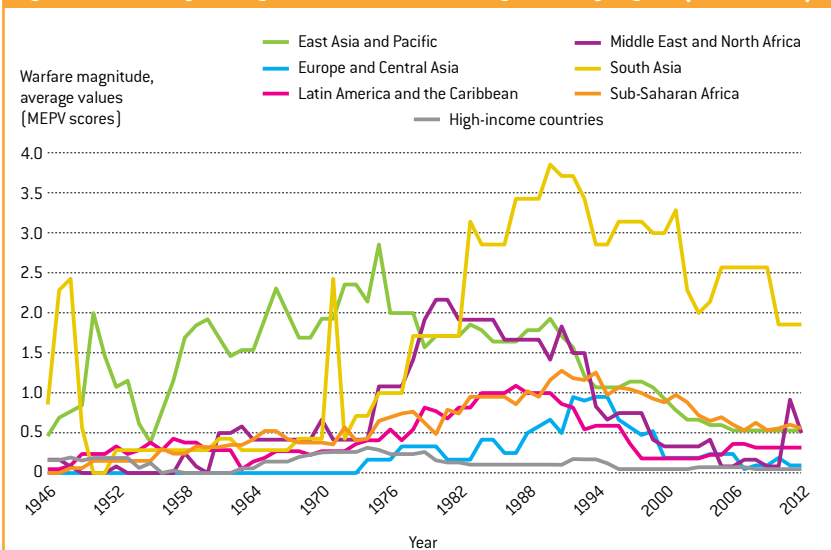
Figure 2.1 Trends in intrastate warfare magnitude, regional sums (1946–2012)



Note: Values are the sums of the magnitude of impact from intrastate (societal) armed conflict across countries by region as assessed with a scale from 1–10 for each country for each year a war is active (0 if there is no war). Magnitude is defined in terms of number of combatants, casualty levels, affected area, dislocated population, and extent of infrastructure damage (see Marshall 2002b; Marshall and Cole 2011: 3).

Source: IFs Version 6.68 using the Major Episodes of Political Violence (MEPV) dataset of the Armed Conflict and Intervention Project. IFs database variable is SecMEPVSocialWarMag.

Figure 2.2 Country averages of intrastate war magnitude by region (1946–2012)



Note: Values are unweighted country averages (not sums) of the magnitude of impact from intrastate (societal) armed conflict as assessed with a scale from 1–10 for each country for each year a war is active (0 if there is no war). As in Figure 2.1, magnitude is defined in terms of number of combatants, casualty levels, affected area, dislocated population, and extent of infrastructure damage (see Marshall 2002b; Marshall and Cole 2011: 3).

Source: IFs Version 6.68 using the Major Episodes of Political Violence (MEPV) dataset from the Armed Conflict and Intervention Project. IFs database variable is SecMEPVSocialWarMag.

■ *The association between the termination of the Cold War and the decline of intrastate conflict occurred primarily in sub-Saharan Africa.* ■

■ *Measures of state fragility or vulnerability to conflict complement, but differ substantially from, measures of intrastate conflict, and they have less historical coverage.* ■

the “dirty wars” against various civilian sub-populations of the 1970s, and the conflicts in Central America of the 1980s.

These patterns suggest that the perverse impact of the superpowers was interacting with a variety of other developmental processes, not least of which would have been (1) the emergence of African states from colonial rule in the 1960s and the weakness in the region of both new nations and states across the succeeding decades; (2) the economic problems of the late 1970s and 1980s related, in part, to energy and food prices and debts often derivative from them; and (3) the earlier and continuing struggles in South Asia that relate to the end of British colonialism in the region (with the partition of India in 1947) and the more recent conflicts there linked to the Soviet invasion of Afghanistan in 1979 and its long aftermath.

State vulnerability to conflict

In addition to the analyses of historical conflict, a second and more recent (and somewhat overlapping) empirical tradition related to security is assessment of state vulnerability to conflict. Hughes, Moyer, and Sisk (2011) undertook a comparative review of some of the many indices that have been developed to rank countries on their vulnerability to conflict. That review focused on:

- the Index of State Weakness in the Developing World from the Brookings Institution (Rice and Patrick 2008);
- the Country Indicators for Foreign Policy (CIFP) measure of state fragility housed at Carleton University (see Carment et al. 2006; Carment, Prest, and Samy 2010);
- the Political Instability Index of the Economist Intelligence Unit (EIU 2011);
- the State Fragility Index (SFI) of the Center for Systemic Peace (see Marshall and Cole 2008; 2009; 2011);
- the Failed States Index of the Fund for Peace (Fund for Peace 2009; 2010; 2011; 2012 presented annually in *Foreign Policy*);
- the Peace and Conflict Instability Ledger based in the Center for International Development and Conflict Management at the University of Maryland (Hewitt, Wilkenfeld, and Gurr 2010; 2012a).

Box 2.3 summarizes the variables used by each of the six indices listed above. The aggregation rules across variables vary by project, but often involve simple averages within and then across subindices. The projects refer variously to the vulnerability to conflict as state fragility, state weakness, state failure, or some other seemingly discrete descriptive terms, but it is better to think of a spectrum across degrees of vulnerability. Hughes, Moyer, and Sisk (2011) concluded that this spectrum runs from state failure (very rare), through state fragility (affecting perhaps 45–50 countries in 2012), to some vulnerability to conflict, and finally to little or no vulnerability.

As Marshall noted (2008: 1), measures of state vulnerability are intended as “risk assessment and early warning models for proactive conflict management at the global level of analysis.” Another lens through which to look at these indices, and one that we will use in subsequent chapters, is as measures of country performance and generalized risk, not just of conflict, but of continued poor performance that could affect human development or pose risks to investors.

Unfortunately, the lack of scores and rankings over an extended period limits the usefulness of the state weakness indices for our purposes. One of the indices has disseminated global scores only once (the Brookings Index) and others only a few times (the CIFP measure of state fragility and the Political Instability Index of the Economist Intelligence Unit). The first analysis of the Peace and Conflict Instability Ledger was for 2005–2007, and the Failed States Index of the Fund for Peace goes back only to 2005.

Only the State Fragility Index, first released in 2007 and now based at the Center for Systemic Peace, includes historical data for a longer period; it goes back to 1995, and so makes possible some trend analysis.⁴ Given the generally downward trend in actual conflict since 1995 (see again Figures 2.1 and 2.2), it is not surprising that, at a global level, the values on the SFI index fell by 14 percent between 1995 and 2010. At the regional level, our own analysis with SFI data shows the largest declines to have been in South Asia (22 percent) and Latin America (20 percent), with a decline in state fragility of only 7 percent in sub-Saharan Africa. Of interest, this is something of a contrast to the

Box 2.3 Variables included in key measures of state vulnerability

There are both overlaps and distinctions between the variables used by different measures of state vulnerability or fragility. The components for the six major indices introduced in the adjoining text are summarized below.

Brookings Index of State Weakness in the Developing World.

This index is composed of 20 indicators pulled from publicly available databases and grouped into four major categories: (1) economic (gross national income per capita, GDP growth, income inequality, inflation, and regulatory quality); (2) political (government effectiveness, rule of law, voice and accountability, control of corruption, and freedom ratings from Freedom House); (3) security (conflict intensity, political stability and absence of violence, incidence of coups, gross human rights abuses, and territory affected by conflict); and (4) social welfare (child mortality, primary school completion, undernourishment, access to improved water and sanitation, and life expectancy). See http://www.brookings.edu/~media/research/files/reports/2008/2/weak%20states%20index/02_weak_states_index.pdf.

Carleton Country Indicators for Foreign Policy (CIFP) measure of state fragility. The CIFP measure combines structural analysis with information from event monitoring. The structural analysis is based on 75 indicators grouped into 6 clusters: (1) governance; (2) economics; (3) security and crime; (4) human development; (5) demography (including youth bulge); and (6) environment (including CO₂ emissions). The indicators come from publicly available databases, including other governance indices (e.g., CIRI [Cingranelli-Richards] Human Rights Index, Freedom House Civil Liberties and Political Rights Indices, Fund for Peace Failed States Index, Polity autocracy/democracy scale, and Transparency International's Corruptions Perception Index). See http://www4.carleton.ca/cifp/ffs_indicator_descriptions.htm; see also Carment and Samy 2012.

Economist Intelligence Unit Political Instability Index. This index uses 15 measures combined into 2 categories: (1) underlying vulnerability (inequality, state history, corruption, ethnic fragmentation, trust in institutions, status of minorities, history of instability, labor unrest, social provision, geographic neighbors, regime type, and interaction of regime type and factionalism); and (2) economic distress

(growth in incomes, unemployment, and income per capita). See http://viewswire.eiu.com/index.asp?layout=VWArticleVW3&article_id=874361472.

Center for Systemic Peace State Fragility Index (SFI). The SFI separately measures both effectiveness and legitimacy on each of four performance dimensions (security, political, economic, and social), and then combines them into an overall fragility score. The paired effectiveness and legitimacy measures for the four dimensions are: residual war and state repression (security); regime/governance stability and regime/governance inclusion (political); GDP per capita and share of export trade in manufactured goods (economic); and human capital development (represented by the Human Development Index [HDI]) and human capital care (calculated by adjusting the infant mortality rate by ranking comparisons between GDP per capita and the HDI). See Marshall and Cole 2011: 35–38; see also <http://www.systemicpeace.org/SFI/matrix2011c.pdf>.

Fund for Peace Failed States Index. The Fund for Peace uses proprietary software to perform content analysis of collected reports and other documents in conjunction with quantitative analysis and qualitative inputs. Twelve primary social and economic indicators (each with numerous subindicators) guide the content analysis. The 12 are: (1) demographic pressures; (2) refugees and internally displaced persons; (3) group grievance; (4) human flight and brain drain; (5) uneven economic development; (6) poverty and economic decline; (7) state legitimacy; (8) public services; (9) human rights and rule of law; (10) security apparatus; (11) factionalized elites; and (12) external intervention. See <http://ffp.statesindex.org/indicators>.

Center for International Development and Conflict Management Peace and Conflict Instability Ledger (University of Maryland). The Ledger uses a statistical model to forecast the risk of government collapse based on sixty years of historical data for five factors in four domains. The domains, and the factors within them, are: (1) political (institutional consistency or inconsistency); (2) economic (economic openness or its lack); (3) economic and social (infant mortality rates); and (4) security (militarization and neighborhood security). See Hewitt, Wilkenfield, and Gurr, 2012b: 6.

more rapid decline of intrastate conflict within sub-Saharan Africa over the same period that we saw in Figure 2.2, using data from the Major Episodes of Political Violence dataset.

In Table 2.1 (p. 26), we list the most vulnerable countries from the latest release of risk rankings or scores available at the time of our writing for each of the six indices presented in Box 2.3. Given the events in the Middle East and North Africa that began in Tunisia in early 2011 and have continued, it is interesting that none of the Arab Spring countries (Bahrain, Egypt, Jordan, Libya, Syria, Tunisia, and Yemen) appeared among the most vulnerable ten countries on any of the lists in recent years preceding the revolutions (Yemen made the top ten in the 2012 Fund for Peace failed states list, but not in 2011; Yemen also made the top ten on the Carleton CIFP list in 2011, but not in 2008).

Terror and repression

Clearly, aspects of domestic physical human security extend beyond the absence of overt intrastate war or vulnerability to it. Important among these aspects are freedom from government repression and freedom from domestic criminality.⁵

Government repression in this case refers to government sanctioned attacks on the physical safety and well-being of individuals. For example, as measured by the Political Terror Scale (PTS), it refers to “state-sanctioned killings, torture, disappearances, and political imprisonment.”⁶ PTS readers review narrative records of events and situations by country since 1976 from two sources—Amnesty International and the U.S. Department of State—and assign each country an annual score for each source based on the extent of repression. The two scores are then averaged and countries are

■ None of the Arab Spring countries appeared among the most vulnerable ten countries on any lists of fragile states in the years preceding the revolutions. ■

Table 2.1 Assessments of most vulnerable states across several major measures

Brookings Index of State Weakness (2008 series)	Carleton CIPF* Fragility Index (2011 series)	Economist Intelligence Unit Political Instability Index (2009–2010 series)	CSP** State Fragility Index (2011 series)	Fund for Peace Failed States Index (2012 series)	CIDCM*** Peace and Conflict Instability Ledger (2010–2012 series)
Somalia	Somalia	Zimbabwe	Somalia	Somalia	Afghanistan
Afghanistan	Afghanistan	Chad	Congo, Dem. Rep. of	Congo, Dem. Rep. of	Congo, Dem. Rep. of
Congo, Dem. Rep. of	Chad	Congo, Dem. Rep. of	Afghanistan	Sudan	Burundi
Iraq	Congo, Dem. Rep. of	Cambodia	Chad	South Sudan	Guinea-Bissau
Burundi	Yemen	Sudan	Myanmar	Zimbabwe	Djibouti
Sudan	Central African Rep.	Iraq	Sudan	Afghanistan	Ethiopia
Central African Rep.	Sudan	Côte d'Ivoire	Central African Rep.	Haiti	Pakistan
Zimbabwe	Eritrea	Haiti	Ethiopia	Yemen	Nigeria
Liberia	Pakistan	Pakistan	Côte d'Ivoire	Iraq	Mali
Côte d'Ivoire	Côte d'Ivoire	Zambia	Iraq	Central African Rep.	Sierra Leone
		Afghanistan	Sierra Leone		
		Central African Rep.			

Note: Each column lists the 10 most vulnerable states (ranked from greatest vulnerability in the top row) according to a major measure of state vulnerability. Columns may include more than 10 states because some are tied.

*Country Indicators for Foreign Policy

**Center for Systemic Peace

***Center for International Development and Conflict Management

Source: Compiled by the authors with data from sources discussed in Box 2.3.

■ **The average levels of political terror in developing regions are about twice as high as levels in high-income countries.** ■

coded on a scale of 1–5 (with 5 representing the greatest level of violence) based on their level of terror the previous year (Gibney, Cornett, and Wood 2010; Wood and Gibney 2010).

A second measure of government repression is the Physical Integrity Rights Index, a component of the broader Cingranelli-Richards (CIRI) Human Rights Dataset since 1982. The CIRI Physical Integrity Rights Index measures government-sanctioned practices of political killings, torture, disappearances, and imprisonment. Rather than averaging scores from Amnesty International and the U.S. Department of State as the PTS does, CIRI treats the Amnesty International reports as authoritative if there are discrepancies between the two.^{7, 8}

Using simple country averages from the PTS data, the overall global pattern is one of some decrease in political terror during the late 1970s (because of the pattern in the developing countries of East Asia and of Europe and Central Asia), but a generally rising rate since 1979.⁹ The CIRI measure similarly shows a decrease in government respect for physical integrity rights in recent years. Thus, according to both the PTS and the CIRI measures, global state

terrorism and repression increased during the same period that other indicators suggest a decline in intrastate warfare and state fragility. This might suggest a trade-off between forms of insecurity—that is, between government repression on the one hand and intrastate war and vulnerability on the other.

However, joint consideration of the regional PTS values (see Figure 2.3) and the regional trends of overt conflict shown in Figure 2.2 suggests less support for the trade-off hypothesis. An inverse relationship between overt conflict and repression might be the case for East Asia and Pacific, where overt intrastate conflict declined substantially after 1980 while the PTS measure has had quite high values since the late 1980s. Yet, such a pattern is not apparent for South Asia, where, in recent decades, values of both intrastate conflict and repression have tended to be higher than in other regions.

The pattern most apparent in Figure 2.3 is that averages in all developing regions are about twice as high as values in the high-income countries and that, over time, this general pattern persists. Values of terror for sub-Saharan Africa have been more stable than those of other

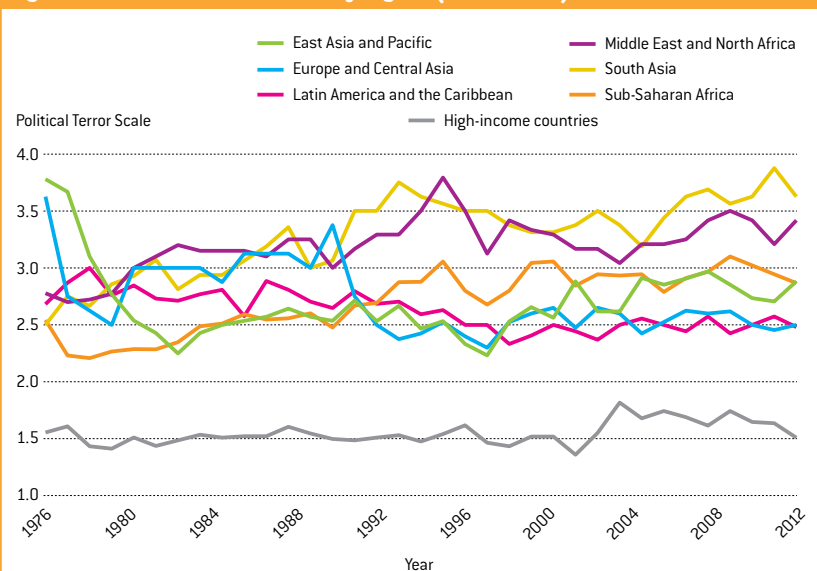
developing regions, but this is partly an artifact of averaging the larger number of countries in the region.

With respect to civilian-on-civilian terror and criminality, the United Nations Office on Drugs and Crime (UNODC) has conducted Surveys on Crime Trends and the Operations of Criminal Justice Systems (CTS) to collect information from UN member states on crime trends, drug trafficking, and criminal justice for a quite extended period.¹⁰ The first survey covered 1970–1980, and subsequent surveys have provided data for various series into the 2008–2010 period. Although the surveys cover many aspects of crime and criminal justice, data are somewhat spotty, as some countries respond to the CTS surveys infrequently or, in some cases, not at all.

In an effort to provide more complete data on the most serious offense against personal security, UNODC recently undertook a global study on homicide, including homicide counts and rates. The report from that project (UNODC 2011) combines information from a variety of sources (the CTS, the World Health Organization, national police, ministries of justice, and others) to provide homicide statistics by country from 1995 to 2010. Even so, just 103 countries are included in the analysis across time, and longitudinal data are especially lacking for countries in sub-Saharan Africa and the Middle East. However, single-point estimates of most-recent data (variously 2004–2009) have been provided for an inclusive list of 207 states and territories (UNODC 2011: Methodology Annex).

These recent data show important interregional variability. Values for sub-Saharan Africa and for the developing countries of Europe and Central Asia tend to be about 10 annual homicides per 100,000, using population-weighted averages within regions (although the rate in South Africa exceeds 30 per 100,000, and the 1.3 per 100,000 in Nigeria is not credible). The rates for these regions are at least twice as high over time as the homicide rates in South Asia and East Asia and Pacific; they are even greater relative to high-income countries (where rates tend to be 1.0–1.5 per 100,000). This disparity across regions is consistent with the longitudinal analysis of Pinker (2011), which documented decline in homicide rates across several centuries in Western Europe and North

Figure 2.3 Political Terror Scale by region (1976–2010)



Note: Values are unweighted country averages, and scale range is from 1–5. A score of 1 is assigned to countries with a secure rule of law where torture is rare, while a score of 5 indicates violence that is extended to the whole population.

Source: IFs Version 6.68 using Political Terror Scale data. IFs database variable is GovPolTerrorScaleAverage.

America during the period of their movement to high-income status.

The real regional outlier is Latin America and the Caribbean, where homicide rates were more than 30 per 100,000 in 1994 and have exceeded 20 per 100,000 through 2010, with a surge back toward 30 per 100,000 in 2008–2010. The surge took Mexico from 8.1 per 100,000 in 2007 to 21.5 per 100,000 in 2010. Rates are extraordinarily high—above 40 per 100,000—in countries such as Belize, El Salvador, Guatemala, Honduras (globally highest at 82.1 per 100,000 in 2010), Jamaica, and Venezuela due to gang and cartel competition arising from the large scarcity-related profits generated by prohibition policies against drugs in importing countries (especially the United States).¹¹ The surge in Latin America and the Caribbean has been so large that it actually reversed a very modest downward global trend, pushing the level of 2010 above that of 1995.

Capacity

Strong state capacity has many aspects, and a central one is the mobilization and effective use of revenues. In fact, along with the security function, the mobilization of resources has been

■ *Historically, mobilizing and using progressively higher shares of GDP has been fundamental to state capacity development.* ■

■ *While much pressure now exists for reducing government spending, population aging creates pressure for increasing it.* ■

■ *Revenue mobilization as a percent of GDP varies greatly across developing regions.* ■

■ *Sub-Saharan Africa's continued reliance on foreign aid suggests a lack of state capacity.* ■

fundamental to the long-term story of state creation. Modern states tend to mobilize and use a progressively higher share of gross domestic product as they develop economically and build professional public administrations. German economist Adolph Wagner (1835–1917) identified this tendency more than a century ago in what is known as Wagner's Law (Wagner 1892; see also Weber and Wagner 1977). Consistent with this tendency, total central and local government expenditures of contemporary Organisation for Economic Co-operation and Development (OECD) countries grew from less than 10 percent of GDP c. 1870 (World Bank 1997: 2) to about 40 percent in 2007, and then jumped to 44–45 percent in 2010–2011 during the Great Recession (IFs calculations using OECD data).

At the same time, revenues of OECD countries averaged a considerably lower 36–39 percent of GDP from 1997 through 2011 (IFs with OECD data). The issue of fiscal imbalances and debt growth thus came dramatically to the surface in the early 2010s and will significantly shape government finances through the decade and probably much longer. But the future of government finance is somewhat uncertain. Although there is much pressure for reduction of spending and even, in spite of fiscal deficits, of taxation, the current and future aging of populations in high-income countries is intensifying already existing pressures for greater spending on pensions and health.

Obviously, the expansion of the shares of GDP that governments mobilize and spend cannot continue indefinitely, as at some point the increasing burden on societies becomes untenable. Tanzi (2011: 92–106) traced the longer-term pattern for high-income countries and noted that almost all of them had reached and retreated from their historically highest values before 2008 and what might prove a temporary surge of higher spending during the Great Recession beginning in 2008.

As the revelations around Greece's budgetary problems during the crisis of the Euro beginning in 2009 graphically revealed, however, data on government expenditures are strikingly poor and inconsistent, even for high-income countries. Revenue data are even harder to obtain. Whereas expenditure categories and accounting are more consistent across countries (for instance, there are efforts to track military, education,

health, R&D, and pension expenditures almost everywhere), revenues come from many disparate sources across levels of government and countries.

When we turn to developing countries, our financial data become even more problematic. A major difficulty is also that our principal global database for many variables, including government finance, is the World Development Indicators (WDI) database,¹² which seems to provide only central government revenues and expenditures.¹³ This creates a difficulty in analysing financial data even for countries with highly centralized government, such as France, for which the OECD estimates general (total central and local) government expenditures to have been 56.7 percent of GDP in 2010, but for which the WDI expenditure estimate is only 48.1 percent. For a federal system such as Germany, the differences in public expenditure between general government (47.9 percent according to the OECD) and what we interpret to be central government alone (32.0 percent according to the WDI) can be even more dramatic. For OECD countries in total, the OECD value for general government expenditure is 44 percent, and the WDI (apparently only central) government spending value is 31.5 percent.

In our model development (see Chapter 4), we rely on OECD data for OECD countries and on WDI data for government revenues and spending of most developing countries (believing that the picture the WDI numbers provide for government expenditures is incomplete, and making appropriate adjustments).¹⁴ For consistency of historical analysis across all regions of the world, however, we will look to WDI data for all countries.

Mobilizing resources

Although a portrayal like that of Wagner's Law of increasing mobilization of revenues in the long run—up to some limit—is a simple and logical one, the reality has been far more complex. Figure 2.4, which uses World Development Indicators data, shows how complex. Beneath a fairly stable long-term global revenue share of GDP within a range of 23–25 percent (with a peak in the 1980s), regional patterns varied greatly. For example:

- The high-income countries exhibited a quite stable pattern across the entire period.

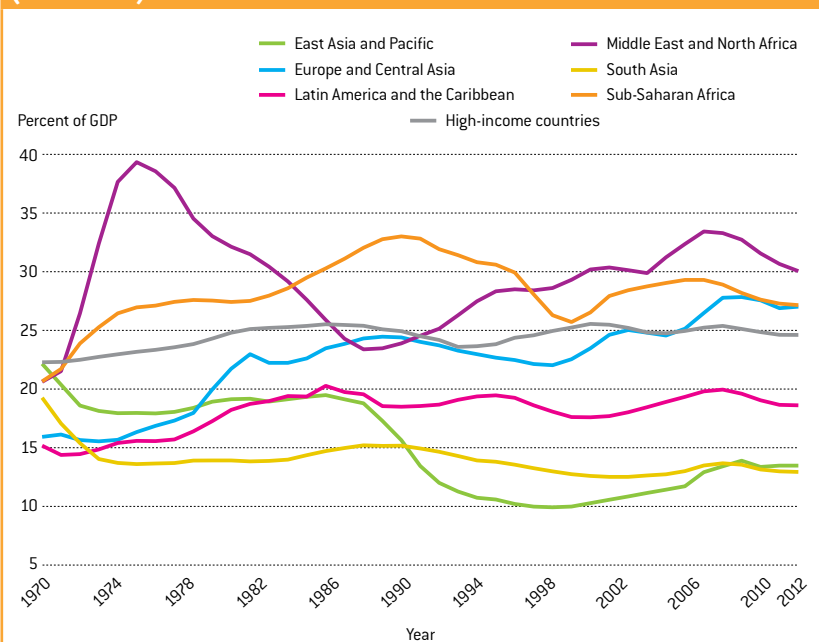
- The Middle East and North Africa had peaks in the mid-1970s and to a lesser degree in the mid-2000s—both peaks tied to rapid rises in oil prices—and still has the highest (central) government share.
- The East Asia and Pacific region shows a substantial decline over time, as China (which, because of population size, dominates the region) moved away from its centrally planned economy. However, government ownership of much industry (as in China) makes accounting for government revenues difficult and, in combination with not always transparent accounting, makes unreliable the current low levels reported in the WDI for China.¹⁵
- In Latin American and the Caribbean, government revenues as a share of GDP reached a peak in the mid-1980s, but then declined slightly in the face of debt problems and pressures from international financial agents. Since then, however, the share for that region has been quite stable, with improved fiscal balance demonstrating improved state capacity.

Perhaps the most surprising pattern in Figure 2.4 is that of sub-Saharan Africa, whose governments had the highest revenue share in the world in the late 1980s. A high level of government revenues might seem to show strong capacity, but such a first conclusion must be tempered because the revenues shown in Figure 2.4 include foreign aid. Further, South Africa economically dominates the region, and its central government revenues are near 30 percent of GDP, thereby also helping give the grouping a relatively high level overall.

The impact of South Africa aside, much of the total government income in sub-Saharan African countries comes from foreign aid (see Figure 2.5). Net foreign aid receipts exceeded 10 percent of GDP in 1992 and have been a significant share of African GDP since independence, even as they have declined relative to GDP in other developing regions. The ratio of aid receipts to government revenue (as opposed to the ratio with GDP) remains near 20 percent for sub-Saharan Africa.

Because foreign aid flows into countries with need, high levels of aid suggest at least the possibility (and quite likely the probability) that

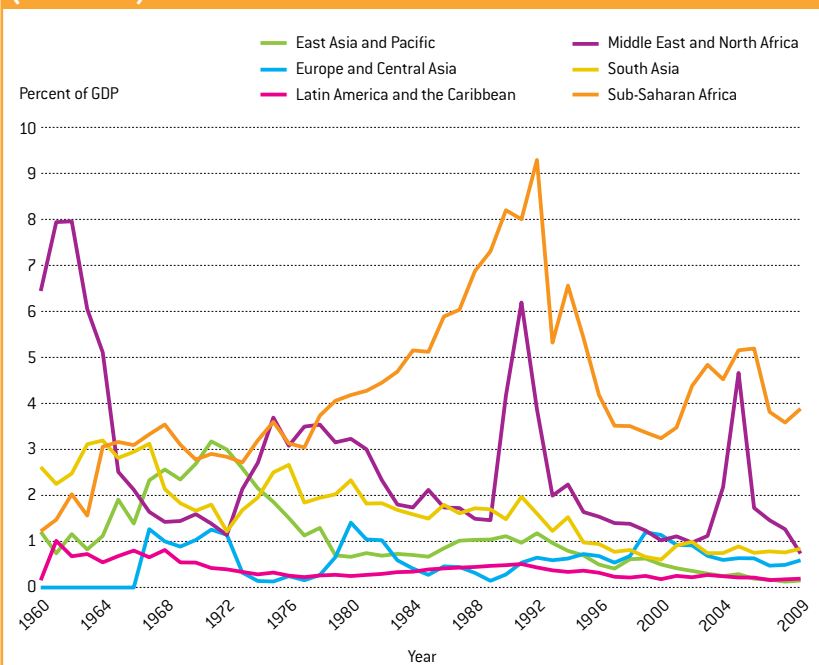
Figure 2.4 Central government revenues by region as a percent of GDP (1970–2010)



Note: Using estimations to fill missing data points, and also using five-year moving averages. Revenues include foreign aid.

Source: IFs Version 6.68 using World Development Indicators data. IFs database variable is GovtCurRev%GDP.

Figure 2.5 Net foreign aid receipts by developing region as a percent of GDP (1960–2009)



Source: IFs Version 6.68 using World Development Indicators data. IFs database variable is AidDon%GNI.

■ *Transfer payments account for most of the post-World War II growth in government expenditures for OECD countries.* ■

■ *This volume measures government capacity by using the extent of corruption as a proxy for rule of law and governance effectiveness or lack thereof.* ■

■ *Regional groupings of developing countries do not vary greatly from each other on the Corruption Perceptions Index, but they do differ substantially from high-income countries.* ■

the resource mobilization component of capacity is not well-developed. On the other hand, aid-dependent countries might demonstrate strength on the second component of capacity, the effective use of resources. In summary, aid dependence does not have a simple relationship to state capacity as we define the term.

The story of how government finances affect capacity over time and across countries has another dimension when one considers the pattern of expenditures. Increased transfer payments—such as welfare and pensions—account for most of the post-World War II growth in government expenditures in the predominantly high-income countries of the OECD and now make up about 70 percent of their total expenditures, compared to just over 25 percent in sub-Saharan Africa and about 50 percent in South Asia.¹⁶ In coming decades, such expenditures will increasingly stress countries around the world as populations age (see Chapter 6). Transfer payments are large enough to shift income distributions of OECD countries from pre-tax patterns that are, on average, more unequal than those in developing countries, to post-redistribution patterns that are more egalitarian than those in poor countries (Chu, Davoodi, and Gupta 2004). In developing countries, the bulk of spending (often constrained by limited motivation of elites to undertake it), is directed toward direct government consumption, which includes spending on the military, education, health, and infrastructure.

Using revenues effectively

Although government's contribution to human well-being depends on its ability to mobilize resources, mobilization is not sufficient. Resources provide potential capacity, but even governments with resources may not prove capable. Many studies find that the broader quality of governance is highly interactive with spending directly and effectively on achieving development targets such as human capital enhancement or on transfer payments (Baldacci et al. 2008; Rajkumar, Sunil, and Swaroop 2008). For instance, in many developing countries, there is great leakage of government resources (i.e., corruption) before some portion reaches public programs such as health and education.¹⁷ And some governments—Nigeria is a prime

example—may find that finances derived from natural resources give rise to corruption rather than enhance state capacity.

For effective governance, there needs to be a rule of law, something that Fukuyama (2011: 245) argued is deeply imbedded in society and consists of “abstract rules of justice that bind a community together.” A rule of law tends to precede and support legislation with respect to effective and just governance and the institutions that administer it, while also being reinforced by them.

Ultimately, of course, there must be administration, including a public service that is accountable, impartial, professional, and responsive (United Nations Department of Economic and Social Affairs 2005: ix; hereafter UN DESA). In this regard, human resource management poses a number of significant problems. In high-income countries, the aging of populations and the retirement of civil servants have begun to, or will soon, stress governments. Of course, in developing countries, the problems are much greater. In many of these countries, the average education of adults is below the level of a completed primary education. In addition, both the public and private sectors of developing countries often lose many of their most skilled people to out-migration. In sub-Saharan Africa, HIV/AIDS has further ravaged the base of potential recruits and those already serving. Countries struggling to increase revenues as a share of GDP and wisely use them sometimes have great difficulty providing salaries to attract, retain, and help maintain the integrity of government employees. Significant effort is required to put in place the merit-based employment and promotion systems and transparent and responsive government that further protect the quality and integrity of personnel.¹⁸ More fundamentally, of course, the rule of law does not have deep roots in many developing societies.

A number of measures of government capacity could potentially be useful to us. In reality, however, there are very few for which we have data across countries, fewer still with any information across time historically, and even fewer that we think are forecastable. Because of the widespread recognition of the critical importance of corruption (or conversely, its absence) and the data series

that exist for it, we have chosen here, and in our forecasting, to focus on the extent of corruption as a primary proxy for rule of law and governance effectiveness or their lack. In particular, we build on the foundation provided by Transparency International's Corruption Perceptions Index (CPI) (see Box 2.4).

Figure 2.6 shows the CPI values by world region since the inception of the series. Because the components of the CPI and their aggregation have changed over time (see again Box 2.4), its ability to provide information about trends is low. The figure nonetheless shows:

- regional groupings of developing countries as a whole do not vary greatly from each other, although Latin American countries may have slightly lower corruption than other developing regions;
- on average, high-income countries are considerably less corrupt than developing countries, but are nonetheless currently some distance from being very clean (around 7 on the scale on which 10 represents very clean).

Relationship between mobilizing revenues and using them effectively

We might expect that, in general, countries having the capacity to mobilize resources would be more likely than others to use them effectively. Figure 2.7 (on p. 32) shows the cross-sectional correlation between the CPI for 2011 and central government mobilization of revenues as a percent of GDP. The correlation is quite low. This suggests that there are many governments that might mobilize revenues but fail to use them well—or that might use revenues that they have well, but mobilize few.

The lack of strong correlation of transparency or perceived absence of corruption with resource mobilization is also true with other measures that might help us assess government capacity. For instance, the World Bank's Worldwide Governance Indicators (WGI) project (Kaufmann, Kraay, and Mastruzzi 2007; 2008; 2009), to be discussed in more detail later in this chapter, includes measures of government effectiveness and rule of law, as well as of government corruption (one of the components of their measure is the CPI). The WGI measures have similarly low correlations with central government resource mobilization.

Box 2.4 Transparency International and the Corruption Perceptions Index

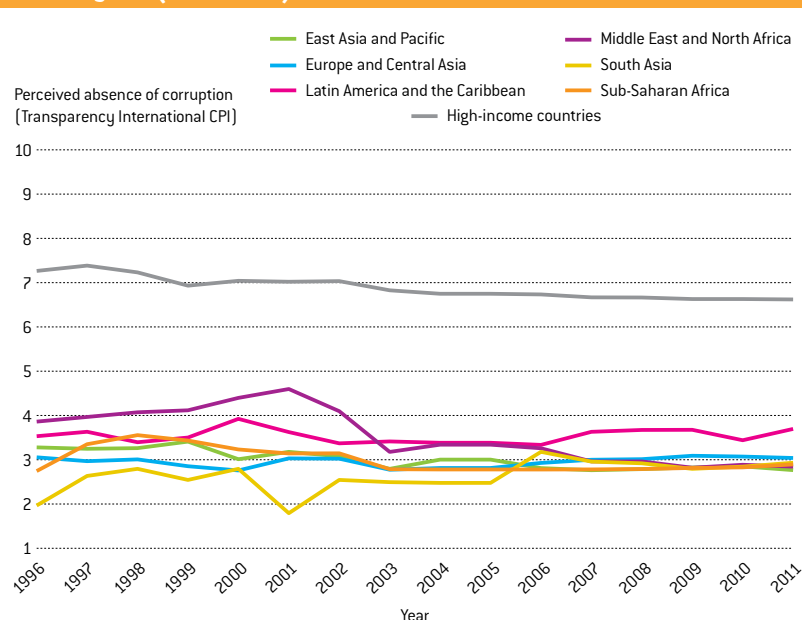
Transparency International (TI), founded in 1993 under the leadership of Peter Eigen, is an international nongovernmental organization with a secretariat in Berlin that works to identify and reduce corruption and to promote transparency, accountability, and integrity in all sectors of society, including government. TI has developed a number of measures, including the Corruption Perceptions Index (1995), the Bribe Payers Index (1999), and a Global Corruption Barometer (2003).

We use the Corruption Perceptions Index (CPI) extensively in our analysis. The CPI assesses countries and territories by perceived levels of corruption. The 2011 index (the most recent update at the time of our analysis) drew on information for 183 countries and territories from 17 data sources and 13 institutions (at least three data sources are required for a country to be included). Through the 2011 version, the CPI was an 11-point scale, with higher values reflecting the least corruption or, conversely, the most clean and transparent governments (a score of 0 is described as "highly corrupt," and a score of 10 is described as "very clean.") Because the number of countries reviewed and the inputs used for the index have varied over time, and because of the use of ranks within the component indicators, the measure through 2011 does not allow accurate assessment of trends.

In 2012, TI changed the computation of the CPI by simplifying the measure, building on raw scores within component measures, and moving to a 0–100 point scale. The revised index will eventually allow more meaningful analysis across time. However, our analysis uses the earlier 11-point scale.

See <http://www.transparency.org/research>.

Figure 2.6 Extent of perceived absence of government corruption over time and across regions (1996–2011)

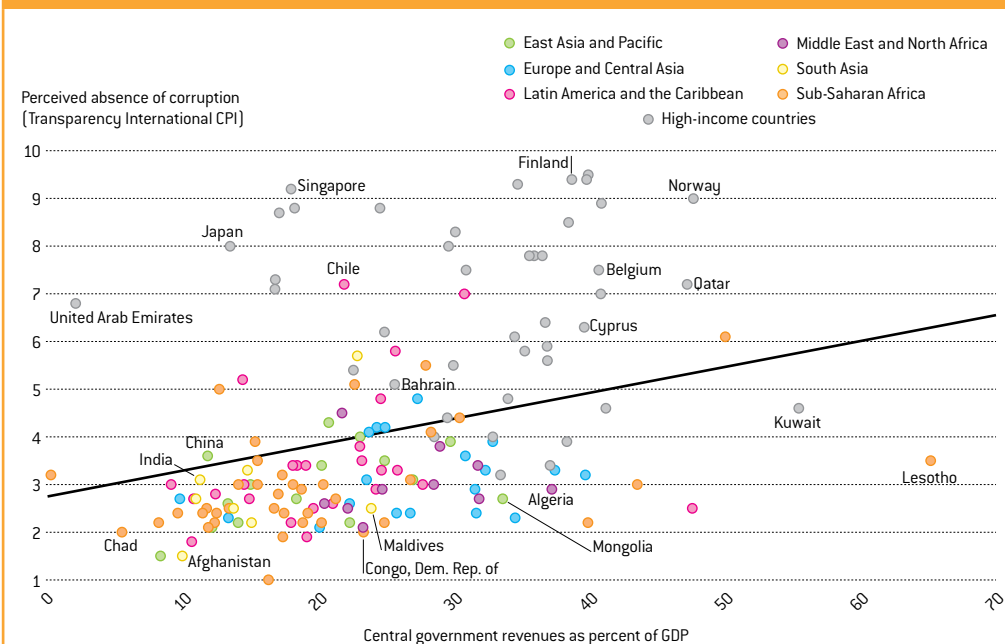


Note: Figure shows simple regional averages on Transparency International's Corruption Perceptions Index (CPI). Transparency International documentation states that the CPI range is 0 (highly corrupt) to 10 (very clean), but actual scores run only from 1–10; higher values reflect perceived lower levels of corruption. Transparency International states that prior to the introduction of revised methodology in 2012, the CPI was not a tool that captured changes very well for individual countries over time (see #7 in Frequently Asked Questions available at http://cpi.transparency.org/cpi2012/in_detail/#myAnchor1). We eliminated 1995 values because that was the first data year for the CPI, and values were clearly inconsistent with the subsequent series.

Source: IFs Version 6.68 using Transparency International's Corruption Perceptions Index. IFs database variable is Corruption.

■ Countries with the capacity to mobilize substantial resources often fail to use them well. ■

Figure 2.7 Relative absence of perceived government corruption in relation to government revenue mobilization



*Note: Revenue scale truncated to 70 percent; Transparency International's Corruption Perceptions Index (CPI) is used as the measure of perceived corruption (see Figure 2.6 Note for information about the CPI). Higher values on the CPI reflect lower levels of perceived corruption. Figure uses most recent data available at time of writing. Low corruption = $2.76 + 0.054 * \text{Revenues} / \text{GDP}$; R-squared = 0.10.*

Source: IFs Version 6.68 using Transparency International's CPI data, and government revenue and GDP data from World Development Indicators. IFs database variables are Corruption and GovtCurRev%GDP.

■ The global progression of democracy relative to autocracy is the fundamental element of the inclusion transition. ■

It is possible that the very low covariance of corruption with resource mobilization is related to the inclusiveness of governance and the overall wealth of societies. A glance at the position of selected countries on Figure 2.7 suggests that those (like Chile, Norway, and Singapore) significantly above the line, and therefore more transparent than their revenue share might suggest, are quite democratic, quite rich, or both. Those below the line (like Afghanistan, Chad, and the Democratic Republic of the Congo) tend to be non-democratic, poor, or both. The next chapter considers a variety of such relationships across our dimensions and indicators of governance. Here we first need to explore inclusion itself and the ongoing transition toward greater levels of it.

Inclusion

The global progression of democracy relative to autocracy is the fundamental element of the inclusion transition. In *The Republic* (c. 380 BCE), Plato began the historical written characterization of different regime types, contrasting

aristocracy (rule by the best); timocracy (rule by the honorable); oligarchy (rule by a few); democracy (rule by the many); and tyranny (rule by a tyrant). Plato identified the types as a general sequence of descent for societies. He thus preferred the rule of philosopher kings to democracy, indicating the placement of greater weight in pursuit of the common good on capacity and effectiveness than on inclusiveness.

In our exploration of the history of inclusion, we want to move beyond the consideration of the formal character of regimes and look also at the extent and nature of involvement of the citizenry. Ideally, we would contrast what has sometimes been called the "thin" democracy inherent in the participation of citizens in elections having at least some elements of contestation with the "thick" democracy of rich inclusion and participation associated with widespread involvement of often marginalized populations in the broad political process and government itself (Campbell 2008; Coppedge 1999; 2007; 2012; Kekic 2007). Our discussion

begins with regime type, the thinner and more easily measurable approach to exploring inclusion. Following that, we consider measures of freedom and of gender inclusion, even though these thicker elements of inclusion are more difficult to study empirically and to model.

Regime type

Regime type refers to the authority characteristics of states. Already introduced in Chapter 1, the major dataset for identifying and tracking regime types comes from the Polity Project with data that go back to 1800 (before the Congress of Vienna in 1814–1815 and the relative stabilization of the state system). The Polity Project, described in Box 2.5, has become “the most widely used data resource for studying regime change and the effects of regime authority” (Marshall 2013), and it is Polity data that we use in our analyses and to initialize our forecasts. A newer project called Varieties of Democracy (V-Dem) involves social scientists across three continents; although they have

completed pilot work, they do not anticipate release of their many indicators on democracy for 206 countries before the fall of 2015.

The Polity Project measures of democracy and autocracy are based on what some scholars would term minimalist or thin definitions (see Kekic 2007), because they focus almost exclusively on electoral competition and participation (see again Box 2.5). In fact, even with respect to participation, Polity classifies some states as democracies in earlier eras when they did not have women’s suffrage (or even when they had slavery). In addition, Polity measures can also prove insensitive to the reality of “illiberal democracy,” a situation in which the forms of democracy exist even though their substance is subverted (Zakaria 1997). Nonetheless, the measures are useful.

Figures 1.4 and 1.5 in Chapter 1 used Polity scores to trace the story of advance in democracy around the world since 1800, allowing discussion of, and some challenge to, the three waves that

■ *In analyzing inclusion, it is important to look beyond the formal character of regimes to the extent and nature of citizen involvement.* ■

Box 2.5 Polity Project and Polity data

The Polity Project began in the 1970s under the direction of Ted Robert Gurr and continues as Polity IV under the direction of Monty Marshall, with support from the U.S. Government’s Political Instability Task Force, the Center for Systemic Peace, and Societal-Systems Research Inc. As of early 2013, Polity IV covered 164 countries with data from 1800 through 2012; Polity data and reports are available through the Center for Systemic Peace website. The periodic *Global Reports* that Marshall and co-authors produce describe the Polity series and other governance and conflict measures and insights from them. Our description below draws heavily on that of Marshall and Cole 2011.

Polity focuses on the authority characteristics of regimes, with attention to six component measures: regulation of executive recruitment, competitiveness of executive recruitment, openness of executive recruitment, constraints that exist on executive action, regulation of political participation, and competitiveness of political participation.

In the Polity system, a full democracy (like Greece, New Zealand, and Sweden in 2010) has institutionalized procedures for extensive political participation; chooses and replaces chief executives in open, competitive elections; and imposes substantial checks and balances on the powers of the chief executive. It merits emphasizing, however, that the Polity measure does not tap the thicker, more richly inclusive aspects of democratization; the project assigns a value of 10 (the most democratic) to the United States from 1845–1849 during the era of slavery and well before women’s suffrage.

In a full autocracy, by contrast, citizen political participation is sharply restricted or suppressed. Instead, chief executives are often selected according to formal rules of succession, generally from hereditary lines, or within the established political elite. In such autocracies, chief executives exercise power without meaningful checks from legislative,

judicial, or civil society institutions. Full autocracies are now fairly rare; the Polity Project rated only Saudi Arabia and Qatar as fully institutionalized autocracies (in their cases, monarchies) in 2011. Other monarchies, such as those in Jordan, Kuwait, Morocco, and Swaziland, now share certain powers with elected officials. Today, autocratic government is more likely to take the form of authoritarian rule by what Marshall and Cole describe as “personalistic leaders,” or by military juntas or one-party dominant structures, as in Belarus and Vietnam (Marshall and Cole 2011: 9). These forms of institutionalized autocratic authority either lack formal rules of executive succession or involve a severely restricted body in the selection of an executive.

Anocracies are governments that blend or combine what Marshall and Cole (2011: 9) describe as “an, often, incoherent mix of democratic and autocratic traits and practices.” Polity coded countries as disparate as Bangladesh, Iraq, Nigeria, Russia, and Venezuela as anocracies in 2011.¹⁹ Anocratic regimes are often less stable than autocratic regimes. Some countries have established democracy (at least for now) by transitioning through autocracy to anocracy and then to democracy, as in Mexico, Nicaragua, Senegal, and Taiwan (Marshall and Cole 2011: 9).

For both democracy and autocracy measures, a team of experts constructs the Polity scores. The project provides overall assessments of countries on democracy and autocracy scales that each range from 0 to 10. The project also computes a composite 21-point Polity Score as the democracy score minus the autocracy score; the Polity Score thus can range from -10 to +10 (Marshall and Cole 2011: 8) as we saw in Figure 1.4. On this 21-point scale, values from -10 through -6 are labeled “autocracies,” values from -5 through 5 are labeled “anocracies,” and values from 6 through 10 are labeled “democracies.”

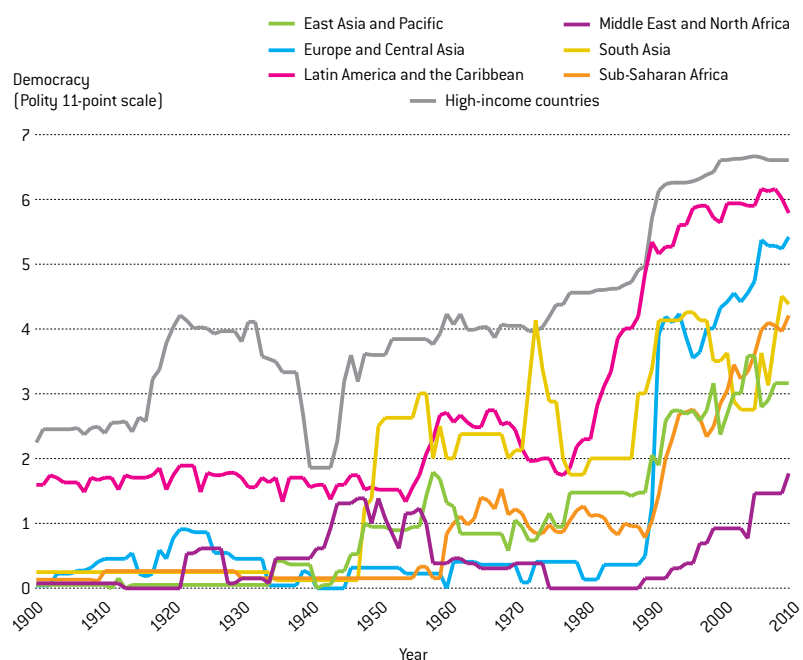
See <http://www.systemicpeace.org/polity/polity4.htm>.

■ *The fall of communism in 1989 resulted in a major surge of democracy that is unlikely to see a large-scale reversal, especially among new members of the European Union and NATO.* ■

Huntington and others have identified. Figure 1.5 also showed the surge of democracy in the non-OECD or developing world since the 1970s.

Using the World Bank regions so as to see the developing countries more clearly, Figure 2.8 traces the pattern since 1900 (treating nulls as zeros as did Figure 1.5). In 1900, some degree of democracy was apparent in Latin America and the Caribbean, where it began to rise shortly after independence in the early nineteenth century. Although advancing somewhat in the 1960s and then reversing in the 1970s, democracy in that region rose significantly in the 1980s and 1990s. Central and Eastern Europe experienced a very small democratic rise in the period between World Wars I and II, but it was only the fall of communism in 1989 that broke the back of authoritarianism in the region. The result has been a major surge of democracy, one that is unlikely to see a reversal, especially among Central European countries that have become members of the European Union and NATO.

Figure 2.8 Extent of democracy in the world by region (1900–2010)



Note: Figure uses the Polity democracy (0–10) scale, with higher values indicating greater democracy. Contemporary states are included in the graphic across the entire time span, but are assigned a value of 0 (non-democratic) when they were not sovereign states (that is, null values are treated as 0s). Values are simple averages of state values, not population-weighted.

Source: IFs Version 6.68 using Polity Project democracy scale and data. IFs database variable is PolityDemoc.

The experiences of the other four regions that the World Bank characterizes as developing are more complicated. South Asia experienced a jump in its democracy level in the late 1940s with the emergence of what are now India, Pakistan, and Bangladesh from British colonial India. The region, including other members such as Afghanistan, Bhutan, Nepal, and Sri Lanka, has experienced waves of advance and regression since that time, however, and its democratic prospects are uncertain. Similarly, the sharp rise in democracy across sub-Saharan Africa for two decades after 1990, although fairly widespread across the region, appears vulnerable on a number of fronts, including the low levels of income and education in most countries and the challenges posed by political instabilities, violence, and climate change.

Several developing countries of East Asia and Pacific (including Cambodia, Indonesia, Mongolia, and the Philippines) also have experienced a rise of democracy since around 1990, and the region's underlying situation now may be generally similar to that of Latin America. It has seen sharp rises in income and education, two significant foundations for democracy. Reversals appear unlikely in most countries of the region that have democratized.

Because democracy tends to rise with income and education, it is possible to identify expected levels of democracy for countries. When actual levels fall below expected ones, we can identify a democratic deficit. Often such deficits, as occurred earlier in Latin America, signal likely future advance in democracy. Some members of East Asia and Pacific, such as China and Vietnam, now have large democratic deficits, which suggests that democratic advances may be more likely than reversals.²⁰

With respect to the Middle East and North Africa, the developing countries of the region exhibited some signs of movement toward democracy in the 1940s and 1950s (notably in Egypt, Iran, Jordan, Lebanon, and Syria), but several factors—such as the region's development of oil-based economies, the interventions of outside powers (including the Cold War antagonists), and a cultural heritage of strong autocratic traditions—largely quashed those stirrings.

There were again some hints of precarious movement toward liberalization in the 1990s

and early 2000s (Algeria, Iran, and Jordan). There have been huge advances in income across much of the region, as well as very substantial progress in education participation rates and attainment levels, which would normally support further democratization. Nonetheless, the democratic deficit of the region has been persistent.

Repeated reports by the United Nations Development Programme (UNDP) have argued both that continued autocracy and repression of women are the two most inhibiting factors to development of the region and that citizens have very low levels of trust in military and personalized rule and aspire for democracy.²¹ The 2011 democracy movements in Bahrain, Egypt, Libya, Syria, Tunisia, and Yemen reflect that demand for change (and sometimes for democracy), even when, as in Yemen, the foundations may not yet be there for success.

Finally, Figure 2.8 shows the grouping of high-income countries, which in the World Bank categorization includes a significant number of non-democratic countries, notably the Gulf states of the Middle East (in contrast to the overwhelmingly democratic OECD country set). It is interesting to note that, on average, the high-income countries are only marginally more democratic than the developing countries of Latin America and the Caribbean or of Europe and Central Asia, suggesting strongly that income by itself is not an adequate explanation of level of democracy. Chapter 4 will show the results of our analysis of drivers of democracy's development, which puts more weight on variables such as demography, the role of women, and resource export dependence than on income.

In summary, the world has witnessed a dramatic overall transformation of the global system across the last 200 years and a very significant one in the course of the most recent wave of democratization, heavily affecting the developing countries and countries transitioning from communism. The number of sovereign autocracies peaked at 89 in 1977 and fell to just 22 by 2011, by which time 95 countries were classified as democracies on the Polity 21-point autocracy/democracy scale (Marshall and Cole 2011: 12, 16). Of considerable concern, however, is the high level of anocracy in the system. With the end of the

Cold War and the collapse of communism, the number of such countries rose from 29 in 1989 to 48 in 1994, and remained at 48 in 2011 (Marshall and Cole 2011: 12). Historically, such countries have been six times more likely than democracies and two-and-a-half times more likely than autocracies to experience societal conflict (Marshall and Cole 2011: 12). Later discussion will return to this issue.

Freedom

As we move toward thickening the definition of democracy, it is useful to consider the Freedom in the World survey conducted by Freedom House. The survey's measures focus on "an evaluation of the state of global freedom as experienced by individuals" in 193 countries and territories.²² Freedom is divided into two broad categories consisting of political rights and civil liberties. The political rights measures have some clear elements of overlap with the Polity measure of regime types, while the measures of civil liberties add other important aspects of democracy (see Box 2.6).

The relationship between the Freedom House political rights measure and the Polity democracy measure is actually closer than

■ *The sharp rise in democracy across sub-Saharan Africa, although fairly widespread, appears vulnerable due to low levels of income and education, political instabilities, violence, and climate change.* ■

■ *China and Vietnam have large democratic deficits, suggesting that democratic advances there are quite possible.* ■

Box 2.6 Freedom House project and data

Freedom House is a nongovernmental organization that monitors democracy and human rights and is also an advocacy organization. Its global database on political rights and civil liberties has formed the basis for annual *Freedom in the World* reports since 1972.

Data for the reports come from annual surveys the organization conducts. The survey is designed to measure the following components of political rights and civil liberties:

Political rights enable people to participate freely in the political process, including the right to vote freely for distinct alternatives in legitimate elections, compete for public office, join political parties and organizations, and elect representatives who have a decisive impact on public policies and are accountable to the electorate. Civil liberties allow for the freedoms of expression and belief, associational and organizational rights, rule of law, and personal autonomy without interference from the state. (Freedom House 2009: 877)

The survey distributes 10 questions across the 3 political rights subcategories and 15 questions across 4 civil liberties subcategories (Puddington 2012: 33). In-house and consultant experts and scholars assign a separate numerical rating between 1–7 to countries for the political rights and civil liberties measures, and then average the two ratings to determine an overall "freedom status." Freedom House notes that while the political rights and civil liberties scales are logically distinct, in practice they are closely related—and, in fact, we calculate the overall R-squared between the two measures in 2012 to have been 0.88.

Freedom House uses its index values in summary form to characterize societies as free (1.0–2.5), partly free (3.0–5.0), and not free (5.5–7.0), its version of democratic, anocratic, or autocratic. A particular strength of the Freedom House approach has been its effort to assure sufficient consistency across time so as to support longitudinal analysis.

See <http://www.freedomhouse.org/>.

■ *Anocratic countries have been six times more likely than democracies and two-and-a-half times as likely as autocracies to experience societal conflict.* ■

■ *Even in the absence of identifiable restrictions, minority or ethnic groups have often found themselves outside of the social and political processes of civil society and state.* ■

■ *Among developing regions with similar levels of formal democracy, Latin America and the Caribbean exhibits greater civil liberties, while the Middle East and Northern Africa exhibits lower.* ■

their conceptual structures might suggest—the R-squared for the relationship of values across the IFs countries in 2010 was 0.80. Yet, there are significant differences for some countries. For instance, Freedom House sees less freedom in the Democratic Republic of the Congo, Nepal, and Russia than Polity sees democracy. There are also longitudinal differences. The Polity democracy measure for Russia was the same in 2010 as in 1992, but the Freedom House measures of both political rights and civil liberties in Russia deteriorated quite dramatically over that period. In Russia, the political forms remained more democratic than the practice over this time. Different scores on the two measures also partly reflect the subjective judgment of the small number of individuals in the two projects who make coding judgments.

Not surprising, the civil liberties measure of Freedom House differs somewhat more from the Polity measure (the R-squared for the relationship of values across the IFs countries in 2010 was 0.74) than does the political liberties measure, and conceptually it moves significantly toward looking at inclusion and, therefore, democracy more broadly. Using the Freedom House measure, Figure 2.9 shows the evolution of civil liberties across global regions since 1972. In general, Freedom House suggests considerably less progress globally in that period than does the Polity Project (contrast Figures 2.8 and 2.9, remembering that lower Freedom House scores indicate more free); in fact, Freedom House concluded in 2012 that 2011 was the sixth consecutive year in which declines in freedom outstripped advances (Puddington 2012).

Regionally, using the Freedom House measure of civil liberties, the high-income countries and the developing countries of Latin America and the Caribbean stand more distinctly apart from the rest of the developing world than they do using the lens of the Polity democracy measure. Conversely, the developing countries of the Middle East and North Africa notably have the lowest average civil liberties and democracy. In contrast to some movement on the Polity measure, the region's civil liberties made essentially no progress on the Freedom House measure between the early 1970s and 2010.

Inclusion and participation

The survey underlying the civil liberties measure of Freedom House includes the question “Are religious institutions and communities free to practice their faith and express themselves in public and private?” as well as the question “Do laws, policies, and practices guarantee equal treatment of various segments of the population?” (Puddington 2012: 34). Attention to inclusion is clear in these questions.

Many academics criticize the Polity and Freedom House measures on a number of conceptual and methodological grounds (Gleditsch and Ward 1997; Munck 2009; Munck and Verkuilen 2002; Przeworski et al. 2000; Treier and Jackman 2008). With respect to inclusiveness, one core concern of many analysts is the inability of the measures to represent the extent to which various commonly disadvantaged and/or marginalized population subgroups *actually do participate* fully and equally. Even in the absence of identifiable restrictions, minority and ethnic groups, whether racial, religious, or cultural, have often found themselves outside the social and political processes of the civil society and state.

Majorities can also suffer at the hand of minorities. Historically, even when women are a majority, as they tend to be if societies do not manipulate birth and childhood survival ratios, they have as a group commonly faced deep discrimination with respect to full political rights and participation, including late enfranchisement and societal biases against political participation (see again Figure 1.6). Similarly, young adults (under the age of 40) and those falling into low- and middle-income levels form a strong majority of the population in most countries, but they often have little influence in politics even in democracies. In contrast, senior citizens make up less than a quarter of the population in most countries but are often over-represented in government and receive the lion's share of social benefits.²³

A deeper picture of democracy, therefore, necessitates a closer examination of how the governance system treats the most disadvantaged groups, whoever they might be. There is good reason to pay special attention to women and minority ethnic or religious groups.

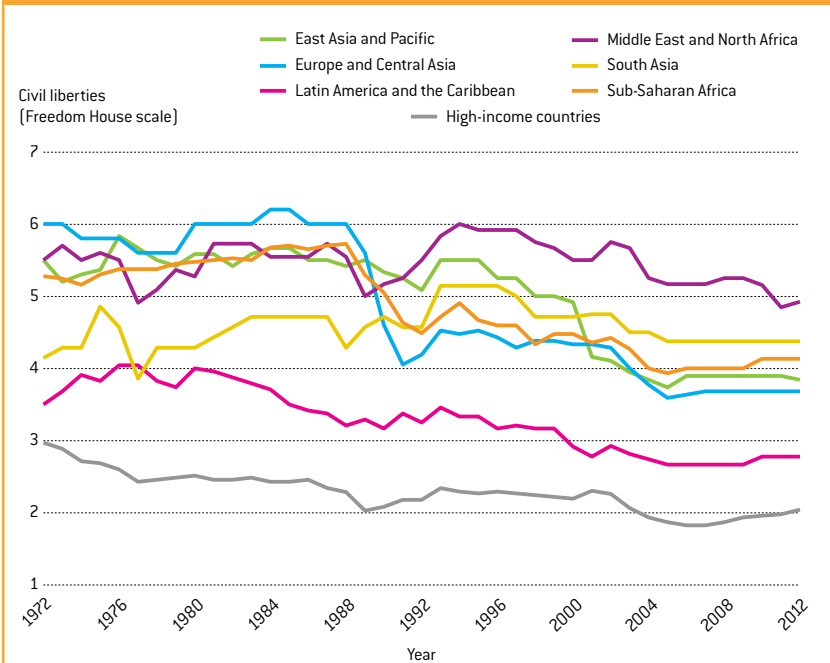
The Cingranelli-Richards Human Rights Data Project (discussed earlier with respect to state

terrorism) is one avenue for exploring the degree of inclusiveness afforded various populations and subgroups. The CIRI Human Rights Dataset contains quantitative standards-based information on government respect for human rights grouped into two indices: (1) the Physical Integrity Rights Index based on measures of torture, extrajudicial killing, political imprisonment, and disappearance indicators; and (2) the Empowerment Rights Index based on measures of freedom with respect to foreign movement, domestic movement, speech, assembly and association, and religion, as well as women's and worker's rights and electoral self-determination. CIRI has also created two indicators that focus on women's economic and political rights and a final indicator that measures the independence of the judiciary.²⁴ Data are available annually from 1981; the 2010 dataset included 195 countries.²⁵

The CIRI measure of women's political rights builds on women's rights to vote, to run for political office, to hold elected and appointed government positions, to join political parties, and to petition government officials. Scores run from 0–3, reaching a value of 3 when women's political rights are guaranteed in both law and practice. The global values of political rights for women have improved over the period 1981–2010, moving from an average of 1.7 to over 2.0 on that CIRI scale. Figure 2.10 displays women's political rights across regions and time, showing gains in all regions except in the developing countries of Europe and Central Asia and of East Asia and Pacific. Currently, the highest developing-region values are in Latin America and the Caribbean, which have values comparable to those of the high-income countries (which have been brought down by the addition to them of the rich oil producing states of the Middle East). The greatest progress over the period was in sub-Saharan Africa (suggesting perhaps the power of culture relative to income) and in the high-income countries, especially the rich Middle Eastern states (suggesting perhaps the power of income relative to culture).

Historically, the worst performing region has been the Middle East and North Africa, although in recent years women's rights there have improved to a level somewhat above that in East Asia and Pacific. The most striking

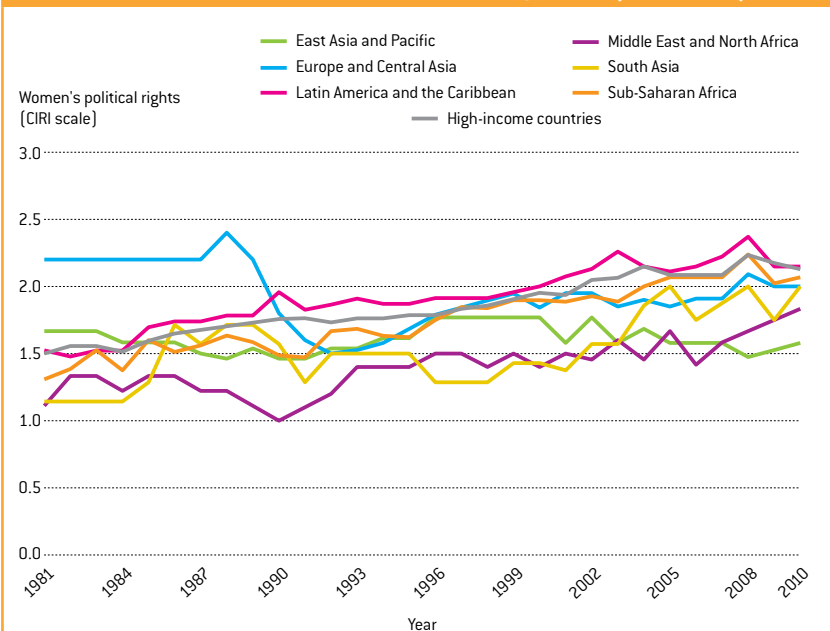
Figure 2.9 Extent of civil liberties in the world by region (1972–2012)



Note: Figure shows simple country averages, not population-weighted. Scale range is 1–7, with lower values indicating greater civil liberties.

Source: IFs Version 6.68 using Freedom House civil liberties scale and data. IFs database variable is FreeCiv.

Figure 2.10 Women's political rights in the world by region (1981–2010)



Note: Figure shows simple averages (not population-weighted). The Cingranelli-Richards (CIRI) scale of women's political rights runs from 0–3, with 3 indicating a greater level of rights.

Source: IFs Version 6.68 using the CIRI Human Rights Dataset. IFs database variable is HumanRightsCIRIWomensPolRight.

■ **A deeper picture of democracy necessitates examination of how the governance system treats disadvantaged groups, especially women and minority ethnic or religious groups.** ■

change over time was the regression of women's political rights in the developing countries of Europe and Central Asia immediately after the fall of communism and their slow climb back up subsequently. This regression is primarily an artifact of the break-up of the Soviet Union in 1991 and the emergence within that region of a large number of new states, including the Central Asian republics with relatively low levels of women's rights (affecting the results of the computation using simple averages in Figure 2.10). However, it is also a result of some fall in women's status (according to CIRI assessment) in Russia and in other Eastern European states such as Romania.

We draw on the CIRI dataset in this historical chapter because it covers a relatively long time period, but the measure is not well-suited for forecasting. Almost all countries are coded either 1, 2, or 3, providing limited differentiation, and our analyses of the data against other variables suggest no obvious drivers for forecasting. The R-squared from cross-sectional relationships with years of

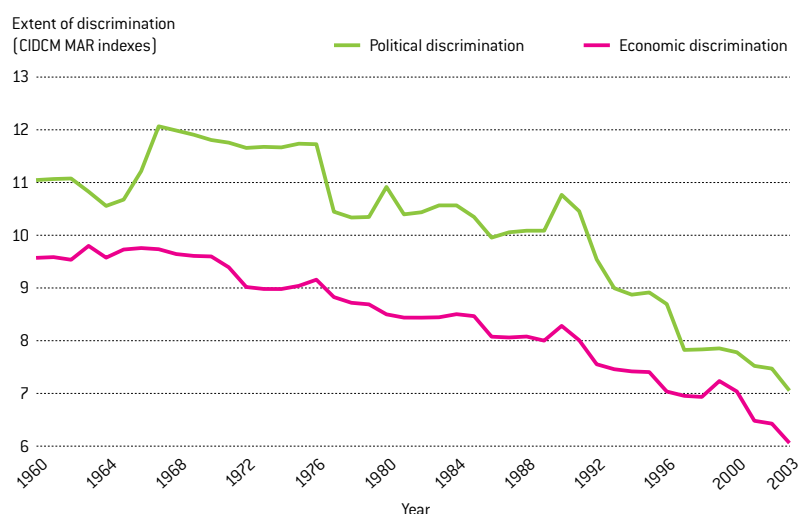
education attained by women 15 years of age and older is only 0.03 and that with GDP per capita is only 0.01. In subsequent chapters, we move to the United Nations Development Programme's Gender Empowerment Measure (GEM), tapping political participation and decision-making power, economic participation and decision-making power, and power over economic resources.²⁶ Although the GEM series goes back only to 1995, it has a number of advantages, including more discriminating interval-level scaling across countries and strong correlations with other model variables. Another measure of growing importance is the Gender Inequality Index of the United Nations Development Programme. In 2008, the R-squared of its association with the GEM was 0.63.

Turning to minorities and ethnic groups, we note that the most extensive database of political discrimination is associated with the Minorities at Risk (MAR) Project at the University of Maryland's Center for International Development and Conflict Management. The project has focused on identifying and describing ethnopolitical, non-state communal groups that meet project-defined criteria as "minorities-at-risk," and on assessing and tracking changes in political and economic discrimination toward them with a five-point scale on each dimension (see Asal and Pate 2005: 30).

Ted Robert Gurr began the MAR project in 1986, and it has had five phases since that time.²⁷ Over the years, the project has dropped some groups and added others as they have gained or lost "at risk" status. Phase V, which began with the release of 2004–2006 data, changed the coding scheme and added 100 additional ethnic groups.²⁸ Because the results are so different from those of earlier phases, the primary database now available for outside users runs from 1960 through 2003 for Phases I through IV. Figure 2.11 uses MAR data from those phases to estimate the extent of both political and economic discrimination globally over time, indicating the general decline in the percentage of the global population subject to such discrimination.

The biggest drop in discrimination shown by the MAR data has been in Europe and Central Asia, where it declined sharply with the breakup of the former multiethnic

Figure 2.11 Global extent of active political and economic discrimination of minorities (1960–2003)



Note: Figure shows population-weighted global values on the political and economic discrimination scales of the Minorities at Risk (MAR) project at the Center for International Development and Conflict Management (CIDCM), University of Maryland. Individual country scores in 2003 ranged from 0–22 on both the political discrimination measure and the economic discrimination measure; higher values indicate greater discrimination. Values for 2004–2006 were excluded because MAR changes in project coding for these years are not compatible with earlier years.

Source: IFs Version 6.68 using the MAR database. IFs database variables are MAREconDiscrimAggreg and MARPolDiscrimAggreg.

communist states. It is interesting to note that the dissolution of the Soviet Union had a very different and more positive impact on minority rights than it did on women's rights (see again Figure 2.10). The MAR data also point to a substantial decline in recent years in ethnic and minority discrimination in South Asia, primarily attributable to changes in India (although caste-based discrimination remains high). Overall, the good news of this analysis is that broader democracy, as represented by the decline in discrimination, has been on the rise widely around the world in recent decades. Recall that we also saw this trend in our analysis of women's political rights, although to a lesser degree (see again Figure 2.10).

In the forecasts that appear in subsequent chapters, we do not use a variable representing discrimination against minorities. As with the CIRI human rights data, the correlations of the MAR series with other key model variables (including income and education) are nearly non-existent, suggesting strong historical path dependencies and cultural or ideational drivers with respect to the treatment of both women and minorities.

Looking Across the Dimensions and Measures

We have seen that there are measures and data series that do help us understand the historical paths and current situations with respect to each of the three ongoing governance transitions or dimensions (although these measures are not always as strong as we would like conceptually or in terms of data quality or extent). In Chapter 4, such measures will also help us develop and initialize our forecasting formulations. Before we can structure such formulations, however, we must better understand the relationships among the dimensions and between them and the broader human development systems. Exploring those relationships as broad literatures understand them is the task of Chapter 3. As a bridge to that chapter, however, we can consider a pair of preliminary questions: Are there existing projects that regularly look across governance dimensions and seek to understand their collective unfolding? What can we say foundationally about the statistical relationships among all of these measures we have been introducing?

The World Bank's Worldwide Governance Indicators project

The best-known integrative effort, the World Bank's Worldwide Governance Indicators project, has developed a set of governance measures that cuts across our three dimensions.²⁹ Since 1996, the WGI project, sometimes known as "Governance Matters" because of its publications by that name, has consolidated many governance indicators from a very broad set of sources into six high-level measures (see Box 2.7). The WGI draws on a large number of perceptions-based governance data sources (31 in 2010) and several hundred individual variables (Kaufmann, Kraay, and Mastruzzi 2010: 2, 4). All data, including proprietary data, are publicly available in the form in which they enter the WGI indicators (Kaufmann, Kraay, and

Box 2.7 Worldwide Governance Indicators

The World Bank's Worldwide Governance Indicators project has developed six composite indicators of broad dimensions of governance. They are:

Voice and accountability—capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

Political stability and absence of violence/terrorism—capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism.

Government effectiveness—capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

Regulatory quality—capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

Rule of law—capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

Control of corruption—capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Source: Kaufmann, Kraay, and Mastruzzi 2010: 4, descriptions in their words.

■ We need to understand the relationship among measures of our governance concepts and between them and broader development processes. ■

■ Many governance measures are reformulated or rescaled too much over time to allow confidence in identifying trends. ■

■ The State Fragility Index shows a relatively high inverse relationship with almost all other indices, suggesting the SFI could be thought of as a broader measure of governance. ■

Mastruzzi 2010: 7). Between 1996 and 2002, the project compiled the indicators biennially. Since then, it has updated them annually. The 2011 indicators cover 215 countries.

The WGI project intends that its six high-level measures represent three significantly discrete aspects of governance. The first two measures (voice and accountability, and political stability and the absence of violence) capture “the process by which governments are selected, monitored and replaced” (Kaufman, Kraay, and Mastruzzi 2010: 4). Whereas the voice and accountability measure quite clearly links to the elements of electoral competition and (especially) participation that the Polity and Freedom House measures capture, and thus relates to inclusion in our conceptual triad, political stability adds content more connected in this volume to our security dimension. The third and fourth WGI measures (government effectiveness and regulatory quality) represent “the capacity of the government to effectively formulate and implement sound policies” (Kaufman, Kraay, and Mastruzzi 2010: 4),³⁰ which obviously is related to our capacity

concept. Finally, the WGI project intends that the fifth and sixth measures (rule of law and control of corruption) indicate “the respect of citizens and the state for the institutions that govern economic and social interactions among them” (Kaufmann, Kraay, and Mastruzzi 2010: 4). Thus, these two also connect with our capacity dimension.

All of the WGI measures, like the Transparency International CPI measure, have serious problems, however, with respect to their use in analysis over time. In addition to the measures being available only since the late 1990s (and therefore providing an historically short time series), their underlying inputs tend to change over time, as do elements of aggregation methodologies. The WGI even rescales its indicators to have a zero mean in each period, so that the world average value will automatically be zero across time. Contrary to much of the discussion and evidence in this chapter showing temporal changes on each governance dimension, Kaufmann, Kraay, and Mastruzzi (2007: 3) argued that “evidence from our individual sources that world averages of governance are not changing much is crucial,

Table 2.2 R-squared values across multiple measures related to governance

	Security measures		Capacity measures		Inclusion measures	
Security measures	PITF	CSP SFI	WDI Rev/GDP	TI CPI	Polity Dem	GEM
PITF* Combined conflict events	–	0.19	-0.12 (PN2)	-0.09 (LN)	-0.02	0.08
CSP** State Fragility Index (SFI)		–	-0.18 (LN)	-0.58 (LN)	-0.30	-0.58
Capacity measures						
WDI*** Revenues/GDP			–	0.08	0.09 (PN2)	0.06
TI† Perceived lack of corruption (CPI)				–	0.42 (PN2)	0.52
Inclusion measures						
Polity Democracy (11 point scale)					–	0.34
UNDP†† Gender Empowerment Measure (GEM)						–

Note: The negative signs indicate a negative direction in the underlying relationship. LN indicates logarithmic relationships. PN2 indicates a relationship especially well captured by a second order polynomial form and that therefore is curvilinear. All others are linear.

*Political Instability Task Force

**Center for Systemic Peace

***World Development Indicators

†Transparency International

††United Nations Development Programme

Source: IFs Version 6.68 using most recent data available at time of writing from sources discussed throughout the chapter.

because it allows us to interpret the *relative* changes in country scores on our aggregate indicators, or groups of countries' scores, as *absolute* changes." In spite of the problem of longitudinal analysis with the WGI series, the measures are available in the IFs database for extended analysis. We will draw on WGI measures for forecasting in this volume, looking especially to government effectiveness to help extend our analysis of state capacity.³¹

Relationships across measures and dimensions of transition

There are many important dynamic relationships among the three governance dimensions central to our analysis—security, capacity, and inclusion—and across the measures that help us represent each of them. Chapter 3 will explore the literature and some of our own analysis with respect to the drivers of each dimension. For now, Table 2.2 provides a preliminary look at interrelationships in the form of cross-sectional statistics called coefficients of determination or, more commonly, R-squared (the R-squared is also the square of the Pearson product-moment correlation). We compute these across some of the major measures introduced in this chapter, using the most recent data years for each measure available at the time of our writing. The table includes the measures closest to those that we will represent in our own forecasting formulations and use in subsequent analysis. The matrix helps us determine the degree to which different measures on the same dimensions overlap and the degree to which different dimensions of governance do, in fact, have discrete characters.

A relatively small number of the relationships in Table 2.2 are very strong.³² There are high negative correlations between the Center for Systemic Peace's State Fragility Index and both the inverse of the Transparency International corruption measure (R-squared of 0.58) and the Gender Empowerment Measure (R-squared of 0.58). In fact, the State Fragility Index shows a relatively high inverse relationship with almost all other indices. This suggests that we may wish to think of the State Fragility Index, which includes variables across security, political, economic, and social domains, as a broader measure of governance, rather than as simply tapping a vulnerability to conflict.

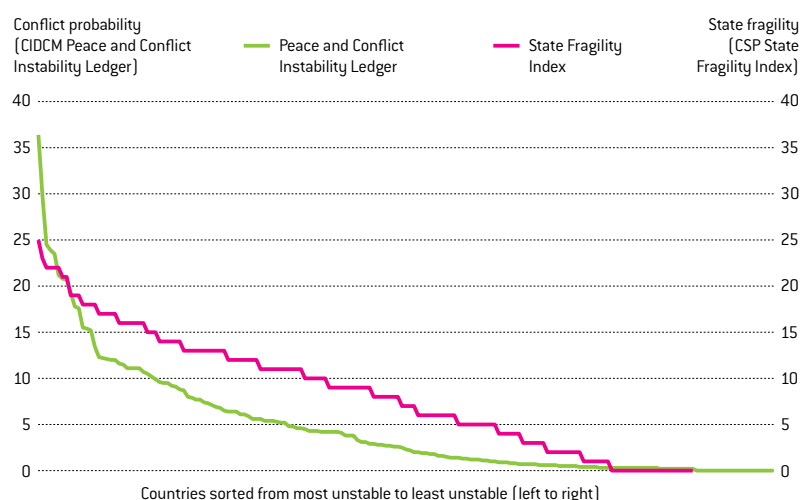
Box 2.8 Comparing two approaches to measuring vulnerability to conflict: Conflict probability and state fragility

The literatures on conflict probability and on state fragility are based on two quite different approaches to assessing vulnerability to conflict. The first attempts to measure the probability of actual onset of conflict in a given year and is generally binary (conflict or not). Measures based on global distributions of conflict occurrences over country-years tend to show a handful of countries with very high scores and to show values dropping off rapidly across the remainder of countries. That pattern reflects the fact that intrastate conflict is a very rare event. Thus, the cross-country distribution of measures that attempt to identify future risk of conflict, such as the Peace and Conflict Instability Ledger measure (tied closely to the Political Instability Task Force framework of actual occurrences), tends to follow a power-law relationship form (rapid decrease beyond the most vulnerable countries). Our own measure of conflict probability, introduced in Chapter 4, will also have this characteristic.

The second approach measures vulnerability as a broader index of state fragility rather than as the probability of conflict. Values, such as those of the State Fragility Index, are distributed more linearly across countries than in the conflict probability approach (although state fragility measures also tend to portray a small handful of states as especially fragile or even failing). Our own measure of state performance risk will behave similarly.

Figure 2.12 shows the distribution of countries in 2009 on the Peace and Conflict Instability Ledger (conflict probability) compared to the State Fragility Index. The difference in distributional form between the two measures is one reason for the relatively low correlation between measures reflecting the two approaches. A second and perhaps even more important reason is that the measures of state fragility do not always anticipate actual conflict well. For instance, Tunisia, Egypt, and Libya tended to have low values of fragility or vulnerability on such measures in 2010, just before the outbreak of revolutions in each (see again Table 2.1).

Figure 2.12 Distributional shapes of two measures of vulnerability to conflict: Conflict probability and state fragility



Note: The Center for International Development and Conflict Management (CIDCM) provides a measure in the tradition of conflict probability in its Peace and Conflict Instability Ledger, while the Center for Systemic Peace (CSP) provides a measure of state vulnerability in its State Fragility Index. In the figure above, countries are arrayed along the left-side y-axis by their estimated risk of experiencing major bouts of political instability or armed conflict between 2010–2012 as assessed by the Peace and Conflict Instability Ledger (risk scores for that period ranged from 0.2–36.4, with higher scores indicating greater instability). The same countries are arrayed along the right-side y-axis according to their scores in 2010 on the State Fragility Index (scores for that year ranged from 0 to 25, with higher scores indicating greater fragility).

Source: Peace and Conflict Instability Ledger data from Hewitt, Wilkenfeld, and Gurr 2012b; State Fragility Index data from Marshall and Cole 2011. Compiled by the authors.

■ **The correlations among central measures of governance dimension are not high, reinforcing our understanding of them as representing separate dimensions.** ■

There is a relatively high relationship also between gender empowerment and reduced corruption (R-squared of 0.52), as well as a reasonably high one between gender empowerment and democracy (R-squared of 0.34). Although not shown in the table, we also calculated the correlations of the CIRI women's political rights variable with all variables in the table and found no R-squared above 0.12, reinforcing the earlier discussion that the measure is remarkably unrelated to other variables that might be considered were we to forecast it.

The relationships between the two measures that we are associating with each governance dimension tend to be quite low, suggesting the complementarity of the pairs of measures in each set. The highest relationship within dimensions is between democracy and gender empowerment (R-squared of 0.34). Because both measure security, it is somewhat surprising that one of the lower correlations (R-squared 0.19) of the State Fragility Index is with the Political Instability Task Force measure of intrastate conflict events (see Box 2.8 and Figure 2.12 [on p. 41] for more on differences between two major approaches to measuring security).

Finally, it is interesting that the correlations among what we might consider especially central measures of each governance dimension (conflict for security, revenues as a portion of GDP for capacity, and democracy for inclusion)

are not high. In fact, the R-squared values do not exceed 0.12 for any of them. This weak correlation reinforces our understanding of them as representing separate dimensions. Of course, there are very important mutually reinforcing dynamics across them that may involve time delays, thereby reducing correlations in any given year. Chapter 3 returns to that analysis.

Broader Human Well-being

Ultimately, governance is instrumental rather than an end in itself. Its fundamental end is advancement of human development and associated well-being. Without sorting out the important question of how much contribution governance makes to that development (an issue to which we return in later chapters), it is useful to sketch briefly some of the trends with respect to well-being.

The first three **Patterns of Potential Human Progress** volumes treated the issues of global poverty, education, and health, looking in considerable depth at historical patterns and forecasts. Those volumes showed that the global trends and those of most regions have been remarkably favorable. Table 2.3 summarizes the advance in selected variables for all World Bank regions. It contains values over a 50-year period for key aspects of human well-being related to the three dimensions of the Human Development

Table 2.3 Human well-being over time in developing regions and high-income countries (1980 to 2010 for the HDI; 1960 or 1961 to 2010 for other measures)

	Life expectancy (years)		Education years (adults 15+)		GDP per capita at PPP (thousand 2005\$)		HDI (0–1 range)		Available calories (per person per day)	
	1960	2010	1960	2010	1960	2010	1980	2010	1961	2010
East Asia and Pacific	49.0	73.2	2.3	7.8	0.5	6.0	0.38	0.64	1560	2848
Europe and Central Asia	66.0	70.2	4.9	9.4	3.9	10.6	0.50	0.70	2892	3231
Latin America and the Caribbean	57.2	74.6	3.0	8.2	4.4	10.1	0.57	0.70	2256	2903
Middle East and North Africa	48.1	71.8	0.8	6.8	3.2	6.4	0.41	0.63	1952	2988
South Asia	44.3	65.6	1.1	5.2	0.7	2.9	0.31	0.51	1999	2335
Sub-Saharan Africa	41.8	54.0	1.5	5.1	1.3	2.0	0.29	0.39	2055	2305
High-income countries	69.3	80.4	6.8	11.2	10.2	33.4	0.75	0.87	2870	3437
World	54.6	70.0	3.4	7.6	3.4	9.9	0.45	0.62	2120	2791

Note: All values are population-weighted averages. For East Asia and Pacific, life expectancy values in 1960 and calorie values in 1961 reflect the disruption of the years in China's Great Leap Forward. The new HDI formulation that we use has data back only to 1980. Values for 2010 are data except for calories, which are IFs forecasts tied to data from earlier years.

Source: IFs Version 6.68 using data from World Development Indicators (life expectancy and GDP per capita), Barro and Lee 2010 (education years); United Nations Development Programme (Human Development Index); and Food and Agriculture Organization of the United Nations (available calories).

Index (HDI)³³—namely health, knowledge, and a decent standard of living; it also shows the HDI itself (Fukuda-Parr 2003; ul Haq 1995; UNDP 2011) and the average availability of calories per capita.³⁴

Although aggregate progress on the HDI has been least in sub-Saharan Africa (where HIV/AIDS has significantly slowed advance in life expectancy and also helped bring down economic performance), it has been evident and even strong across not just the rich countries of the world, but even more throughout the developing world. In fact, without downplaying the tremendous levels of human suffering associated with a billion people still living in extreme poverty, the aggregate story of human development across the last 50 years is remarkably positive. Global life expectancy has risen by two decades from 50 to 70 years; the average years of education of adults age 15 and older has more than doubled from 3.4 to 7.6; and daily calorie availability has moved, on average, from a barely life-sustaining 2120 (and because that was an average, from non-sustaining levels for huge numbers of people) to an increasingly obesity-inducing 2791 (even though a billion people also remain undernourished).

Of course, attributing all of this progress in broader human well-being to governance improvement, such as reduced corruption, is not remotely possible. Technological change was rapid across the period and certainly pushed life expectancy and incomes upward. The processes of capital accumulation also made significant contributions to the upward march of income, and many of the variables (like health and education) tied to income and globalization processes facilitated the spread of technology and capital. In fact, some point to the “Bangladesh paradox” of rapid developmental progress in the face of high corruption levels, a juxtaposition that might lead one to question whether there is a linkage between governance and well-being (World Bank 2007).

Can we attribute any of the progress in human well-being to improved governance? There have been so many eras in human history when bad governance and associated domestic turmoil and international conflict have greatly slowed technological advance, destroyed existing capital, killed and maimed large numbers,

and disrupted all types of flows across borders that we can conclude without hesitation that poor governance frequently reduces levels of well-being. The positive contributions of good governance, although not always as dramatic, are also obvious. Yet, the complexity of many interacting and bidirectional causal relationships makes understanding the positive and negative contributions incredibly difficult. Understanding these relationships is the subject of the rest of the volume.

Conclusion

We have seen in the previous chapter and this one that there have been ongoing transitions associated with each of the three dimensions of governance, and that those transitions generally have been unfolding favorably. At least in recent years, intrastate conflict has been subsiding globally and, in fact, has done so in all developing regions, even while average rates for countries in South Asia are very high relative to the period before 1980 and in absolute terms, and while conflicts in Africa are numerous. This general decline in intrastate conflict comes at the end of a cycle of conflict rise and fall of the type that we have seen several times since the Congress of Vienna in 1814–1815 (frequently considered the beginning of the modern state system), with the most recent rise coinciding to some considerable degree with the era of post-World War II decolonization and the proxy-country struggles of the Cold War. Therefore, the long-term pattern does not preclude a rise of intrastate conflict again in the next 50 years for a variety of reasons, including those that Chapter 6 will explore.

State capacity, our second dimension of governance, also generally has been advancing. In the last two centuries, the ability of states to mobilize revenues has, on average, substantially risen around the world. In the last 50 years, this has been true in high-income countries, while an upward but more mixed pattern has characterized the developing world. With China’s movement away from central planning and economic control, there has actually been a decline in revenues as a portion of GDP in China, and therefore East Asia, while the great influx of foreign aid into sub-Saharan Africa complicates the assessment of resource

■ *Ultimately, governance is instrumental rather than an end in itself. Its fundamental end is the advancement of human well-being.* ■

■ *The aggregate story of human development across the last 50 years is remarkably positive. For example, global life expectancy has risen from 50 to 70 years.* ■

■ *Understanding the complex bidirectional relationships across dimensions of governance is the subject of the rest of this volume.* ■

mobilization strength there. Our ability to assess broader historical progress on state capacity or effectiveness beyond revenue mobilization (including variables that assess corruption and expenditure efficiency) is unfortunately fairly weak, with measures that have generally been in existence for less than 20 years and that often have not been structured to allow consistency in longitudinal analysis. As structured, however, they do not suggest recent progress.

By contrast, the clearest advances in governance transition have been increases in inclusion. Over both the long term and in the last 50 years, there have been major advances for formal democracy. These are most especially obvious when analysis recognizes that almost all of the contemporary states that did not exist in earlier periods were autocratic (a very large portion were colonies); therefore, when our analysis codes them as autocratic in the evaluation of trends and cycles, the global and regional advances are especially obvious. Despite some progress over the longer term, not just in the most recent years, the region of the Middle East and North Africa nonetheless

stands out as an especially undemocratic one today, an issue to which the volume will return. Expanding the exploration to consider thicker democracy—including the enhancement of the rights of women and the reduction of overt discrimination against minorities—reinforces a conclusion that the last 50 years have been ones of significant progress for inclusion on many fronts.

Human well-being has surged ahead in most of the world, in part on the foundation of these advances in governance. Issues we need to better understand include: (1) the importance of further improvements in governance to continued progress in well-being (and vice versa); and (2) the extent to which broader systemic stresses (including aging populations, energy transitions, water scarcity, and climate change) might challenge societies and their governance with respect not only to such continued progress, but potentially also to maintaining past gains. Our next task in this volume, and the focus of Chapter 3, is to assess what we know about the dynamics of these interacting human systems.

1 Portions of this chapter benefited greatly from background working papers provided by IFs team members Keith Gehring and Mariko Frame.

2 Websites for these four projects are at: <http://www.correlatesofwar.org/> (COW) http://www.pcr.uu.se/research/ucdp/datasets/ucdp_prio_armed_conflict_dataset/ (UCDP/PRIO) <http://www.systemicpeace.org/warlist.htm> (ACI) <http://globalpolicy.gmu.edu/political-instability-task-force-home/> (PITF)

3 With respect to Figure 2.2, some might wish to see population-weighted averages rather than simple or unweighted averages. Those do, in fact, convey a still different image: big spikes in East Asia and Pacific in the 1960s and 1970s (related significantly to conflict in China) and a lower rise for South Asia after 2000. Population-weighted values tend to distort regional pictures when a single country is very large.

4 Data for the period from 1995 through 2011 are available at <http://www.systemicpeace.org/inscr/inscr.htm>.

5 The treatment of non-citizens is an issue that measures are not likely to reflect. For instance, in a number of countries in the Middle East, including Qatar and Saudi Arabia, non-citizens constitute a very large part of the total population, but official data do not report their treatment (and often mistreatment). In Europe and the United States, some foreign-born populations also are very insecure, especially those present illegally.

6 The Political Terror Scale has been produced by a group of human rights scholars and students at Purdue University since the early 1980s; information about the scale is available at <http://politicalterror.org>. For a measure of terrorist incidents rather than state-directed terror, see the Global Terrorism Database of a consortium led by

the University of Maryland at <http://www.start.umd.edu/gtd/about/>. The Global Terrorism Database uses a very broad definition that does not require casualties.

7 The website for the CIRI Human Rights Dataset is <http://www.humanrightsdata.org/>.

8 A third dataset dealing with violence and repression is the UCDP One-sided Violence Dataset available through the Uppsala Conflict Data Program at Uppsala University. This dataset includes armed attacks on civilians not only by governments, but also by other formally organized armed groups (see http://pcr.uu.se/research/ucdp/datasets/ucdp_one-sided_violence_dataset/).

9 Analysis by income level within the PTS project also shows some increase in political terror, especially since 2000, in high-income countries. This increase is almost entirely attributable to the

- project's coding of the United States over time, and shows up in PTS only via the contribution from the Amnesty International reports, not that based on reporting by the U.S. Department of State. A U.S./high-income country decline with respect to physical integrity rights also appears in CIRI data (presumably again because of the use of Amnesty International reports and related to the Guantanamo detainment camp and CIA foreign prisons). And a decline in respect for rights is apparent for both South Asia and the developing countries of Europe and Central Asia. Governance is a highly politicized field of study, however, and there is reason to question whether political terror in the United States rose during the 2000–2008 period from a very low level to one very nearly equal to the average in the Middle East and North Africa, as such measures suggest.
- 10 See <http://www.unodc.org/unodc/en/data-and-analysis/United-Nations-Surveys-on-Crime-Trends-and-the-Operations-of-Criminal-Justice-Systems.html>.
 - 11 Patterns of prisoners per 100,000 are quite different. The highest values per 100,000 in 2006 were in the developing countries of Europe and Central Asia (347), high-income countries (216), and Southern Africa (515). Much lower values characterized other developing regions, including Latin America (73) and South Asia (11). See again <http://www.unodc.org/unodc/en/data-and-analysis/United-Nations-Surveys-on-Crime-Trends-and-the-Operations-of-Criminal-Justice-Systems.html>.
 - 12 The World Bank's World Development Indicators are available at <http://data.worldbank.org/data-catalog/world-development-indicators>. They include over 1,000 indicators of demographic, economic, and social variables for 216 developed and developing countries from 1960–2011, and are therefore a critical source of data for the PPHP volume series and all studies of development.
 - 13 Although WDI source notes suggest that the WDI current revenue data are for general government (that is, both central and local levels), the comparisons we made of those data with OECD data suggest otherwise.
 - 14 The shares of local government spending in the total for developing countries tends to be very considerably lower than it is for high-income countries (North, Wallis and Weingast 2009: 10–11; Chapter 4 returns to this in discussion of our forecasting).
 - 15 The National Bureau of Statistics of China (NBS 2011) reports that Chinese revenues were 31.1 percent of GDP in 1978, falling to 10.3 percent in 1995, before rising to 20.1 percent in 2009. The values from the World Development Indicators for China underlying Figure 2.3 begin in 1990 and are quite different, showing only 5.9 percent in 1995, with 11.9 percent in 2009 and an extraordinary jump to 18.1 percent in 2010.
 - 16 Pension payments to government employees make up a significant share of transfer payments in many developing countries (including India and Brazil).
 - 17 Gauthier and Wane (2009) discussed the phenomenon in Chad, and Ablo and Reinikka (1998) discussed it for Uganda.
 - 18 IFs is not able to forecast the quality of public sector personnel performance. In fact, it is difficult even to measure it. UN DESA (2005:111–115) reported on a database project that rather laboriously pulled together expert judgment-based information for a total of 51 countries, but without any significant coverage across time. Not surprisingly, analysis with it shows clearly that merit systems and (to a lesser degree) higher salaries are associated with higher quality and integrity of government.
 - 19 Polity 2011 country regime codes can be accessed via link at <http://www.systemicpeace.org/inscr/inscr.htm>.
 - 20 “Democratic deficit” is a term coined by David Marquant (see Mény 2002) that was first used to describe the shortage of direct democracy in the institutions of the European Union. We use it in our work for analysis of the gap between expected and actual democracy in countries (see Chapter 4).
 - 21 Landmark UNDP reports prepared in 2002, 2003, 2004, 2005, and 2009 (see <http://www.arab-hdr.org/>) presaged the rupture in state-society relations that became the Arab Spring. The 2012 Arab Human Development Report focused on the importance of human security for both improving governance and achieving development outcomes.
 - 22 See this statement of purpose as well as definitions and a methodology summary for the Freedom House 2011 survey at http://www.freedomhouse.org/template.cfm?page=351&ana_page=379&year=2011.
 - 23 It is likewise possible that elites representing relatively equal segments of a highly polarized population alternate in power and in policy orientations, with very limited regard for their political and social “enemies”—not only in an Argentina or a Bangladesh, but also in the United States.
 - 24 CIRI human rights variable descriptions are available at http://www.humanrightsdata.org/documentation/ciri_variables_short_descriptions.pdf.
 - 25 CIRI data are available at <http://www.humanrightsdata.org>.
 - 26 For discussion of the GEM, which is provided in some UNDP Human Development Reports, see http://hdr.undp.org/en/statistics/indices/gdi_gem/. The GEM components are women's share of parliamentary seats, women's share of managerial and technical positions (public and private sector), and female-male income ratio. The reach of this measure beyond the strictly political realm and into socioeconomic variables might be seen as inappropriate for a measure of governance inclusiveness, but we conceptualize governance and inclusion quite broadly.
 - 27 Phase I tracked 227 ethnopolitical non-state communal groups over the period from 1945–1989; Phase IV covered 287 groups from 1998–2003. Through 2003, determination of at-risk status was based on the following criteria: the group's legal and political status (e.g., whether denied recognition or explicitly restricted, such as Arabs in Israel) and whether the ethnopolitical group in question was subject to current discrimination; was disadvantaged due to past discrimination; was an advantaged minority; and whether it supported political organizations advocating greater group rights. See pages 14 and 15 of the 2003 Minorities at Risk Dataset Users Manual available at http://www.cidcm.umd.edu/mar/margene/mar-codebook_040903.pdf. Asal and Pate (2005: 28–29) identified 337 groups in 124 countries over the lifetime of the project through Phase IV.
 - 28 Beginning with the 2004–2006 release, the criteria for inclusion were broadened; see page 1 of the 2009 Codebook, available at http://www.cidcm.umd.edu/mar/data/mar_codebook_Feb09.pdf. There is a data update for 2004–2006 on the web at <http://www.cidcm.umd.edu/mar/data.asp>, but it is not compatible with the earlier years. The MAR website indicates that the project intends to recode earlier years.
 - 29 Similarly cutting across dimensions of transition, the Ibrahim Index has examined African governance since 2000 across what it calls four pillars: safety and rule of law, participation and human rights, sustainable economic opportunity, and human development. See the project's methodological discussion at <http://www.moibrahimfoundation.org/en/section/the-ibrahim-index/methodology>.
 - 30 Joshi (2011a) discussed how the structure of these measures reinforces the free-market orientation of the World Bank and associates sound policies with the perspective of foreign investors and multinational corporations. For instance, eliminating a minimum wage would improve a country's rating on the regulatory quality measure.
 - 31 Because historical values of WGI measures are not consistent across years, we initialize the model with only the most recent values available at the time of writing (not with the trend in them) and, using formulations tied to those initial conditions, are able to forecast meaningfully over time.
 - 32 Several measures that the chapter has introduced and that are not in Table 2.2 correlate highly with some that are. For instance, the World Bank's governance effectiveness measure relates to the inverse of the Transparency International Corruption Perceptions Index with an R-squared of 0.85, and we look in forecasting to a representation of the governance effectiveness measure as another indicator of capacity. Similarly, the relationship of the Freedom House measure with Polity's democracy index has an R-squared of 0.80, and we similarly use it as an alternative measure of inclusion later in the volume.
 - 33 The HDI has known weaknesses as a measure of human well-being, including an inattention to distribution (which other UNDP measures address) and issues such as protection of cultural minorities (which overlaps with our inclusiveness dimension of governance).
 - 34 The HDI combines three sub-dimensions: a long and healthy life (measured by life expectancy at birth); knowledge (tapped by mean years of schooling and expected years of schooling); and a decent standard of living (represented by the logarithm of Gross National Income per capita). It is important to note that all three of these measures tend to saturate with advance in income. The United Nations Development Programme's Human Development Report Office reformulated the measure in 2010. Unless we specify otherwise, this volume uses the new approach.



The Dynamics of Change

The interactions that connect the three dimensions of governance and that imbed these dimensions in human development systems more generally often create mutually reinforcing dynamics, potentially setting up vicious or virtuous cycles. Zimbabwe's development pathway since the transition from white minority rule in 1980 illustrates the nature of vicious cycles, connecting conflict, poor governance more generally, and development failures. Civil strife—including ethnic conflict such as the Matabeleland Massacres of 1982–1985 and overlapping interparty, university-based, and industrial conflicts—continued after the transition to majority rule. Between 1980 and 2000, the economy stagnated in per capita terms. HIV/AIDS became epidemic, with about 25 percent of adults infected by 1997. Infant mortality, which had fallen to 50 per thousand in the late 1980s, rose to 70 per thousand by the late 1990s, while life expectancy fell from over 60 to 43 in 2003.

After 2000, government policies further failed on many fronts. Reacting to the ongoing control of most arable land by a small number of white settlers, President Robert Mugabe, the freedom fighter who became an election manipulator, created turmoil through an incompetent land seizure and redistribution program. The government added an internationally condemned program to forcibly clear urban slums. Partly as a result of such activities, the economy deteriorated rapidly for a decade—GDP per capita dropped by one third, capital fled, and hyperinflation took hold. A major cholera outbreak occurred in 2008. Overall, hundreds of thousands of people migrated abroad, mostly to South Africa. A vicious cycle of insecurity, incapacity, and exclusion in governance also generated a downward spiral of ineffective governance and increasing ill-being.

Yet the country has tremendous agricultural potential, and there are some positive forces at work. It has now abandoned its own currency so as to bring inflation under control, and

economic growth resumed at an annual rate of nearly 6 percent in 2010 as the economy began to recover. There are extensive international sanctions against the Mugabe government and much pressure on it to reform. Following elections with many irregularities and under considerable domestic and international pressure, Mugabe agreed to a political arrangement in 2008 that, while it did not come close to redressing the authoritarian behavior of his government, allowed opposition leader Morgan Tsvangirai to survive and to participate in some limited aspects of decision-making. The security forces are disciplined and well-organized, and provide security at least to those who do not challenge the government. Moreover, some societal foundations for a better future are in place. For instance, primary education is near universal, and the average years of formal education of adults age 15 and older doubled to approximately 7.7 between 1980 and 2010. It is too early to say that virtuous cycles have clearly begun to replace the vicious ones, especially given still another irregular re-election of Mugabe in 2013, but it is definitely possible. Whether feedback cycles turn definitively virtuous will depend heavily on the ultimate process of transition from Mugabe and the character and quality of the next government.

The purpose of this chapter is to explore the insights that analysts have gained concerning the interaction of governance and development variables (such as those we noted in Zimbabwe) and the dynamics they set up. Doing so is foundational for our elaboration of forecasting methods in Chapter 4 and our own forecasts thereafter.

The Dynamics Underlying Governance and Development

As Chapters 1 and 2 discussed, the modern global political system consists predominantly of internally peaceful sovereign states with at least some basic capacity and strong pressures for inclusivity. Looking forward, the consolidation or deepening of security, capacity, and inclusion will interact closely with functional performance of governments and the well-being of peoples. Multiple possible causal relationships connect the interacting elements of governance itself and also link governance with human well-being. These relationships

help create either vicious or virtuous cycles across many dimensions of governance and human development; changes in governance character and quality often can be the linchpin variable in interrupting vicious cycles and setting up or maintaining virtuous ones.

Yet, our understanding of the relationships among these highly correlated concepts and forces is often contentious because the effects of their interaction and the direction of causality are hard to sort out. The long-term, or deep drivers, of each concept also often differ from the more immediate pressures for change. Moreover, many additional variables shape their evolution and interaction, creating the possibility that relationships are spurious (the result of third variables). For example, changing demographic and economic structures (including variation in dependence on raw materials exports) can greatly affect the extent of security, the capacity, and the inclusiveness of governments, and the level of human well-being. So, too, can deep historical and culturally related patterns of social interaction and the extent of social fragmentation in a society. And not least, neighbors and the broader global system often affect domestic developments.

The causal connections set out below are therefore less fully understood and more contentious than we would like. Nevertheless, they lie at the heart of any effort to look at the future of governance and its functioning. As in earlier chapters, we begin our look at governance in terms of its security foundations; then, we turn to its functional capacity and its inclusiveness.

Security

In Chapter 2, in the course of introducing measures of, and vulnerability to, conflict and showing historical patterns, we distinguished between two different types of measures. The first, exemplified by the work of the Political Instability Task Force (PITF), focuses directly on historical conflict (see again Box 2.2).

As also discussed in Chapter 2, a small industry has arisen to assign values and ranks to countries with respect to their broader performance and resultant *vulnerability* to violent internal conflict, an approach that provides the second type of security measure in this volume (see again Box 2.3). That analysis involves

■ *The dimensions of governance strongly interact with each other—and with human development and well-being—in either vicious or virtuous cycles.* ■

■ *The causal connections among governance dimensions and between them and well-being are close but not fully understood.* ■

■ Unfortunately, most vulnerability indices do not strongly correlate with the actual outbreak of violence. ■

■ Regime type appears to be a key variable for vulnerability to conflict, with anocracies being particularly subject to instability and failure. ■

the creation of multiple indices, variously and confusingly referred to as state weakness, state fragility, state failure, or by other names.

In the discussion here of the determinants of insecurity, we will emphasize the analysis of actual conflict, or the first type of measure, not the vulnerability to it. We do so because measures of vulnerability are indices that include a broad range of economic, social, political, and security elements; it is not surprising that many of these same elements correlate very highly with the indices—and (as we saw in Chapter 2) it is somewhat distressing that most of the indices do not strongly correlate with the actual outbreak of conflict.¹ Here we undertake analysis that tries to identify the key variables underlying intrastate conflict episodes as a foundation for building our own formulation in Chapter 4 (where we also build our own broader index of vulnerability to conflict).

Our discussion begins with some attention to quantitative analysis of key drivers from two large-scale and integrative research efforts, the PITF project and a project at the Peace Research Institute Oslo (PRIO). It then moves to the larger literature and some historical data visualization around a few selected potential drivers.

Integrated quantitative analysis of determinants of intrastate conflict

The five phases of the PITF project have progressively refined and extended its analysis. The conclusions of Phase I are perhaps best known through repeated references to them. In a working paper, the project team for what was then known as the State Failure Task Force concluded that the

single-best model [of intrastate conflict] relied on three variables: (1) openness to international trade, (2) infant mortality, and (3) level of democracy. The study found that a combination of these variables can correctly discriminate between failure and nonfailure cases some two years in advance for about two-thirds of the cases. . . (Esty et al. 1995: viii)

By Phase IV of the PITF project, Goldstone et al. (2010) described results of work over

many years with a refined analysis that reported 80 percent accuracy with respect to past conflict. The project found that the key variable was regime type and that anocracies, especially those with sharply polarized factional competition, were particularly subject to instability or failure. The report also noted that infant mortality (logged and normalized to the global average); being in a conflict-ridden neighborhood (defined as four or more neighbors in conflict); and state-led discrimination were statistically significant drivers of historical state failures. (Although we use the term “drivers” here, and although much of the research we discuss attempts to differentiate causal relationships from mere correlation, we emphasize that causality is extremely difficult to identify. For example, abnormally high infant mortality may well be a proxy for a broader cause, such as poor government services and/or discrimination against certain groups, as was the case in Zimbabwe). It is interesting to note that the PITF analysis found very similar drivers across all types of state failure.

In part benefitting from the work of the PITF, the Peace Research Institute Oslo project found a similar set of drivers of conflict. Relying on the UCDP [Uppsala Conflict Data Program]/PRIO Armed Conflict Dataset, Hegre et al. (2013)² pointed to population size (larger countries like India almost inherently have more conflict); infant mortality; demographic composition (notably youth bulges); education level; oil dependence; ethnic cleavages; and neighborhood characteristics (good or bad patterns on some of the other drivers). They treated recent conflict history and neighborhood conflict as endogenous variables in their model.

Although the PITF and UCDP/PRIO variable sets overlap, they are not identical. Both sets direct attention to human development via variables such as education level and, especially, infant mortality, and to patterns of social division (factional competition and ethnic cleavages, respectively). Yet PITF devotes much more attention to regime type and UCDP/PRIO to oil dependence.

It is not possible here to fully review the larger literature to which these studies link or those drivers to which both PITF and UCDP/PRIO devote little or no attention. Instead, we will

selectively discuss some of the important drivers of conflict, noting that these drivers are heavily interactive and that any one factor can provide only limited forecasting power.

Human development and conflict

In our overall conceptual framework, as well as in our discussion of Zimbabwe, we have emphasized the possibility of both virtuous and vicious cycles not just among the dimensions of governance, but also between them and human development and well-being. Using income as a broad measure of human development, Marshall and Cole (2009: 14) found in data from 2004 a very strong inverse relationship between the logarithm of per capita income and state fragility (an adjusted R-squared of 0.76).³ Similarly, we find an R-squared of 0.67 linking the 2004–2006 values in the Brookings Institution’s Index of State Weakness in the Developing World to the Human Development Index (HDI), a measure that we discussed in Chapter 2 as being the more complete indicator

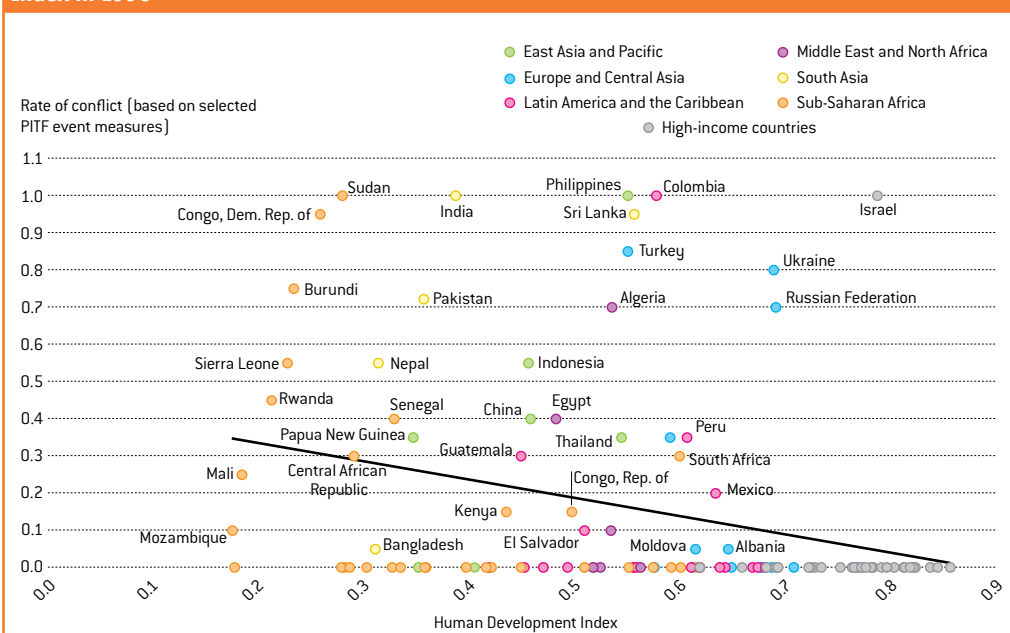
of human development that we will use throughout the volume.

Yet, as we have emphasized, such indices of vulnerability to conflict combine many dimensions of variables (including economic, social, political, and security), and we might better consider the indices to be measures of broader societal strength or resilience than simply of security. Thus, Figure 3.1 turns instead to a cross-sectional relationship between the rate of conflict from 1990 to 2010 (calculated by International Futures [IFs] from PITF data) and the HDI in 1990 at the beginning of that period. Such a cross-sectional analysis can help us visualize whether higher levels of development tend to be associated with lower subsequent conflict rates across a broad range of development levels. As we would expect, the relationship is quite steeply downward sloping.

The relationship is not nearly as strong (R-squared of 0.09) as that between human development and generalized indices of vulnerability to conflict, however. Many

■ Human development and intrastate conflict are highly and inversely correlated. ■

Figure 3.1 Historical rate of intrastate war (1990–2010) as a function of the Human Development Index in 1990



Note: The historical conflict rate is from IFs processing of Political Instability Task Force (PITF) data on revolutionary war, ethnic conflict, and genocides/politicides. Because conflict is a dichotomous condition (yes or no), we used the episodes of conflict from 1990–2010 to compute historical country averages across these years, coding annual conflict of any type as 1. The Human Development Index (HDI) from the United Nations Development Programme is used as the measure of human development (values below 1.0 indicate female disadvantage). Conflict rate = $0.433 - 0.489 * HDI$; R-squared = 0.09.

Source: IFs Version 6.68 using conflict data from the PITF State Failure Problem Set and 1990 HDI values from the United Nations Development Programme. IFs database variables are *SFIntlWar1990–2010* and *HDI*.

■ Many countries moving into the lower-middle-income group face ongoing or even growing insecurity. ■

countries with quite high HDI values have recently experienced or are suffering from conflict, including Algeria, Colombia, Israel, Mexico, the Philippines, Russia, Sri Lanka, and Turkey. What clearly distinguishes them from countries with low HDI scores, such as Afghanistan, Burundi, Democratic Republic of Congo, Somalia, Sudan, and Uganda, are their broader governmental and social strengths. Very few countries with high HDI values are likely to collapse or even lose broader governance capability as a result of the insecurity of past or current conflict.

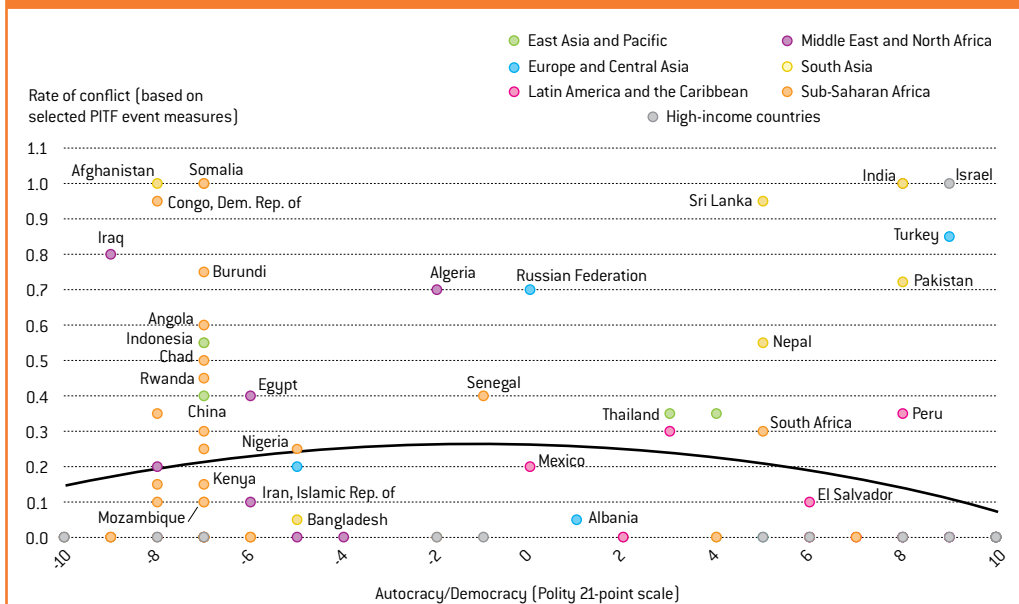
Yet, moving up the development ladder—as measured by the HDI or income level alone (or by other measures of human development such as reduced infant mortality)—does not guarantee security. In fact, an increasing global problem is the set of countries, such as Pakistan or the Sudan, that by World Bank reckoning have moved into lower-middle-income status but face ongoing or even growing insecurity.

Inclusion (especially democracy) and conflict

A very large literature looks at the important relationship between inclusion and security. It has been posited that there is a “domestic democratic peace” in which better governance (particularly a high level of democracy) is associated with a lower risk of internal armed conflict (Hegre, et al. 2001). We have looked at the relationship between democracy and indices of vulnerability to conflict and found a fairly strong relationship, typically in the form of an inverted-U. For instance, the IFs measure of such vulnerability or risk and the Polity democracy variable relate to each other in 2010 with an R-squared of 0.53.

Again, however, indices of vulnerability often include democracy, making the high relationship somewhat tautological. The relationship between democracy and conflict is much weaker when we turn to actual conflict levels. Figure 3.2 shows the inverted U-shaped relationship between democracy in 1990 (using the 21-point Polity

Figure 3.2 Historical rate of intrastate war (1990–2010) as a function of autocracy/democracy in 1990



*Note: The historical conflict rate is from IFs processing of Political Instability Task Force (PITF) data on revolutionary war, ethnic conflict, and genocides/politocides. Because conflict is a dichotomous condition (yes or no), we used the episodes of conflict from 1990–2010 to compute historical country averages across these years, coding annual conflict of any type as 1. The composite 21-point Polity Score is used as the measure of regime type (-10 through -6 indicates autocracy; -5 through +5 indicates anocracy; +6 through +10 indicates democracy). Conflict rate = $0.265 - 0.00375 * \text{Autocracy/democracy} - 0.00155 * \text{Autocracy/democracy}^2$; R-squared = 0.04. Many points on the graph represent multiple countries, especially those with a zero rate of conflict at the autocratic and democratic ends of the Polity scale (hence the generation of the inverted-U shape).*

Source: IFs Version 6.68 using conflict data from the PITF State Failure Problem Set and 1990 autocracy/democracy values (Polity Scores) from the Polity Project. IFs database variables are SFIntlWar1990–2010 and PolityCombined.

measure) and subsequent conflict, for which the R-squared is only 0.04. Although there does appear to be some minimal increased risk of conflict in passing through an anocratic middle-ground (defined as between -5 and +5 on the 21-point Polity scale), Figure 3.2 suggests that greater risk may face countries that have only somewhat relaxed authoritarianism but not reached anocratic status; a number of countries with quite high conflict rates are clustered around Polity Scores of -7, including Somalia, Burundi, Angola, Indonesia, Chad, and Rwanda.⁴

Exploring more deeply this U-shaped relationship, Marshall and Cole (2009: 12) noted that anocracies have been about six times more likely than democracies, and two-and-a-half times more likely than autocracies, to have new outbreaks of what they call societal warfare. They have also been three times more likely to revert to autocracy than are democracies.

Further, Marshall and Cole suggested that the relationship between governance and conflict may interact with other variables. They found that in the era of globalization (defined by them as the period since 1989–1991), there have been far fewer breakdowns of anocracies. They attributed this to changes in the global system, especially efforts by system leaders to support stability and conflict resolution (an argument very closely related to our discussion in Chapter 7 of “tipping the balance”).

Contrast that hypothesis for the recent period of reduced intrastate conflict, however, with a demographic explanation based on work by Cincotta (2011). Cincotta pointed out that, between the time of the political transitions of Eastern and Central Europe (c. 1990) and the Arab Spring (2011), the median population age of very few countries passed from youth-dominated societies through an intermediate age structure (with median age between 26 and 35) toward more mature age structures. Cincotta argued that it is young adults in societies with an intermediate median age (one might call it either a “sweet spot” or a “danger zone”) who generally give rise to democratic transitions and the turmoil or conflict often associated with them. More commonly (see, for example, Cincotta, Engelman, and Anastasion 2003: 43), it has been emphasized that the most youthful populations, those with a youth bulge (sometimes defined as a population in which young adults, those between

Box 3.1 Democracy and international conflict: A (useful) digression

There is a widespread belief that democracy, as an end-state, is good for peace (Malloch-Brown 2003), but research has shown that democracies go to war about as often as autocracies and sometimes attack or invade other countries directly or covertly (Blum 2000). Nonetheless, while democracies, including liberal democracies, can be violent (Ramsay 2010), consolidated democracies rarely fight each other (Ray 1993). One can list the War of 1812 (UK–U.S.), the Turkish invasion of Cyprus in 1974, the Peru–Ecuador war of 1994, and a few other partial or possible exceptions to this general rule. In each of these instances, however, the democracy of at least one party to the conflict had serious flaws.⁵ For example, in both the United States and the United Kingdom, only a small minority of the population was permitted to vote in 1812, and both countries practiced widespread slavery. In other words, these countries were not close to being democratic by modern standards. The Turkish invasion of Cyprus followed a coup in the country sponsored by a military junta in Greece.

15 and 29 years of age, constitute more than 40 percent of all adults), are more conflict prone. Our own analysis in Chapter 4 returns to the impact of demographic variables.⁶

Much empirical work has elaborated the positive relationships between a deep level of democracy and both reduced intrastate and interstate violence (Doyle 1983; Ray 1989; Rummel 1983; 1985; 1991).⁷ With respect to democracy and external security, it has long been noted that a fairly extensive and apparently quite stable “zone of peace” exists among the highly industrialized democratic countries of Western Europe, North America, and elsewhere in the world (see Box 3.1). Nearly 200 years ago, as modern democracies were only beginning to emerge, Immanuel Kant predicted just such a zone.⁸

More directly relevant to our intrastate analysis, in the period since World War II, democracies have not killed their own citizens in large numbers. Unlike the Stalinist Soviet Union, Cambodia under the Khmer Rouge, Rwanda under the control of armed forces and the Interahamwe militia, and a wide variety of dictatorships that have attacked subgroups of their citizenry (consider the “disappeared” under Latin American dictatorships), democracies—especially inclusive democracies—are generally more respectful of the human right to life.

■ *Anocracies today seem to suffer less intrastate conflict than they did historically.* ■

■ *Countries with a large proportion of young adults tend to be more conflict prone, and it is young adults who generally give rise to tumultuous democratic transitions.* ■

■ Societies in transition to democracy or with young and unconsolidated democracies suffer more conflict. ■

Yet even though democracies have not visited massive, concentrated violence on their citizenry, there are instances in which prolonged lower-level violence has claimed many lives. For instance, South African behavior under apartheid (if the country can be considered a democracy in that period) and Israeli action against Palestinians in areas under its control, have killed large numbers over time, giving rise to both internal debates and widespread criticism by most external democracies and ultimately changing the behavior of South Africa.⁹ And in at least one instance, a prolonged period of relative neglect by a democratic government can be argued to have claimed a very large number of lives—the World Health Organization attributed a high percentage of the estimated 129 million child deaths in India between 1950 and 1980 to poverty and undernutrition, despite food reserves that could have been used to save many of those lives (Gupta and Rohde 2004; Joshi 2007; 2009; Joshi and Yu 2011).

Beyond democracy, other aspects of inclusion also interact, often bidirectionally, with rates of intrastate conflict, broadly defined. For instance, exclusion of women from political participation or more general social equality is associated with more sexual and other violence (Hudson et al. 2008/2009). The impact of conflict on women has been long evident, with the sexual violence in the Democratic Republic of Congo a recent and virulent example. Caprioli (2003) argued that abuse of women is also a potential contributor to state fragility, and Jennings (2009) saw that inclusion of women in post-conflict governance can lead to a diminution in social violence and even limit recurrence of civil wars.

Transitioning and instability problems of young democracies

As we have noted, while democracy may dampen the propensity to violence in the long run, transitions to democracy can exacerbate vulnerability to conflict (Przeworski 1988; Ward and Gleditsch 1998).¹⁰ For example, in young or unconsolidated democracies, politicians too often play the ethnic card and mobilize voters along divisive identity lines in order to win elections and exercise state power (Rabushka and Shepsle 1972; see also Mansfield and Snyder 1995b; 2005). In a multiethnic society, this

can result in a politics of communalism and particularism that erodes a common national identity and the social consensus needed for sustainable democracy. This pattern is closely related to the problems associated with polarized factionalism in “partial democracies” that Goldstone et al. (2010) of the Political Instability Task Force project identified, as discussed above. Much depends on institutions that provide for inclusion of all major social forces, that proportionally divide resources and opportunities, that ensure minority rights and freedoms, and that are based on consensus decision-making institutions and procedures.¹¹

Newer and unconsolidated democracies often also have difficulties around underdeveloped electoral processes, and we have seen debilitating election-related violence on many occasions in recent decades. For example, the outbreak of severe violence in Kenya in late 2007 and early 2008 reflected not only the fragile nature of its democracy, but also the devastating developmental impacts that election-related conflict can have especially on the poor and vulnerable. More effective international development aid and partnerships may help prevent such election-related conflict (UNDP 2009b). Chapter 7 will return to this issue.

Trade openness and resource dependence as conflict drivers

The analysis of the PITF project identified trade openness as a driver of reduced intrastate conflict, analogous to the role that it and trade interconnectedness have been seen to play with respect to interstate conflict (Gartzke 2007). Figure 3.3 reinforces that connection, although correlation, even with a time lag, never guarantees causality. In this instance, however, the R-squared is actually quite a bit higher than that linking historical conflict to either the HDI or regime type as reflected by the Polity autocracy/democracy scale.

Beyond overall trade openness, one type of trade that has received great attention is resource dependence and the struggles or overt conflicts that occur within resource-rich countries over often extraordinary profits or resource rents when resources have low production costs relative to their market prices. This issue also receives much general media and public attention, as conflicts that seem to be

Figure 3.3 Historical rate of intrastate war (1990–2010) as a function of trade openness in 1990



■ Although trade openness is associated with less intrastate conflict, high dependence on raw material exports increases the propensity for conflict. ■

clearly driven by (or at least sustained by) the capture of natural resources crowd the headlines about countries endowed with precious gemstones, oil, minerals, timber, or lucrative drug markets (Collier et al. 2003; Jansen and Wantchekon 2004; Ross 2001).

Looking at dependence on raw material production and export, Marshall and Cole (2009: 15) noted that only two net oil-exporting states (Syria and East Timor) had less fragility than would be expected based on the cross-sectional relationship between GDP per capita and the State Fragility Index; all others had more expected fragility, and Syria has subsequently ceased to be an exception to the rule.

Emergence from conflict and other dimensions of governance

The PRIO project noted the endogenous linkage of conflict from previous years to conflict in future ones. Of course, there are many intervening dynamics that create that positive

feedback loop around conflict. Considering the linkage from conflict back to the capacity and inclusion dimensions of governance, countries emerging from conflict (whether originally related to difficult democratic transitions or other drivers) also often go through difficult war-to-democracy transitions that feature periods of complicated and potentially unstable power sharing, difficult resuscitation of civil society involvement, and struggles around inclusion of new voices—such as ex-combatants—demanding a say in the democratization process (Bermeo 2003; Jarstad and Sisk 2008).

Governance in countries emerging from conflict is thus often substantially weakened and ineffective. Executive institutions are subject to elite rivalry or capture, the judiciary is often compromised, public security forces are not trustworthy, parliamentary bodies are exclusive or dysfunctional, and public administration is compromised or shattered.

■ Post-conflict democracies often face difficult periods of potentially unstable power sharing, with struggles around the inclusion of new voices. ■

■ Historically, control of corruption and support for a rule of law have come into being slowly, responding to the needs of the state and to social pressures. ■

Continued fragility undermines the capacity of the state to provide for national authority through law, to provide for basic personal and community security, and to facilitate economic and social development. Some degree of ongoing armed violence, mistrust, displacement, severe deprivation, political fragmentation, and war-damaged infrastructure inhibit the ability of the state to recover from conflict and, in fact, frequently give rise to its re-emergence.

Capacity

Turning more explicitly to capacity, Chapter 2 introduced two elements of state capacity, the raising of revenues and the effective use of them (including the control of corruption in the use of resources). In many respects, understanding the variables that affect the raising of revenues is the easier of the two. The capacity to tax over a prolonged period of time requires a strong and secure government that does not simply expropriate all that it can, as bandits might, but extracts what it wants and needs without damaging the ability of society to generate more. In fact, a state interested in enhancing its own long-term viability will focus on creating a more prosperous revenue base. Thus, with a more secure state and a more prosperous society, revenues will likely rise not just proportionately to national income, but as a proportion of it (Wagner's Law), within some reasonable limits.

The drivers of effective use of revenues or of the broader capacity of the state are more difficult to identify, however. In 2011 and 2012, two books with broad historical and geographic sweep appeared that treated the topics of this volume in largely qualitative and "big think" fashion. Francis Fukuyama (2011) published *The Origins of Political Order: From Prehuman Times to the French Revolution*, while Daron Acemoglu and James A. Robinson (2012) produced *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, a book that might more accurately have been titled *Why Nations Succeed*.¹² Their analyses and our more quantitative ones overlap in some important ways.

Fukuyama identified three essential categories of political institutions—the state, the rule of law, and accountable government—that map remarkably well to our own three dimensions. Acemoglu and Robinson devoted

much attention to the possibilities of virtuous and vicious cycles across pluralism and inclusiveness, the rule of law, and the prosperity of societies. In each case, the volumes focused most heavily on the rule of law with respect to what we call the capacity dimension.

What did those authors mean by the rule of law, and what do they believe brings it into being in some societies over time? With respect to meaning, Fukuyama (2011: 245) noted that economists often emphasize the creation and protection of property rights, but the authors of both volumes, including the two economist co-authors of *Why Nations Fail*, see it more broadly as "the principle that laws should not be applied selectively or arbitrarily and that nobody is above the law" (Acemoglu and Robinson 2012: 305). In this volume, we have emphasized the importance of reducing corruption. Whereas the Acemoglu and Robinson volume did not even include that concept in its index, it was important to Fukuyama. In describing early modern England, he wrote:

The English state under the early Stuarts at the beginning of the seventeenth century was not only increasingly authoritarian, it was also very corrupt. The same sorts of practices that infected public administration in contemporary France and Spain, like venal officeholding and patrimonial appropriation, happened in England as well, even if on a more modest scale. In England, however, the problem of public corruption was, if not solved, at least substantially mitigated by the end of the century. The political system eliminated venal officeholding and established modern bureaucratic administration in a manner that increased the overall power and efficiency of the state. (Fukuyama 2011: 403)

With respect to what brings the rule of law into being or what controls corruption, both volumes direct much attention to inclusion. For Acemoglu and Robinson, inclusion was the paramount driver, although they did not naively suggest that it rapidly brings about the rule of law:

The rule of law is a very strange concept when you think about it in historical perspective. Why should laws be applied equally to all? If the king and the aristocracy have political power and the rest don't, it's only natural that whatever is fair for the king and the aristocracy should be banned and punishable for the rest. Indeed, the rule of law is not imaginable under absolutist institutions. It is a creation of pluralist political institutions and of the broad coalitions that support such pluralism. It's only when many individuals and groups have a say in decisions, and the political power to have a seat at the table, that the idea that they should all be treated fairly starts making sense. (Acemoglu and Robinson 2012: 306)

Because elections are relatively easy to manipulate, Fukuyama explicitly rejected the notion that they bring about the rule of law. He also downplayed the notion that economic development must come first. He argued that the rule of law, that “body of abstract rules of justice that bind a community together” (Fukuyama 2011: 245), emerges only over a long period of time in a bottom up process that in this volume we might say represents a thicker notion of democracy and inclusion than mere electoral processes. He looked to Austrian economist Friedrich Hayek to understand the causality in a manner reminiscent of Ostrom's (1990) work on institutional formation:

Social order was not, according to Hayek, the result of top down rational planning; rather, it occurred spontaneously through the interactions of hundreds of thousands of dispersed individuals who experimented with rules, kept the ones that worked, and rejected those that didn't. (Fukuyama 2011: 252)

We next look in more detail both at raising revenues and controlling corruption (as well as creating effectiveness more generally), with an eye to understanding what might help

us develop our own forecasting capability in Chapter 4.

Revenue extraction growth with average income rise

Advances in both income and education are highly correlated with measures of government capacity, including the ability to raise revenue and control corruption. Figure 3.4 (on p. 56) shows the pattern of rise in central government revenues (net of aid receipts) as a portion of GDP as GDP per capita at purchasing power parity (PPP) increases. The most striking feature of that pattern is the logarithmic rise that countries tend to experience up to a saturation level of about 30 percent, above which additional revenue extraction may kill the golden goose. Hughes (2001) referred to the lower end of this range (below about \$8,000 in Figure 3.4) as the “sweet spot” of social development because so many other structural development changes occur in the same general range (including rapid reductions in fertility, advances in life expectancy and, as we shall see later, democracy). Above the sweet spot, efforts of social transformation become more of a “steady slog.”

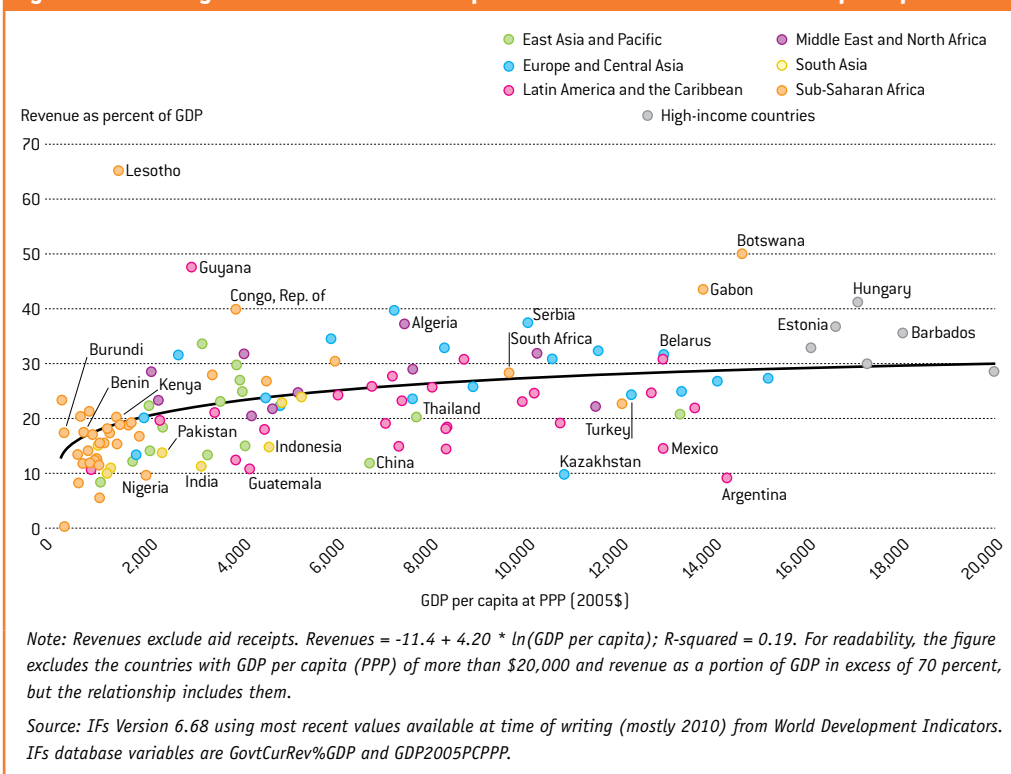
Chapter 2 introduced the argument, often associated with Wagner's Law (Wagner 1982; Weber and Wagner 1977), that the share of national income taken and used by governments rises over time and with the increasing sophistication and capability that higher average national incomes generally provide. If this is the case for central government, it is even more so for local government. North, Wallis, and Weingast (2009: 9–10) gathered data for the all-government expenditure share of GDP across societies at different levels of per-capita income and data for the subnational percent of the all-government expenditures. Although the number of countries for which they were able to obtain such data was small, the subnational share of total government revenues and expenditures rose quite consistently across income categories, from about 4 to 5 percent for societies with per capita incomes below \$5,000 (2000 dollars) to 30 percent for societies with per capita incomes above \$20,000. That pattern would suggest a rise in subnational expenditures as a share of GDP from about 1 to

■ **Advances in both income and education are highly correlated with measures of government capacity, including the ability to raise revenue and control corruption.** ■

■ **Major social change—including rapid reductions in fertility, advances in life expectancy, and democratization—frequently occurs before incomes reach \$8,000 per capita.** ■

■ Revenue patterns vary greatly across countries at similar levels of GDP per capita because of differences in their historical evolution and political economy. ■

Figure 3.4 Central government revenues as a percent of GDP as a function of GDP per capita at PPP



2 percent to about 16 percent, considerably sharper than the central government rise in revenues we see in Figure 3.4.

Focusing further on revenues and the differences between lower and higher income countries, we note that indirect taxes on goods and services, such as tariffs, tend to be easier for developing countries to levy than direct taxes on personal income (Bird and Zolt 2005; Gemmell and Morrissey 2005; Tanzi and Zee 2000).¹³ Yet, indirect taxes are not always easy to collect, especially in the face of competing development priorities. For example, in 2011 the International Monetary Fund strongly criticized Ugandan authorities for exempting more than 1,200 businesses from indirect taxes in order to provide incentives such as encouraging SABMiller to buy locally grown sorghum.¹⁴

Similarly because of relative ease of collection, trade taxes (on both imports and exports) tend to be relatively higher in developing countries than in high-income ones. Data from the World Development Indicators (WDI) suggest that in 2008 the share of government revenues raised through taxes on trade was only about 1 percent in the mostly

high-income countries of the Organisation for Economic Co-operation and Development (OECD), while it was closer to 10 percent in non-OECD countries.¹⁵ For some developing countries, like Côte d'Ivoire and Kenya, the taxation of exports of commodities has become a primary source of central government revenue (Enoh, Enoh, and Koffi 2000).

In sharp contrast, Tanzi and Zee (2000: 13) found that in 1995–1997 the share of GDP collected by personal income taxes ranged from 1.0 to 3.9 percent in regions of developing countries, compared with 10.6 to 12.3 percent in developed countries (by 2009 most developed countries were in the 8 to 13 percent range according to WDI data). The shares of GDP collected as direct corporate taxes do not differ greatly between developing and developed countries (Tanzi and Zee 2000).

Although generalizations about revenue patterns are useful, specifics vary greatly even across countries at similar levels of GDP per capita because of differences in historical evolution and political economy (John 2006). For instance, with a very inegalitarian social structure, South Africa is able to employ direct

taxes rather effectively on its middle and upper-income populations but not on lower-income segments. Even with similarities in income, economic structure, and distribution, however, the wealthy in Brazil have protected themselves more from having to pay direct taxes.

Broader government capacity

Broms (2011) found both in the literature and in his own research on Africa that taxes (especially direct taxes and also, to a lesser extent, indirect taxes) tend to be associated with higher levels of government effectiveness, as reflected by the government effectiveness measure from the World Bank's Worldwide Governance Indicators project (see again Box 2.7). Yet, we have emphasized that raising revenues, while a necessary foundation of state capacity, hardly guarantees their transparent and effective use.

In particular, the availability of natural resource rents can significantly enhance governmental revenues (see Algeria in Figure 3.4), but it tends to undercut both capacity and inclusion, especially when institutional means to curb elite predation have not yet been developed (Jansen and Wantchekon 2004; Ross 2001). This is particularly true, of course, for developing countries (Norway is the classic example of a more developed country handling resource rents exceptionally well).

Moore (2011) extended the argument concerning the problematic impact of rents. The forces of globalization have generated opportunities for elites to benefit from outsize returns from select raw materials, as well as from foreign aid increasingly concentrated on a small set of lowest-income countries. They have also gained from smuggling of drugs, guns, and people; from non-transparent sovereign wealth funds; from land sales to foreign interests; and from provision of globalization services such as tax havens. Although the resulting rent streams are highly differentiated across countries, they create a pattern of disconnect of elites and governments from traditional tax bases and from the incentives of building systems capable of serving social needs.

Leaving aside resource and other rents, raising revenues via taxation has broad and generally positive implications for the development of state capacity. Wider tax bases require both a greater administrative capability

and deeper connection between a state and its citizenry. Although they may complain about taxes, citizens paying taxes will also want to be included in decisions about them. And when they are included, they will push for the transparent and effective use of their taxes.

As discussed earlier, both Fukuyama (2011) and Acemoglu and Robinson (2012) emphasized the impact that inclusion has on the improvement of the rule of law over the long historical sweep. Figure 3.5 (on p. 58) directs our attention to the relationship between inclusion and one important aspect of rule of law, the control of corruption. It shows the contemporary cross-sectional relationship between the composite regime scores from the Polity Project and Transparency International's Corruption Perceptions Index (CPI). The pattern is curvilinear, with some nondemocratic states like Singapore, Qatar, and the United Arab Emirates also managing to keep corruption to quite low levels (high values on the index). Yet, the tendency for corruption to fall (transparency to rise) with greater democracy is clear.

As we have emphasized, however, the Polity measure of democracy is a rather thin measure of inclusion. Some studies have found that women's inclusion is related to greater transparency and lower levels of corruption (Dollar, Fisman, and Gatti 2001; Stockemer 2011; Swamy et al. 2001). Sung (2003) argued that these studies have omitted liberal democracy as the driver of both women's inclusion and reduced corruption. Yet, in Chapter 4 we will see that our formulation for forecasting corruption benefits from the incorporation of both the Polity 21-point autocracy/democracy scale and the UNDP Gender Empowerment Measure (GEM). In fact, the GEM has the stronger and more linear correlation with the CPI (an R-squared of 0.52).

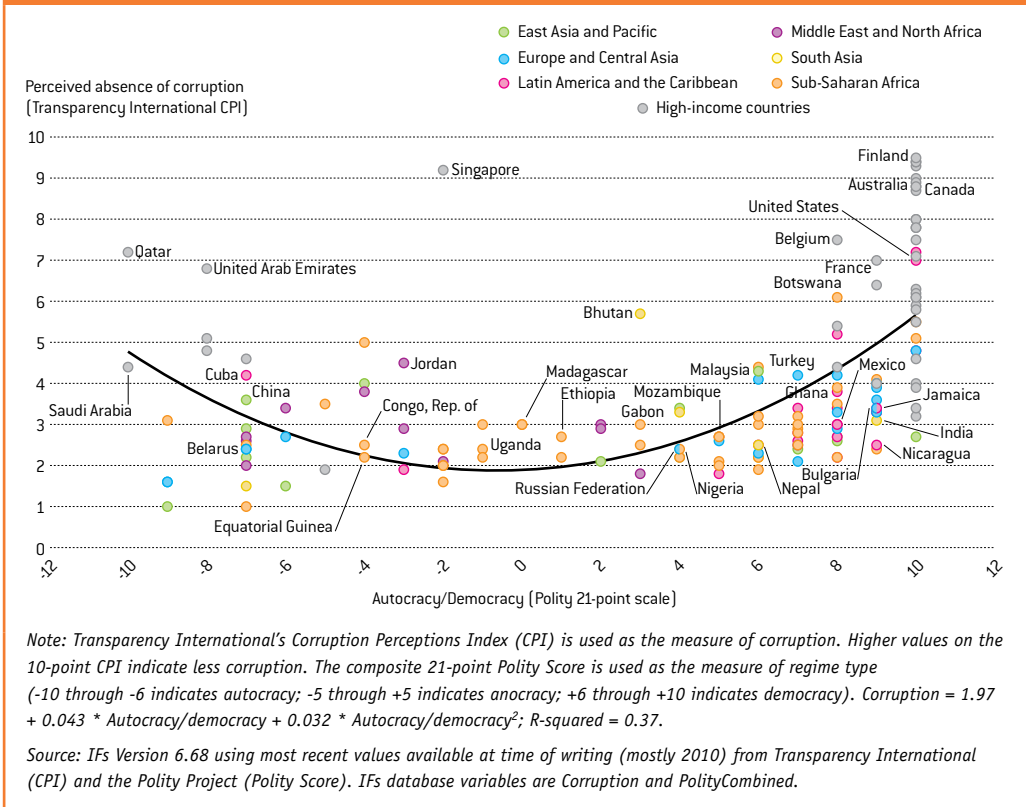
Transparent and effective governments benefit not only from higher tax revenues and associated expansion of inclusion, but also from greater security. In fact, given the historical sequencing of the security, capacity, and inclusion transitions that Chapter 1 introduced, we would expect there to be an especially clear relationship between the creation of security and sovereignty and the advance of government effectiveness. And research does clearly show that conflict undermines governmental capacity or impedes its development (Harttgen and

■ *Raising revenues, while a necessary foundation of state capacity, hardly guarantees their transparent and effective use.* ■

■ *Broader tax bases require greater administrative capability and a deeper connection between state and citizenry, because citizens will push for effective use of their taxes.* ■

■ Transparent and effective governments benefit not only from higher tax revenues and associated expansion of inclusion, but also from greater domestic security. ■

Figure 3.5 Perceived absence of corruption as a function of autocracy/democracy



Klasen 2010; Hoeffler and Reynal-Querol 2003; Jarstad and Sisk 2008). The impact of violent conflict on the endogenous capacity required for effective governance is often both severe and multifaceted (Hoeffler and Reynal-Querol 2003).

Utilizing the World Bank's government effectiveness measure, Figure 3.6 shows a relationship (albeit a relatively small one) between historical conflict (using the Political Instability Task Force consolidated event measure over the last 20 years) and government effectiveness. Again, such relationships cannot demonstrate direction of causality or preclude the possibility that other developmental variables affect both. Although there is much reason to believe that significant causality runs from absence of conflict to enhanced effectiveness, effectiveness presumably also reduces conflict and enhances security.

Inclusion

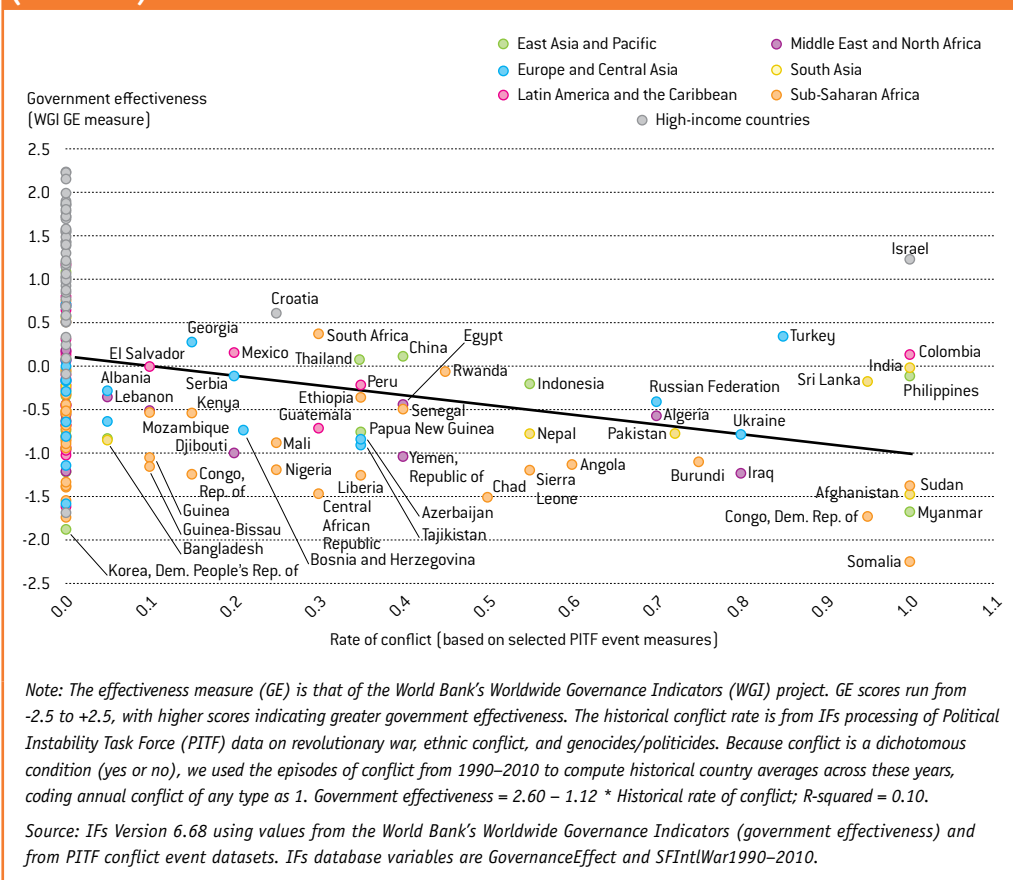
Although the security and capacity transitions traditionally have preceded the democratic transition, in recent decades democratization has become central to thinking on development

and change in governance. Amartya Sen (1999a) has called the global advance of democracy the single most important development of the twentieth century, further noting that

Throughout the nineteenth century, theorists of democracy found it quite natural to discuss whether one country or another was "fit for democracy." This thinking changed only in the twentieth century, with the recognition that the question itself was wrong: A country does not have to be deemed fit *for* democracy; rather, it has to become fit *through* democracy. (Sen 1999a: 3)

While some question whether liberal democracy will (or should) prove to be the last phase in sociopolitical intellectual and institutional evolution as Fukuyama (1992) famously argued, none can question the significant global advance of democracy over time. And although some developing states may successfully fuse the development of an initially not very inclusive

Figure 3.6 Government effectiveness in 2010 as a function of the historical rate of intrastate war (1990–2010)



democracy with state and nation-building (as arguably did the United States), many find themselves with autocratic systems in their early stages (as did the Europeans). The question of interest becomes: What are the drivers of the process toward inclusive democracy?

Deep developmental drivers of democratization

Perhaps the path in our conceptual jungle that has been explored most fully over several decades is the long-term causal relationship from development level—often measured and thereby oversimplified in terms of GDP per capita—to democracy level. Economic development and technological advance create modernization and diversification of economies and societies. Then, in the view of some researchers, only democracy has the ability to reconcile diverse interests associated with these societies (Diamond 1992; for seminal analysis from the modernization perspective, see Lipset 1960; we return later to the impact of democracy on development).

In fact, the set of variables around development and those driving democracy is considerably richer than GDP per capita. Seymour Martin Lipset, a pioneer in thinking about democratization (1959: see especially 105; see also 1960; 1994: 2–3), focused attention on a constellation of important supports or conditions for democracy: an open class system, economic wealth, an equalitarian value system, a capitalist economy, literacy, and high participation in voluntary organizations. He saw typically positive feedbacks from democracy back to many of these same variables. Nonetheless, Lipset's own research led him to place special weight on economic development as a foundation for democracy, and subsequent cross-sectional analyses by him and by others have identified a clear relationship.

Of course, changes in third variables can alter such relationships over time. Our analysis suggests that, consistent with such third-variable influence, the strength of the

■ The long-term causal relationship between development level and democracy has been studied extensively. ■

■ The relationship between per capita income and democracy has weakened since 1970, as the extent of formal democracy at low levels of income has climbed significantly. ■

relationship between per capita income and democracy has weakened since 1970 and the extent of formal democracy at low levels of income has climbed significantly (see Figure 3.7). One explanation of this change is that there has been a global push for democracy, or at least electoralism (Lindberg 2006), even for the many new countries that have entered the global system. In historical context, the transition to or toward democracy at the income levels of many of these countries is surprising. Chapter 7 will return to global influences on this and other recent governance trends.

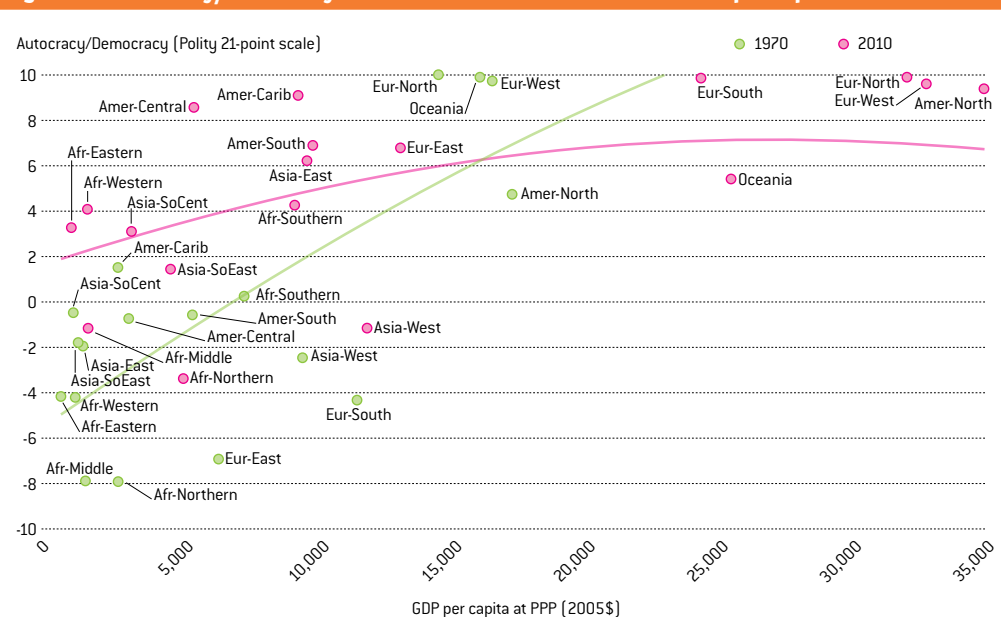
Income affects not just the likelihood of democracy, but also its stability. Przeworski and Limongi (1997: 159, 165) found that above a level equivalent to \$8,000 per capita in 2010 US dollars at PPP, dictatorships tended to become less stable and democracies more so. Further, they argued that above the 2010 equivalent of \$12,100 per capita there has been no instance of a democracy collapsing.¹⁶

Such analysis suggests that because of the low level of economic development in Africa the

advances toward democracy there may have a weak foundation. Those skeptical of "premature democratization" cite three important concerns. First, very few, if any, of the 34 mostly wealthy OECD member countries implemented universal suffrage prior to reaching a middle or high level of income, education, and technological know-how. Second, most of the developing economies that sustained rapid growth in the post-World War II period over multiple decades were either authoritarian regimes or one-party states (Joshhi 2011b; Leftwich 1996; World Bank 1993). Third, there have been a large number of historical cases in which low-income democracies have failed (Przeworski et al. 2000).¹⁷

The reasons for democratic failure are varied, but many relate to the difficulties of institutionalizing democracy in low-education and low-technology, multiethnic developing countries (Somit and Peterson 2005). First, democratic governments in low-income countries may be weak. Democratization, or the transition from autocratic rule or conflict to new institutions and participation, can yield unstable

Figure 3.7 Autocracy/democracy in 1970 and 2010 as a function of GDP per capita



*Note: The composite 21-point Polity Score is used as the measure of regime type (-10 through -6 indicates autocracy; -5 through +5 indicates anocracy; +6 through +10 indicates democracy. In 1970, Autocracy/democracy = $-5.54 + 0.000831 * \text{GDP per capita} - 6.75\text{E-}09 * \text{GDP per capita squared}$; R-squared = 0.30. In 2010, Autocracy/democracy = $1.62 + 0.000399 * \text{GDP per capita} - 7.21\text{E-}09 * \text{GDP per capita squared}$; R-squared = 0.13. Although the figure displays UN subregional groupings for readability, the relationships and statistics are based on countries.*

Source: IFs Version 6.68 using autocracy/democracy values (Polity Scores) from the Polity Project and GDP per capita data from World Development Indicators. IFs database variables are PolityCombined and GDP2005PCPPP.

governing coalitions and result in state capacity that is unable to handle the extreme challenges of poverty and broader underdevelopment.

In such an environment, highly contentious politics can escalate into violence. Second, in low-income countries, relatively democratic governments (like authoritarian ones) can be co-opted by leaders who align themselves with outside interests and capture the state for the benefit of specific subpopulations or simply the leadership's own predatory purposes (Evans 1995; Roberts 2006).

The challenges that developing countries face can easily overwhelm a relatively weak, newly democratic state. Very commonly, persistent inequality and social stratification greatly exacerbate poverty and hunger as well as deprivations in education and health. They also play a strong role in inhibiting the crucial formation and maintenance of social trust, solidarity, harmony, and cooperation necessary for an effective democracy (Krishna 2002; Putnam, Leonardi, and Nonetti 1993; Tsai 2007). Krishna (2002), for example, found that social trust and cooperation varies not only between countries and provinces, but also across the villages of northern India (see also Varshney 2002). Those villages with higher social trust and friendships ("social capital") had more effective democracies, less conflict, and were more successful in economic development.

In our own cross-sectional analysis (to be elaborated in Chapter 4), we have found that the education level of adults is a particularly important factor. It correlates highly with GDP per capita, of course. Yet it also has independent variation and relates even more closely to democracy level than does GDP per capita.¹⁸ Education level also tends to relate strongly to such variables as social trust.¹⁹

Other potentially important drivers of democratization

Moving beyond the variables most closely associated with modernization and development theory, the literature identifies many other variables that may influence the democratization process. These include some that have roots in the specific historical and cultural paths of individual countries and regions. Earlier discussions already noted the importance of ethnic fractionalization.

Horizontal inequalities (Stewart 2002), that is, social fragmentation in which some subgroups are systematically advantaged or disadvantaged economically or socially, might create pressures for democratization, but also structure resistance to it.

Many analysts have emphasized the importance of culture more generally in at least two ways. First, the development of a political culture supportive of democracy can be a long and irregular process. Second, certain cultures may be less supportive of democracy than others (Huntington 1991); many observers point to the low levels of democratization in Islamic societies relative to their levels of economic development, or at least of income, in support of such argument.²⁰ Similar versions of the same argument with respect to Asia have largely fallen away in the face of democratization in countries as disparate as South Korea, Taiwan, Indonesia, and Mongolia; the same is true of sub-Saharan Africa. The dramatic regime contestation within the Middle East and North Africa beginning in 2011—with citizenry in the streets protesting and fighting for change and perhaps democracy—may further weaken arguments of culture-specific values with respect to human rights and political systems relative to arguments that such values are universal.²¹ Indeed, for several years prior to 2011, the Arab Human Development reports of the United Nations Development Programme (UNDP) had identified autocratic governance and discrimination against women as barriers to the region's realization of its potential with respect to broader development.²²

Demographic structure is also associated with the movement to democracy. Using the Freedom House rating of "free," Cincotta (2008/2009) found that when the proportion of young adults age 15–29 in the working-age population, defined as those from 15–64 years of age,²³ drops below 40 percent (values above that are often considered a youth bulge), a country's chance of achieving a stable liberal democracy rises to 50–50. Using such demographic analysis in 2008, Cincotta accurately forecasted imminent changes in Tunisia (Cincotta 2008/2009).

That some elements of economic structure can affect democratization is uncontroversial. Dependence by countries on natural resource production and export is perhaps the most

■ *Many reasons for democratic failure relate to the difficulties of institutionalizing democracy in low-education and low-technology, multi-ethnic developing countries.* ■

■ *The education level of adults relates even more closely to democracy than does GDP per capita.* ■

■ *Some elements of economic structure affect democratization, particularly dependence on natural resource production and export.* ■

■ *Democratization's wave-like character suggests there may be self-reinforcing positive feedback loops involving global and neighborhood contagion effects.* ■

■ *Even if ongoing economic, demographic, and technological transitions suggest continued long-term global democratization, identifying the timing of step changes presents challenges.* ■

obvious. As mentioned earlier, resource rents provide incentives for corruption and for maintenance of power, and thereby frequently undercut democracy (Jansen and Wantchekon 2004; Ross 2001; Teorell 2010; Ulfelder 2007; Ulfelder and Lustik 2007). Other sources of rent, including even foreign assistance, can similarly discourage adherence to democratic principles.

Some research suggests that democracy often emerges from the bottom up, and that the place to find democratic practice is often in the ways in which those in poverty self-organize in order to create their own local public goods (Reno 2008). Many analysts posit that it has been the less-advantaged classes and groups that historically have driven transitions to democracy (Heller 2000; Rueschmeyer, Stephens, and Stephens 1992). This approach suggests that democracy and development may occur mostly from domestic factors and popular demand for security and for service delivery.

Still other factors that influence democratization arise from outside the country. On one hand, dependency and world-systems literatures (e.g., Frank 1966; Wallerstein 1979) argued that the developed world created and/or maintains underdevelopment elsewhere, including nondemocratic regime forms, through various mechanisms of cultural, economic, political, and military penetration (Galtung 1971). However, other research (to be discussed in Chapter 7) tends to see the external environment as supportive of democracy. At the systemic level, it is often suggested that the European Union, the United States, and other developed countries can affect democratization in less-developed countries, either positively or negatively, via their examples and through their policies, including, potentially, the conditionality of their assistance and direct interventions. Huntington (1991) also suggested that at the systemic level democracy contagion and demonstration effects can snowball.

There have been related discussions around swing-state effects or neighborhood effects—that is, the importance of large countries such as Brazil or Nigeria—at the regional level. Obviously the former Soviet Union was a prime example of a democracy-retarding swing state within its sphere of influence, but there is anecdotal evidence to believe in lesser and less coercive effects elsewhere. The wave character

of democratization reinforces the idea of such self-reinforcing positive feedback loops around the world and within regions.

The sociopolitical revolutions of 2011 in North Africa and the Middle East have drawn additional attention not only to neighborhood and contagion effects, but also to the role that information technology (including the internet, cell phones, and social networking) can play in such contagion (Howard and Hussain 2011; Teorell 2010). These technologies assisted the mobilization of citizens into protest movements, sometimes with clear leadership, but often without any.

Understanding democratic transitions

Given their importance as driving forces, ongoing and widespread economic growth, near universal population aging, and the rapid global expansion of public access to information and communication technologies suggest a fairly steady long-term movement of developing societies toward democracy. However, consideration of these forces raises the question as to whether we can become more specific about the phases and even timing of transitions to democracy.

In statistical analysis, Boix and Stokes (2003) found that the lagged annual probability of transitions away from democracy decreases very rapidly as GDP per capita rises to about \$12,000 per capita in 2010 dollars (from nearly 0.8 at very low levels of income to near 0.0 at \$12,000), while transitions to democracy rise only very slowly over a much larger income range and remain below 0.1 at all income levels. Geddes (1999) reviewed extensive empirical and qualitative literatures and found that regime transitions (of both authoritarian and democratic systems) are more likely during economic downturns.

Beyond income level and economic downturns (and associated high unemployment like that in Tunisia in 2011), are there other indicators of likely transition timing? We have already noted that Cincotta tied particular phases of the demographic transition (for instance, youth bulges falling below 40 percent) to acceleration of democratic transitions. He noted (2011: unpaginated) that transitions can happen very quickly as youth bulges pass their peaks and median ages began to mature. Cincotta cited

as examples that movement from “not free” to “free” took only eight years in Indonesia (1997–2005), four in Poland (1987–1991), three in Portugal (1973–1976), six in Romania (1990–1996), five in South Korea (1983–1988), four in Spain (1973–1976), and fifteen in Taiwan (1980–1995).

Another approach is to look at the disparate types of authoritarian regimes. Geddes (1999) found that most personalist regimes (those ruled by powerful individuals such as the late President Hugo Chavez in Venezuela) maintain their grip as long as possible, making conflictual transitions more likely. Military regimes cling less tightly to power; and single-party regimes are more open to compromise. Partly agreeing with and partly contesting that analysis, Teorell (2010) found that military dictatorships and multiparty autocracies were more likely to democratize than single-party regimes or monarchies. One can see how these differences played out in 2011 and 2012 by contrasting the personalist regime of Colonel Moammar Khadafy in Libya with Egypt and its strong and somewhat independent army as well as a history of contested elections, however badly rigged.

One of the most interesting discussions about the foundations that support the rise of democratic transitions is the broad-sweep historical analysis by North, Wallis, and Weingast (2009). They identified three “doorstep” conditions for the transition from what they called “limited access societies,” the dominant form of the last 10,000 years, and “open access societies,” the emergent democracies of the last 300 years. As summarized by Franke and Quintyn (2012: abstract) in their supportive empirical analysis, these conditions are “(i) the establishment of rule of law among elites; (ii) the adoption of perpetually existing organizations [by which they mean institutions the life of which continues beyond their founding members, such as parliaments and courts]; and (iii) the political control of the military.” Franke and Quintyn (2012: 35) found the first two conditions to be more critical.

Still another element in understanding governance transitions is that they are often associated with conflict. Conflict can either facilitate transition to democracy or make it more difficult to complete because of the residual problems, including grievances, that

conflict leaves behind (Bermeo 2003; Gutierrez and Piombo 2007; Jarstad and Sisk 2008). Thus there is no automaticity in the consolidation of democracy. To the contrary, there is significant concern that many countries transitioning from authoritarianism via civil war do not consolidate democratic gains and that many regimes are characterized by incomplete transitions and partial or “qualified democracy” (Carothers 2002: 10).

Among the empirical analyses that have sought to draw together multiple explanatory factors on democratization generally, as well as on often conflict-ridden transition, is that of Ulfelder and Lustik (2007). Drawing on 1,300 variables in the database of the Political Instability Task Force, they found that the following are especially important factors explaining democratic transitions or lack thereof:

- prior experience with democracy;
- logged infant mortality (which is powerful partly as a proxy for income per capita or other human development and partly as an indication of both income distribution and quality of policy);
- resource rents; a post-Cold War dummy variable; any nonviolent collective action;
- a new chief executive (within five years);
- GDP growth (they operationalized this as the square root of the two-year prior moving average rate of change in GDP).

In transitions back to autocracy, the key variables are the post-Cold War dummy, logged infant mortality, and factionalism, which they recognize as any polarizing, winner-take-all competition, not necessarily only ethnic divisions. Our own formulation for forecasting democracy, described in Chapter 4, will have many similarities to this work.

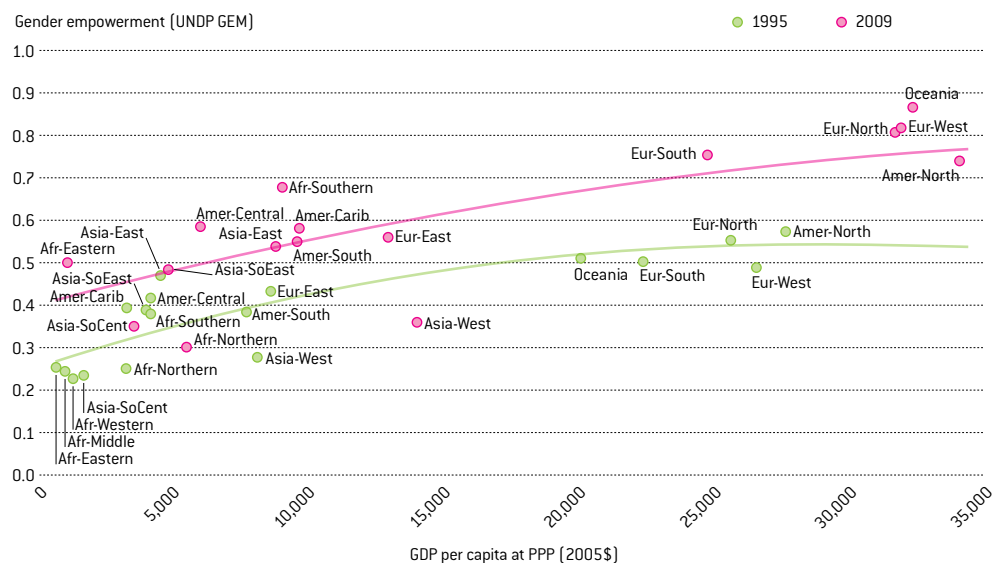
Inclusion beyond democracy: Gender empowerment

Looking to gender empowerment as a key measure of broader inclusion, we see many of the same drivers. In the long run, income is very important, as the cross-sectional relationship between GDP per capita and the UNDP’s Gender Empowerment Measure shows in Figure 3.8 (on p. 64). However, that figure also shows that

■ *Many countries transitioning from authoritarian regimes to democracy via civil war suffer from incomplete transitions and what might be called “qualified democracy.”* ■

■ Gender empowerment, a measure of thicker inclusion, has advanced across all levels of economic development. ■

Figure 3.8 Cross-sectional relationship of GDP per capita and gender empowerment in 1995 and 2009 as a function of GDP per capita



Note: The Gender Empowerment Measure (GEM) of the United Nations Development Programme (UNDP) is used as the measure of women's inclusion; values below 1.0 indicate female disadvantage. In 1995, Gender empowerment = $0.252 + 2.01E-05 * \text{GDP per capita} - 3.46E-10 * \text{GDP per capita squared}$; R-squared = 0.52. In 2009, Gender empowerment = $0.401 + 1.72E-05 * \text{GDP per capita} - 1.92E-10 * \text{GDP per capita squared}$; R-squared = 0.55. Calculated from countries and displayed in UN subregions.

Source: IFs Version 6.68 using UNDP GEM scores and GDP per capita data from World Development Indicators. IFs database variables are GEM and GDP2005PCPPP.

the relationship between these two variables across the countries of the world was quite different in 2009 than it was just 14 years earlier. Clearly other variables are also driving advance in gender empowerment over time, and one of the most likely candidates may well be an almost global ideational change with respect to women's position in families and the broader society (Inglehart and Norris 2003).

Thinking about governance in the future: New driving factors?

When looking out over the next 50 years, as this volume does, we must consider that entirely new factors might come to shape both government capacity and regime types or inclusion more generally. It is only necessary to think back a century when, for instance, women around the world were first gaining the right to vote, or over 60 years ago when, in 1948, the United Nations adopted the Universal Declaration of Human Rights, to wonder what emerging forces might affect governance over the next 50 years.

Consider two factors that might drive important change. One is demand for

lengthening time horizons of policy action. For instance, considerations of environmental sustainability generally require a much longer time horizon than most policy traditionally has had, with the partial exception of infrastructure investments, where democratic policy typically has not been very successful at assuring economically efficient investment levels (see Rothman et al. 2014). Another pressure for governance sensitivity to a longer-term time horizon is now rapidly gaining importance: the fiscal burden of aging populations. Again, in general, democracies are not yet handling this challenge well, and fiscal crises loom for many. These pressures for longer policy time horizons could cause societies to place greater weight on capacity relative to inclusion, or at least to search for ways in which inclusive regimes can better delegate policy authority to capable systems and personnel.

A second and somewhat related factor that might drive regime change, within or beyond democracy, is the tendency, described by Olson (1984), for governments to show increasing rigidities over time. For example, as time passes,

■ Issues such as environmental sustainability and population aging require longer policy horizons and present new challenges to democracy. ■

democracies tend to take on more commitments and to allow more specialized interests to lock in benefits and policies. (One need only think of what referenda and constitutional amendments have done to tie up the budgets of many U.S. states, as well as the locking-in by public employees of large defined-benefit pensions.) These and other commitments can greatly reduce the flexibility of the system. In the face of such pressures, one could even legitimately ask whether contemporary democracies, relative to more technocratic leaderships (potentially elected or subject to recall), have long-term leadership superiority. We can raise such questions concerning changing forces in the long term much more easily than we can address them.

Human development

Of course, our ultimate concern is not governance in and of itself, but human and social development. Human development has many dimensions, and in this volume we often look to the Human Development Index and its components (including income, education, and health) for one important conceptualization of it.

With respect to the relationship between governance and human development, some aspects of political development, especially along the security and inclusion dimensions, have direct (not simply instrumental) implications for well-being. Certainly among these aspects is gender inclusion. It is important in itself, as well as being a major contributor to advancing education, improving health, and much more. Here, however, we continue our focus on understanding relationships across variables and how governance might more instrumentally affect well-being. Because productivity and material prosperity make such broad secondary contributions to so many other aspects of development, we will give special attention to governance dimensions as drivers of economic growth. Slightly altering our normal order in treatment of governance dimensions for reasons that will become clear in our discussion of causality, we consider the impacts on growth first of conflict, then of regime type (particularly of democracy), then of generalized government capacity, and finally of specific policies.²⁴

Conflict and economic growth

In a previous section (see again Figure 3.1), we saw through cross-sectional analysis that there is an inverse, probably bidirectional, relationship between human development and the rate of conflict in societies. Conflict undercuts human development, and it does so in many ways.

Empirically, Collier (1999: 175) calculated that civil conflict reduces annual GDP growth by 2.2 percentage points, with short wars having a greater annual cost than longer ones. Collier found that the economic impact accumulates, so that a 15-year civil war would reduce GDP per capita by about 30 percent. Collier's calculated values are similar to those of other studies. For example, Gates et al. (2010: 19) put the annual cost at between 1–2 percent for minor conflicts and twice that for major conflicts.²⁵ They also found that after short civil conflicts there is a faster rebound to base-line GDP trends (the “peace dividend” in Collier's term) than after long ones. Alesina et al. (1996: 200) measured the impact at between 1.3–1.4 percent.²⁶ Bozzoli, Brück, and de Groot (2010: 13) went a step further and calculated that the negative impact on the global GDP in 2007 of all conflict from 1960–2007 was \$10.4 trillion (in 2005 dollars)—GDP could have been 16.4 percent higher in a conflict-free world.

In terms of conflict's impact, perhaps the most immediate effect is direct physical damage to critical infrastructures, producing not just instant loss, but also slowing longer-term economic recovery.²⁷ For example, the 2009 UN fact-finding mission to Gaza, which investigated the effect of the conflict between Israel and Hamas fighters in 2008, documented how the conflict left widespread damage to basic water and sanitation infrastructures as well as to the electrical grid.²⁸ The U.S. invasion of Iraq led to a similar critical deficit in provision of basic sanitation and clean water services and in the provision of the stable electrical supply that most economic activity and basic functioning of government ministries and agencies require.

Beyond its physical impact, conflict has a variety of other consequences on state capacity and the deeper social relationships that underlie economic growth. Conflict has destabilizing effects through influxes of small arms and light weapons; reduced trade and investment (and capital flight); organized crime (armies

■ **Conflict has many negative impacts on human and social development, including intensifying social divisions that create vicious cycles.** ■

■ The
implications of
democracy
for economic
growth remain
contentious. ■

and militias can morph into organized crime groups); migration and human trafficking; and public health emergencies. With respect to public health, most deaths in civil wars are from disease. Ironically, however, the Human Security Report Project (2011: 110) found that, because most intrastate conflicts are localized and because of the effectiveness of humanitarian assistance, mortality rates actually declined in the overwhelming majority of sub-Saharan African countries in conflict between 1970 and 2008.

Other common effects of conflict on state capacity are the loss of resources and revenues to support state functions and services; degradation of institutions and the capacity of the state to regulate property rights; weakened ability to combat crime or corruption; poorer functioning of key economic institutions for regulation or monetary and fiscal management; and recurring risks of democratization crises and of divided civil society (Jarstad and Sisk 2008).

Perhaps most damaging, conflicts fracture relationships, thereby potentially diminishing the collective capacity of societies for some time. In the aftermath of conflicts and of political instability, a general sense of mistrust and suspicion toward the state and emerging leadership groups commonly prevails. These conditions are most pervasive in those countries in which human development is lowest. Thus, there can be vicious cycles of conflict, state weakness, and social, economic, and environmental deterioration, just as there can be positive ones around security, more effective governance, and human development (Marshall and Cole 2009).

Democracy and economic growth

A seminal article by Mancur Olson (1993) argued that democracies are better for development than other regime types (Halperin, Siegle, and Weinstein [2005] concurred). In contrast, Barro (1996) and Przeworski and Limongi (1997) first argued during the 1990s that regime type has no effect on growth.²⁹ In extended cross-sectional analysis involving national income statistics of 135 countries over a 40-year period from 1950–1990, Przeworski et al. (2000: 270–271) again concluded that political regimes have no impact on the growth of total income. More recently, through a meta-analysis of 84 studies on democracy and growth, Doucouliagos

and Ulubaşoğlu (2008) again reinforced the generally dominant view that democracy has no direct impact on economic growth. However, any such relationship probably depends, in part, on interacting economic and political development, as well as historical paths, and would be challengingly complex to analyze.³⁰

Some analysis has focused on the putative advantages of authoritarian regimes. Partly because of the success of economic development in communist countries during the early years after World War II (generally with intensive capital investment and heavy emphasis on industry), much development literature once saw considerable value in strong, authoritarian institutions that could mobilize resources for growth (Ruttan 1991). McGuire and Olson (1996) provided some theoretical elaboration of the argument by explaining the importance for an autocrat to mobilize resources and support growth, in part, to buy legitimacy.³¹ Joshi (2011b) found that none of the 11 economies (Botswana, Cambodia, China, Equatorial Guinea, Hong Kong, Côte d'Ivoire, Kuwait, Singapore, South Korea, Thailand, and Vietnam) that sustained rapid growth rates (over 7 percent annually) over two or more decades since 1960 were multiparty democracies. In his analysis (similar to the approach of the Commission on Growth and Development 2008), however, not all regimes without multiparty democracy have an equal advantage when it comes to sustaining rapid economic growth—among those 11, single-party states (sometimes a bridge to broader democracy) performed better than military regimes and monarchies.

A great deal of analysis has drawn attention to some of the problems of emergent democracies that may hinder their growth and distort the broader analysis of the relationship between democracy and growth. Some emerging democracies struggle with social fragmentation and the identification of elites with only a part of the population (Lindberg 2003), therefore not really being fully inclusive democracies. Many such polities display persistent horizontal inequalities (Stewart 2002) across subpopulations, including ethnic communities. Bates (2008) has described how political elites take control of state institutions and distribute resources and turf among family and dependents, how clientelism

and patronage work in terms of personal incentives, and how state resources are used for private gain (see also Bratton and Chang 2006; Joseph 1999; Keefer 2007). Predation and corruption may intensify during democratic transitions because time horizons are short and elites seek to accumulate resources in a brief period to gain wealth and an advantage in the electoral process. Predation is especially likely to take place when privileged classes (or regional or ethnic elites) control the media, are the main source of funding for election campaigns, and are capable of intimidating, harassing, or assassinating their opponents—as has historically been the case in a number of Central American countries like Guatemala and El Salvador (Lindenberg 1993). In many cases, what exist are mere forms or illusions of democratic government, not the reality of democratic governance with its clear linkages between government and the broader society.

An interacting challenge for contemporary emerging democracies that earlier ones generally did not face to the same extent is the existence of an internationally oriented elite who share a life situation and a consumption pattern, and who have an attitude to the policy regime that places self-interest above the collective national interest (Harvey 2005; Sklair 2001; Steger 2009). In fact, within each polity (authoritarian, anocratic, or democratic) in the Global South, elite enclaves compare in disposable income and lifestyle with similar populations in the Global North and often identify with them.

The linkage between democracy and broader human development is no more automatic and clear-cut than that between democracy and economic growth. While one study might find a link between democratization and increased education spending (Stasavage 2005), for example, another can find no link between democratization and child survival (Ross 2006).³²

Time horizon is very important in this discussion. Most empirical and much qualitative analysis focuses on the relatively short run. Within those studies the evidence is mixed, with both democracies and dictatorships having successes and failures in their development record across recent decades. That some developing-world democracies are corrupt, predatory, or for whatever reason incapable of fostering economic growth or broader

development, obviously does not mean that all democracies in poor countries have failed. There are several countries that were once low-income democracies, such as Botswana, Costa Rica, and Mauritius that, although small in size, have been quite successful in human and economic development without falling into civil war or an authoritarian interlude (Leftwich 1996; Sandbrook et al. 2007). Simply based on the balance of results in such studies, however, we would conclude that there is most likely no general causal relationship between democracy and development.

Nonetheless, most longer-term, historically oriented political-economic analysis seems to have concluded that there is. In our earlier discussion of Fukuyama (2011) and of Acemoglu and Robinson (2012), we pointed to their generally shared conclusion that, over the long sweep of history, the rule of law (an element of capacity in our conceptualization) has been critical to prosperity, and that inclusion has, in turn, been foundational to the development of that rule of law. In earlier work, Acemoglu and Robinson (2006) pointed to a “political replacement effect” in which entrenched political elites seek to block economic change and advance that may undercut their power in the longer-run, as the landed aristocracies of the Austrian-Hungarian and Russian empires long did. This is in contrast to the promotion of such change by the greatly weakened monarchy of Great Britain (after the Glorious Revolution of 1688) or within the much more open system of the United States. In their recent work, they have argued that “oligarchy may be better than democracy in the medium run because it creates favorable environments and low taxes for entrepreneurs” but that in the longer run it “tends to create entry barriers protecting current incumbents.”³³ They believe that countries like China will ultimately fail to sustain economic performance unless they undergo political transformation.³⁴

The primary conclusion one can draw from the literature about whether democracy or inclusion contributes to economic growth is probably that it depends on whether and over what time period advance in democracy contributes to capable governance with a broad development orientation. The reality is that, at least in the short run, emergent democracy can either provide

■ *In the longer term, democracy tends to support economic growth and broader human development.* ■

■ *In looking at drivers of economic growth and human development, it is useful to move beyond thinking about regime types and to consider the character and quality of institutions.* ■

■ *Institutions affect development by framing the relationships citizens have to one another and with government.* ■

opportunities for self-centered and predatory elites or for more enlightened leadership supporting growth-enhancing institutional development and growth-promoting policies. Over time, democracies will “get it right” more often than not. But the basic causal chain is from expansion of inclusion, to (eventually) capable government, to good policies, to growth. We need to explore this chain further.

Government capacity and economic growth

We have seen that the weight of analysis does not allow us to conclude that democracy—in spite of its obvious intrinsic value and strong contributions to human empowerment and participation—is a regime type conducive to fast economic growth and to broad human development over a short- or middle-range horizon, especially at the lowest levels of income.

However, as discussed earlier, there is very considerable evidence that other governmental characteristics have such linkages to growth.³⁵ Joshi (2011a), for example, has found in cross-national empirical research that states with stronger capacity—in terms of revenue collection, civil service quality, and public service delivery—have demonstrated enhanced economic performance and better progress toward the Millennium Development Goals for improving health, education, sanitation, nutrition, and the environment.

Therefore, it is useful to move beyond thinking of regimes to a consideration of institutions and to their character and quality. Douglass North (1990: 3) said that institutions are “the rules of the game in society or, more formally, are the humanly devised constraints that shape human interaction. In consequence they structure incentives in human exchange, whether political, social, or economic.” Institutions shape human behavior—behavior that is not always rational and that relies heavily on perceptions. Institutions greatly affect development because they frame the relationships citizens have with the government, the way businesses direct their productive capacities and react to market pressures, and the way in which people act and react to one another.³⁶

In his analysis of both informal and formal institutions, North devoted limited attention to democracy and did not argue that it had an inherent advantage with respect to economic

performance; in fact he discussed a number of its deficiencies (1990: 51, 109). He did, however, emphasize the importance of property rights. Similarly, Knack and Keefer (1995) drew together many measures related to institutional character from different sources, including expropriation risk and quality of bureaucracy from the International Country Risk Guide,³⁷ as well as contract enforceability, infrastructure quality, nationalization potential, and bureaucratic delays from Business Environment Risk Intelligence.³⁸ Among other conclusions, Knack and Keefer (1995) found strong relationships between property rights and growth. A common argument in the economic development literature favors creation of strong and transferable property rights, enabling asset creation so that households can then make use of them to accumulate further capital (de Soto 2000).

Yet as Rodrik (2007: 184–85) argued, the now “widespread agreement among economists studying economic growth that institutional quality holds the key” should not be “interpreted as a form of property-rights reductionism.” The literature on “second generation reforms” leads instead to an agenda of “governance reforms aimed at reducing corruption, improving the regulatory apparatus” and much more with respect to what others have labeled the rule of law. And beneath it all, he argued, lies the meta-institution of democracy (Rodrik 2007: 8).

In this volume we have already given, and will continue to give, special attention to the level of corruption as a measure of governance capacity because it provides an indication of whether governance is perceived by those who deal with it as protecting the rule of law. One of the most widely studied relationships between institutions and development is, in fact, that between corruption and economic growth. For example, Tanzi and Davoodi (2002: 218) concluded in an analysis across 97 countries that corruption reduces economic growth by 0.4 percent annually (see also Aidt 2009).

Continuing our chain of causality, however, even capable government, mobilizing substantial revenue, largely free of corruption, and rooted in an inclusive system, potentially might not perform well with respect to economic growth

and broader human development. Societies moving through developmental passages that require structural changes, while simultaneously interacting with a globalized world that also evolves rapidly, need good policies.

Government policies and economic growth

The discussion of government capacity bleeds rather obviously into a discussion of government policies. There have been many generations of policy analysis in the development literature that have provided a series of prescriptions for accelerating growth and broader human advance (see Todaro and Smith 2012 for a review). Such analyses are rooted in an evolving set of models and theories that describe economic growth and structural change, set, in turn, within paradigmatic perspectives on the nature of domestic and international society that tend to frame orientations with respect to the extent and character of the role of government in the development process.

Among the many complimentary and competing prescriptions have been: increased savings and capital formation; import substitution and managed external trade; export promotion and liberal external trade; lower taxes; higher taxes; monetary stability; fiscal balance; and, investment in public goods such as infrastructure, research and development, and human capital. In addition, of course, there have been prescriptions more directly associated with the character of governance, including protection of property rights, control of corruption, and, in general, enhancing the rule of law. Among the models and theories that Todaro and Smith (2012) and other texts have identified as shaping such prescriptions have been stages of growth à la Rostow, the Lewis two-sector model, the more structural change variant of Chenery and colleagues, and neo-classical conceptualizations and theories. The larger paradigmatic debates have included that between the perspective of so-called realism (going back at least to List 1841), which supports greater market intervention by governments to push movement up the ladder of development, and liberalism, which focuses much more heavily on the development and opening of markets (see Stiglitz 2002 for critical analysis). Of course, there are many variations and syntheses of the paradigms.

Among the most important contemporary debates is that between advocates of “big push” development approaches, who suggest a multipronged and significant assault on underdevelopment, and those who support more “targeted focus” approaches with carefully selected interventions. The proposals of the UN Millennium Project (2005) exemplify the big push strategy with what they termed “A Practical Plan to Achieve the Millennium Development Goals.” Albeit with special attention to human capital, that plan included a very wide range of interventions also targeting capital formation, infrastructure, knowledge and technology, institutional development, and environmental protection (UN Millennium Project 2005: 25). Rodrik exemplifies the targeted focus approach (Hausmann, Velasco, and Rodrik 2005; Rodrik 2007), which he and his colleagues refer to as “growth diagnostics.” Different countries at different points in their development face specific binding constraints on their growth, and Rodrik proposed a tree structure of possible constraints for analysis and targeting. Sachs (2005) similarly proposed a “clinical analysis” approach modeled after medical diagnosis to determine a country’s developmental problems. Related to the Rodrik and Sachs emphasis on the value of empirical analysis to determine leverage points, the Commission on Growth and Development (2008: 4) argued in support of “an experimental approach well expressed by Deng Xiaoping’s oft-quoted dictum to ‘cross the river by feeling for the stones.’”

These debates around appropriate policies have significant relevance for our discussion in Chapter 7, where we will explore policy-centric interventions that build on an approach that is something of a synthesis between big push and targeted focus.

Conclusion

The conceptual relationships across the triangle of governance concepts (security, capacity, and inclusion) and between them and human well-being help us understand how both virtuous and vicious cycles persist over long periods of time for countries, regions, and even globally. In fact, most countries have now experienced multiple decades of mostly positive developments across all three points of the triangle and in well-being.

■ *The level of perceived corruption provides an integrative indicator of whether governance protects the rule of law.* ■

■ *Even governments that mobilize revenues effectively and avoid corruption may not perform well; policies matter.* ■

■ *One of the most important development debates today is between advocates of “big push” multipronged assaults on underdevelopment and those who support more targeted interventions.* ■

This chapter has laid out some of the key dynamics that link these governance dimensions and broader well-being over time. In the process, it also has tried to identify some of the controversies and uncertainties around these relationships and dynamics, not least of which are (1) the directions of causality; (2) the relative strength of often highly interrelated drivers of change (statistically, the issue of multicollinearity); and (3) the complications of distinguishing longer- and shorter-term relationships. We hope we have also made clear that understanding change in governance and well-being requires a still broader search for explanatory factors, many of which are equally or more difficult to conceptualize, much less measure. For instance, historical path dependencies are important for countries, and when vicious cycles persist, they often have roots in ethnic fractionalization and historical

grievances. Similarly, heavy dependence on raw materials exports can help lock countries into dysfunctional patterns. In contrast, external actors can sometimes tip countries from vicious to virtuous cycles (or do the reverse), something to which we will return in Chapter 7.

Some existing forecasts of governance around the points of our triangle, as scarce as they are, anticipate continued functioning of the primarily virtuous cycles that have characterized recent decades and even movement of some currently struggling societies into positive dynamics. However, alternative forecasts point to the problems that accelerating global warming, an impending energy transition from fossil fuels, and global aging might cause. Before we explore our own Base Case forecast and variations on it, we need to provide some information on such existing forecasts and on the tool we will use.

1 Some indices of state fragility or vulnerability to conflict look to a smaller set of drivers of conflict, including those identified by the PITF project itself. In particular, the Peace and Conflict Instability Ledger of the Center for International Development and Conflict Management at the University of Maryland explicitly builds on the work of the PITF (Hewitt, Wilkenfeld, and Gurr 2010).

2 The correlations between the conflict measures of the PITF and the UCDP/PRIOD datasets are very high. For instance, the R-squared in the relationship between the average rate of conflict in the PITF data from 1990 to 2010 and the UCDP/PRIOD data is 0.59.

3 Marshall and Cole (2009) also explored a broad set of other variables that correlate with state fragility, including environmental degradation, inequality, and a variety of governance characteristics.

4 Bremmer (2006) referred to this as the J-curve phenomenon. Carment, Prest, and Samy (2010: 127) found a somewhat more pronounced U-shaped relationship with their measure of state fragility, the Country Indicators for Foreign Policy, and noted that this relationship has been seen by a number of analysts.

5 Spiro (1994) suggested that liberals may define away troublesome cases, and that, due to the limited number of democracies historically, the relationship of democracy to war is insignificant. Russett (1995) and Russett, Oneal, and Davis (1998) rebutted both arguments. Mansfield and Snyder (2005) found that emerging democracies, unlike mature ones, are prone to conflict (India and Pakistan illustrate this).

6 In our own examination of the relationship between median age and conflict propensity over the last 20 years, we find a clearly downward sloping pattern with an R-squared of 0.07, but the relationship decreases monotonically, without any obvious bulge as states age (which does not preclude more of the conflict being associated with democratization under conditions of particular age structures). We find an R-squared of 0.06 of conflict with youth bulge.

7 Another, and sometimes overlapping, body of work emphasizes the importance of free markets and economic interdependence for the reduction of interstate violence (see Gartzke 2007).

8 In the seminal tract "Perpetual Peace: A Philosophical Sketch," Immanuel Kant (1795) argued that "If the consent of the citizens is required in order to decide that war should be

declared . . . nothing is more natural than that they would be very cautious in commencing such a poor game, decreeing for themselves all the calamities of war. . . But, on the other hand, in a constitution which is not republican, and under which the subjects are not citizens, a declaration of war is the easiest thing in the world to decide upon, because war does not require of the ruler . . . the least sacrifice of the pleasures of his table, the chase, his country houses, his court functions, and the like.” The essay is available at <http://www.mtholyoke.edu/acad/intrel/kant/kant1.htm>.

- 9 See Lustick 1979 on “control regimes.” Russia in Chechnya is another example, one that also illustrates how the use of internal violence to control a population can undercut democratization movements.
- 10 The domestic fissures brought about by democratization can also have spillover effects into the international arena. Mansfield and Snyder (1995a) found that states in the process of democratizing are more vulnerable to international conflict. Following this work, others have argued that democratization can have mixed impacts on conflict, and that especially rapid transitions to democracy lead to an increased likelihood of war (Ward and Gleditsch 1998).
- 11 For more on the issues of democracy and conflict, see the International Institute for Democracy and Electoral Assistance’s handbook series, especially Harris and Reilly (1998) and Large and Sisk (2006).
- 12 Evan Hillebrand suggested this superior title in review of our manuscript.
- 13 IFs analysis suggests that central governments in non-OECD countries took 6.1 percent of GDP in indirect taxes in 2010, compared to the rate of 4.4 percent in OECD countries. Total tax rates were 23.7 percent and 32.5 percent respectively, indicating a much higher rate of direct taxation in high-income countries.
- 14 Katrina Manson, “IMF Criticises Uganda’s Extensive Tax Breaks,” *Financial Times*, July 11, 2011, available at <http://www.ft.com/intl/cms/s/0/dad0bdfc-abcd-11e0-945a-00144feabdc0.html#axzz1hUnjleIX>.
- 15 In 1995–1997, trade taxes averaged 2.6 to 5.1 percent of GDP across developing regions, compared with 0.3 to 0.6 percent in developed regions (Tanzi and Zee 2000: 13).
- 16 Przeworski and Limongi (1997: 169) reported values in 1985 dollars. We converted their values to 2010 dollars using the Consumer Price Index inflation calculator of the Bureau of Labor Statistics, which yielded a rate that proved to be almost precisely 2 to 1.
- 17 In empirical study over several decades, Linz (1994) found that presidential democracies fail more often than parliamentary democracies.
- 18 However, Friedman et al. (2011) found education did not advance the commitment to democracy of Kenyan schoolgirls.
- 19 Conversely, Marshall (2002a: 38) found that lack of education is associated with extremism and violence against noncombatant populations.
- 20 Ruttan (1991: 276–277) reviewed some of the literature on the relationship of culture

to governance, especially that looking at the association of Asian culture with consensus-based and collective orientations, finding it inconclusive. The issue is a very sensitive one for many analysts and observers, especially with respect to the protection of fundamental human rights and the debate as to whether definition of such rights should be universal or open to culture-specific variation. See again Sen (1999a) in support of universal values.

- 21 In recent decades, scholars have increasingly taken interest in cross-national studies of values, political and otherwise, including the World Values Survey, Eurobarometer, Afrobarometer, Asiabarometer, Latinobarometer, Gallup International, and Pew Global Attitudes surveys.
- 22 The reports, issued by UNDP in 2002, 2003, 2004, 2005, and 2009 are available at <http://www.arab-hdr.org/>.
- 23 In other work on the youth bulge the denominator is the total adult population rather than the working-age population.
- 24 IFs team member Mark Stelzner contributed valuable background research for this discussion of governance and human well-being relationships.
- 25 In addition, Gates et al. (2010) found many significant relationships between civil conflict and aspects of human development such as poverty, undernutrition, infant mortality, maternal mortality, and life expectancy.
- 26 Surprisingly, Polacheck and Sevastianova (2012: Abstract) concluded that intrastate conflict reduces GDP growth only by between 0.01 and 0.13 percent annually, much less than the finding of other studies. In contrast to that result, however, they found that interstate conflict reduces GDP growth rate by 0.18–2.77 percent annually, more comparable to the domestic impact other studies have found (Polacheck and Sevastianova 2012: 362–363).
- 27 The UN Development Group, European Commission, and Regional Development Banks, in cooperation with affected countries and donor countries, have carried out about a dozen multilateral Post-Conflict Needs Assessments as a step toward building recovery and development efforts.
- 28 United Nations Human Rights Council, *Human Rights in Palestine and Other Occupied Arab Territories: Report of the United Nations Fact-Finding Mission on the Gaza Conflict* (Goldstone Report) A/HRC/12/48 (25 September 2009), available at <http://www2.ohchr.org/english/bodies/hrcouncil/docs/12session/A-HRC-12-48.pdf>.
- 29 However, Przeworski and Limongi (1997) found that population grows more rapidly under dictatorships (in part because of the lower status of women), slowing growth per capita.
- 30 For instance, Ruttan’s (1991: 274) review of the quantitative literature on regime type and economic growth concluded with the generalizations that: (1) low-income countries with low political institutionalization suffer low rates of economic growth (and often political instability and violence); (2) low-income countries with authoritarian systems grow more rapidly than those with democratic systems; (3) at higher levels of GDP per capita (above about \$750 in 1985 dollars),

the advantage of authoritarian systems disappears. Ruttan concluded that there is some evidence that centralized political systems become an obstacle to growth as countries reach a middle-income level. In contrast, however, Halperin, Siegle and Weinstein (2005) devoted much of their extensive empirical analysis to countries under \$2,000 per capita and concluded that democracy led to higher growth.

- 31 See also Olson 1993. Similarly, there is in both currently developed and now developing countries some tradition for authoritarian regimes to provide social benefits, either from beneficence or to head-off pressures for democratization (Mares and Carnes 2009). One need only think of Venezuela under Hugo Chavez for a recent example. That tradition might not lead to longer-term growth, and in fact might undercut it by profligate spending.
- 32 Ross (2006) has argued that democracy does not necessarily help the cause of the poor. In his extensive statistical analysis on democratization, he stated (2006: 872) “[I] find no evidence that the rise of democracy [from 1970–2000] helped cause the fall in infant and child mortality rates. Democracy produced non-economic benefits for people in poverty, offering them important political rights . . . but did not lead to improvements in their material well-being. These improvements were overwhelmingly caused by economic growth, medical innovations, and the diffusion of low-cost health interventions.”
- 33 Daron Acemoglu, “Why Nations Fail” (PowerPoint Presentation, April 27, 2011), 15 and following, available at <http://economics.mit.edu/files/6699>. The presentation summarized the arguments based on the work of Acemoglu and Robinson that later appeared in Acemoglu and Robinson 2012.
- 34 In his own sweeping historical analysis of human development performance, however, Lindenberg (1993) concluded that what mattered most was not the regime type, but (1) the quality of public administration; (2) a strong civil society coalition that demanded and campaigned for universal human development policies (in education, health care, etc.); and (3) a relatively open economy with links to the outside world. We note that the second point sounds much like extensive inclusion.
- 35 The background work of Patrick McLennan (2010) of the IFs team was important to this discussion and provided information and selected text.
- 36 Aron (2000) looked at economic growth performance, especially of sub-Saharan African countries, from this perspective, and found institutions to be very important.
- 37 For information about the International Country Risk Guide, see http://www.prsgroup.com/prsgroup_shoppingcart/pc-39-7-international-country-risk-guide-icrg.aspx.
- 38 Information about Business Environment Risk Intelligence is available at <http://www.beri.com/>.



Forecasting Governance

■ *Even if we cannot anticipate specific timing and extent of changes in governance, we can seek to forecast the trajectory and general pace of such changes.* ■

How democratic will Syria and Yemen be in 2030 or 2060, and how corrupt will the government of Pakistan be? Will the authoritarian North Korean regime survive for even another five years? Will Somalia remain a failed state in 2020? In 30 years, will Mexico become as democratic and stable as the United States—or will the United States become as difficult to govern as Mexico? From the vantage point of 2014, we cannot answer such questions with any precision even for 2017, much less through and past the middle of the century. Because political change is, in part, a result of struggles across population groupings within countries, and because change therefore tends to be intermittent and irregular, as well as subject to reversal, we cannot forecast the timing of such changes with any confidence. In spite of the fact that our tables and graphs will provide precise numbers for democracy in Syria in 2030 and 2060 (see, for example, the end tables to this volume), such time-specific forecasts are not our central purpose.

Instead of trying to anticipate the specific details and timing of changes in governance, the core of our effort is to understand the general trajectory and approximate pace of change. What we can and will forecast in subsequent chapters is the direction that underlying pressures—in demography, the economy, education, information technology, energy and the environment, global political dynamics, and other domestic and international systems—are likely to move countries and regions. We also can attempt to say something about the general speed at which such changes might occur.

The potential transitions over the coming decades of countries in regions like the Middle East and North Africa or East Asia toward greater democracy and transparency, less vulnerability to conflict, and greater human well-being are important regardless of their precise timing. In addition to impacting the well-being of these countries' own populations, the future internal security, corruption levels, and inclusiveness of South Asian countries like India and

Pakistan, which have nuclear weapons and large populations, is very much an issue of long-term, ongoing interest globally.

How then can we go about forecasting such general patterns of changes in governance across regions of the world and even for specific countries? Part of the answer must be: tentatively and with many caveats. Modeling remains as much an art as a science; thus, while making decisions for action calls for conscientious use of forecasts, we must approach models and their forecasts with caution.

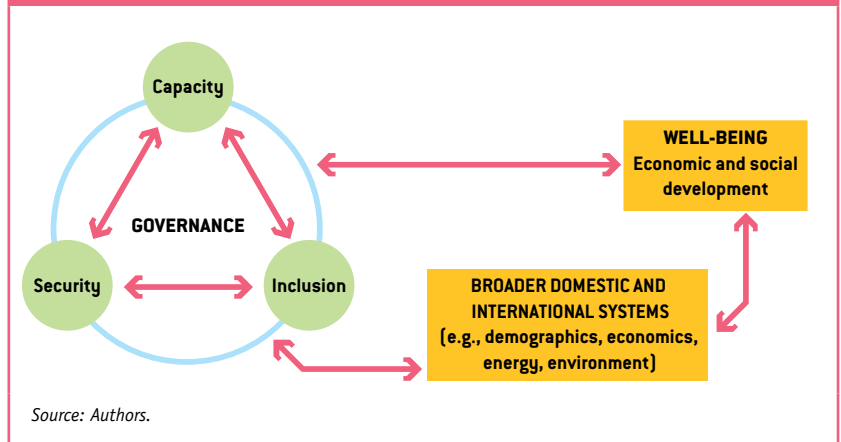
The primary purpose of this chapter is to introduce our tools for such forecasting. These tools relate back to the conceptual schema framing this volume, summarized in Figure 4.1. That schema focuses our attention on the relationships among three dimensions of governance (security, capacity, and inclusiveness) and between them and the broader well-being of citizens. In Chapter 3, we emphasized how a great volume of analysis suggests that positive feedback dynamics (both virtuous and vicious) link the dimensions of governance themselves and also tie governance bidirectionally to human well-being.

However, Chapter 3 also made clear that we need a still broader context for governance and well-being, including their connections to other systems, both domestic and international. For instance, changes in demographic, economic, education, and energy systems, as well as patterns of relationship among states in regional neighborhoods and globally, strongly affect governance and well-being. Fortunately, the inclusion of interacting countries and systems in the International Futures (IFs) forecasting tool allows that broader representation and analysis. As a context for our own efforts, it is useful to survey the forecasting that others have done before we begin our discussion of IFs and the representation of governance within it.

A Survey of Related Forecasting

Decision-making, including that which underlies policy decisions, requires implicit or explicit forecasts. At the personal level, most individuals in high-income countries choose not only what to wear in the morning and what smart phone to buy, but also their education goals, career path, and life partner, based on their sense of (forecasts of) the success and happiness the

Figure 4.1 Governance and the broader systems to which it links



choices may bring them. They understand the difficulty and associated costs of forecasting and the errors they are likely to make. Yet, they also understand, as do policy makers and even societies (especially in critical periods of obvious crisis), that stronger insight into the potential consequences of alternative paths can provide great benefits.

Therefore, it is surprising how little forecasting, especially for the longer term, we find associated with the various conceptual elements of governance and even around human development and many of the broader domestic and international systems in which these variables are imbedded. The primary exceptions are demographic and economic forecasting, where the relative conceptual clarity (population and money, respectively) and, in the case of economics, the metrics of costs and benefits, have encouraged and facilitated greater activity. Our initial task is to indicate the extent and general character of forecasting relevant to our own efforts in this volume.

Forecasting security and conflict

Although the distinction is blurred in much written work, forecasting can be normative or exploratory. That is, it can provide visions of where we want to go (normative) or insights into where we seem to be going (exploratory). It is this latter form that primarily interests us in this volume.

Enlightenment thought is the font of a complex combination of normative and exploratory (albeit highly generalized) thinking about the evolution of governance and of

■ It is surprising how little forecasting, especially for the longer-term, we find associated with governance and even around human development. ■

■ **Institutions**
have spent
hundreds of millions
of dollars to forecast
near-term political
instability. ■

conflict. While somewhat ironically praising the autocratic Frederick of Prussia, Immanuel Kant defined the Enlightenment as human emergence from a “self-imposed immaturity” to an ability to argue and think for oneself.¹

Immanuel Kant and other elaborators of Enlightenment thought anticipated an ongoing progression, perhaps periodically interrupted, toward global democracy. In significant part because of that expected movement toward democracy, they also looked forward to an ongoing progression toward global peace.² Kant did not assume that this was the natural order, however. In fact, like classical realist analysts (Morgenthau 1948; Waltz 1959), he explicitly said that the natural state among humankind was not peace, but war.³ Thus, Kant concluded that a state of peace must be established (not assumed to be forthcoming), but he was more optimistic than many realists in believing that to be possible and even likely.

In general, we can similarly identify contemporary scholars as being optimistic or pessimistic regarding the future of both domestic and international conflict. Optimists point to increasing incomes, education levels, and democracy as bringing about the kind of world that Kant envisaged. Pessimists point to climate change and other environmental

problems, such as water scarcity, food insecurity, peak oil, changing global power structures, and the nefarious use of advancing technology as bringing about new and more conflict.

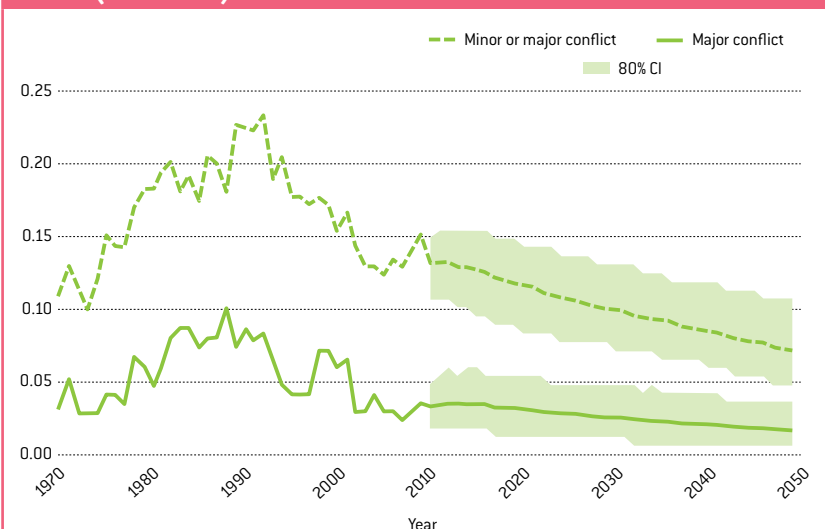
A more secure world

Defense and foreign policy institutions have spent hundreds of millions of dollars supporting efforts to forecast political instability over the relatively near-term (very seldom beyond five years).⁴ Explicit and publicly available forecasts, especially long-term, large-scale ones are scarce, however.

One of the major efforts to understand domestic instability or conflict has been the work of the Political Instability Task Force (PITF), discussed both in Chapters 2 and 3. The PITF project has focused on the analysis of historical conflicts, however, and it has not produced publicly available forecasts of future conflict or, more precisely, conflict’s higher or lower probability across time.⁵ An exception within the PITF tradition is the Peace and Conflict Instability Ledger associated with the Center for International Development and Conflict Management at the University of Maryland (Hewitt, Wilkenfeld, and Gurr 2012), but its forecasts are also decidedly short-term (two-to-three years). Earlier, we saw that the literatures around state failure and domestic vulnerability to conflict (as well as various political risk services) are also attentive to very general prospects for domestic conflict in the short run.⁶ In fact, considerable interest exists in such short-term forecasting, but much less in the longer term.

The forecasts most comparable to those we wish to produce have come from researchers at the Peace Research Institute Oslo (PRIO). The analysis at PRIO of the causes of conflict by Hegre et al. (2013) has much in common with the PITF approach (Chapter 3 noted the similarities and differences). PRIO’s key drivers are population size, infant mortality rates, demographic composition (e.g., youth bulges), neighborhood characteristics, and education levels; former conflicts are also important.⁷ The project’s forecasts are unique in extending from 2010 through 2050, thereby allowing an assessment as to whether global conflict is likely to increase, decrease, or be stable over the longer term. Figure 4.2 shows Hegre et al.’s

Figure 4.2 Observed and simulated proportion of countries in major or minor conflict (1970–2050)



Note: The x-axis represents the proportion of countries in major or minor conflict, and CI refers to the confidence interval of the forecasts.

Source: Hegre et al. 2013: 261; used with permission.

answer to that question—namely, that conflict is on a downward trend that will continue. Even in PRIO’s pessimistic scenario (not shown in the figure), the trajectory is flat rather than increasing. Specifically, their median case anticipates that the proportion of countries in conflict will decline from about 15 percent in 2009 to about 7 percent in 2050, and that the remaining conflicts will be concentrated in East, Central, and South Africa and in East and South Asia (Hegre et al. 2013: 1).

A less secure world

In addition to traditional sources of conflict, such as competing territorial claims and ethnic and religious divisions, many analysts in both government and academic circles who are more pessimistic now draw attention to connections between climate change and increases in conflict, both intrastate and interstate.⁸ Some are near apocalyptic in their forecasts. Homer-Dixon, writing in *the New York Times*, stated that “Evidence is fast accumulating that, within our children’s lifetimes, severe droughts, storms and heat waves caused by climate change could rip apart societies from one side of the planet to the other.”⁹ Buhaug, Gleditsch, and Theisen (2008: 2) have conceptualized three paths whereby climate change will impact conflict: intensification of natural disasters, increasing resource scarcity, and sea-level rise. Dyer (2010) has also argued that climate change will lead to greatly increased conflict across the globe.¹⁰

Busby et al. (2010: 22) assessed which African regions are most vulnerable to a changing environment by exploring the nexus of governance weakness, household vulnerability, and historical rates of exposure to extreme weather events (among the most vulnerable countries were the Central African Republic, Ethiopia, Kenya, Madagascar, and Sudan). Other researchers who explored the relationship between climate change and conflict concluded that temperature change (about 1 degree Celsius in their scenario) would increase the incidence of civil conflict in Africa from 11 percent of country-years to approximately 17 percent by 2030 (Burke et al. 2009: 20672).¹¹

One of the specific paths from climate change to conflict is via water shortages. Yet, problems around water may come not just from climate change. Gleick (1993)

argued that water resources have been the source of much historical conflict¹² and that continued population growth (as well as climate change) will increase water pressures underlying international conflict, though many of these tensions may not escalate to violence. Specifically, Gleick (1993: 111) concluded that “The Middle East and the Persian Gulf exhibit many vulnerabilities to water-related conflict, as do certain countries of Africa, Europe, and southern and central Asia.”

More generally, many bases for potential conflict around resources are largely unrelated to environmental change. Some analysts have suggested that the peaking of global oil production could lead to catastrophic economic and security outcomes within and between countries. Hirsch (2008), for example, argued that declines of global GDP by 2–5 percent annually could follow peaking of global oil production¹³ (see also Farrell and Brandt 2006). Given the continued emergence of other energy forms, this sounds extreme to us.

Klare (2001) synthesized many of the pessimistic arguments regarding resources and the future of conflict, arguing that the question of resources will play an increasingly important role in future questions of security. He contended that there will be conflict over energy resources in the Caspian Sea, Persian Gulf, and South China Sea; conflict over water resources in the Indus River, Jordan River, Nile River, and Tigris-Euphrates River basins; and domestic strife over mineral resources in Angola, Borneo, Papua New Guinea, and Sierra Leone.

While we have identified some exceptions (and there certainly are others), there has been limited forecasting of intrastate conflict (and there is not much on international conflict either). Moreover, most of what exists has been quite short-term and/or quite qualitative.

Forecasting democracy

The unfolding of the Enlightenment was an impetus for an analytical expectation of, and normative press for, democracy. Thinkers within that tradition (sometimes referred to as liberal) typically have argued that progress toward such governance is fundamentally inevitable. After the dissolution of the Soviet Union, Fukuyama’s 1992 declaration of victory for the liberal perspective of the Enlightenment and

■ Many analysts point to connections between climate change and increases in conflict. ■

■ In spite of extensive interest in intrastate conflict, most forecasting has been quite short-term and qualitative. ■

■ **Capacity improvement in governance tends to be a focal point of normative prescription, not forecasting.** ■

pronouncement of the end of great ideological divides was fundamentally in this mixed exploratory and normative tradition.

In a more exploratory fashion, Huntington (1991) also anticipated the general advance of democracy, but he saw it to be subject to waves of advance and reversal. During the Cold War, Huntington had argued that the prospects of democratization were high in Brazil and Argentina, low in industrializing East Asian economies (highest but not very high in the Philippines), low in the Middle East and Africa, and “virtually nil” in Eastern Europe because of the Soviet influence (Huntington 1984: 215–217). While such failure to anticipate the implosion of the Soviet Union was all but universal, Huntington (1991) appropriately stressed that the complicated interaction of economic pressures toward democracy with long-lived authoritarian leaders and with different cultural traditions make the unfolding of further democratic advance and reversal difficult to anticipate.

There is also implicit forecasting in the modern empirical tradition, of which Lipset was the early leader. In Chapter 3, we discussed his analysis (Lipset 1959) of the foundations of democratization, driven by forces, such as income and educational advance, that we can largely anticipate will continue; he did not explicitly discuss the pace of advance or possibilities of reversal, however. Revisiting the issue of the social foundations for democracy in the mid-1990s, Lipset, acknowledging the influence of Huntington, suggested the possibility that the democratic transitions from the mid-1970s until the time of his revisited analysis might not have had the legitimacy to be sustainable (Lipset, 1994).

It is not normal academic practice to make forecasts of any specificity related to governance. In a somewhat tentative departure, however, and working within the empirical tradition of Lipset, Przeworski et al. (2000) included some predictions in their conclusions. For 2030, they forecast: (1) world per capita income approximately 2.5 times higher than in 1990; (2) most of humanity living in democracies, but India to be a dictatorship; (3) population growth slowing as in UN forecasts; (4) “quite a few wars, all in poor countries”; and (5) increased income disparities among countries (2000: 276, 277).

In a more definitive departure from the normal practice, by making forecasts the centerpiece of his work rather than a secondary and even casual add-on, Bueno de Mesquita (2002) predicted (the word he prefers) future regime-type values using a game theory model. Taking Polity Scores from 1995 (and transforming them to a 100-point scale), he predicted that by 2028 approximately three-fourths of states will be democratic (at scores of 75 or above), in comparison with two-thirds in 2000 (Bueno de Mesquita 2002: 141).¹⁴

Relying on demographic variables alone, Cincotta and Doces (2011: 99, 112) forecast that increasing demographic maturity and the dissipation of youth bulges are strengthening the probability of movement to liberal democracy not only in North Africa, but also the northwestern rim of South America (meaning Ecuador, Colombia, Venezuela, and Guyana), and scattered states across Western Asia. We earlier noted the success of Cincotta’s forecasts with respect to Tunisia and North Africa.

Returning to a more broad-sweep, qualitative approach, Lewin has argued that the unfolding of democracy across the world is a gradual process, but that it might be complete in about one hundred years. Lewin pointed out:

It took two hundred years to implement democracy within the nation state, from the emergence of democratic theories during the Enlightenment to the introduction of popular government after World War I. If the same process were to follow at the international level with the Treaty of Versailles [1919] as the baseline for the calculation, one would expect a democratic world order to emerge by the year 2119. (2012: 5)

Again, we find overall that forecasting of democracy (let alone broader inclusion) is quite limited. Much has been qualitative and fairly general. The driving variables tend to be those discussed in Chapter 3, especially income, but also demographic change.

We devote no attention here to forecasts by others concerning government capacity because we are aware of none—although Wagner’s Law obviously contains an expectation of continued

rise in government revenue share of GDP, at least for developing countries. Capacity improvement tends to be a focal point of normative prescription, not of forecasting.

Forecasting human well-being and broader contextual systems

The Population Division of the United Nations Department of Economic and Social Affairs is the premier global population forecasting organization. Its biennial revisions of high, median, and low population forecasts through 2050 (supplemented periodically by longer ones) are widely used in and of themselves and as drivers in other forecasting exercises.¹⁵ The IFs project has long compared its own population forecasts with those of the UN, and found them to be very similar. The U.S. Census Bureau and the International Institute for Applied Systems Analysis (IIASA) in Austria also produce highly respected population forecasts.¹⁶

Because of the interests that most users of economic forecasts have (for instance, anticipating recessions or recovery from them), and because of the greater difficulty of economic forecasting relative to population forecasting, economic forecasts tend to be shorter term. Notably, most forecasts in the International Monetary Fund's semiannual *World Economic Outlook* extend about five years. A few services sometimes extend their forecasts to what they specify to be the "long term," meaning five-to-ten years. The best known and most widely used of these are the forecasts of Oxford Economic Forecasting, which extend as far as 10 years into the future for 190 countries.¹⁷ Goldman Sachs also provides near-term forecasts as part of its research service. On occasion, its forecasts have extended over a long period, as when it produced a report on the BRICs (Brazil, Russia, India, and China) through 2050 (Wilson and Purushothaman 2003). The Organisation for Economic Co-operation and Development (OECD) has also looked out further, at least for OECD members and a small number of other countries, preparing GDP per capita forecasts (at purchasing power parity [PPP]) for all years through 2060.¹⁸

Other groupings of scientists and policy analysts have also needed economic forecasts combined with strong historical datasets. Those working on the World Health Organization's

Global Burden of Disease project needed and built a data and forecasting series on GDP per capita for 210 countries from 1950 through 2015 (James et al. 2012). The Economic Research Service of the U.S. Department of Agriculture similarly put together a data and forecasting series on GDP (as well as population and other variables) for 190 countries from 1969 through 2030.¹⁹

In contrast to the relatively near-term focus of most economic analysts, those interested in energy and the environment have needed and sometimes developed truly longer-term economic forecasts. For instance, in 1998 IIASA produced a volume (Nakićenović, Grübler, and McDonald 1998) in cooperation with the World Energy Council with global economic forecasts through 2100. The progressive assessment rounds of the Intergovernmental Panel on Climate Change (IPCC) have needed such economic growth forecasts as a foundation for their energy and environmental analyses through 2100. The set for the third assessment round is available in the IPCC report on emissions scenarios (IPCC 2000).

More recently, Duval and Maisonneuve (2010) produced forecasts of GDP through 2050 for a set of selected countries, country groupings, and the rest of the world, and Fouré, Bénassy-Quéré, and Fontagné (2012) provided forecasts through 2050 for 147 countries. The IFs project itself provided a set of four alternative GDP scenarios through 2100 in support of the *Global Environment Outlook-4* of the United Nations Environment Programme (UNEP 2007). The research community is currently in the process of developing new scenarios that will include alternative pathways for GDP growth out to 2100 for support of the IPCC process and other uses (Kriegler et al. 2012; Van Vuuren et al. 2012).

Moving beyond population and economic variables to other aspects of human development, there are again relatively few long-term forecasts. With respect to poverty, relatively short-term forecasts of rates and levels of poverty around the world have been important for analyzing progress toward the Millennium Development Goal of reducing extreme poverty rates everywhere by 50 percent between 1990 and 2015. One of the very few sources for such analysis has been the World Bank's semiannual forecasts in its *Global Economic Prospects* series. The primary annual volume in the series includes forecasts of poverty numbers with somewhat

■ Some analysts interested in energy and the environment have developed truly long-term economic forecasts. ■

■ *The IFs system is unique in its provision of a wide array of integrated, long-range global forecasts.* ■

■ *The central purpose of IFs is to facilitate exploration and shaping of global futures through alternative scenarios.* ■

■ *IFs produces forecasts for 183 countries through the year 2100.* ■

varying horizons over time (e.g., through 2020 in the 2010 release), but only for China, India, and major global regions.

Another key human development variable is education attainment. We shall see that a number of the forecasting formulations in IFs used for this volume rely on forecasts of years of education, as did the long-term conflict forecasts of PRIO. Beyond the IFs project, perhaps the only other source of such long-term forecasts is IIASA.²⁰ Still other critical human development variables concern population health, including life expectancy. The two primary sources of such forecasts are the World Health Organization's Global Burden of Disease project (Mathers and Loncar 2006) and the IFs Patterns of Potential Human Progress project (Hughes, Kuhn, et al. 2011).

Although a considerable number of forecasts thus exist across the range of interests in this volume, this brief survey suggests how relatively thin the capability is for long-term integrated global forecasting. The International Futures system is quite unique in its provision of a wide range of integrated, long-range global forecasts. The end tables of this volume provide IFs forecasts through 2060 at country and regional levels for governance variables as well as for human development and broader system variables. Chapters 5–7 will discuss our governance forecasts in a Base Case as well as in alternative possible futures.

The International Futures Modeling System

As a foundation for the forecasts of this volume, we need to present the model underlying them. We begin with a general overview of IFs as an integrated, dynamic modeling system. We then move to a more detailed discussion of the representations of governance in IFs.

IFs is a large-scale, long-term, integrated global modeling system.²¹ It represents demographic, economic, energy, agricultural, sociopolitical, and environmental subsystems for 183 interacting countries (see Figure 4.3). In support of the **Patterns of Potential Human Progress** series, we have added models of education, health, and infrastructure, and we have greatly elaborated our earlier representations of domestic sociopolitical (governance) systems.

The IFs project recognizes the close interaction of three dimensions of human activity:

- *the development of individual human capabilities*, including the achievement of improved health, extended education, and adequate material well-being;
- *the evolution of social systems*, including the advance of security, inclusive democracy, and government capacity in equitable societies;
- *the interaction of human systems with the broader biological and physical environment*, including the achievement of sustainability of physical inputs and the protection of natural systems from harmful human outputs.

Across these domains, the project draws inspiration from seminal figures such as Nobel Prize winner Amartya Sen (1999a), with his emphasis on individual development and freedom; widely respected philosopher John Rawls (1971), with his emphasis on fairness within society; and former Norwegian prime minister and UN official Gro Harlem Brundtland (World Commission on Environment and Development 1987), with her group's foundational definition of sustainability.

The central purpose of IFs is to facilitate exploration and shaping of global futures through the creation and analysis of alternative scenarios. Fundamentally, IFs is a thinking tool, allowing exploration of human leverage in pursuit of key goals in the face of great uncertainty and across variable long-term time horizons through 2100. IFs assists in understanding the state of the world and the future that appears to be unfolding and with thinking about and shaping the future we want to see.

IFs is a structure-based (with extensive representation of underlying accounting systems such as demographic structures and the exchanges of goods, services, and finance), agent-class driven (so as to provide a basis for representing change), dynamic modeling system. That is, IFs represents typical behavior patterns of major agent-classes (households, governments, firms) interacting in a variety of global structures (demographic, economic, social, and environmental). The system draws on standard approaches to modeling specific issue areas whenever possible, extending those as necessary,

and integrating them across issue areas. For instance, the demographic model uses the typical cohort-component representation, tracking country-specific populations over time by age and sex (extended by education). Within that structural or accounting framework, the model represents the fertility decisions of households (influenced by income and education) as well as mortality and migration patterns.

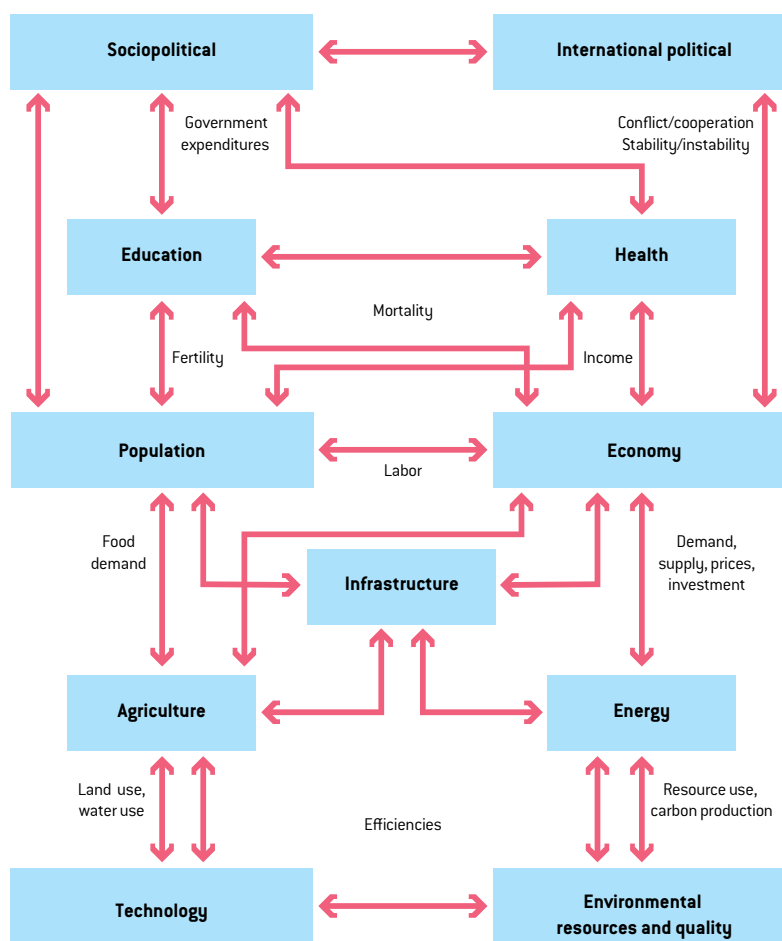
Rooted in the theory of various disciplines and subspecializations, IFs is also heavily data based. About 2,500 supporting data series come from the various member organizations of the United Nations family and many other sources (Chapter 2 discussed some of the key data series in the system related to governance). The database underlying IFs, and integrated with the system for use by others, includes data for 183 countries over as much of the period since 1960 as available in each series.

Governance sits largely within the sociopolitical model. Some of the key features of the sociopolitical model are that it:

- represents the prospects for internal war or state instability;
- represents fiscal policy through taxing and spending decisions;
- shows eight categories of government spending (military, health, education, R&D, two categories of infrastructure, foreign aid, and a residual category) plus transfer payments;
- represents the general evolution of other governance variables related to capacity, including corruption;
- represents the possible change of regime type;
- represents changes in social conditions of individuals (like fertility rates, literacy levels, or poverty), attitudes of individuals (such as the level of materialism/post-materialism of a society from the World Values Survey), and the social organization of people (such as the status of women).

Two other models within the IFs system that interact especially closely with the governance representations in the sociopolitical model are the population and economic models. Some of the key characteristics of the population model are that it:

Figure 4.3 Major models in the IFs modeling system and example connections



Links shown are examples from much larger set, and technology elements are dispersed throughout the modeling system.

Source: Authors' conceptualization.

- represents 22 age-sex cohorts to age 100+ in a standard cohort-component structure (but computationally spreads the five-year cohorts initially to one-year cohorts and calculates change in one-year time steps);
- calculates change in cohort-specific fertility of households in response to income, income distribution, infant mortality (from the health model), education levels, and contraception use;
- uses mortality calculations from the IFs health model for 15 causes of death;
- computes average life expectancy at birth, literacy rate, and overall measures of human development;
- represents migration, which ties to flows of remittances.

■ IFs includes 2,500 supporting data series covering all years since 1960 for which data are available. ■

■ Initially developed as an educational tool, IFs increasingly supports research and policy analysis. ■

■ IFs is freely available online at Pardee.du.edu and in a somewhat richer downloadable version. ■

Some of the most important characteristics of the economic model are that it:

- represents the economy in six sectors: agriculture, raw materials, energy, industry, services, and information and communications technology;
- computes and uses input-output matrices that change dynamically with development level;
- is a general equilibrium-seeking model that does not assume exact equilibrium will exist in any given year; rather, it uses inventories as buffer stocks and to provide price signals so that the model chases equilibrium over time;
- contains a Cobb-Douglas production function that (following insights of Solow [1956, 1957] and Romer [1990]) endogenously represents contributions to growth in multifactor productivity from human capital (education and health), social capital and governance (domestic security, low corruption, democracy), physical and natural capital (infrastructure and energy prices), and knowledge development and diffusion (research and development and economic integration with the outside world);
- uses a linear expenditure system to represent changing household consumption patterns;
- utilizes a pooled rather than bilateral trade approach for international trade;
- is imbedded in a social accounting matrix (SAM) envelope that ties economic production and consumption to representation of inter-agent class financial flows.

The model system itself runs in annual time steps from its initial year (currently 2010).²² The menu-driven interface of the IFs software system allows display of historical data since 1960 by themselves or in combination with results from an historical Base Case. It similarly facilitates display from a forecast Base Case plus flexible development and analysis of alternative scenarios over time horizons from 2010 through 2100. Users can save scenarios for development and refinement over time. Standard framing scenarios, such as those from UNEP's *Global Environmental Outlook-4*, are available within the model for users to explore and potentially develop further. The system provides

tables, common graphical formats, and a basic Geographic Information System or map display capability. It also provides specialized displays, such as age-sex-education cohort structures, social accounting matrices, and government performance risk evaluation.

Although initially developed as an educational tool, IFs increasingly supports research and policy analysis. IFs was a core component of a project, sponsored by the European Commission (EC), exploring the New Economy in the TERRA project and a subsequent EC project on information and communication technology and sustainability (Moyer and Hughes 2012). Forecasts from IFs supported Project 2020 (*Mapping the Global Future*) of the United States government's National Intelligence Council (US NIC 2004) as well as *Global Trends 2025* (US NIC 2008) and *Global Trends 2030* (US NIC 2012). IFs provided long-term population and economic forecasts and analysis for the *Global Environment Outlook-4* of the United Nations Environment Programme (UNEP 2007). The Frederick S. Pardee Center for International Futures (the home of the IFs project) has also provided scenarios on environmental challenges to human development for the United Nations Development Programme's *Human Development Report* in 2011 and 2013 (Hughes, Irfan et al. 2011; Pardee Center for International Futures 2013; UNDP 2011; UNDP 2013). The IFs model has been used in long-term analysis of global inequality (Hillebrand 2008) and of the winners and losers from possible de-globalization (Hillebrand 2010). And it serves as the primary tool for the African Futures 2050 project based at the Institute for Security Studies in South Africa (Cilliers, Hughes, and Moyer 2011).

IFs is freely available online at Pardee.du.edu and in a somewhat richer downloadable version at the same address. The model's Help system contains primary documentation, and the website provides extended reports and publications.

Extending IFs to Forecast Governance

Chapter 3 addressed the complexity of causal relationships underlying change in governance variables across our three dimensions, including the close interrelationships of governance dimensions themselves, as well as their bidirectional linkages with a wide range of additional domestic and international drivers.

Because we needed to simplify this complexity for model development to be feasible, we selected two variables as the foci for each of our three governance dimensions. For security, we focus on probability of intrastate conflict and vulnerability to intrastate conflict. For capacity, we focus on government revenues and the level of government corruption (more accurately, the perceived absence of corruption). And for inclusion, our foci are extent of democracy and gender empowerment. Our drivers for each of these variables are described below.

- *Probability of intrastate conflict* is a function of past conflict, neighborhood effects, economic growth rate (inverse), trade openness (inverse), youth bulge, infant mortality, democracy (inverted-U), state repression (inverse), and external intervention.
- *Vulnerability to intrastate conflict* is a function of energy trade dependence, economic growth rate (inverse), urbanization rate, poverty level, infant mortality, undernutrition, HIV prevalence, primary net enrollment rate (inverse), intrastate conflict probability, corruption, democracy (inverse), government effectiveness (inverse), freedom (inverse), and water stress.
- *Government revenues* are a function of past revenue as percentage of GDP, GDP per capita, and fiscal balance (inverse).
- *Corruption* is a function of past corruption level, GDP per capita (inverse), energy trade dependence, democracy (inverse), gender empowerment (inverse), and probability of intrastate conflict.
- *Democracy* is a function of past democracy level, youth bulge (inverse), gender empowerment, and dependence on energy exports (inverse).
- *Gender empowerment* is a function of past gender empowerment level, GDP per capita, youth bulge (inverse), and primary net enrollment rate.

The remainder of this chapter will focus on the relationships in the model, but several broad characterizations help provide insight into them.

- In almost each case, there are path dependencies that supplement the basic

relationships because social change has considerable inertia.

- The driving and driven variables clearly constitute a complex syndrome of mutually interdependent developmental interactions, not a simple causal sequence. The modernization literature of the 1950s and 1960s (see, for example, Lerner 1958) often made the simplistic characterization that “all good things go together.” In spite of the criticism that this perspective drew, the reality is that large numbers of good and sometimes not-so-good development patterns do unfold almost simultaneously. North, Wallis, and Weingast stated clearly the difficulty this pattern of simultaneity causes for analyses such as ours:

Because changes in these elements [improvements in human capital, physical capital, technology, and institutions] happen at roughly the same time, quantitative social scientists have been persistently frustrated in their attempts to identify causal forces at work in the midst of a sea of contemporaneous correlation. (2009: 12)

- In Chapter 1, we discussed the tendency for the dimensions of governance that traditionally develop later to feed back to earlier ones—notably, for inclusion to affect capacity via reduced corruption, and also for inclusion and capacity to reduce the probability of internal conflict. This tendency reinforces the insight that development of governance can potentially create increasingly stable modern governance systems via positive feedback loops. Such feedback loops, as well as an emphasis on the role of inclusion in them, are embedded in the causal structure we built into IFs.
- Contributing to the broader positive loops within society (see again Figure 4.1), the forward linkages of governance variables to economic growth and human development (not identified in the summary of governance formulations above but described later in this chapter) tend to feed back to governance variables across all three dimensions.

■ IFs builds two categories of domestic conflict from data and focuses on internal war. ■

- In total, these insights suggest the possibility that the reinforcing processes may accelerate as governance strengthens, setting up a kind of tipping from one equilibrium to another (a potential phenomenon to which Chapter 7 returns).

We will now elaborate, in turn, on the manner in which IFs represents the three points of the framing conceptual triangle of core governance dimensions, as well as on their interactions with each other and their broader connection to other human systems.

Governance: The security dimension

Chapters 2 and 3 introduced two types of measures related to domestic conflict and security. The first, and the one our forecasting will rely on most heavily, has roots in the work of the Political Instability Task Force (see again Box 2.2). The PITF database allows us to see the actual pattern of conflict in countries over time and to use that historical conflict pattern to compute an initial probability of conflict. The second type of measure includes indices of vulnerability to conflict, generally presented as rankings of countries with respect to their vulnerability. Because these indices are not rooted as solidly in past conflict patterns, we cannot interpret their values or the rankings based on them as probabilities of conflict, but rather as propensities for conflict (and as indicators more generally of country performance and risk).

In order to establish forecasting approaches within IFs, we first looked to earlier work (as outlined in Chapter 3) with respect to both types of measures. In addition, we did our own statistical analysis to create an underlying base formulation for overt conflict probability. We further augmented the basic approach to forecasting conflict probability via more algorithmic elements, because algorithms or logical procedures, like recipes, help guide forecasting through steps that analytical functions cannot easily represent. The algorithmic elements are tied, in part, to our efforts to fit the IFs forecasting approach at least relatively well to historical data from 1960 through 2010. With respect to vulnerability to conflict, we supplemented literature analysis with a division of drivers into elements representing governance character, government performance, and broader country-specific variables, always with an eye to what we can actually forecast within IFs.

Internal conflict or war probability

The PITF defined state failure in terms of four different types of events (with specific magnitude thresholds): adverse regime change (such as coups); revolutionary wars; ethnic wars; and genocides or politicides (Esty et al. 1998). On the recommendation of Ted Robert Gurr, one of the founding fathers of the PITF data project and approach, IFs builds two categories of insecurity from the four types: instability (adverse regime change) and internal war (combining revolutionary war, ethnic war, and genocide or politicide).²³ It is the internal war variable that poses the greater security threat to the state and its citizens and is therefore of central interest to us here.²⁴

Figure 4.4 shows the pattern of internal war since 1960 by region. At a global level, these recent regional histories aggregate into the pattern we saw in Figure 1.2: a rise from 1960 to a peak in 1992 and a subsequent fall. The regional values are country averages of 0 (no conflict) and 1 (conflict) values—values of 1 would mean a war for each country in each year. These regional values are quite comparable in pattern to the average regional intrastate war magnitude data from the Major Episodes of Political Violence dataset presented in Figure 2.2.

We use simple, rather than population-weighted, averages so as to avoid having China and India overwhelm their respective regions. We also introduce a five-year moving average because it greatly helps us see the changing patterns over time—including the early rise and then fall of conflict within countries of East Asia and Pacific and the subsequent rise of conflict in South Asia, with less pronounced but noticeable peaks in conflict in the Middle East and North Africa in the 1980s and sub-Saharan Africa in the late 1980s and early 1990s.

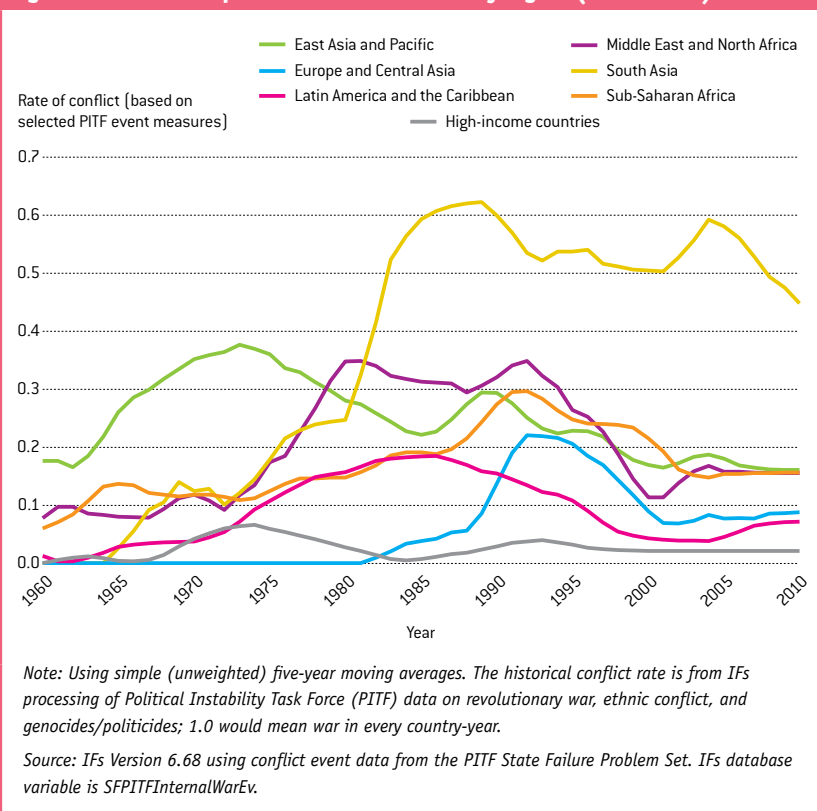
Chapter 3 identified a number of country-specific variables that empirical analyses regularly tell us are especially important in determining intrastate conflict. Yet, it is obvious from a simple look at the historical conflict data in Figure 4.4, as well as from our own statistical analysis, that there is a very great deal of variation in conflict over time that these “usual suspect” variables will not explain. Therefore, in many cases, they cannot be very effective for forecasting conflict. In looking at a number of these variables we found that:

■ Normed infant mortality proves statistically interesting, being associated with (explaining or being explained by, using a second-order polynomial form) about 12 percent of cross-country variation in intrastate conflict in the most recent data-year (8.9 percent in panel analysis across the 1960–2000 period). Thus, forecasting this variable may help us understand general propensity for conflict, but its slow variation over time means it cannot possibly explain the big surges of warfare within regions and their country members in Figure 4.4.

■ Trade openness (which we define as the sum of exports and imports as a percentage of GDP) can be helpful in understanding variations in conflict and varies within countries more rapidly than infant mortality. In cross-sectional analysis with most recent data, trade openness (inverse relationship) and infant mortality together account for 15 percent of the variation in intrastate conflict. Moreover, the increase of trade openness coincides with the reduction of conflict historically within the countries of East Asia. But openness perversely increased over time in South Asia as intrastate conflict also rose. And its statistical power is good but not great. Trade openness itself is associated with 11 percent of the variance within intrastate conflict in a logarithmic formulation.²⁵

■ Factionalism, which can have many bases, including ethnicity or the intensity of feelings around ethnicity, is of surprisingly little use in forecasting. Most underlying social divisions change very slowly over time. Although intensity of factionalism around those divisions may change much more rapidly (for instance, as conflict entrepreneurs inflame passions), we cannot anticipate when that might happen. Nor do we believe we can anticipate changes in other potential ideational drivers, such as ideologies. Further, historical measurement of change in factionalism risks using conflict as a proxy, thereby creating the danger that correlations between it and conflict are simply a tautological artifact of that measurement. Finally, our own analysis of various measures of ethnic and/or religious factionalism and intrastate conflict suggests a smaller relationship than we expected.

Figure 4.4 Historical patterns of internal war by region (1960–2010)



■ Youth bulges are a potentially more useful driver in forecasting because our demographic forecasts are stronger than those of variables like factionalism or even trade openness, and because demographic structures exhibit clear and non-monotonic variation over time. There were many bulges in East Asia during the 1970s, as there have been many recently in South Asia and as there are today in the Middle East and North Africa. In cross-sectional analysis of recent data, a linear relationship with youth bulge size accounts for 7 percent of the variation in conflict (however, in panel analysis since 1960, it accounts for only 3.5 percent).

■ Consistent with studies that have found anocracy rather than autocracy more likely to be related to conflict, the relationship of measures of regime type with conflict have an inverted U-shaped character (see again Figure 3.2). Using a third-order polynomial, we found that the Polity measure of regime type explains 4 percent of the variation in recent intrastate war.²⁶

■ A great deal of variation in conflict over time cannot be explained by commonly identified drivers. ■

■ For forecasting, we conceptualize intrastate war not as a “yes” or “no” outcome but as a probability of conflict in any country-year. ■

■ Income of \$18,000 per capita (2005 dollars at PPP) is a point above which economic downturns and youth bulges no longer tend to increase the probability of internal war. ■

- Downturns in economic growth rates preceded the collapse of communism in Europe and Central Asia, the rise of internal conflict in both Latin America and the Middle East in the 1980s, and the events of the Arab Spring in 2011. Analysis of the magnitude of downturn required to generate conflict and the lag between downturn and conflict is complex. Through experimentation directed at fitting historical conflict patterns,²⁷ we found that a 1.0 percent drop in a moving average of economic growth (carrying 60 percent of the moving average forward) is associated with a 0.04 point increase in the rate of internal war.
- Conflict begets conflict. Again through historical analysis, we found a 60 percent carryover of past conflict levels to current ones.

For IFs forecasting, we conceptualize and operationalize intrastate war not as a 0 or 1 (no war or war) outcome as in the data, but as a probability of conflict in any country-year. We initialize country probabilities at the beginning of a forecast horizon with average conflict rates across the preceding 20 years.²⁸ The development of our own basic forecasting formulation for these probabilities involved not just literature and statistical analysis, but also testing of the formulation in runs of the model from 1960 through 2010 and comparisons of our historical forecasts with the data on intrastate war. We let the historical forecasts run for the full 50 years without the frequently used annual adjustment/correction by the historical conflict data. We then experimented with a number of algorithmic elements in order to improve the historical fit. This analysis yielded the following basic formulation (see Box 4.1 on notation and estimation):

$$SFINTLWAR_{r,t} = (0.142 + 0.0012 * INFMOR_{r,t} - 0.006 * TRADEOPEN_{r,t} + F(DEMOCPOLITY_{r,t}, YTHBULGE_{r,t}, GDPDMA_{r,t}, SFINTLWARMA_{r,t})) * sfintlwarm_{r,t}$$

where

$$TRADEOPEN_{r,t} = (X_{r,t} + M_{r,t}) / GDP_{r,t}$$

and

SFINTLWAR = probability of internal war or state failure
 INFMOR = infant mortality, normed globally
 TRADEOPEN = trade openness ratio
 X = exports in billion dollars
 M = imports in billion dollars
 GDP = gross domestic product in billion 2005 dollars at market exchange rates
 DEMOCPOLITY = Polity's 21-point scale of autocracy/democracy
 YTHBULGE = youth bulge, the population age 15–29 as a portion of the population 15 and older; algorithmic adjustment with high levels of GDP per capita explained in text
 GDPDMA = gross domestic product growth rate, algorithmic moving average carrying forward 60 percent of past years' value; algorithmic adjustment with high levels of GDP per capita explained in text; inverse relationship
 SFINTLWARMA = moving average of past internal war probability (i.e., carrying forward past forecast values, not past data values)
 sfintlwarm = an exogenous multiplier for scenario analysis
 Algorithm on regional contagion explained in text
 R-squared = 0.22 in 50-year historical simulation without annual correction (see text for elaboration)

Our historical and extended analytical explorations of the core statistical relationship between infant mortality and trade openness led us to make a number of algorithmic changes to it in creating our basic formulation. We found that income of \$18,000 per capita (in 2005 dollars at PPP) is a point above which economic downturns and youth bulges tend not to increase the probability of internal war, so we greatly dampened the effects of both of these variables above that level. We also found it important to add a regional contagion effect; we combined three of the Correlates of War Project distance categories (contiguous, less than 12 miles separation, and less than 24 miles separation)²⁹ and added 0.1 to conflict probability for a country for each neighbor

with computed conflict probability of its own above 0.2. Because of conflict carryover across time, this algorithm can also lead to a positive feedback loop of neighborhood contagion.

We further found that the intrastate war formulation is sensitive to actual GDP levels, not just because of the growth rate term, but because GDP per capita also affects the endogenously calculated youth bulge and democracy variables within the broader IFs system (we will return to discussion of the latter). To deal with this sensitivity, we forced the IFs historical forecast to be accurate with respect to historical GDP growth. We should reiterate that otherwise the entire historical forecast of IFs after 1960 was endogenously determined in recursive annual calculation only by initial conditions and formulations rather than with annual corrective terms often used in historical validation exercises.

The initial formulation reported above generated the pattern of historical forecasts of intrastate warfare probabilities shown in Figure 4.5. (Although the model computes values for 183 countries, we show only major regions so

as to facilitate visual analysis.) The results in Figure 4.5 show some of the characteristics of the historical data in Figure 4.4, including peaks for the Middle East and North Africa and for developing Europe and Central Asia in the 1990s. However, a comparison of the two figures quickly suggests that the overall pattern is not a good historical fit. In particular, the bulges of conflict in East Asia in the early years and of South Asia more recently are missing. In addition, because of the infant mortality and economic growth terms, the model generates a bulge of conflict within Africa in the early 1980s (when growth and social advance were very weak) that does not appear in the data. Moreover, statistically, the regional patterns of Figures 4.4 and 4.5 correlate only at a 0.19 R-squared level across the 1960–2010 time period.³⁰

We explored the bases of the historical patterns still more carefully,³¹ and concluded that additional factors were missing. One was the extreme or totalitarian repression that lowered conflict in developing Europe and Central Asia until the late 1980s after General

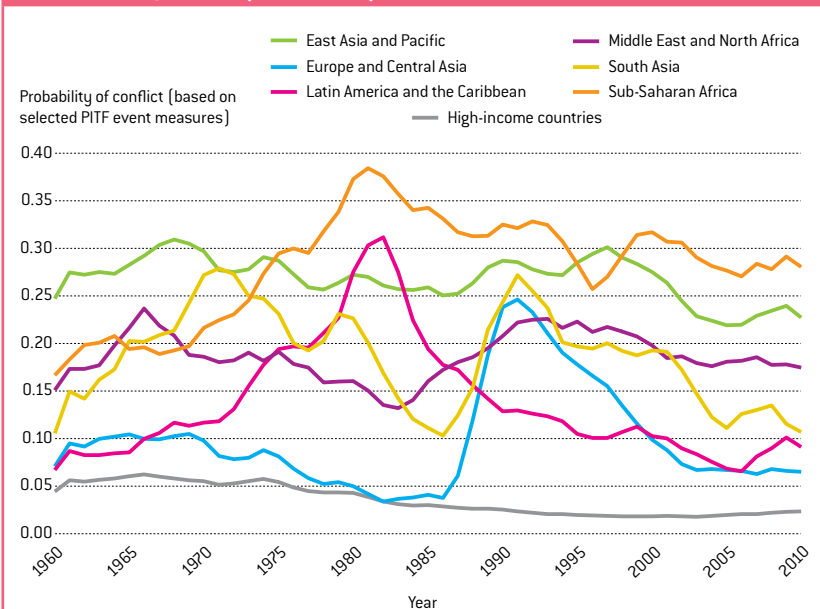
Box 4.1 Equation notation and comments on estimations

Insofar as possible, the names of variables in the equations of this chapter are the same as those of the model so that interested readers can move easily to it. Bold face indicates exogenous parameters available for manipulation in scenario analysis. Variables in IFs are typically specific to model countries (or regions within them) as indicated by the subscript “*r*” and are computed in each year recursively as indicated by the time subscripts “*t*” for the current year, “*t*-1” for the previous year, and “*t*=1” for initial conditions (i.e., 2010).

Most often, the parameters shown numerically (which model users can change) were computed in cross-sectional regression analysis and were statistically significant (T-scores of 2 or more). In formulating the equations, we always experimented with alternative forms such as logarithmic, polynomial, and power equations, both statistically and in forecasting. Sometimes the best form according to statistical fit on historical data produces unrealistic behavior in forecasting because of major changes in the behavior of drivers (such as reaching saturation values).

For more complex relationships, IFs sometimes uses algorithmic elements for patterns not easily represented by equations. In presenting equations, we show algorithms as generic functions (*F*); the text describes them.

Figure 4.5 IFs historical forecast of internal war probabilities with IFs basic formulation by region (1960–2010)



Note: Using simple (unweighted) five-year moving averages. IFs defines intrastate war to include revolutionary war, ethnic conflict, and genocides/politicides as measured by the Political Instability Task Force in its State Failure Problem Set; 1.0 would mean war in every country-year. Historical forecasts begin in 1960 and extend through 2010, using the IFs basic formulation based on statistical estimation, algorithmic extensions, and historically forced GDP.

Source: IFs Version 6.68. IFs forecast variable is SFINTLWARALL.

■ It is important to add external interventions and domestic repression to the consideration of intrastate conflict forecasts. ■

Secretary Mikhail Gorbachev came to power in the Soviet Union; we added a repression parameter for exogenous manipulation.³² More controversial perhaps, we also found it necessary to extend the suppression of conflict to sub-Saharan Africa in the middle period of the historical run (intensifying it steadily from 1960 through 1980). Our underlying assumption was that the domestic prestige and power of liberation movement leaders, backed by their domestic and superpower supporters, helped dampen conflict significantly in the face of poor, and even deteriorating, domestic economic and social conditions.

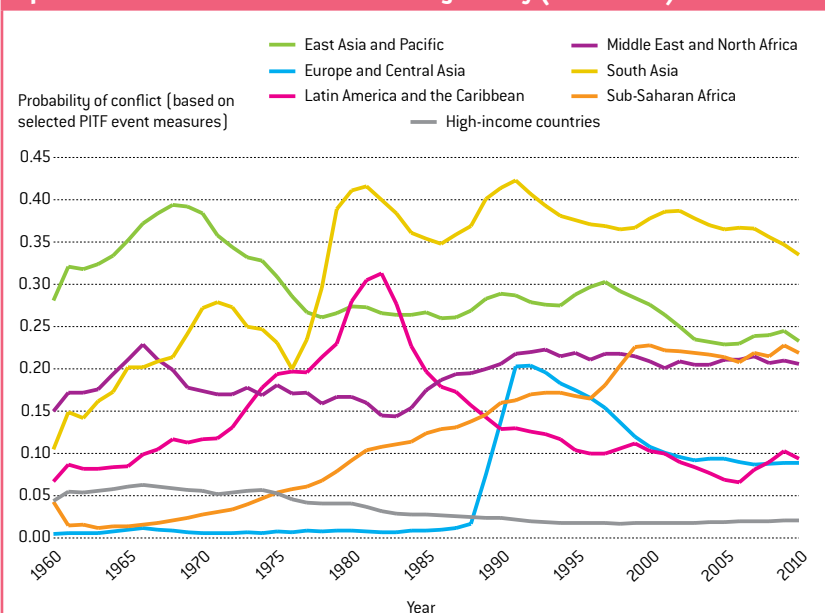
A second type of factor missing in our basic statistical analysis was external interventions, such as those of the United States in Southeast Asia in the 1960s and those of the Soviet Union and then the United States in South Asia after 1980; we added another exogenous parameter to represent such interventions.³³ Adding exogenous historical content to those parameters and running the model again produced the historical forecast pattern of Figure 4.6.

Although still not a terribly strong match to history, this revised historical forecast has some remarkable similarities to past patterns, including the initially high level of conflict in East Asia and Pacific and a relatively high rate for South Asia in recent decades. The adjusted R-squared between the values in Figures 4.4 and 4.6 rises to 0.61 from the 0.19 between Figures 4.4 and 4.5 (before the addition of the repression and intervention variables).³⁴ The major problems that remain in our historical forecast include the model's generation of too much conflict for Latin America and the Caribbean in the 1980s, when economic and social conditions in that region deteriorated significantly, and the relatively high levels of conflict in sub-Saharan Africa beyond the end of the Cold War in 1991, again associated in our forecast with a combination of absolute and relative deterioration in socioeconomic conditions of many countries. Nonetheless, the extended formulation is a large improvement and the one we use for forecasts in Chapters 5–7.

It is important to emphasize again that our historical runs from 1960 through 2010 do not involve resetting the drivers of intrastate conflict each year, as is common in many analyses. Doing so would allow the very powerful history-of-conflict term to have the historically correct value and would greatly enhance the correlation of forecasts with history. However, our forecasts from 2010 cannot involve corrections in future years, so our historical forecasts should also be done without year-to-year corrections. In our case, the model run between 1960 and 2010 is shaped only by model formulations described above, the setting of economic growth to historical patterns, and the two sets of exogenous parameter changes to represent repression and external intervention.

The parameter changes proved very important. In fact, one of the most significant conclusions of our historical forecasting analysis concerns the great importance of adding domestic repression and external interventions to the consideration of security forecasts, something that we have not typically seen in intrastate conflict forecasting. It is possible that, even after formulation enhancements, our relatively high historical forecasts for conflict in post-Cold War sub-Saharan Africa may reflect the remaining omission of yet another systemic variable, namely regional and global

Figure 4.6 IFs historical forecast of internal war by region after adding repression and external interventions exogenously (1960–2010)



Note: Using simple (unweighted) five-year moving averages. Ifs defines intrastate war to include revolutionary war, ethnic conflict, and genocides/politicides as measured by the Political Instability Task Force in its State Failure Problem Set; 1.0 would mean war in every country-year. Historical forecasts use the IFs basic formulation modified by the addition of exogenous measures of internal repression and external interventions.

Source: IFs Version 6.68. IFs forecast variable is SFINTLWARALL.

efforts to dampen conflict there. Of course, such additional and largely systemic variables are inherently difficult, if not nearly impossible, to forecast as endogenous drivers for conflict, but we will return to them exogenously in our scenario analysis of Chapter 7.

Vulnerability to conflict (or country performance risk)

The second approach to analyzing risk of violent internal conflict (and country risk more broadly) involves the creation of indices that tend to rank states according to generalized performance. The projects creating such indices—variously referred to as measures of state fragility, state weakness, political instability, or state failure—most often do not intend to convey a probability of violent internal conflict. Rather, they try to suggest greater or lower propensities for conflict as well as broader country risk, such as that which foreign investors might face with respect to socioeconomic conditions. (See the more elaborated discussion and listing of indices and sources in Chapters 2 and 3, especially Box 2.3.)

Generally, these indices combine variables in four categories: social, political, economic, and

security. Developers of indices may supplement variables that identify the average values for countries with variables that focus on the distribution of those values (such as the Gini index). They commonly weight variables within categories equally and/or weight the categories equally when aggregating them to final index values. While individual variables have theoretical and empirical links to conflict or lack of security, such simple combination of large numbers of highly intercorrelated variables into a formulation of conflict vulnerability is very difficult to interpret. Moreover, because reports generally present an index with no simple interpretation of scale, they focus heavily on rankings of countries.

The IFs project has created its own Country Performance Risk Index along the lines of these approaches, and for the purposes of forecasting has uniquely made it responsive to endogenous long-term change in the underlying variables. Like those of other projects, the IFs measure draws on social, political, economic, and security variables, but we impose a different conceptual or analytical structure on them (see the example risk analysis form for Angola in Figure 4.7). We divide the variables of the index into three general categories: governance,

Figure 4.7 IFs country performance risk analysis form

	Risk Index	Value	Standard Error	Alert Level	Goal Level	Min Level	Max Level	Risk	Weighting
Governance: Security									
Instability	0.3	10.3	2.5	0.1	0.05	0	1	5	1
Internal war	0.0	0.0	1.05	0.1	0.05	0	1	10	1
Governance: Capacity									
Corruption	0.81	4.3	1	2	7	0	10	11	1
Effectiveness	0.72	3.31	1.07	1.5	2.5	0	5	26	1
Governance: Inclusion									
Openness	0.0	0	0.93	7	14	0	20	37	1
Freedom	0.95	6	1.05	6	11	2	14	27	0
Gender Empowerment Measure	0.72	0.28	1.07	0.4	1	0	1	25	1
Risk Driver: Population									
Youth Bulge	0.51	10.03	1.22	47.5	35	0	100	19	1
Elderly Bulge	0.02	2.40	0.97	16	10	0	100	173	0
Urbanization Rate	0.92	4.42	1.57	5	2	-10	10	15	1
Risk Driver: Environment									
Water use/Personable	0	0	0.24	0.4	0.2	0	30	176	1
Climate Change	0.5	0	0	5	5	-30	30	1	1
Risk Driver: International									
Power Transition				0	0				
Performance: Economy									
Poverty Level	0.43	0.43	1.24	0.2	0.03	0	1	26	1
Inequality	0.51	0.13	1.22	0.45	0.25	0	1	20	1
Resource Export Dependence	0.67	100.02	3.06	20	5	0	150	1	1
Rate of per capita Growth	0.47	5.27	1.78	1.5	2	-100	100	173	1
Performance: Health									
Infant Mortality	0.22	176.0	2.43	50	18	0	500	5	1
Life Expectancy	0.61	63.70	2.07	60	70	0	125	9	1
Malaria Inc.	0.16	15.0	0.42	10	3	0	100	51	1
HIV Prevalence Rate	0.01	1	0.02	1.5	0.2	0	100	34	1
Performance: Education									
Primary Net Enrollment	0.7	100.03	3.47	60	90	0	100	4	1
Adult Education Years	0.7	0.05	0.05	7	5	0	30	57	1
Summary Measure	0.15	21	1.22					6	20

Note: Values shown are those for Angola in 2010 (used as example).

Source: IFs Version 6.68 screen capture.

■ *The IFs Country Performance Risk Index is unique in its long-term forecasting capability.* ■

■ *Risk indices are seldom used to identify conflict likelihood, but rather to assess a wide variety of risks, only some of which may lead to conflict.* ■

■ *Government finance in IFs sits within a social accounting matrix structure.* ■

deep risk drivers, and performance. We further divide the governance variables into our three dimensions of security, capacity, and inclusion; the deep risk factors into demographic, environmental, and international categories; and the performance factors into economic, health, and education categories.

As Chapter 2 discussed, the two different approaches to looking at security (the probability of internal war versus a risk index) provide quite different images of security in states, in part because the probability of intrastate war has a power-law distribution across countries, and risk indices have a more nearly linear distribution.³⁵ For 2010, the correlation between the two measures in IFs has an adjusted R-squared of only 0.25, reinforcing the fact that the measures are telling us quite different things. Presumably, the probability-of-conflict measure should be the better indicator of conflict likelihood. In fact, beyond their drawing our attention to the highest ranked and therefore most fragile countries, risk indices are seldom used to identify conflict likelihood and more often suggest a wider variety of risks (including overall poor state performance), only some of which may be so severe as to lead to conflict.

Because vulnerability or risk indices often include GDP per capita or other highly correlated indicators, they generally assign greater risk to poorer countries. Another way of using such risk information is to compare performance of countries to expectations with a cross-sectional analysis that controls for their level of GDP per capita. The column in Figure 4.7 showing standard errors helps us do that. In 2010, Angola's performance on infant mortality was 2.4 standard errors worse than the expected value. Thus, its performance on that variable was not only very poor relative to other countries around the world, but also relative to countries at its own income level.

Unlike our analysis with the probability of conflict, comparing the IFs Country Performance Risk Index with other measures across the full 1960–2010 historical time period is not possible because the other measures tend to be quite recent and to cover only a limited number of years. For instance, the Brookings Institution's Index of State Weakness in the Developing World was produced only for a single year (2008). The measures with the greatest time series are the

Fund for Peace's Index of State Failure (2005–2013) and the Center for Systemic Peace's State Fragility Index (1995–2012).

In order to assess the risk index of IFs, we again did a historical run of the model from 1960 through 2010, without any extraordinary interventions, computing the IFs Country Performance Risk Index for all years. Figure 4.8 shows the cross-sectional relationship for 2010 between the State Fragility Index and the IFs measure. The R-squared of 0.71 indicates the remarkably close correlation, even after 50 years of forecasting with the full integrated IFs model. In fact, the R-squared is 0.70 across all years for which the State Fragility Index is available.

Governance: The capacity dimension

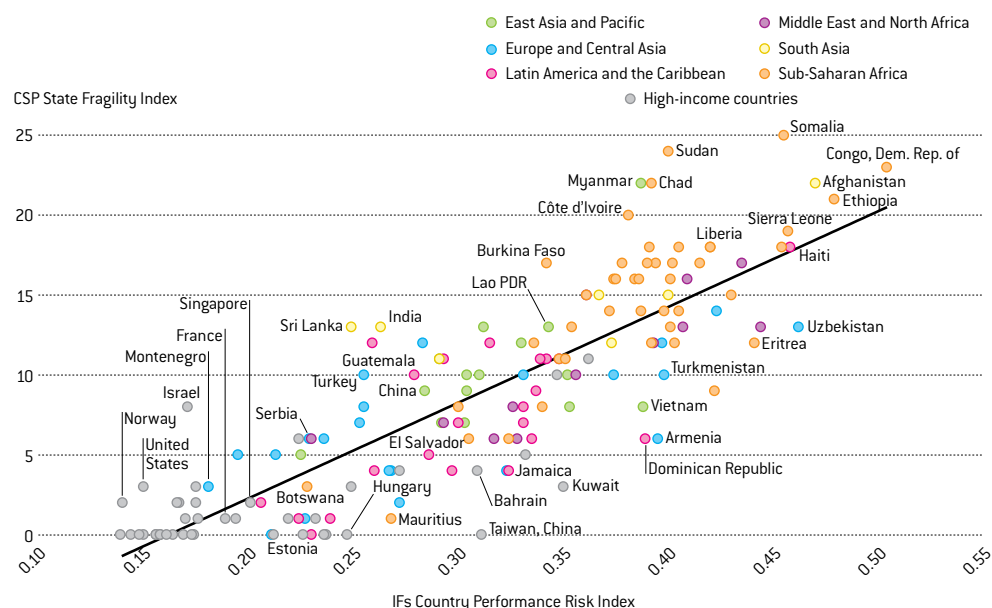
As Chapters 2 and 3 discussed, the capacity dimension has two primary elements. The first is the ability to raise revenue. The second is the effective use of it and the other tools of government—that is, the competence or quality of governance.

Government finance

Government finance in IFs sits within a broader social accounting matrix structure that accounts for, and in the process balances, all domestic and international financial exchanges among firms, households, and governments. The IFs system is unique, not only in the representation of flows within and across so many countries of the world, but also in maintaining, insofar as the sparse data allow, stocks (accumulations of net flows, such as government debt and assets of firms) that provide signals for equilibration processes that require changes in flows (such as revenues and expenditures) over time. Like the goods and services markets of the economic model, the government finance representation in IFs does not seek an exact equilibrium in every time point, but rather chases equilibrium over time. This approach is both more realistic and more computationally efficient.

The desired IFs treatment of government is of consolidated or general government, summing local and central government values. As discussed in Chapter 2, however, beyond our use of the OECD's general government expenditure data for its members, our main data source for finance is the World Bank's World Development Indicators (WDI), which appear to provide data primarily for

Figure 4.8 IFs Country Performance Risk Index in comparison with the Center for Systemic Peace State Fragility Index (2010)



Note: $R\text{-squared} = 0.71$; $\text{State Fragility Index} = -9.68 + 59.9 * \text{IFs risk index}$. IFs historical forecasts begin in 1960 and continue through 2010 with limited interventions. The cross-sectional analysis is based on IFs final year historical forecast in comparison with 2010 values of the State Fragility Index from the Center for Systemic Peace.

Source: IFs Version 6.68. IFs database variable is *SFCenSysPeace* and forecast variable is *GOVRISK*.

central government. In fact, for most countries, there are quite incomplete and inconsistent systems of national accounts on which to build social accounting matrices generally or a full mapping of government finance more specifically. Thus a “preprocessor” in IFs plays a big role in creating a consistent and complete initial image of government finance.

With respect to government finance and the social accounting matrix more generally, the preprocessor both fills holes for missing data series of many countries, using cross-sectionally estimated functions or algorithms, and otherwise cleans and balances the SAM data. The preprocessor first builds on data to estimate total governmental revenues and expenditures for the model’s base year, and then uses available data on the breakdown of revenues and expenditures to calculate initial values of those streams consistent with the totals. Those who wish to understand the entire social accounting system, both with respect to initialization and forecast, should look to Hughes and Hossain (2003). More generally, the IFs preprocessor’s computational rules assist in the initialization of all models

within the IFs system and the connections among them, including reconciliation of physical systems, such as energy and agriculture, with financial ones.

We make simplifying assumptions to move from limited data to initial values for general government expenditures and revenues of all countries as a percentage of GDP (general government being the total of central and local government). For OECD countries and a few others, we have general government expenditure data from the OECD, but we do not have general government revenues. The WDI data cover many more developing countries and include both expenditure and revenue data. For countries that both data sources cover, the WDI expenditure data tend to be considerably lower as a share of GDP. We therefore interpret the WDI data in those instances to represent central rather than general government.

We make two adjustments to deal with the data gaps. First, for the countries in both the OECD and WDI series, we compute from WDI data the difference between expenditures and revenues as a share of GDP, and we use that

■ The IFs system represents financial flows within and among countries, and maintains stocks that provide signals for equilibration processes in flows over time. ■

difference to estimate general government revenues from the general expenditure data of the OECD. The implicit and generally reasonable assumption that this process makes is that local government expenditures and revenues are in balance.

Our second adjustment relates to local government revenues and expenditures in developing countries. As stated above, for most non-OECD countries, we have from the WDI only what we interpret to be central government expenditures and revenues. Therefore, we estimate a size for local government revenues and expenditures that rises progressively from 2 percent for the lowest income countries to 14 percent for high-income countries—the latter being the contemporary average of OECD countries. A similar rise in size of local government revenues across country income levels is apparent in the data and analysis of North, Wallis, and Weingast (2009: 10), as discussed in Chapter 3.

In IFs forecasting, there is similar attention not only to revenues and expenditures, but also to the cumulative imbalance between them and how that imbalance affects their dynamics over time. The model represents five revenue streams from taxes on household and firm income: household income taxes; household social security/welfare taxes; firm income taxes; firm social security/welfare taxes; and, indirect taxes.³⁶ Total domestic government revenue is computed from the five streams. Foreign assistance augments domestic revenue in computing the fiscal balance with expenditures.

Government expenditures combine direct consumption expenditures and transfer payments. Direct government consumption as a portion of GDP is computed from functions linking GDP per capita (at PPP) to key elements of spending (such as military, health, and education), and total government consumption generally rises with GDP per capita.³⁷ The final division of government consumption into target destination categories—military, education, health, research and development, infrastructure (two subcategories), and an “other” or residual category—depends on a combination of functions and broader algorithmic and modeling elements specific to each spending category (including, for example, demand for expenditures from the education and

infrastructure models). The model normalizes across spending categories to assure that they equal total government consumption.

As a general rule, transfer payments grow with GDP per capita more rapidly than does direct government consumption. And within the category of transfer payments, pension payments grow especially rapidly in many countries, particularly in more economically developed ones. Computation of government transfers involves integrating two different behavioral logics, a top-down one depending on general relationships to income and a bottom-up one. The bottom-up logic is especially important in the analysis of pensions, because it is responsive to the changing size of the elderly population.

With completed computations of revenues and expenditures, it is possible to compute the government fiscal balance, an annual flow variable. That allows the update of cumulative government financial assets or debt and a calculation of their magnitude relative to GDP. IFs uses this cumulative total as a percentage of GDP in its equilibrating dynamics for annual government revenues and expenditures.

Broader governance capacity

Forecasting of variables that relate to broader regime capacity in IFs has three elements: (1) a basic statistical formulation tied to the literature analysis of Chapter 3 and our own estimations; (2) a recognition of country-specific differences (tied in part to path dependencies); and (3) an algorithmic linkage to internal conflict. A fourth potential element could be factors external to the country, including global waves and neighborhood effects, but we introduce these only through scenario analysis.

Corruption is one of the most powerful indicators of capacity (or more accurately, lack of capacity and accountability). We rely in our analysis on historical data from the Transparency International (TI) Corruption Perceptions Index, which is actually a measure of perceived absence of corruption, with higher values indicating less corruption. Note that the basic formulation in IFs for relative absence of corruption (see below) contains four statistically significant drivers, which collectively account for nearly 80 percent of

the cross-country variation in corruption in the most recent year of data. The first term, and the one identified with the most variation, involves a variable representing long-term development, namely GDP per capita. (Another aspect of development, years of education, is central in forecasting formulations for some other governance variables discussed below, such as democracy.)

A second very powerful driving variable for the forecasting of corruption (or, again, more accurately its perceived absence), is the Gender Empowerment Measure (GEM), which, in spite of its high correlation with GDP per capita, makes its own contribution and suggests the power of inclusion in affecting capacity. In fact, still another driving variable is the extent of democracy, further suggesting the power that inclusion may have to increase accountability and transparency, thus reducing corruption.

A less powerful but still significant variable (related inversely to governance capacity) is the dependence of the country on exports of energy. In a few years, as energy exports become less important in the economies of many current exporting countries, this variable may drop out of cross-sectional analyses of change in governance capacity, but it probably will still remain very important for those countries with low levels of development and inclusion.³⁸

A multiplier for scenario analysis is the only exogenous element added to the basic formulation.

$$\begin{aligned} GOVCORRUPT_{r,t} = & \left(1.58 + 0.113 * \right. \\ & GDPPCP_{r,t} + 2.27 * GEM_{r,t} + 0.0278 * \\ & DEMOCPOLITY_{r,t} - 0.0457 * ENX_{r,t} * \frac{ENPRI_{r,t}}{GDP_{r,t}} \left. \right) \\ & * govcorruptm_{r,t} \end{aligned}$$

where

GOVCORRUPT = IFs measure of government corruption, initialized with Transparency International Corruption Perceptions Index values; higher values indicate less corruption
GDPPCP = GDP per capita at purchasing power parity in thousand 2005 dollars
GEM = Gender Empowerment Measure (values below 1 indicate female disadvantage)

DEMOCPOLITY = Polity's 21-point scale of autocracy/democracy; inverse relationship

ENX = energy exports in physical terms (billion barrels of oil equivalent)

ENPRI = energy price per barrel

GDP = gross domestic product in billion 2005 dollars at market exchange rates

govcorruptm = an exogenous multiplier for scenario analysis

R-squared in 2010 = 0.75

■ *Domestic conflict reduces government capacity, resulting in greater corruption.* ■

We compute an additive adjustment term (not shown in the equation) on top of the basic formulation in the base year to capture any difference between the value anticipated in the formulation and the value from data. We use additive or multiplicative terms in this manner in most of our formulations, and the adjustment term introduces the impact of other variables (such as historical path dependencies and cultural differences) not in the statistically estimated equation. In our forecasts, the additive adjustment term gradually converges to zero over time. The logic behind such convergence is twofold: first, many differences from initial anticipated values are the result of transient factors and even data errors; second, ongoing global processes tend to lead to a convergence of patterns across countries.

There is every reason to believe that the presence of domestic conflict reduces government capacity, resulting in higher levels of corruption. In our statistical analysis, the inverse relationship between the IFs internal war variable (SFINTLWARALL) and perceived lower corruption is strong. Even when added to the full equation above, the relationship of internal war to corruption remains quite strong (a T-score of -1.97). Because conflict tends to be quite variable over time, however, we undertook more analysis rather than simply adding conflict to the equation for corruption. Specifically, we experimented with different coefficients in analysis across the historical period (1960–2010). The historical analysis reinforced the relationship found in the pure statistical analysis, and indicated that a movement from 0 (no conflict) to 1 (conflict) appears to increase corruption (to lower the TI measure) by 0.6 points. We algorithmically overlaid this relationship on the basic equation above.

■ IFs builds forecasts for regime type on a basic statistical formulation, adding path dependencies, global waves, and neighborhood effects. ■

Looking beyond our corruption perceptions measure based on Transparency International's CPI, IFs also forecasts a number of capacity-related variables from the World Bank's World Governance Indicators project. These include the quality of government regulation and government effectiveness. The approaches are identical to those used for corruption and involve the same drivers. The R-squared values again are high (0.74 and 0.72, respectively).

Governance: The inclusion dimension

Inclusion has many elements, such as recognition and acceptance of ethnic diversity, that reach beyond democratization or regime type and gender empowerment. For reasons that include conceptual clarity, data availability, and parsimony, we limit our forecasting to regime type and gender empowerment.

Regime type

As with forecasting capacity, the forecasting of regime type in IFs has multiple elements: (1) a basic statistical formulation tied to the

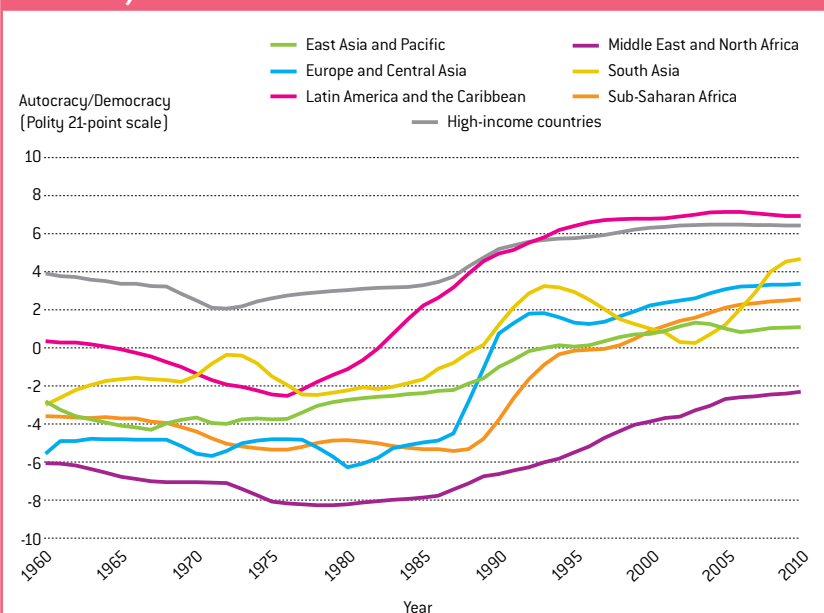
literature analysis of Chapter 3 and our own estimations; (2) a recognition of country-specific differences (tied in part to path dependencies); and (3) an algorithmic specification of a number of additional factors, including global waves and neighborhood effects.

Figure 4.9 shows the historical patterns of democratization across global regions since 1960 and suggests reasons that a multi-element and potentially algorithmic forecasting formulation is again important. Note, for instance, that the general upward movement of democracy across most developing regions could be forecast with a basic formulation tied to the traditionally identified development drivers of democracy, including income and education increase. And, in fact, most analyses of democratization place much emphasis on a development variable such as GDP per capita (see again Figure 3.7 and the discussion around it). However, there is a clear dip in the early years of the post-1960 period and an accelerated advance in the latter years, consistent with a global wave that a formulation tied only to quite steadily growing long-term development variables could not generate. Further, a formulation tied only to such drivers would be unlikely to generate initial conditions for 1960 or 2010 consistent with the actual history because country and regional values in those years also reflect historical path dependencies.

In building an initial statistically based formulation, we looked, as usual, at the power of two highly correlated long-term development variables (notably GDP per capita and average years of education attained by adults). The better broad development-driving variable proved to be adults' years of education. With additional exploration, we found a slight further advantage for the Gender Empowerment Measure, however, and so replaced the education variable with the GEM (which we will see later is strongly influenced by adults' education). In addition, we found the size of the youth bulge and extent of dependence on energy exports to be quite useful.

In the equation below, which is the basic IFs formulation, all terms are significant with T-scores above 2.0 in absolute terms. In earlier work, we also explored a linkage to the survival/self-expression dimension of the World Value Survey but have found that other development

Figure 4.9 Extent of autocracy/democracy by region (historical data for 1960–2010)



Note: Values are simple (unweighted) five-year moving averages. The measure of autocracy/democracy is the Polity Project's composite 21-point Polity Score (the Project's democracy scale score minus its autocracy scale score). A completely autocratic state would be represented by -10, while a completely democratic state would be represented by +10.

Source: IFs Version 6.68 using Polity Project data. IFs database variables are PolityDemoc minus PolityAutoc.

variables statistically force it out of the relationship.

$$DEMOCPOLITY_{r,t} = \left(13.4 + 11.4 * GEM_{r,t} - 9.73 * YTHBULG_{r,t} - 0.232 * ENX_{r,t} - \frac{ENPRI_{r,t}}{GDP_{r,t}} \right) * democm_{r,t}$$

where

DEMOCPOLITY = Polity's 21-point scale of autocracy/democracy

GEM = Gender Empowerment Measure (values below 1 indicate female disadvantage)

YTHBULGE = youth bulge, the population age 15–29 as a portion of the population 15 and older

ENX = energy exports in physical terms (billion barrels of oil equivalent)

ENPRI = energy price per barrel

GDP = gross domestic product in billion 2005 dollars at market exchange rates

democm = an exogenous multiplier for scenario analysis

R-squared in 2010 = 0.41

In order to make sure that the initial conditions for forecasting are correct, the model computes the difference between the actual value for a country in the first model year (2010 throughout this volume) and the expected value from the basic formulation. It uses that ratio algorithmically to adjust the country-specific value year after year, with the ratio converging to 1, bringing the forecast to the function's expected value in the long run. Although it would be possible to use regional dummies, such as ones for the Middle East or for Islamic countries, the use of country-specific variations from initial model computations captures such differences more fully. There is also a simple multiplier (**democm**, shown in the basic formulation above), via which the model user can easily create alternative future scenarios so as to study the possible impacts on physical security and well-being of differing democratization trajectories.

Additionally, we built structures, largely algorithmic, that allow forecasting with waves

of democratization influenced by the impetus provided by systemic leadership. Our analysis suggests the waves could have magnitudes (trough to peak) of as much as 6 points on the 21-point Polity combined autocracy/democracy scale, although we found in historical analysis that downward shifts tend to be only one-third as great as upward movements. We found that the swings appear greatest in the anocracies, and that countries with higher incomes appear unaffected by them. We have structured and then “tuned” the general IFs representation of such effects so that the representation appears generally consistent with behavior over our 1960–2010 period of historical analysis.³⁹ Nonetheless, we have no basis for forecasting the impetus that the United States or other systemic leadership might provide in the future, and we therefore set parameters for forecasting so that the effect is neutralized unless model users decide to introduce such an impetus on a scenario basis.⁴⁰

Similarly, we have added representations for regional swing-state effects, but the statistical relationships linking change in level of democracy in large or leading states within regions to changes in neighboring states are not strong. Therefore, we set the parameter to zero in the Base Case and leave the structure only for specialized analyses.⁴¹

Further, we anticipated and statistically explored the data for a negative impact of internal war on democratization, as discussed in some of the literature that Chapter 3 reviewed. Although there is a cross-sectional relationship, it is weak. Further, when the variable is added to a formulation with a long-term driver such as GEM, it actually reverses sign (more war is associated with greater democracy) and the significance drops further. One of the analytical difficulties is that a number of countries, like India and Israel, are both democratic and prone to internal conflict. Internal conflict conceptualization and measurement probably need refinement to take into consideration the actual threat level that internal war poses to regimes. We have explored the relationship using the PITF data on conflict magnitude rather than simply event occurrence and have found similar results. Given our analysis, we have not built a relationship from intrastate conflict into our forecasting of democracy.

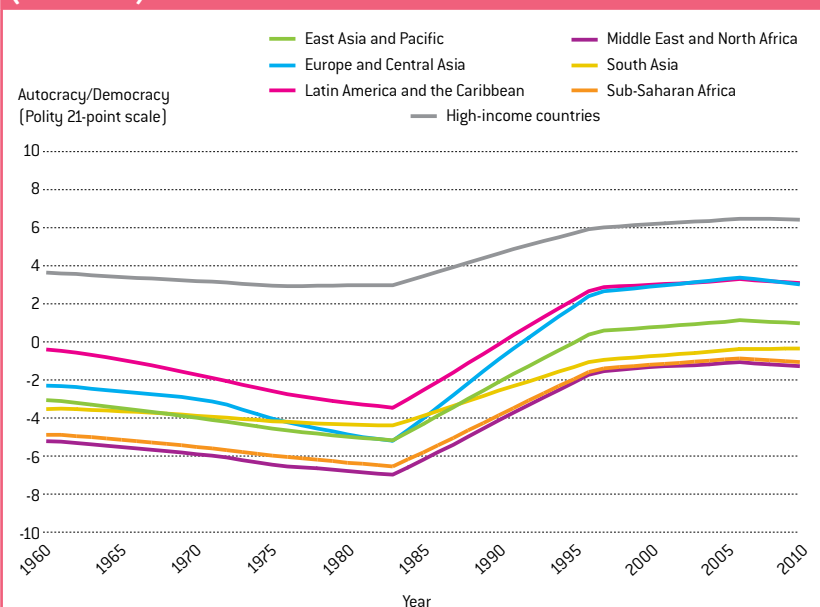
■ *Systemic leadership can lead to waves of democratization with the greatest swings appearing in anocracies.* ■

■ *A difficulty in forecasting the impact of conflict on democratization is that a number of countries, like India and Israel, are both democratic and prone to internal conflict.* ■

■ **Basic forecasts of democracy are unlikely to foresee the timing of transitions, but forecasting the unmet demand for democracy can help assess pressure for transition.** ■

As we saw with internal war and country risk, IFs has the capability of doing an historical simulation between 1960 and 2010 so that we can compare our model results with data. Figure 4.10 shows a run of the model over that period using the basic democratization formulation and the wave-based modifications to it described above. Although we introduced an historical wave exogenously, no other interventions were made to affect the course of the forecasts for level of democracy. The R-squared in a cross-sectional analysis comparing the IFs regional forecast for 2010 against Polity data is 0.69, and the value across the entire time period is 0.78. That provides a false sense of the accuracy of our historical forecasts, however. At the country level, the R-squared in 2010 is only 0.09, and the value over the entire 50-year period is 0.37. IFs expected higher values for democracy than proved to be the case for a number of countries, including Belarus, Cuba, Kuwait, Qatar, and Singapore. IFs expected lower values than Polity data show for a number of other countries, including Bangladesh, Ethiopia, Moldova, and Nigeria.

Figure 4.10 IFs historical forecast of autocracy/democracy by region (1960–2010)



Note: IFs historical forecast of autocracy/democracy values based on Polity Project regime categories. A completely autocratic state would be represented by -10, while a completely democratic state would be represented by +10. Historical forecasts use the IFs basic formulation modified by a historical wave of democracy.

Source: IFs Version 6.68. IFs forecast variable is DEMOCPOLITY.

Most significantly, IFs failed to anticipate the large rise in democracy in Africa in the 1990s. More generally, however strong our basic formulations for forecasting democracy may become, they are unlikely to foresee the timing of transitions toward or away from democracy.

One alternative to forecasting the timing of transitions is to try to assess the pressures and/or unmet demand for democracy. As a small step in that direction, and using the concept of democratic deficit that Chapter 2 introduced, the model also computes an expected democracy variable (DEMOCEXP) directly from the equation for DEMOCPOLITY without exogenous multiplier or convergence to the function. This is useful for those who wish to see the magnitude of a country's democratic deficit or surplus by comparing DEMOCPOLITY with DEMOCEXP. In fact, in advance of the Arab Spring of 2011, IFs analysis (Cilliers, Hughes, and Moyer 2011) had identified the Middle East and North Africa as having exceptionally large democratic deficits.

In comparison with its approach to forecasting the Polity autocracy/democracy measure, IFs uses a simpler function to forecast a FREEDOM measure, combining the Freedom House political rights and civil liberties scales into one scale running from least to most free. Specifically, the drivers are GDP per capita and adults' education attainment, our two standard long-term development drivers. It is interesting that the R-squared between the democracy and freedom measures in 2010 (using data from both projects) is 0.686 and that in 2060 (using forecasts of IFs for both measures) is a nearly identical 0.689. This suggests that the long-term driver variables in our formulations are doing a good job of representing the similarities and differences in the two measures.

Gender empowerment

It is not surprising that a measure of women's inclusion, such as the Gender Empowerment Measure of the United Nations Development Programme, should correlate highly with GDP per capita or completed years of education of adult women. As we have seen, income and education are closely correlated, and one or the other is almost invariably a key driver in our forecasts of change in governance. It is thus perhaps surprising that they both make statistically significant contributions to the GEM, as seen

in the formulation below. Remember, however, that the discussion in Chapter 3 showed that the relationship between GDP per capita and the GEM has shifted over time (see again Figure 3.8). The advance of global education, even in countries with low levels of income, helps explain that shift and almost certainly helps account for the independent contribution of education to higher levels of female empowerment. Of interest, women's education does not differ in its statistical contribution from that of men; we nonetheless use that of women in our formulation.

One might expect a strong inverse relationship between total fertility rate and the GEM as women who bear fewer children rise in other ways in society. In fact, there is a strong correlation. It is interesting to note, however, a stronger one inversely relates the size of the youth bulge to the GEM. The IFs formulation is:

$$GEM_{r,t} = (0.443 + 0.0034 * GDPPCP_{r,t} + 0.0271 * EDYRSAG15_{r,g=f,t} - 0.506 * YTHBULGE_{r,t}) * gemm_{r,t}$$

where

GEM = Gender Empowerment Measure
(values below 1 indicate female disadvantage)

GDPPCP = GDP per capita at purchasing power parity in thousand 2005 dollars

EDYRSAG15 = average years of education for females age 15 and older

YTHBULGE = youth bulge, the population age 15–29 as a portion of the population 15 and older

gemm = an exogenous multiplier for scenario analysis

R-squared in 2010 = 0.66

We experimented with a variation on the above formulation in which GDP per capita enters in a logged term and found nearly as high an R-squared (0.64). However, a problem in longer-term forecasting with such a variation is that the saturation of the log of GDP per capita nearly stops growth in the GEM for more developed countries, often well below parity for women.

Governance indices

Chapter 2 introduced the variables that we use throughout this volume to represent our

three dimensions of governance and provided an historical review of them. In particular, it identified two key variables for each dimension: probability of intrastate conflict and vulnerability to intrastate conflict for security; government revenues and the relative absence of corruption for government capacity; and extent of democracy and gender empowerment for inclusion. In the current chapter, we have focused on our approach to forecasting these six variables. However, Table 2.2 showed that the two variables on each dimension have not been highly correlated historically—just as the dimensions themselves show considerable conceptual independence.

Thus, there is value in creating an index for each of the three governance dimensions that integrates the two variables representing them. In Chapter 5 and subsequent analytical chapters, the indices will help us explore both the evolution of governance across time and the variations across countries and regions.

We have taken the typical basic approach to index construction when there is no clear external referent against which to judge the validity of the resultant index; that is, we have scaled each variable from 0 to 1 and averaged the two variables that make up each dimension. The resultant IFs governance security, capacity, and inclusion indices, GOVINDSECUR, GOVINDCAPAC, and GOVINDINCLUS, each has a global average value near 0.5, but the distribution of countries across the component measures varies. For instance, because the intrastate conflict variable of the Governance Security Index exhibits the power-law distribution that Chapter 2 also discussed, the global average of the security measure is slightly higher than that of the other two indices.⁴²

In computing the IFs Governance Capacity Index, we do not attribute increased capacity to countries when the revenue to GDP ratio rises above 0.45. Migdal (1988: 281) and Joshi (2012d) suggest that the appropriate upper limit is 0.30, but their focus is on central government; our own analysis suggests that local government can add, on average, another 0.15 (15 percent of GDP) to that ratio for high-income countries.

Finally, we compute an overall IFs Governance Index (GOVINDTOTAL) as the simple average across the three dimensional indices. Just as the rankings of countries on the dimensional indices

■ *Governance affects all elements of the Human Development Index.* ■

provide some face or subjective validity to the indices, the rankings on the combined index correspond to the general perceptions that most analysts have. Sweden, Denmark, Finland, New Zealand, Norway, the Netherlands, Canada, and Germany take top positions in descending order. From the bottom up are Afghanistan, Somalia, Myanmar (with a positional change nearly certain as new data become available), Chad, Sudan, Angola, and the Central African Republic.

Well-being

As stated previously, we rely heavily on the Human Development Index (HDI) as a measure of well-being and will focus on it and its components in the forecasts in subsequent chapters. Recall that the components of that measure are life expectancy, expected education years of children, mean education years of adults, and gross national income per capita. The general discussion of the IFs modeling system earlier in this chapter introduced the major components of IFs that forecast these elements of human well-being—namely, the core demographic and economic models plus the additional models on education and health.⁴³

Governance affects all elements of the HDI. The direct relationships with health and education are not always clear-cut, however. Even the impact of higher government spending on health care and educational outcomes is contested. Chapter 7 will return to some of these paths when we turn from the consideration of governance generally to the policy outputs of governments. In the meantime, the core path that we will explore between the three governance dimensions and human well-being is via economic productivity and growth, with specific attention to multifactor productivity (MFP).⁴⁴

As discussed earlier in this chapter, the approach in IFs to representation of economic growth involves a Cobb-Douglas production function for each economic sector. Specifically, the IFs Cobb-Douglas formulation represents the so-called Solow residual (Solow 1956 and 1957) as a combination of exogenous, science-driven knowledge advances (with diffusion from a systemic technological leader to other countries) and endogenously represented advance in multifactor productivity (as per Romer 1990).

In IFs, MFP is responsive to four categories of drivers: change in human, social, physical, and knowledge capital.⁴⁵ Social capital is the key direct entry point for the influence of variables representing security, capacity, and inclusion. In turn, an increase in MFP improves economic growth, and that further enhances government revenue and spending on human needs, setting up positive feedback loops across the elements of human well-being (or human capital).

Across the four categories of drivers of productivity, IFs combines a metaproduction function for endogenous productivity change with an elasticity-like approach (see Hughes 2005).⁴⁶ Specifically, we compare values of driving forces (such as completed years of formal education by adults and spending on education, or corruption level and governance effectiveness) with an expected value for those variables given the development level of the country, using GDP per capita at PPP as a proxy for development. Improvement or deterioration in drivers relative to the initial variations from expected levels determines changes in productivity attributed to that variable.

Important variables related to the previous discussion of security, capacity, and inclusion that enter the calculation of social capital are the forecasts of the IFs Governance Security Index; the IFs measure of government corruption (initialized from the Transparency International Corruption Perceptions Index); and the Polity 21-point measure of autocracy/democracy. We do not include the GEM directly in the MFP calculation (it has impact indirectly via other elements), but female participation in the labor force enters the production function via the labor term.

IFs also adds other variables that relate to governance and that considerable literature and our own analysis have found related to productivity rise and economic growth. The first is the World Governance Indicators measure of government effectiveness, related, like transparency, to capacity. The second is the Fraser Institute's economic freedom measure.⁴⁷ Both of these begin to broaden the inputs from character of governance to policies, and we will return to policy discussion in Chapter 7.

Hughes (2005) documented the IFs approach to parameterization of the important MFP term.

■ *Increasing social capital can improve economic growth, setting up positive feedback loops with government revenue, spending, and human well-being.* ■

The Base Case parameters are tied heavily to other studies. For example, we parameterize the link from the IFs Governance Security Index (combining internal war and vulnerability to conflict) to the advance of productivity by drawing on the work of Collier and others (Collier 1999; Gates et al. 2010) who concluded that internal conflict could reduce economic growth by several percentage points. Because the literature around the relationship between regime type and economic growth generally suggests that democratization does not improve (or weaken) economic growth, the contribution of that term is set to 0.0 in the Base Case of the model.⁴⁸ We set most parameters near the bottom of ranges suggested by such studies because the use of multiple terms in IFs risks introduction of double counting of contributions. Our historical analysis of the model's behavior (again with runs from 1960 through 2010) has helped refine and validate the overall approach.

Conclusion

Although there have been some prior efforts to forecast almost all of the governance and human well-being variables of interest to us in this volume, there has been less forecasting than one might expect. Moreover, the IFs model is unique in its integration of multiple human systems for long-term forecasting, including variables across demographic, health, education, economic, infrastructure, agriculture and food, energy, environment, and sociopolitical subsystems. This chapter has elaborated on the capabilities (and the weaknesses) of the IFs system for forecasting governance variables across the three points of our conceptual triangle of governance dimensions (security, capacity, and inclusion), as well as for looking at the future of human well-being in close interaction with governance quality.

With respect to governance, we have identified two primary variables that help us both historically understand and then forecast each dimension. For security, the variables are a measure of internal war probability and an index of vulnerability to conflict. For governance capacity, we have focused on revenue mobilization and relative lack of corruption. For inclusion, we have built

forecasting capabilities for regime type and gender empowerment.

In discussing the forecasting formulations for each governance variable, we have seen that there are a great many plausible causal connections across the categories (as well as significant correlations among them), creating the strong possibility of positive feedback loops across them. In addition, the governance dimensions have a number of important implications for human well-being, many of which enter our broader model representations via the concept of social capital and its significant impact on economic productivity—thereby also setting up still broader feedback dynamics back to governance variables.

We also have seen that our analyses of governance cannot be restricted to individual countries because country dynamics across neighborhoods and in interaction with the global system can be very important. This was true for security, where representations of spillover of conflicts from neighbors, repression within regional systems like that of the Soviet Union on its satellites, and intervention by major external powers all proved necessary in an attempt to replicate historical patterns more accurately, and presumably to anticipate future ones. Need for attention to the external environment of countries was also true for state capacity, where foreign aid augments domestic revenues, sometimes very dramatically as we saw in Chapter 2. It is also highly probable that global norms and behaviors heavily influence patterns of corruption around the world, an issue to which Chapter 7 will return. And the same sensitivity to outside forces was important for inclusion, where global waves of democracy clearly have affected historical patterns and, again, presumably could alter future ones. In presenting our forecasting formulation for gender empowerment, we also noted the high probability that advance in countries around the world has benefited considerably from global system effects, notably the worldwide emphasis on advancing education. Such impacts of the broader system on individual countries make it almost certain that changes in countries will also cumulatively shape global patterns, establishing still another and broader set of positive feedback dynamics to which subsequent analytical chapters will be attentive.

Of course, positive (that is, self-reinforcing) feedback loops can be vicious as well as virtuous. Although many earlier studies have been very optimistic about global developments, many others have been concerned about downward spirals. Such spirals can be narrowly conceptualized (conflict breeds more conflict), somewhat more broadly conceptualized (poor governance feeds on itself), or understood to be operational across multiple issue areas and across the world (global risks such as resource depletion or global warming and climate change lead to deteriorating well-being and governance, dampening prospects of addressing the risks).

This chapter and the previous two have provided foundations—understandings of

historical patterns across the three major governance transitions (security, capacity, and inclusion), and with respect to human development, of theoretical and empirical literature, and of the IFs forecasting system. We can now begin exploration of possible alternative futures for governance and development globally. The next chapter looks at the IFs Base Case—a dynamic and fully interactive analysis of where governance seems to be going. The subsequent chapters turn to alternative forecasts and to a consideration of how major challenges might disrupt positive patterns and of how the balance might be tipped globally to more desirable governance and human futures.

- 1 See Kant's famous essay from 1784, "An Answer to the Question: What is Enlightenment?," available at <http://www.english.upenn.edu/~mgamer/Etexts/kant.html>.
- 2 See Kant's 1795 essay on "To Perpetual Peace: A Philosophical Sketch," available at <http://www.mtholyoke.edu/acad/intrel/kant/kant1.htm>.
- 3 See Section II of "To Perpetual Peace: A Philosophical Sketch," available at <http://www.mtholyoke.edu/acad/intrel/kant/kant1.htm>.
- 4 The United States Central Intelligence Agency and Department of Defense alone spent an estimated \$125 million in 2008–2010; see Noah Shachtman, "Pentagon's Prediction Software Didn't Spot Egypt's Unrest" at www.wired.com/dangerroom/2011/02/pentagon-predict-egypt-unrest/. On some of the project approaches and efforts, see O'Brien 2002 and 2010.
- 5 The PITF is sponsored by the U.S. government and is tasked with forecasting state instability two years in advance; therefore, the PITF produces periodic classified watch lists.
- 6 One strand of very near-term forecasting comes from models that code current events (news feeds, for example) and create models of reported events and the historical onset of conflict. These models are used to assess probabilistically the near-immediate increase or decrease in conflict (see Brandt, Freeman, and Schrodt 2011). The European Union has funded establishment of early warning systems for Africa. Other approaches use mixed methods, combining both macro-structural models, agent-based models, and content analysis (O'Brien 2010).
- 7 Due to "over-fitting" (adding variables and tuning a model to fit a sample of data), models that fit history well may not forecast well (Ward, Greenhill, and Bakke 2010). One approach to improving such models is to split the sample (in this case, intrastate conflicts) and test forecasts against that part not used to build the model, an approach used by the PRIO team.
- 8 See United Nations Environment Programme 2004.
- 9 See Thomas Homer-Dixon, "Terror in the Weather Forecast," *New York Times*, April 24, 2007, available at <http://www.nytimes.com/2007/04/24/opinion/24homer-dixon.html>.
- 10 In a particularly pessimistic discussion, Dyer (2010) explored qualitative scenarios that include the failing of Mexico and mass immigration to the United States by 2029 due to desertification; nuclear war between Pakistan and India in 2036; and the collapse of the European Union in 2045, with military tensions between northern and southern former members.
- 11 While many analysts point to a shifting environment as cause for concern, others argue that there is not yet an academic consensus on the issue. Theisen (2008) extensively reviewed quantitative analyses and found that more standard descriptions of the drivers of conflict (underdevelopment, corruption, etc.) are more statistically relevant than environmental measures (see also Buhaug 2010).
- 12 The *Water Conflict Chronology* is an ongoing publication that has identified conflicts involving water resources stretching back to 3000 BCE (see <http://www.worldwater.org/conflict/timeline>).
- 13 Hirsch (2008: 888) has asserted that "From previous experience and various analyses, we concluded that world oil shortages will degrade world GDP and that unity is a reasonable assumption for the relationship between percent decline in world oil supply and percent decline in world GDP, i.e., a 1% decrease in world oil supply could conceivably produce a 1% decrease in world GDP." Given historical improvements in energy efficiencies and possibilities for substitution, we view this analysis as extreme except in the case of very abrupt and severe disruptions.
- 14 The IFs Base Case suggests that 63 percent of states will be democratic on the 21-point Polity autocracy/democracy scale in 2028; our calculation

- of democratic states in Polity data for 2000 was 48 percent.
- 15 The latest UN Population Division revision is available at <http://www.un.org/esa/population/unpop.htm>.
 - 16 U.S. Census Bureau population forecasts are available at <http://www.census.gov>; information about IIASA can be found at <http://www.iiasa.ac.at>.
 - 17 Information about Oxford Economics forecasting can be found at <http://www.oxfordeconomics.com/>. See also the work of IHS Global Insight (<http://www.ihs.com/products/global-insight/index.aspx>) into which the former Data Resources Inc. and Wharton Econometric Forecasting Associates were merged in 2001. IHS is primarily a shorter-term forecasting service focused heavily on risk analysis.
 - 18 Available at http://stats.oecd.org/Index.aspx?DataSetCode=E091_LTB.
 - 19 Available at <http://www.ers.usda.gov/data-products/international-macro-economic-data-set.aspx>.
 - 20 IIASA has provided combined population and education forecasts for selected individual countries and for 13 world regions, generally through 2030. For access to these forecasts, see <http://www.iiasa.ac.at/Research/POP/edu01/index.html>. IIASA has also provided forecasts with age-sex detail for most countries through 2100 for the Shared Economic Pathways (SSP) scenarios in the fifth assessment round of the IPCC (the SSP scenarios are available in the IFs system).
 - 21 For an introduction to the character and use of the model, see Hughes and Hillebrand 2006.
 - 22 More technically, the model structure is recursive; it computes equations sequentially in each time-step without simultaneous solution. It combines features of systems dynamics (notably the accounting structures, with careful attention to both flows and stocks) and econometrics (using estimated equations for the dynamic behavior of the agent classes).
 - 23 The presence of any one of the three types of war, either as an initiation or continuation, leads us to code a country as 1; otherwise we code the country as 0. This distinction between instability and internal war helps differentiate among what Easton (1965) identified as regime, state, and polity levels within the sociopolitical system, by at least differentiating the regime level (where adverse regime changes occur) from the more fundamental state and polity levels. The forces of change and generally the extent of violence around change differ significantly at these different levels.
 - 24 IFs forecasts adverse regime change (SFREGCHNG) as well as internal war (SFINTWARALL), but with a much simpler formulation developed earlier, not the extended formulation for internal war discussed here.
 - 25 Again, causality could run in either direction or be a spurious result of a third variable. For example, the end of wars in Indochina (especially the conclusion of the Vietnam War in 1975 and a subsequent change in Vietnam's economic policy) led to greater trade there.
 - 26 The Freedom House measure (see <http://www.freedomhouse.org/>) explains 10 percent, but we used the Polity Project measure (see <http://www.systemicpeace.org/polity/polity4.htm>) because it is a purer measure of political democracy (rather than civil liberties as well) and because it is our primary measure of regime in forecasting.
 - 27 That is, we used historical runs of IFs with different moving average formulations and different parameterization of the linkage to conflict to experimentally and iteratively improve the fit of historical conflict forecasts to actual historical patterns.
 - 28 For our historical runs beginning in 1960, we could only look back to 1955 for initialization because the genocide series begins then. Other intrastate war series begin in 1948.
 - 29 Paul Diehl, University of Michigan, was kind enough to provide his distance dataset to the IFs project many years ago. It is normally used in analysis of interstate war rather than contagion of intrastate war. See the Correlates of War explanation of contiguity at <http://www.correlatesofwar.org/cow2%20data/directcontiguity/dcv3desc.htm>.
 - 30 Interpretation of the correlation between the historical data and our forecasts is complicated by the fact that the first variable is a measure of historical conflict occurrence (0 or 1) and the second is a model computation of country-specific conflict probabilities. The correlation across all time points and countries of 0 or 1 occurrences from data with probabilities from the historical forecast is only 0.099.
 - 31 See Pierson 2004 on the methodological need to supplement statistical analysis with exploration of the historical bases of events.
 - 32 The repression and intervention parameters are set by country or region in specific years (such as the Soviet Union's intervention in Afghanistan starting in 1979 with the Soviet invasion).
 - 33 Although many historical interventions have been responsive to an initial conflict, they often exacerbate and/or prolong such conflict. Interventions typically are on the behalf of a domestically disadvantaged party, thereby raising the level of conflict.
 - 34 The country level correlation across the entire historical forecast generates only a 0.13 adjusted R-squared; the fact that the historical variable is occurrence (0 or 1) and the forecasted value is probabilistic (any value between 0 and 1) explains part of the low correlation.
 - 35 See again Box 2.8. Power law distributions drop off rapidly from the highest values and then level off with a long tail. City size within countries illustrates the pattern.
 - 36 Of course, many countries have other government revenue streams, including property taxes. In the absence of data for these, the IFs preprocessor allocates the missing revenue streams in the base year to household taxes, a category for which data are especially weak.
 - 37 An additional optional term in the equation is a Wagner term (set to zero in the Base Case), after Adolph Wagner, the discoverer of the long-term behavioral tendency for government consumption to rise as a share of GDP, even at stable levels of GDP per capita.
 - 38 We find that the same drivers work well (an R-squared of 0.62) for the IFs economic freedom variable, based on the Fraser Institute's Economic Freedom of the World index. The Fraser Institute Index is based on 42 data points that measure the degree to which the policies and institutions of countries are supportive of economic freedom, described as personal choice, voluntary exchange, freedom to compete, and security of privately owned property. See <http://www.fraserinstitute.org/research-news/research/display.aspx?id=16613>.
 - 39 The upward phase of the wave that began about 1980 appears to have run approximately 23 years. We have used that duration for historical analysis.
 - 40 The parameter for the U.S. impetus (**democimpus**) is set equal to the parameter for normal impetus (**democimpusn**). The parameter for other sources of impetus (**democimpoth**) is set to 0.
 - 41 The parameter is **swseffects**, and a value of 1 turns it on. In a project of the U.S. Central Intelligence Agency's Strategic Assessment Group, the countries set as default neighborhood leaders are Brazil, Indonesia, Mexico, Nigeria, Pakistan, Russian Federation, South Africa, Turkey, and Ukraine. Parameterization of the regional effect of changes in the democracy level of the neighborhood leaders (when turned on) was estimated by David Epstein of Columbia University.
 - 42 The IFs Governance Security Index uses 1.0 minus the average of the probability of intrastate war and the IFs vulnerability to conflict measure. The relative infrequency of intrastate war causes many states to cluster near 1.0 in that formulation.
 - 43 The first three volumes in this series described those models at some length (see Dickson, Hughes, and Irfan 2010; Hughes et al. 2009; Hughes and Kuhn et al. 2011).
 - 44 Obviously, one could directly model many paths from good governance to improved well-being. For example, Blaydes and Kayser (2011: 899) found that, whereas a \$100 increase of GDP per capita in autocracies adds 5.8 total calories per capita per day in the short run, the increment rises to 14.3 calories in hybrid regimes and about the same in democracies. That path is probably via greater equality in more inclusive regimes. Nonetheless, MFP remains the most critical path because of its much broader impacts on economic and social development (including, within IFs, its impact on calorie availability).
 - 45 Economists often bundle the human capital term with the labor term in the Cobb-Douglas formulation, but we separate the two.
 - 46 Jamison, Lau, and Wang (2005: 71) used a metaproduction function approach around a Cobb-Douglas function to explore a wide range of factors that drive multifactor productivity, and the IFs approach is fundamentally similar.
 - 47 For information about the Fraser Institute measure, see again <http://www.fraserinstitute.org/programs-initiatives/economic-freedom.aspx>.
 - 48 Model users can thus turn on a democracy contribution to MFP if desired; similarly, there is a term (**mfpfree**) using the Freedom House measure that is off by default, but usable as desired.



The Current Path As It Appears to Be Unfolding

■ Just prior to the Arab Spring, the IFs project published an analysis showing a significant democratic deficit across North Africa relative to other development indicators. ■

In January 2011, a young, unemployed university graduate in Tunisia, harassed by police for street vending without a license, doused himself with flammable liquid and set himself on fire. Mohamed Bouazizi's act of resistance and subsequent death triggered protests across the country that, following a 23-year rule, drove President Zine el-Abidine Ben Ali and his extended family out of the country. The protests proved contagious for Egypt and Libya, similarly ending the 30-year tenure of President Hosni Mubarak and the 42-year reign of Colonel Muammar Gaddafi, while also moving across North Africa and the Middle East in what became known as the Arab Spring.

We knew that such revolutions could happen in the region. In December 2010, the International Futures (IFs) project published an analysis, using the 21-point Polity scale, that showed a nearly 7-point average democratic deficit across the countries of Northern Africa.¹ Over decades, movement toward democracy simply had not kept pace with changes in

education and income. Like some other observers, we pointed out that such deficits "may give rise to episodes of sociopolitical disruption and change" (Cilliers, Hughes, and Moyer 2011: 69).

Yet, we had no idea when such domestic turmoil would erupt and what its consequences would be. Political change is irregular over long periods of time. Pressures for change build below the surface of daily events and often are nearly unrecognized. Change tends to occur in sudden lurching movements as the hidden fault lines manifest themselves (Pierson 2004).

In describing the path that governance around the world may follow in the coming five decades, we can, with considerable confidence, point out the direction that change is likely to take. We may even hint at the imminence or intensity of possible change, for instance by assessing the magnitude of democratic (or security or capacity) deficits and overshoots or by deeper analysis of demographic and broader socioeconomic evolution. Yet, we cannot forecast when the

Box 5.1 The IFs Base Case

The IFs Base Case is not a simple extrapolation of variables in multiple issue areas, but rather the dynamic, nonlinear output of the fully integrated IFs system. The integrated system underlying the Base Case includes the governance model that Chapter 4 described. Among the most obvious consequences of this integration are that changes in demographics, economic structure, education, and income levels result in changes in security, capacity, and inclusion, which can either accelerate further beneficial or detrimental change in human development via positive (reinforcing, but not necessarily desirable) feedbacks.

The forecasts that other IFs system components produce of key drivers, such as GDP per capita and education attainment of adults, are thus foundational underpinnings of its governance forecasts. Hughes et al. (2009: 56–71) compared IFs forecasts of such key drivers to the forecasts of others, such as those of

the United Nations Population Division and the World Bank. As a general rule, the IFs Base Case produces behavior quite similar to medium variant or base forecasts of such analyses (see also Hughes 2004a; Hughes and Hillebrand 2006). Until recently, our forecasts of African economic growth have tended to be more optimistic than those of most other analyses, but others have now moved upward. Our forecasts of global population growth have long been somewhat lower than the biennial revisions of the United Nations forecasts, which, except for the 2010 version, have generally drifted downward over time. We build in the Great Recession with International Monetary Fund-based assumptions, including the recession's ending for most of the world by 2014. We forecast interim plateauing and then declining global oil production between 2030 and 2040, with varying consequences for economic growth of producer and consumer countries.

■ Whereas the historical record shows lurching movements, forecasts of political change will simply show where such shifts, in aggregate, may take us over the coming decades. ■

tectonic plates that underlie sociopolitical change will shift, giving rise to an earthquake.² Whereas the historical record shows jerks and leaps, our forecasts will simply show where we think these shifts, in aggregate, will take us over the coming decades and where some of the greatest pressures might be now and along the way.

In this chapter, we explore the IFs Base Case (see Box 5.1 for background on the Base Case approach), elaborating where we seem to be going with respect to both human development and governance. In subsequent chapters, we will explore alternative futures.

Human Development

Before turning to the future of governance in the IFs Base Case, we want to consider the future of human development, which both affects, and is influenced heavily by, the quality of government. With respect to the Arab Spring, understanding the region's human development helps us understand patterns of change occurring in governance in the Middle East and North Africa.

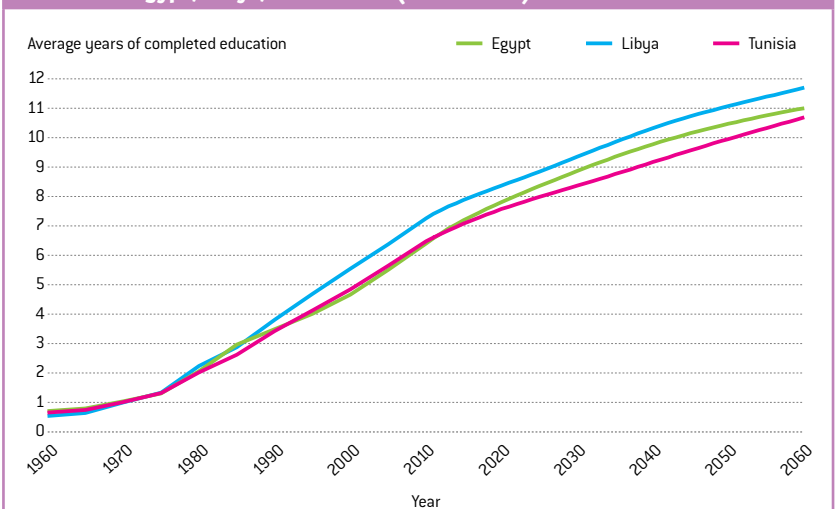
Human development and the Arab Spring

Education and income are among the greatest forces of social change and, although subject to disruptive events, tend to change more smoothly than governance across long periods of time. Over the 50 years prior to the events of 2011, completed formal education of the average Tunisian and Egyptian adult (25 years and older) had climbed from less than 1.0 years to 6.6

years (see Figure 5.1, which also has forecasts), a rapid growth pattern repeated quite widely throughout the Middle East and North Africa. For instance, by 2011 the average adult in Libya had attained about 7.4 years of education; the number was approximately 5 years in Syria. Yemen, at only 2.5 years, remained an exception. By 2011, the adult literacy rate had risen to nearly 70 percent in Egypt, as it had across the developing countries of the region on average; the figure in Tunisia was 78 percent.

■ The Base Case is the dynamic, nonlinear output of the fully integrated IFs system rather than a simple extrapolation. ■

Figure 5.1 History and forecast of average completed years of formal education of adults in Egypt, Libya, and Tunisia (1960–2060)



Note: Population is adults 25 years of age and older.

Source: Historical data from Barro and Lee 2010; forecast from IFs Version 6.68 Base Case. IFs database variable is EdYearsAge25, and forecast variable is EDYRSAG25.

■ Education and income are among the greatest forces of social change.

While subject to disruptive events, they tend to change more smoothly than governance. ■

■ Once a country's per capita income reaches \$12,000 (in 2010 dollars), transformations to democracy very rarely reverse, but Egypt and Tunisia were well below that level in 2010. ■

■ We forecast that the gap in the HDI between OECD and non-OECD countries will decline slowly but significantly, from 0.28 points in 2010 to 0.18 in 2060. ■

For the younger adults most often at the center of the uprisings, the completion of primary education had effectively become universal in both Tunisia and Egypt, as had enrollment at the lower secondary level, which typically ends at the 8th grade. In fact, the gross enrollment rate at the upper secondary level was approximately 70 percent in both countries in 2011, while that at the tertiary level was about 30 percent (compared with very small numbers in 1960).³

Of course, educational advance is only one manifestation of the broader changes that have and will continue to reshape these countries, this region, and the world. Income is another. In 1960, GDP per capita (in constant 2005 dollars) was about \$300 in Egypt, \$800 in Tunisia, and \$1,000 in Libya, but had grown in 2010 to over \$1,400 in Egypt, \$3,800 in Tunisia, and \$8,300 in Libya. At purchasing power parity (PPP, also 2005 dollars), the revolution-year numbers had reached about \$5,100, \$7,400, and \$15,300, respectively. In Chapter 3, we introduced the argument that \$12,000 (in 2010 dollars) is roughly the level at which political transformations to democracy very rarely, if ever, reverse; of the three countries, only Libya was above that threshold.⁴

Another important socioeconomic indicator is size of the middle class. One global definition of middle class status is an annual income between \$6,000 and \$30,000 per capita at purchasing power parity (Wilson and Dragusanu 2008).⁵ By this definition, IFs analysis suggests that in 2010, while more than 10 percent of the Tunisian population and nearly one-fourth of the Libyan was middle class, only a very small portion of the Egyptian population had reached that level. Looking at poverty, none of these countries had more than 2 percent of its population living on less than \$1.25 per day; yet, while fewer than 5 percent of Tunisians and 6 percent of Libyans lived on less than \$2 per day, more than 10 percent of Egyptians did.

Demographic transformations, also related to education and income, were similarly dramatic leading up to 2011. In 1960, total fertility rates in Egypt, Libya, and Tunisia had been near seven children per woman. By 2010, they had dropped to near 2 in Tunisia, 2.5 in Libya, and below 3 in Egypt (see also Kuhn 2012). As a result, median age already had risen to 29 in Tunisia and to about 24 in Egypt. For comparison, the

median age in sub-Saharan Africa was below 19. Another important demographic indicator is that in 2010 both Egypt and Tunisia most likely had a larger portion of 15–29 year-olds in the working-age population than they will ever have again (about 37 percent in Tunisia and 42 percent in both Egypt and Libya). Although that percentage has been dropping and will continue to do so quite rapidly, the great size of the cohort is reminiscent of the baby boom generation of the United States and Western Europe in the 1960s, an era that also witnessed dramatic movements for political and social reform. Chapter 4 discussed our inclusion of youth-bulge size in governance forecasts along with education and income.

Lest we begin to think that these advances in education and income, coupled with such dramatic demographic change, should have told us that political revolution was inevitable and imminent, consider the emirate of Qatar. It had much higher education and literacy rates, comparable fertility, a median age near 30, a rating by Transparency International as being low on corruption, and a GDP per capita at PPP of about \$56,000.⁶ These are conditions normally associated with a high level of democracy, not a near-total absence of it. In 2010, Qatar had a democratic deficit on the Polity scale of nearly 20 points, dwarfing those of Tunisia and Egypt. There were no significant signs of discontent in the country, however. In fact, in spite of heavy restrictions on press coverage of the Qatari government, the Al Jazeera TV network, based in Qatar, operated relatively unconstrained in distributing critically important news globally on revolutions elsewhere in North Africa and the Middle East. In contrast to many other authoritarian systems, including that of China, the Qatari government did not appear anxious about the domestic impact of access to such news. Clearly, the fact that the Qatari government was able to deliver sufficient goods and services to satisfy its citizens is a critical factor differentiating Qatar from pre-revolutionary Tunisia and Egypt.

The comparison with Qatar reinforces the point that forecasting changes in governance is much more complicated than forecasting trends in human development. These trends have allowed us to reasonably conclude that the pressures for sociopolitical change across

North Africa and the Middle East—whether we use the metaphor of tectonic plates poised to slip or that of a gas-soaked rag awaiting the spark—have been great and growing. There will be additional dramatic unfoldings linked to different immediate events—a rise in food or energy prices, the desperate act of an individual or small group, the death of an autocratic leader, contagion from the example of a neighbor, and so on—that are unexpected in timing, but not fundamentally in their root drivers.

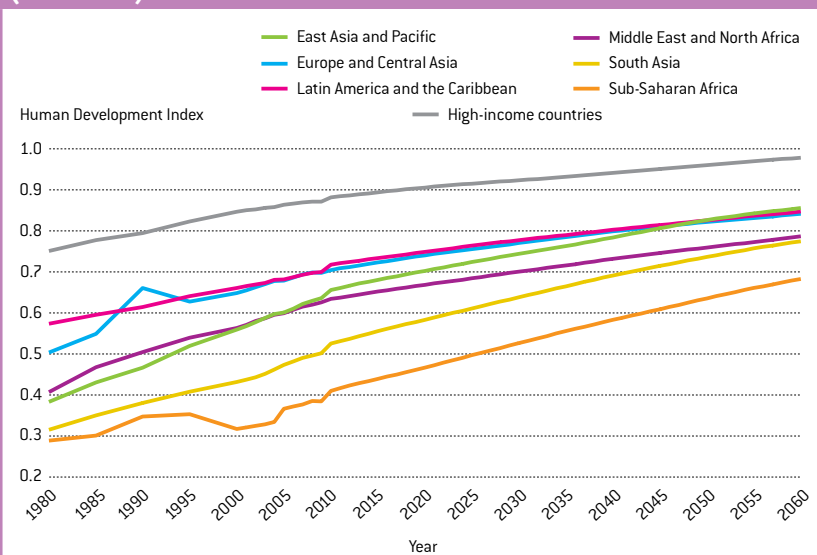
The broad global trajectory of human development and equity

Many measures of national economic performance, poverty, education, and health can help us understand average levels of human development and well-being and the distribution of them across societies. The end tables of this volume, like those in previous volumes of this series, provide extensive forecasts of such variables at the country, regional, and global levels.

In this chapter, we will focus on a single aggregate measure of well-being, the United Nations Development Programme's Human Development Index (HDI), and then turn to some variables indicating income distribution. The HDI combines life expectancy, knowledge (expected years of schooling of school entrants and mean years of adults' education), and logged Gross National Income per capita into a single index with a range from 0.0–1.0.

Historically, HDI values have increased around the world, with a few significant interruptions, such as in Eastern Europe and Central Asia with the collapse of the Soviet Union and in sub-Saharan Africa with the HIV/AIDS epidemic. For example, the HDI value for Egypt reached 0.62 by 2010, up from 0.39 in 1980. Our forecasts (see Figure 5.2) show that very significant advance is likely to continue in all regions through 2060. We anticipate that the global HDI value, now nearly identical to that of Egypt, will increase to approximately 0.81 by 2060, with only about a dozen countries likely to be below 0.60.⁷ Global convergence will be slow but significant over that period. The gap in the HDI between the nations of the Organisation for Economic Co-operation and Development (OECD) and non-OECD countries is now 0.28 points on the scale of 0.0–1.0; by 2060 we anticipate the gap will fall to 0.18 points.

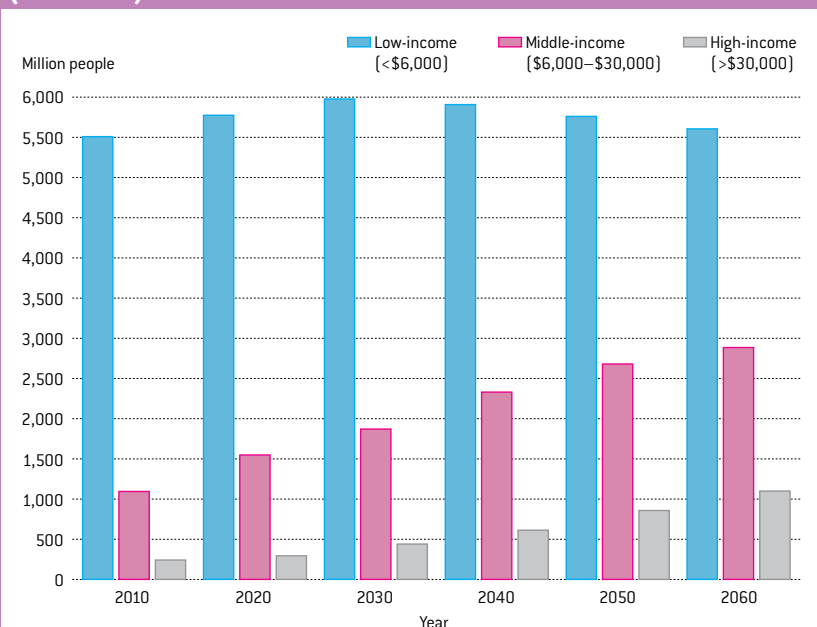
Figure 5.2 History and forecast of the Human Development Index by region (1980–2060)



Note: Using the United Nations Development Programme's 2010 reformulated Human Development Index (HDI) methodology, which combines three sub-dimensions: a long and healthy life (measured by life expectancy at birth); knowledge (tapped by mean years of schooling and expected years of schooling); and a decent standard of living (represented by the logarithm of Gross National Income per capita). Index range is 0.0–1.0.

Source: United Nations Development Programme HDI data and IFs Version 6.68 Base Case. IFs database variable is HDI, and forecast variable is HDINEW.

Figure 5.3 Forecast distribution of global population by per capita income level (2010–2060)



Note: IFs forecasts using Goldman Sachs division points for income categories (see Wilson and Dragusanu 2008). IFs forecasts for middle class growth are lower than those of Goldman Sachs.

Source: IFs Version 6.68 Base Case. Income distribution is from IFs specialized poverty display.

■ The global middle class will reach 3 billion by 2060, with another billion having attained high-income status. ■

■ The aggregate trend over the last two decades has been toward greater global income equality, even as income inequality has increased within many countries. ■

There will be other manifestations of change in the global distribution of well-being. For example, the world will increasingly become middle class (see Figure 5.3 [on p. 103]). We estimate that the global middle class (aggregating citizens with consumption expenditures between \$6,000 and \$30,000, regardless of their country) exceeded 1.1 billion people in 2010, and that it will reach 2 billion by 2034 and 3 billion by 2064, at which time almost another billion will have attained high-income status.⁸ Since the emergence of democracy in the United States, Great Britain, Switzerland, and Scandinavia, observers have stressed the importance of a strong middle class for democracy's appearance and persistence.

The income structure of the world is changing in a manner that might also support more capable and democratic governance. Following nearly two centuries of divergence in the incomes of China and India from the countries of Europe and North America, the high growth rates in recent decades of the Asian giants and many other developing countries have reversed the upward trend in global income inequality. Using the Gini coefficient as a measure of inequality,⁹ the aggregate trend for all humans globally in the last two decades has bent toward greater equality (even as income inequality has increased within many countries).

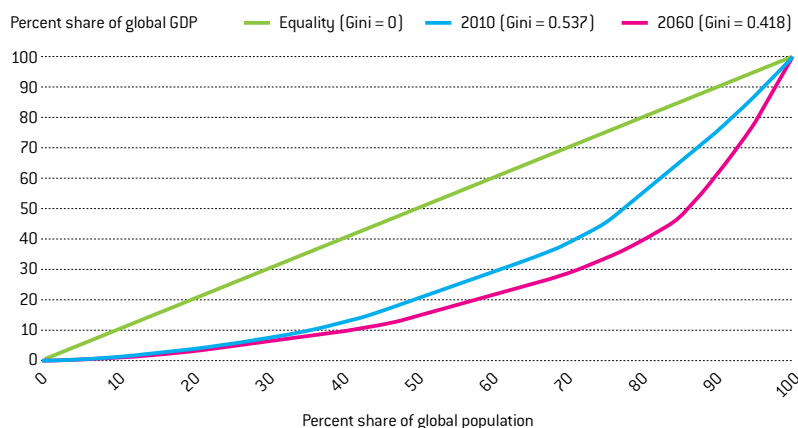
The reality of increase in global equality is very often contrary to perceptions even of development analysts. Thus, it is important to emphasize that the convergence in recent decades of average incomes in China and India toward those of high-income countries can by itself explain the increase in global equality even without looking at the catching-up patterns of many smaller countries. The progress of the demographic giants overwhelms both the growing inequality of incomes within many countries (including China) and the failure of countries at the lowest income levels to converge similarly.

Continued movement toward greater global equality will result primarily from economic growth in the middle-income countries rather than growth in the poorest countries. Nevertheless, the overall Gini for GDP at PPP across countries is likely to decline quite dramatically (see Figure 5.4) from 0.537 in 2010 (like that today of many Latin American countries, including Brazil and Chile) to 0.418 in 2060 (closer to that of Suriname or Oman today, but still well above values of 0.35 or lower characteristic of many European countries, such as Austria, Germany, and Finland).¹⁰

A better calculation for global Gini, however, is one across all persons, taking into account distributional patterns within countries, not just across all countries as in Figure 5.4. Although the global citizen-level Gini of GDP at PPP is much harder to estimate with confidence, IFs calculates it to have been a higher, and thus more unequal, 0.626 in 2010 (like that of Gabon or Lesotho today; worse than that of Haiti) and forecasts it to be 0.571 in 2060 in the Base Case. Attention to the citizen level thus suggests a smaller decline in global inequality than does Figure 5.4 and may be a better estimate of the global trajectory. Nonetheless, the trend with both measurements is toward greater equality.

Analysts often suggest it is easier to maintain democracy and competent government in the countries of Western Europe than those of Latin America not just because of higher incomes in the European countries, but also because of more equal income distribution within them.¹¹ That association of greater equality with democracy may be important with respect to global distribution also, because citizens of countries *relatively* less impoverished by global standards are more likely to interact with

Figure 5.4 Forecast of Lorenz curve (global distribution) of GDP and resulting Gini index of income inequality at purchasing power parity (2010 and 2060)



Note: The figure shows global Gini of GDP at purchasing power parity, which makes the global calculation more comparable to Gini coefficients within countries than would the use of market exchange rates. However, the global Gini is calculated across countries, not individuals. Gini index range is 0.0–1.0; higher values indicate greater inequality.

Source: IFs Version 6.68 Base Case. Lorenz curve and Gini index from IFs specialized Lorenz curve display.

citizens of other countries cooperatively rather than to pursue fundamental transformation of the international system.

In short, barring global disruptions such as a major plague or military conflict among the great powers, the probable advances in human development and equity around the world will likely increase pressures for improvements in governance, including enhanced state capacity and greater political participation.

Governance

Our Base Case scenario forecasts changes in global human well-being that are uncertain; therefore, we will also examine alternative scenarios and their implications. In fact, Chapter 6 will explore quite a different world, one of global challenges, with problems affecting well-being that include aging populations, major energy transitions, water shortages, and climate change, among other stresses. But let us assume for the moment that advances in human well-being might occur as in the Base Case. Recognizing that governance both responds to and helps support well-being, with what type of governance might increased well-being be associated? To answer this question, we want to look at security, capacity, and inclusion dimensions of governance.

Security

We have repeatedly distinguished two approaches for looking at the internal security of countries. The first represents overt intrastate conflict as measured, for instance, by the Political Instability Task Force (PITF). As Chapter 4 discussed, the IFs approach to forecasting overt conflict is not to anticipate discrete episodes, but to focus on probability of future conflict. The second typical approach uses more generalized indices of vulnerability to conflict, following the basic approaches of projects such as the Failed States Index of the Fund for Peace and the State Fragility Index at the Center for Systemic Peace. Our own Country Performance Risk Index uses comparable input variables but is geared toward forecasting. We look, in turn, at IFs Base Case forecasts of each.

Probability of conflict

In the historical consideration of overt conflict, PITF analysts have distinguished instability events, such as coups, from much more lethal

forms of conflict (revolutions, ethnic wars, and genocides/politicides) that we refer to as intrastate or internal war. Chapter 4 reviewed the historical pattern of regional frequency of intrastate war, identifying the high rates for East Asian and Pacific countries in the 1960s and 1970s, the high rates for South Asian countries from the 1980s into the twenty-first century. In terms of country averages, the somewhat lower rates of two waves for sub-Saharan Africa, the first post-independence in the 1960s and the second in the late 1980s and early 1990s. Chapter 4 also detailed the elaboration of the IFs forecasting model so as to generally reproduce these same historical patterns.

Figure 5.5 extends the historical record with IFs Base Case forecasts, which, through 2060, suggest decline in the probability and therefore average frequency of conflict in all developing regions. The reasons for the general pattern lie in expected improvements in human development. Figure 5.5 contains two possible variations of the Base Case forecast. The left panel uses the formulation that Chapter 4 discussed and tested historically, which gives very considerable weight to conflict in past years. The right panel uses the same broader formulation, but in a century-long process, it gradually removes the impact of past conflict and allows the conflict probability pattern to move toward that generated by the rest of the formulation.

The left panel thus implicitly assumes that some interacting combination of historical grievances and factors (such as deep social fractionalization) that we cannot explicitly represent continue to generate conflict potential. The right panel implicitly assumes that these drivers of conflict gradually erode. This assumption results in lower forecasts of future conflict across regions because of significant changes in demographic and human development variables toward less conflict-prone levels. Although we recognize the possibility of the future in the right panel, we also recognize the optimism bias of most forecasting and have chosen to be conservative by adopting the approach of the left panel in our Base Case.

Chapter 4 discussed the forecasting of global conflict by a group of researchers at the Peace Research Institute Oslo (PRIO) who concluded that the proportion of countries suffering internal armed conflict would decline from 15 percent in

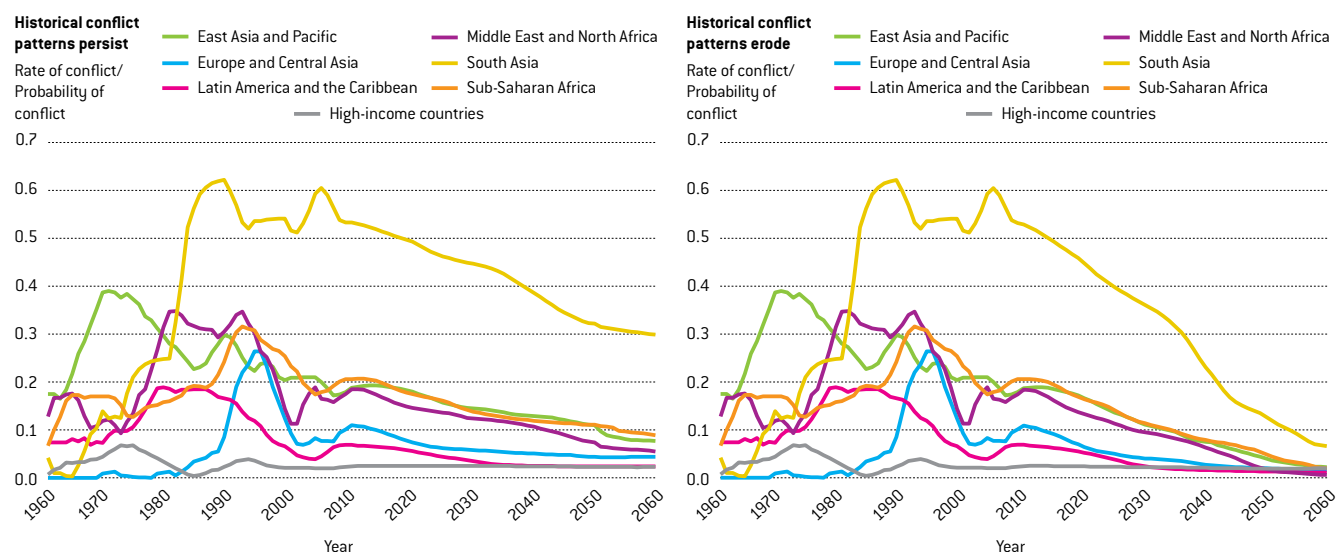
■ The global Gini for GDP at PPP across countries is likely to decline significantly by 2060. ■

■ When measured across all humans instead of across countries, the global Gini will not decline as much, but the global trajectory is still toward greater equality. ■

■ Barring major global disruptions, advances in human development around the world will increase pressures for strengthened governance. ■

■ The IFs Base Case suggests that intrastate conflict will decline by more than half (as measured by country-year frequency rates) through 2060. ■

Figure 5.5 History and forecast of regional trends in internal war (1960–2060)



Note: Values before 2010 are regional average occurrence rates; values in 2010 and later are probabilities. A value of 1.0 would mean war in every country-year. Regional averages are unweighted five-year moving averages. The left panel uses the full Base Case formulation, including inertial impact of past conflict; the right panel removes the inertial impact over 100 years via setting parameter sfusehist to 2 so that values move toward the underlying function.

Source: Political Instability Task Force State Failure Problem Set data and IFs Version 6.68 Base Case and variation. IFs database variable is $\text{SFPTFConsolidatedEv}$, and forecast variable is SFINTLWARALL .

■ Some of the developmental challenges in South Asia are so significant that its conflict frequency is likely to remain high relative to other regions. ■

2009 to 7 percent in 2050 (Hegre et al. 2013). Although we use the PITF database instead of the one from PRIO, our global unweighted average probability of conflict in Figure 5.5 is 14.3 percent in 2010. And although our forecasting formulation differs from that of PRIO, our value for 2050 in the Base Case is a remarkably similar 7.2 percent. In the more optimistic and probably unrealistic forecast of the right panel, the global conflict rate declines in 2050 to 3.4 percent.

Exploring the left panel further, sub-Saharan Africa must still navigate many key human and social development transitions (fertility and poverty reduction and democratization among them) that are likely to slow the process of reducing conflict. Similarly, the developing countries of East Asia have a number of transitions ahead of them, not least being democratization. In the case of South Asia, the current wave of conflict is large and has been long; some of the developmental challenges are so significant that, even as various elements of development bring conflict down, its tail extends in the Base Case across our forecasting horizon. Thus, in South Asia an annual country frequency above 0.3 (one intrastate war for each three country-years) may well persist through 2060,

with sub-Saharan Africa and developing East Asia and Pacific also still near 0.1. The Middle East and North Africa is likely to experience fairly high levels of conflict for some years, but its development path in the longer term actually puts it in a relatively favorable position.

However, in this volume, we repeatedly emphasize that our confidence in any very specific forecast of conflict, including our own, is low. Because conflict is a typically intermittent event of low frequency and high intensity, even short-term forecasting of it has proven very difficult (again, the events in Egypt, Libya, Tunisia, and other countries in 2011–2012 drove that lesson home).¹² We therefore consider the forecasts here only generally indicative of likely directions and a base line around which we can analyze the likely changes in forward linkages should future conflict patterns unfold in a very different manner. For instance, Chapter 6 will explore a higher stress scenario in which one explicit element will be a future with a significantly higher pattern of intrastate conflict.

Performance risk and vulnerability to conflict
We turn now from the probabilistic measure of

conflict to an index of generalized vulnerability to conflict. The IFs Country Performance Risk Index, like other such indices, tends to be considerably less bound to past records of conflict and more attentive to a wider range of underlying influences. It is, in fact, a measure of state performance with security implications, not simply a measure of conflict risk.

Figure 5.6 shows the likelihood that country risk will decline gradually across our forecast horizon for all regions. Increases in human development again largely explain that pattern. Not surprising, the greatest contemporary and future performance risk across regions is in sub-Saharan Africa, with very high initial levels of risk in Somalia, followed by the Democratic Republic of Congo, Angola, the Sudans, and Chad. The average vulnerability to conflict across the countries of South Asia is close to that in sub-Saharan Africa, with Afghanistan ranked highest, followed by Nepal and Pakistan (globally numbers 24 and 38, respectively).

Following these two regions at the beginning of our forecast period is a second pair of vulnerable regions—the Middle East and North Africa and East Asia and Pacific. The IFs index placed the former region in this position prior to the revolutions of 2011,¹³ with Yemen, Djibouti, and Iraq identified as the most vulnerable countries of the region, followed in descending order by Egypt, Algeria, Libya, Iran, Syria, Palestine, Morocco, Jordan, Tunisia, and Lebanon.¹⁴ The most vulnerable countries in the latter region are Myanmar, Papua New Guinea, North Korea, Laos, and Timor-Leste.

The third pairing of developing regions by average risk across the forecast horizon places Europe and Central Asia roughly with Latin America and the Caribbean. The highest risk countries in the former are Turkmenistan, Uzbekistan, Azerbaijan, Tajikistan, Kazakhstan, and Russia. The highest-risk countries in the latter are Haiti, Colombia, Guatemala, Venezuela, Bolivia, and Honduras.

The approaches rooted in conflict probability and country risk or vulnerability to conflict clearly differ with respect to the understandings they convey about historical experiences (see again Chapter 2), current conditions, and forecasts. For instance, the relatively comparable risks for sub-Saharan Africa and South Asia in Figure 5.6 are interesting in light of the higher

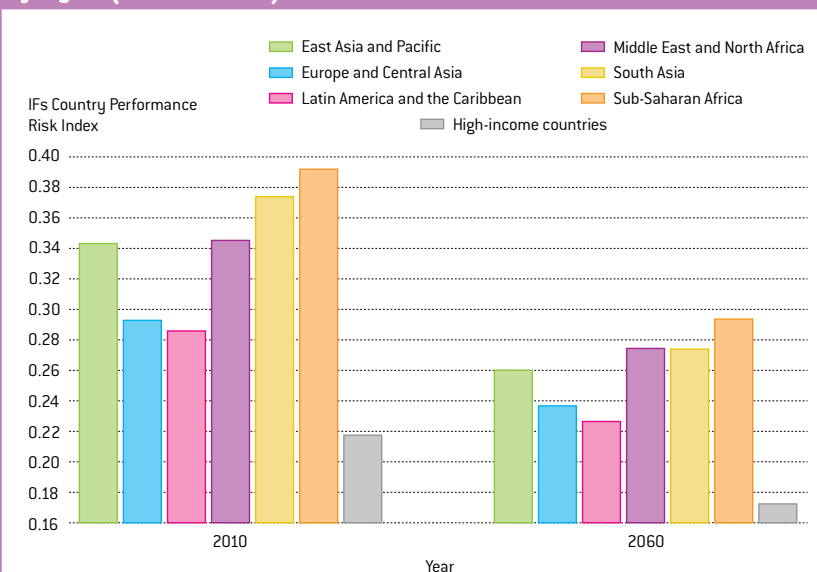
current and forecasted rates of conflict in South Asia in the conflict probability approach (compare with Figure 5.5).

Why do the measures from the two approaches result in differing forecasts? With respect to initial conditions, risk measures incorporate a broad range of continuous-scale variables with typically equal weighting. It is not surprising, therefore, that the initial conditions across regions in Figure 5.6 exhibit less differentiation than those in Figure 5.5, which strongly reflect actual levels of historical conflict (a dichotomous condition).

Another important difference between the two types of measures has to do with the size and broader strengths of countries. Consider India. It has active internal conflicts, for example, in the state of Jammu and Kashmir, and a high probability of continuing ones, including that related to Naxalite groups, especially in West Bengal, Bihar, and less-developed areas of central and eastern India such as Orissa. It therefore places very high on the intrastate conflict probability measure of Figure 5.5. At the same time, India has sufficient economic and sociopolitical strengths that it tends not to rank very high on indices, like that of Figure 5.6, that pick up broader performance.

■ Country performance risk will decline gradually from 2010 to 2060 for all regions; however, several countries in sub-Saharan Africa and South Asia will still face high risk. ■

Figure 5.6 Forecast of regional trends in IFs Country Performance Risk Index by region (2010 and 2060)



Note: Using a simple average across countries. Index range is 0.0–1.0, with higher values indicating greater vulnerability to conflict.

Source: IFs Version 6.68 Base Case. IFs forecast variable is GOVRISK.

■ Even by 2060, the levels of vulnerability in developing regions will remain, on average, above the value for high-income countries in 2010. ■

■ Government revenue shares of GDP will increase almost everywhere, especially due to aging populations. ■

In contrast, many African countries are quite small. They may not have conflicts that in any given year exceed the threshold of deaths set to identify countries with active intrastate wars, but they have poorer overall performance and more risk of major failure than does India.

As with the probability of intrastate conflict, the Base Case forecast of decline in vulnerability needs to be put in context. Even by 2060, the levels of vulnerability in developing regions remain, on average, above the value for high-income countries in 2010, and considerably above in many cases. Countries that the Base Case suggests are candidates for high risk 50 years from now include, but are not limited to: Afghanistan, Burundi, the Central African Republic, Chad, the Democratic Republic of the Congo, Guinea Bissau, Madagascar, Niger, Somalia, and the Sudans. The Global Challenges scenario of Chapter 6 will expand this list.

Capacity

Earlier chapters have defined capacity in terms of the state's ability to mobilize revenues and use them effectively. Chapter 2 traced historical patterns, Chapter 3 explored the literature's understanding of drivers of stronger capacity, and Chapter 4 explained the formulations that IFs uses for forecasting capacity. In this chapter, we use the IFs Base Case to look at how government capacity might evolve in coming decades.

Resource mobilization and use

Over the very long term, government revenues have tended to increase with GDP per capita. On a global basis, however, the historical data of the last three decades do not clearly show this global trend for central government revenues. Instead, central government revenues rose from about 18 percent of GDP in 1970 to about 20 percent by the early 1980s but remained generally in the range of 19–20 percent of global GDP between then and 2009.¹⁵ Factors that have held down the government share of the global GDP in recent years include: the retreat of government in the countries making transitions from communism to market economies (although the data are weak); the neo-liberal philosophy of fiscal discipline leading to some expenditure (and revenue) retrenchment in Latin America and South Asia; and the growing relative share within the global economy of developing economies

with lower fiscal resource generation capabilities. (Governments in high-income countries were able to gradually mobilize a greater percentage of GDP, with central revenues climbing from an average of about 18 percent of GDP in 1970 to 21 percent in 2009.)

More important, however, is the fact, discussed in Chapter 4, that as countries become more well-to-do, their local government expenditures tend to increase significantly so that general expenditures can rise, even when central government expenditures stabilize or rise more slowly. Our forecasts try to capture general government patterns as well as our very incomplete data and modeling formulations allow.

The Base Case forecasts shown in Figure 5.7 suggest revenue-share increases almost everywhere. Among the most important factors that will almost certainly drive up revenue mobilization in coming decades will be the need of governments for higher expenditures as populations age globally; aging will especially force increased expenditure, and therefore revenue shares, in high-income countries and in the developing countries of Europe and Central Asia.

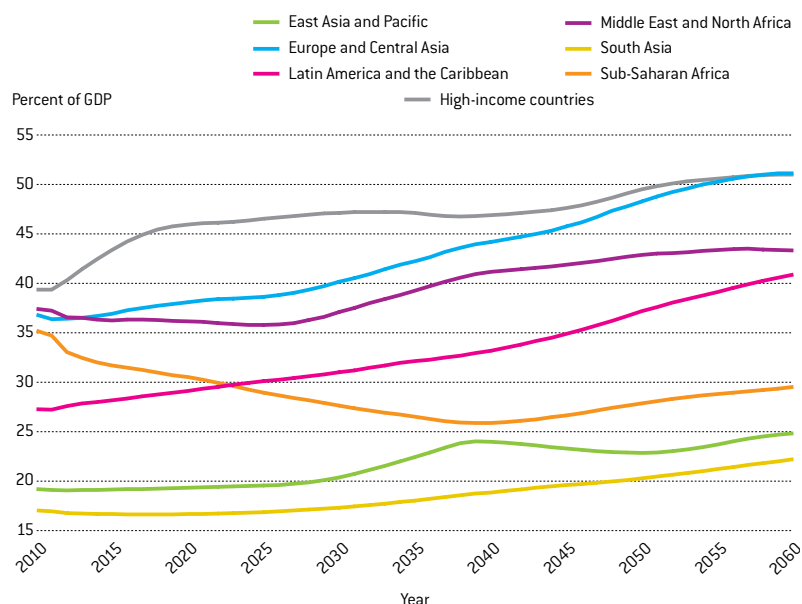
The reason for the rapid near-term rise in the high-income country forecast is only partly aging, however. Significantly, it also is due to the very large fiscal deficits of many of those countries during the Great Recession and the resultant pressing need for adjustments on both expenditure and revenue sides. As Latin America and the Caribbean becomes more like the high-income countries, the region is also likely to see a considerable rise in revenues as a percentage of GDP. In contrast, the revenue shares in developing East Asia and Pacific, in South Asia, and in the Middle East and North Africa grow more modestly in the Base Case; the last of these regions faces deteriorating contributions from energy export revenues over the coming decades as its countries move toward peak oil and increasingly also consume their production. Overall, however, the IFs Base Case foresees worldwide government revenue rising from about 36 percent of GDP in 2010 to about 38–39 percent in the 2020s, then declining slowly to about 36 percent as the weight of developing countries in the total increases.

One surprise in Figure 5.7 might be the relatively high levels of current revenues as a percent of GDP in sub-Saharan Africa, given the region's low income and the decline in the

forecast values. As Chapter 2 discussed (see especially Figures 2.4 and 2.5), that pattern occurs in large part because our numbers include foreign development assistance. Without these inflows, the forecast of revenue mobilization would be rather flat at closer to 20 percent of GDP. Using moving averages, the share of aid-flows into Africa as a whole (adding North Africa to sub-Saharan Africa) as a portion of GDP has had two major run-ups and peaks (see Figure 5.8). The first, and larger, run-up was in the final years of the Cold War, with the peak in 1990–1992, just after its end. The fall-off from that peak in the 1990s was rapid and substantial, especially in North and South Africa, where oil and other strategic stakes had motivated the Cold War competitors. The second run-up started in 2001 with the September 11 attacks in the United States and the subsequent “War on Terror,” as well as the humanitarian assistance that support for progress toward the Millennium Development Goals motivated. That second rise peaked in 2004, with 3.4 percent of total GDP in the region coming in the form of aid, compared with 6.6 percent in 1990. The pattern has varied somewhat across the regions of Africa, with an especially different historical cycle in North Africa. The peaks in Eastern Africa (the biggest recipient area as a share of GDP) were 9.3 percent in 1992 and 13.1 percent in 2004. Western Africa and Central Africa were the other two large recipient regions in the second, and probably final, significant peaking.

Going forward, there are many reasons to believe that the contribution to government revenue in the continent and its subregions from external assistance will continue to fall fairly steadily from the second peak. Likely growth in regional incomes underlies two of the reasons. First, donors will be less inclined to see contributions as essential for humanitarian reasons when poverty falls. Second, because developing economies have been and are likely to continue to grow faster than those of high-income countries, even constant aid given by donors as a percentage of their GDPs will become smaller portions of recipient economies and of government revenues. In addition, both the pressures on high-income countries to address their own fiscal deficits in the period following the Great Recession and the increasing pressures of aging populations are likely to

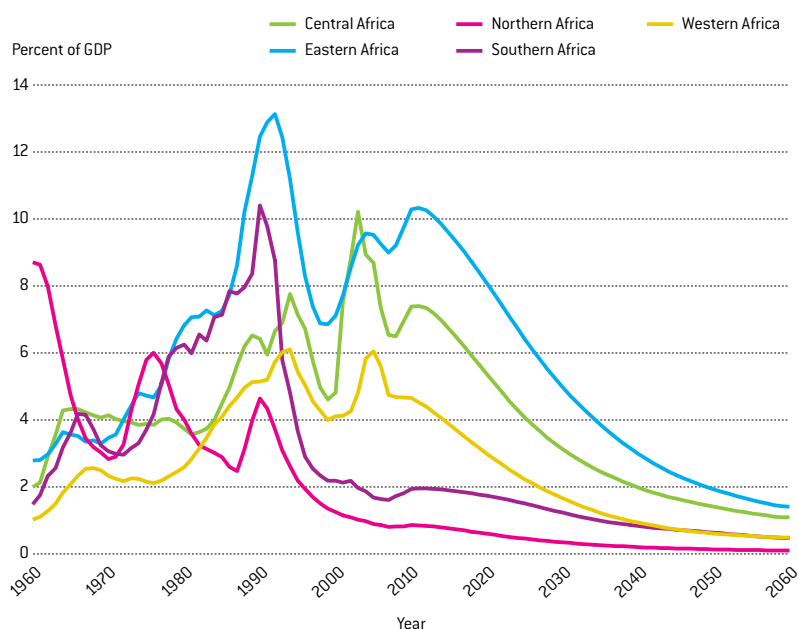
Figure 5.7 Forecast of general government revenues, including aid receipts, as a percent of GDP (2010–2060)



Note: Regional values are GDP-weighted averages of group members.

Source: IFs Version 6.68 Base Case. IFs forecast variable is GOVREV as a percentage of GDP.

Figure 5.8 History and forecast of foreign aid (net receipts) as a percent of GDP for African subregions (1960–2060)



Note: Using simple five-year moving averages for African Futures Project subregional groupings (see Cilliers, Hughes, and Moyer 2011).

Source: Historical GDP and foreign assistance data are from the World Development Indicators; forecasts are from IFs Version 6.68 Base Case. IFs database variables are AidRec%GNI minus AidDon%GNI, and the forecast variable is AID as a percentage of GDP.

■ Sub-Saharan Africa's reliance on external assistance will fall steadily and steeply. ■

■ For low-income countries, health and education expenditures will almost certainly rise as a proportion of GDP, while infrastructure and military spending are likely to fall. ■

reduce GDP shares going to foreign assistance. The current primary African subregions receiving aid (East, West, and Central) are likely to lose total government revenues of between 4 and 10 percent of their GDP as aid declines through 2060. This decline will require a major increase in tax generation simply to prevent sharp decreases in government fiscal capability.

In summary, the relatively large size of governments in these African subregions and their resultant expenditure patterns are likely to generate considerable pressure on those governments to replace some significant share of declining assistance with internally generated funding. As a result, African states may have proportionately larger governments than most Asian countries.

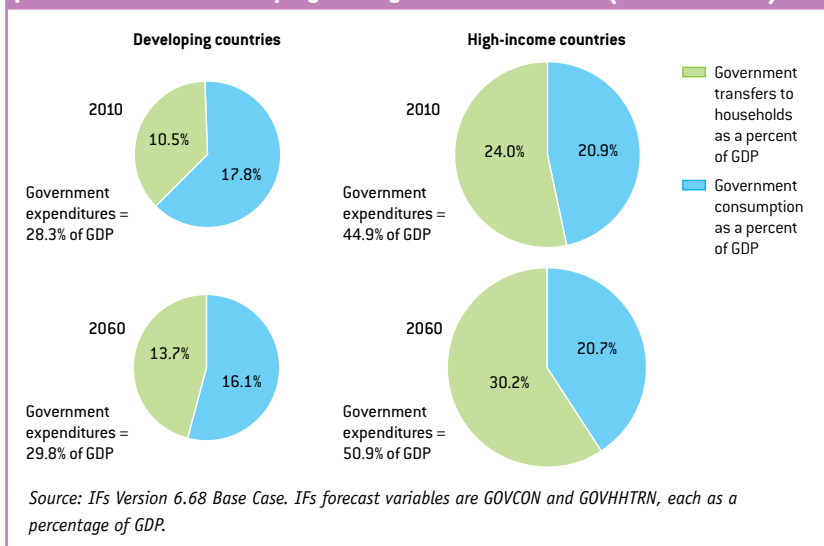
Turning to the expenditure side, it is not surprising that total expenditures, globally and by region, follow roughly the same pattern as revenues in the long run. But to understand the patterns of expenditures, it is important to divide them into direct public consumption (on defense, education, health, infrastructure, R&D, and other items, including administrative costs)¹⁶ and domestic transfer payments (e.g., welfare and pensions). Figure 5.9 shows that breakdown as a portion of GDP for the World Bank high-income and aggregated developing-country groupings.

High-income countries could see both direct consumption and transfer payments decline as a percentage of GDP in the coming decade

as they redress the fiscal imbalances that are likely to require increased revenues. Thereafter we anticipate that consumption and transfer payments will grow again. However, through 2060, direct consumption may only just recover its current share of GDP, while the share of transfer payments in GDP will almost certainly move still higher, again in significant part because of aging populations. In developing countries, the direct consumption share of GDP is already not much below that of high-income countries (poorer countries tend to spend similar shares of GDP on education and defense, somewhat smaller ones on health, and considerably more on infrastructure) and is not likely to change significantly through 2060 (declining somewhat on average as Asian countries bring it down). However, transfer payments are a much lower share of GDP in developing countries and will almost certainly grow as the countries become richer and their populations also age.

Within the general category of government consumption, there also will be substantial changes over time. Looking only at the low-income countries (see Figure 5.10), health and education expenditures almost certainly will rise as a portion of GDP. Infrastructure spending is likely to fall after basic catch-up investments in roads, electricity, and water and sanitation have been made (see Rothman et al. 2014); perhaps over-optimistically, the IFs Base Case suggests that defense expenditures also might fall.

Figure 5.9 Forecast of government consumption and transfer payments as a percent of GDP for developing and high-income countries (2010 and 2060)



Governance quality

Government capacity requires not only the collection and expenditure of funds, but also the ability to collect and expend them efficiently and effectively. One of the greatest barriers to effectiveness is corruption. In exploring corruption's current and future levels, we turn again to the Corruption Perceptions Index (CPI) of Transparency International introduced in Chapter 2 and to which we connected our own forecasting formulation in Chapter 4. On that measure, higher values indicate less corruption.

In contrast to the substantial variation of democracy levels across developing regions historically and in recent years that we illustrated in Chapter 2, the CPI measure, although not structured for over-time analysis, shows a large and persistent gap separating high-income countries from all developing regions. It further

suggests limited variation of perceptions of corruption across developing regions.

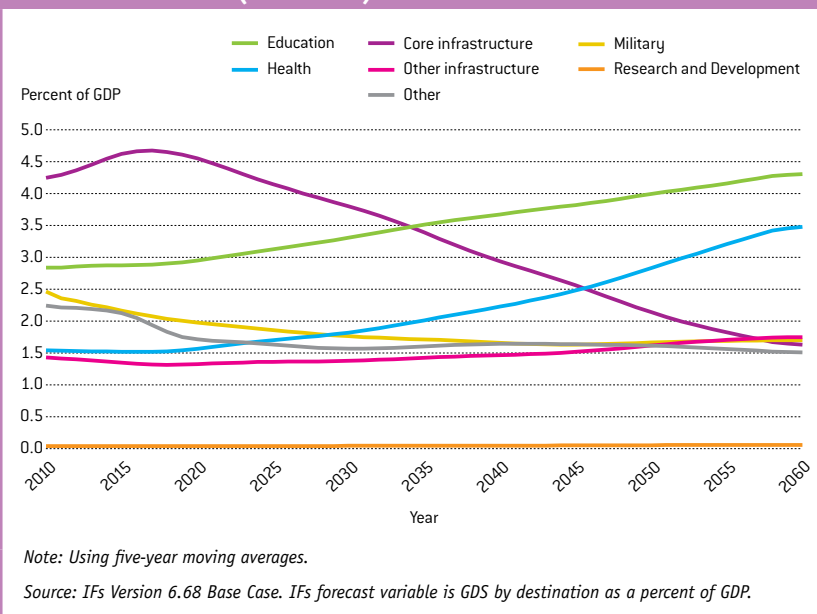
The left panel of Figure 5.11 shows the clustering of countries at other income levels relative to high-income countries. In 2010, the average CPI score—a proxy for absence of corruption—was 2.3 for low-income countries, and even that for upper-middle income countries was 3.7, far below the 6.6 of high-income countries. Given our anticipated advances in GDP per capita, democracy, and gender empowerment, however, the Base Case forecast suggests an increased spread of average corruption levels by country-income grouping in future decades. Note, too, that the income-grouping averages conceal already great variation among countries at each income level. Among upper middle-income countries, the range of data in 2011 was from 1.6 in Turkmenistan to 7.2 in Chile. Among low-income countries, the range was from 1.0 in Somalia to 5.0 in Rwanda.

The right panel of Figure 5.11 shows more detail on the possible reduction of corruption across developing regions. As many of its countries advance in income and education, even sub-Saharan Africa progresses toward less corruption. So, too, does South Asia. The quite positive story of the Base Case for Middle East and North Africa may also surprise some. Nevertheless, it can be explained in significant part by two likely transitions in the region: (1) movement toward reduced dependence on energy production and exports, with concomitant reductions in the high and corrupting rents of this sector; and (2) movement toward greater levels of democracy.

Even considerably more rapid progress is likely in other regions with higher education levels and stronger foundations for government effectiveness. The “biggest movers” are likely to be:

- The developing countries of East Asia and Pacific because of rapid economic growth;
- Latin American countries for the same reason (we cannot explicitly forecast the pernicious influences of current high-income-country drug policies, but qualitative consideration would expect those policies to improve in the long run);
- The countries of Europe and Central Asia whose current levels of corruption are well above where we would expect them to be

Figure 5.10 Forecast of government spending by category as a percent of GDP in low-income countries (2010–2060)



based on the fundamentals of their societies (a legacy in substantial part of the abrupt and rent-opportunity-creating transition from communism to market-based economies).

Although the World Bank combines the developing countries of Central Asia with those of Central and Eastern Europe, these two regions actually have quite different capacity development prospects. The latter are less burdened by dependence on energy exports and have some legacy of strong state capacity from earlier eras. The IFs system does not explicitly represent the likely influence of movement by many of the latter into the European Union, but that would reinforce the forecasts here.

Inclusion

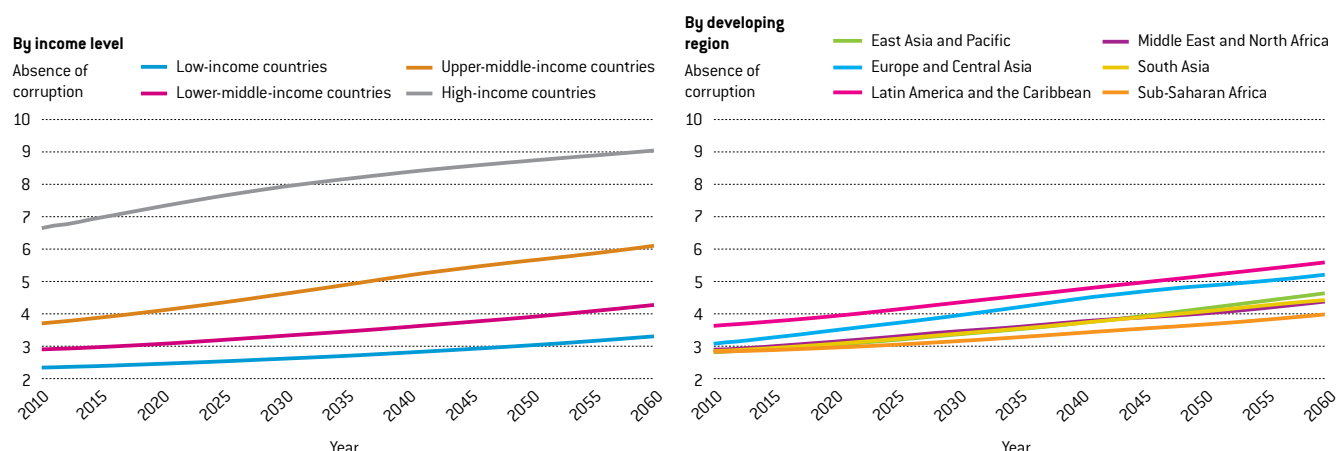
Earlier chapters have made a distinction between changes in regime type and those in broader inclusion, especially that of women’s empowerment. We follow the same pattern here.

Regime type

Chapter 1 described the waves of democratization that have characterized changes in governance globally over the last two centuries. The first long wave lasted through most of the nineteenth century until the early 1920s (before the retreat in the 1920s

■ Given anticipated advances in GDP per capita, democracy, and gender empowerment, a decrease in corruption among developing countries is probable. ■

Figure 5.11 Forecast of absence of corruption by country income level and developing region



Note: IFs forecasts of simple regional averages of absence of corruption are initialized with data from Transparency International's Corruptions Perceptions Index (CPI). We do not simultaneously show historical series nor explicitly forecast the CPI because Transparency International states that prior to the introduction of revised methodology in 2012, the CPI was not a tool that captured changes very well for individual countries over time (see #7 in Frequently Asked Questions available at http://cpi.transparency.org/cpi2012/in_detail/#myAnchor1). IFs scale runs from 1–10; higher values reflect lower levels of corruption.

Source: IFs Version 6.68 Base Case. IFs forecast variable is GOVCORRUPT.

■ Corruption in the Middle East and North Africa will likely fall with reduced dependence on energy exports and greater levels of democracy. ■

■ Latin American and the Caribbean will join high-income democracies in enjoying regime stability; other regions will not. ■

and 1930s), bringing the current high-income countries of the world (mostly European states and some of their settler colonies) up to average levels of democracy not surpassed until the 1990s after the collapse of the Soviet empire. Of course, we know that those democracies were often very oligarchic and patriarchal, frequently suffering high levels of electoral fraud and denying women's suffrage; therefore, they were not inclusively democratic in a deeper sense.

The waves of the twentieth century, particularly after 1980 (see Figure 5.12), brought most of the states in the Latin America and the Caribbean region within the democratic range on the Polity scale of regime type (as they did countries of Southern Europe, long thought to be questionable candidates for democracy within Europe itself). In fact, one striking aspect of our Base Case forecast is that the aggregate level of democracy in Latin America might exceed that of high-income countries before 2060. The reason for this has much to do with the composition of the high-income category, which currently includes several autocracies and anocracies, such as Bahrain, Brunei, Equatorial Guinea, Hong Kong, Kuwait, Qatar, Saudi Arabia, and Singapore, a number of which have access to substantial energy revenues and therefore may be slow to increase democracy levels (because the governments can either use the revenues

to satisfy demands of citizens or use them to repress the population).

In recent decades, high-income countries have experienced very considerable stability of regime type and, for the democracies, this will probably be true going forward. Such relative stability at high levels of democracy is also likely for almost all of Latin America and the Caribbean. That is not to be expected, however, in most other world regions, where some countries can boast high levels of democracy, while others are at the opposite extreme, and some are at that awkward in-between level we call anocracy. Moreover, as Figure 5.12 suggests, many countries in these other regions have experienced considerable movement up and down.

For example, the transitions from communism in Europe and Central Asia brought these states on average to levels near 13 on the rescaled (0–20) 21-point Polity scale (IFs rescales the index with a 0 base instead of -10 so as to simplify model calculations and algorithms). However, that regional grouping combines Eastern Europe, with an average value approaching 17 (in spite of setbacks in Hungary), and many Central Asian countries that have much lower values. Similarly, on average, South Asia experienced a surge toward democracy in the 1980s, reflecting changes in Bangladesh, Nepal, and Pakistan.

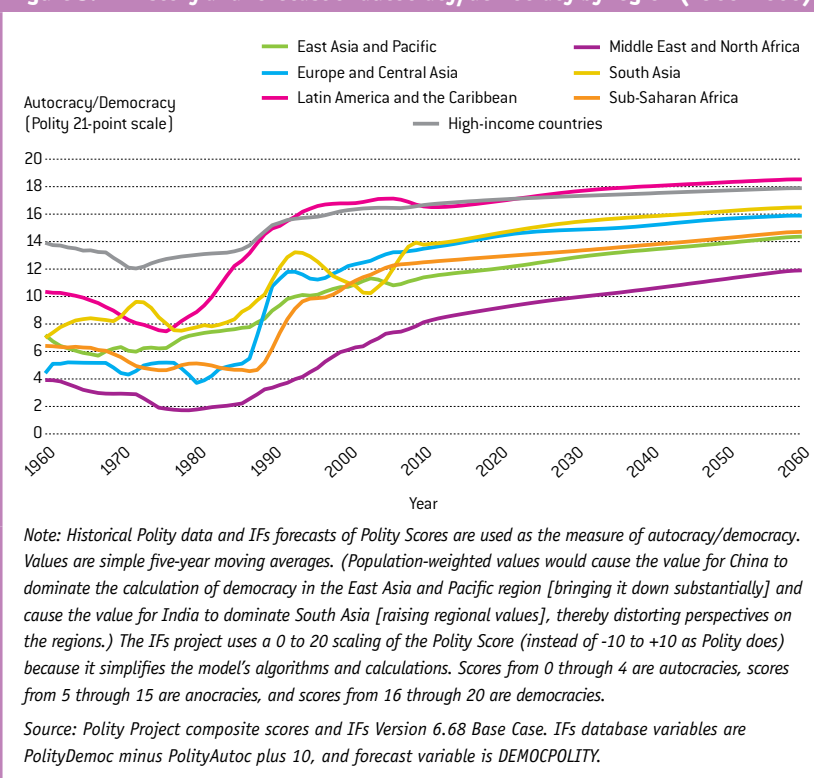
Unfortunately, the region has a history of quite-abrupt autocratic reversals as well as democratic transitions. Within the region, only India (with notable democratic failings) has maintained quite high Polity scores. In the case of the developing countries of East Asia and Pacific, there is a similar split between Indonesia (in recent years), Mongolia, the Philippines, and the new state of Timor-Leste, all of which have quite high levels of formal democracy, and China, Fiji, Laos, Myanmar, North Korea, and Vietnam, where in 2010 all the governments were autocracies. Africa is similarly divided, but experienced a considerable shift toward democratic regimes in the 1990s.

Historically, the only developing country grouping that has exhibited considerable regime-type stability in recent decades, albeit at the opposite, more authoritarian end of the governance scale, has been the Middle East and North Africa, with an average Polity value of 8.1 out of 20 in 2010. In that year, four countries of the region (Iran, Libya, Morocco, and Syria) sat solidly on the authoritarian end, with values below 5.0. Eight fell into the anocratic category, and only Lebanon was democratic.¹⁷ In reality, however, regime type has not been unchanging in the region (see again Figure 5.12). In 1980, Algeria, Djibouti, Egypt, Iraq, Jordan, and Tunisia were also in the more purely autocratic category, but some very slow progressive change is evident over recent decades. With the movements of the Arab Spring in 2011, any semblance of stability has now disappeared, even though it appears unlikely that anything approaching a clean sweep of authoritarian and anocratic regimes will occur for quite a long time.

Thus, even though IFs Base Case suggests movement of all regions toward democracy, the historical record makes it clear that such movement will not be as smooth and setback-free as that forecast. Moreover, even the pattern of the Base Case in 2060 is quite far from a democratic world. A total of 131 countries are forecast to have a value above 15 on the IFs 0–20 point version of the Polity regime scale, but most of the remaining 52 countries are likely to be anocracies, with values between 5 and 15, and therefore to be less than fully stable in many respects (see the left panel of Figure 5.13 for our forecast of the percentage of countries by regime type).

When looking at the global population living under each regime type (see the right

Figure 5.12 History and forecast of autocracy/democracy by region (1960–2060)



panel of Figure 5.13 [on p. 114]), the key question will be the status of China. In the Base Case, China reaches a level of 5 on the 21-point Polity scale and by definition moves from autocratic to anocratic status in the late 2020s, thereby pushing about 40 percent of the world's citizens into that mid-range through the end of our horizon. The fact that many of the anocracies are likely to be quite capable is at least some comfort. For example, Singapore, with a Polity value of 8 out of 20 in 2010, has highly capable governance and does not appear a likely candidate for breakdown of order or for significant human rights threats.¹⁸

Nonetheless, the democratization element envisioned by the Enlightenment thinkers is unlikely to be complete by mid-century, and that failure could pose systemic risks during an era when China and other emerging countries are moving into global leadership roles. (On the IFs power measure, China passes the United States in about 2030 and the BRICs [Brazil, Russia, India and China] pass the OECD countries in the 2030s, when their collective GDP per capita at PPP will only be about \$16,000 and their average Polity autocracy/democracy level will be around 15 out

■ Although all global regions will likely become more democratic, the movement will not be smooth and setback-free. The world of 2060 will not be fully democratic. ■

■ China will probably be anocratic as it and other emerging countries move into global leadership roles. ■

■ Democratic deficits will cause disruptions in regime type for many countries as increases in human development and democratization proceed at different speeds. ■

of 20.) Finally, we note that although the IFs forecasting formulation raises all countries and peoples from autocracy to at least anocracy by 2060, this rise seems improbable.

As we look forward, one of the forces that will surely cause disruption in regime type is what we have called democratic deficits, the differences between actual regime type and that which we would expect based on levels of human development (looking to education and income levels especially). As noted in this chapter's introduction, challenges to the old orders in the countries of Middle East and North Africa were to be expected because of large democratic deficits there. The right panel of Figure 5.14 shows the IFs calculation of democratic deficits by country grouping in 2010, using simple country averages. The Middle East and North Africa had a deficit of about 6.5 points on the 21-point Polity scale, far larger than those of other regions.

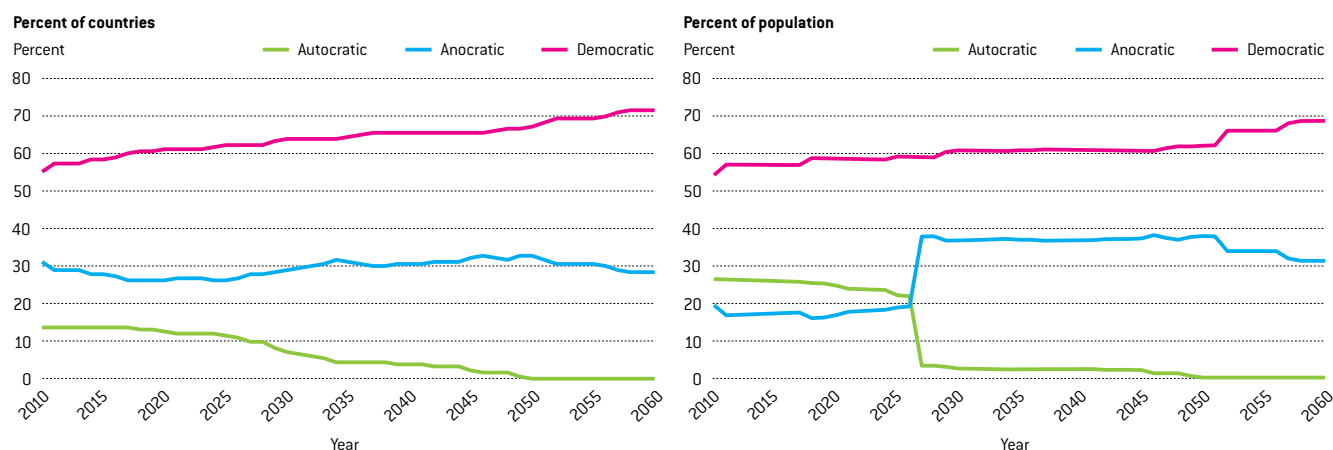
A population-weighted average within each region (the left panel of Figure 5.14) reveals a somewhat different image, one in which East Asia and Pacific joins the Middle East and North Africa at a very high level of deficit due to the large population of China. In sharp contrast to these regions, with population weighting South Asia shows a "democratic surplus" relative to expectations because of India (a country that would appear less democratic with measures of inclusion that placed more weight on broadly effective participation than does that of Polity).

One of the interesting implications of the comparison of the panels in Figure 5.14 is that the gaps between expected and actual regime values are greater overall in the population-weighted analysis. That is, some of the countries with the largest populations (including China, India, and, until recently, Egypt) have some of the greatest discrepancies with expectations and therefore potential for significant shifts in regimes. That perspective suggests greater potential regional and global instability than if we look only at simple country and regional averages.

At the country level, the differences between expectations and reality with respect to level of democracy can be striking. In 2010, there were 20 countries with more than 10 points of deficit on the Polity scale, led in descending order by Qatar (at 20 points), the United Arab Emirates, Bahrain, Saudi Arabia, Oman, and Kuwait. Libya was eighth, with a 14-point deficit. Bahrain also saw turmoil in the Arab Spring related to the interaction of its democratic deficit with incongruence between the religious orientations of the Sunni leadership and the Shia majority of the population. There were 23 countries with democracy levels five or more points above expected levels, led by Comoros, Timor-Leste, Burundi, Mali, Sierra Leone, and the Democratic Republic of the Congo (India is in 14th place).

Clearly, our estimation and discussion of deficit or surplus is very simplistic, ignoring

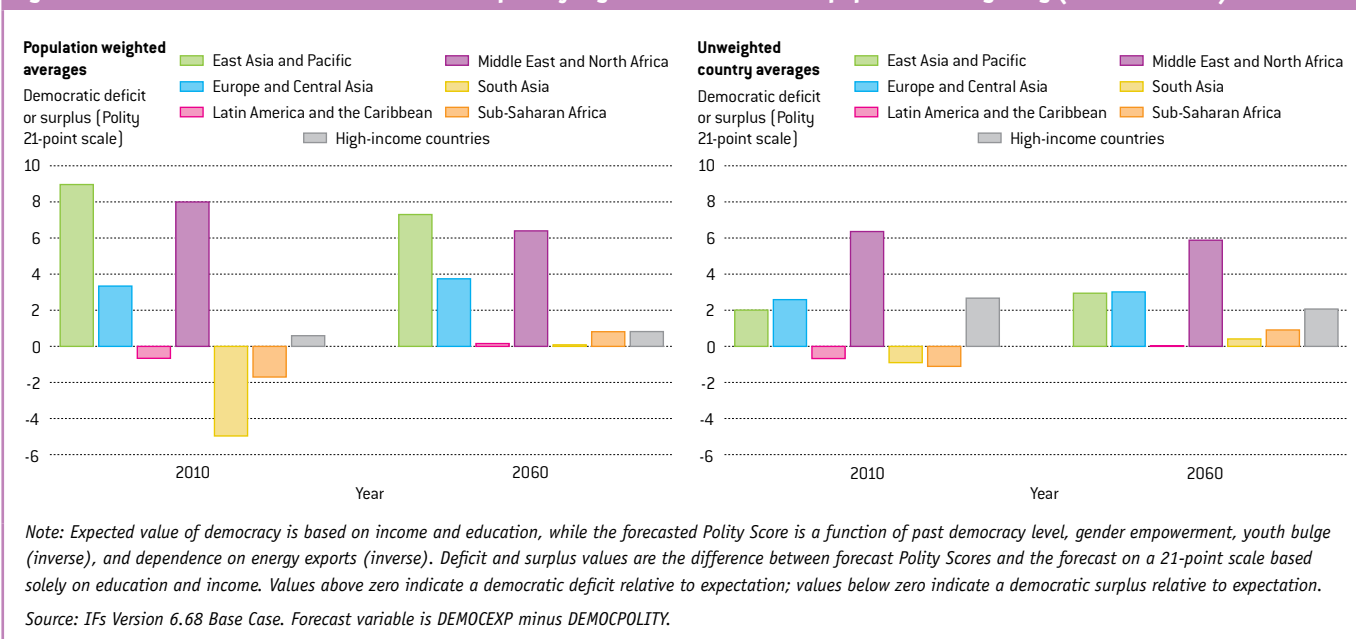
Figure 5.13 Forecast of portion of world with different regime types by percent of countries and percent of population (2010–2060)



Note: Based on IFs forecasts of Polity Scores. The IFs project uses a 0 to 20 scaling of the Polity Score (instead of -10 to +10 as Polity does) because it simplifies the model's algorithms and calculations. Scores from 0 through 4 are autocracies, scores from 5 through 15 are anocracies, and scores from 16 through 20 are democracies.

Source: IFs Version 6.68 Base Case. IFs forecast variables are DEMOCPOLITY and POP.

Figure 5.14 Forecast of democratic deficit or surplus by region with and without population weighting (2010 and 2060)



issues such as cultural differences and historical path dependencies related to factors such as colonization. We must recognize the estimation to be indicative, not definitive. Nonetheless, it is extremely unlikely that democratic deficits of the magnitude of those in China (nearly 13 points on the 21-point Polity scale) or the Middle East and North Africa will persist without social turmoil and resultant sociopolitical change. In fact, the Base Case of IFs suggests that democratic deficits (and surpluses) are likely to be at least somewhat smaller in 2060 than today.

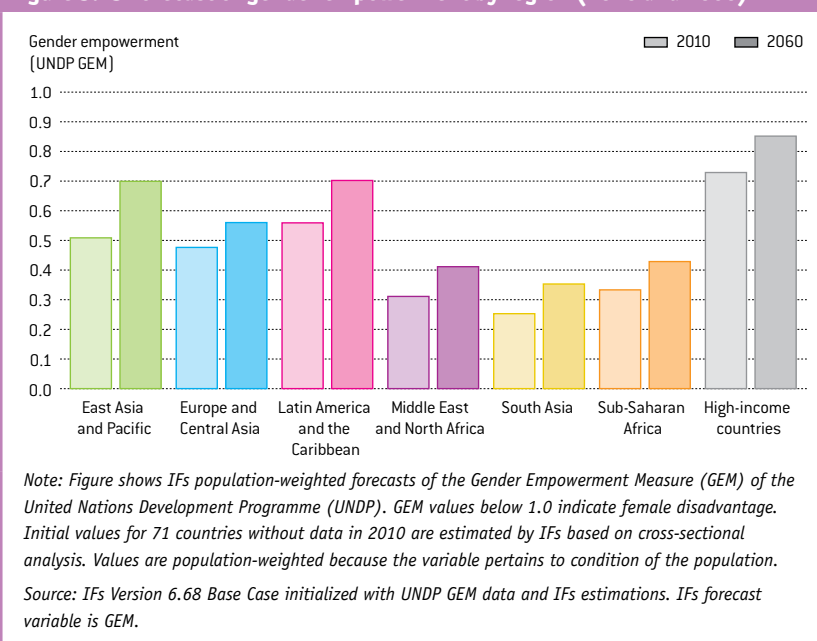
In the case of the Middle East and North Africa, three factors are likely to significantly raise the level of actual democracy, even as expected values also rise: (1) the continued advance of education; (2) the reduction of youth bulges as fertility declines work their way through the age structure; and (3) the combination of reduced (or even largely depleted) supplies of oil and natural gas resources accompanied by economic diversification. Very likely, our forecasts for 2060 are understating the adjustments that will occur.

Broader inclusion: Gender empowerment

As Chapter 2 discussed, cross-sectional time-series measures of social inclusion in governance over multiple decades are not widely available.

We drew attention in that chapter to the Gender Empowerment Measure (GEM) of the United Nations Human Development Programme. Unfortunately, there are no estimates of the GEM for 71 of our 183 countries and no values prior to 1995. In addition, the historical estimates are not truly comparable over time; for instance, average values for high-income countries grew from 0.50

Figure 5.15 Forecast of gender empowerment by region (2010 and 2060)



■ Some highly populated countries are among those with the greatest democratic deficits, indicating greater potential for regional and global instability than that shown in unweighted regional analyses. ■

in 1996 to 0.72 in 2009, an improbably large increase in fewer than 15 years. Hence, Figure 5.15 (on p. 115) shows our forecasts only. Based on the formulations in Chapter 4, we anticipate fairly steady but not particularly rapid advance in coming decades. In fact, on a global basis, we foresee movement from a value of 0.46 in 2010 to only 0.55 in 2060. Slow global growth is partly a result of the growing demographic weight of regions such as South Asia, with especially low values both in absolute terms and relative to the high-income countries.

Other indicators of women's progress socially are more optimistic. For instance, we estimate that globally the female share of the formal labor force will rise from 38.8 percent in 2010 to 44.9 percent in 2060. This and rising female education levels ultimately may advance broadly assessed inclusion more rapidly than the forecast of Figure 5.15 suggests. With respect to education, women are making especially rapid progress at the tertiary level and have pulled ahead of men in tertiary enrollment rates in high-income countries, Latin America and the Caribbean, Europe and Central Asia, and East Asia and Pacific (therefore having also reached parity on a global basis).

The Governance Transitions in Interaction

The three governance transitions will not proceed discretely in coming decades. The interactions among them have been close historically and will remain so. It is quite obvious, however, that different countries may exhibit quite different balances across these transitions in their progressions from poorly functioning and even predatory environments to more fully and richly complete developmental states. We certainly recognize, for example, that the patterns of development in India and China are quite unlike each other, with India embracing democracy well ahead of China, while China has developed, at least in many respects, a more capable state at an earlier stage (Joshi 2012b).

In order to consider such differential patterns of state development today and in coming decades, it is useful to turn to the indices we introduced in Chapter 4 for each of the three governance dimensions. In each case, we use two elements to explore a dimension, rescaling each element from 0 to 1 and averaging them

to compute an index score. We also calculate a total index of governance as a simple average of the three dimensional indices. We can use the three separate indices and the composite index to consider current and future patterns for individual states and across groupings of states.

Patterns across income levels

Figure 5.16 uses the dimensional indices to show contemporary and possible future patterns of governance development across country income categories.¹⁹ Several insights are of interest here. First, currently (see the left radial diagram), there is similar structural balance on the indices across levels of development. Somewhat surprising, as we move across categories from low-income to high-income levels, we do not find that countries first exhibit significantly higher values on the security index, followed by capacity improvements, and then followed by extensions of inclusion. In something of a contrast to the long-term historical trends identified in Chapter 1, we find that the contemporary cross-country story seems to be one of relatively uniform progression across the dimensions with increasing income levels.

Second, we see that at all income levels the security transition appears somewhat more advanced than those for inclusion and capacity. That positioning of security is generally consistent with the earlier historical pattern of first building security. In contrast to historical patterns, however, currently there seems to be somewhat greater advance on inclusion relative to capacity, a development that might reflect the contemporary emphasis on democratization. The three indices are apples and oranges, however, so we need to be careful about reading too much meaning into comparisons across the indices as opposed to across levels of income.

Third, countries at the low- and lower-middle-income levels and, in 2010, even the upper-middle-income level, demonstrate less differentiation than we might expect. Instead, on average, they exhibit great similarity on capacity and inclusion dimensions. Although there is somewhat more differentiation across income levels on the security dimension—consistent again with a “security first” understanding of governance transitions—the progression even on security is not one of steady increase with income.

In short, values for all developing-country income groups fall considerably below those for

high-income countries on all three indices. We have already seen something of that pattern with respect to selected measures in the Base Case discussion of this chapter, as well as in the historical review of Chapter 2, but it is striking to see it more broadly across the dimensions. This pattern could have several different explanations, some of which include: (1) historical path dependency (for instance, higher income being associated with first-comer development of strong governance across dimensions and resultant strength in the global system); (2) existence of rather big steps at certain thresholds of interacting economic and political development in the progression from weaker to stronger governance; and (3) bias in the perception of observers and measure creators toward assessing governance in high-income countries more positively than in other countries (a large portion of these measures rely on expert assessment).

Fourth, as we look forward (see the right radial diagram in Figure 5.16), the Base Case forecast suggests that there will be considerable progression toward stronger governance across

the country income groups, but in a fashion that will preserve the relative similarity of values for the low-income and lower-middle-income country categories. In contrast, upper-middle-income countries will begin to look more like high-income ones. This pattern is logical because some upper-middle-income countries should, over time, break free from that grouping and move toward the characteristics of high-income countries both in terms of income and governance.

Patterns across Brazil, Russia, India, and China

Of course, there is much variation within groupings of countries, such as those by income level. Figure 5.17 (on p. 118) illustrates this by focusing on Brazil, Russia, India, and China (the BRICs).

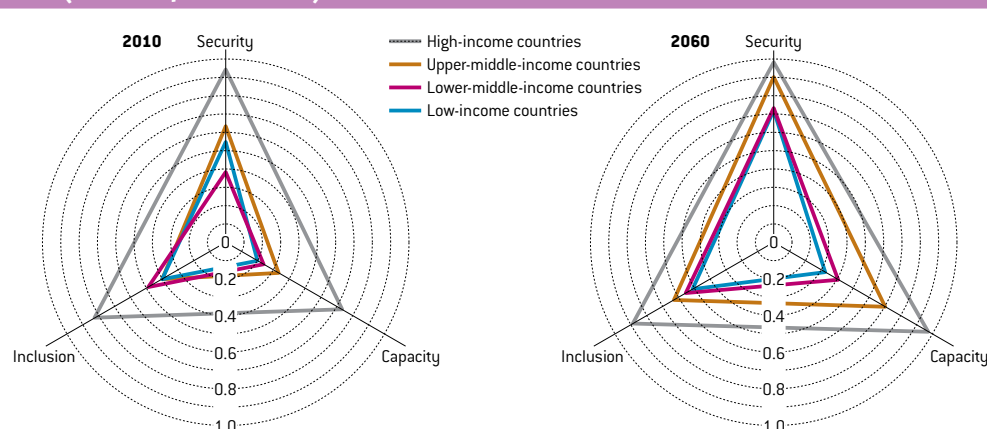
Because all of the BRICs are middle-income countries (India is lower-middle-income and the rest are upper-middle-income), their governance patterns tend not to be developed very fully in 2010 compared to the pattern we saw for high-income countries. With respect to security, Brazil currently is the most developed of the BRICs

■ It is extremely unlikely that democratic deficits of the magnitude of those in China or the Middle East and North Africa will persist without social turmoil and resultant sociopolitical change. ■

■ The three governance transitions will interact in different patterns across countries. ■

■ Regardless of income level, progression appears likely to occur across all governance dimensions simultaneously. ■

Figure 5.16 Forecast of patterns of governance development across countries grouped by income levels (2060 compared to 2010)



	Security		Capacity		Inclusion	
	2010	2060	2010	2060	2010	2060
High-income countries	0.95	0.98	0.74	0.98	0.82	0.89
Upper-middle-income countries	0.64	0.90	0.33	0.70	0.39	0.64
Lower-middle-income countries	0.39	0.71	0.24	0.31	0.48	0.56
Low-income countries	0.55	0.73	0.20	0.33	0.38	0.52

Note: Using IFs indices of governance security, capacity, and inclusion. Values are population-weighted; scales run from 0.0 to 1.0.

Source: IFs Version 6.68 Base Case. IFs forecast variables are GOVINDSECUR, GOVINDCAPAC, and GOVINDINCLUS.

■ Developing countries differ from each other primarily on the security dimension, consistent with a “security first” understanding of governance transitions. ■

■ Governance in upper-middle-income countries will begin to look more like that in high-income ones. ■

■ Security clearly remains an issue for all of the BRICs except Brazil and could undercut other aspects of their advance. ■

and has a high level. Russia, India, and China follow; this is not surprising because each has faced security problems, including Russia’s recent internal war in Chechnya, India’s continuing Naxalite revolt, and China’s difficulties in areas such as Tibet. Security clearly remains an issue for all of the BRICs except Brazil and could potentially undercut many other aspects of advance in governance and broader development.

With respect to capacity, the four BRICs clump into two groupings, the first with Brazil and Russia near the middle of the index’s range, and the second with India and China at a fairly low level. The relatively low capacity level of China is surprising but reflects official and perhaps misleading data on comparatively low levels of resource mobilization; as Chapter 2 discussed, data ignore state-owned enterprises and must significantly underestimate that mobilization. With respect to inclusion, Brazil is at a fairly high level. Russia follows it more closely than we might expect, in large part because of the level of empowerment of women. India is also not far below Brazil on inclusion, while China lags behind very noticeably.

One of the very interesting aspects of the contemporary values and forecasts in Figure 5.17 is that they suggest the BRICs, except for China, are currently more advanced on the inclusion transition than on the capacity one—and that they are probably even further ahead (that is, that they have a greater spread between capacity and inclusion) than the average middle-income country (see again Figure 5.16). We have discussed how the contemporary pattern across these two dimensions of governance appears to differ from the historical pattern, which tended to emphasize capacity before inclusion. The heavy emphasis today on democratization and inclusion is apparent, but the relative underdevelopment of state capacity may reveal, on the one hand, a significant obstacle to making that inclusion meaningful and, on the other, a foundation for pressures to improve capacity.

Looking forward, in 2060 the patterns could be very different. All four countries will probably be at fairly high levels on the security dimension, although our Base Case suggests that Russia and India will still be lagging. We anticipate very strong advance by all BRICs on the capacity

Figure 5.17 Forecast of patterns of governance development across the BRICs (2060 compared to 2010)



Note: Using IFs indices of governance security, capacity, and inclusion. Values are population-weighted; scales run from 0.0 to 1.0.
Source: IFs Version 6.68 Base Case. IFs forecast variables are GOVINDSECUR, GOVINDCAPAC, and GOVINDINCLUS.

dimension, with some lag by India related significantly to slower progress with respect to reducing corruption and mobilizing resources. In 2060, BRIC values on both the capacity and inclusion indices likely will be substantially above those of today, but the challenges are significant.

Patterns within sub-Saharan Africa

With respect to the development of governance, it is not the BRICs about which we worry most, but some countries in South Asia (like Pakistan) and sub-Saharan Africa (such as Nigeria). Figure 5.18 shows the patterns for the four countries of sub-Saharan Africa with the largest populations: the Democratic Republic of the Congo (DRC), Ethiopia, Nigeria, and South Africa. Although because of its size and income South Africa increasingly understands itself to be the “S” in BRICS (spelled with a capital “S”), we examine it with other demographically large sub-Saharan African states because it demonstrates important contrasts with other countries of the grouping.

In 2010, the governance weaknesses of sub-Saharan Africa were obvious relative to the BRICs. On the security dimension, even South

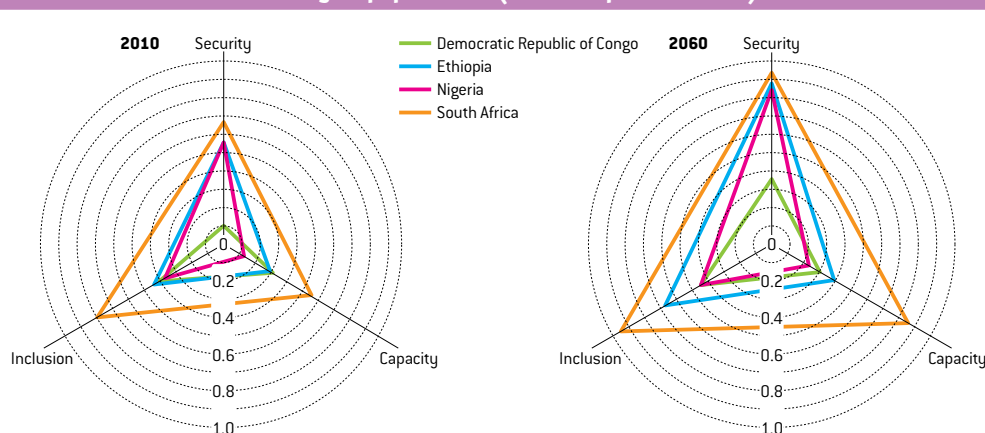
Africa, the most secure, had index values well below those of Brazil. Nigeria and Ethiopia had values considerably below South Africa, and the Democratic Republic of Congo was at a level that helps us understand why it is often referred to as a failed state. Clearly, security remains a foundational problem for many African states.

On the capacity and inclusion dimensions, South Africa, which stands apart from these other African states on both, is already near or above the levels of the BRICs. With respect to inclusion in particular, South Africa is not only already well above China but also India and Russia, and it is comparable to the average for contemporary high-income states (these include many of the Gulf states, which drag down that average, however). The capacity levels of the DRC, Ethiopia, and especially Nigeria are very low, as are their positions on inclusion. It is not security alone with which these states struggle.

By 2060, we anticipate considerable progress on the continent. With the exception of the DRC, security for these largest sub-Saharan African countries could be above the current level of Brazil, and the DRC could be out of the failed

■ The relatively low level of state capacity in the BRICs presents significant challenges and opportunities for their ongoing development. ■

Figure 5.18 Forecast of patterns of governance development across the four countries of sub-Saharan Africa with the largest populations (2060 compared to 2010)



	Security		Capacity		Inclusion	
	2010	2060	2010	2060	2010	2060
Democratic Republic of Congo	0.10	0.36	0.31	0.31	0.4	0.45
Ethiopia	0.56	0.89	0.30	0.40	0.43	0.68
Nigeria	0.56	0.85	0.12	0.23	0.37	0.44
South Africa	0.67	0.95	0.56	0.87	0.79	0.95

Note: Using IFs indices of governance security, capacity, and inclusion. Values are population-weighted; scales run from 0.0 to 1.0.

Source: IFs Version 6.68 Base Case. IFs forecast variables are GOVINDSECUR, GOVINDCAPAC, and GOVINDINCLUS.

■ Although progress in security is encouraging, governance will still pose significant challenges in many African countries through 2060. ■

■ Among difficult developmental passages, many countries will struggle to restructure their economies in order to avoid a middle-income trap. ■

■ In 2011, 94 countries were moving through the range of decline in the youth bulge that is frequently associated with political transition. ■

state range, although still exhibiting levels of security well below those of China or Russia today. On inclusion and capacity, South Africa is likely to advance considerably. Ethiopia is likely to do quite well on inclusion also, while the DRC and Nigeria will probably lag considerably. Other than South Africa, all of these states are expected to have low to modest capacity levels. The passages to better conditions for large African countries (and many others) are very often apt to be problematic. Nonetheless, the probable progress across these countries—and the continent more generally—is encouraging.

Problems: Passages and Pressures

Although the long-term prospects for governance around the world are very positive, getting there from here will be difficult for many countries. Large numbers of countries will face two general categories of problems. The first we can call “passages,” the necessity of moving through difficult developmental and governance transitions. The second we can label “pressures,” some of which could steadily intensify over time.

Difficult passages

The discussions of Chapters 3 and 4 identified some forces that in the modern era appear to work for the most part monotonically (that is, with constant change in only one direction) to improve the human condition. Among the most important are advances in education and per capita income. As we have seen, these societal variables help set up the virtuous feedback loops that push forward improvements in governance and development.

Yet, even the advance of these variables periodically creates complications for countries and can be mixed blessings. For instance, as women begin to receive primary education, their fertility rates can actually rise because of associated improvements in their own health and that of their children (United Nations Population Division 2003: 21; contradicted by Diamond, Newby, and Varle 1999). It is only when women receive secondary education that fertility definitely declines and begins to reduce the problems associated with traditional patterns of high fertility and high infant and child mortality (as well as high maternal mortality). Similarly, income growth like that of Brazil in the 1960s and of China since the 1970s is now

recognized to eventually move such countries to a level of GDP per capita that is associated with a middle-income trap, that is, a level at which the international comparative advantage of cheap labor largely disappears and the need for difficult restructuring of the economy becomes pressing (Kharas and Kohli 2011). Many societies have become at least temporarily stuck in this trap, and some, like Argentina, have languished there for very prolonged periods.

Other passages can have comparable or even more significant negative effects, and we should note the future implications of at least three of these. The first is the passage from very high youth bulges to more mature structures.²⁰ Cincotta and Doces (2011) defined youth bulge in terms of the population age 15–29 as a share of the total working-age (15–64) population; that portion can exceed 50 percent at the peak of a bulge. In themselves youth bulges are a negative force with respect to governance and development because they often give rise to many unemployed, and therefore, unhappy young men; but the bulges and such associated problems tend to disappear with the demographic changes of further socioeconomic development.

The reduction of a youth bulge, however, while ultimately a positive passage, also commonly involves disruptive change, because it can set up a demographic-political transition as the population and the society itself matures. Cincotta and Doces (2011) identified decline to 39 percent, well below largest youth-bulge size, as the level of bulge at which states have a 50 percent chance of becoming a liberal democracy and therefore at which many attempts to create democracy occur. In preparation of their study prior to the Arab Spring, they identified the countries on the northern coast of Africa (Algeria, Egypt, Libya, Morocco, and Tunisia) as one cluster that would pass this point by 2015 and therefore be ripe for regime transition. Such political transitions are obviously a somewhat mixed blessing, potentially bringing instability and conflict as well as liberalization.

If we can identify a range around that 39 percent value, we might be able to suggest the portion of the demographic transition from high to low youth bulges most likely to generate such political transitions and to be complicated passages. In 2011 when the Arab Spring began, IFs calculations of youth bulge

suggested Bahrain was at 34, Egypt at 42, Libya at 40, Syria at 45, Tunisia at 36, and Yemen at 54. All except Yemen have had higher levels in the recent past. Although this is very limited evidence, the experiences of the Arab Spring suggest that the transitions may be likely to take place at nearly any youth-bulge level between 35 and 50 percent and that countries with higher values in that range (or values even above it like Yemen) may have the most difficult and least successful passages. For instance, Yemen's demographic profile may suggest what Cincotta and Doces (2011: 108) call attaining democracy "demographically too soon."

Globally, there were 94 countries moving through this demographic-political passage in 2011. Another 21 countries had youth bulges still above the range and therefore are nearly certain to enter it in coming years, suggesting that a very large number of countries will face the challenges of navigating this passage.

A second complicated passage, long noted in the literature, is from the autocratic into and through the anocratic or mixed regime range, typically regarded as between 5 and 15 on the IFs version of the 21-point Polity scale running from 0 to 20. In 2010, Bahrain was at 2, Egypt at 7, Libya at 3, Syria at 3, Tunisia at 14, and Yemen at 8. The same year there were 57 countries moving through this democratization transition range (and another 25 still living, like many of the Arab Spring countries, under authoritarian regimes).

A third complicated passage relates to reduction of heavy dependence on energy exports (more generally, dependence on any high-value raw material, though in this volume we have focused on energy). Countries that manage to build a large energy export industry based on nonrenewable resources set up an inevitable transition away from energy export dependence; some combination of increases in their own consumption and depletion of fossil resources eventually necessitates the reduction of export levels. The pending global transitions to and through peak production of oil and natural gas may initially push additional countries into this dependence and may push some already there to still higher export levels. As Chapter 6 will discuss, however, peak oil and gas will almost certainly lead to higher prices for those forms of energy and to concentration of their production in fewer countries, even as

other countries grapple with decline in the value of their energy exports.

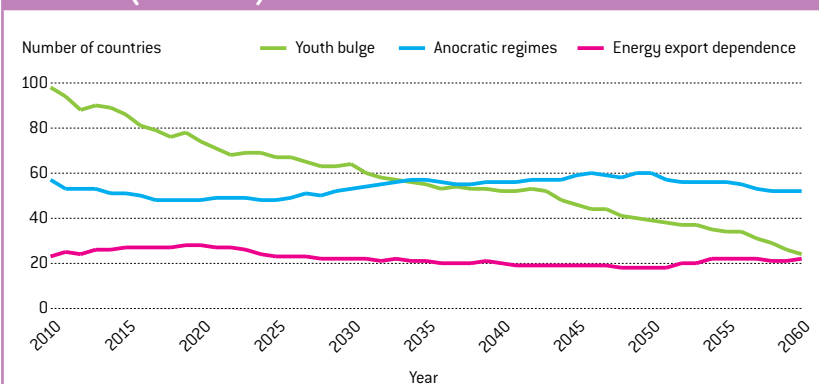
In 2010, energy exports constituted 10 percent or more of GDP in 27 countries; for 15 countries, including some with the greatest governance problems, the value exceeded 20 percent. The top five dependent countries, in descending order, were Angola, Trinidad, Libya, Azerbaijan, and Kazakhstan. The export dependence levels themselves, as we have seen in discussion of corruption, often create problems, but in addition, each of these countries will eventually grapple with the revenue consequences of export declines.

As we look quite far ahead (see Figure 5.19), only the number of countries passing through the youth bulge transition in any given year is likely to decline. Some countries will complete the other two transitions, but an approximately equal number will enter them. By 2060, there will likely be only 25 countries moving through the demographic-political change passage (with no countries above a youth bulge level of 50 percent and therefore poised to enter it) but 52 still progressing through the democratization passage, and 32 dealing with the energy dependence passage.

Growing pressures

Although assorted passages will challenge the ability of many countries to sustain progress

Figure 5.19 Forecast of number of countries in or facing three difficult transitions (2010–2060)



Note: The range for the demographic-political transition is youth bulges (population 15–29 years of age) between 35 and 50 percent of the population 15 years of age and older. For the democratization transition, the range is Polity values between 5 and 15. For the energy dependence transition, the threshold is energy export value as a share of GDP above 10 percent.

Source: IFs Version 6.68 Base Case. IFs forecast variables are YTHBULGE, DEMOCPOLITY, and the dollar value of ENX as a percent of GDP.

■ Further societal evolution will intensify the pressures of democratic deficits such as those in the Gulf states. ■

toward improved governance and better well-being, there is also near certainty that some countries will face persistent pressures that grow steadily until some potentially sudden change or manifestation of problems forces a resolution and/or creates severe disruption. The democratic deficit that we have discussed in this chapter is an example of such a pressure. For countries such as Saudi Arabia and others in the Gulf, that pressure is simply not going to go away until it is relieved. In the absence of governance change, societal evolution will almost certainly intensify such pressure over time; hopefully resolutions will be smooth, but historically they often have not been.

Other such pressures may arise from environmentally linked forces. Energy importing states may find costs rising steadily through our forecast horizon and beyond. Pressures on renewable water supplies continue to rise in many parts of the world. Atmospheric carbon dioxide and the costs of warming and of precipitation pattern changes will likely rise steadily through the century. Chapter 6 will turn to consideration of the implications of such pressures and challenges, including demographic and sociopolitical as well as environmental ones.

Conclusion

In general, the story of the IFs Base Case is a very positive one. Just as human development and governance have advanced in tandem around most of the world in the last 50 years, the prospects are good that they will continue to do so in the coming 50 years. The advances in income (with poverty reduction) and education are two especially potent forces pushing that self-reinforcing dynamic forward, and those advances appear likely to continue. The reduction of fertility that accompanies growth in income and education also adds a very positive bonus to that impetus, particularly as the associated bulge of young and better-educated citizens passes beyond the early years of the typical working period (during which transitional period the bulging youth population can be a considerable source of instability).

If such growth and development dynamics do, in fact, continue to operate, we can expect the probabilities of intrastate conflict to continue to decline slowly (albeit with especially difficult problems in South Asia and Africa). Similarly, the broader elements of country risk will move

downward. In 2060, the average country in all regions could well experience greater security than at any time in the history of the modern state system. However, currently fragile states (those with high vulnerability to conflict) most likely will remain at about the level of insecurity faced now by states with lower but continuing vulnerability to conflict, a set that includes Belarus, Columbia, India, Mexico, and the Philippines. Moreover, we should recognize that before 2011 the fragile set identified by our own and other indices did not include either Egypt or Syria, demonstrating the possibility of some or limited fragility quickly becoming a great deal of fragility.

We also can expect state capacity to increase, both in terms of ability to mobilize financial resources (with reduced dependence on external assistance likely to be forced on many currently aid-dependent states) and in terms of reduced corruption and improved overall government effectiveness. Here too, however, the story will likely not be one of universal improvement. The long-term IFs forecasts for Chad, Myanmar, Somalia, Tajikistan, and Togo, among others, still place them near the bottom of Transparency International's scale (that is, with still very high levels of perceived corruption).

Turning to the future of inclusion, Chapter 1 documented how, when the governance qualities of societies that were not state system members are properly assessed, the long waves in democracy's advance have cycled around strongly upward-sloping trend lines. On average, countries are likely to continue this long advance toward democracy and broader inclusion.

Of course, reversals and disruptions will occur on each governance dimension. Our discussion elaborated three important sources of these in the form of complicated passages (demographic-political transition associated with decreasing youth bulges, movement through anocracy to democratization, and reduction of energy-export dependence) that many countries will navigate in coming decades. There are still other such complicated passages, including the middle-income trap. And additional pressures (such as energy prices and water shortages) will build that could derail progress in a substantial number of countries. Consequently, the future may not unfold quite so optimistically as our Base Case suggests.

In fact, the world faces a series of major challenges, ranging from demographic transitions (not just youth bulges, but also unprecedented aging), through peaking of oil and gas production, to the impacts of climate change. These could interrupt or even reverse the positive

dynamics linking human development and governance. In the next chapter, we will explore more fully the likely impact of such challenges and the degree to which they may potentially disrupt advance toward stronger governance and improved human well-being.

- 1 See Chapters 2 and 4 for discussion of the term “democratic deficit” and our calculation of it.
- 2 For a view supporting this conclusion see Blake Hounshell, “Dark Crystal: Why Didn’t Anyone Predict the Arab Revolutions?” *Foreign Policy* (July/August, 2011), available at http://www.foreignpolicy.com/articles/2011/06/20/dark_crystal. For a contrary opinion, see Jay Ulfelder, “Crystal Clear: Yes, Rows of Numbers Can Help Predict Revolutions,” *Foreign Policy* (June 22, 2011), available at http://www.foreignpolicy.com/articles/2011/06/22/crystal_clear.
- 3 Gross enrollment rates are a measure of the total enrolled population, regardless of age, as a percentage of the population of the “expected” age for a given level of education. Thus, “over-age” and adult learners are included in the numbers, and somewhat exaggerate the actual enrollment levels of typical secondary- and tertiary-age populations.
- 4 The iconic \$6,000 threshold number comes from a Przeworski and Limongi 1997 study using 1985 dollars and would be closer to \$12,000 in 2010 dollars (using <http://www.westegg.com/inflation/inf.cgi> to calculate inflation).
- 5 This definition of middle class reflects particular attention to emerging countries. In high-income countries, poverty thresholds are often well above the bottom of this range. For low-income countries, some analysts set the threshold as low as \$10 per day of consumption expenditures (Kharas 2010) or even \$2 per day (Ravallion 2009). See also Banerjee and Duflo 2008 and Milanovic and Yitzhai 2002. Access to some luxury consumption is often associated with middle class status. Wilson and Dragusanu (2008: 6) noted that elasticity of car ownership to income peaks around \$9,000 per capita income (which would mean GDP per capita of \$25 a day) and that of oil demand peaks around \$7,000.
- 6 This is a calculation by the authors to include non-native residents, not just citizens.
- 7 These HDI values are calculated based on the methodology introduced in 2010, which changed some of the underlying variables, especially those in the knowledge subindex, and which moved to the use of geometric means for the combination of subindices into the HDI.
- 8 In a study for Goldman Sachs, Wilson and Dragusanu (2008: 6) forecast that nearly all Chinese will be in the middle class category (or higher) by 2025, and that nearly all Indians will be by 2045. We forecast average GDP per capita at PPP (2005 dollars) for China in 2025 of about \$13,620 and for India in 2045 of \$14,420. But IFs forecasts much smaller shares than Goldman Sachs in the middle class, in fact only about 30 percent of Chinese by 2025 and a considerably smaller percentage of Indians in 2045. Our requirements may be more stringent, including our focus on private consumption per capita rather than on GDP per capita.
- 9 Gini coefficients are calculated based on Lorenz curves of distribution. Higher Gini values indicate greater inequality.
- 10 Global Gini of GDP at market exchange rates was 0.689 in 2010. Using purchasing power parity, however, makes global calculations more nearly comparable to Gini coefficients within countries. See Hillebrand 2008 for an exploration of global income distribution from 1820 to 2050.
- 11 As Chapter 4 discussed, many other factors promote or retard democratization, including racial and ethnic equality or inequality.
- 12 Using a base year of 2010, our 2011 forecasts for conflict in Egypt and Yemen ranked them at 26 and 35 in the world, respectively (and assigned them 40 percent and 30 percent risk of conflict, respectively) with Tunisia, Syria, and Libya effectively tied, with many other countries having negligible likelihood of conflict. As the discussion of modeling in Chapter 4 makes clear, this result, like those of other forecasting projects, is tied closely to the record of past conflict in these countries. We know of no methodology that forecasts intrastate conflict without reference to past occurrences and still maintains any significant record of success in anticipating future conflict. That would be akin to forecasting temperatures tomorrow without attention to temperatures today.
- 13 Using a base year of 2010, our 2011 forecasts of performance risk or vulnerability to conflict in Yemen, Egypt, Libya, Syria, and Tunisia ranked them globally at 17, 53, 57, 69, and 97, respectively.
- 14 The World Bank classification of countries places Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates in its high-income category, not in the North Africa and Middle East developing-country set.
- 15 Data on government revenues are sometimes very discrepant. For example, the National Bureau of Statistics of China (NBS) and the World Bank report significantly different figures for China. The NBS (2011) estimates a revenue/GDP ratio of 31.1 percent in 1978 before China’s movement toward a market-based economy. The ratio then dropped, according to the NBS, to a nadir of 10.3 percent in 1995; with the introduction of VAT and other reforms, this ratio steadily rose to 20.1 percent in 2009 according to the NBS. The World Bank’s World Development Indicators (WDI) estimate a much lower level of current government revenues in China during this period. For example, WDI estimated them to be 5.8 percent of GDP in 1990 and 10.1 percent in 2009. These discrepancies (which may partly reflect the difference between general government and central government statistics) illustrate the difficulty of assessing revenues as a share of GDP. There are also problems in assessing revenue shares of GDP in state-controlled economies due to the prominent role of state-operated enterprises.
- 16 Although referred to as consumption, spending on education, health, R&D, and infrastructure is often an investment.
- 17 Analysis of historical patterns and the Base Case forecast using Freedom House assessments (the IFs summation of their political rights and civil liberties measures; see Chapter 4) produces fundamentally the same division of the world’s regions into the cluster with high levels of democracy (the high-income countries and Latin America and the Caribbean), the cluster with mixed levels (South Asia, sub-Saharan Africa, and the developing countries of Europe and Central Asia), and the region with historically very low levels (Middle East and North Africa). The only major difference in the picture portrayed by the Freedom House measure is that the regions of the middle cluster are more tightly concentrated.
- 18 In fact, as measured by the Cingranelli-Richards (CIRI) Human Rights Data Project index of physical integrity, in 2004 Singapore scored higher (7 out of 8) than the United States (4 out of 8) with respect to the right not to be tortured, summarily executed, disappeared, or imprisoned for political beliefs (see CIRI database at <http://www.humanrightsdata.org/>; in 2010 the index values were 7 and 6, respectively).
- 19 The radial diagrams rescale each index precisely from 0 to 1, with 1 representing the highest country-year value through 2100. This is necessary because some index elements (including government revenues) are themselves only roughly scaled from 0 to 1. Other index developers face the same problem; consider, for instance, that some currently high-income countries now have values near 1 on the Human Development Index and, if the maximums are not changed, are likely in forecasts across coming decades to rise beyond 1.
- 20 Youth bulges often precede demographic dividends, which occur when the very young population share begins to decline and the share of the population of working age begins to rise relative to those of pre-working and retirement age. However, countries with bulges typically have not yet begun to experience such a dividend. Capturing the dividend also presumes the ability of the society to employ the additional potential workers.



Challenging Futures: Implications for Governance and Human Development

■ *The IFs Base Case forecast suggests slow but significant global progress on all dimensions of governance and in human development.* ■

A number of large-scale global imbalances, including high levels of household debt (especially in the United States for home mortgages) and persistent current account imbalances, set the stage for a financial crisis in 2007–2008. That, in turn, initiated the Great Recession, with an especially sharp downturn in late 2008. Already significant levels of government debt rose higher in many countries and economic growth faltered, compounding the difficulties of rebalancing and recovery. Overlapping with these developments, global food prices began climbing in 2003–2004 relative to long-term trends, took large jumps in 2007 and 2008, and remained through 2012 at levels that were roughly double those only 12 years earlier. Similarly, world oil prices, which had begun the century under 30 dollars per barrel, began climbing in 2002–2003 and rose quite steadily through 2008, dipped somewhat with the onset of the recession, and then climbed in 2011 to over 100 dollars

per barrel.¹ Although unsustainable use of aquifers in a large number of countries continued and global emissions of carbon dioxide also climbed steadily, weak economies and high prices of basic commodities diverted attention from such environmental issues. With respect to governance, 2011 was the sixth consecutive year in which, according to Freedom House, the number of countries with declines in global political rights and civil liberties outnumbered those with increases (Puddington 2012: 1). That was the longest stretch of reported deterioration since Freedom House began tracking political rights and civil liberties in 1972.

The International Futures (IFs) Base Case discussed in Chapter 5 suggested that slow but significant global progress on all interacting dimensions of governance—security and capacity, as well as inclusion—is probable across coming decades. It further suggested that such progress would likely support and be supported by similar progress in human development.

However, human progress has never been steady. Perhaps the negative turns in the first two decades of the twenty-first century were simply manifestations of the turbulence (Rosenau 1990) that accompanies long-term progress. Yet, it would be foolish to discount the possibility that periods of progress could also be harbingers not just of turbulence, but also of great disruptions in the making.

At least five categories of variables could create ongoing or even intensifying challenges to governance and human development:

- Technological advance, a key driver of improvements in governance and well-being, could falter, or at least fail to deliver the same large net benefits of past decades.
- Decreasing supplies of nonrenewable raw materials, such as fossil fuels and fossil water (aquifers that replenish extremely slowly), could not just restrict progress but also present steadily intensifying constraints.
- Damage to environmental systems from human outputs, including but not limited to greenhouse emissions, could create vicious feedback loops, with human systems progressively disrupting and/or degrading biophysical systems in the process of demanding ever more from them.
- Social forces—ranging from aging, to unbridled and competitive consumption demand, to global competition that dampens or shuts down positive international flows of finance, trade, people, and ideas—could exacerbate conflicts within and across societies.
- Finally, large-scale unpleasant surprises, such as outbreaks of wheat rust or other food-destroying pathogens, or the rapid emergence of new diseases or resistance to old ones, may seriously test and perhaps overwhelm the resilience of our systems.

Disruptions in human progress have involved not just decadal reverses but multi-century collapses as well. Without being apocalyptic, this chapter attempts to map some of the downside variation that is clearly possible in governance and human well-being, even as Chapter 7 will explore some of the upside possibilities.

In this chapter, we present and explore a Global Challenges (GC) scenario across multiple dimensions of global change. How much damage might such a scenario do to human well-being and governance? What does IFs tell us about variations in the scenario's impact across dimensions of change and across geography? Are some countries and regions especially vulnerable, perhaps shifting from progress to regression with respect to indicators of human development? This analysis will help us map some of the uncertainty around the triangle of key governance dimensions and its interaction with human development that together frame this volume.

Defining the Global Challenges Scenario

The IFs Base Case described in Chapter 5 does not ignore the kind of global challenges identified above. Our Base Case is not a simple projection of past patterns into the future, what some forecasters refer to as a “business as usual” scenario. Instead, it is a dynamic unfolding of the interaction of complex systems, in which an energy transition away from fossil fuels advances, global warming has consequences, and populations age. Chapter 5 identified difficult passages and growing pressures. In spite of these, within the Base Case, governance improves, technology progresses, and the level of human development continues (at least through 2060) the rapid pace of advance that has characterized recent decades.

There are good reasons to believe that the global challenges we face may be more severe than those foreseen in the Base Case. Most fundamentally, we do not fully understand the challenges ahead of us because the world has never faced many of them. For instance, we do not know what energy mix might be able to replace the nearly 60 percent of global energy that oil and gas now provide as production of both fuels levels out and declines. Nor can we foresee how the world might address the carbon emissions from coal, which now provides another 30 percent of the world's energy. And we certainly do not understand fully the wide implications of global warming, including the effects of changing precipitation patterns, the impacts of sea level rise, and the dangers of significantly increased variation in weather.

■ *Historically, human progress has alternated with regression, and we must consider that possibility.* ■

■ *Many of the global challenges now confronting us are new to humanity, and we do not fully understand them.* ■

■ *The Global Challenges scenario builds on four variables: slowing technological progress, nonrenewable resource depletion, environmental system insult, and social failures.* ■

Nor can we be certain about the speed and impact of possible positive (reinforcing, but not necessarily desirable) feedback loops around phenomena, such as glacial melting or release of methane from tundra and methane hydrate on seafloors, which might accelerate warming.

Among social changes that present challenges is the unprecedented steady and rapid growth in the proportion of the population beyond current retirement ages. The portion of the global population over 65 will likely increase from about 8 percent in 2010 to 19 percent by 2060, and the share in high-income countries is likely to increase from 16 percent to 28 percent over the same period. Although the “young old” could be a boon to a society through many contributions to younger generations and social institutions, even their retirement and increasing health problems pose challenges. In 2060, there may be 1.8 billion people who are 65 years of age and older.² Much more likely to require care will be the more than 330 million who are 85 and older. And at the extreme end of the age distribution, the number of global centenarians, likely to require the most care, will rise from about 0.35 million in 2010 to 12.8 million in 2060.

Because the world is facing unprecedented challenges, the mental and computer modeling of these challenges and of their impacts, including their representation in the IFs system, is work in progress. Many forward linkages are difficult to identify, much less to represent with confidence. Omissions of risk may be more likely than overestimations of it. In fact, analysts and observers consistently identify an optimism bias in much forecasting, one that we need to guard against (Armstrong 2001; Coates 2004).

Key elements of the Global Challenges scenario

We identified five categories of variables that we should consider: slowing of technological progress; nonrenewable resource depletion; environmental system insult; social failures; and surprises or “wild cards.” We built our Global Challenges scenario on the first four of these. Wild cards are inherently unforeseeable, but potentially could considerably worsen the scenario.

One long-term global challenge not often described as such is that of maintaining a high rate of technological advance (typically

generated globally by one or a small set of technologically leading countries) as an engine of global economic growth.³ Whether or not one believes in the existence of fairly regular long waves of such technological advance, often called Kondratieff cycles, there is no doubt that the pattern of economic advance varies significantly over relatively long periods of time. In the late 1960s, global GDP growth sustained a five-year moving average rate above 5 percent annually. That rate declined sharply in the 1970s, falling well below 4 percent and then down to 2 percent in the 1980–1982 period. In fact, through the 1980s and 1990s, GDP growth mostly remained well below 3 percent, recovering to 4 percent only in the middle of the first decade of the new century—before succumbing to the Great Recession.

Obviously, many factors affect economic growth patterns. Those who work to separate out the impact of waves of technological advance generally associate 0.2 to 1.0 percentage point shifts in annual economic growth of global technological leaders with historical advances in particular technologies, such as steam engines, electricity, and information and communication technologies (ICT) (Crofts 2002).

With respect to ICT, the lackluster economic performance of the 1980s led to Robert Solow’s famous quip that “You can see the computer age everywhere but in the productivity statistics.”⁴ In fact, the pattern of economic growth in the United States, the country generally defined throughout this period as the global technological leader, was actually falling when Solow voiced his observation and complaint. U.S. growth continued to be slower than its longer-term average into the 1990s, before it experienced a surge in the late 1990s that, indeed, did take it about a percent above the long-term trend, a rise that may, at least partly, reflect the productivity benefits of ICT. The world as a whole had a similar spike a decade later.

Given that leading countries will, by definition, be at the cutting edge of global technological advance, a related issue is whether other countries have the capacity that, within a permissive international environment (a second enabling condition), will allow them to converge toward the technology, productivity,

and growth patterns of the leaders. Contentious debates characterize the economic literature about the extent of convergence and the reasons for its occurrence in some countries but not others. Sachs and Warner (1995) took a frequently espoused position that the key driver of convergence is adoption by poorer countries of generally efficient economic policies, significantly open trade, and protection of private property.

The IFs Base Case builds in constant patterns of technological advance for the system leader across the entire forecast horizon, variable by economic sector but contributing in the aggregate about 1 percentage point annually to productivity advance. The Base Case also builds in a pattern of convergence so that less developed countries narrow the gap with the system leader by adopting and adapting technology. Around that pattern, advances in multifactor or total factor productivity depend on a wide range of physical, social, and human variables that Chapter 4 outlined, many of which we discuss below.

Turning to energy (an arena reflecting both technology and physical resource bases), rising prices have contributed to many economic downturns, including those of the 1970s. Increasing costs and relative scarcity are often behind rising prices. M. King Hubbert issued one of the most famous and prescient forecasts ever made when he predicted in the 1950s that U.S. oil production from the lower 48 states would peak between 1965 and 1970 (for foundational analysis, see Hubbert 1949). Even with Alaskan production, U.S. production peaked in 1970, contributing to rapidly rising global energy prices in the 1970s. Of course, the question around global oil production is not whether but when it will peak (U.S. Government Accountability Office 2007). Estimates generally range from now through 2040, depending not just on rate of growth of production from conventional sources but also heavily on assumptions about more unconventional sources, such as tar sands and shale as well as deep-ocean drilling. Production in 54 of the largest 65 producing countries globally appears to have passed peaks, leaving the remaining large producers like Saudi Arabia in swing positions, and estimates of their future capacity are hotly debated.⁵

The IFs Base Case represents production not just of fossil fuels, but also of hydropower, nuclear power, and (in the aggregate) new renewable forms such as wind and different forms of direct solar energy. In the Base Case, global oil and gas production do not peak before 2030, although global growth in production slows steadily until then. That pattern is rooted heavily in our use of estimates from the U.S. Geological Survey on ultimately recoverable resources. The very rapid expansion in recent years, particularly in the United States but spreading to China and other countries, of natural gas production from shale formations through the use of hydraulic fracturing technologies greatly complicates our understanding of resource bases. The fracturing technologies have improved and spread even as environmental debates rage. The Base Case has somewhat optimistic assumptions for nonconventional oil resources and somewhat cautious ones for natural gas relative to the most recent analyses of organizations such as the International Energy Agency and the U.S. Energy Information Administration.

In addition, the IFs Base Case makes perhaps overly optimistic assumptions about the likelihood of technological improvements resulting over time in increased energy efficiency and reduced costs of new renewable energy forms.⁶ If various constraints on either traditional or new energy forms in a Global Challenges scenario lead to higher energy prices, there will be an effect on economic productivity and growth. One rule of thumb is that a 10 dollar per barrel increase in price lowers growth in an economy like that of the United States by 0.2 percentage points.⁷

Energy resources are only one of the major global challenges posed by the interaction of humans with the environment via extraction from sources of needed inputs (e.g., energy, water, and forests) and the dumping into sinks (e.g., the air, streams, and oceans) of a variety of outputs (e.g., carbon, nitrogen, and phosphorus). Rockström et al. (2009) identified nine “planetary boundaries” with respect to sustainability associated with such use of biological and geological sources and sinks. They argued that we have already transgressed three of the boundaries—those around (1) climate change (associated with atmospheric levels of

■ *Global Challenges relaxes Base Case assumptions of constant technological advance for the system leader and catch-up over time by developing countries.* ■

■ *The Global Challenges scenario reduces Base Case optimism about energy efficiency improvement and renewable energy cost reduction.* ■

■ *The feedbacks around global warming and other movements beyond sustainable limits are still poorly understood.* ■

■ *For many developing countries, the most immediate demographic challenge remains fertility reduction; transition to replacement levels is far from complete.* ■

carbon and other greenhouse gases); (2) the rate of biodiversity loss; and (3) the global nitrogen cycle (in their look at both the nitrogen and phosphorus cycles). The other boundaries they identified relate to ocean acidification, stratospheric ozone, freshwater use, land system change, chemical pollution, and atmospheric aerosol loading.

Rockström et al. (2009) also made clear the extent of uncertainty surrounding analyses of these boundaries and the impacts of exceeding them. Even with respect to one of the issues that has received most attention, namely atmospheric carbon levels, they pointed out the complications around their identified boundary value of 350 parts per million (ppm), which is below current levels of about 390 ppm. For instance, they noted that contemporary climate models assess only “fast feedbacks”—such as water vapor, clouds, and sea ice—linking atmospheric carbon and global temperature. They observed that analysis of only fast feedbacks suggests that a doubling of pre-industrial CO₂ levels (which our Base Case foresees by about 2080) would lead to a global temperature increase of about 3° C. In contrast, they argued that some analysis around inclusion of “slow feedbacks”—such as decreased ice sheet volume, changed vegetation patterns, and flooding of continental shelves—suggests an impact of 6° C. And, of course, such uncertainty about temperature change patterns (Curry and Webster 2011) precedes considerations of how atmospheric carbon might affect agricultural production. Because agricultural yields also are affected by many other variables, including the ability of scientists and farmers to adapt crops to new conditions, the full chain of uncertainty is considerable.

Even the extensive analysis of Rockström et al. (2009) left many potential biophysical challenges underexplored.⁸ For instance, with respect to water use, they focused only on “green water” (soil moisture) and a portion of “blue water” (liquid water), notably that in rain and stream run-off. However, among the major water issues facing many countries and regions is drawdown of ground water faster than recharge (as in many parts of China and India) and heavy exploitation of fossil water in aquifers (as in Libya and Saudi Arabia), often with limited knowledge of the ultimate extent of such supplies.

The IFs Base Case does forecast the build-up of atmospheric CO₂, the possible global temperature change resulting from it, the associated country-specific changes in temperature and precipitation relative to 1990, and the impact of those changes on agricultural yields. The Base Case also considers the positive or “fertilizing” impact that increased atmospheric carbon might have. However, it does not represent the impacts on agriculture of increased weather variability or of sea-level rise and coastal flooding. These are potentially very significant omissions. Also important, there is no direct constraint in IFs on future agricultural production from drawdowns in groundwater availability (nor is there any representation of possibly improved efficiency in water use).

One of the major social challenges facing the globe is rapidly aging populations. The demographic forecasts are relatively more certain than many others. Yet, the consequences are not at all certain, in part because the health conditions of the elderly (either the young-old or the old-old) and the possible political choices for care of the elderly will only become clearer over coming decades. Of course, in democracies older adults already tend to be a powerful force and are unlikely to become more reticent in pursuit of their interests (Metz 2002; Wilson 1993).

For many (if not most) developing countries, a prior and more immediate demographic challenge is fertility, because the fertility transition to levels near or below replacement (about 2.1 children average per woman) is far from complete. In fact, arguing that the transition to replacement fertility rates is proceeding more slowly than it foresaw earlier in many high fertility countries, especially in Africa and Asia, the United Nations Population Division (UNPD) significantly revised upward its median population forecast (to 10.1 billion in 2100) in its 2010 *Revision of World Population Prospects*.⁹ The IFs Base Case forecast, with endogenous representations of changing fertility and mortality that we believe to be reasonable, produces numbers closer to the UNPD’s earlier 2008 *Revision*, including a peaking of global population two decades before 2100 at about 9.85 billion. However, a more challenging scenario with slower fertility decline is definitely possible.

Many other social factors will test humanity's mettle over the coming five decades. One of these is very considerable and persistent conflict across ethnic and religious groups. In fact, we may be seeing an increasing trend in conflict between more fundamentalist groups (whatever their scripture) and more secular humans, as well as across the adherents of competing ideologies or definitive truths. The IFs Base Case does not build in explicit assumptions of either increasing or decreasing ethnic, religious, or other ideological tensions; instead, it looks to the drivers of conflict that Chapter 4 identified.¹⁰

Still other global challenges will almost certainly arise from international conflicts. The end of the Cold War ultimately resulted in peace dividends for many governments in the form of lower defense spending as a portion of GDP (although the United States increased its expenditures after 9/11 and in association with conflicts in Iraq, Afghanistan, and elsewhere). However, the rise of China, as well as of India and other large emerging states, will reshape the global high table in coming decades.

Although accommodations to their rise, such as the creation of the G-20 grouping of countries to supplement the G-7, may head off many overt manifestations of conflict, the history of international politics in the face of challenges by rising states to system leaders has been one of repeated wars. Moreover, in this particular rise, we are seeing a significant socioeconomic gap appear between high-income states and middle-income emerging ones, reinforcing differing perceptions of self-interest. The high-income states will prefer the status quo with respect to global institutions, while the middle-income states will often want change.

That gap in income and interests has already helped frustrate a number of efforts to provide collective global public goods, such as the Doha round of trade negotiations and multiple high-level discussions on climate change. The gap also colors how countries interpret global trade and financial imbalances. Most directly related to security are a large number of unsettled territorial claims that pit China against multiple neighbors (e.g., India, Japan, the Philippines, and Vietnam). Although these competing claims might not lead to overt

conflict, they could frustrate efforts to deepen important systemic connections like open trade and financial flows, and might even lead to disrupting such efforts and processes of globalization more generally.

Not least among the global sociopolitical challenges will be those surrounding inequitable human development and the failure of the global community to raise huge numbers of the poorest, hungriest, and least-enabled human beings from abysmal conditions. In spite of much progress toward the Millennium Development Goals, about 1.2 billion people still live on less than \$1.25 per day. Almost 400 million of them are in sub-Saharan Africa, and the IFs Base Case suggests that there still will be almost 200 million in sub-Saharan Africa in 2060. Further, such numbers easily could be overly optimistic, as also might be the progress that the IFs Base Case anticipates in educational advance, extension of life expectancy (especially via reduction in the communicable disease burden), improvement in access to safe water and sanitation, reduction in the indoor use of solid fuels (a major killer), and more. Much depends on the actual policies governments adopt, not just on underlying levels of security, capacity, and inclusion.

Finally, but not least, innumerable wild cards or fundamentally unpredictable bad events may shock human systems dramatically over the next half century. Taleb (2007) referred to these as "black swans," very low-probability but high-impact events. The fact that researchers cannot foresee essentially unpredictable events that almost certainly will appear in the long-term future of any complex system is one reason for the optimism bias of forecasting. Multiple and devastating events could shock the system. Among those most often cited, and perhaps of relatively higher probability, are plagues (Garrett 2007). Aging and therefore more vulnerable populations, growing antibiotic resistance, and the proven ability of pathogens to mutate, recombine, and jump across species might make a significant disease epidemic a low-to-medium probability event rather than a very low one.

Of course, there are wild cards as well as underlying forces that could contribute very positively to global futures and alleviate many possible risks. These would include new and inexpensive energy technology or an African

■ *Social factors that will test humanity in future years include conflict across ethnic and religious groups and between religious fundamentalists and secularists.* ■

■ *The rise of emerging states will reshape the globe as they become more powerful than the United States and Europe; such past power transitions have generated systemic struggles.* ■

green revolution of major proportions. However, in this chapter we will continue to focus on the risks rather than the possibilities for luck and breakthroughs. Therefore we now turn to Global Challenges, which integrates various risks into a single scenario that includes considerably more pessimistic assumptions than those of the Base Case.

Putting the elements together

We certainly do not anticipate that almost everything that can go wrong will. In fact, the Base Case is our best estimate of what we expect might unfold globally in the next half century. Nonetheless, looking at a very demanding scenario can help us explore some important questions. How different might human well-being be in a Global Challenges world? Might it even reverse course from the improvements of recent decades and decline? How big could the challenges to governance be? How well might our anticipated improvements in governance hold up in the face of them?

After looking at significant challenges, we will turn to a set of follow-on questions in Chapter 7. Might significant improvements in governance offset (or in some way head off) large portions (or even all) of the negative consequences of such challenges? How much better might such improvements make human well-being even in a world, like that of the Base Case, facing fewer challenges?

The Global Challenges scenario (see Box 6.1 for specifics) consists of a set of model interventions tied to the developments that might, as discussed above, unfold less favorably than in the Base Case. It combines elements of the Environmental Challenges scenario that the Pardee Center prepared for the 2011 *Human Development Report* (Hughes and Irfan et al. 2011; UNDP 2011) with elements from the Security First scenario that the IFs project operationalized for the United Nations Environment Programme's *Global Environment Outlook 4* (UNEP 2007). Because of the dynamic and highly interactive character of IFs, the

Box 6.1 The Global Challenges scenario

All interventions are relative to underlying dynamic base values calculated by the model in the scenario. Those underlying values may be similar to the Base Case, but other scenario interventions might also move them far from the Base Case. Nearly all of the interventions are very substantial or even dramatic changes to Base Case assumptions.

Interventions may or may not shift the direction of change in underlying base values. For instance, the increase in fertility in the Global Challenges scenario is relative to underlying base rates that decrease for almost all developing countries; the intervention thus slows the fertility transition for most countries rather than reverses it.

The scenario introduces most interventions over a period of years after 2012 because large changes seldom happen quickly. Interventions change economic growth by percentage points; most other interventions are percent changes in base values.

Technology (Productivity impact). The overall rate of systemic technological advance declines by about 0.5 percentage points (somewhat variable by economic sector), and the rate of convergence by other countries to the leader slows. As rapidly emerging countries with high growth rates, both China and India lose 2.0 percentage points of annual convergence. As especially vulnerable regions (but with much lower base growth than China and India), South Central Asia and Africa lose 1.0 percentage point of annual convergence. The rest of the world loses 0.5 percentage points.

Energy (Resources and environmental impact). Remaining ultimately recoverable global resources of oil and gas drop by 50 percent. The rate of improvement in energy efficiency declines by 50 percent over 10 years. The rate of progress in cost reduction for production of all energy forms also slows by 50 percent over 10 years.

Agriculture (Resources and environmental impact). Positing impacts on yield from environmental factors not in the model, the scenario reduces agricultural yields by 25 percent of the base value over

50 years. Undernutrition grows by 50 percent relative to its base value over 50 years (in part related to poor food distribution). Global supplies of fresh water decline by 25 percent of the base value over 50 years.

Demographic. Government spending on health by member countries of the Organisation for Economic Co-operation and Development (OECD) increases by 50 percent of the base value over 60 years, reflecting demands of aging societies. Fertility rates of non-OECD countries increase by 10 percent of the base value over 60 years, and the long-term target for the all-country fertility rate increases from 1.8 to 2.1 (mirroring the assumption of the UN 2010 *Revision of the World Population Prospects*).

Sociopolitical: International. Global migration slows by 25 percent of the base value over 10 years, and protectionism on trade (implicitly combining tariff and non-tariff barriers) increases by 20 percent over 10 years. Flows of foreign direct investment decline by 40 percent over 10 years, and economic freedom falls by 10 percent over 15 years.

Sociopolitical: Domestic. Spending and policy emphases change as follows:

- **Military spending.** Spending increases by 20 percent over 10 years relative to base values.
- **Infrastructure.** Progress toward improved and household-connected water and sanitation systems slows by 50 percent over 50 years. Urban air pollution and indoor use of solid fuels increases by the same amount relative to base values.
- **Health.** Relative to the base values, the global death rate from AIDS increases by 20 percent over 20 years. In addition, the scenario defers peaking of HIV prevalence in sub-Saharan Africa by eight years and increases the peak incidence in sub-Saharan Africa by 4 percentage points.
- **Domestic inequality.** The Gini coefficient for income inequality increases by 15 percent over 20 years relative to its base value.

scenario takes on a life of its own beyond the specified individual interventions. In some cases, interventions are offsetting; for instance, with respect to the trajectory of future energy prices, slower economic growth significantly offsets the impact of earlier oil and gas peaking; thus the scenario could result in either higher or lower energy prices. In other instances, interventions are compounding; for example, with respect to the trajectory of fertility, slower income growth and reduced government spending on education (as some funds are shifted to the military) largely reinforce each other, and both lead to slower declines in fertility rates and much higher population growth over the forecast horizon.

The Impact of the Global Challenges Scenario

The interventions that structure the Global Challenges scenario are not catastrophic, but they are substantial. How large would the human development impact of such global challenges be? One might anticipate that they could even reverse human progress on multiple dimensions, and we want to understand at least the general magnitude of their possible impact.

Also, all else being equal, what might the impact of those challenges be on the three dimensions of governance? On the surface, it is uncertain whether the challenges would reverse or only slow trends we saw in the Base Case toward reduced global intrastate conflict, reduced corruption, increased effectiveness, more democracy, and greater empowerment of women. Nor is it clear whether the impacts would be roughly comparable across the three governance transitions or quite different.

Human development in the face of Global Challenges

The analysis below will show that the Global Challenges scenario is not likely to stop global progress, but rather to slow it. Although for another project the IFs team created an Environmental Disaster scenario (Hughes and Irfan et al. 2011) that actually did reverse global per capita GDP growth and values on the broader Human Development Index (HDI), the momentum of human development is very powerful.

Figure 6.1 shows the less dramatic but still very significant impact of the Global Challenges

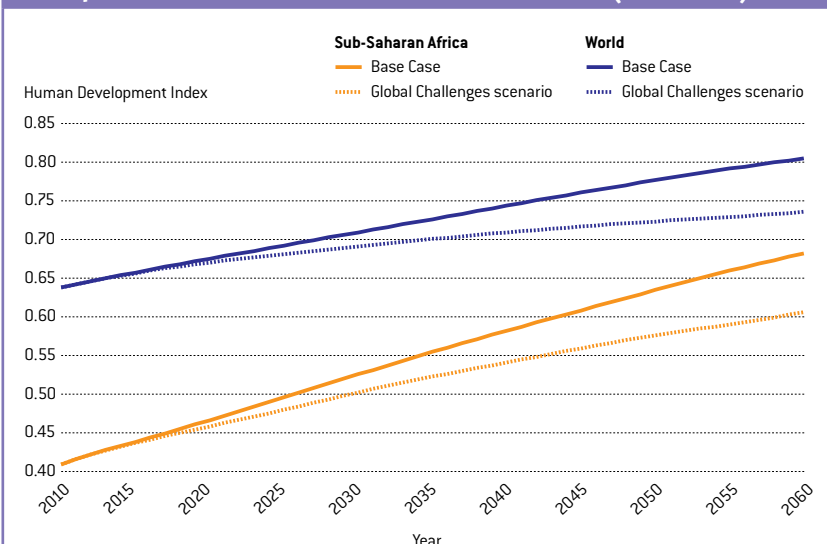
scenario on the HDI relative to the Base Case. It supplements the global patterns in the two scenarios with those of sub-Saharan Africa, the region with the lowest HDI values in 2010. The Base Case gains of sub-Saharan Africa by 2060, relative to 2010 values, could be cut by 26 percent as a result of Global Challenges. The world as a whole could lose more than 40 percent of the gains forecast in the Base Case.

More dramatic than the impacts of Global Challenges on the HDI is its effect on the rates of undernutrition of children and the associated morbidity and mortality patterns, which differ significantly in the two scenarios. In the Base Case, the rate of childhood undernutrition globally declines from approximately 16 percent to 5 percent. In Global Challenges, it actually climbs from its current level to 19 percent. In the sub-Saharan Africa of Global Challenges, a considerably larger population than in the Base Case contributes to increased pressure on food supplies. In fact, undernutrition in sub-Saharan Africa in 2060 climbs from the 2010 level (24 percent) to 29 percent of children under age five. Also of significance, the percentage of the population in sub-Saharan Africa living on less

■ *The Global Challenges scenario does not stop global progress, but, rather, slows it. The momentum of human development is very powerful.* ■

■ *With Global Challenges, the world could lose 40 percent of the gains in the HDI that are forecast in the Base Case.* ■

Figure 6.1 Comparing Base Case and Global Challenges forecasts of the Human Development Index for sub-Saharan Africa and the world (2010–2060)



Note: IFs approach is based on the United Nations Development Programme's 2010 reformulated HDI methodology, which combines three subdimensions: a long and healthy life (measured by life expectancy at birth); knowledge (tapped by mean years of schooling and expected years of schooling); and a decent standard of living (represented by the logarithm of Gross National Income per capita). Index range is 0.0–1.0.

Source: IFs Version 6.68. IFs forecast variable is HDINEW.

■ *With Global Challenges, undernutrition of children in Africa could climb rather than continue to fall.* ■

■ *The IFs Country Performance Risk Index rises significantly for developing countries in a Global Challenges world.* ■

than \$1.25 per day declines from 45 percent to 9 percent in the Base Case, but only to 23 percent with GC. Africa needs significant advances in human development to raise many of its people out of traps related to poverty and hunger.

Why is the impact of Global Challenges not greater with respect to the HDI? Remember that the index includes the logged value of GDP per capita as well as measures of life expectancy and education; even in the GC scenario, technological advance would likely push GDP ahead. In addition, significantly increased costs of energy and food can have a smaller long-term impact than one might expect on growing economies. Investment in the agricultural and energy sectors of the global economy constitutes about ten percent of all investment; thus, diversion of considerable capital investment to these sectors from others would have very important costs but would not stop economic growth. Technology also continues to push life expectancy ahead in Global Challenges. With respect to the education component of the HDI, adults' average years of education would also almost certainly keep growing in a world of much greater challenge, if only because, in developing and developed societies alike, systems are in place to provide

young people with much more education than the elderly once received.

Governance in the face of Global Challenges

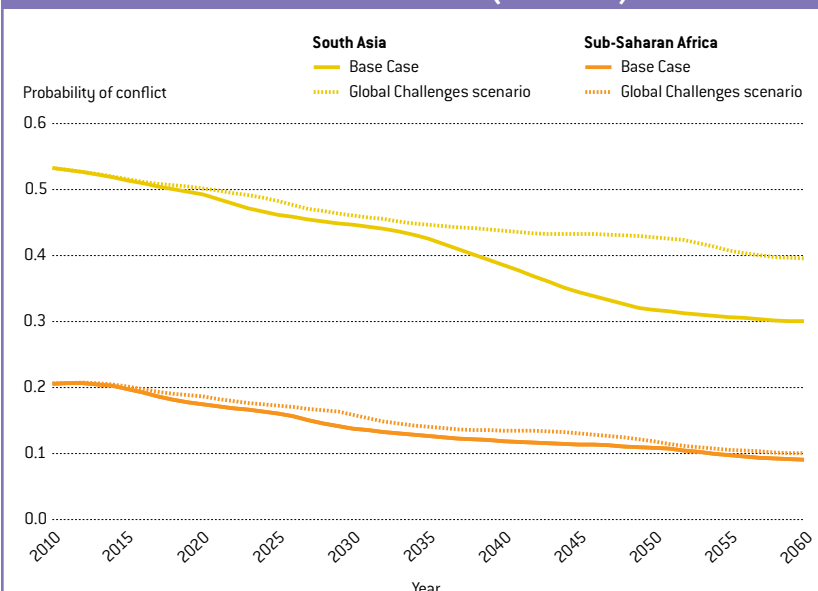
Global Challenges takes a toll not just on human development, but also on the ongoing transitions toward strengthened governance via security, capacity, and inclusion. We look at the impact on each transition in turn.

Security

We saw in Chapters 2 and 5 that the highest rates of intrastate conflict in recent decades have been in South Asia and sub-Saharan Africa and that these regions are likely to continue to have the highest rates. Africa has more total conflicts, but the rate per country in South Asia is higher. Figure 6.2 shows the forecast patterns for the two regions in the Base Case and the Global Challenges scenario. Reflecting recent history, in the initial years in the Global Challenges scenario the countries of South Asia suffer a bit more than one intrastate conflict every other year, or alternatively, half of the countries are in conflict each year. The forecast of the Base Case reduces that, on average, to approximately one intrastate conflict per every third country-year. The Global Challenges scenario does not completely stop the Base Case's pattern of slow reduction in intrastate conflict for either region, but it eliminates nearly one-half of the decline for South Asia. In contrast, the decline of conflict probability for sub-Saharan Africa in the Base Case is from 0.21 conflicts per country-year to 0.09 in 2060; Global Challenges only nudges that up to 0.10 (a still hefty one intrastate war for every ten country-years).

The GC scenario disadvantages South Asia more than sub-Saharan Africa. Among the explanations is that economic growth is affected more in South Asia, where growth rates have recently accelerated and are more vulnerable to decline than in sub-Saharan Africa. Agricultural system variables, including denser populations, less headroom for agricultural productivity improvement, and already poorer nutrition, interact with the greater loss of economic growth in South Asia to drive up undernutrition more in this area than in other regions. Further, the higher energy prices of the

Figure 6.2 Comparing Base Case and Global Challenges forecasts of intrastate conflict in South Asia and sub-Saharan Africa (2010–2060)



Note: Using five-year moving averages. Probability of conflict expressed as likelihood of conflict per country per year; 1.0 would mean war in every country-year.

Source: IFs Version 6.68. IFs forecast variable is SFINTLWARALL.

Global Challenges scenario actually boost the trade of sub-Saharan Africa relative to the Base Case, while GC slightly reduces trade openness in South Asia. In both regions, the neighborhood effects associated with conflict act as a positive feedback loop that reinforces the impact of other variables.

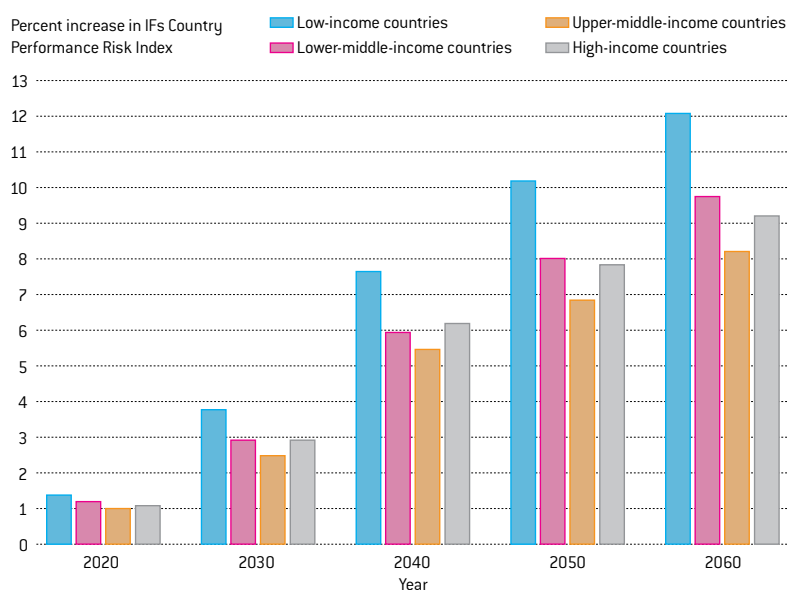
Although a variety of region-specific factors shape the effect of the Global Challenges scenario, much of its impact is related directly to income. Figure 6.3 reinforces this reality by shifting our attention to the IFs Country Performance Risk Index (or country vulnerability to conflict), comparing the Base Case and the GC scenario across time and across the four income-level country groupings used by the World Bank. The high-income countries suffer only a relatively modest absolute increase in performance risk in the Global Challenges scenario relative to the Base Case's already low values (see again Figure 5.6), although the percentage increase is slightly larger than that of upper-middle-income countries. Generally, within Global Challenges, as income level decreases the incremental risk in 2060 rises significantly in absolute terms and very noticeably also in percentage terms—8.2 percent for upper-middle-income countries, 9.7 percent for lower-middle-income countries, and 12.1 percent for low-income countries.

Capacity

Turning to elements of the second governance transition, we have identified the ability to raise revenues as one of two important components of capacity, the other being effectiveness of revenue use. Figure 6.4 shows for developing countries in aggregate and for high-income countries the impact of the Global Challenges scenario on the share of government revenues in GDP. Global Challenges results in a considerably higher government revenue share for developing countries—about 11 percentage points by 2060. The two scenarios differ less and later for high-income countries.

However, we would be wrong to interpret these higher revenue shares for either country category as a positive development representing significant advance in state capacity. In fact, higher revenue shares in Figure 6.4 are largely a response to the increased societal needs and pressures of the GC scenario. Indicative of that

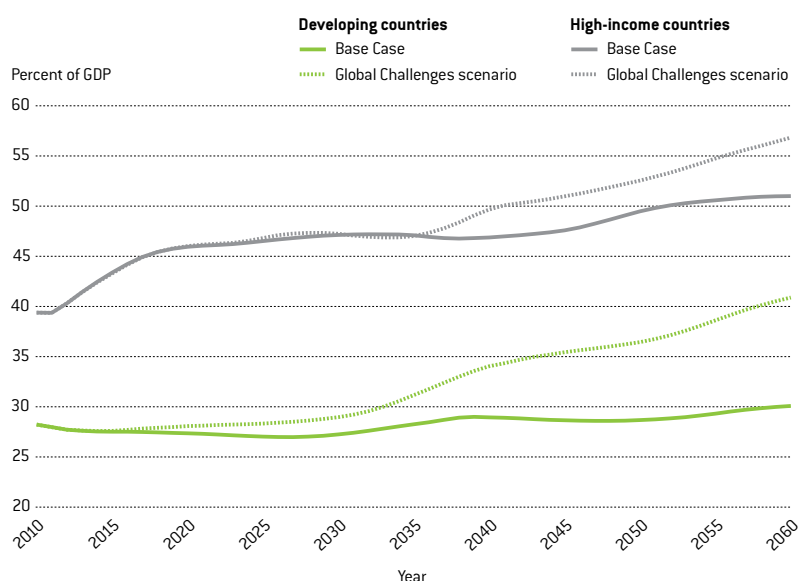
Figure 6.3 Percent increase in forecasts of country performance risk from the Base Case to the Global Challenges scenario by country income group (2020–2060)



Note: Within the Base Case, absolute values of risk increase as income level decreases; the Global Challenges scenario exacerbates that pattern. IFs Country Performance Risk Index used as measure of risk. Index range is 0.0–1.0.

Source: IFs Version 6.68. IFs forecast variable is GOVRISK.

Figure 6.4 Comparing Base Case and Global Challenges forecasts of government revenues as a percent of GDP for developing and high-income countries (2010–2060)



Note: Revenues include forecasts of decreasing net inflows of foreign assistance to developing countries over the forecast horizon.

Source: IFs Version 6.68. IFs forecast variable is GOVREV divided by GDP times 100.

■ **Increased societal needs and pressures in the Global Challenges scenario raise government revenue shares of GDP for developing countries.** ■

■ **In middle-income countries, Global Challenges greatly slows reduction of corruption.** ■

stress, GDP per capita (at purchasing power parity [PPP]) of developing countries, while still climbing, reaches less than half that of the Base Case in 2060. And in high-income countries, GDP per capita in Global Challenges rises only to 71 percent of that in the Base Case.

In such a situation, we need to recognize that higher government revenues as a portion of GDP in Global Challenges are a double-edged sword.¹¹ On one side of the blade, the increases help cope with challenges and may enhance capacity for doing so. On the other side, additional revenues require additional taxes and place burdens on potentially productive alternative uses of the funds. With respect to high-income countries, Chapter 4 noted that it is because of this crowding-out phenomenon that we do not increase our integrated index of governance capacity when revenues as a share of GDP exceed 45 percent. And as Chapter 5 discussed, the rapid near-term rise that we forecast in revenue share for high-income countries results both from the need to address (with revenues and expenditures) current large fiscal deficits and from the rapid aging of these societies with the increased pressures for

pension and health benefits that will almost inevitably follow. With respect to developing countries, the growth of revenue share of GDP may mean more coping capacity, but it also reflects our forecast of relatively sharp decreases in foreign aid inflows. Moreover, GC actually leads to decrease in the mobilizing capacity of low-income countries.

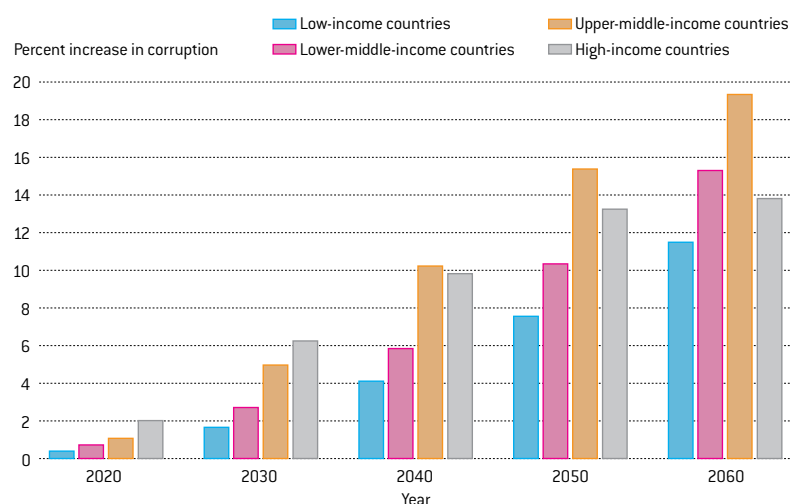
Partly because of the complicated implications of higher state revenues for different societies, we have used reduction of corruption as another important indicator of state capacity. Figure 6.5 shows that the pattern of GC's impact on corruption across country income categories (relative to the Base Case) is quite different from the pattern of its effect on performance risk. In the case of corruption, the negative impact of the scenario generally increases as income rises. This is, in part, because the corruption levels of low-income countries in the Base Case (see again Figure 5.11) remain so high that, even by mid-century, the impact of the Global Challenges scenario cannot make them significantly worse.

The largest effect of GC on corruption is in middle-income countries, where the scenario greatly slows advance in corruption reduction and leads to values in 2060 that are, on average, 17 percent worse than the Base Case (more for upper-middle-income countries). In descending order, the most vulnerable countries in this group are China, Angola, Turkmenistan, India, Libya, Gabon, Laos, Botswana, and South Africa.

Inclusion

We now turn to inclusion, our third dimension of governance. Figure 6.6 is somewhat surprising because the Global Challenges scenario only marginally slows the progression toward democracy that we saw in the Base Case, even in sub-Saharan Africa. The reason is that IFs formulation for democracy (see again Chapter 4) is driven upward by the combination of advance in the UNDP Gender Empowerment Measure (GEM), reduction in the extent of youth bulge, and reduction in energy export value as a portion of GDP. The momentum that advance in women's empowerment has globally is great, again given the advance occurring in education, and especially women's education. And the momentum for reduction in youth bulges is also

Figure 6.5 Percentage increase in forecasts of corruption from the Base Case to the Global Challenges scenario by country income group (2020–2060)



Note: IFs forecasts of absence of corruption are initialized with data from Transparency International's Corruptions Perceptions Index (CPI). We do not explicitly forecast the CPI because Transparency International states that prior to the introduction of revised methodology in 2012, the CPI was not a tool that captured changes very well for individual countries over time (see #7 in Frequently Asked Questions available at http://cpi.transparency.org/cpi2012/in_detail/#myAnchor1). IFs scale runs from 1–10; higher values reflect perceived lower levels of corruption.

Source: IFs Version 6.68. IFs forecast variable is GOVCCORRUPT.

great because of the recent history and on-going patterns of fertility reduction.

Perhaps even more important in our understanding of the advance of democratization in the two scenarios is change in democracy's drivers in recent decades and, in particular, a substantial reduction over time in its relationship to GDP per capita. Figure 3.7 showed that the cross-sectional relationship between democracy and GDP per capita in 1970 was described quite well by a logarithmic function with a sharp rise in democracy as levels of GDP per capita climbed (an R-squared of 0.30); in 1980 the relationship was even stronger (an R-squared of 0.33). By 2010, however, the rise of democracy at lower levels of GDP per capita had significantly flattened that function and reduced the strength of the relationship (an R-squared of only 0.13). The predictive values of variables such as the Gender Empowerment Measure and the youth bulge have become greater in recent years than that of GDP per capita, and analysis discussed in Chapter 4 found that income drops out of multivariate analysis and, therefore, also from our forecasting formulation. There is good reason to believe that global support for democratization and a widespread ideational attachment to it are now key drivers of its progression, perhaps the most important ones. (Chapter 7 picks up this discussion.)

In summary, the weakening of the relationship with income goes far in explaining why achieving a basic level of electoral democracy (as measured by the Polity scale) suffers less than we might expect in the Global Challenges scenario.

Beyond the formal aspects of democracy, the other element of inclusion that we have focused on is gender empowerment (which, as we have just seen, is itself an important driver of democracy). Figure 6.7 shows the forecasted percentage decline in the Gender Empowerment Measure for different country income categories in the Global Challenges scenario relative to the Base Case. The low-income countries lose much less on this variable than do other income groups, but sadly this once again has much to do with their low values in the Base Case, even in 2060. Again it is the upper-middle-income countries that experience the greatest relative losses in the face of GC. By 2060, that potential loss is 0.08 points on a 1-point scale, amounting

Figure 6.6 Comparing Base Case and Global Challenges forecasts of autocracy/democracy in sub-Saharan Africa and the world (2010–2060)

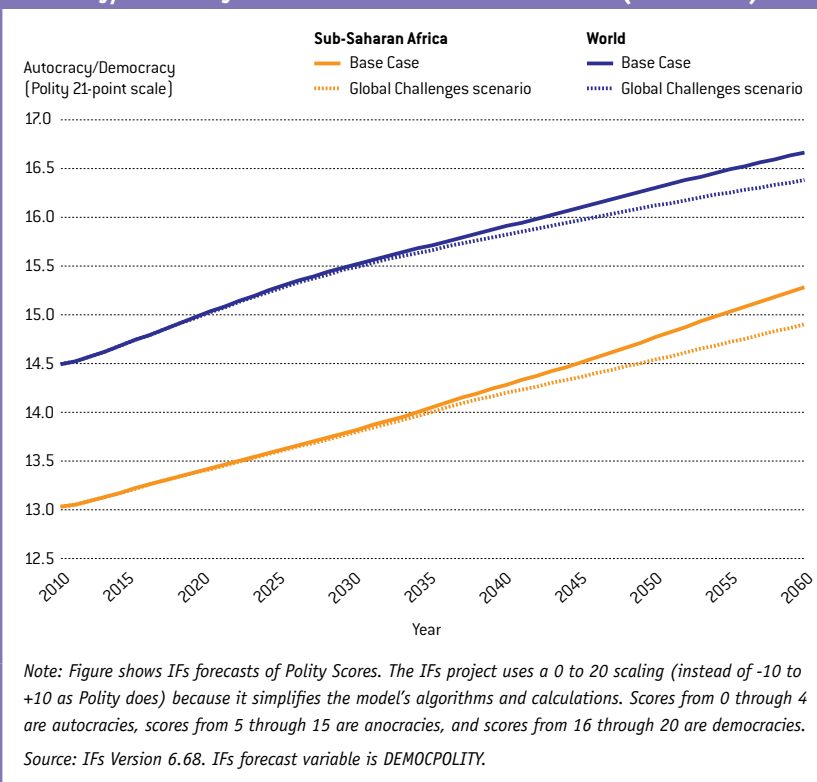
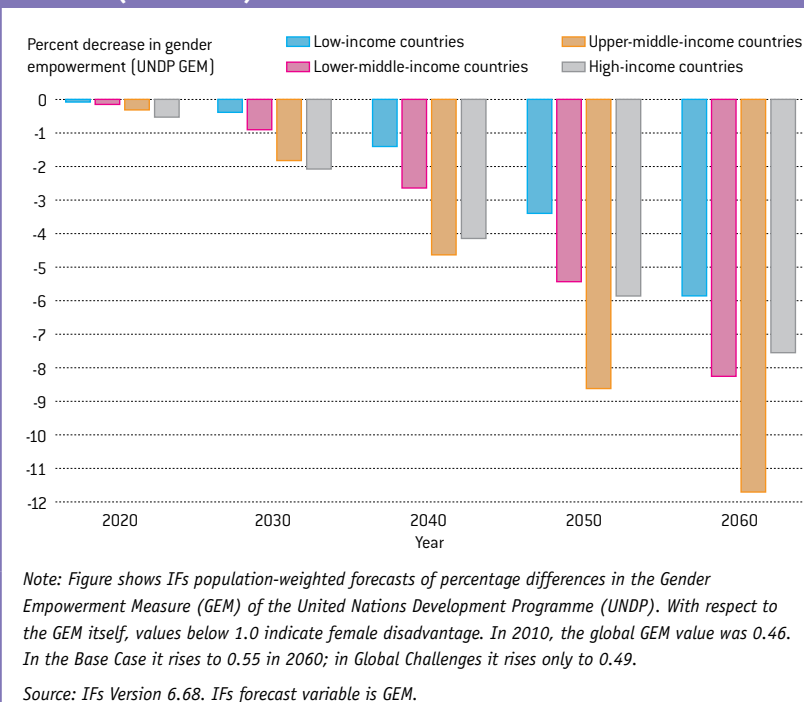


Figure 6.7 Forecast of percentage losses in gender empowerment across country income groups in the Global Challenges scenario relative to the Base Case (2020–2060)



■ *Demographic change and educational advance significantly protect global progress toward democracy in Global Challenges, even in sub-Saharan Africa.* ■

■ *Global support for democratization and a widespread ideational attachment to it are now key drivers of its progression.* ■

■ *Educational gains for women and ideational support for them have remarkable momentum around most of the world.* ■

■ *Overall, the Global Challenges scenario slows progress in human development and governance.* ■

to a nearly 12 percent decline relative to the Base Case.

Of course, there are other ways of looking at losses in the status and role of women in a Global Challenges world. Access by women to higher positions and equal status within the economic system would undoubtedly decline, as our effort to forecast the GEM suggests. Interestingly, however, GC shows rather limited slowing in the rapid march toward educational parity that women have experienced in recent decades. As we have noted, educational gains and ideational support for them have remarkable momentum around most of the world.

The overall impact of Global Challenges on governance

Chapters 4 and 5 introduced three dimensional indices of governance, each of which integrates pairs of variables and each of which scales from roughly 0 to 1 for comparability.

Specifically, the IFs Governance Security Index draws on the probability of intrastate conflict and our index of performance risk; the IFs Governance Capacity Index draws on ability to mobilize revenues (up to a point) and the reduction of corruption as a measure of effective resource use; and the IFs Governance Inclusion Index draws on democracy and gender empowerment. The IFs Aggregate Governance Index is a simple average of the three dimensional indices.

Table 6.1 uses the IFs indices to provide summary information on the patterns of change in the Base Case and the Global Challenges scenario and to summarize the differences between them across country income levels. The Global Challenges scenario does not reverse gains in either human development (discussed earlier) or governance. It does, however, significantly slow progress relative to the Base Case. About one-third of the global advance in the overall index could be lost to the challenges.

In percentage terms, the greatest costs of Global Challenges are felt on the security dimension. This is particularly true for the lower-middle-income countries, which have the lowest security index values in 2010, even below those of low-income countries, and which gain much in the Base Case. Global Challenges costs them more than half of their potential 0.309 point advance in the Base Case.

Further, in the face of Global Challenges, the low-income countries could lose more than a quarter of their very large potential Base Case gain in security, as well as about one-fifth of their potential advance on inclusion. We have already indicated that their seeming incremental capacity gain with GC is somewhat illusory, the result of being forced to increase government revenues as a share of considerably slower GDP growth.

Although high-income countries experience percentage losses above those of upper-middle-income countries in the GC scenario, this is an artifact of them already being at high levels on all dimensions, so that their prospective absolute gains are quite small. Still, high-income countries that are relatively low on corruption control, democracy, and gender empowerment in 2010 (e.g., the oil-rich Gulf states) advance significantly in the Base Case, but give quite a bit of that back in Global Challenges.

Countries at special risk from Global Challenges

The HDI values of all countries are lower in 2060 in the Global Challenges scenario than in the Base Case. Not surprising, those that suffer most in percentage terms are predominantly low-income countries. In descending order of impact, those that experience the greatest relative decline are Somalia (with a 21 percent decline), Madagascar, Togo, Afghanistan, Burundi, Guinea Bissau, Niger, Chad, Mauritania, and India. Thirty-two countries drop 10 percent or more from the 2060 Base Case HDI values.

On the overall governance index, the greatest losers from the GC scenario (again in descending order) are Myanmar (with a 21 percent decline), India, Equatorial Guinea, Afghanistan, Sri Lanka, Turkmenistan, China, Angola, Kuwait, and Iraq. Again not surprising, many of these are countries that also have the most to gain from governance advance in the Base Case.

The effects of GC can be quite variable across dimensions of governance (as we saw in Table 6.1) and even on specific indicators. For instance, with respect to the probability of intrastate conflict, the countries that bear the biggest costs in this scenario (in descending order) are India, Myanmar, Indonesia, Papua New Guinea, Sri Lanka, Iraq, Algeria, Azerbaijan, Angola, and Chad.

Table 6.1 Base Case and Global Challenges forecasts of values on IFs governance indices by country income groups (2060 compared to 2010)

	IFs Governance Security Index	IFs Governance Capacity Index	IFs Governance Inclusion Index	IFs Aggregate Governance Index
Low-income countries				
2010 Calculated value	0.580	0.332	0.460	0.457
2060 Base Case forecast	0.751	0.436	0.581	0.590
2060 Global Challenges (GC) forecast	0.703	0.449	0.558	0.570
2010–2060 change: GC relative to Base Case				
Absolute difference	-0.048	0.013	-0.023	-0.020
Percentage difference	-28.1%	12.5%	-19.0%	-15.0%
Lower-middle-income countries				
2010 Calculated value	0.430	0.360	0.550	0.447
2060 Base Case forecast	0.731	0.508	0.617	0.619
2060 Global Challenges (GC) forecast	0.574	0.506	0.592	0.557
2010–2060 change: GC relative to Base Case				
Absolute difference	-0.157	-0.002	-0.025	-0.062
Percentage difference	-52.2%	-1.4%	-37.3%	-36.0%
Upper-middle-income countries				
2010 Calculated value	0.663	0.441	0.471	0.525
2060 Base Case forecast	0.906	0.750	0.683	0.779
2060 Global Challenges (GC) forecast	0.868	0.674	0.633	0.725
2010–2060 change: GC relative to Base Case				
Absolute difference	-0.038	-0.076	-0.050	-0.054
Percentage difference	-15.6%	-24.6%	-23.6%	-21.3%
High-income countries				
2010 Calculated value	0.950	0.778	0.840	0.856
2060 Base Case forecast	0.984	0.980	0.903	0.956
2060 Global Challenges (GC) forecast	0.970	0.920	0.869	0.920
2010–2060 change: GC relative to Base Case				
Absolute difference	-0.014	-0.060	-0.034	-0.036
Percentage difference	-41.2%	-29.7%	-54.0%	-36.0%
World				
2010 Calculated value	0.617	0.454	0.558	0.543
2060 Base Case forecast	0.814	0.619	0.664	0.699
2060 Global Challenges (GC) forecast	0.726	0.589	0.629	0.648
2010–2060 change: GC relative to Base Case				
Absolute difference	-0.088	-0.030	-0.035	-0.051
Percentage difference	-44.7%	-18.2%	-33.0%	-32.7%

Note: Absolute and percentage differences are reductions in the Global Challenges scenario of gains in the Base Case from 2010 to 2060. The range on all of the indices is 0.0–1.0.

Source: IFs Version 6.68. IFs forecast variables are GOVINDSECUR, GOVINDCAPAC, GOVINDINCLUS, and GOVINCTOTAL.

The individual interventions of the Global Challenges scenario itself (see again Box 6.1) are significant but not beyond the realm of possibility. Even so, their cumulative character—along with some of the reinforcing dynamics that the interventions set up—

creates great economic losses relative to potential for a substantial set of countries. The countries that in 2060 show losses of 60 percent or more in GDP per capita (PPP) relative to the Base Case are (in descending order of loss) Somalia, India, Togo, Zambia,

■ *The greatest governance costs of Global Challenges are felt on the security dimension, particularly for lower-middle-income countries, which lose more than half of their Base Case gains.* ■

■ *The effects of Global Challenges on individual countries vary substantially.* ■

■ *The countries where vicious cycles are most likely in a world of Global Challenges are those at early stages on all three governance transitions.* ■

Tanzania, Mali, Ghana, China, and Afghanistan. A few countries, including Madagascar, Bahamas, Cyprus, Bahrain, Greece, Barbados, Luxembourg, Brunei, Libya, Swaziland, and Montenegro, could actually experience lower GDP per capita (PPP) in 2060 than in 2010. A total of 134 countries experience less than a doubling of their GDP per capita over the 50-year period (thus, less than a 1.4 percent average annual growth rate).

As the lists above suggest, a number of countries appear at risk of falling into a vicious cycle of decline (or perhaps more accurately staying in such a cycle), but even Afghanistan, Madagascar, and Somalia eke out some gains by 2060 in overall HDI and governance in the Global Challenges scenario compared to 2010.

More broadly, negative dynamics are set up across well-being and governance in several countries. We saw that in the Base Case the global probability of intrastate war gradually decreases over time from its current value of 0.143 (one intrastate conflict for every eight country-years) to a still greatly undesirable value of 0.062 in 2060. In Global Challenges, it decreases only to 0.078, helping to continue a state of nearly perpetual conflict for many countries.

Many of the countries where vicious cycles are most likely to occur in a world of Global Challenges are those that in 2010 were at fairly early stages on all three governance transitions (for example, Afghanistan, Somalia, and Sudan). In the Base Case, even by 2060, these states are often barely breaking free from low-level equilibria that characterize very fragile, if not strictly failed, states.

Why are Global Challenges not more challenging?

The Global Challenges scenario is not one of global disaster, as could occur as a result of global plague, global war, or a sudden and great acceleration of climate change and its impacts. Nonetheless, it is a considerably more pessimistic scenario than the Base Case on multiple, mostly reinforcing, dimensions.

Why then, do human well-being and governance improve almost everywhere even under GC? We can frame the answers to that question with reference to both the substance of the world system and to our representation of it in the forecasting model. We would hope that

the answers from either framing would be quite similar, and we believe that they are.

With respect to our broad understandings of the global system, we have repeatedly emphasized that there is a great deal of momentum in many key system-transforming variables that GC can clearly slow, but is unlikely to reverse. We have pointed to three very fundamental ones. The first is demographics. Fertility rates are falling in almost all countries where they currently remain above replacement rates. Even an event as traumatic as the genocide in Rwanda, which caused parents to have more children for several years as they rebuilt their lives and families, only slowed that decline there. Although Chapters 3 and 5 pointed out that fertility declines can result in complicated passages through a phase of population aging, strong evidence seems to support the long-term positive impact of maturing age structures on both human well-being and governance. In the Base Case, the median global population age rises from 29.2 in 2010 to 39.7 in 2060, and even in Global Challenges, it rises to 36.8. That process appears all but irreversible in coming decades.

The second system-transforming variable is education. It is worth emphasizing again that young people globally have much more education on average than older adults. Even if current enrollment and completion rates across developing countries dropped significantly—which is almost inconceivable—there would be rising levels of average education in global populations for many years as the young replace the old. For instance, only 55 percent of adults age-15 and older in Africa have completed primary education, but about 72 percent of African children now complete it, and that rate is rising rapidly.

The third variable is technological advance. This consists of the movement forward not only among technologically leading countries (where progress in ICT, biotechnology, robotics, and other fields has great momentum), but also among following countries, who can adopt and adapt already well-developed technologies even if the development of new ones were to slow dramatically. Although the Global Challenges scenario slows down global technology advance, it is hard to imagine circumstances that would

completely stop either such advance or the flow of many well-developed technologies to countries that have not yet benefited from them.

Technological advance has implications not just for economic growth, but also for variables such as infant mortality, which fell globally from approximately 100 per 1,000 births in 1960 to about 31 per 1,000 in 2010. In the Base Case, infant mortality is on a path to decline to near 7 per 1,000 in 2060, and even in Global Challenges it declines to 19 per 1,000. Reductions in infant mortality affect longevity more than do proportional decreases in adult mortality because they extend life many more years.

With respect to the model's representation of change in governance, Chapter 4 showed the extent to which the formulations we developed represent these same momentum-heavy variables. Our forecast of the Gender Empowerment Measure is driven by increases in adult education years, growth of GDP per capita, and decline of the youth bulge. Our forecast of Polity's democracy variable is driven, in turn, by advance in the GEM, decline of the youth bulge, and decline in dependence on energy exports. Similarly, the formulation for forecasting reduced corruption involves advance in democracy and the GEM, as well as reduction in energy export dependence. And when we turned to security, we began by relating variables, including decrease in infant mortality, to decrease in the probability of intrastate conflict because of their importance in the analysis of the Political Instability Task Force. In short, the forecasting system we built passes much of the momentum we see in these three key systemic drivers to both human development and dimensions of governance in what we understand to be an empirically based replication of the functioning of global systems.

Conclusion

The Global Challenges scenario tempers the relative optimism of the Base Case, and exploring GC facilitates a better understanding of the linkages between human well-being and governance, especially the forward linkages from development (which the GC scenario slows) to governance. There is no question that essentially all regions and countries would face less desirable futures should the world prove to be one of major challenges like those we modeled.

Of course, the effects geographically, by country income level, and across governance dimensions would vary. Security would be very adversely affected in a world of Global Challenges, especially in lower-middle-income and low-income countries, while the Base Case has considerable potential for improving it. Regionally, South Asia would fare worst.

With respect to capacity, increases in government revenues as a percent of GDP would likely increase in the Global Challenges scenario, but this does not necessarily suggest actual enhanced capacity. Chapter 4 noted that our index of government capacity does not attribute increased capacity to governments when the percent of government revenues in GDP rises above 45. Many high-income countries already exceed that level in the Base Case forecast, and Global Challenges pushes them higher. The percent in developing countries is considerably below that level in the Base Case (closer to 28 percent on average), suggesting that the rise with GC could signal greater capacity. Given the circumstances, especially that of slower economic growth, it is more likely, however, that these would be compensatory rather than development-leading expenditures. The proportional risks from Global Challenges for loss of the Base Case's widespread reduction in corruption tend to be largest for upper-middle-income countries and even some high-income countries. In the Base Case, the upper-middle-income countries might move on average from a value of only 3.7 in 2010 on our 10-point corruption scale (initialized with Transparency International data) to a much more positive value of 6.1 in 2060 (higher values indicate less perceived corruption); GC could hold them to 4.9.

With respect to inclusion, the world has remarkable momentum toward greater democracy, due especially to advance in educational attainment. Global Challenges would almost certainly slow this movement, but not dramatically. In contrast, our Base Case forecasts of gender empowerment are much more vulnerable to the more pessimistic scenario. Instead of moving globally from a value of 0.46 in 2010 to 0.55 in 2060 (still very discouraging values because 1.0 represents equality), GC might hold that global average to 0.49.¹²

Overall, analysis with the integrated IFs system has shown us how the feedback systems

■ *There is much momentum in key system-transforming variables, notably demographics, education, and technological advance. Progress could slow but is unlikely to reverse.* ■

across well-being and governance variables set in motion reinforcing patterns of variation from the Base Case when we introduce Global Challenges. One of the surprises of the analysis is that even though the GC scenario slows advance in human development and governance strength across the three dimensions, and even though these slowing patterns interact and reinforce each other, the scenario has not set up truly vicious cycles of state collapse. In terms of both individual human circumstances and social variables, the momentum of global development is remarkably strong. Demographic change, educational advance, and technological progress are powerful drivers. Obviously, a fair number of states are likely to slip into regressive modes between now and 2060 for many reasons, including, perhaps, leadership failures. Specific individuals in leadership positions can make great differences, positively and negatively, and we cannot forecast such

micro-level changes. There are many other wild cards that we cannot and have not attempted to anticipate. Such failures will happen in a number of countries in the next 50 years. We would nonetheless argue that the course of global, regional, and (almost always) national development is likely to be progressive.

An important question throughout this volume has been the implications of the linkages of governance forward to development, specifically the degree to which improvements of governance might help countries break free of slow development traps and accelerate developmental advance. Chapter 7 turns to this consideration. It begins by discussing the quite powerful forces at work within and among countries to improve governance. It then introduces a Strengthened Governance scenario that we explore to understand the impact of better governance on both the Base Case and the Global Challenges scenario.

- 1 See the Food and Agriculture Organization food price index at <http://www.fao.org/worldfoodsituation/wfs-home/foodpricesindex/en/>. For oil prices see British Petroleum (2012: 15).
- 2 These forecasts are from IFs Version 6.68.
- 3 In a short popular book, Cowen (2011) argued that the United States has consumed the low-hanging fruit of technological advance and that information and communications technology does not provide the jobs and growth that earlier waves of innovation did.
- 4 Solow, Robert M. 1987. "We'd Better Watch Out." *New York Times*. 12 July. Available at <http://www.standupeconomist.com/pdf/misc/solow-computer-productivity.pdf>.
- 5 The estimates of countries past their peak are from the Association for the Study of Peak Oil and Gas (see http://www.peakoil.net/Oil_tsunami.html). Colin Campbell and others at the association are among those who argue we already have reached the peak of global oil production. For a contrary view see Mills 2008.
- 6 In particular, renewable energy production grows quite rapidly in the Base Case, whereas it may face unexpectedly large constraints, such as inadequate electric grid and power storage infrastructure and loss of subsidies.

- 7 Cited by David Wessel, economic editor of *The Wall Street Journal* (see <http://www.npr.org/2011/03/31/135002308/economy-update>). However, this is an uncertain relationship subject to controversy, and an alternative rule of thumb is that the effect is 0.5 percentage points. Dean Baker of the Center for Economic and Policy Research explored this second rule of thumb and suggested that the effect might be only half as great, closer to the assessment of Wessel (see <http://www.businessinsider.com/the-impact-of-oil-prices-on-economic-growth-2011-2>). Hamilton (2011) reviewed the complications of such analysis, emphasizing that oil shocks have highly variable impacts depending on the structure of the energy system, the economy, and other factors occurring simultaneously.
- 8 Rockström et al. did not determine boundaries for chemical pollution and atmospheric aerosol loading.
- 9 See http://esa.un.org/unpd/wpp/Other-Information/Press_Release_WPP2010.pdf.
- 10 IFs separately forecasts the probability of intrastate conflict and vulnerability to intrastate conflict. Our forecasts of the probability of intrastate conflict are a function of past conflict, neighborhood effects, economic growth rate (inverse), trade openness (inverse), youth bulge, infant mortality,

democracy (inverted-U), state repression (inverse), and external intervention. IFs formulation for forecasting vulnerability to intrastate conflict is a function of energy trade dependence, economic growth rate (inverse), urbanization rate, poverty level, infant mortality, undernutrition, HIV prevalence, primary net enrollment rate (inverse), intrastate conflict probability, corruption, democracy (inverse), government effectiveness (inverse), freedom (inverse), and water stress.

- 11 Tanzi (2011) explored the growth of the three aspects of government expenditures (allocation, including monies directed to defense and the environment; redistribution; and stabilization) and their positive and negative contributions to growth and well-being. As have many others, he argued that higher revenues and expenditures of governments globally can have significant negative consequences, including crowding out of investment.
- 12 This result is, in part, a function of our formulation for forecasting of the GEM. That formulation includes not only women's education, but also GDP per capita (at PPP) and youth bulge. Global Challenges substantially retards the progress of the Base Case on both of those other driving variables.



Tipping the Balance

The long transitions that ultimately brought strong governance to today's most economically developed countries proceeded in large part *sequentially*—concentrating authority in states, increasing the state's capacity to govern professionally, and eventually expanding the democratic franchise and political practice toward greater inclusion. Governance transitions around the world now progress in a much different manner. Even the most fragile states—where insecurity is pervasive, failure to deliver essential services is common, and exclusion is the norm—are now struggling with these transitions in a more *simultaneous* manner.

Across most of today's developing world, the struggles to gain security, build state capacity, and attain democracy proceed in interaction. Fragile and conflict-affected countries recognize deep capacity deficits as hindering their ability to deliver basic services and reach Millennium Development Goal (MDG) targets. In sub-Saharan Africa and South Asia, democracy has sometimes emerged as a thin veneer overlain on societies

where security is far from assured and capacity is weak; yet the desire for democracy in most of the world runs very deep.

Interacting transitions have been obvious also in association with the so-called Third Wave of rapid democratization that began in the late 1970s (see again Chapters 1 and 2). Each democratization process within that wave has manifested all three governance transitions in some way. In the 2011 Arab Spring, repression and lack of personal security, as well as obvious failures of governments to provide basic services, often spurred movements to transform governance; in other instances, as in South Africa or Nepal, peace agreements to end internal conflict have been the pathway for a transition toward democracy. The future of governance in the contemporary era is thus very much about interactively strengthening security, improving state capacity, and building state-society relations through greater inclusiveness.

Chapters 5 and 6 portrayed two possible future evolutionary pathways of governance and

■ *Many developing countries today struggle simultaneously with concentrating authority, increasing capacity, and expanding inclusion, three governance transitions that once occurred across centuries.* ■

■ **Strengthening national governance has become a focus of international (not just domestic) concern and effort.** ■

human well-being in the coming half century. This chapter considers how domestic and global interventions to strengthen governance may help improve it relative to the Base Case described in Chapter 5 and the more pessimistic Global Challenges scenario of Chapter 6. We foresee that such interventions could possibly offset some or even all of the negative effects that a Global Challenges scenario would pose for both governance and human development.

The first section of this chapter provides an overview of the evolving global patterns of agents, actions, and normative context that might help tip the balance toward providing greater security, building public administration capabilities, and fostering social inclusion. The subsequent sections present Strengthened Governance (SG) components that illustrate how interventions to improve security, capacity, and inclusion may be both mutually reinforcing and enhance broader human well-being. What types of intervention might tip the balance?

Strengthening Governance

Strengthening governance has become an international concern and effort, not just a domestic one. Global engagement requires

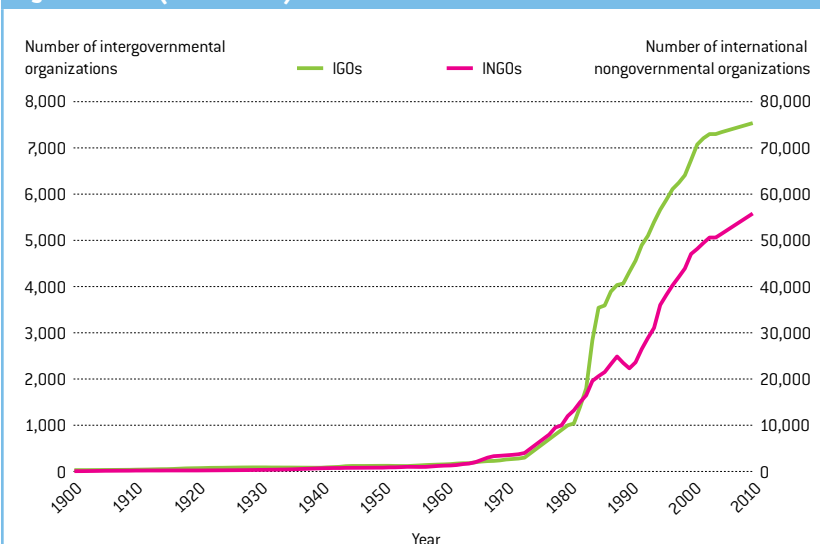
activities including standard-setting, better monitoring, improved aid effectiveness, capacity building, and more consistently proactive reactions to non-compliance with global and regional standards. Such efforts benefit from the evolution and codification of a normative and institutional foundation and from the proliferation of actors dedicated to their pursuit. That is, they benefit from the development and strengthening of global regimes, which Krasner (1983: 2) defined as “principles, norms, rules, and decision-making procedures around which actors’ expectations converge in a given area of international relations.”

The building by states of a global regime for the protection of personal security and human rights reaches back to the Enlightenment tradition—a foundation solidified by the post-World War II human rights movement with the Universal Declaration of Human Rights in 1948 and with the International Covenant on Economic, Social, and Cultural Rights and the International Covenant on Civil and Political Rights, both in 1966. Similarly, the adoption of the United Nations Convention against Corruption in 2003 laid a foundation for the global regime committed to improving governance capacity.

Global principles, norms, and rules continue to evolve, in particular with regard to the most egregious cases of abrogation of rights, when sovereign states themselves are culpable in gross violations and crimes against humanity. For example, the recently articulated Responsibility to Protect (R2P) norm has its origins in notions of “sovereignty as responsibility” and the principle that states failing to exercise this responsibility are the legitimate target of international intervention, including military confrontation.¹ In 2011, the R2P principle was invoked to justify military action against President Laurent Gbagbo of Côte d’Ivoire, who in 2010 had refused to concede an election loss as verified by the United Nations and who subsequently unleashed his military loyalists and militias on a vulnerable population. R2P was also the basis that year for the United Nations Security Council authorization of NATO action in Libya to preempt attacks on civilians by the forces of President Muammar Gaddafi.²

The ongoing increase in multilateral treaties and conventions and the rapid and continued

Figure 7.1 Increase in intergovernmental and international nongovernmental organizations (1900–2010)



Note: Criteria for counting international organizations have changed over time, generally becoming more inclusive. However, criteria for counting intergovernmental organizations (IGOs) and international nongovernmental organizations (INGOs) were tightened in 1989 to exclude less active or less internationally focused organizations.

Source: Union of International Associations, 1991–2010, v. 1B.

growth of intergovernmental organizations (IGOs) and international nongovernmental organizations (INGOs) (see Figure 7.1) support the continuing development and evolution of interlocking regimes. They do so by facilitating the convergence of actor expectations (including those of states and intergovernmental organizations supporting good governance) and mobilizing these actors. As of September 2012, there were 3,735 INGOs that had consultative status with the United Nations Economic and Social Council.³

Specifically in the human rights arena, Brysk (2009) referred to interlinked “coalitions of the caring” that now monitor and report human rights practices and violations. International institutions—such as the Office of the United Nations High Commissioner for Human Rights; regional organizations, such as the Organization for Security and Cooperation in Europe; and international nongovernmental organizations, like Human Rights Watch—work together with local civil society activists and organizations in complex “transnational advocacy networks” (Keck and Sikkink 1998; also see Marshall and Cole 2011 on the influence of such transnational efforts on governance character).

While these patterns of evolution in normative foundations and institutionalization point to the possibility of a continued overall shift in global support for more secure, capable, and inclusive governance, prospects for meeting the challenge of achieving and sustaining good governance also depend on the politics of system leadership. Some argue that the global regime for direct support of improved governance took a major step during the early 1990s. At that time, international organizations, especially the United Nations, freed from the ideological and power-politics traps of the Cold War, moved on to a new ideology articulating an agenda for global good governance and democratization as part of the pathway to both well-being and peace (Holsti 1996; Joshi 2012a; Joshi and O’Dell 2013).⁴ Looking forward, the growing power and voice at the global level of emerging countries, such as China, will increasingly shape the future of governance.

Thus, there is both promise and peril around the future of governance. How, then, might global actors build on these evolving normative foundations and institutional elements to tip the balance toward improved governance?

Tools and general approaches for tipping the balance

The notion of *tipping* suggests that a particular intervention, or a package of interventions, could pivot the future toward a more positive scenario for governance. Some interventions are *indirect* in terms of improving the overall social context and thus the drivers of change in governance (Haider and Rao 2010). Interventions can also occur via *direct* measures, that is, measures that address a particular problem or gap in the exercise of governance.

Here, although we comment on indirect measures, we focus primarily on direct ones. Direct measures to improve governance can target political leaders and ministries, parliaments, institutions supporting the rule of law (including the judiciary), local governments, civil society, and informal institutions. Direct action on capacity development can be either “upstream” (focusing on policies and rules made by central governments) or “downstream” (facilitating the voice and participation of society in governance).⁵

Tipping the balance does not mean that there is a silver bullet or single policy intervention that can radically strengthen governance. Enhancing security, improving state accountability and responsibility, and facilitating involvement of citizens, as well as advancing development, go hand-in-hand. The variable needs of societies mean careful, context-specific diagnoses and tailored interventions are necessary; there is no one-size-fits-all.⁶

Indirect measures: General support for development

A powerful long-term indirect leverage point for improving governance is improvement in the overall social context. This context includes broad-based human development and, in particular, advances in GDP, education, health, and social solidarity, which also help to reduce poverty. The efforts of international actors to foster general human and social development should drive a virtuous cycle between improved well-being and better governance. For example, efforts to promote the socioeconomic advance of women are critical to their participation in local government and political processes. Hicks (2011) described how women living in poverty in South Africa face deep-seated barriers to political

■ *Global principles, norms, and rules continue to evolve, in particular with regard to the most egregious cases of abrogation of rights when sovereign states themselves are culpable.* ■

■ *The growing power and voice of emerging countries will increasingly shape the global unfolding of governance transitions.* ■

■ *No silver bullet policy intervention can radically strengthen governance—context-specific diagnoses and tailored interventions are necessary.* ■

■ Around the world, increasingly educated youth growing up in a digital age are demanding more capable, responsive, and legitimate government. ■

■ The concept of statebuilding has emerged as a complement or sequential follow-on to peacebuilding. ■

■ How can external actors contribute to what is inherently an internal process of statebuilding, especially where predatory elites have captured the government? ■

participation, which in turn diminishes the capacity of local governments to address issues of equity critically important to women.

The forward linkages from development to improved governance begin first and foremost with citizen demands for accountable and effective government. Globally, the changing attitudes of a large population of increasingly educated youth growing up in a digital age suggest a continued increase in demand (augmenting that of their elders) for more capable, responsive, and legitimate states.⁷

Direct aid for governance: From narrow focus to state-building

Beyond the general focus on development, an international, multilayered, networked set of institutions and processes is increasingly involved today in providing external assistance directly for improvements in governance. Security is often the foundational focus, and direct attention to it is especially important in fragile and/or conflict-affected states. The central argument made in the World Bank's *World Development Report 2011: Conflict, Security, and Development* is that a prior focus on security, justice, and jobs is essential in laying the foundation for progress in the world's fragile states (World Bank 2011).

Organizations such as the UN and the World Bank, donor states,⁸ and others realize that while immediate intervention in conflict is critical to averting humanitarian and development emergencies, long-term and broader approaches are also essential for putting development initiatives on a sustainable path. Yet, there is great debate about whether more narrowly focused peacebuilding (or other narrowly focused governance enhancing) initiatives can be extended successfully to statebuilding.

The concept of peacebuilding emerged in the 1990s in response to the multiple needs of countries that were struggling with internal conflicts, in transition toward peace, and/or solidifying peace agreements and implementing stabilization programs.⁹ Fundamentally, as Newman (2009) noted, peacebuilding is about enabling transitions that in most cases feature a risk-strewn pathway. There is broad appreciation of the danger that internal conflicts will lead to or return to war, especially when underlying conditions, such as reliance on primary

commodity exports, render a country vulnerable to corruption and rent-seeking by elites (Arnson and Zartman 2005).

The concept of statebuilding has emerged as a complement or sequential follow-on to peacebuilding, as well as an extension of the movement toward broad support for governance improvement. The term and practice of statebuilding appeared in the late 1990s and early 2000s in response to frustration with the “quick-fix” approaches of earlier conflict-motivated interventions that relied on rapid political transitions culminating in elections. In contrast to earlier approaches that drew on simple models of democratic forms to improve governance, statebuilding replaces a myopic notion of conflict “exit strategy” as an outcome of international intervention with a longer-term emphasis on consolidating peace through building state authority, legitimacy, and capacity (Paris 2004; Sisk 2013).

The goals and approaches to statebuilding involve security (especially security sector reform and basic public order functions such as policing),¹⁰ development (especially the core functions of the state in provision of essential services), and democracy building and protection of human rights (Chesterman, Ignatieff, and Thakur 2004; U.S. Agency for International Development 2005). Crosscutting issues include advancing women's rights and livelihoods, inclusion and participation of marginalized and vulnerable groups, and the role of informal authorities such as tribal, clan, or religious leaders.

Yet, for outsiders seeking to help build states within countries, strategic dilemmas and operational challenges abound, and successes are few (Paris and Sisk 2009). Despite military intervention and targeted sanctions, combined with billions of dollars in aid for reconstituting governance in fragile countries, success is elusive, and statebuilding projects are substantially incomplete. Examples include experiences such as external intervention in Iraq and Afghanistan, engagement in the wake of civil wars in Bosnia and Liberia, and assistance to new countries following wars of secession and self-determination, such as in Kosovo, South Sudan, and Timor-Leste. These countries remain susceptible to new conflict, and progress in development is generally absent. In summary,

although the United Nations has seen some success in such endeavors—for example, in El Salvador, Liberia, and Mozambique—failures have been common (Dobbins et al. 2005).

Thus, statebuilding by external actors presents a core conundrum: how can outsiders, using instruments such as military intervention, development aid transfers, and capacity building initiatives, contribute to what is inherently an internal process, especially where predatory elites have captured and control the government? Today, the United Nations faces this problem as it manages the interlinkages across elements of its complex mandate to promote global development and environmental sustainability, advance human rights, and create the conditions for global peace and security in fragile post-conflict settings (Muggah et al. 2012).

The concepts and agendas of statebuilding that we have been discussing obviously cut across all three of the governance transitions. Especially given the controversies surrounding such broad-scale initiatives (not least of which is funding), however, many analysts have recommended a turn in policy to initiatives and interventions that tend to be more narrowly specific to either providing security, building capacity, or assuring inclusion. Our discussion, too, will now turn to more specific initiatives and interventions for each of the three governance dimensions.

Providing security

Prevention of external conflicts between states has been at the heart of the architecture of global governance institutions and processes since the end of World War I, initially in the League of Nations and today through the United Nations. Although this development has some scholars pondering the possibility that international war may be obsolete (see Mueller 1989), conflict at the international level very obviously remains an important threat.

Since 1989, however, the locus of conflict globally has been predominantly internal (see Chapters 1 and 2). With “An Agenda for Peace: Preventive Diplomacy, Peacemaking, and Peace-Keeping” in 1992, UN Secretary General Boutros Boutros-Ghali identified the challenges that internal armed conflict poses to the international system in a manner

that continues to guide analysis and action (Boutros-Ghali 1992). Internal conflicts take an incredible toll on the international system in terms of the erosion of global order, the costs of humanitarian assistance, the extensive abrogation of human rights—often especially violence against women—the spread of debilitating diseases, and the scourge of chronic poverty.¹¹ Conflicts have tangible and immediate spillovers for the population of neighboring countries, further prompting the impetus for international intervention (Lake and Rothchild 1998). Research and policy reflection affirm the view that conflict-affected countries—which typically are fraught with cycles of repeated violence—have not advanced systematically toward the Millennium Development Goals (World Bank 2011: xi). Thus, the international community has come to see intrastate conflict both as a challenge in itself and also as a threat to international peace and security. Unfortunately, international interventions by state actors, especially competitive ones, do not always resolve conflicts and, in fact, can extend their length and magnitude. This suggests the need for multilateral approaches, but these also face daunting challenges.

Improving conflict prevention and peacekeeping

Intrastate conflict prevention emerged in the early 1990s as a critical mission of international organizations such as the United Nations and of leading states in the international system. In general, these global-level initiatives show that the problem of preventing internal conflicts often cuts across levels of analysis. Global and regional processes, national instabilities, and local-level socioeconomic tensions have to be addressed simultaneously for prevention to work. Major studies of the 1990s (the Carnegie Commission on Preventing Deadly Conflict) and the 2000s (the UN Secretary-General’s High-Level Panel on Threats, Challenges and Change) capture well the difficulty of preventing such conflicts.¹²

At the global level, UN capacities for early action and peacemaking have been evident in its peacekeeping and transitional assistance patterns of intervention. For example, strides are continually made in disarmament, demobilization, and reintegration in response

■ *International interventions do not always resolve conflicts, and instead can extend their length and increase their magnitude.* ■

■ *The importance of regional conflict complexes suggests that a critical element of prevention will be strengthening regional organizations.* ■

■ *Current armed violence, like that in Mexico and South Africa, may be indicative of new challenges, including the emerging phenomenon of failed cities.* ■

to the need to refine approaches to deal better with the messy reality of international engagement in post-conflict countries (Gamba 2006). More conflicts today end in negotiated settlements than battlefield victories, and some observers attribute this to the increased capacity and effectiveness of the United Nations and other multilateral efforts (Human Security Report Project 2011).

The continued importance of regional conflict complexes¹³ (such as the multiple interacting conflicts afflicting states in West Africa) suggests that another critical element of prevention will be strengthening the capacities of regional organizations for early warning and rapid intervention—for example, reactions to nonconstitutional regime changes such as military coups d'état. The approach has been successful at times in the Americas (through the Organization of American States) and in Africa (through the Economic Community of West African States).¹⁴

The scholarly literature suggests that peacekeeping works (Collier, Chauvet, and Hegre 2009; Doyle and Sambanis 2006; Fortna 2004) and that investments by the international community in new approaches toward securing peace pay dividends (United Nations Department of Peacekeeping Operations and Department of Field Support 2009). Budgets for peacekeeping topped \$1.5 billion in 2010. This figure reflects a continuing steady rise in global investments to afford immediate safety and security for war-ravaged populations and to provide a credible commitment to support peacemaking (or mediation) by guaranteeing, to some measure, internal peace agreements (Sisk 2010). A key lesson learned, however, is that the United Nations can only intervene effectively once the conditions in the conflict are ripe for resolution,¹⁵ as difficult as it may be to define that point.

New challenges in security

Transnational organized crime and more domestically specific crime have emerged as a major new threat to stability in many societies, supplementing and even supplanting ideologically-based conflict. In fact, those who closely study long-term trends in the more ideologically rooted strife argue that the trend line in internal conflicts, especially large-scale civil wars, is declining overall, notwithstanding

headlines that may emanate from current crises. Thus, more crime-based armed violence like that in Colombia, Mexico, South Africa, and Venezuela may be indicative of new kinds of conflict prevention challenges, in contrast with prior contexts such as the predominantly class- and ideologically-based conflicts of El Salvador and Nicaragua in the late 1980s and early 1990s. At the extreme, such crime can explain an emerging phenomenon of failed cities, such as Guatemala City (with globe-topping rates of homicide) or the world's most violent slums (such as Kibera in Nairobi, Kenya).

It is not surprising that recent research highlights a close connection between the context of contemporary conflict and the need for a global strategy, set of norms and institutions, and international capabilities to fight transnational organized crime.¹⁶ Gaps exist in the current conflict response system that international security and development practitioners are seeking to address.¹⁷ Clearly, among the top global governance priorities to stem criminal violence is reform and reinvigoration of global institutions and agencies (such as the UN Office of Drugs and Crime) that are at the forefront of efforts such as reducing the demand for drugs in the major drug-consuming countries or reconsidering the criminalization of some drugs that feed illicit markets.

Building capacity

We have emphasized that capacity requires the ability to mobilize national resources and use them effectively. Ineffective use may not be only badly designed or managed programs for service delivery. In today's world, where money flows easily, and in electronic form almost instantaneously, corrupt leaders are able to extract resources locally and easily transfer them abroad for personal aggrandizement.

Problems often emanate from the export of primary commodities, especially oil and gas, precious and strategic minerals, and agricultural products such as coffee, cocoa, palm oil, or timber. For example, in the late 1990s and early 2000s, the regime of Liberian President Charles Taylor allegedly profited from nearly \$70 million per year in illegal timber sales, in part from trees harvested from the Liberian national forests and parks.¹⁸ Compared to the multi-billion dollar diversions by masters such

as the former President Mobutu Sese Seko of the Democratic Republic of Congo, however, Taylor's level of profiteering was relatively small scale.

Given the complex physical and financial webs of local, national, and global relationships that both contemporary predatory and development-oriented governance require, the efforts to reduce predation and increase capacity need to function at and across multiple geographical levels. We look first at such multiple-level efforts to reduce corruption and then turn to broader development of state capacity.

Anticorruption efforts

Increasing transparency and reducing corruption generally involves: (1) building supportive global processes; (2) strengthening capacity and accountability within institutions of the state; and (3) empowering civil society and citizens to hold public officials directly accountable through innovative approaches to monitoring and reporting.

At the international level, the adoption of the United Nations Convention against Corruption in 2003¹⁹ was a milestone in the evolution of an international regime to develop a set of identifiable standards for dealing with corrupt practices and to create the associated monitoring and compliance mechanisms. Regional institutions, including the Organization of American States, the African Union, and the Organisation for Economic Co-operation and Development (OECD), have reinforced the normative basis of the convention. Key global actors, such as the World Bank, have encouraged countries to ratify the Convention and to incorporate elements of the global regime into national statutes that guide public administration, and organizations such as the Inter-Parliamentary Union have sought to create a global coalition of parliament members to work against corrupt practices.²⁰

Numerous specialized initiatives are emerging within the general anticorruption regime. For instance, since 1997, the United Nations Office of Drugs and Crime has led global anticorruption efforts in key sectors related to global money laundering, transnational criminal organizations, and corrupt practices that facilitate trafficking in drugs and even persons. In 2003 the UN General Assembly supported the development of the Kimberly Process Certification Scheme

(KPCS) to certify the origin of rough diamonds in an effort to stop trade in "blood diamonds" (those mined in war zones and used to finance insurgencies). Such global efforts continue to struggle against the innovative techniques of smugglers and corrupt governments, however, as exemplified by the 2011 withdrawal of Global Witness (a global NGO that identifies and seeks to prevent corruption and conflict associated with natural resource exploitation) from KPCS in protest of its ineffectiveness.²¹

This global governance approach is complemented by support to national level "islands of integrity," or state anticorruption agencies, particularly within the judicial system. Donor organizations have extensively supported such anticorruption institutions; one example is World Bank support of the Office of the Auditor General in Iraq. In other contexts, domestically created institutions such as special police units—for example, the "Scorpions" in South Africa—were established to investigate and prosecute cases of corruption.²²

National wealth-sharing agreements, like anticorruption efforts as a whole, are more likely to be effective when they are integrated into global normative and monitoring processes (such as the Extractive Industries Transparency Initiative of the World Bank) and into local partnerships that link foreign and local private companies, national governments, civil society, and informal institutions (such as those that surround traditional leaders) to ensure that resource extraction is accountable and responsive to the needs of local communities (Haufler 2010).

In Sierra Leone, for example, there is an acute awareness that elite capture of alluvial diamond mines and export of their product were at the heart of the 1991–2002 insurgency. Thus, in the post-war period, Sierra Leone has adopted a landmark wealth sharing agreement through which the country participates in the Kimberley Process, has created a Sierra Leone Diamond Board to regulate and monitor exports, and has identified a new formula to facilitate equitable distribution of export revenues from diamond mining to directly affected communities and the country more broadly (Dupuy and Binningsbø 2008.)

In some countries, however, wealth-sharing agreements have proved impossible to negotiate.

■ *Development-oriented governance requires the capacity to function at and across multiple geographic levels.* ■

■ *At the country level, wealth-sharing agreements and accountability politics reduce corruption.* ■

For example, in Iraq, given the tensions over disputed sub-areas such as Kirkut, a proposed hydrocarbon law that would specify a formula for oil-rent distribution has been elusive, while in Sudan the wealth-sharing provisions of the 2005 Comprehensive Peace Agreement were honored in the breach and have not prevented the re-escalation of conflict in oil-rich zones such as Abyei or South Kordofan.

Countries such as Ghana and Liberia, which have discovered new oil and gas reserves, are learning from experiences and best practices elsewhere. Ghana, for example, has turned to Norwegian specialists to build local capacities in the creation and implementation of a sovereign wealth fund to prevent corruption and to allow for the equitable distribution of the rents both in the areas of exploitation (primarily in the North and West) and to the country more broadly.²³

At the local level, anticorruption efforts have focused more on improving the ability of media, civil society, and ordinary citizens to report corrupt practices and to further “accountability politics.” For example, new approaches (as in India) that use citizen score cards with respect to government corruption and service delivery and/or new information and social media technologies emphasize the direct ways in which citizens can foster a culture of anticorruption.²⁴

Broader capacity development initiatives

Building state capacity has many concrete elements beyond controlling illegal trafficking and the corruption surrounding the exploitation of raw materials. These elements range from building public administration systems that have the ability to manage taxation and expenditures and to provide essential public services—such as access to safe drinking water, health care, and education—through enhancing leadership capacity to formulate and pursue development strategies. They also include strengthening the capabilities of local governments and coordinating local and national policies.

Capable civil services are not easy to build, in part because doing so has immediate costs and only long-term payoffs. Yet, they are necessary foundations for managing fiscal and monetary policy, building capacity of governments to collect and analyze statistical data, developing

systems of accountability and transparency, and supporting policy implementation and service delivery capabilities.²⁵ Creating an effective and progressive taxation system and good public finance administration are critical to overcoming debt and aid dependency and achieving better leveraging of national resources to solve development deficits. These are efforts in support of which OECD countries can share expertise and technical know-how. For instance, in 2011 the United States initiated a program called Domestic Finance for Development (DF4D). In an era of constrained aid flows, the program was designed to help countries improve capacity to finance their own development via increased domestic revenue mobilization, increased fiscal transparency, and decreased corruption. El Salvador was the first partner country in DF4D.

Such programs, also supported by the International Monetary Fund (IMF), can help increase a country’s ability to raise taxes toward what is sometimes called “tax capacity,” an empirically expected level of taxes as a portion of GDP given each country’s specific development conditions (IMF 2011; Pessino and Fenochietto 2010). Although the potential of burdensome taxes always exists, countries that succeed in raising taxes within reasonable limits can often support development efforts to a much greater degree than other countries.

Requirements associated with external aid have also been helpful in strengthening governance capacity. For example, since 2002 the IMF and the World Bank have required Poverty Reduction Strategy Papers (PRSPs) as a condition for aid; a central purpose of the PRSPs, not always achieved, is to create state capacity for, and ownership of, development-oriented governance. In more specific terms, support has been focused on the competencies of executives to formulate a broad national vision in interaction with civil society and to manage complex macroeconomic strategies at the level of ministries.

Facilitating and incentivizing local and decentralized government—in particular, efforts to extend state capacity for service delivery beyond central government—has also become a target of international assistance. By 2050, approximately three-fourths of the global population will be urban, and city governments

increasingly serve human needs that central governments alone cannot. They do so with very different approaches and success rates. With respect to transport, for example, contrast Shanghai, which by 2011 had the world's longest metro system and plans to double it by 2020, with Mumbai, in which a metro system was just being built.²⁶ External assistance for decentralization and local governance must be approached carefully, however; donors have learned that powerful local actors may capture international resources and that support for decentralized authority in fragile-state settings may undermine countrywide democracy and development (Barnett and Zürcher 2009).

Capacity development thus involves both vertical and horizontal relationships. On the horizontal plane, capacity development among various social groups and coordination among government bodies themselves is urgent. On the vertical axis, supporting governance capacities and relationships between the national government and local communities has emerged as a priority.

Assuring inclusion

Democracy building evolved rapidly in the post-Cold War period in response to the sharp increase in the number of regime transitions in the turbulent years of the early 1990s. In 1996, UN Secretary General Boutros Boutros-Ghali's *An Agenda for Democratization* reflected the tone of changing international engagement and clearly affirmed the role of the United Nations as a critical external supporter of democracy worldwide (Boutros-Ghali 1996). Although the UN's role and functions have generally broadened over time (especially in some areas of institution and capacity building, such as electoral and parliamentary assistance), the organization continues to be involved in norm-setting, monitoring, encouraging compliance, and responding to democratization crises (Newman and Rich 2004). In fact, democratic governance has become the largest single area of investment for the United Nations Development Programme (UNDP), which has programs in 130 countries.²⁷

Democracy building

The 2011 Arab Spring again raised important questions about how transition processes can be helped by external governmental

and nongovernmental actors to yield more democratic states committed to protection of human rights. There is good reason for caution around the outcomes of recent transitions toward democracy and therefore the potential for such assistance to be helpful. As Menocal, Fritz, and Rakner (2008) pointed out, the track record of democracy building in developing countries is notably mixed.

Fortunately for domestic democracy-building efforts, international intergovernmental organizations, such as the International Institute for Democracy and Electoral Assistance, which had 27 member states as of October 2012, are working to advance global norms and guidelines. INGOs are active in the spheres of electoral systems and election administration, voter registration, training and technical assistance for elections, best practices in constitution-making processes, and the regulation and funding of political parties.²⁸ There also is new recognition of the need to pair assistance for elections with widespread efforts to prevent election-related violence (UNDP 2009b).

Likewise, regional organizations have emerged as essential in setting local norms for democratic processes (including elections) and addressing important issues such as the rights of minorities and indigenous persons. Organizations—including the Commonwealth, the Organization of American States, the African Union, African subregional organizations, and the Organization for Security and Cooperation in Europe—have developed a long track record of monitoring and observing elections, often in concert with transnational nongovernmental organizations such as the Carter Center.²⁸

Not least, the emergence on the global stage of important democratic developing countries, such as Brazil, India, Indonesia, South Africa, and Turkey, offers the prospect of their supporting an agenda of global democratization. At the same time, however, many of these countries are reluctant to embrace programs associated with the more established high-income democracies (Carothers and Youngs 2011).

The global regime for support of human rights is of great importance to the advance of democracy and inclusion. Among the issues that dominate the debates on ensuring civil and political rights today are:

■ *By 2050, approximately three-fourths of the global population will be urban, and city governments will increasingly serve human needs that central governments alone cannot.* ■

■ *The global regime for support of human rights is of great importance to the advance of inclusion.* ■

■ *The rapid evolution of ICT has accelerated the demand for accountability from autocratic regimes and for impartiality in the treatment of citizens.* ■

■ *A largely youthful, increasingly educated, and better-connected world populace generally supports human rights, fairness, transparency, and democratic participation.* ■

- realizing fundamental rights to free and fair elections and the right to vote;
- guaranteeing freedom to form political associations (particularly political parties);
- protecting religious and cultural minorities;
- advancing women's rights and the rights of the poor, the working class, indigenous peoples, and other vulnerable populations (to include, for example, rights of expression of sexual preference);
- eradicating extrajudicial killings;
- eliminating torture;
- addressing new issues, such as the mitigation of election-related violence.

Communication and accountability

From the advent in 1951 of Radio Free Europe (which broadcast news into the authoritarian Soviet Union and satellite states of the Warsaw Pact), to the ubiquitous presence and transformative role of social media during the transitions in 2011 in the Middle East and North Africa, the spread of communication technologies and media transmission have both stoked demands for accountability and facilitated responsiveness in governance.

While the importance of Radio Free Europe/Radio Liberty in the collapse of communism in 1989 will never be fully clear, Johnson and Parta (2010) argued that Cold War broadcasting to the Eastern Bloc was causally related to the downfall, in part by giving people: (1) information about how dissent transcended borders, and (2) awareness that uprisings could succeed in challenging totalitarian states. The advent of satellite broadcasting associated initially with CNN in 1980, and more recently with transnational news broadcasters such as Al Jazeera, has changed contemporary landscapes; modern broadcasting now overcomes many efforts by autocratic regimes to control information.³⁰

The rapid evolution of information and communication technologies (ICT) in recent years has accelerated the demand for accountability from autocratic regimes and for impartiality in the treatment of citizens. Accountability is a broad and crosscutting issue, but at a minimum it involves the prevention of one-sided violence by an armed and capable state against its citizens. Iran's violent crackdown on protestors following widely

fraudulent elections in mid-2009 was captured and disseminated worldwide by video and photos taken by mobile phones and uploaded quickly to internet sites such as Facebook and YouTube (Hashemi 2009). This, in turn, led to decisions by leading global powers to escalate sanctions against the regime's top leadership and, in particular, those in the Revolutionary Guards deemed responsible for the post-election repression. Such targeted sanctions, which have also been applied against elites in countries such as Belarus, Myanmar, Syria, and Zimbabwe, are indicative of the ways in which increased use of ICT by citizens in oppressive countries has been an impetus to (by no means always successful) international action.³¹

Within countries, technologies from texting to Twitter help dissidents (whether democratically inclined or antidemocratic) coordinate antiregime action. Encryption technologies, such as Whisper, facilitate hiding such communication from monitoring authorities. Across borders, the same technologies facilitate a global dissemination of values and assertion of rights (Diamond 2010). In summary, in a globalized world, the predominant pressures from a largely youthful, increasingly educated, and better connected populace with local and global communication options seems to be generally supportive of human rights, fairness with respect to jobs and livelihoods, transparency, and democratic participation. Obviously, the motivation and ability of oppressive governments to control and manipulate media, including new social media forms, will remain, but their efforts to do so increasingly appear likely to be overwhelmed by citizen use.

Of course, improved communications flows are not just about mobilizing populations, but also about listening to them and serving them. In 2011, an Open Government Partnership took form, with its member governments committed to basic standards, including publishing draft budgets.³² On the whole, E-governance tends to be open governance.

Enhancing global and regional support for improvement of governance

Ultimately, of course, strengthened national governance depends on the decisions and actions of domestic populations and leaders.

No outside force can be a substitute for these. Efforts by global and regional actors have at times been counterproductive rather than helpful, for instance, through misreading of local conditions and possibilities, through support of social elements that have abused that assistance, and by creation of cultures of dependency. Insofar as external assistance (or pressure) can be helpful, actors must learn from both mistakes and successes, and improve their efforts accordingly.

Improvements and reforms at the level of international and regional organizations could involve the further evolution of international and (critically) regional norms on key issues such as elections; human rights (especially civil and political rights); non-constitutional transfers of power (e.g., coups d'état); and "soft law" or best practices around development aid and technical assistance (which have sometimes been criticized as capacity substitution rather than capacity building). Improvement in global support systems also means better monitoring and measurement (for example, monitoring of elections or measurement of citizen satisfaction with democracy and service provision).

Already, however, external support for national governance enhancement is very substantial and increasingly effective within global regimes that have progressively solidified.³³ Increased numbers of domestic NGOs and strength of domestic civil society frequently reflect and complement the role of external actors. A basis exists for at least cautious optimism that in the coming years such forces may help countries around the world tip the balance further toward stronger and more effective governance across all dimensions.

A Strengthened Governance Scenario

With or without external assistance, there is a good basis for believing that advances in the quality of governance can be quite rapid and very dramatic. We have seen this in the historical record presented in Chapter 2 and in the events of recent decades. The advances in South Korea since the armistice of 1953 have been nothing short of astounding on all three of our dimensions of governance. Although advance has by no means always been equal on all dimensions, we could also point to the transformations of

formerly communist countries in Central and Eastern Europe, of Taiwan and Singapore in Asia, of Mauritius in Africa, and of Chile in Latin America as countries that have experienced surges of improvement in governance.

We, therefore, have developed a scenario for greatly strengthened governance so as to explore its potential contributions to human development. In spite of the considerable set of success stories, however, it is not reasonable to expect that the average low-income country can rapidly attain the same quality of governance as the average high-income one. Rather than setting identical expectations for all countries, scenario elements (with the exception of intrastate war, where our intervention is identical across all countries) take into account differing starting points and development levels.

Consistent with such differing expectations, the scenario advances countries around the world rapidly, over periods of as few as ten years, toward appropriately strong levels of performance on security (absence of intrastate war); capacity (low levels of corruption and high government effectiveness, as well as strong revenue raising in non-OECD countries where it is weak); and inclusion (high levels of democracy and gender empowerment). Box 7.1 provides information on the specifics of the scenario quantification.

■ *External support for governance enhancement is increasingly effective and may help countries tip the balance further toward stronger governance.* ■

■ *We developed a Strengthened Governance scenario that rapidly advances countries around the world toward strong levels of governance performance.* ■

Box 7.1 The Strengthened Governance scenario

Except for the elimination of internal conflict, this scenario does not move countries to "perfect" governance values, but rather to aggressive yet reasonable values given each country's level of development. For instance, we explored levels of corruption reduction as a function of GDP per capita in a cross-sectional relationship across all countries, and then set target values one standard error (equivalent in univariate analysis to one standard deviation) above the function's expected value for each specific country. Attaining such values would place all countries at levels now seen only in the top third of performers.

The scenario moves countries to the target values over a period of years because large changes seldom happen immediately. Of course, many countries already have high standards of governance, and the scenario posits that countries now at or above the target level maintain their positions relative to targets that increase with development level.

All changes are relative to underlying dynamic values of the Base Case or Global Challenges scenario.

Security. The probability of intrastate war declines to 0.0 over 20 years.³⁴

Capacity. General government revenues increase in non-OECD countries by 10 percent (about three percentage points of GDP on average) over 20 years relative to the Base Case. The scenario globally reduces corruption, increases government effectiveness, and increases regulatory quality over 10 years to one standard error above values typical for each country's level of per capita GDP.

Inclusion. Over 10 years, the measures of democracy and gender empowerment move to one standard error above values typical for each country's level of per capita GDP.

■ *Strengthened Governance closes nearly half the gap in the HDI between the Base Case and the Global Challenges futures.* ■

■ *Strengthened Governance on top of Global Challenges recaptures more than one year of the three-year loss of life expectancy in the Global Challenges scenario relative to the Base Case.* ■

In the rest of this chapter, we will explore the potential that such transformation to strengthened governance has for advancing human well-being relative to the Base Case and to the Global Challenges scenario discussed in Chapters 5 and 6, respectively. We also will explore (somewhat more tentatively) the implications of advances in governance specific to each of the three governance dimensions. Where does it appear that leverage might best be applied to tip the balance to better governance and greater human well-being, and how much benefit might the exercise of such leverage bring?

The Impact of Strengthened Governance

Unfortunately, Strengthened Governance is less likely to thrive in a world facing significantly increased Global Challenges, when it would be most needed, than in the world of the Base Case. Nonetheless, we explore here the possible unfolding of human well-being in four alternative scenarios: the Base Case and the Global Challenges scenario by themselves and the Base Case and Global Challenges in combination with the Strengthened Governance scenario sketched above. Among the questions we consider are:

- How much might Strengthened Governance shift the trajectories of the Base Case and the Global Challenges scenario with respect to governance and human well-being?
- Even if less likely to materialize, might Strengthened Governance be even more important with respect to human well-being in combination with Global Challenges than with the Base Case?
- Might Strengthened Governance have sufficient impact to ameliorate the negative consequences of a Global Challenges future, thereby bringing human development in the Global Challenges with Strengthened Governance scenario back closer to the pattern of the Base Case (or even above it)?
- How might the alternative scenarios differentially impact world regions and countries, and where is Strengthened Governance especially important to well-being?

Strengthened Governance and global well-being

We rely heavily in this analysis on the Human Development Index (HDI) as a gauge of the impact of Strengthened Governance. We also consider the impact of the scenario on poverty reduction, global income distribution, and other indicators of well-being.

Impacts on the Human Development Index and its components

Strengthened Governance would be beneficial in either a world characterized by Global Challenges or that of the Base Case. As Figure 7.2 shows, Strengthened Governance adds 4.3 percent to the global HDI relative to the underlying Global Challenges scenario, and 3.1 percent relative to the Base Case. The relatively greater contribution to Global Challenges is not surprising because the HDI saturates more quickly in a less challenging world, making incremental gains increasingly difficult to achieve.

Were we to face Global Challenges, might Strengthened Governance actually offset the consequences of these challenges and produce a future closer to that of the Base Case? As we saw in Chapter 6 (see again Figure 6.1), the Global Challenges scenario would have considerable cost to potential world HDI, lowering it in 2060 from the value of 0.81 in the Base Case to 0.74 (the 8.6 percent drop we see in Figure 7.2). Unfortunately, Strengthened Governance is not able to bring the Global Challenges future even close to the global future of the Base Case (without Strengthened Governance). Still, it closes nearly one-half of the gap and is thus an important potential antidote for a very bad set of global problems.

The components of the HDI are health (life expectancy); knowledge (expected education of school entrants and average education of adults); and income (the log of GDP per capita). Table 7.1 shows our forecasts of the variation in 2060 of these variables across the four scenarios. For example, Global Challenges reduces the global life expectancy in 2060 by 2.9 years relative to the Base Case; Global Challenges with Strengthened Governance is able to recapture more than one year of that. Variation across the scenarios in expected years of education of school entrants and in the average years of completed education of adults is relatively limited. The former has great momentum from

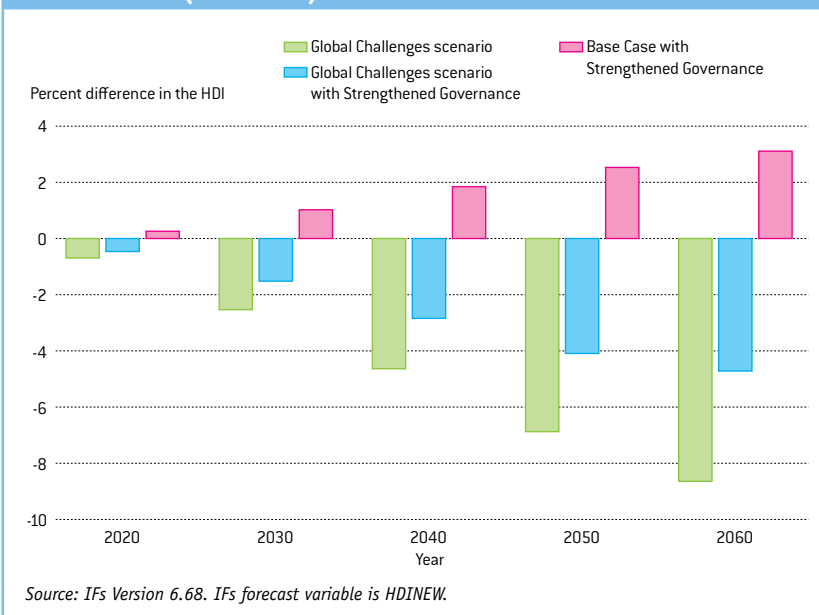
enrollment growth around the world, and the latter has much inertia due to the long life span of adults who earlier had less formal education on average than today's children.

The truly large differences appear across the scenarios in GDP per capita. The full range across the four scenarios is a factor of about 2.5. In the case of this variable, however, Global Challenges with Strengthened Governance is unable to recover even one third of the loss from the Base Case to Global Challenges. Nonetheless, the addition of \$4,200 to global GDP per capita in Global Challenges with Strengthened Governance is a potentially very important contribution. Of course, as shown in Table 7.1, the best future for global human development would be the Base Case with Strengthened Governance.

Broader human development impacts of Strengthened Governance

Turning to some of the variables related more directly to the Millennium Development Goals, but looking well beyond the 2015 horizon associated with the MDGs, Figure 7.3 (on p. 154) shows the global and regional differences that the four scenarios suggest for global poverty. Today, about 1.2 billion people live on less than \$1.25 per day—that is, in extreme and life-threatening poverty. The global total population in 2060 living at that level ranges from a low of 150 million in the Base Case with Strengthened Governance scenario to more than 1.1 billion in a world of Global Challenges. In all scenarios,

Figure 7.2 Forecasts of Global Challenges, Global Challenges with Strengthened Governance, and Base Case with Strengthened Governance HDI values relative to the Base Case (2020–2060)



the largest number living in extreme poverty in 2060 is in sub-Saharan Africa, followed by South Asia (in the Base Case with Strengthened Governance, South Asian poverty is actually reduced to levels of Latin American poverty). In the Global Challenges scenario, however, there are not only more poor South Asians than in other scenarios (443 million versus 15 million in the Base Case with Strengthened Governance scenario), but they also constitute a higher percentage of the global total than in other

■ Today, about 1.2 billion people live on less than \$1.25 per day, compared to a low of 150 million in 2060 under the Base Case with Strengthened Governance and more than 1.1 billion under Global Challenges. ■

Table 7.1 Global human development components across four scenarios (2060 forecasts compared to 2010 values)

	Life expectancy (years)	Expected years of schooling (entrance age children)	Completed years of education (adults 15+)	GDP per capita at PPP (thousand 2005\$)	HDI (0–1 range)
Global Challenges	76.2	12.6	9.4	13,540	0.736
Global Challenges with Strengthened Governance	77.4	13.0	9.6	17,740	0.767
Base Case	79.1	13.5	9.8	26,590	0.805
Base Case with Strengthened Governance	80.0	13.9	10.0	33,950	0.830
Value in 2010 (for comparison)	70.1	11.7	6.9	9,743	0.638

Note: Values in 2010 are from data or estimations. Expected years of schooling refers to years likely to be attained by new school entrants; completed years of education refers to average years of education attained by adults 15 years of age and older.

Source: IFs Version 6.68. IFs forecast variables are LIFEXP, EDYRSSLE, EDYRSAG25, GDPPCP, and HDINEW.

Figure 7.3 Forecasts of poverty in developing regions in 2060 across four scenarios

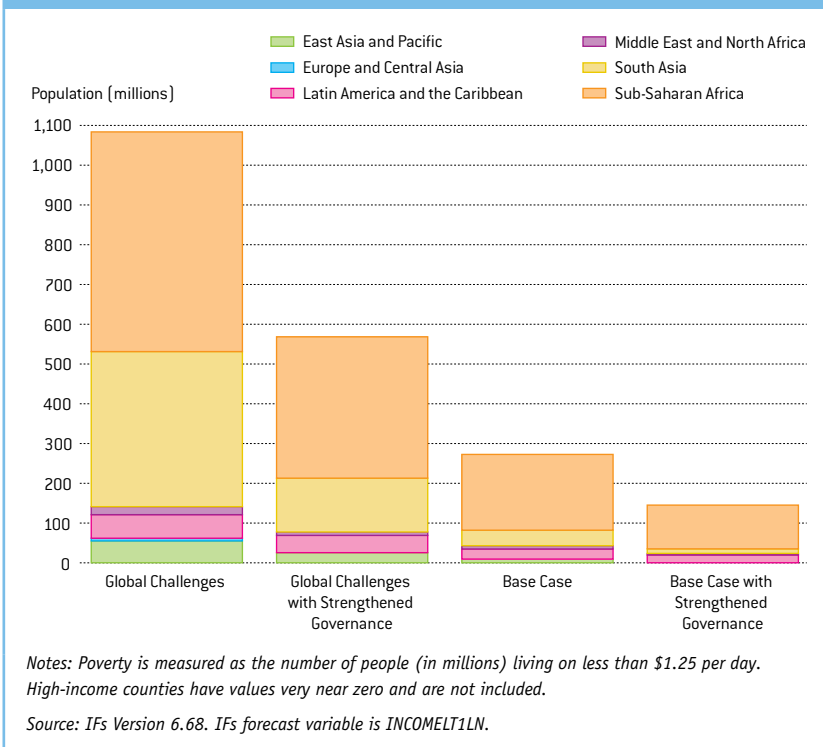
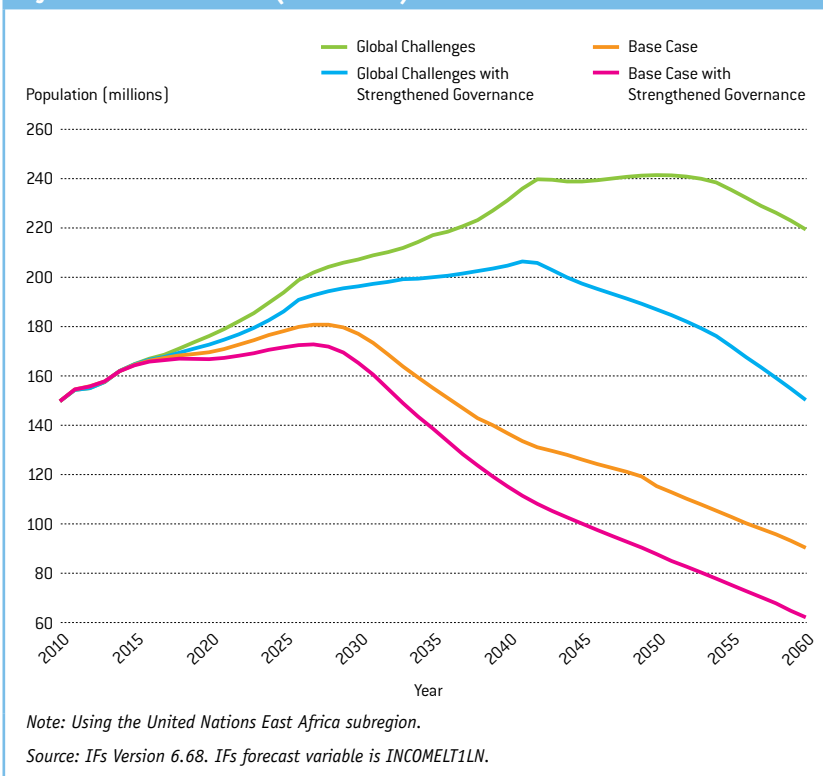


Figure 7.4 Forecasts of population in East Africa living on less than \$1.25 per day across four scenarios (2010–2060)



scenarios. That is, citizens of South Asia have the most to lose in a world of Global Challenges combined with a failure to improve governance.

Turning to the sub-regions of sub-Saharan Africa, East Africa was home to 150 million people living on less than \$1.25 per day in 2010. In the Base Case (see Figure 7.4), the number of poor in East Africa still climbs slowly until about 2027, as the growth of the total population outstrips the reduction in the percentage rate, but the number then declines. The variation across the four scenarios is very large in East Africa, giving rise to values in 2060 from 62 million (Base Case with Strengthened Governance) to 220 million (Global Challenges). Ethiopia, the East African country with the largest population and currently highest poverty count, is likely to nearly eliminate extreme poverty in all scenarios except Global Challenges—and even in that scenario it falls sharply. In Kenya, however, the stakes are higher, with a range from 1.4 to 15 million across the four scenarios (see the Forecast Tables at the back of this volume for country-specific data across developmental variables in the Base Case).

Undernutrition is closely related to poverty; in fact, analysts initially pegged the threshold of extreme poverty to the difficulties of obtaining adequate caloric intake (Ahluwalia, Carter, and Chenery 1979). While it is difficult to assess undernutrition levels directly for adult populations, children are the most vulnerable subpopulation, and measurements of undersize in them provide more accurate estimates.³⁵

The contemporary global geographic pattern for undernutrition is similar to that for poverty. In general, however, South Asia accounts for a greater share of global child undernutrition than it does of poverty, a phenomenon that is, in part, related to dietary taboos (such as against eating meat), which can contribute to protein and iron deficiencies. Of the 126 million undernourished children around the world in 2010, more than half (70 million) lived in South Asia, making it the subregion requiring most attention. Although that number declines by 2060 to 12 million in the Base Case, it is little changed (61 million) in the Global Challenges scenario. However, the addition of Strengthened Governance to Global Challenges would reduce the subregional total in 2060 to 47 million, a

significant contribution to reduction of potential child death and life-long stunting rates.

In 2010, approximately 1.8 billion people worldwide were without even shared access to improved sanitation—those 1,770 million people constituted about 1 in 4 people globally. The good news is that the number was down from the nearly 2.5 billion of 1990. Yet, in some subregions of the world, including Central Africa, the portion without access is still near 50 percent, and the absolute numbers are still growing. Figure 7.5 shows the forecasts for the population in that region without access to improved sanitation in the four scenarios. Whereas the Base Case and the Strengthened Governance variant of it show a peak around 2030 in the numbers without improved access, such peaking does not appear until late in the forecast horizon when there are global challenges, even when Strengthened Governance is coupled with the Global Challenges scenario. In Global Challenges, the region could still have more than 40 percent of the population living without access to improved sanitation, compared to 11 percent in the Base Case. The proportion in 2060 could be as high as 66 percent in Chad.

The implications of Strengthened Governance for global income distribution

The impacts of good governance go well beyond better human development within regions and individual countries. Figure 7.6 shows one key variable at a global level—the pattern of household-based income distribution. At the household level, global inequality today is even greater than that within most inegalitarian countries, including South Africa, which, with a Gini of about 0.58, is often identified as one of the most unequal.³⁶ Yet, especially because of rapid income growth in China, and more recently in India, the global distribution of income has been improving (that is, displaying less inequality) in recent years. The Base Case forecasts a continuation of that trend until about 2040, at which time the slowing of income growth in China and the rapid population growth of low-income Africa become two important forces causing the global progression toward equality to cease. With Global Challenges, the cessation happens earlier and at a much higher level of inequality.

Figure 7.5 Forecasts of population in Central Africa lacking access to improved sanitation across four scenarios (2010–2060)

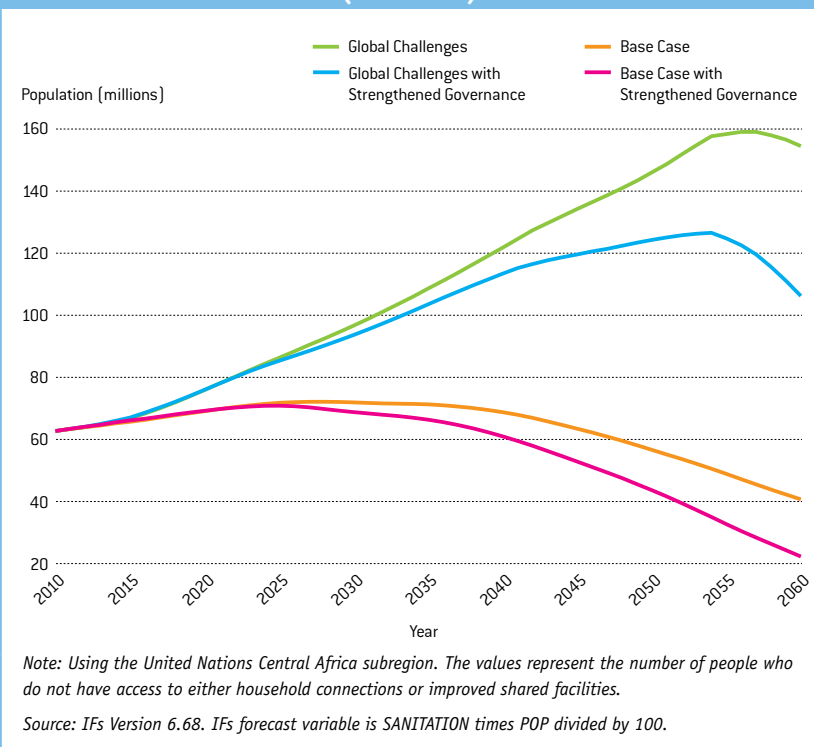
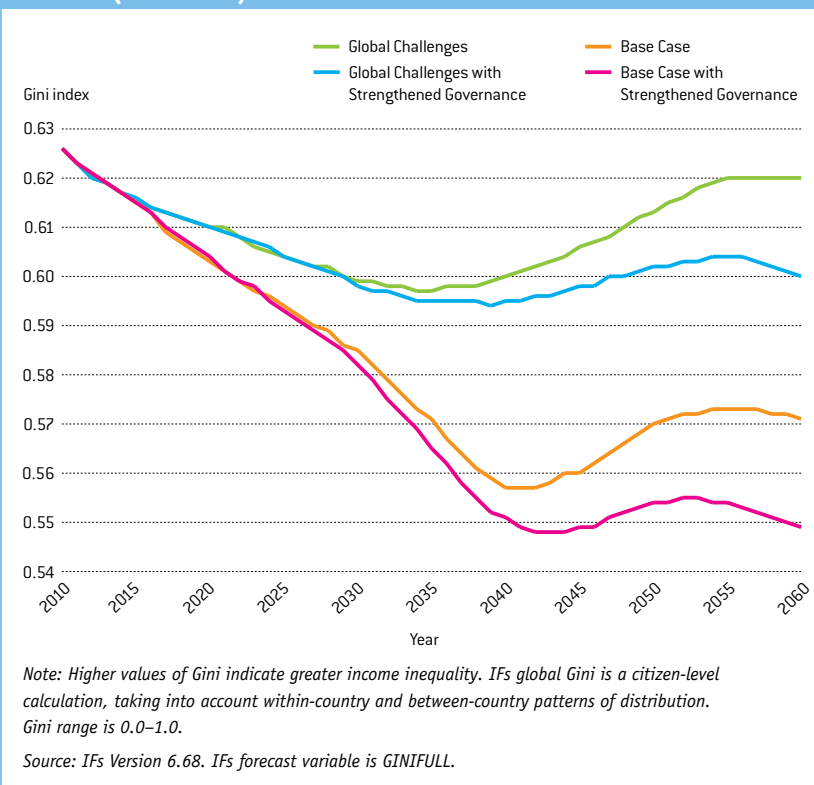


Figure 7.6 Forecasts of global Gini coefficient of income inequality across four scenarios (2010–2060)



■ *In 2010, 70 million children in South Asia were malnourished. Under Global Challenges, the number declines to 61 million by 2060; Strengthened Governance on top of Global Challenges reduces it to 47 million. ■*

■ *Strengthened Governance facilitates a decrease in global income inequality. ■*

■ *If Strengthened Governance improves well-being even with Global Challenges, should efforts to strengthen governance focus primarily on security, capacity, or inclusion? ■*

Strengthened Governance significantly helps maintain progress toward a more egalitarian world in both the Base Case and the Global Challenges scenario, in large part because the most “head room” for improving governance, and reaping the benefits of doing so, is in the developing world. When Strengthened Governance augments the Base Case, it minimizes the interruption of the downward trend in global income inequality within the Base Case and facilitates decrease in global inequality to a level in 2060 somewhat below that of countries like South Africa today. Although that level would still be highly unequal, the global improvement is still very considerable relative to 2010.

Where should we focus our efforts?

We have seen that Strengthened Governance consistently improves human development relative to both the Base Case and the Global Challenges scenario. We also have seen that such improvement would be even more important should the world face an intensification of challenges, even though it appears unlikely that Strengthened Governance would more than partially offset the impact of such challenges. What we have not yet explored is how different aspects of governance might differentially interact with the Base Case or Global Challenge scenario. This volume has consistently distinguished among three dimensions of governance: security, capacity, and inclusion. Is there one of these dimensions on which it might be especially important to focus?

That is a fundamentally difficult question for us to address, in part because it is an “apples and oranges” question. There is no strict comparability to the scaling of the three transitions and our interventions with them. How does one think about balancing an elimination of conflict in the Democratic Republic of Congo against corruption reduction in that country or against a transformation to a democratic system with very high levels of gender empowerment? Nonetheless, the question is an important one to consider.

Especially given the historical sequencing of the governance transitions or the poor performance of states with significant intrastate conflict, one might reasonably argue that security is fundamental, and therefore that the reduction of conflict would have greater impact

(and perhaps even be a necessary prerequisite) than even the most dramatic enhancements of capacity. One might alternatively hypothesize, however, that globally we already have greatly reduced intrastate conflict and largely attained security, so that the greatest leverage across the world now lies with improved capacity. Finally, one might argue that unless people can participate fully in government, and until all citizens are empowered, security and capacity will not truly exist.

Despite the great complexity of such analysis, and the dependence of conclusions on the model formulations that Chapter 4 acknowledged to be far from perfect, Figures 7.7 and 7.8 look at the impact of dividing our Strengthened Governance scenario (see again Box 7.1) into its three underlying components (providing security, building capacity, and assuring inclusion). Figure 7.7 shows the percentage impact on global HDI relative to the Base Case by strengthening each dimension of governance and also all three in combination. The Strengthened Capacity component of the scenario adds somewhat more than the Strengthened Security and Strengthened Inclusion components. Yet, the graph primarily reinforces the fact that all three make contributions. More striking, perhaps, is that at a global level none of them individually or collectively adds particularly large increments of HDI. Together they raise the HDI approximately 3 percent in 2060.

Figure 7.8 provides an alternative perspective at a country level, in this case Afghanistan. The Strengthened Security component by itself (on top of the Base Case) boosts the HDI by nearly 6 percent in 2060, twice the impact that the Strengthened Governance scenario as a whole has on the global HDI. Strengthened Capacity by itself adds more than 4 percent, and Strengthened Inclusion adds 3 percent. For Afghanistan, the three components of Strengthened Governance together add about 10 percent or 0.06 points on the 0.0–1.0 HDI scale relative to the Base Case.

Within the HDI, the biggest impact of Strengthened Governance for Afghanistan is on GDP growth—GDP per capita (2005 dollars at purchasing power parity [PPP]) in 2060 at \$8,281 is nearly double that of the Base Case by itself (and more than four times that of Global Challenges). Whereas more than 15

million Afghans would still be living on less than \$2 per day in 2060 in the Base Case, that number drops below 1 million in the Base Case with Strengthened Governance.

The Strengthened Security component by itself raises the Afghan GDP per capita by almost 50 percent relative to the Base Case. This is consistent with the research discussed in Chapter 3, which found that internal conflict costs 1–2 percent of GDP annually (the Strengthened Security component eliminates conflict in Afghanistan only slowly, putting the impact at the lower or more conservative end of that range). The Strengthened Capacity component on top of the Base Case adds just over 30 percent to GDP per capita because it builds the financial resources, and efficiency in their use, that allow investment in education and health. (Of course, we know that it would be nearly impossible to achieve and maintain improved capacity in Afghanistan without the foundation provided by strengthening security.) By itself, Strengthened Inclusion on top of the Base Case also makes a positive contribution, including about a 22 percent boost in GDP per capita, but adds the least to the HDI; it, too, would not be possible in a country as conflict-riven as Afghanistan without first creating a security base.

We have also analyzed the Global Challenges world with respect to the question of which governance dimension might contribute the most to protecting and enhancing human development. The overall pattern is much the same as that in the Base Case. That is, for the world as a whole, increased capacity again appears to provide the greatest benefit, followed by enhanced security, and then extended inclusion. Again, that would vary by the condition of countries within such a world. The greatest difference in the Global Challenges world, as we also saw in Chapter 6, is that the strength of governance becomes considerably more important overall. Whereas Strengthened Governance across all three dimensions adds about 3 percent to the Base Case global value of the HDI in 2060, it adds nearly 13 percent to the value in Global Challenges. Given that additional aggregate impact, the variation of impact across the three dimensions of governance becomes even less significant (capacity provides an 11.6 percent gain compared to 10.0 percent for inclusion).

Figure 7.7 Forecasts of percentage differences in global HDI values relative to the Base Case: Individual strengthened components and full Strengthened Governance scenario (2020–2060)

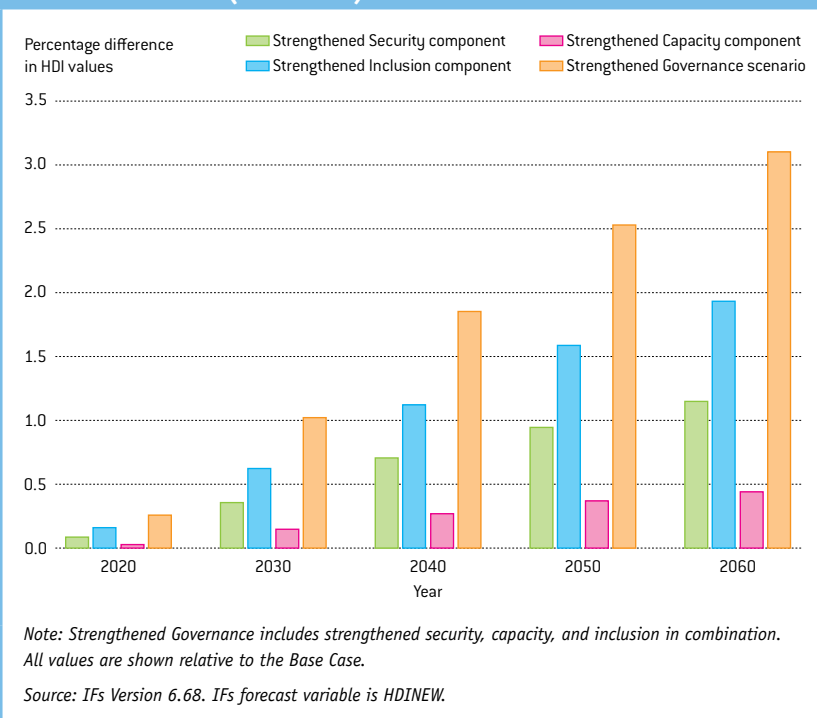
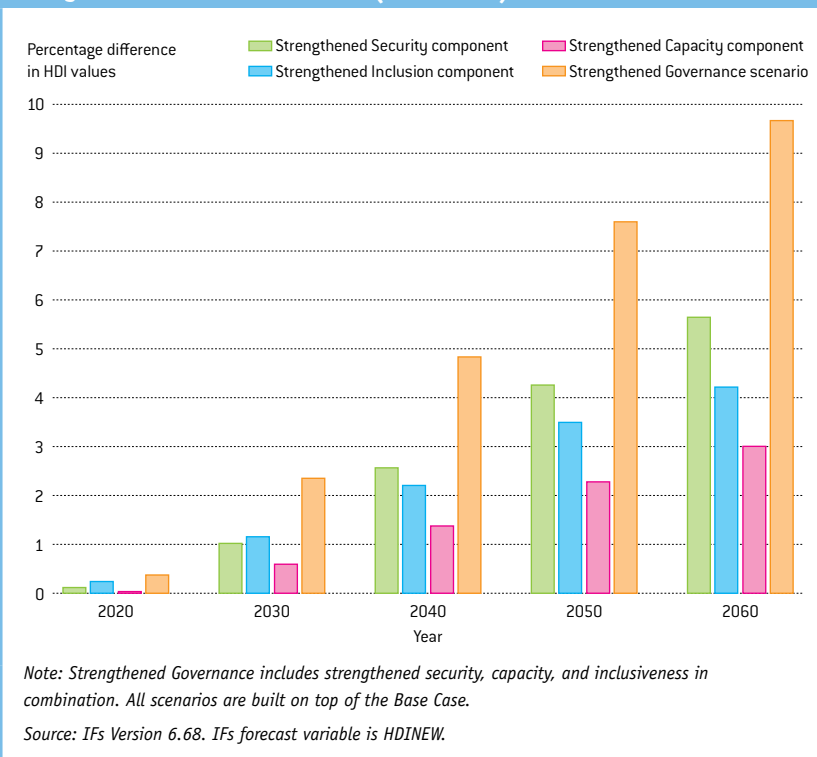


Figure 7.8 Forecasts of percentage differences in Afghanistan's HDI values relative to the Base Case: Individual strengthened components and full Strengthened Governance scenario (2020–2060)



■ *For countries with poor security, enhancing it is fundamental, but on a global level, improving capacity could add more to the HDI.* ■

■ *Strengthened Governance would not, by itself, protect our current pace of progress in the face of major systemic shocks. Policies matter.* ■

■ *Governments should embrace sound macroeconomic management and healthy markets, pursue development-oriented policies, and invest significantly in public goods.* ■

Where, then, should we focus our efforts to improve governance? Not surprising, the answer appears to be a combination of “everywhere” and “it depends.” For countries with low levels of security, enhancing that security is a fundamental pillar of progress. In Afghanistan, the Democratic Republic of Congo, Myanmar, the Philippines, and Somalia, Strengthened Security alone could add more than 40 percent to GDP per capita (PPP) by 2060 compared to the Base Case.

Most of the world has achieved quite high levels of security, however, and globally we have seen that improvements to capacity could actually add more to the HDI (see again Figure 7.7). In the Comoros, Equatorial Guinea, Gabon, Guinea Bissau, Somalia, and Zimbabwe, Strengthened Capacity alone would add more than 5 percent to the HDI of each country by 2060 in the Base Case. In the Comoros, Equatorial Guinea, and Greece, it could add more than 50 percent to GDP per capita at PPP.

On the other hand, given the very large emphasis placed globally on democratization, would progress on inclusion bring large developmental gains? Our discussion of the literature in Chapter 3 indicated that the relationship between inclusion and economic growth is contested, and in Chapter 4 we noted that our default representation of drivers of multifactor productivity does not include democratization. Nonetheless, we find that in Afghanistan, Myanmar, Rwanda, and Uganda, Strengthened Inclusion alone could add 20 percent or more to GDP per capita at PPP in 2060. The effect is via the indirect impacts of inclusion on other aspects of governance, including higher capacity.

Adding Development-Oriented Policies

In a future of Global Challenges, we have seen that Strengthened Governance on top of the challenges could bend the curves of development back toward those of the Base Case. And in a future like that of the Base Case, Strengthened Governance could further enhance progress on development. Yet, the forecasted impacts of Strengthened Governance are not as great as we might have expected with respect to either the Base Case or Global Challenges. Could we be underestimating the

impact of improved governance? Are there possible paths of impact between improved governance on our three dimensions and socioeconomic development other than the ones we have so far represented and discussed?

Quite likely there are such paths. Governance is not just about orientations. It is about actions. As discussed in Chapter 1, we would expect that secure, capable, and inclusive governments would embrace sound macroeconomic management and healthy markets, pursue development-oriented policies with a pro-poor character,³⁷ and invest significantly in public goods such as education, health, and infrastructure (Overseas Development Institute 2011). However, our representation of Strengthened Governance to this point has not included a direct linkage to such policies—policies that potentially and quite logically could strengthen further the impact of the more indirect effects of governance on development through the linkages that Chapter 4 discussed.

The lack of a direct linkage of governance strength to such policies is, at least in part, a weakness of the model. Yet, it is also true that not all governments judged strong by outside observers with respect to security, capacity, and inclusion will inevitably adopt responsible and sustainable development-oriented policies. Many would judge a number of the countries in the European debt crises harshly in this respect.

South Africa and Albania illustrate quite concretely the possible disconnect. In 2010, South Africa had a higher GDP per capita at PPP than Albania (\$9,627 versus \$7,616 [in 2005 dollars]), a higher score on the IFs Governance Capacity Index (0.63 versus 0.51), and a higher score on the IFs Governance Inclusion Index (0.82 versus 0.66). It is thus striking that its HDI was dramatically lower—only 0.59 compared with 0.74 in Albania. Obviously, much of the difference is a clear consequence of differing development policy histories, with choices of policies, in turn, having deep roots in colonial and apartheid-era history for South Africa and in decades of communism for Albania. Among other consequences of those policy and path differences are: (1) a very considerable difference in income distribution (Albania’s Gini in 2008 was 0.35 and South Africa’s in 2009 was 0.63); and (2) a great difference in scores on the IFs Governance

Security Index (Albania's score of 0.85 in 2010 was much higher than the 0.69 of South Africa).

To explore the impact of policy choices, we have created one final scenario, Strengthened Governance and Development Policies (SG and DP), described in Box 7.2. Our approach built on work we did for earlier volumes in the **Patterns of Potential Human Progress** (PPHP) series and in support of the 2012 Human Development Report (Pardee Center for International Futures 2013; UNDP 2013). The PPHP volumes explored policies that would reduce poverty, advance education, and improve health. They found no silver bullets. And, in fact, they found inherent complications in the global emphasis on some specific policies, especially those, like the MDGs, linked to pursuit of goals with universal target dates. Such goals tend to be unreasonable for many countries that begin far from them or lack foundations for their aggressive pursuit. In the PPHP volumes, we sought instead to create scenarios containing aggressive yet reasonable policy postures with respect to poverty reduction, education, and health. The SG and DP scenario combines the policy orientations of

those scenarios with Strengthened Governance. We should note, however, that even with the level of detail that IFs has, it does not represent actual field-level policies, such as the building of clinics for maternal and child health care. Instead, IFs represents policy orientations and effects, such as emphasis on family planning and fertility reduction.

Figure 7.9 (on p. 160) illustrates the power that adding development-oriented policies to Strengthened Governance might have. Relative to the Base Case, it adds about 10 percent to the HDI. Thus, the SG and DP scenario adds much more to HDI progress globally than does Strengthened Governance alone (see again Figure 7.7). In addition, SG and DP on top of Global Challenges could result in an HDI that is actually somewhat higher than that in the Base Case.

We saw earlier that Strengthened Governance on top of the Base Case could raise the HDI of Afghanistan in 2060 about 10 percent above the Base Case value. SG and DP on top of the Base Case raises it over 30 percent. And whereas the Base Case leaves 188 million people in sub-

■ *Earlier volumes in this series explored policies to reduce poverty, advance education, and improve health. We found no silver bullets.* ■

■ *Aggressive but reasonable policy postures best support human development.* ■

Box 7.2 Strengthened Governance and Development Policies (SG and DP) scenario

All changes are relative to underlying dynamic values of the Base Case or Global Challenges scenario. For instance, a decrease in fertility would be relative to underlying rates that are already decreasing for almost all developing countries in the Base Case and even in Global Challenges.

The SG and DP scenario introduces almost all changes over a period of years (generally 10–20). Of course, many countries already have a quite high quality of governance and/or pro-development policies, and when maximum values are reached on any dimension, further advance in the scenario ceases for that country.

The scenario largely combines the aggressive yet reasonable interventions explored in the first three volumes in this series. We fully recognize the difficulty of pursuing all of these policies simultaneously, but the scenario does not reach beyond rates of change that some strong performers have attained. Moreover, the IFs system assures that accounting constraints are maintained across the interventions; it is impossible, for example, to spend more on both education and health if the funds are not available through reducing expenditures elsewhere or increasing government revenues (which in turn would reduce firm and household net incomes).

Government finance. Government spending on education, health, and R&D is increased 20–80 percent, depending on the country. Linked to a larger normative scenario, education spending increases are determined by aggressive but reasonable growth in education participation rates (intake, persistence, and completion) at all education levels. Internal transfers in support of unskilled-labor households are increased 50 to 100 percent, commensurate with conditional transfer and basic safety net

programs. The expenditure increases require some increase in taxation and revenue mobilization and some decreases in other spending. Because some of that decrease is in military spending, we understand that it could complicate attainment of security.

Education, health, and environmental policies. There is an acceleration of the movement toward gender equality in education. There are also steady improvements in a variety of proximate drivers of health, including increased access to safe water and improved sanitation, and reductions in indoor use of solid fuels, urban particulate pollution, smoking, undernutrition, and obesity. Growth in renewable energy production is about half-again that of the underlying scenario.

Social changes. Associated (by assumption) with higher rates of female education, women's participation rates in the formal economy are 30 to 50 percent higher and fertility rates are 10–20 percent lower.

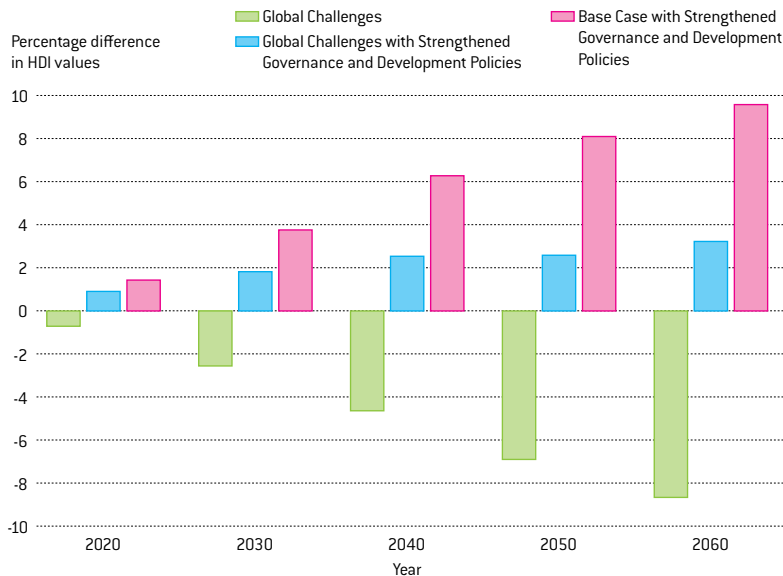
Domestic market support. Savings and investment rates are about one-third higher. Economic freedom is 20 percent higher.

International openness. There is a generally greater openness to Foreign Direct Investment (it is about 30 percent higher globally) and portfolio investment,* and an orientation that encourages exports. Barriers to trade are about 20 percent lower. Global migration is about 50 percent higher.

Foreign assistance. Aid donors now giving less than 0.5 percent of their GDP move to that level. Aid is presumed to be effective in augmenting government resources in pursuit of the spending priorities indicated above.

*Such openness to Foreign Direct Investment and portfolio investment could require protection against rapid capital repatriation to be most effective; however, such policies are at a level of detail beyond the scope of our model and analysis.

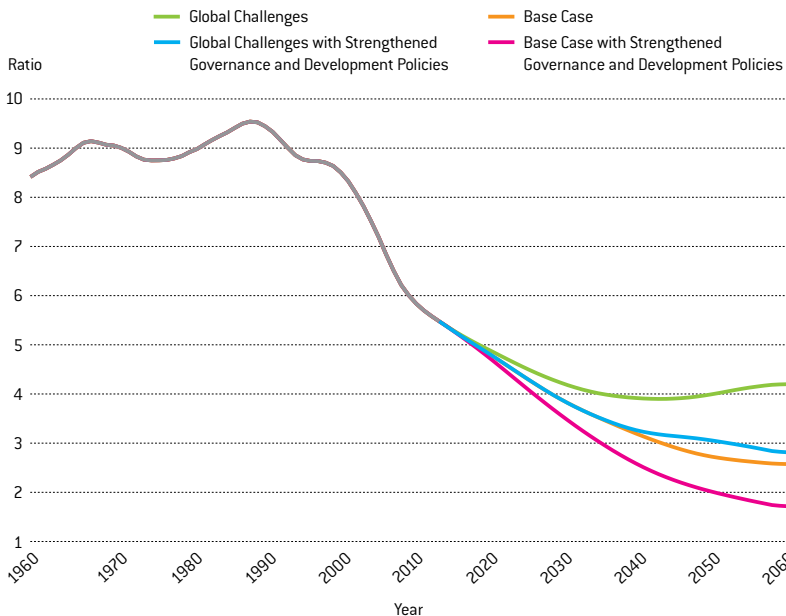
Figure 7.9 Forecasts of global HDI values relative to Base Case: Global Challenges, Global Challenges with Strengthened Governance and Development Policies, and Base Case with Strengthened Governance and Development Policies (2020–2060)



Note: Strengthened Governance includes strengthened security, capacity, and inclusion.

Source: IFs Version 6.68. IFs forecast variable is HDINEW.

Figure 7.10 Ratio of Global North to Global South GDP per capita: History and forecasts with Base Case and alternative scenarios (1960–2060)



Note: Excludes former communist countries because of poor long-term data. Uses five-year moving averages and OECD and non-OECD countries as proxies for Global North and South, and uses population weights for countries.

Source: IFs Version 6.68. IFs forecast variable is GDPPCP.

Saharan Africa living on less than \$1.25 per day in 2060 (down from 390 million in 2010), and Strengthened Governance alone takes that number down to 110 million, the Base Case with SG and DP reduces it to 16 million.

Figure 7.9 also shows the power of the SG and DP scenario when added to Global Challenges. Whereas Global Challenges alone leads to a more than 8 percent reduction in the global HDI relative to the Base Case, the combination of Global Challenges with SG and DP actually generates an HDI value more than 2 percent above that of the Base Case.

As the implications for countries like Afghanistan and regions like sub-Saharan Africa suggest, the global income distribution consequences of SG and DP are also significant (see Figure 7.10). Braudel (1984) estimated that there was less than a 10 percent difference in per capita incomes of Western Europe and the Global South in 1800. Maddison (2006: 89, 92) computed a higher gap at that time with respect to selected European countries, putting the income of France at about twice that of China and the income of the United Kingdom at more than three times that of China. In any case, the ratio of GDP per capita in the Global North to that of the Global South (using contemporary OECD membership to distinguish the North from the South) climbed until the 1980s, reaching nearly 10-to-1. Since then, the remarkable economic rise of China and the more recent take-off of India have begun to bring down that ratio quite dramatically—at purchasing power parity the GDP per capita of the United Kingdom was less than 5 times that of China in 2010.

Although the Base Case would continue that narrowing of the last two-to-three decades, Global Challenges would likely stop and even somewhat reverse it in the first half of this century. If the world is fortunate enough to face the Base Case rather than Global Challenges, by 2060 SG and DP could bring the ratio down to under 2-to-1, which Brown (1972: 42) estimated the world last saw in 1850. Even if the world experiences Global Challenges, the addition of SG and DP can help give rise to a continued reduction in inequality quite similar to that forecast by Base Case.

SG and DP also has consequences for international income distribution at the citizen level (not just averages across countries). Using

IFs, we calculate that the global Gini at the individual level (thereby taking into account distribution within as well as across countries) in 2010 was 0.63, comparable to that of some of the most inegalitarian countries in the world today. In Global Challenges, that declines by 2060 only to 0.62, still worse than the contemporary values in all but four countries. In the Base Case, the value comes down to 0.57 (about that of Bolivia or Zimbabwe currently), and in the Base Case augmented by SG and DP it declines to 0.48 (approximately that of the Dominican Republic or Peru, and just above that of China today). Given the typically slow pace of change in Gini within societies, such transformation at the level of the global society would be truly dramatic.

Conclusion

Both domestic societies and the global community appropriately believe that good governance plays a critical role in enhancing human well-being on standard measures of development, as well as in providing security and dignity to citizens. Domestic and global efforts to enhance governance have evolved and strengthened considerably in recent decades, with a significant leap or step-change in attention to its importance since the end of the Cold War. There are many more agents (including international governmental and nongovernmental organizations, as well as members of domestic civil society) pursuing improvements globally across all three dimensions of governance than at any time previously. Moreover, they have a clear sense of their ability to tip the balance toward improvement.

Both the Strengthened Governance and the Strengthened Governance and Development Policies scenarios reinforce the importance that these organizations attach to their

activities. Of course, providing security is critically important in that (fortunately) shrinking set of countries where intrastate war persists. In addition to enhancing security, however, and also helping to bring that enhancement, the building of capacity can generate significant returns by adding appreciably to overall economic productivity. As the empirical work we discussed in Chapter 3 made clear, assuring inclusion does not appear to translate automatically into similarly large developmental gains. Yet, inclusion can enhance capacity and, in combination with security and capacity, it has the potential to turn the state from predatory toward developmental strategies, like those of our SG and DP scenario. In fact, many of the policies that provided the greatest gains for human development in our analysis are likely to find solid root only in societies that have built a foundation that combines security, capacity, and inclusion.

If fundamentals underlying global development proceed on the track of our Base Case scenario, such a combination of strengthened governance and developmentally oriented policies could help bring into being a world of high and very widespread human development by 2060. Imagine a world in which those living on less than \$1.25 a day has declined from 1.22 billion in 2010 to 30 million—in fact, one in which those living on less than \$2 each day has dropped from 2.39 billion to 83 million. Even if significantly increased Global Challenges do confront us, Strengthened Governance and Development Policies can at least keep us roughly on the track of the Base Case, in fact perhaps even ahead of it. Governance and good policies can make a very large difference.

■ *Introducing a development policy posture into the Strengthened Governance scenario adds much to HDI progress globally and offsets the very negative consequences of Global Challenges.* ■

■ *In a world of Strengthened Governance and Development Policies on top of the Base Case, the GDP per capita ratio of developed to developing countries could be below 2-to-1 by 2060, a level last seen in 1850.* ■

1 The emerging norm of Responsibility to Protect that was a key element in global responses to the Middle East crises in 2011 has its origins in awareness in the early 1990s that governance failures by sovereign states are often at the source of violent conflicts and development failures. Weiss and Thakur (2010: 338) argue that “R2P is about the changing conceptions of the appropriate

relations between citizens and states in an interdependent and globalizing world: the norms, laws, and practices that constitute those relations and the variety of civil society, governmental, and intergovernmental actors engaged in efforts to redefine and reconstitute those norms, laws and practices.” At the same time, the norm remains controversial, with some seeing it as a

rationalization for neo-imperialism by Western powers, or “geopolitics as usual.”

2 See United Nations Security Council Resolution 1973, adopted 17 March 2011, that stated “*Reiterating* the responsibility of the Libyan authorities to protect the Libyan population and *reaffirming* that parties to armed conflicts bear the

- primary responsibility to take all feasible steps to ensure the protection of civilians,” and that authorized “all necessary measures” to enforce the resolution. Available at <http://www.un.org/News/Press/docs/2011/sc10200.doc.htm#Resolution>.
- 3 NGO Branch of the UN Department of Economic and Social Affairs at <http://csonet.org/?menu=100>.
 - 4 In support of this argument, see also World Bank (1989) on the “good governance” theme and United Nations Secretary General Boutros Boutros-Ghali’s 1996 “An Agenda for Democratization,” available at http://www.un.org/en/events/democracyday/pdf/An_agenda_for_democratization%5B1%5D.pdf.
 - 5 See “Upstream-Downstream Synergies: Policies Linked to Practice,” UNDP Bureau for Development Policy Capacity Development Group, March 2004. Available at http://www.undp.org/capacity/library_research.shtml.
 - 6 See the International Peace Institute paper “Power, Politics, and Change: How International Actors Assess Local Contexts” (Slotin, Wyeth, and Romita 2010).
 - 7 For evidence supporting the argument that youth seek democracy and a case study on Iran, see Lutz, Cuaresma, and Abbasi-Shavazi 2010.
 - 8 Although donor states are united in their belief in the importance of governance, their motivations for providing aid for governance reforms vary. The government of the United States, for example, often supports governance in part as a geostrategic approach to expand the community of democracies because democratic countries are believed to be more externally and internally peaceful. European donors, on the other hand, appear to be more animated by an underlying assumption that capable governance is essential for development and the eradication of socially entrenched poverty (Carothers 2009).
 - 9 See the 2009 “Report of the Secretary General on Peacebuilding in the Immediate Aftermath of Conflict” (UN document A/63/881–S/2009/304), available at http://www.unrol.org/doc.aspx?n=pbif_090611_sg.pdf.
 - 10 See Tardy and Mani 2005.
 - 11 On the impetus for humanitarian intervention as a gateway toward international engagement and subsequent peacebuilding and statebuilding, see Weiss 2007.
 - 12 See *Preventing Deadly Conflict: Final Report* authored by the Carnegie Commission on Preventing Deadly Conflict and published by the Carnegie Corporation in 1998. Also see *A More Secure World: Our Shared Responsibility*, the 2004 final report of the UN Secretary General’s High-level Panel on Threats, Challenges and Change, available at http://iis-db.stanford.edu/pubs/20806/A_More_Secure_World_.pdf.
 - 13 See Wallensteen and Sollenberg 1998 and recent data of the Uppsala Conflict Data Program, University of Uppsala, available at www.ucdp.uu.se.
 - 14 See especially the work of the Economic Community of West African States (ECOWAS) and its early warning system, which has been designed to follow and provide a response for assistance in local and community-level conflict mitigation http://www.comm.ecowas.int/dept/stand.php?id=h_h2_brief&lang=en). ECOWAS works in conjunction with regional civil society, especially the West African Network for Peacebuilding (<http://www.wanep.org/wanep/>).
 - 15 The phrase “ripe for resolution,” coined by I. William Zartman, conveys the notion that a certain set of conditions in a conflict create the circumstances for progress in peacemaking by international mediators and local conflict-managers (Zartman 1989). See also Sisk 2009.
 - 16 See the work of the Small Arms Survey at www.smallarmssurvey.org, and in particular Krause and Muggah 2008; also Tilly 2002.
 - 17 This issue was originally highlighted starkly in UN-HABITAT 2003. See, in particular, the work of the Canadian Department of International Affairs and Trade at <http://www.international.gc.ca/cip-pic/discussions/fragile/cities-villes.aspx?lang=eng>.
 - 18 Taylor’s graft was documented by Global Witness, a London-based nongovernmental organization. Among Global Witness’s extensive efforts to focus a spotlight on the situation in Liberia, see its 2010 report “Bankrolling Brutality,” available at: http://www.globalwitness.org/sites/default/files/library/bankrolling_brutality_low.pdf.
 - 19 Adopted by the United Nations General Assembly as Resolution 58/4 on October 31, 2003.
 - 20 See www.ipu.org. Also see <http://www.iaca-info.org> for information on the International Anti-Corruption Academy created in March 2011 and <http://www.gopacnetwork.org> for the website of the Global Organization of Parliamentarians Against Corruption.
 - 21 See “Global Witness Quits Kimberly Process in Protest at ‘Diamond Laundering,’” *Guardian*, 5 December 2011, available at <http://www.guardian.co.uk/global-development/2011/dec/05/kimberley-process-global-witness-withdraws>. Global Witness cited problems in the Ivory Coast, Zimbabwe, and Venezuela.
 - 22 The Scorpions, a nickname for the Directorate of Special Operations, was established in 1999 by the government of President Thabo Mbeki but was later disbanded in a controversial decision by Parliament following the unsuccessful prosecution of South Africa President Jacob Zuma in 2008. Eventually a new entity was created and nicknamed the “Hawks.” For more on this interesting case of domestically driven anticorruption, see the 2004 study by Jean Redpath, “The Scorpions: Analyzing the Directorate of Special Operations,” Institute for Security Studies Monograph 96, Institute for Security Studies, Pretoria, available at <http://dSPACE.cigilibrary.org/jspui/bitstream/123456789/31459/1/Mono96.pdf?1>.
 - 23 See Mark Broad, “Ghana’s Oil Boom: Blessing or Curse?” BBC World News, June 3, 2008, available at <http://news.bbc.co.uk/2/hi/business/8081717.stm>.
 - 24 Such approaches were highlighted in the *World Development Report 2004: Making Services Work for Poor People* (Washington, DC: The World Bank).
 - 25 See, in particular, the work of the United Nations Development Programme on public administration reform, described extensively and by regional context at http://www.undp.org/governance/focus_public_administration.shtml. See also the UN Committee of Experts on Public Administration Reform, whose work is described at <http://www.unpan.org/cepa.asp>.
 - 26 “Megacities,” *Financial Times Weekend*, November 5–6, 2011, House and Home section: 1.
 - 27 See http://www.undp.org/content/undp/en/home/ourwork/democraticgovernance/focus_areas/.
 - 28 See the work of the International Institute for Democracy and Election Assistance at www.idea.int.
 - 29 See Hyde 2011 on the dilemma that such efforts pose for “pseudo democrats” who want the international support that opening up to such efforts can help deliver, while seeking to limit their actual impact.
 - 30 For early evaluations of the role CNN played in responding to humanitarian catastrophes worldwide, see Strobel 1996. On Al-Jazeera, see Miles 2011.
 - 31 For a more detailed look at the variety of contexts in which smart sanctions are imposed, see Cortright and Lopez 2002.
 - 32 *The Economist*, “The Parting of the Red Tape,” October 8, 2011: 73.
 - 33 For a systematic analysis of 15 global regimes, most of which relate to global governance (from trade to health and management of violence), see Simmons and Oudraat 2001.
 - 34 The Political Instability Task Force defines revolutionary and ethnic intrastate wars as involving at least 1,000 conflict-related deaths over their full course and at least one year in which the toll exceeds 100 deaths. The probability would never fall to zero, but potentially could be very low.
 - 35 See <http://www.who.int/childgrowth> for the World Health Organization’s standards on child growth and the associated database.
 - 36 The global value of Gini across households is not an average of country values. It is estimated based on households around the world. Because the inequality between countries is so great, the global Gini can be worse than that of all countries (imagine a world with one very rich and one very poor country both having modest inequality; the differences between the richest households of the rich country and the poorest households of the poor country would not be modest, but rather extreme).
 - 37 Social democratic systems tend to pursue such pro-poor policies. Social democracy is a system of governance that is highly inclusive. Found in countries such as Denmark, Finland, the Netherlands, Norway and Sweden, social democracy is a political system that promotes participation and representation of all social classes. In such societies, the government proactively seeks to mitigate risks and equalize life opportunities for citizens by providing or guaranteeing public goods and services to meet civil, political, economic, and social human rights. Social democracies tend to collect more revenue as a portion of national income (in fact, they are often criticized for overtaxing populations and reducing incentives for investment) and experience high political participation of women, less crime, and less susceptibility to violent conflict or war (see Joshi 2012c; Joshi and Navlakha 2010; Meyer and Hinchman 2007; Sandbrook et al. 2007).



The Future of Governance Globally

Given the importance of governance to all individuals and societies, surprisingly few efforts have been made to forecast the future of governance around the world. Those who have thought seriously about governance futures have overwhelmingly engaged in prescriptive consideration of them. While critically important, such largely qualitative thinking leaves some large gaps in the forecasting of governance. We have aimed to make contributions on two fronts. The first is to improve our forecasting toolkit by adding a quantitatively informed model for thinking about alternative governance futures. The second, interacting with the first, is to explore where patterns of changes in governance might take us and to consider the effects of international efforts to improve governance around the world relative to those unfolding patterns. Moreover, this study has sought to think about how improvements in governance might interact with broader human development, both in the world as it appears

to be unfolding and in a world of considerably greater potential challenge to humanity.

Enhancing Capability for Governance Forecasting

It is quite common to see forecasts of human population size and structure through mid-century, and even to the end of the century or beyond. It is less common to see forecasts of national economies and the global economy for more than 3–4 years, although some forecasts do exist for 10–20 years, and even through the end of the century—generally as inputs to considerations of energy demand and carbon emissions, for which there are also long-term forecasts. With respect to human development, although past volumes in this series have looked out through 2060, the forecast horizons for educational attainment or health conditions have seldom exceeded the horizon of the Millennium Development Goals even as we get closer to the 2015 target date for their attainment. In short, there are fairly numerous

■ *Quantitatively backed forecasts for governance have been virtually non-existent.* ■

■ *Difficulties in conceptualizing and measuring governance are among key reasons that analysts seldom forecast it.* ■

■ *High intercorrelation of key variables as well as difficulties in understanding causal patterns complicate efforts to develop governance forecasting formulations.* ■

shorter-term and somewhat less common longer-term forecasts available for consideration of most important human systems. It is surprising, however, that quantitatively backed forecasts for governance have been virtually non-existent (see Chapter 4 for discussion of exceptions).

One of the reasons for this void is that conceptualization and measurement of governance are not simple. In Chapter 1, we identified three dimensions that help us understand governance: security, capacity, and inclusion. The chapter sketched the long-term global transitions associated with each dimension and noted that, for the currently more developed countries, the movement through the transitions progressed in large part sequentially. It also emphasized the importance of two-way linkages between the evolution of governance and the advance of human well-being.

Chapter 2 further explored these three dimensions historically across global regions, utilizing commonly available indicators for each dimension as well as elaborating key subdimensions and analyzing a set of measures for them. For security, these measures were probability of conflict and an index of country performance and vulnerability to conflict. For capacity, they were the government's ability to mobilize revenues and to use them effectively, notably without corruption. For inclusion, they were the presence of formal electoral democracy and the broader inclusion and empowerment of citizens in politics and society, with special attention to women.

In looking at the history of governance, however, data availability poses problems that reinforce the conceptual ones and also help explain the paucity of forecasting efforts. Most governance data series have relatively short historical coverage (with regime type and some conflict variables being the key exceptions), and many data projects have had inconsistent coding schemes or incomplete assessment over time, making their own series non-comparable longitudinally. Chapter 2, nonetheless, constitutes one of the most comprehensive existing considerations of what multiple data series on governance can tell us about its evolution across global regions in recent decades. And the International Futures (IFs) database, which incorporates those data series and many more, is freely available within the

IFs system for others to use in longitudinal and cross-sectional analysis.

Beyond clear conceptualization and adequate measurement, forecasting requires understanding relationships and building forecasting formulations for them. Chapter 3 quantitatively and theoretically extended the consideration of the three dimensions and each subdimension, attempting via literature and our own analysis to tease out their drivers, interactions across the dimensions and variables, and linkages to broader human development. It would not have been possible to even consider undertaking this volume without those many and generally very thoughtful efforts by others.

Building on reviews of wide and disparate literatures around the three dimensions of governance and our own analysis of data, Chapter 4 sketched our own formulations and described the manner in which these are integrated into the broader International Futures modeling and forecasting system, allowing us to undertake analysis of their impacts on each other and on broader human development.

With respect to the forward linkages, we focused on the impacts that governance dimensions have on economic growth. Expanding the set of forward linkages is one priority for future research.

Creating forecasting capability involved major challenges. Two have been especially significant. First, the important governance and human development variables are highly intercorrelated (more technically, there is high *multicollinearity*), making it extremely difficult to sort out the key drivers in any instance and to understand the direction of causality. Second, governance variables have not tended to change smoothly over time, but instead have been subject to periods of rapid transformation and frequent reversal, even while the underlying historical trends have generally been progressive (that is, agency and events interact strongly with long-term structural changes). In the case of drawing causal specifications from complex correlations, we have tried to use data and theory intelligently. With regard to patterns of change, our forecasts are meant to suggest most-likely direction and the extent of pressure for pace of change, not to predict the inevitably irregular temporal patterns of that change.

We tested historical model runs of IFs against data over the 1960–2010 period to strengthen our formulations. We sometimes found the need for algorithmic specifications to augment simpler equations; such algorithms can often more easily address non-linearities and threshold phenomena. And we found it necessary to add systemic effects to purely domestic representations of countries, especially with respect to intrastate conflict.

One interesting insight from our process of model development concerned relationships among the three governance dimensions and associated transitions. Given that high-income countries often historically proceeded through the transitions sequentially, from security to capacity to inclusion, we anticipated and found relationships among variables linking the dimensions in that sequence. We also found, however, that progress by countries on inclusion appears to generate advance in capacity and, in turn, improvement in security. At least in the contemporary world, the relationships work in both directions.

The development of the formulations thus confirmed our understanding that there are many reinforcing causal linkages across the dimensions of governance, as well as between them and advances in human development. The interaction of these transitions in positive feedback loops can potentially set up virtuous or vicious cycles across the governance dimensions, and between them and broader human well-being.

In spite of inevitable weaknesses, so far as we know, the resultant IFs governance model is the only source for integrated (both with respect to governance dimensions and with respect to all of the other modules with which they are linked) and long-term consideration of governance futures. The tables that accompany this volume provide Base Case forecasts for 183 countries, as well as for the geographical groupings that build on them. The model allows others to replicate our forecasts and build their own variations (see Pardee.du.edu).

Understanding the Future of Governance Globally

Those concerned with global peace and development not only want to understand the possible future of governance—they also want to know how improving it might affect

broader human futures. The International Futures system brings a number of advantages to the efforts in such analysis. One is the availability within it of fairly elaborate modules representing demographic, economic, and other human systems related to governance. A second is its ability to facilitate extensive scenario analysis, or the framing of what-if questions.

Our scenario analysis began with exploration of a Base Case, considering how governance seems to be evolving in dynamic interaction with other human systems. In contrast with the historical pattern of governance development, our Base Case and other scenarios emphasize the extent to which societies in today's developing world are struggling with all three transitions simultaneously, as well as with historically rapid human development.

Our Base Case forecast is quite positive; in it, virtuous cycles dominate global patterns for the next half century, as they have for most countries over the last 50 years. In part, this positive outlook is because of the very great momentum that progress on key dimensions of human development has now created, especially advances in education and health as underlying drivers of evolving societal progress. Advance in education is dramatic for school-age children and is steadily raising the education attainment levels of previously much less well-educated adult populations. Improvements in health and life expectancy, in spite of set-backs from HIV/AIDS, continue to spread around the world; moreover, such improvements characterize even the most long-lived populations, suggesting further potential progress globally. Income levels have climbed almost everywhere for several decades (with very significant exceptions such as the “lost decades” of the 1980s and 1990s for Latin America, the 1970–2005 period for sub-Saharan Africa, and the decade after the collapse of communism in 1989 for the transitioning countries). Other ongoing socioeconomic changes that tend to favor stronger governance include reduced fertility rates and smaller youth bulges in some of the poorest countries.

There are, however, a number of storm clouds on the forecast horizon, including aging

■ *Positive feedback loops across dimensions of governance and with human development have been strong and are likely to remain so.* ■

■ *Whereas contemporary high-income countries progressed somewhat sequentially through three governance transitions, today's developing countries are dealing with all three simultaneously.* ■

■ *The momentum of advance in global education, health, and income is so strong that it appears highly likely to also drive progress, even if erratic, in governance.* ■

■ *Even in our Global Challenges scenario, some improvements in governance and advance in human development appear likely.* ■

populations and the fiscal pressures associated with them; forthcoming peaking of global oil and gas production and the need to develop alternative, sustainable sources of energy; the nearly inevitable continued rise to global leadership of emerging and demographically large countries with less democratic histories; growing pressure on fresh water supplies; and climate change that is likely to accelerate. Therefore, we also developed and explored a Global Challenges scenario that heightened all of these pressures relative to the Base Case (although we did not include potentially devastating wild cards such as major plagues or war among great powers). The good news was that, even in our Global Challenges scenario, improved governance and advance in human development appear likely; it requires assumptions of very great negative change to actually reverse these courses.¹ The not-so-good news is that the assumptions of Global Challenges significantly inhibit progress on all of the dimensions of interest to us.

Tipping the balance toward more favorable human development futures is a central concern, and we would hope that strengthening governance might help accomplish that. In our final analytical chapter, we therefore considered the kinds of interventions that local, regional, and global actors might make to tip that balance, recognizing that the broader global normative context has shifted toward support for strengthened governance.

Extending scenario analysis via a Strengthened Governance scenario, built on aggressive but reasonable improvements in governance, we found that enhancements could *help* tip the balance of development in the Global Challenges scenario back toward that of the Base Case. In particular, on a global basis, stronger state capacity appears to have the greatest leverage to improve human development (as measured by the Human Development Index [HDI]), although for countries, like Afghanistan, that face ongoing intrastate war, improvements in security contribute more than those of capacity or inclusion. Yet, the potential contribution of incremental governance advance to human development appears not as great as we had hoped and as some literature discussed in Chapter 3 seems to suggest.

We therefore took the analysis one step further. Previous volumes in this series have explored interventions in specific policy arenas, namely poverty reduction, education advance, and health improvement. We coupled the interventions to which these analyses gave rise—interventions that were intended to be aggressive yet reasonable—with improved governance to create a Strengthened Governance and Development Policies (SG and DP) scenario. In fact, greater security, stronger capacity, and broader inclusion should generally give rise to less predatory and more development-oriented government policies, thereby making such a combination a fairly likely one.²

Table 8.1 summarizes both the patterns of advance in governance and those in human development that we might see regionally across the range of scenarios we developed and explored. The top panel of Table 8.1 shows the changes in governance, using the aggregate index we created across all three dimensions to summarize change in it (see Chapter 4 for details). That panel suggests a number of insights:

- In the Base Case, all regions are likely to see considerable advance in governance between 2010 and 2060, reflecting the momentum for advance that we have already discussed. By 2060, no developing region is likely to have reached the average level of governance experienced by high-income countries in 2010, but Latin America and the Caribbean are likely to be close to it.
- The Base Case suggests that the Middle East and North Africa, South Asia, and sub-Saharan Africa are likely to be the least well-governed regions, still considerably less well-developed in that respect than high-income countries today. Developing East Asia and Pacific may experience the most rapid advance, largely closing the gap with the better governed Europe and Central Asia region, but still lagging well behind high-income countries.
- Advances with Strengthened Governance would not only likely compensate for the inherent damage that Global Challenges would do to governance, but very considerably advance it beyond the Base Case, with developing countries in East Asia and

Pacific, Europe and Central Asia, and Latin America and the Caribbean actually reaching levels in 2060 comparable to those of high-income countries today. That is, there is great potential for advance in governance even in the face of challenges.

- The addition of development-oriented policies could further advance governance with or without Global Challenges. In fact, in the Base Case with Strengthened Governance and Development Policies, even South Asia and sub-Saharan Africa might have values on the IFs Aggregate Governance Index in 2060 that put them within reasonable range of the high-income countries today.

Should we or our descendants be lucky enough to live in a world of significantly less challenge through 2060, one more like that of the Base Case, the SG and DP scenario also offers the possibility of considerable acceleration of the ongoing and already quite rapid advance toward

a future of widespread human development. Some of the insights from the lower panel of Table 8.1 and the larger volume are:

- Even in the Base Case, all regions except sub-Saharan Africa are likely to have HDI values in 2060 that exceed those that the high-income countries had as recently as 1980. With Strengthened Governance and Development Policies on top of the Base Case, sub-Saharan Africa could also pass the levels of high-income countries in 1980, and by 2060 all other regions could attain or surpass the level of high-income countries in 2010.
- Global Challenges would set back the progress of all regions relative to the Base Case. East Asia and Pacific, sub-Saharan Africa, and especially South Asia have the most to lose, potentially a third of the progress in the Base Case.
- In the face of Global Challenges, Strengthened Governance and Development

Table 8.1 Forecasts of IFs Aggregate Governance Index and the Human Development Index in 2060 compared to history across scenarios of the volume

IFs Aggregate Governance Index: History and IFs 2060 forecast Global	History		Base Case forecast	Global Challenges forecast	Global Challenges with SG forecast	Global Challenges with SG and DP forecast	Base Case with SG and DP forecast
	1980	2010					
East Asia and Pacific	—	0.46	0.73	0.67	0.85	0.88	0.89
Europe and Central Asia	—	0.58	0.74	0.71	0.87	0.90	0.92
Latin America and the Caribbean	—	0.66	0.81	0.79	0.89	0.93	0.94
Middle East and North Africa	—	0.49	0.65	0.62	0.78	0.80	0.82
South Asia	—	0.41	0.60	0.51	0.69	0.73	0.80
Sub-Saharan Africa	—	0.49	0.61	0.59	0.72	0.76	0.78
High-income countries	—	0.86	0.96	0.92	0.98	0.99	0.99
World	—	0.54	0.70	0.65	0.79	0.83	0.89
Human Development Index: History and IFs 2060 forecast Global							
East Asia and Pacific	0.38	0.64	0.86	0.79	0.81	0.85	0.90
Europe and Central Asia	0.50	0.70	0.84	0.81	0.83	0.87	0.90
Latin America and the Caribbean	0.57	0.70	0.85	0.82	0.84	0.88	0.91
Middle East and North Africa	0.41	0.63	0.79	0.74	0.77	0.81	0.85
South Asia	0.31	0.51	0.77	0.67	0.72	0.81	0.88
Sub-Saharan Africa	0.29	0.39	0.68	0.61	0.64	0.72	0.79
High-income countries	0.75	0.87	0.98	0.95	0.96	0.98	1.00
World	0.46	0.62	0.81	0.74	0.77	0.83	0.88

Note: The IFs Aggregate Governance Index runs from 0 to 1 and equally weights subindices of security, capacity, and inclusion. It begins with a 2010 calculation due to lack of sufficient data for earlier periods. Human Development Index (HDI) values for 1980 are from UNDP and reflect the 2010 HDI revised methodology; HDI values for 2010 are IFs calculations and also use the 2010 revised methodology. SG refers to Strengthened Governance; SG and DP refers to Strengthened Governance and Development Policies. Values are population-weighted.

Source: IFs Version 6.68. IFs forecast variables are GOVINDTOTAL and HDINEW.

Policies would help all regions attain HDI levels quite comparable to or above those of the Base Case, offsetting the impact of the challenges. Strengthened Governance alone would not accomplish that, however, offsetting somewhat less than half of the losses from Global Challenges for the world as a whole.

- The world of human development in the Base Case with SG and DP is clearly the one to which we would aspire. Although sub-Saharan Africa would still be relatively struggling with an HDI value of 0.79 in 2060, the world as a whole would have closed nearly half of the gap between its average value of 0.46 in 1980 and that of the best-performing countries in that year.

The analysis of this volume is largely positive and suggests, more likely than not, continued progress in both governance and broader human development. Lest this lure us into complacency, we should also reiterate the caveats of the volume. Although we have emphasized positive momentum, we may

underestimate the extent of global challenges, including the risks from power transitions in the global system, from climate change, or from wild cards such as plagues. Moreover, tipping the balance toward improved governance and development-oriented policies will by no means be automatic, and is, in fact, unforeseen in our Base Case. It would require widespread, consistent, and immense human effort.

We would not have undertaken such a daunting task as this analysis had we not believed both that it is very important to consider the long-term future of governance globally and that it is possible to provide some insights into possibilities concerning it and the implications of alternative governance futures for broader human well-being. Our hopes are that, even when we have erred, we will have provided some guidance for those who might do it better, and that, when we have generated insights, most will hold up in the face of future work and in some fashion enhance understandings of human governance that can, in turn, help improve the long-term human condition.

1 We explored negative interventions of a magnitude that reversed progress in an Environmental Disaster scenario prepared for the 2011 Human Development Report (see Hughes and Irfan et al. 2011).

2 The model does not endogenously connect strong governance with development orientation because they are not inherently linked, but we would expect such an association to be common.

Appendix I: Countries in IFs by World Bank Developing Region and Economy Classification

East Asia and Pacific Developing Countries

Cambodia (low-income)	Micronesia, Fed. Sts. (lower-middle-income)	Solomon Islands (lower-middle-income)
China (upper-middle-income)	Mongolia (lower-middle-income)	Thailand (upper-middle-income)
Fiji (lower-middle-income)	Myanmar (low-income)	Timor-Leste (lower-middle-income)
Indonesia (lower-middle-income)	Papua New Guinea (lower-middle-income)	Tonga (lower-middle-income)
Korea, Dem. Rep. of (low-income)	Philippines (lower-middle-income)	Vanuatu (lower-middle-income)
Lao PDR (lower-middle-income)	Samoa (lower-middle-income)	Vietnam (lower-middle-income)
Malaysia (upper-middle-income)		

Europe and Central Asia Developing Countries

Albania (lower-middle-income)	Kyrgyz Republic (low-income)	Russian Federation (upper-middle-income)
Armenia (lower-middle-income)	Latvia (upper-middle-income)	Serbia (upper-middle-income)
Azerbaijan (upper-middle-income)	Lithuania (upper-middle-income)	Tajikistan (low-income)
Belarus (upper-middle-income)	Macedonia, TFYR (upper-middle-income)	Turkey (upper-middle-income)
Bosnia and Herzegovina (upper-middle-income)	Moldova, Rep. of (lower-middle-income)	Turkmenistan (upper-middle-income)
Bulgaria (upper-middle-income)	Montenegro (upper-middle-income)	Ukraine (lower-middle-income)
Georgia (lower-middle-income)	Romania (upper-middle-income)	Uzbekistan (lower-middle-income)
Kazakhstan (upper-middle-income)		

Latin America and the Caribbean Developing Countries

Argentina (upper-middle-income)	Ecuador (upper-middle-income)	Nicaragua (lower-middle-income)
Belize (lower-middle-income)	El Salvador (lower-middle-income)	Panama (upper-middle-income)
Bolivia, Plurinational State of (lower-middle-income)	Grenada (upper-middle-income)	Paraguay (lower-middle-income)
Brazil (upper-middle-income)	Guatemala (lower-middle-income)	Peru (upper-middle-income)
Chile (upper-middle-income)	Guyana (lower-middle-income)	St. Lucia (upper-middle-income)
Colombia (upper-middle-income)	Haiti (low-income)	St. Vincent and the Grenadines (upper-middle-income)
Costa Rica (upper-middle-income)	Honduras (lower-middle-income)	Suriname (upper-middle-income)
Cuba (upper-middle-income)	Jamaica (upper-middle-income)	Uruguay (upper-middle-income)
Dominican Republic (upper-middle-income)	Mexico (upper-middle-income)	Venezuela, RB (upper-middle-income)

Middle East and North Africa Developing Countries		
Algeria (upper-middle-income)	Jordan (upper-middle-income)	Palestine (lower-middle-income)
Djibouti (lower-middle-income)	Lebanon (upper-middle-income)	Syrian Arab Republic (lower-middle-income)
Egypt, Arab Rep. of (lower-middle-income)	Libya (upper-middle-income)	Tunisia (upper-middle-income)
Iran, Islamic Rep. of (upper-middle-income)	Morocco (lower-middle-income)	Yemen, Rep. of (lower-middle-income)
Iraq (lower-middle-income)		

South Asia Developing Countries		
Afghanistan (low-income)	India (lower-middle-income)	Pakistan (lower-middle-income)
Bangladesh (low-income)	Maldives (upper-middle-income)	Sri Lanka (lower-middle-income)
Bhutan (lower-middle-income)	Nepal (low-income)	

Sub-Saharan Africa Developing Countries		
Angola (upper-middle-income)	Gabon (upper-middle-income)	Niger (low-income)
Benin (low-income)	Gambia (low-income)	Nigeria (lower-middle-income)
Botswana (upper-middle-income)	Ghana (lower-middle-income)	Rwanda (low-income)
Burkina Faso (low-income)	Guinea (low-income)	São Tomé and Príncipe (lower-middle-income)
Burundi (low-income)	Guinea Bissau (low-income)	Senegal (lower-middle-income)
Cameroon (lower-middle-income)	Kenya (low-income)	Sierra Leone (low-income)
Cape Verde (lower-middle-income)	Lesotho (lower-middle-income)	Somalia (low-income)
Central African Republic (low-income)	Liberia (low-income)	South Africa (upper-middle-income)
Chad (low-income)	Madagascar (low-income)	Sudan (lower-middle-income)
Comoros (low-income)	Malawi (low-income)	Swaziland (lower-middle-income)
Congo, Dem. Rep. of (low-income)	Mali (low-income)	Tanzania, United Rep. of (low-income)
Congo, Rep. of (lower-middle-income)	Mauritania (low-income)	Togo (low-income)
Côte d'Ivoire (lower-middle-income)	Mauritius (upper-middle-income)	Uganda (low-income)
Eritrea (low-income)	Mozambique (low-income)	Zambia (lower-middle-income)
Ethiopia (low-income)	Namibia (upper-middle-income)	Zimbabwe (low-income)

High Income Countries				
Australia	Czech Republic	Iceland	New Zealand	Slovenia
Austria	Denmark	Ireland	Norway	Spain
Bahamas	Equatorial Guinea	Israel	Oman	Sweden
Bahrain	Estonia	Italy	Poland	Switzerland
Barbados	Finland	Japan	Portugal	Taiwan
Belgium	France	Korea, Rep. of	Puerto Rico	Trinidad
Brunei Darussalam	Germany	Kuwait	Qatar	United Arab Emirates
Canada	Greece	Luxembourg	Saudi Arabia	United Kingdom
Croatia	Hong Kong SAR	Malta	Singapore	United States
Cyprus	Hungary	Netherlands	Slovak Republic	

Source: World Bank classification as of July 2012 of countries included in IFs. Note that IFs treats two countries differently than the World Bank: (1) the World Bank refers to West Bank and Gaza, whereas IFs uses the country name Palestine; (2) IFs includes Taiwan and the World Bank does not. The full World Bank list is available at <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>.

Appendix II: Major Databases and Governance Measures Used in *Strengthening Governance Globally*

Name of database or measure	Auspices or organizational home	URL
Cingranelli-Richards (CIRI) Human Rights Dataset	Cingranelli-Richards Human Rights Data Project Researchers at Binghamton University (SUNY), University of Connecticut, and University of Georgia	http://www.humanrightsdata.org/
Civil liberties scale	Freedom House	http://freedomhouse.org
Corruption Perceptions Index (CPI)	Transparency International	http://www.transparency.org/cpi2011/results
Country Indicators for Foreign Policy (CIFP) (measure of state fragility)	Norman Paterson School of International Affairs Carleton University	http://www4.carleton.ca/cifp/app/ffs_data_methodology.pjp
Failed States Index	Fund for Peace	http://ffp.statesindex.org/
Gleditsch and Ward List of Independent States	Researchers at University of Essex and Duke University	http://privatewww.essex.ac.uk/~ksg/statelist.html/statelist.html
Human Development Index (HDI)	United Nations Development Programme	http://hdrstats.undp.org/en/indicators/103106.html
Index of State Weakness in the Developing World	Brookings Institution	http://www.brookings.edu/research/reports/2008/02/weak-states-index
International Human Development Indicators	United Nations Development Programme	http://hdr.undp.org/en/data/profiles/ldcs
Intra-State War Data set	Correlates of War Project	http://www.correlatesofwar.org
Major Episodes of Political Violence (MEPV) dataset	Armed Conflict and Intervention project Center for Systemic Peace jointly with George Mason University Center for Global Policy	http://www.systemicpeace.org/warlist.htm
Minorities at Risk (MAR) Data	Center for International Development and Conflict Management University of Maryland	http://www.cidcm.umd.edu/mar/data.asp
Peace and Conflict Instability Ledger	Center for International Development and Conflict Management University of Maryland	http://www.cidcm.umd.edu/pc/executive_summary/exec_sum_2012.pdf
Physical Integrity Rights Dataset	Cingranelli-Richards Human Rights Data Project Researchers at Binghamton University (SUNY), University of Connecticut, and University of Georgia	http://www.humanrightsdata.org/
Political Instability Index	Economist Intelligence Unit	http://www.economist.com/node/13349331

Name of database or measure	Auspices or organizational home	URL
Political rights scale	Freedom House	http://freedomhouse.org
Political Terror Scale	Researchers at University of North Carolina at Asheville and Arizona State University, Tempe	http://politicalterrorsscale.org
Polity autocracy scale	Polity IV Project	http://www.systemicpeace.org/polity/polity4.htm
Polity democracy scale	Center for Systemic Peace	http://www.systemicpeace.org/inscr/inscr.htm
Polity Score (Autocracy/ Democracy scale)		
State Failure Problem Set	Political Instability Task Force (PITF) PITF website hosted by Center for Global Policy George Mason University	http://www.systemicpeace.org/inscr/inscr.htm
State Fragility Index	Center for Systemic Peace	http://www.systemicpeace.org/inscr/SFIMatrix2012c.pdf
State Membership in the International System	Pardee Center for International Futures University of Denver	http://pardee.du.edu/diplometrics
State System Membership Data set (v 2011)	Correlates of War Project	http://correlatesofwar.org
UCDP One-sided Violence Dataset	Uppsala Conflict Data Program Uppsala University	http://pcr.uu.se/research/ucdp/datasets/ucdp_one-sided_violence_dataset/
UCDP/PRIO Armed Conflict Dataset	Uppsala Conflict Data Program and Centre for the Study of Civil War Uppsala University (Sweden) and Peace Research Institute Oslo	http://www.prio.no/Data/Armed-Conflict/UCDP-PRIO/
UNODC Homicide Statistics	United Nations Office on Drugs and Crime	http://www.unodc.org/unodc/en/data-and-analysis/index.html?ref=menuaside
Women's Political Rights Dataset	Cingranelli-Richards Human Rights Data Project Researchers at Binghamton University (SUNY), University of Connecticut, and University of Georgia	http://www.humanrightsdata.org/
World Development Indicators (WDI)	World Bank	http://data.worldbank.org/data-catalog/world-development-indicators
Worldwide Governance Indicators (WGI)	World Bank	http://data.worldbank.org/data-catalog/worldwide-governance-indicators

Bibliography

- Ablo, Emmanuel, and Ritva Reinikka. 1998. "Do Budgets Really Matter? Evidence from Public Spending on Education and Health in Uganda." WB Policy Research Working Paper no. 1926. World Bank, Washington, DC.
- Acemoglu, Daron, and James A. Robinson. 2006. "Economic Backwardness in Political Perspective." *American Political Science Review* 100(1): 115–131. doi: 10.1017/S0003055406062046.
- . 2012. *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*. New York: Random House.
- Ahluwalia, Montek S., Nicholas G. Carter, and Hollis B. Chenery. 1979. "Growth and Poverty in Developing Countries." *Journal of Development Economics* 6(3): 299–341.
- Aidt, Toke S. 2009. "Corruption, Institutions, and Economic Development." *Oxford Review of Economic Policy* 25(2): 27–291. doi: 10.1093/oxrep/grp012.
- Albaugh, Ericka A. 2011. "An Autocrat's Toolkit: Adaptation and Manipulation in 'Democratic' Cameroon." *Democratization* 18(2): 388–414.
- Alesina, Alberto, Sule Özler, Nouriel Roubini, and Phillip Swagel. 1996. "Political Instability and Economic Growth." *Journal of Economic Growth* 1(2): 189–211. doi: 10.1007/BF00138862.
- Armstrong, J. Scott, ed. 2001. *Principles of Forecasting: A Handbook for Researchers and Practitioners*. Boston: Kluwer Academic Publishers.
- Arnson, Cynthia J., and I. William Zartman, eds. 2005. *Rethinking the Economics of War: The Intersection of Need, Creed, and Greed*. Washington, DC and Baltimore: The Woodrow Wilson Center Press and Johns Hopkins University Press.
- Aron, Janine. 2000. "Growth and Institutions: A Review of the Evidence." *World Bank Research Observer* 15(1):99–135. doi: 10.1093/wbro/15.1.99.
- Asal, Victor, and Amy Pate. 2005. "The Decline of Ethnic Political Discrimination, 1950–2003." In Monty Marshall and Ted Gurr, eds., *Peace and Conflict 2005: A Global Survey of Armed Conflicts, Self-Determination Movements, and Democracy*. College Park: University of Maryland Center for International Development and Conflict Management, 28–38.
- Baldacci, Emanuele, Benedict Clements, Sanjeev Gupta, and Qiang Cui. 2008. "Social Spending, Human Capital, and Growth in Developing Countries." *World Development* 36(8): 1317–1341. doi: 10.1016/j.worlddev.2007.08.003.
- Banerjee, Abhijit V., and Esther Duflo. 2008. "What is Middle Class about the Middle Classes around the World?" *Journal of Economic Perspectives* 22(2): 3–28. doi: 10.1257/jep.22.2.3.
- Barnett, Michael, and Christoph Zürcher. 2009. "The Peacebuilder's Contract: How External Intervention Reinforces Weak Statehood." In Roland Paris and Timothy D. Sisk, eds., *The Dilemmas of Statebuilding: Confronting the Contradictions of Post-War Peace Operations*. London: Routledge, 23–52.
- Barro, Robert J. 1996. "Democracy and Growth." *Journal of Economic Growth* 1(1): 1–27. doi: 10.1007/BF00163340.
- Barro, Robert J., and Jong-Wha Lee. 2001. "International Data on Educational Attainment: Updates and Implications." *Oxford Economic Papers* 53(3): 541–563.
- . 2010. "A New Data Set of Educational Attainment in the World, 1950–2010." NBER Working Paper no. 15902. National Bureau of Economic Research, Cambridge, MA.
- Bates, Robert H. 2008. *When Things Fell Apart: State Failure in Late-Century Africa*. Cambridge Studies on Comparative Politics. New York: Cambridge University Press.
- Bermeo, Nancy. 2003. "What the Literature Says—or Doesn't Say—About Post-war Democratization." *Global Governance* 9(2): 159–177.
- Bird, Richard M., and Eric M. Zolt. 2005. "The Limited Role of the Personal Income Tax in Developing Countries." *Journal of Asian Economics* 16(6): 928–946. doi: 10.1016/j.asieco.2005.09.001.

- Blaydes, Lisa, and Mark Andreas Kayser. 2011. "Counting Calories: Democracy and Distribution in the Developing World." *International Studies Quarterly* 55(4): 887–909. doi: 10.1111/j.1468-2478.2011.00692.x.
- Blum, William. 2000. *Rogue State: A Guide to the World's Only Superpower*. Monroe, ME: Common Courage Press.
- Bogaards, Matthijs. 2009. "How to Classify Hybrid Regimes? Defective Democracy and Electoral Authoritarianism." *Democratization* 16(2): 399–423.
- Boix, Carles, and Susan C. Stokes. 2003. "Endogenous Democratization." *World Politics* 55(4): 517–549. doi: 10.1353/wp.2003.0019.
- Boutros-Ghali, Boutros. 1992. "An Agenda for Peace: Preventive Diplomacy, Peacemaking and Peace-keeping." Report of the Secretary-General of the United Nations. United Nations: New York.
- . 1996. *An Agenda for Democratization*. New York: United Nations.
- Bozzoli, Carlos, Tilman Brück, and Olaf J. de Groot. 2010. "The Global Economic Costs of Conflict." Global Economic Costs of Conflict Project Paper no. 3. German Institute of Economic Research (DIW), Berlin, Germany.
- Brandt, Patrick T., John R. Freeman, and Philip A. Schrod. 2011. "Real Time, Time Series Forecasting of Inter- and Intra-State Political Conflict." *Conflict Management and Peace Science* 28(1): 41–64. doi: 10.1177/0738894210388125.
- Bratton, Michael, and Eric Chang. 2006. "State Building and Democratization in Sub-Saharan Africa: Forwards, Backwards, or Together?" *Comparative Political Studies* 39(9): 1059–1083. doi: 10.1177/0010414005280853.
- Braudel, Fernand. 1984. *The Perspective of the World*. Vol. 3 of *Civilization and Capitalism, 15th–18th Century*. Trans. Siân Reynolds. New York: Harper and Row.
- Bremmer, Ian. 2006. *The J-Curve: A New Way to Understand Why Nations Rise and Fall*. New York: Simon and Schuster.
- British Petroleum. 2012. *BP Statistical Review of World Energy June 2012*. London: British Petroleum.
- Broms, Rasmus. 2011. "Taxation and Government: The Size, the Shape, or Just Europe 300 Years Ago?" Quality of Government Institute Working Paper Series 2011:16. University of Gothenburg, Gothenburg, Sweden.
- Brown, Lester. 1972. *World Without Borders*. New York: Vintage Books.
- Brysk, Alison. 2009. *Global Good Samaritans: Human Rights as Foreign Policy*. New York: Oxford University Press.
- Brzezinski, Zbigniew. 2012. *Strategic Vision: America and the Crisis of Global Power*. New York: Basic Books.
- Bueno de Mesquita, Bruce. 2002. *Predicting Politics*. Columbus: Ohio State University Press.
- Buhaug, Halvard. 2010. "Climate Not to Blame for African Civil Wars." *Proceedings of the National Academy of Sciences* 107(38): 16477–16482. doi: 10.1073/pnas.1005739107.
- Buhaug, Halvard, Nils Petter Gleditsch, and Ole Magnus Theisen. 2008. "Implications of Climate Change for Armed Conflict." Paper delivered at the World Bank Workshop on the Social Dimensions of Climate Change, Washington, DC, March 5–6.
- Burke, Marshall B., Edward Miguel, Shanker Satyanath, John A. Dykema, and David B. Lobell. 2009. "Warming Increases the Risk of Civil War in Africa." *Proceedings of the National Academy of Sciences* 106(49): 20670–20674. doi: 10.1073/pnas.0907998106.
- Busby, Joshua W., Todd G. Smith, Kaiba L. White, and Shawn M. Strange. 2010. "Locating Climate Insecurity: Where are the Most Vulnerable Places in Africa?" Climate Change and African Political Stability Working Paper. The Robert S. Strauss Center for International Security and Law, Austin, TX.
- Campbell, David F. J. 2008. "The Basic Concept for the Democracy Ranking of the Quality of Democracy." Vienna: Democracy Ranking.
- Caprioli, Mary. 2003. "Gender Equality and Civil Wars." Conflict Prevention and Reconstruction Unit Working Paper no. 8. World Bank, Washington, DC.
- Carment, David, Souleima El-Achkar, Stewart Prest, and Yiagadeesen Samy. 2006. "The 2006 Country Indicators for Foreign Policy: Opportunities and Challenges for Canada." *Canadian Foreign Policy* 13(1): 1–35.
- Carment, David, Stewart Prest, and Yiagadeesen Samy. 2010. *Security, Development and the Fragile State: Bridging the Gap Between Theory and Policy*. Hoboken, NJ: Routledge.
- Carment, David, and Yiagadeesen Samy. 2012. "Assessing State Fragility: A Country Indicators for Foreign Policy Report." Normal Paterson School of International Affairs, Carleton University, Ottawa, Canada.
- Carnegie Commission on Preventing Deadly Conflict. 1998. *Preventing Deadly Conflict: Final Report*. New York: Carnegie Corporation.
- Carothers, Thomas. 2002. "The End of the Transition Paradigm." *Journal of Democracy* 13(1): 5–21. doi: 10.1353/jod.2002.0003.
- . 2009. "Democracy Assistance: Political vs. Developmental." *Journal of Democracy* 20(1): 5–19.
- Carothers, Thomas, and Richard Youngs. 2011. "Looking for Help: Will Rising Democracies Become International Democracy Supporters?" The Carnegie Papers: Democracy and Rule of Law. Carnegie Endowment for International Peace, Washington, DC.

- Chang, Ha-Joon. 2007. *Bad Samaritans: The Myth of Free Trade and the Secret History of Capitalism*. New York: Bloomsbury Press.
- Chesterman, Simon, Michael Ignatieff, and Ramesh Thakur. 2004. "Making States Work: From State Failure to State-Building." International Peace Institute Policy Paper. International Peace Academy and United Nations University, New York and Tokyo.
- Choi, Kwang, and Seung-Soo Han. 1992. "Tax Policy and Tax Reforms." In Kwang Choi, Dong-Kun Kim, Taewon Kwack, and Kun-Young Yun, eds., *Public Finance in Korea*. Seoul: Seoul National University Press, 125–159.
- Chu, Ke-young, Hamid Davoodi, and Sanjeev Gupta. 2004. "Income Distribution and Tax and Government Social-Spending Policies in Developing Countries." In Giovanni Andrea Cornia, ed., *Inequality, Growth and Poverty in an Era of Liberalization and Globalization*. New York: Oxford University Press, 249–270.
- Cilliers, Jakkie, Barry Hughes, and Jonathan Moyer. 2011. *African Futures 2050: The Next 40 Years*. Pretoria, South Africa, and Denver, CO: Institute for Security Studies and Frederick S. Pardee Center for International Futures.
- Cincotta, Richard P. 2008/2009. "Half a Chance: Youth Bulges and Transitions to Liberal Democracy." *Environmental Change and Security Program Report* (13): 10–18.
- . 2011. "Tunisia's Shot at Democracy: What Demographics and Recent History Tell Us." *NewSecurityBeat*. January 25, 2011. Blog available at <http://demographymatters.blogspot.com/2011/01/tunisia-shot-at-democracy-what.html>.
- Cincotta, Richard P., and John Does. 2011. "The Age-Structural Maturity Thesis: The Impact of the Youth Bulge on the Advent and Stability of Liberal Democracy." In Jack A. Goldstone, Eric Kaufmann, and Monica Duffy Toft, eds., *Political Demography: How Population Changes Are Reshaping Security and National Politics*. Basingstoke, UK and New York: Palgrave-MacMillan, 98–116.
- Cincotta, Richard P., Robert Engelman, and Daniele Anastasion. 2003. *The Security Demographic: Population and Civil Conflict After the Cold War*. Washington, DC: Population Action International.
- Coates, Joseph. 2004. "Coming to Grips with the Future." *Research-Technology Management* 47(5): 23–32.
- Collier, Paul. 1999. "On the Economic Consequences of Civil War." *Oxford Economic Papers* 51(1): 168–183. doi: 10.1093/oep/51.1.168.
- . 2007. *The Bottom Billion: Why the Poorest Countries are Failing and What Can be Done About It*. New York: Oxford University Press.
- Collier, Paul, Lisa Chauvet, and Håvard Hegre. 2009. "The Security Challenge in Conflict-Prone Countries." In Bjorn Lomborg, ed., *Global Crisis, Global Solutions*. Cambridge UK: Cambridge University Press, 58–103.
- Collier, Paul, Lani Elliott, Håvard Hegre, Anke Hoeffler, Marta Reynal-Querol, and Nicholas Sambanis. 2003. *Breaking the Conflict Trap: Civil War and Development Policy*. Washington, DC: World Bank and Oxford University Press.
- Commission on Global Governance (CGG). 1995. *Our Global Neighborhood: Report of the Commission on Global Governance*. Oxford: Oxford University Press.
- Commission on Growth and Development. 2008. *The Growth Report: Strategies for Sustained Growth and Inclusive Development*. Washington, DC: The World Bank.
- Coppedge, Michael. 1999. "Thickening Thin Concepts and Theories: Combining Large N and Small in Comparative Politics." *Comparative Politics* 31(4): 465–476. doi: 10.2307/422240.
- . 2007. "Thickening Thin Concepts: Issues in Large-N Data Generation." In Gerardo Munck, ed., *Regimes and Democracy in Latin America: Theories and Methods*. New York: Oxford University Press, 105–122.
- . 2012. *Democratization and Research Methods: Strategies for Social Inquiry*. New York: Cambridge University Press.
- Cortright, David, and George Lopez, eds. 2002. *Smart Sanctions: Targeting Economic Statecraft*. Lanham, MD: Rowman & Littlefield.
- Cowen, Tyler. 2011. *The Great Stagnation: How America Ate All the Low-Hanging Fruit of Modern History, Got Sick, and Will (Eventually) Feel Better*. New York: Dutton.
- Crafts, Nicholas. 2002. "The Solow Productivity Paradox in Historical Perspective." CEPR Discussion Paper no. 3142. Centre for Economic Policy Research, London.
- Curry, Judith A., and Peter J. Webster. 2011. "Climate Science and the Uncertainty Monster." *Bulletin of the American Meteorological Society* 92(12): 1167–1182. doi: 10.1175/2011BAMS3139.1.
- Dahl, Robert A. 1971. *Polyarchy: Participation and Opposition*. New Haven, CT: Yale University Press.
- de Soto, Hernando. 2000. *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic Books.
- Devarajan, Shantayanan. 2008. "Two Comments on 'Governance Indicators: Where are We, Where Should We be Going?' by Daniel Kaufmann and Aart Kraay," *The World Bank Research Observer* 23(1): 31–36.
- Diamond, Ian, Margaret Newby, and Sarah Varle. 1999. "Female Education and Fertility: Examining the Links." In Caroline H. Bledsoe, John B. Casterline, Jennifer A. Johnson-Kuhn, and John

- G. Haaga, eds., *Critical Perspectives on School and Fertility in the Developing World*. Washington, DC: National Research Council, 23–48.
- Diamond, Larry. 1992. "Economic Development and Democracy Reconsidered." *American Behavioral Scientist* 35(4/5): 450–499.
- . 2010. "Liberation Technology." *Journal of Democracy* 21(3): 69–83.
- Diamond, Larry, and Leonardo Morlino. 2005. "Introduction." In Larry Diamond and Leonardo Morlino, eds., *Assessing the Quality of Democracy*. Baltimore: Johns Hopkins University Press, ix–xliii.
- Dickson, Janet R., Barry B. Hughes, and Mohammad T. Irfan. 2010. *Advancing Global Education*. Vol. 2 of the Patterns of Potential Human Progress series. Boulder, CO, and New Delhi, India: Paradigm Publishers and Oxford University Press. <http://pardee.du.edu/patterns-potential-human-progress>.
- Di John, Jonathan. 2006. "The Political Economy of Taxation and Tax Reform in Developing Countries." World Institute for Development Economics Research Paper no. 2006/74. United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki, Finland.
- Dobbins, James, Seth G. Jones, Keith Crane, Andrew Rathmell, Brett Steele, Richard Teltschik, and Anga Timilsina. 2005. *The UN's Role in Nation-Building: From the Congo to Iraq*. Santa Monica, CA: Rand Corporation.
- Dollar, David, Raymond Fisman, and Roberta Gatti. 2001. "Are Women Really the 'Fairer' Sex? Corruption and Women in Government." *Journal of Economic Behavior & Organization* 46(4): 423–429. doi: 10.1016/S0167-2681(01)00169-X.
- Doorenspleet, Renske. 2000. "Reassessing the Three Waves of Democratization." *World Politics* 52(3): 384–406.
- Doucouliaqos, Hristos, and Mehmet Ali Ulubaşoğlu. 2008. "Democracy and Economic Growth: A Meta-Analysis." *American Journal of Political Science* 52(1): 61–83. doi: 10.1111/j.1540-5907.2007.00299.x.
- Doyle, Michael W. 1983. "Kant, Liberal Legacies, and Foreign Affairs." *Philosophy and Public Affairs* 12(3): 205–235.
- Doyle, Michael W., and Nicholas Sambanis. 2006. *Making War and Building Peace: United Nations Peace Operations*. Princeton, NJ: Princeton University Press.
- Dupuy, Kendra, and Helga Malmin Binningsbø. 2008. "Buying Peace with Diamonds? Power-Sharing Agreements in Sierra Leone." CSCW Policy Brief no. 7. Center for the Study of Civil War, Peace Research Institute Oslo, Oslo, Norway.
- Duval, Romain, and Christine de la Maisonneuve. 2010. "Long-run Scenarios for the World Economy." *Journal of Policy Modeling* 32: 64–80.
- Dyer, Gwynne. 2010. *Climate Wars: The Fight for Survival as the World Overheats*. Oxford: Oneworld.
- Easton, David. 1965. *A Framework for Political Analysis*. Englewood Cliffs, NJ: Prentice-Hall.
- Enoh, Ephrem, Catherine Enoch, and Edmé Koffi. 2000. "Fiscal Reform and Structural Adjustment in Cote d'Ivoire." In Perry Guillermo, John Whalley, and Gary McMahon, eds., *Fiscal Reform and Structural Change in Developing Countries*. New York: St. Martin's Press in association with International Development Research Centre, Canada, 113–141.
- Esty, Daniel C., Jack A. Goldstone, Ted Robert Gurr, Barbara Harff, Marc Levy, Geoffrey D. Dabelko, Pamela Surko, and Alan N. Unger. 1998. "State Failure Task Force Report: Phase II Findings." Study Commissioned by the Central Intelligence Agency and George Mason University School of Public Policy. Political Instability Task Force, Arlington, VA.
- Esty, Daniel C., Jack A. Goldstone, Ted Robert Gurr, Pamela T. Surko, and Alan N. Unger. 2005. "Working Papers: State Failure Task Force Report." Science Applications International Corporation, McLean, VA.
- Evans, Peter. 1995. *Embedded Autonomy: States and Industrial Transformation*. Princeton, NJ: Princeton University Press.
- Farrell, Alexander E., and Adam R. Brandt. 2006. "Risks of the Oil Transition." *Environmental Research Letters* 1(1): 6 pages (unpaginated). doi: 10.1088/1748-9326/1/1/014004.
- Fischer, Stanley. 2003. "Globalization and Its Challenges." *American Economic Review* 93(2): 1–30.
- Fortna, Virginia Page. 2004. "Does Peacekeeping Keep Peace? International Intervention and the Duration of Peace after Civil War." *International Studies Quarterly* 48(2): 269–292. doi: 10.1111/j.0020-8833.2004.00301.x.
- Fouré, Jean, Agnès Bénassy-Quéré and Lionel Fontagné. 2012. "The Great Shift: Macroeconomic Projections for the World Economy at the 2050 Horizon." Working Paper 2012-3. Centre D'Études Prospectives et D'Informations Internationales, Paris.
- Frank, Andre Gunder. 1966. "The Development of Underdevelopment." *Monthly Review* 18: 17–31.
- Franke, Sophia Gollwitzer, and Marc Quintyn. 2012. "Institutional Transformations, Polity and Economic Outcomes: Testing the North-Wallis-Weingast Doorsteps Framework." IMF Working Paper WP/12/87. International Monetary Fund, Washington, DC.
- Freedom House, Inc. 1976–2013. *Freedom in the World*. Washington, DC: Freedom House, Inc.

- Friedman, Will, Michael Kremer, Edward Miguel, and Rebecca Thornton. 2011. "Education as Liberation?" NBER Working Paper no. 16939. National Bureau of Economic Research, Cambridge, MA.
- Fukuda-Parr, Sakiko. 2003. "The Human Development Paradigm: Operationalizing Sen's Ideas on Capabilities." *Feminist Economics* 9(2-3): 301-317. doi: 10.1080/1354570022000077980.
- Fukuyama, Francis. 1992. *The End of History and the Last Man*. New York: Free Press.
- . 2011. *The Origins of Political Order: From Prehuman Times to the French Revolution*. New York: Farrar, Straus, and Giroux.
- Fund for Peace (FFP). 2009. "The Failed States Index 2009." Fund for Peace, Washington, DC. <http://ffp.statesindex.org/>.
- . 2011a. "The Failed States Index 2010." Publication CR-10-99-FS. Fund for Peace, Washington, DC.
- . 2011b. "The Failed States Index 2011." Publication CR-11-14-FS. Fund for Peace, Washington, DC.
- . 2012. "The Failed States Index 2012." Publication CFSIR1210. Fund for Peace, Washington, DC.
- Galtung, Johan. 1971. "A Structural Theory of Imperialism." *Journal of Peace Research* 8(2): 81-117.
- Gamba, Virginia. 2006. "Post-Agreement Demobilization, Disarmament, and Reintegration: Toward a New Approach." In John Darby ed., *Violence and Reconstruction*. Notre Dame, IN: Notre Dame University Press, 53-76.
- Garrett, Laurie. 2007. "The Challenge of Global Health." *Foreign Affairs* 86(1): 14-38.
- Gartzke, Erik. 2007. "The Capitalist Peace." *American Journal of Political Science* 51(1): 166-191.
- Gates, Scott, Håvard Hegre, Håvard Nygård, and Håvard Strand. 2010. "Consequences of Civil Conflict." World Development Report 2011 Input Paper. World Bank, Washington, DC.
- Gauthier, Bernard, and Waly Wane. 2009. "Leakage of Public Resources in the Health Sector: An Empirical Investigation of Chad." *Journal of African Economies* 18(1): 52-83. doi: 10.1093/jae/ejn011.
- Geddes, Barbara. 1999. "What Do We Know About Democratization After Twenty Years?" *Annual Review of Political Science* 2: 115-144. doi: 10.1146/annurev.polisci.2.1.115.
- Gemmell, Norman, and Oliver Morrissey. 2005. "Distribution and Poverty Impacts of Tax Structure Reform in Developing Countries: How Little We Know." *Development Policy Review* 23(2): 131-44. doi: 10.1111/j.1467-7679.2005.00279.x.
- Gerschenkron, Alexander. 1962. *Economic Backwardness in Historical Perspective: A Book of Essays*. Cambridge, MA: Belknap Press of Harvard University Press.
- . 1970. *Europe in the Russian Mirror: Four Lectures in Economic History*. New York: Cambridge University Press.
- Gleditsch, Kristian S., and Michael D. Ward. 1997. "Double Take: A Re-Examination of Democracy and Autocracy in Modern Polities." *Journal of Conflict Resolution* 41(3): 361-383. doi: 0.1177/0022002797041003002.
- . 1999. "A Revised List of Independent States Since the Congress of Vienna." *International Interactions* 25(4): 393-413. doi: 10.1080/03050629908434958.
- Gleck, Peter H. 1993. "Water and Conflict: Fresh Water Resources and International Security." *International Security* 18(1): 79-112.
- Goldstein, Joshua S. 2011. *Winning the War on War: The Decline of Armed Conflict Worldwide*. New York: Dutton.
- Goldstone, Jack A., Robert H. Bates, David L. Epstein, Ted Robert Gurr, Michael B. Lustik, Monty G. Marshall, Jay Ulfelder, and Mark Woodward. 2010. "A Global Model for Forecasting Political Instability." *American Journal of Political Science* 54(1): 190-208. doi: 10.1111/j.1540-5907.2009.00426.x.
- Goldstone, Jack A., Eric P. Kaufmann, and Monica Duffy Toft. 2012. *Political Demography: How Population Changes are Reshaping International Security and National Politics*. Boulder, CO: Paradigm Publishers.
- Good, Kenneth. 2008. *Diamonds, Dispossession and Democracy in Botswana*. Auckland Park, South Africa: James Currey.
- Griffiths, Ryan, and Charles Robert Butcher. 2012. "Mapping the International System(s) of the 19th and 20th Centuries: A Contribution to Existing Datasets on Sovereign States." Unpublished paper. doi: org/10.2139/ssrn.2028821.
- Gupta, Arun, and Jon E. Rohde. 2004. "Infant and Young Child Undernutrition: Where Lie the Solutions?" *Economic and Political Weekly* 39(49): 5213-5216.
- Gutierrez, Karen, and Jessica Piombo, eds. 2007. *Interim Governments: Institutional Bridges to Peace and Democracy?* Washington, DC: United States Institute of Peace.
- Haider, Huma, and Sumedh Rao. 2010. "Political and Social Analysis for Development Policy and Practice: An Overview of Five Approaches." Governance and Social Development Resource Centre, University of Birmingham, Birmingham, UK.
- Halperin, Morton, Joseph T. Siegle, and Michael M Weinstein. 2005. *The Democracy Advantage: How Democracies Promote Prosperity and Peace*. New York: Routledge.

- Hamilton, James D. 2011. "Historical Oil Shocks." NBER Working Paper no. w16790. National Bureau of Economic Research, Cambridge, MA.
- Harris, Peter, and Ben Reilly, eds. 1998. *Democracy and Deep-Rooted Conflict: Options for Negotiators*. Stockholm: International Institute for Democracy and Electoral Assistance.
- Harttgen, Kenneth, and Stephan Klasen. 2010. "Fragility and MDG Progress: How Useful is the Fragility Concept?" EUI Working Paper no. 2010/20. Robert Schuman Centre for Advanced Studies, European University Institute, Florence, Italy.
- Harvey, David. 2005. *A Brief History of Neoliberalism*. New York: Oxford University Press.
- Hashemi, Nader. 2009. *Islam, Secularism, and Liberal Democracy: Toward a Democratic Theory for Muslim Societies*. New York: Oxford University Press.
- Haufler, Virginia. 2010. "Disclosure as Governance: The Extractive Industries Transparency Initiative and Resource Management in the Developing World." *Global Environmental Politics* 10(3): 53–73. doi: 10.1162/GLEP_a_00014.
- Hausmann, Richardo, Andres Velasco, and Dani Rodrik. 2008. "Growth Diagnostics." In Narcis Serra and Joseph E. Stiglitz, eds, *Washington Consensus Reconsidered: Towards a New Global Governance*. Oxford: Oxford University Press, 356–366.
- Hegre, Håvard, Tanja Ellingsen, Scott Gates, and Nils Petter Gleditsch. 2001. "Toward a Democratic Civil Peace? Democracy, Political Change, and Civil War, 1816–1992." *American Political Science Review* 95(1): 33–48.
- Hegre, Håvard, Joakim Karlsen, Håvard Moksleiv Nygård, Håvard Strand, and Henrik Urdal. 2013. "Predicting Armed Conflict, 2010–2050." *International Studies Quarterly* 57(2): 250–270.
- Held, David, and Anthony McGrew. 2007. *Globalization/Anti-Globalization: Beyond the Great Divide*. Cambridge, UK: Polity Press.
- Heller, Patrick. 2000. "Degrees of Democracy: Some Comparative Lessons from India." *World Politics* 52(4): 484–519.
- Hewitt, J. Joseph, Jonathan Wilkenfeld, and Ted Robert Gurr. 2010. *Peace and Conflict 2010*. Boulder, CO: Paradigm Publishers.
- . 2012a. *Peace and Conflict 2012*. Boulder, CO: Paradigm Publishers.
- . 2012b. "Peace and Conflict 2012: Executive Summary." University of Maryland, College Park.
- Hicks, Janine. 2011. "Strengthening Women's Participation in Governance: Lessons and Strategies." *Community Development Journal* 46(suppl 1): i36–i50. doi:10.1093/cdj/bsq048.
- Hillebrand, Evan E. 2008. "The Global Distribution of Income in 2050." *World Development* 36(5): 727–740. doi: 10.1016/j.worlddev.2007.05.013.
- . 2010. "Deglobalization Scenarios: Who Wins? Who Loses?" *Global Economy Journal* 10(2): 1–19. doi: 10.2202/1524-5861.
- Hirsch, Robert L. 2008. "Mitigation of Maximum World Oil Production: Shortage Scenarios." *Energy Policy* 36(2): 881–889. doi: 10.1016/j.enpol.2007.11.009.
- Hoeffler, Anke, and Marta Reynal-Querol. 2003. "Measuring the Costs of Conflict." Working paper. conflictrecovery.org. http://www.conflictrecovery.org/bin/2003_Hoeffler_Reynal-Measuring_the_Costs_of_Conflict.pdf.
- Holsti, Kalevi J. 1996. *The State, War, and the State of War*. Cambridge, UK: Cambridge University Press.
- Howard, Philip N., and Muzammil M. Hussain. 2011. "The Role of Digital Media." *Journal of Democracy* 22(3): 35–48. doi: 10.1353/jod.2011.0041.
- Hubbert, M. King. 1949. "Energy from Fossil Fuels." *Science* 109(2823): 103–109.
- Hudson, Valerie M., Mary Caprioli, Bonnie Ballif-Spanvill, Rose McDermott, and Chad F. Emmett. 2008/2009. "The Heart of the Matter: The Security of Women and the Security of States." *International Security* 33(3): 7–45. doi: 10.1162/isec.2009.33.3.7.
- Hughes, Barry B. 2001. "Global Social Transformation: The Sweet Spot, the Steady Slog, and the Systemic Shift." *Economic Development and Cultural Change* 49(2): 423–458. doi: 10.1086/452510.
- . 2004a. "The Base Case of International Futures (IFs): Comparison with Other Forecasts." Frederick S. Pardee Center for International Futures Working Paper. University of Denver, Denver, CO. <http://pardee.du.edu/research-and-projects>.
- . 2004b. "Forecasting the Human Development Index." Frederick S. Pardee Center for International Futures Working Paper. University of Denver, Denver, CO. <http://pardee.du.edu/research-and-projects>.
- . 2005. "Forecasting Productivity and Growth with International Futures (IFs), Part 1: The Productivity Formulation." Frederick S. Pardee Center for International Futures Working Paper, University of Denver, Denver, CO. <http://pardee.du.edu/research-and-projects>.
- Hughes, Barry B., and Evan E. Hillebrand. 2006. *Exploring and Shaping International Futures*. Boulder, CO: Paradigm Publishers.
- Hughes, Barry B., and Anwar Hossain. 2003. "Long-Term Socio-Economic Modeling with Universal, Globally-Integrated Social Accounting Matrices (SAMs) in a General Equilibrium Model

- Structure." Frederick S. Pardee Center for International Futures Working Paper, University of Denver, Denver, CO. <http://pardee.du.edu/research-and-projects>.
- Hughes, Barry B., Mohammad T. Irfan, Haider Khan, Krishna Kumar, Dale S. Rothman, and José R. Solórzano. 2009. *Reducing Global Poverty*. Vol. 1 of the Patterns of Potential Human Progress series. Boulder, CO, and New Delhi, India: Paradigm Publishers and Oxford University Press. <http://pardee.du.edu/patterns-potential-human-progress>.
- Hughes, Barry B., Mohammad T. Irfan, Jonathan D. Moyer, Dale S. Rothman, and José R. Solórzano. 2011. "Forecasting the Impacts of Environmental Constraints on Human Development." Human Development Research Paper 2011/08. United Nations Development Programme, New York. http://hdr.undp.org/en/reports/global/hdr2011/papers/HDRP_2011_08.pdf.
- Hughes, Barry B., Randall Kuhn, Cecilia M. Peterson, Dale S. Rothman, and José R. Solórzano. 2011. *Improving Global Health: Forecasting the Next 50 Years*. Vol. 3 of the Patterns of Potential Human Progress series. Boulder, CO, and New Delhi, India: Paradigm Publishers and Oxford University Press. <http://pardee.du.edu/patterns-potential-human-progress>.
- Hughes, Barry B., Jonathan Moyer, and Timothy D. Sisk. 2011. "Vulnerability to Interstate Conflict: Evaluating Quantitative Measures." Peaceworks Report no. 72. United States Institute of Peace, Washington, DC.
- Human Security Report Project (HSRP). 2011. *Human Security Report 2009/2010: The Causes of Peace and the Shrinking Costs of War*. New York: Oxford University Press.
- Huntington, Samuel P. 1968. *Political Order in Changing Societies*. New Haven, CT: Yale University Press.
- . 1984. "Will More Countries Become Democratic?" *Political Science Quarterly* 99(2): 193–218.
- . 1991. *The Third Wave: Democratization in the Late Twentieth Century*. Norman: University of Oklahoma Press.
- Hurd, Ian. 1999. "Legitimacy and Authority in International Politics." *International Organization* 53(2): 379–408. doi: 10.1162/002081899550913.
- Hyde, Susan. 2011. *The Pseudo-Democrat's Dilemma: Why Election Observation Became an International Norm*. Ithaca, NY: Cornell University Press.
- Hyden, Goran, Kenneth Mease, Marta Foresti, and Verena Fritz. 2008. "Governance Assessments for Local Stakeholders: What the World Governance Assessment Offers." ODI Working Paper 287. Overseas Development Institute and Dag Hammarskjöld Foundation, London and Uppsala, Sweden.
- Ikenberry, G. John. 2001. *After Victory: Institutions, Strategic Restraint, and the Rebuilding of Order after Major Wars*. Princeton, NJ: Princeton University Press.
- Inglehart, Ronald, and Pippa Norris. 2003. *Gender Equality and Cultural Change around the World*. Cambridge, UK: Cambridge University Press.
- Inglehart, Ronald, and Christian Welzel. 2005. *Modernization, Cultural Change, and Democracy: The Human Development Sequence*. New York: Cambridge University Press.
- Intergovernmental Panel on Climate Change (IPCC). 2000. *Emissions Scenarios: Summary for Policymakers*. Geneva: Intergovernmental Panel on Climate Change.
- . 2007. *Climate Change 2007: Synthesis Report*. Geneva: Intergovernmental Panel on Climate Change.
- International Monetary Fund (IMF). 2011. "Revenue Mobilization in Developing Countries." Fiscal Affairs Department, International Monetary Fund, Washington, DC.
- James, Spencer L., Paul Gubbins, Christopher J. L. Murray, and Emmanuela Gakidou. 2012. "Developing a Comprehensive Time Series of GDP per Capita for 210 Countries from 1950 to 2015." *Population Health Metrics* 2012(10): 12 pages (unpaginated). doi: 10.1186/1478-7954-10-12.
- Jamison, Dean T., Lawrence J. Lau, and Jia Wang. 2005. "Health's Contribution to Economic Growth in an Environment of Partially Endogenous Technical Progress." In Guillem López-Casasnovas, Berta Rivera, and Luis Currais, eds., *Health and Economic Growth: Findings and Policy Implications*. Cambridge, MA: Massachusetts Institute of Technology Press, 67–91.
- Jansen, Nathan, and Leonard Wantchekon. 2004. "Resource Wealth and Political Regimes in Africa." *Comparative Political Studies* 37(7): 816–841. doi: 10.1177/0010414004266867.
- Jarstad, Anna K., and Timothy D. Sisk, eds. 2008. *From War to Democracy: Dilemmas of Peacebuilding*. New York: Cambridge University Press.
- Jennings, Kathleen M. 2009. "Gender and Post-Conflict Statebuilding." Program on States and Security Synthesis Paper. Ralph Bunch Institute for International Studies, City University of New York, New York.
- Johnson, A. Ross, and R. Eugene Parta, eds. 2010. *Cold War Broadcasting: Impact on the Soviet Union and Eastern Europe*. Budapest: Central European University Press.
- Joseph, Richard, ed. 1999. *State, Conflict, and Democracy in Africa*. Boulder, CO: Lynne Rienner Publishers.
- Joshi, Devin. 2007. "Government Performance, Economic Growth and Human Development in China and India."

- Ph.D. diss., Political Science Department, University of Washington, Seattle.
- . 2009. "Do We Have a Winner? What the China-India Paradox May Reveal about Regime Type and Human Security." *International Studies Review* 10(1): 73–98.
- . 2011a. "Good Governance, State Capacity, and the Millennium Development Goals." *Perspectives on Global Development and Technology* 10(2): 339–360. doi: 10.1163/156914911X5824.68.
- . 2011b. "Multi-Party Democracies and Rapid Economic Growth: A 21st Century Breakthrough?" *Taiwan Journal of Democracy* 7(1): 25–46.
- . 2012a. "Does China's Recent 'Harmonious Society' Discourse Reflect a Shift towards Human Development?" *Journal of Political Ideologies* 17(2): 229–252.
- . 2012b. "The Politics of Human Development in India and China: It Pays to Invest in Women and Children." *Law and Business Review of the Americas* 18(4): 101–145.
- . 2012c. "The Social and Adversarial Varieties of Democracy: Which Produces Fewer Criminals?" *Development and Society* 41(2): 229–252.
- . 2012d. "Varieties of Developmental States: Three Non-Western Paths to the Millennium Development Goals." *Journal of Developing Societies* 28(3): 355–378.
- Joshi, Devin, and Neha Navlakha. 2010. "Social Democracy in Sweden." *Economic and Political Weekly* 45(47): 73–80.
- Joshi, Devin, and Roni Kay O'Dell. 2013. "Global Governance and Development Ideology: The United Nations and the World Bank on the Left-Right Spectrum." *Global Governance* 19(2): 249–275.
- Joshi, Devin, and Bin Yu. 2011. "Does Democracy Make the Poor Healthier? The Political Determinants of Health Care Outcomes in China and India." Paper delivered at the American Political Science Association Annual Conference, Seattle, Washington, September 3.
- Kant, Immanuel. 1795. "To Perpetual Peace: A Philosophical Sketch." In Ted Humphrey, trans., *Perpetual Peace, and Other Essays on Politics, History, and Morals*. Indianapolis, IN: Hackett, 1983, 107–144.
- Kaufmann, Daniel, Aart Kraay, and Massimo Mastruzzi. 2007. "The Worldwide Governance Indicators Project: Answering the Critics." WB Policy Research Working Paper no. 4149. World Bank, Washington, DC.
- . 2008. "Governance Matters VII: Aggregate and Individual Governance Indicators, 1996–2007." WB Policy Research Working Paper no. 4654. World Bank, Washington, DC.
- . 2009. "Governance Matters VIII: Aggregate and Individual Governance Indicators, 1996–2008." WB Policy Research Working Paper no. 4978. World Bank, Washington, DC.
- . 2010. "The Worldwide Governance Indicators: Methodology and Analytical Issues." WB Policy Research Working Paper no. 5430. World Bank, Washington, DC.
- Keck, Margaret E., and Kathryn A. Sikkink. 1998. *Activists beyond Borders: Advocacy Networks in International Politics*. Ithaca, NY: Cornell University Press.
- Keefer, Philip. 2007. "Clientelism, Credibility, and the Policy Choices of Young Democracies." *American Journal of Political Science* 51(4): 804–821. doi: 10.1111/j.1540-5907.2007.00282.x.
- Kekic, Laza. 2007. "The Economist Intelligence Unit's Index of Democracy." The Economist Intelligence Unit, London. http://www.economist.com/media/pdf/democracy_index_2007_v3.pdf.
- Kharas, Homi. 2010. "The Emerging Middle Class in Developing Countries." OECD Development Centre Working Paper no. 285. Organisation for Economic Co-operation and Development, Paris.
- Kharas, Homi, and Harinder Kohli. 2011. "What is the Middle Income Trap, Why do Countries Fall into It, and How Can It be Avoided?" *Global Journal of Emerging Market Economies* 3(3): 281–289.
- Kjær, Mette, Ole Hersted Hansen, and Jens Peter Frølund Thomsen. 2002. "Conceptualizing State Capacity." Democracy, the State, and Administrative Reform Research Report no. 6. Department of Political Science, University of Aarhus, Aarhus, Denmark.
- Klare, Michael T. 2001. *Resource Wars: The New Landscape of Global Conflict*. New York: Metropolitan Books.
- Knack, Stephen, and Philip Keefer. 1995. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics* 7(3): 207–227. doi: 10.1111/j.1468-0343.1995.tb00111.x.
- Kornhauser William. 1959. *The Politics of Mass Society*. Glencoe, IL: The Free Press.
- Krasner, Stephen D., ed. 1983. *International Regimes*. Ithaca, NY: Cornell University Press.
- . 2004. "Sharing Sovereignty: New Institutions for Collapsed and Failing States." *International Security* 29(2): 85–120.
- Krause, Keith, and Robert Muggah. 2008. "Armed Violence Prevention and Reduction: A Challenge for Achieving the Millennium Development Goals." Background Paper. Geneva Declaration Secretariat, Geneva.
- Kriegler, Elmar, Brian C. O'Neill, Stephane Hallegatte, Tom Kram, Robert J. Lempert, Richard H. Moss, and Thomas Wilbanks. 2012. "The Need for and Use of Socio-economic Scenarios for Climate

- Change Analysis: A New Approach Based on Shared Socio-economic Pathways." *Global Environmental Change* 22(4): 807–822. doi: 10.1016/j.gloenvcha.2012.05.005.
- Krishna, Anirudh. 2002. *Active Social Capital: Tracing the Roots of Development and Democracy*. New York: Columbia University Press.
- Kuhn, Randall. 2012. "On the Role of Human Development in the Arab Spring." *Population and Development Review* 38(4): 649–683.
- Kwak, Taewon. 1992. "Size and Structure of Public Expenditure." In Kwang Choi, Dong-Kun Kim, Taewon Kwack, and Kun-Young Yun, eds. *Public Finance in Korea*. Seoul: Seoul National University Press, 33–52.
- Lake, David A., and Donald Rothchild, eds. 1998. *The International Spread of Ethnic Conflict: Fear, Diffusion, and Escalation*. Princeton, NJ: Princeton University Press.
- Large, Judith, and Timothy Sisk, eds. 2006. *Democracy, Conflict and Human Security: Pursuing Peace in the 21st Century*. Vol. 1. Stockholm: Institute for Demography and Electoral Assistance.
- Leftwich, Adrian, ed. 1996. *Democracy and Development: Theory and Practice*. Cambridge, MA: Blackwell Publishers.
- Legros, Gwénaëlle, Ines Havet, Nigel Bruce, and Sophie Bonjour. 2009. *The Energy Access Situation in Developing Countries: A Review Focusing on the Least Developed Countries and Sub-Saharan Africa*. New York and Geneva: United Nations Development Programme and World Health Organization.
- Lerner, Daniel. 1958. *The Passing of Traditional Society: Modernizing the Middle East*. Glencoe, IL: The Free Press.
- Levitsky, Steven, and Lucan A. Way. 2010. *Competitive Authoritarianism: Hybrid Regimes after the Cold War*. New York: Cambridge University Press.
- Lewin, Leif. 2012. *2119: The Year Global Democracy Will Be Realized*. Amherst, NY: Cambria Press.
- Lijphart, Arend. 1999. *Patterns of Democracy: Government Forms and Performance in Thirty-Six Countries*. New Haven, CT: Yale University Press.
- Lindberg, Staffan I. 2003. "It's Our Time to 'Chop': Do Elections in Africa Feed Neo-Patrimonialism Rather than Counteract It?" *Democratization* 10(2): 121–140. doi: 10.1080/714000118.
- . 2006. *Democracy and Elections in Africa*. Baltimore: Johns Hopkins University Press.
- Lindenberg, Marc. 1993. *The Human Development Race: Improving the Quality of Life in Developing Countries*. San Francisco: Institute for Contemporary Studies Press.
- Linz, Juan J. 1994. "Presidential or Parliamentary Democracy: Does It Make a Difference?" In Juan J. Linz and Arturo Valenzuela, eds., *The Failure of Presidential Democracy*. Baltimore: Johns Hopkins University Press, 3–88.
- Lipset, Seymour Martin. 1959. "Some Social Requisites of Democracy: Economic Development and Political Legitimacy." *American Political Science Review* 53(1): 69–105. doi: 10.1017/S000305540628256X
- . 1960. *Political Man: The Social Bases of Politics*. Garden City, NY: Doubleday.
- . 1994. "The Social Requisites of Democracy Revisited: 1993 Presidential Address." *American Sociological Review* 59(1): 1–22.
- List, Friedrich. 1841. *The National System of Political Economy*. Trans. Sampson S. Lloyd with introduction by J. Shield Nicholson. London: Longmans, Green and Co. 1904.
- Lomborg, Bjørn, ed. 2009. *Global Crises, Global Solutions*, 2nd ed. Cambridge, UK: Cambridge University Press.
- Lustick, Ian. 1979. "Stability in Divided Societies: Consociationalism versus Control." *World Politics* 31(3): 325–344.
- Lutz, Wolfgang, Jesús Crespo Cuaresma, and Mohammad Jalal Abbasi-Shavazi. 2010. "Demography, Education, and Democracy: Global Trends and the Case of Iran." *Population and Development Review* 36(2): 253–281. doi: 10.1111/j.1728-4457.2010.00329.x.
- Maddison, Angus. 2006. *The World Economy*. Paris: Organisation for Economic Co-operation and Development.
- Malloch-Brown, Mark. 2003. "Democratic Governance: Toward a Framework for Sustainable Peace." *Global Governance* 9(2): 141–146.
- Mander, Harsh, Mohammed Asif, K.P. Sasi, and ActionAid. 2004. *Good Governance: Resource Book*. Bangalore, India: Books for Change.
- Mansfield, Edward D., and Jack Snyder. 1995a. "Democratization and the Danger of War." *International Security* 20(1): 5–38.
- . 1995b. "Democratization and War." *Foreign Affairs* 74(3): 79–97.
- . 2005. *Electing to Fight: Why Emerging Democracies Go to War*. Cambridge, MA: Massachusetts Institute of Technology Press.
- Mares, Isabela, and Matthew E. Carnes. 2009. "Social Policy in Developing Countries." *Annual Review of Political Science* 12: 93–113. doi: 10.1146/annurev.polisci.12.071207.093504.
- Marshall, Monty G. 2002a. "Global Terrorism: An Overview and Analysis." Center for Systemic Peace Occasional Paper Series no. 3. Center for Systemic Peace, Vienna, VA.
- . 2002b. "Measuring the Societal Impact of War." In Fen Osler Hampson and David M. Malone, eds., *From Reaction to Conflict Prevention: Opportunities for the UN System*.

- Boulder, CO and New York: Lynne Rienner Publishers and International Peace Academy, 63–83.
- . 2008. "Fragility, Instability, and the Failure of States: Assessing Sources of Systemic Risk." A Center for Preventive Action (CPA) Working Paper. Council on Foreign Relations, New York.
- . 2013. "Polity IV Project: Political Regime Characteristics and Transitions 1800–2012." <http://www.systemicpeace.org/polity/polity4.htm>.
- Marshall, Monty G., and Benjamin R. Cole. 2008. "Global Report on Conflict, Governance and State Fragility 2008." *Foreign Policy Bulletin* 18: 3–21. doi: 10.1017/S1052703608000014.
- . 2009. *Global Report 2009: Conflict, Governance, and State Fragility*. Vienna, VA: Center for Systemic Peace and George Mason University Center for Global Policy.
- . 2011. *Global Report 2011: Conflict, Governance, and State Fragility*. Vienna, VA: Center for Systemic Peace.
- Mathers, Colin D., and Dejan Loncar. 2006. "Projections of Global Mortality and Burden of Disease from 2002 to 2030." *PLOS Med* 3(11): e442. doi:10.1371/journal.pmed.0030442.
- McGuire, Martin C., and Mancur Olson, Jr. 1996. "The Economics of Autocracy and Majority Rule: The Invisible Hand and the Use of Force." *Journal of Economic Literature* 34(1): 72–96.
- McLennan, Patrick G. 2010. "Governance and Economic Growth." Background Paper for *Strengthening Governance Globally*. Frederick S. Pardee Center for International Futures, Josef Korbel School of International Studies, University of Denver, CO.
- Meadows, Donnela H., Dennis L. Meadows, Jorgen Randers, and William K. Behrens, III. 1972. *Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind*. New York: Universe Books.
- Menocal, Alina Rocha, Verena Fritz, and Lise Rakner. 2008. "Hybrid Regimes and the Challenges of Deepening and Sustaining Democracy in Developing Countries." *South African Journal of International Affairs* 15(1): 29–40. doi: 10.1080/10220460802217934.
- Mény, Yves. 2002. "De la démocratie en Europe: Old Concepts and New Challenges." *Journal of Common Market Studies* 41(1): 1–13. doi: 10.1111/1468-5965.t01-1-00408.
- Metz, David. 2002. "The Politics of Population Ageing." *The Political Quarterly* 73(3): 321–327. doi: 10.1111/1467-923X.00472.
- Meyer, Thomas, and Lewis P. Hinchman. 2007. *The Theory of Social Democracy*. Cambridge, UK: Polity Press.
- Migdal, Joel. 1988. *Strong Societies and Weak States: State-Society Relations and State Capabilities in the Third World*. Princeton, NJ: Princeton University Press.
- Milanovic, Branko, and Shlomo Yitzhai. 2002. "Decomposing World Income Distribution: Does the World Have a Middle Class?" *Review of Income and Wealth* 48(2): 155–78. doi: 0.1111/1475-4991.00046.
- Miles, Hugh. 2011. "The Al Jazeera Effect." *Foreign Policy*, February 8. http://www.foreignpolicy.com/articles/2011/02/08/the_al_jazeera_effect.
- Mills, Robin. 2008. *The Myth of the Oil Crisis: Overcoming the Challenges of Depletion, Geopolitics, and Global Warming*. Westport, CT: Praeger Publishers.
- Moore, Mick. 2011. "Globalisation and Power in Weak States." *Third World Quarterly* 32(10): 1757–1776. doi: 10.1080/01436597.2011.610572.
- Morgenthau, Hans J. 1948. *Politics among Nations: The Struggle for Power and Peace*. New York: Alfred A. Knopf.
- Moyer, Jonathan D., and Barry B. Hughes. 2012. "ICTs: Do They Contribute to Climate Change or Sustainable Development?" *Technological Forecasting and Social Change*, 79(5): 919–931. doi: 10.1016/j.techfore.2011.12.005.
- Mueller, John. 1989. *Retreat from Doomsday: The Obsolescence of Major War*. New York: Basic Books.
- Muggah, Robert, Timothy D. Sisk, Eugenia Piza-Lopez, Jago Salmon, and Patrick Keuleers. 2012. *Governance for Peace: Securing the Social Contract*. New York: United Nations Development Programme.
- Munck, Gerardo L. 2009. *Measuring Democracy: A Bridge between Scholarship and Politics*. Baltimore: Johns Hopkins University Press.
- Munck, Gerardo L., and Jay Verkuilen. 2002. "Conceptualizing and Measuring Democracy: Evaluating Alternative Indices." *Comparative Political Studies* 35(1): 5–34. doi: 10.1177/001041400203500101.
- Murphy, Craig N. 2006. *The United Nations Development Programme: A Better Way?* New York: Cambridge University Press.
- Nakićenović, Nebojša, Arnulf Grubler, and Alan McDonald, eds. 1998. *Global Energy: Perspectives*. Cambridge, UK: Cambridge University Press.
- National Bureau of Statistics of China (NBS). 2011. *China Statistical Yearbook 2010*. Beijing: China Statistics Press.
- Newman, Edward. 2009. "Liberal Peacebuilding Debates." In Edward Newman, Roland Paris, and Oliver P. Richmond, eds., *New Perspectives on Liberal Peacebuilding*. Tokyo: United Nations University Press, 26–53.
- Newman, Edward, and Roland Rich, eds. 2004. *The UN Role in Promoting Democracy: Between Ideals and Reality*. Tokyo: United Nations University Press.
- Noland, Marcus, Sherman Robinson, and Tao Wang. 2001. "Famine in North Korea: Causes and Cures." *Economic*

- Development and Cultural Change* 49(4): 741–767. doi: 10.1086/452523.
- Nordhaus, William D. 1973. "World Dynamics: Measurement without Data." *The Economic Journal* 83(332): 1156–1183.
- Norris, Pippa. 2004. *Electoral Engineering: Voting Rules and Political Behavior*. Cambridge, UK: Cambridge University Press.
- . 2008. *Driving Democracy: Do Power-Sharing Institutions Work?* New York: Cambridge University Press.
- North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge, UK: Cambridge University Press.
- North, Douglass C., John Joseph Wallis, and Barry R. Weingast. 2009. *Violence and Social Orders: A Conceptual Framework for Interpreting Recorded Human History*. Cambridge, UK: Cambridge University Press.
- O'Brien, Sean P. 2002. "Anticipating the Good, the Bad, and the Ugly." *The Journal of Conflict Resolution* 46(6): 791–811. doi: 10.1177/002200202237929.
- . 2010. "Crisis Early Warning and Decision Support: Contemporary Approaches and Thoughts on Future Research." *International Studies Review* 12(1): 87–104. doi: 10.1111/j.1468-2486.2009.00914.x.
- Olson, Mancur. 1984. *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities*. New Haven, CT: Yale University Press.
- . 1993. "Dictatorship, Democracy, and Development." *American Political Science Review* 87(3): 567–576.
- . 2000. *Power and Prosperity*. New York: Basic Books.
- Organisation for Economic Co-operation and Development (OECD). 2008. "Concepts and Dilemmas of State Building in Fragile Situations: From Fragility to Resilience." OECD/DAC Discussion Paper. Organisation for Economic Co-operation and Development, Paris.
- Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge, UK: Cambridge University Press.
- Overseas Development Institute (ODI). 2011. *Mapping Progress: Evidence for a New Development Outlook*. London: Overseas Development Institute Publications.
- Pardee Center for International Futures. 2013. "Development-Oriented Policies and Alternative Human Development Paths." A 2013 Human Development Report Occasional Paper. United Nations Development Programme, New York. http://hdr.undp.org/en/reports/global/hdr2013/occasional-papers/05_HDRO%20Pardee.pdf.
- Paris, Roland. 2004. *At War's End: Building Peace after Civil Conflict*. Cambridge, UK: Cambridge University Press.
- Paris, Roland, and Timothy D. Sisk. 2009. *The Dilemmas of Statebuilding: Confronting the Contradictions of Postwar Peace Operations*. Abingdon, UK: Routledge.
- Pessino, Carola, and Richardo Fenochietto. 2010. "Determining Countries' Tax Effort." *Hacienda Pública Española/Revista de Economía Pública* 195(4): 65–87.
- Pierson, Paul. 2004. *Politics in Time: History, Institutions, and Social Analysis*. Princeton, NJ: Princeton University Press.
- Pinker, Steven. 2011. *The Better Angels of Our Nature: Why Violence has Declined*. New York: Viking.
- Plato. [c. 380 BCE] 1992. *The Republic*. Trans. G.M.A. Grube. 2nd ed. Revised C.D.C. Reeve. Indianapolis, IN: Hackett.
- Polachek, Solomon W., and Daria Sevastianova. 2012. "Does Conflict Disrupt Growth? Evidence of the Relationship between Political Instability and National Economic Performance." *Journal of International Trade and Economic Development* 21(3): 361–388. doi: 10.1080/09638191003749783.
- Przeworski, Adam. 1988. "Democracy as a Contingent Outcome of Conflicts." In Jon Elster and Rune Slagstad, eds., *Constitutionalism and Democracy*. Cambridge, UK: Cambridge University Press, 59–80.
- Przeworski, Adam, Michael E. Alvarez, José Antonio Cheibub, and Fernando Limongi. 2000. *Democracy and Development: Political Institutions and Well-Being in the World, 1950–1990*. Cambridge, UK: Cambridge University Press.
- Przeworski, Adam, and Fernando Limongi. 1997. "Modernization: Theories and Facts." *World Politics* 49(2): 155–183. doi: 10.1353/wp.1997.0004.
- Puddington, Arch. 2012. "Freedom in the World 2012: The Arab Uprisings and their Global Repercussions." Freedom House, Washington, DC.
- Putnam, Robert, Robert Leonardi, and Raffaella Y. Nonetti. 1993. *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.
- Rabushka, Alvin, and Kenneth A. Shepsle. 1972. *Politics in Plural Societies: A Theory of Democratic Instability*. Columbus, Ohio: Merrill.
- Rajkumar, Andrew Sunil, and Vinaya Swaroop. 2008. "Public Spending and Outcomes: Does Governance Matter?" *Journal of Development Economics* 86: 96–111.
- Ramsay, Maureen. 2010. "Liberal Democratic Politics as a Form of Violence." *Democratization* 17(2): 235–250. doi: 10.1080/13510341003588658.

- Ravallion, Martin. 2009. "The Developing World's Bulging (but Vulnerable) Middle Class." WB Policy Research Working Paper no. 4816. World Bank, Washington, DC.
- Rawls, John. 1971. *A Theory of Justice*. Cambridge, MA: Belknap Press of Harvard University Press.
- Ray, James Lee. 1989. "The Abolition of Slavery and the End of International War." *International Organization* 43(2): 405–439.
- . 1993. "Wars between Democracies: Rare or Non-Existent?" *International Interactions* 18(3): 251–276. doi: 10.1080/03050629308434807.
- Reno, William. 2008. "Bottom-up Statebuilding?" In Charles T. Call and Vanessa Wyeth, eds., *Building States to Build Peace*. Boulder, CO: Lynne Rienner Publishers, 143–161.
- Rice, Susan E., and Stewart Patrick. 2008. *Index of State Weakness in the Developing World*. Washington, DC: The Brookings Institution.
- Roberts, Adam. 2006. *The Wonga Coup: Guns, Thugs and a Ruthless Determination to Create Mayhem in an Oil-Rich Corner of Africa*. New York: PublicAffairs.
- Roberts, Peter, Shyam KC, and Cordula Rastogi. 2006. "Rural Access Index: A Key Development Indicator." Transport Sector Board Paper TP-10. World Bank, Washington, DC.
- Rockström, Johan, Will Steffen, Kevin Noone, Åsa Persson, F. Stuart Chapin III, Eric Lambin, Timothy M. Lenton, et. al. 2009. "Planetary Boundaries: Exploring the Safe Operating Space for Humanity." *Ecology and Society* 14(2): unpaginated. <http://www.ecologyandsociety.org/vol14/iss2/>.
- Rodrik, Dani. 2007. *One Economics, Many Recipes: Globalization, Institutions, and Economic Growth*. Princeton, NJ: Princeton University Press.
- Romer, Paul M. 1990. "Endogenous Technological Change," *Journal of Political Economy* 98(5): S71–S102.
- Rosenau, James N. 1990. *Turbulence in World Politics: A Theory of Change and Continuity*. Princeton, NJ: Princeton University Press.
- Rosenberg, Tina. 2012. "The Body Counter: Meet Patrick Ball, a Statistician Who's Spent His Life Lifting the Fog of War." *Foreign Policy* (March/April): 88–96.
- Ross, Michael L. 2001. "Does Oil Hinder Democracy?" *World Politics* 53(3): 325–361. doi: 10.1353/wp.2001.0011.
- . 2006. "Is Democracy Good for the Poor?" *American Journal of Political Science* 50(4): 860–874. doi: 10.1111/j.1540-5907.2006.00220.x.
- Rothman Dale S., Mohammod T. Irfan, Eli Margolese-Malin, Barry B. Hughes, and Jonathan D. Moyer. 2014. *Building Global Infrastructure: Forecasting the Next 50 Years*. Vol. 4 of the Patterns of Potential Human Progress series. Boulder, CO and New Delhi, India: Paradigm Publishers and Oxford University Press. <http://pardee.du.edu/patterns-potential-human-progress>.
- Rothstein, Bo. 2011. *The Quality of Government: Corruption, Social Trust, and Inequality in International Perspective*. Chicago: University of Chicago Press.
- Rubin, Barnett R. 2005. "Constructing Sovereignty for Security." *Survival* 47(4): 93–106. doi: 10.1080/00396330500433357.
- Rueschmeyer, Dietrich, Evelyn Huber Stephens, and John D. Stephens. 1992. *Capitalist Development and Democracy*. Chicago: University of Chicago Press.
- Rummel, Rudolph J. 1983. "Libertarianism and International Violence." *Journal of Conflict Resolution* 27(1): 27–71. doi: 10.1177/0022002783027001002.
- . 1985. "Libertarian Propositions on Violence within and between Nations." *Journal of Conflict Resolution* 29(3): 419–455. doi: 10.1177/0022002785029003003.
- . 1991. "Political Systems, Violence, and War." In W. Scott Thompson and Kenneth M. Jensen, with Richard N. Smith and Kimber M. Schraub, eds., *Approaches to Peace: An Intellectual Map*. Washington, DC: The United States Institute of Peace, 347–370.
- Russett, Bruce. 1995. "'And Yet It Moves' (Correspondence: Bruce Russett on the Democratic Peace)." *International Security* 19(4): 164–175.
- Russett, Bruce, John R. Oneal, and David R. Davis. 1998. "The Third Leg of the Kantian Tripod for Peace: International Organizations and Militarized Disputes, 1950–85," *International Organization* 52(3): 441–467. doi: 10.1162/002081898550626.
- Ruttan, Vernon W. 1991. "What Happened to Political Development?" *Economic Development and Cultural Change* 39(2): 265–292.
- Sachs, Jeffrey D. 2005. *The End of Poverty: Economic Possibilities for Our Time*. New York: The Penguin Press.
- Sachs, Jeffrey D., and Andrew M. Warner. 1995. "Economic Convergence and Economic Policies." NBER Working Paper no. 5039. National Bureau of Economic Research, Cambridge, MA.
- Sandbrook, Richard, Marc Edelman, Patrick Heller, and Judith Teichman. 2007. *Social Democracy in the Global Periphery: Origins, Challenges, Prospects*. New York: Cambridge University Press.
- Sarkees, Meredith Reid, and Frank Wayman. 2010. *Resort to War: 1816–2007*. Washington, DC: Congressional Quarterly Press.
- Sen, Amartya. 1999a. "Democracy as a Universal Value." *Journal of Democracy* 10(3): 3–17.

- . 1999b. *Development as Freedom*. New York: Knopf.
- Simmons, P.J., and Chantal de Jonge Oudraat, eds. 2001. *Managing Global Issues: Lessons Learned*. Washington, DC: Carnegie Endowment for International Peace.
- Simon, Julian L. 1981. *The Ultimate Resource*. Princeton, NJ: Princeton University Press.
- Sisk, Timothy D. 2009. *International Mediation in Civil Wars: Bargaining with Bullets*. Abingdon, UK: Routledge.
- . 2010. "Cooperating for Peace: The Challenges and Promises of Partnerships in Peace Operations." GSCP Geneva Paper no. 14. Geneva Center for Security Policy, Geneva.
- . 2013. *Statebuilding: Consolidating Peace after Civil War*. Cambridge, UK: Polity Press.
- Sklair, Leslie. 2001. *The Transnational Capitalist Class*. Oxford: Blackwell Publishing.
- Skocpol, Theda. 1985. "Bringing the State Back In: Strategies of Analysis in Current Research." In Peter B. Evans, Dietrich Rueschemeyer, and Theda Skocpol, eds., *Bringing the State Back In*. Cambridge, UK: Cambridge University Press, 3–37.
- Slotin, Jenna, Vanessa Wyeth, and Paul Romita. 2010. "Power, Politics, and Change: How International Actors Assess Local Dynamics." International Peace Institute, New York.
- Solow, Robert M. 1956. "A Contribution to the Theory of Economic Growth." *Quarterly Journal of Economics* 70(1): 65–94.
- . 1957. "Technical Change and the Aggregate Production Function." *Review of Economics and Statistics* 39(3): 312–320.
- Somit, Albert, and Steven A. Peterson. 2005. *The Failure of Democratic Nation Building: Ideology Meets Evolution*. New York: Palgrave Macmillan.
- Spiro, David E. 1994. "The Insignificance of the Liberal Peace." *International Security* 19(2): 50–81.
- Stasavage, David. 2005. "The Role of Democracy in Uganda's Move to Universal Primary Education." *Journal of Modern African Studies* 43(1): 53–73. doi: 10.1017/S0022278X040006.
- Steger, Manfred B. 2009. *Globalisms: The Great Ideological Struggle of the Twenty-First Century*, 3rd ed. Lanham, MD: Rowman & Littlefield Publishers.
- Stern, Nicholas. 2007. *The Economics of Climate Change: The Stern Review*. Cambridge, UK: Cambridge University Press.
- Stewart, Frances. 2002. "Horizontal Inequalities: A Neglected Dimension of Development." Queen Elizabeth House Working Paper Series no. 81. Queen Elizabeth House, University of Oxford, Oxford.
- Stiglitz, Joseph E. 2002. *Globalization and its Discontents*, 1st ed. New York: W.W. Norton.
- Stockemer, Daniel. 2011. "Women's Parliamentary Representation in Africa: The Impact of Democracy and Corruption on the Number of Female Deputies in National Parliaments." *Political Studies* 59(3): 693–712.
- Strobel, Warren P. 1996. "The CNN Effect." *American Journalism Review* 18(4): 33–37.
- Sung, Hung-En. 2003. "Fairer Sex or Fairer System? Gender and Corruption Revisited." *Social Forces* 82(2): 703–723. doi: 10.1353/sof.2004.0028.
- Swamy, Anand, Stephen Knack, Young Lee, and Omar Azfar. 2001. "Gender and Corruption." *Journal of Development Economics* 64(1): 25–55. doi: 10.1016/S0304-3878(00)00123-1.
- Taleb, Nassim Nicholas. 2007. *The Black Swan: The Impact of the Highly Improbable*. 1st ed. New York: Random House.
- Tanzi, Vito. 2011. *Government versus Markets: The Changing Economic Role of the State*. New York: Cambridge University Press.
- Tanzi, Vito, and Hamid R. Davoodi. 2002. "Corruption, Growth, and Public Finances." In George T. Abed and Sanjeev Gupta, eds., *Governance, Corruption, and Economic Performance*. Washington, DC: International Monetary Fund, 197–224.
- Tanzi, Vito, and Howell H. Zee. 2000. "Tax Policy for Emerging Markets: Developing Countries." *National Tax Journal* 53(2): 299–322.
- Tardy, Thierry, and Rama Mani, eds. 2005. "Pursuing Security in the Post-Conflict Phase: Implications for Current and Future Peace Operations." Geneva Centre for Security Policy Workshop Report no. 4, Geneva, June 12–13.
- Teorell, Jan. 2010. *Determinants of Democratization: Explaining Regime Change in the World, 1972–2006*. New York: Cambridge University Press.
- Tetlock, Philip E. 2005. *Expert Political Judgment: How Good Is It? How Can We Know?* Princeton, NJ: Princeton University Press.
- Theisen, Ole Magnus. 2008. "Blood and Soil? Resource Scarcity and Internal Armed Conflict Revisited." *Journal of Peace Research* 45(6): 801–818. doi: 10.1177/0022343308096157.
- Themnér, Lotta and Peter Wallensteen. 2011. "Armed Conflict, 1946–2010." *Journal of Peace Research* 47(4): 525–536.
- Tilly, Charles. 1985. "War Making and State Making as Organized Crime." In Peter B. Evans, Dietrich Rueschemeyer, and Theda Skocpol, eds., *Bringing the State Back In*. Cambridge, UK: Cambridge University Press, 169–191.
- . 2002. "Violence, Terror, and Politics as Usual." *Boston Review* 27(3/4): 21–24.

- Todaro, Michael P., and Stephen C. Smith. 2012. *Economic Development*. 11th ed. Boston: Addison Wesley.
- Treier, Shawn, and Simon Jackman. 2008. "Democracy as a Latent Variable." *American Journal of Political Science* 52(1): 201–217. doi: 10.1111/j.1540-5907.2007.00308.x.
- Tsai, Lily. 2007. *Accountability without Democracy: Solidary Groups and Public Goods Provision in Rural China*. New York: Cambridge University Press.
- Ulfelder, Jay. 2007. "Natural-Resource Wealth and the Survival of Autocracy." *Comparative Political Studies* 40(8): 995–1018. doi: 10.1177/0010414006287238.
- Ulfelder, Jay, and Michael Lustik. 2007. "Modelling Transitions to and from Democracy." *Democratization* 14(3): 351–387. doi: 10.1080/13510340701303196.
- ul Haq, Mahbub. 1995. *Reflections on Human Development*. New York: Oxford University Press.
- Union of International Associations. 1991–2010. *Organization Descriptions and Cross-References*. Vol. 1 of *Yearbook of International Organizations*. Munich: K.G. Saur.
- United Nations Department of Economic and Social Affairs (UN DESA). 2005. *Unlocking the Human Potential for Public Sector Performance: World Public Sector Report 2005*. New York: United Nations Department of Economic and Social Affairs.
- United Nations Development Programme (UNDP). 2009a. *Human Development Report 2009—Overcoming Barriers: Human Mobility and Development*. New York: United Nations Development Programme.
- . 2009b. "Elections and Conflict Prevention: A Guide to Analysis, Planning and Programming." Democratic Governance Group and Bureau for Development Policy, United Nations Development Programme, New York.
- . 2011. *Human Development Report 2011—Sustainability and Equity: A Better Future for All*. New York: United Nations Development Programme.
- . 2013. *Human Development Report 2013—The Rise of the South: Human Progress in a Diverse World*. New York: United Nations Development Programme.
- United Nations Environment Programme (UNEP). 2004. *Understanding Environment, Conflict and Cooperation*. Nairobi: United Nations Environment Programme.
- . 2007. *Global Environment Outlook: Environment for Development (GEO-4)*. Valletta, Malta: United Nations Environment Programme.
- United Nations Human Settlements Programme (UN-HABITAT). 2003. *The Challenge of Slums: Global Report on Human Settlements 2003*. Nairobi: United Nations Human Settlement Programme.
- United Nations Millennium Project. 2005. *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals*. Report to the United Nations Secretary General. London: Earthscan.
- United Nations Office on Drugs and Crime (UNODC). 2011. *Global Study on Homicide 2011: Trends, Contexts, Data*. Vienna: United Nations Office on Drugs and Crime.
- United Nations Population Division. 2003. *Population, Education, and Development: The Concise Report*. New York: Department of Economic and Social Affairs.
- United States Agency for International Development (USAID). 2005. "Fragile States Strategy." Report no. PD-ACA-999. United States Agency for International Development, Washington, DC.
- United States Government Accountability Office (USGAO). 2007. "Crude Oil: Uncertainty about Future Oil Supply Makes it Important to Develop a Strategy for Addressing a Peak and Decline in Oil Production." Report no. GAO-07-283. United States Government Accountability Office, Washington, DC.
- United States National Intelligence Council (US NIC). 2004. *Mapping the Global Future: Report of the National Intelligence Council's 2020 Project*. Washington, DC: United States National Intelligence Council.
- . 2008. *Global Trends 2025: A Transformed World*. Washington, DC: United States National Intelligence Council.
- . 2012. *Global Trends 2030: Alternative Worlds*. Washington, DC: United States National Intelligence Council.
- Van Vuuren, Detlef P., Keywan Riahi, Richard Moss, Jae Edmonds, Allison Thomson, Nebojsa Nakicenovic, Tom Kram, et. al. 2012. "A Proposal for a New Scenario Framework to Support Research and Assessment in Different Climate Research Communities." *Global Environmental Change* 22(1): 21–35. doi:10.1016/j.gloenvcha.2011.08.002.
- Varshney, Ashutosh. 2002. *Ethnic Conflict and Civil Life: Hindus and Muslims in India*. 1st ed. New Haven, CT: Yale University Press.
- Wagner, Adolph. 1892. *Grundlegung der Politischen Ökonomie*. Leipzig: C.F. Winter.
- Wallenstein, Peter, and Margareta Sollenberg. 1998. "Armed Conflict and Regional Conflict Complexes, 1989–97." *Journal of Peace Research* 35(5): 621–634.
- Wallerstein, Immanuel. 1979. *The Capitalist World-Economy*. Cambridge, UK: Cambridge University Press.
- Waltz, Kenneth. 1959. *Man, the State, and War: A Theoretical Analysis*. New York: Columbia University Press.
- Ward, Michael D., and Kristian S. Gleditsch. 1998. "Democratizing for

- Peace." *American Political Science Review* 92(1): 51–61.
- Ward, Michael D., Brian D. Greenhill, and Kristin M. Bakke. 2010. "The Perils of Policy by P-value: Predicting Civil Conflicts." *Journal of Peace Research*. 47(4): 363–375. doi: 10.1177/0022343309356491.
- Weber, Max. 1978. *Economy and Society: An Outline of Interpretive Sociology*. Guenther Roth and Claus Wittich, eds. Berkeley, CA: University of California Press.
- Weber, Warren E., and Richard E. Wagner. 1977. "Wagner's Law, Fiscal Institutions, and the Growth of Government." *National Tax Journal* 30(1): 59–68.
- Weimer, David L., and Aidan R. Vining. 2005. *Policy Analysis: Concepts and Practice*. 4th ed. Upper Saddle River, NJ: Pearson Prentice Hall.
- Weiss, Thomas G. 2007. *Humanitarian Intervention*. Cambridge, UK: Polity Press.
- Weiss, Thomas G., and Ramesh Thakur. 2010. *Global Governance and the UN: An Unfinished Journey*. Bloomington: Indiana University Press.
- Wendt, Alexander. 2003. "Why a World State is Inevitable." *European Journal of International Relations* 9(4): 491–542. doi: 10.1177/135406610394001.
- Wilson, Dominic, and Raluca Dragusanu. 2008. "The Expanding Middle: The Exploding World Middle Class and Falling Global Inequality." Goldman Sachs Global Economics Paper no. 170. Goldman Sachs, New York.
- Wilson, Dominic, and Roopa Purushothaman. 2003. "Dreaming with BRICs: The Path to 2050." Goldman Sachs Global Economics Paper no. 99. Goldman Sachs, New York.
- Wilson, Gail. 1993. "The Challenge of an Ageing Electorate: Changes in the Formation of Social Policy in Europe?" *Journal of European Social Policy* 3(2): 91–105. doi: 10.1177/095892879300300202.
- Wood, Reed M., and Mark Gibney. 2010. "The Political Terror Scale (PTS): A Re-Introduction and a Comparison to CIRI." *Human Rights Quarterly* 32(2): 367–400.
- World Bank. 1989. *Sub-Saharan Africa: From Crisis to Sustainable Growth*. Washington, DC: The World Bank.
- . 1993. *The East Asian Miracle: Economic Growth and Public Policy*. New York: Oxford University Press.
- . 1997. *World Development Report 1997: The State in a Changing World*. New York: Oxford University Press.
- . 2007. "Bangladesh Strategy for Sustained Growth." Report no. 38289-BD. World Bank Poverty Reduction and Economic Management Sector Unit, South Asia Region, Dhaka, Bangladesh.
- . 2008. "Public Sector Reform: What Works and Why? An IEG Evaluation of World Bank Support." Bangladesh Development Series Paper no. 18. World Bank, Washington DC.
- . 2011. *World Development Report 2011: Conflict, Security, and Development*. Washington, DC: World Bank.
- World Commission on Environment and Development (WCED). 1987. *Our Common Future*. Oxford: Oxford University Press.
- Zakaria, Fareed. 1997. "The Rise of Illiberal Democracy." *Foreign Affairs* 76(6): 22–43.
- Zartman, I. William. 1989. *Ripe for Resolution: Conflict and Intervention in Africa*. New York: Oxford University Press.

Forecast Tables: Introduction and Glossary

Forecasts (or simulation results) from International Futures (IFs) are dynamic calculations of the full modeling system, not extrapolations of series, results of isolated multiple regressions, or representations of the forecasts of others. To understand more about the forecasts of IFs and the specific formulations for the variables shown in the output tables, see the text of the volume, especially Chapter 4, and the model documentation available at Pardee.du.edu.

Base Case forecasts for 183 individual countries out to 2060 appear in the tables at the back of each volume in the **Patterns of Potential Human Progress** (PPHP) series. Such forecasts are seldom done outside the IFs project, and there are good reasons for reluctance to provide them, including:

- Data in any series are seldom available for all countries, particularly for smaller ones or those that have undergone substantial sociopolitical transitions. IFs separately represents 183 countries and uses estimation procedures to fill data holes as necessary.
- Every country is unique. Formulating a large-scale dynamic model to behave reasonably in the face of such complexity is extremely challenging, and structures of the system will never be completely free of poor behavior for many countries, especially under extreme or new circumstances.
- Some variables, such as the future level of democracy, have especially weak bases for forecasting.

Most longer-term global forecasting reduces the severity of these problems in several ways,

including relying on regional aggregations of countries and significantly limiting the forecast horizon. The accompanying forecast tables obviously ignore such practical approaches and simply present the numbers that the model produces. This volume has repeatedly stressed that we should never treat any model results as predictions; we should instead use them for thinking about and exploring possible futures. That is the spirit behind these tables. As the IFs team continues to develop the IFs modeling system, these results will change and presumably, on average, improve.

The forecast tables are organized by geographic, substantive, and temporal attributes. Geographically, the first page of each set begins with global and continental totals (Africa, the Americas, Asia with Oceania, and Europe), followed by the UN subregional divisions within each of the continents. The subsequent six pages of each set provide IFs Base Case forecasts for each of the country members of the subregional divisions within the four continents. The countries appear in subregions in descending order based on our forecasts of their population in 2060.

The multiple sets cover six substantive issue areas. The first provides a variety of population measures, land area, and an overall measure of human development. The remaining sets of forecasting variables are divided into five categories: poverty and income, health, education, infrastructure, and governance. These categories correspond to the topics that the PPHP series addresses, and forecasts in each category are therefore being developed across volumes. Each of the PPHP volumes, including the forecast tables, is posted on line at Pardee.du.edu.

Temporally, most series present values for 2010, 2035, and 2060, while some show values only for 2010 and 2060. In all cases, the forecast horizon is 50 years. Most of the time, an additional column shows the cumulative percentage change forecast from 2010 through 2060.

The model is currently initialized in 2010, and it computes annual results recursively from 2010 through the simulation horizon. The model uses International Monetary Fund forecasts of GDP through 2013. Otherwise, all results in years after 2010 are IFs model computations

rather than actual values (even when data are available) or the forecasts of others.

To facilitate the reading and interpretation of the tables, the glossary that follows provides both the names of the variables as they appear in the tables and in IFs, along with brief definitional information and the sources of initial conditions and data. Variables are listed in the order in which they appear in the end tables. Please refer to the list of acronyms immediately following the glossary for the full names of the organizations referred to in it.

Variables	IFs Names	Sources and Notes
Population, Land Area, and Human Development Index		
Population in millions of people	POP	Total number of people within a country. Total initialized from WDI data. IFs also has cohort data on age/sex distribution, fertility, and mortality from UNPD.
Land area in 1,000 sq kilometers	LANDAREA	Total national land area in 1,000 square kilometers. Initialized with data from FAO via WDI. Constant over time.
Land area in 1,000 sq miles	No variable name in model; calculated by converting square kilometers	Total national land area in 1,000 square miles. Constant over time.
Population density per sq kilometer	No variable name in model; calculated from LANDAREA and POP	Population per land area measured in square kilometers.
Population density per sq mile	No variable name in model; calculated by converting density per square kilometer	Population per land area measured in square miles.
Urban population	No variable name in model; calculated from other variables	Percentage of total population living in urban areas. Initialized with WDI data. The WDI notes that countries differ in how they determine urban residence, with size of municipalities as low as 2,000 residents; Eurostat requires a density of at least 300 people per square kilometer and 5,000 minimum population.
Population growth rate	POPR	Annual percentage change in total population. See description of “Population in millions of people” entry at beginning of glossary.
Total fertility rate	TFR	The average number of children a woman is expected to bear throughout her life. Initialized from WDI data.
Population below 15 years of age	POPLE15	The total number of people in this age category, which is generally considered a period of economic dependence on others.
Population 65 years and older	POPGT65	The total number of people in this age category, which is generally considered a period of nonparticipation in the labor force.
Youth bulge	YTHBULGE	Although the youth bulge is always an indicator of the proportion of the adult or near-adult population that is young, specific definitions vary. In IFs, the definition is the population age 15–29 as a percentage of the population 15 and older. A bulge exists when this ratio is above a specified level, such as 50 percent.
Human Development Index	HDI	This corresponds very closely to the Human Development Index of the UNDP (see http://hdi.undp.org), which is an average of three components: long and healthy life; knowledge (literacy and education); and standard of living (GDP/capita). Computed in IFs population module from nearly identical drivers within IFs (see B. Hughes 2004b for specifics).
HDI with higher ceilings	HDI21STFIX	An IFs-specific measure. Computed in the IFs population module from driver categories within IFs corresponding to the UNDP’s Human Development Index, but with maximum values raised to levels that constitute arguably better upper limits for the 21st century (notably, life expectancy of 120 years and GDP per capita of \$100,000).

Poverty and Income

Poverty below \$1.25 per day	INCOMEL1LN	Population living below \$1.25 per day at 2005 international prices (purchasing power parity). Initialized from the World Bank's PovcalNet. The forecasting function is based on an assumption that income in a country is subject to log-normal distribution and is also responsive to the GINI index of distribution. The \$1.25 per day threshold represents the World Bank's 2008 revision of its previous measure (\$1.08 per day at 1993 international prices) based on new data and expenditure surveys.
Poverty below \$2 per day	INCOMEL2LN	Population living below \$2 per day at 2005 international prices (purchasing power parity). Initialized from the World Bank's PovcalNet. See immediately preceding description of "Poverty below \$1.25 per day" for further information and interpretation.
Poverty below \$5 per day	No variable name in model; calculated from other variables	Population living below \$5 per day at 2005 international prices (purchasing power parity). See preceding description of "Poverty below \$1.25 per day" for further information and interpretation. The forecasts of values at income poverty levels above \$2 per day do not use survey data for initial conditions, but rather use \$2 per day survey data and the log-normal formulation to estimate initial conditions.
Poverty below \$10 per day	No variable name in model; calculated from other variables	Population living below \$10 per day at 2005 international prices (purchasing power parity). See preceding description of "Poverty below \$1.25 per day" for general interpretation and "Poverty below \$5 per day" for a note on initialization.
Poverty below \$20 per day	No variable name in model; calculated from other variables	Population living below \$20 per day at 2005 international prices (purchasing power parity). See preceding description of "Poverty below \$1.25 per day" for general interpretation, and "Poverty below \$5 per day" for a note on initialization.
GDP at market exchange rates (2005 dollars)	GDP	Gross domestic product is defined as either the sum of value added across all sectors of an economy or as the sum of goods and services delivered to meet final demand of an economy. Market exchange rates refer to the exchange rates determined by market transactions of currency traders. Initialized with WDI data in 2005 dollars.
GDP per capita at PPP (2005 dollars)	GDPPCP	Gross domestic product at purchasing power parity divided by total population. GDP is explained in the immediately preceding variable ("GDP at market exchange rates"). OECD defines purchasing power parity as "a price relative which measures the number of units of country B's currency that are needed in country B to purchase the same quantity of an individual good or service as 1 unit of country A's currency will purchase in country A" (see http://stats.oecd.org/glossary/detail.asp?IF=2205). In other words, purchasing power parities eliminate price level differences between countries in order to make better comparisons of actual purchasing power. Initialized with WDI data in 2005 dollars.
Gross domestic product at PPP (2010 dollars)	GDPP	Gross domestic product in 2010 dollars is initialized from WDI data in 2005 dollars using conversion factors based on local currency units, GDP deflators, and purchasing power parity (PPP) conversion factors (local currency units per international dollars). (See definitions of GDP and PPP in the two immediately preceding entries.)

Health

Life expectancy at birth	LIFEXP	The average number of years a newborn is expected to live. Initialized from WDI data.
Infant mortality rate	INFMOR	The probability an infant will die before her/his first birthday, expressed as a rate per 1,000 live births. Initialized from UNPD data.
Child mortality probability	No variable name in model; calculated using IFs population model	The probability a child will die before her/his fifth birthday, expressed as a rate per 1,000 live births. Initialized from UNPD data.
Adult mortality probability	No variable name in model; calculated using IFs population model	The probability that a 15-year-old person will die before her/his 60th birthday, expressed as a rate per 1,000 population. Initialized from UNPD data.
Calories per capita	CLPC	Estimate of available calories per day from all sources, measured in kilocalories. Initialized with data originally from the FAO.
Undernourished children	MALNCHP	As defined by WHO (http://apps.who.int/gho/indicatorregistry/App_Main/view_indicator.aspx?iid=27), "Percentage of children underweight is the percentage of children under five years who have a weight-for-age below minus two standard deviations of the NCHS/WHO reference median." Individual countries may look at children at ages three, four, or five. Initialized from WDI data using weight-based malnutrition measure.
Adult obesity rate	HLOBESITY	The prevalence of obesity among adults 30 years of age and older, expressed as a percentage who have a body mass index of 30 or greater. Initialized using WHO estimates (available at http://apps.who.int/bmi/index.jsp) and forecast based on the historical relationship between obesity and available calories per capita.
Adult smoking rate	HLSMOKING	The prevalence of smoking, expressed as the percentage of the adult population (typically defined by countries as those 15 or 18 and older) who currently smoke tobacco. Initialized with data from WHO and WDI.
Disability-adjusted life years	HLDALY: Commun, NonCom, Injuries	Total disability-adjusted life years (DALYs) across a population, expressed as years in millions. DALYs are calculated as the sum of years of life lost (YLLs), which are calculated as deviation from life expectancy, and years lived with disability (YLDs). YLDs initialized from WHO Global Burden of Disease estimates; YLLs initialized from calculations inside IFs. DALYs are shown for the three major categories of disease: communicable diseases (encompasses also maternal and perinatal diseases, including nutritional deficiencies); noncommunicable diseases; and injuries.

Years lived with disabilities	HYLDD: Commun, NonCom, Injuries	Total years lived with disability (YLDs) across a population, expressed as years in millions. Initialized from WHO Global Burden of Disease estimates. YLDs are shown for the three major categories of disease: communicable diseases (encompasses also maternal and perinatal diseases, including nutritional deficiencies); noncommunicable diseases; and injuries.
Total annual deaths	DEATHS	Total number of annual deaths in millions. Initialized from UNPD mortality data.
Deaths from communicable diseases	DEATHCAT: AIDS, Diarrhea, Malaria, RespInfect, OthCommDis	Total number of annual deaths from communicable diseases, expressed in thousands. Initialized using WHO Global Burden of Disease cause-specific mortality rates for communicable diseases (encompasses also all other causes of maternal and perinatal mortality, including nutritional deficiencies). Separate forecasts are shown for AIDS; diarrheal diseases; malaria; respiratory infections; and a combined category of all other communicable, maternal, and perinatal diseases.
Deaths from noncommunicable diseases	DEATHCAT: CardioVasc, Diabetes, Digestive, MalignNeoPl, MentalHealth, Respiratory Conditions, OtherNonComm	Total number of annual deaths from noncommunicable diseases, expressed in thousands. Initialized using WHO Global Burden of Disease cause-specific mortality rates for noncommunicable diseases and conditions. Separate forecasts are shown for cardiovascular diseases, diabetes, digestive diseases, malignant neoplasms, mental health, respiratory conditions, and a combined category of all other noncommunicable diseases and conditions.
Deaths from injuries	DEATHCAT: TrafficAcc, UnintInj, IntInj	Total number of annual deaths from injuries, expressed in thousands. Initialized using WHO Global Burden of Disease cause-specific mortality rates for injuries. Separate forecasts are shown for road traffic accidents, other unintentional injuries, and intentional injuries.

Education

Literacy	LIT	The basic definition is the ability of adults to read and write, but different countries use very different standards. IFs uses 15-year-olds and older as the definition of adult for this variable. Initialized from WDI data.
Years of education, Adults 25+	EDYRSAG25	Average number of years of completed education, presented separately for females and males 25 years of age and older. Initialized from the Barro and Lee data set (Barro and Lee 2010).
Primary education enrollment rate, net	EDPRIENRN	The percentage of the official primary age group enrolled at the primary level. Contrast this with gross enrollment, which includes enrolled students from all age groups but maintains the base of the official age group and can therefore exceed 100 percent. Initialized using UNESCO data.
Lower secondary enrollment rate, gross	EDSECLWRENRG	All students of any age enrolled at the lower secondary level as a percentage of those of the official age to enroll at that level (see “Primary enrollment rate, net” immediately above for the distinction between gross and net enrollment rates). Lower secondary education for most countries is approximately grades 7–9. Initialized with UNESCO data.
Upper secondary enrollment rate, gross	EDSECUPPRENRG	All students of any age enrolled at the upper secondary level as a percentage of those of the official age to enroll at that level (see “Primary enrollment rate, net” above for the distinction between gross and net enrollment rates). Upper secondary education for most countries is approximately grades 10–12. Initialized with UNESCO data.
Tertiary enrollment rate, gross	EDTERENRG	All students of any age enrolled at the tertiary or post-secondary degree level as a percentage of those of the official age (frequently considered to be 18–21) to enroll at the tertiary level. Initialized with UNESCO data.
Knowledge Society Index	KNOWSOC	Adapted from the technological connectivity subindex of the A. T. Kearney Globalization Index (see “Globalization Index” entry below). Supplemented in IFs with ties to R&D spending and tertiary graduation rate (see B. Hughes 2005 Part 2 for specification).

Infrastructure: Roads

Roads per capita	No variable name in model; calculated from total roads and population	Road network density measured in terms of kilometers of total road network length per million persons. Initialized with data compiled from the WDI, the International Road Federation, and authors Calderón (personal communication) and Canning (http://www.hsph.harvard.edu/faculty/david-canning/data-sets/).
Road network density	INFRAROAD	Road network density measured in terms of kilometers of total road network length per 1,000 hectares (10 square kilometers) of total land area. Initialized with data compiled from the WDI, the International Road Federation, and authors Calderón (personal communication) and Canning (http://www.hsph.harvard.edu/faculty/david-canning/data-sets/).
Population within 2 kilometers of an all-season road	INFRAROADRAI	Percentage of population living within two kilometers of an all-season road, where an all-season road is defined as “a road that is motorable all year round by the prevailing means of rural transport. . . . Occasional interruptions of short duration during inclement weather (e.g., heavy rainfall) are accepted” (Roberts, KC, and Rastogi 2006: 2). Initialized with data from the World Bank Rural Road Access Index.
Paved roads	INFRAROADPAVEDPCNT	Percentage of total road network that has been paved. Initialized with data compiled from the WDI, the International Road Federation, and authors Calderón (personal communication) and Canning (http://www.hsph.harvard.edu/faculty/david-canning/data-sets/).
Cars, buses, and freight vehicles	VEHICLES1000	The number of total vehicles on a country’s roads per 1,000 persons. Includes personal vehicles, public transport, and commercial vehicles. Does not include motor scooters or other two-wheeled vehicles. Initialized with data from the WDI.

Infrastructure: Energy/Electricity		
Population with access to electricity	INFRAELECACC	Percentage of population with access to electricity. Can be broken out for urban and rural populations. Initialized from IEA data.
Electricity generation capacity	INFRAELEGENCAP	The total installed electricity generation capacity of all power plants measured in kilowatts. Initialized from EIA data.
Household use of modern forms of energy	No variable name in model; calculated from ENSOFUEL	Percentage of the population using modern fuels rather than solid fuels (ENSOFUEL) as their main household energy source, where modern fuels include “electricity, liquid fuels, or gaseous fuels” (Legros et al. 2009: 5–6). Initialized with data from the UN Millennium Development Goals Indicator database at http://mdgs.un.org/unsd/mdg/Data.aspx .

Infrastructure: Water and Sanitation		
Access to improved drinking water	WATSAFE	Percentage of population with access to improved water sources. Improved water sources include household piped water; public taps or standpipes; tube wells or boreholes; protected dug wells; protected springs; and rainwater collection. Initialized with data from WHO and UNICEF.
Access to improved sanitation	SANITATION	Percentage of population with access to personal (as opposed to shared or public) sanitation facilities that ensure hygienic separation of human excreta from human contact. Includes flush toilets, piped sewer systems, septic tanks, improved pit latrines, and composting toilets. Initialized with data from WHO and UNICEF.
Wastewater collection coverage	WATWASTE	Percentage of the population connected to a wastewater collection system. Initialized with data from the UN Statistics Division.
Land area equipped for irrigation	LANDIRAREQUIP	The area of land equipped with irrigation systems measured in 1,000 hectares (1,000 hectares equals 10 square kilometers). Initialized from FAO data.

Infrastructure: Information and Communication Technologies		
Mobile phone usage	ICTMOBIL	Number of mobile phone subscriptions per 100 persons; can exceed 100 because of multiple subscriptions per individual. Initialized from ITU data.
Mobile broadband usage	ICTMOBILBROAD	Number of mobile phone subscriptions with access to data communication at broadband speed per 100 persons. Initialized from ITU data.

Infrastructure: Spending		
Spending on core infrastructure	No variable name in model; calculated from other variables	Total spending on core infrastructure in billions of 2005 dollars, where core infrastructure is defined as paved and unpaved roads; electricity generation capacity and urban and rural electricity connections; improved water connections and improved sanitation connections; wastewater treatment; the area equipped for irrigation; fixed telephone lines; fixed broadband subscriptions; mobile telephone subscriptions; and mobile broadband subscriptions. See “Total (core + other) infrastructure spending” entry below for description of how infrastructure spending is calculated.
Total (core + other) infrastructure spending	No variable name in model; calculated from other variables	Total spending on infrastructure in billions of 2005 dollars. Represents the sum of spending on new construction and maintenance by public and private sectors for each type of core infrastructure. Also includes public spending on other infrastructure types. Spending is calculated by adding the cost of maintaining existing infrastructure (determined by multiplying the amount of physical infrastructure in a given year by the unit cost of that infrastructure and by a fixed annual maintenance/renewal percentage) and adding to it the cost of new infrastructure (the expected net change in the amount of infrastructure from one year to the next, multiplied by the same unit cost). Public and private shares are determined by fixed percentage contributions that differ by infrastructure type. The unit costs, maintenance percentages, and public/private shares are based on a wide range of sources.
Spending on roads	No variable name in model; calculated from other variables	Percent of spending on core infrastructure devoted to roads. Spending on roads includes public and private expenditures related to the construction and maintenance of paved and unpaved roads. See “Total (core + other) infrastructure spending” for methodology.
Spending on electricity	No variable name in model; calculated from other variables	Percent of spending on core infrastructure devoted to electricity. Spending on electricity includes public and private expenditures related to adding new, and maintaining existing, electricity generation capacity; adding and maintaining transmission capabilities; and increasing urban and rural electricity access. See “Total (core + other) infrastructure spending” for methodology.
Spending on water and sanitation	No variable name in model; calculated from other variables	Percent of spending on core infrastructure devoted to water and sanitation infrastructure. Spending on water and sanitation includes public and private expenditures related to the construction and maintenance of improved water and sanitation systems; the maintenance and expansion of irrigation networks; and the provision of wastewater services. See “Total (core + other) infrastructure spending” for methodology.
Spending on ICT	No variable name in model; calculated from other variables	Percent of spending on core infrastructure devoted to ICT infrastructure. Spending on ICT includes public and private expenditures related to the construction and maintenance of fixed telephone lines and the equipment/structures needed to provide mobile phone and fixed and mobile broadband services. See “Total (core + other) infrastructure spending” for methodology.

Governance		
Internal War Occurrence	SFINTLWARALL	The Internal War Occurrence measure in IFs represents the probability of an internal war or state failure occurrence in each country year. Index values range from 0 to 1, with 1 representing a war occurrence in a given country-year. The index is initialized in 2010 with data on internal conflict (sometimes referred to as state failure) from the Political Instability Task Force.
IFs Country Performance Risk Index	GOVRISK	The IFs Country Performance Risk Index represents the performance of a country on several dimensions, thereby also indicating the propensity of a country for instability or internal conflict. The index is a weighted-average measure made up of variables from the three categories of governance (security, capacity, and inclusion); deep risk drivers (demographic, environmental, and international); and country performance on issues mostly reflecting service delivery (economic, health, and education). Index values are bounded between 0 and 1, but because of the scale of some submeasures, will not reach either outer limit. Higher values represent a higher level of risk. The IFs index draws conceptually on work of the Center for International Development and Conflict Management at the University of Maryland (Hewitt, Wilkenfeld, and Gurr 2010) and the Political Instability Task Force.
Corruption Perceptions Index	GOVCORRUPT	This variable is based on, and initialized with, data from Transparency International's Corruption Perceptions Index (TI-CPI). Broadly speaking, corruption is defined as the misuse of public power for private benefit. The TI-CPI's purpose is the country-level assessment of the perceived extent of public and political sector corruption as indicated by the frequency and/or the size of corrupt transactions (e.g., bribes). The TI-CPI is an aggregate indicator; it draws on multiple sources (none of which cover all countries) that share this common purpose. Evaluative assessments are made by country experts (both residents and non-residents) and by business leaders. Individual ratings of ranks are combined through a standardization process into a country-level composite score that ranges from 1 to 10, with higher values representing less corruption (see http://www.transparency.com).
Government Effectiveness	GOVEFFECT	This variable is based on and initialized with data from the World Bank's Worldwide Governance Indicators Government Effectiveness measure. Government Effectiveness is an aggregate measure built from 30 underlying data sources representing public perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies (Kaufmann, Kraay, and Mastruzzi 2010: 4). Values run from -2.5 to 2.5 with higher values representing greater governance effectiveness (see http://info.worldbank.org/governance/wgi/resources.htm).
Government Regulatory Quality	GOVREGQUAL	This variable is based on and initialized with data from the World Bank's Worldwide Governance Indicators Regulatory Quality measure. Regulatory Quality is an aggregate measure built from 30 underlying data sources representing public "perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development" (Kaufmann, Kraay, and Mastruzzi 2010: 4). Values run from -2.5 to 2.5 with higher values representing greater policy and regulatory quality and stability (see http://info.worldbank.org/governance/wgi/pdf/rq.pdf).
Polity Autocracy/Democracy Index	DEMOCPOLITY	This variable is based on and initialized from Polity Project data (see http://www.systemicpeace.org/polity/polity4.htm). The Polity score measures a spectrum of governance structures from fully institutionalized autocracies through mixed authority regimes (anocracies) to fully institutionalized democracies. The Polity Project expresses polity scores on a 21-point scale ranging from -10 (hereditary monarchy) to +10 (consolidated democracy). Adapted in IFs as the Polity measure of democracy minus the Polity measure of autocracy plus 10, so that the IFs scale runs from 0 through 20.
Freedom House Index (inverted)	FREEDOM	This variable is based on, and initialized with data from, the annual surveys conducted by Freedom House and published in the <i>Freedom in the World</i> series. The surveys measure freedom—defined as the opportunity to act spontaneously in a variety of fields outside the control of the government and other centers of political domination—in terms of political rights and civil liberties. Countries are assigned a separate score in each of the two major categories; scoring runs from 1 to 7, with 1 indicating "most free" and 7 indicating "least free" (see http://www.freedomhouse.org). In IFs, the two scores are added and the valence is reversed, resulting in composite country-level freedom scores that can range from 2 to 14, with higher numbers indicating more freedom.
Gender Empowerment Measure	GEM	This variable is based on and initialized from the Gender Empowerment Measure (GEM) of the UNDP. The GEM is a measure of female political participation and decision-making power, economic participation, and command over resources. The GEM includes four measures: the percentage of parliamentary seats held by men and women; the percentage shares of women and men in positions as legislators, senior officials, and managers; women's and men's percentage shares of professional and technical positions; and women's and men's estimated earned income (at purchasing power parity). The composite GEM measure is an index on which 1.0 represents gender parity, and numbers below 1.0 indicate female disadvantage.
Economic Freedom Index	ECONFREE	This variable is based on an index developed by the Fraser Institute and initialized with data from its annual <i>Economic Freedom of the World</i> (EFW) series. The definition of economic freedom includes personal choice, voluntary exchange coordinated by markets, freedom to enter and compete in markets, and protection of persons and their property from aggression by others. The EFW index utilizes data from external sources (e.g., IMF, the World Bank, and the World Economic Forum) and includes a large number of variables across the following five components: size of government; legal structure and security of property rights; access to sound money; freedom to trade internationally; and regulation of credit, labor, and business. Each component is rated on a scale from 0 to 10 based on underlying country-level data, with higher ratings indicating greater economic freedom. The final country-level rating also ranges from 0 to 10 and is determined by averaging its component ratings (see http://www.freetheworld.com).

Economic Integration Index	ECONINTEG	The Economic Integration Index in IFs is adapted from the economic integration component of the Foreign Policy Globalization Index developed by the international management consulting group A. T. Kearney, and is initialized with values from the broader IFs database (primarily WDI and the United Nations Conference on Trade and Development's World Investment Report). The index combines measures of a country's trade and foreign direct investment inflows and outflows in relation to its GDP (e.g., relative to its capacity to participate rather than to the absolute size of its participation). Values run from 0 to 100, with higher values representing greater economic integration. See B. Hughes 2005 for IFs specification.
Globalization Index	GLOBALIZ	The Globalization Index in IFs is adapted from the Foreign Policy Globalization Index developed by the international management consulting group A. T. Kearney. A. T. Kearney's index is a composite of four subindices: economic integration, personal contact, technological connectivity, and political engagement. In IFs, economic integration is measured by trade (exports) and foreign direct investment (inflows of capital), while personal contact is represented by telephone infrastructure and worker remittances (net) relative to GDP. Technological connectivity is represented by an electronic network infrastructure measure, and political engagement is calculated from the sum of foreign aid expenditures or receipts as a portion of GDP relative to the global average. See B. Hughes 2005 for expanded specification of the components of the Index in IFs. The Index is initialized with data from the broader IFs database.
IFs Governance Security Index	GOVINDSECUR; calculated from SFINTLWARALL and GOVRISK	The IFs Governance Security Index is an aggregate indicator of a state's ability to maintain control over its territory and to forestall violence within its boundaries. The index is calculated by averaging the probability of internal war (see earlier entry for "Internal War Occurrence") and the degree to which the country performance risk index exceeds its lower boundary of 0.15 (see earlier entry for "IFs Country Performance Risk Index"). Index values are bounded between 0 and 1, with higher values representing greater security.
IFs Governance Capacity Index	GOVINDCAPAC; calculated from GOVREV and GOVCORRUPT	The IFs Governance Capacity Index is an aggregate indicator of a state's ability to mobilize funds and other resources to address the needs of its population. The index is calculated by averaging measures of government revenues net of foreign aid as a percentage of GDP and the Corruption Perceptions Index (see that variable's entry above) rescaled to run from 0 to 1. Government revenue in IFs is the sum of domestic government revenue (taxes on household and firm income, household social security/welfare taxes, firm income taxes, firm social security/welfare taxes, and indirect taxes) plus foreign assistance (which the index removes). The contribution of revenue minus foreign aid to the IFs Governance Capacity Index is capped once its percentage of GDP rises above 45. Index values are constrained between 0 and 1, with higher values representing greater capacity.
IFs Governance Inclusion Index	GOVINDINCLUS; calculated from DEMOCPOLITY and GEM	The IFs Governance Inclusion Index is an aggregate indicator of how well a state's population is included in the process of governing. The index is calculated by averaging a 0–1 rescaled measure of regime type (see earlier entry for "Polity Autocracy/Democracy Index") and the already 0–1 scaled gender empowerment measure (see earlier entry for "Gender Empowerment Measure"). Index values range from 0 to 1, with higher values representing greater inclusiveness, including the freer flow of information, greater freedom of association, more extensive participation in political decision-making, and a more cooperative culture of political behavior.
IFs Governance Index (Aggregate)	GOVINDTOTAL; calculated from Governance Capacity, Inclusiveness, and Security Indices	The IFs Governance Index (Aggregate) is a composite measure of overall governance. It is calculated as a simple average of the three IFs component governance indices described above: the Governance Security Index, the Governance Capacity Index, and the Governance Inclusion Index (see the respective entries for details on each). Index values are bounded between 0 and 1, with 1 representing stronger governance.

Data Source Organization Abbreviations

EIA	Energy Information Administration (U.S.)
FAO	Food and Agriculture Organization (UN)
IEA	International Energy Agency
IMF	International Monetary Fund
ITU	International Telecommunication Union
NCHS	National Center for Health Statistics
OECD	Organisation for Economic Co-operation and Development
UNAIDS	United Nations Program on AIDS
UNDP	United Nations Development Programme
UNESCO	United Nations Education, Scientific, and Cultural Organization
UNICEF	United Nations Children's Fund
UNPD	United Nations Population Division
WDI	World Development Indicators (World Bank)
WHO	World Health Organization

Forecast Tables: Maps of Continents and Subregions

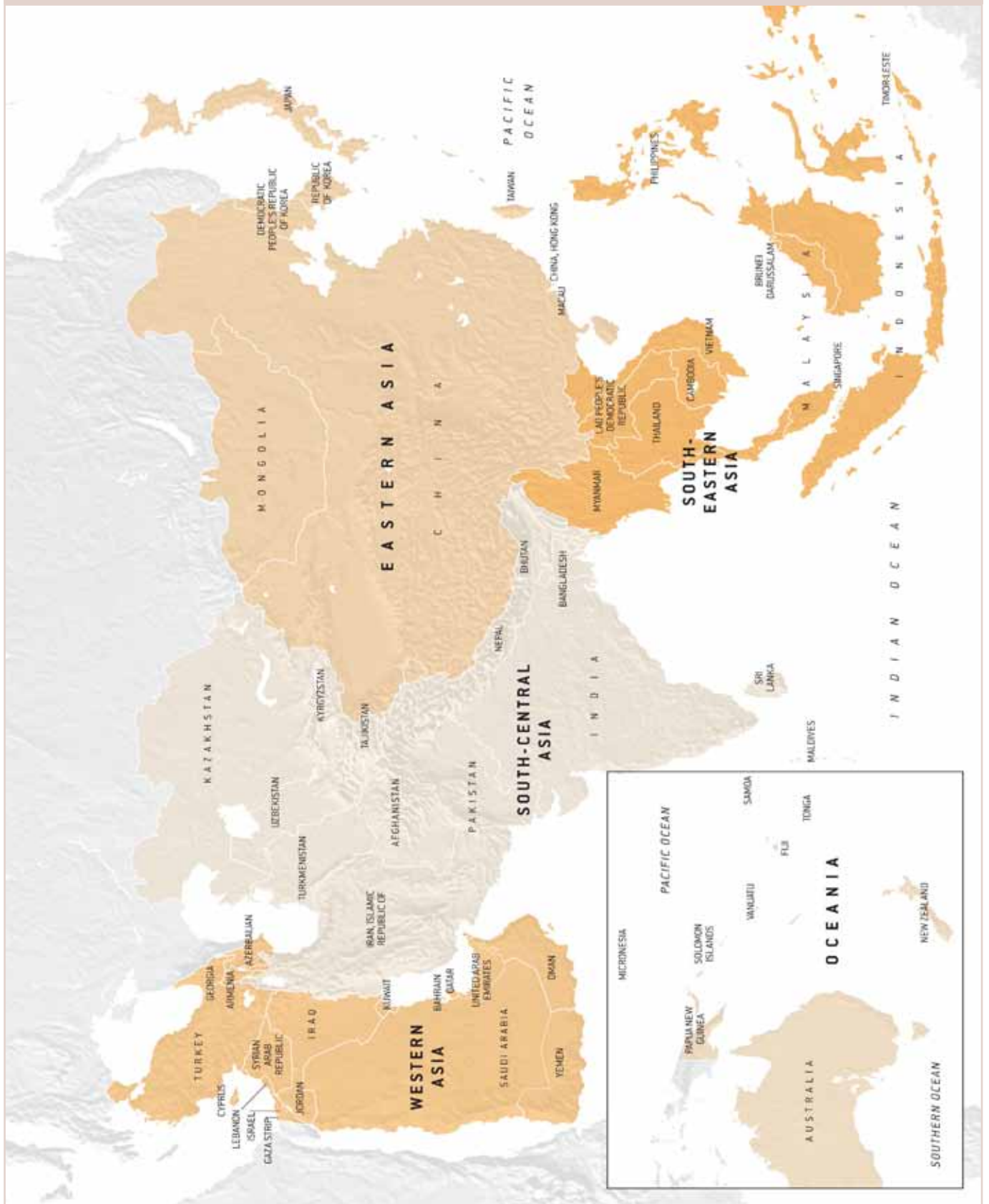
African regions



American regions



Asian regions



European regions



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Patterns of Potential Human Progress		Multination Regional Analysis						Measures of Poverty, Health, Education, Infrastructure, and Governance									
Population, Land Area, and Human Development Index																	
Base Case Source: International Futures Model Version 6.68, Nov 2013	Population				Land Area		Population Density						Urban Population				
	Millions of people				Sq km	Sq mi	Persons per sq km			Persons per sq mi			Percent of total population				
	2010	2035	2060	% Chg	000s	000s	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	
	World	6849	8587	9605	40.2%	129368	49949	52.9	66.4	74.2	137.1	171.9	192.3	50.84	61.81	68.8	35.3%
Africa	1031	1730	2456	138.2%	29483	11383	35.0	58.7	83.3	90.6	152.0	215.8	39.66	51.56	61.14	54.2%	
Americas	928.4	1143	1244	34.0%	38380	14819	24.2	29.8	32.4	62.6	77.1	83.9	80.6	85.78	87.7	8.8%	
Asia with Oceania	4155	5011	5272	26.9%	39434	15225	105.4	127.1	133.7	272.9	329.1	346.3	43.08	57.35	66.22	53.7%	
Europe	726.3	694.5	626.1	-13.8%	22014	8500	33.0	31.5	28.4	85.4	81.7	73.7	73.15	80.23	83.24	13.8%	
World	6849	8587	9605	40.2%	129368	49949	52.9	66.4	74.2	137.1	171.9	192.3	50.84	61.81	68.8	35.3%	
Africa-Eastern	326	591.7	876.9	169.0%	6157	2377	52.9	96.1	142.4	137.1	248.9	368.9	23.49	33.05	45.4	93.3%	
Africa-Middle	128.9	235.1	355.9	176.1%	6497	2508	19.8	36.2	54.8	51.4	93.7	141.9	42.53	59.13	70.46	65.7%	
Africa-Northern	212.6	293.1	337.3	58.7%	8114	3133	26.2	36.1	41.6	67.9	93.6	107.7	50.87	62.19	70.03	37.7%	
Africa-Southern	57.33	64.18	69.94	22.0%	2652	1024	21.6	24.2	26.4	56.0	62.7	68.3	59	77.92	84.6	43.4%	
Africa-Western	306.2	545.7	815.4	166.3%	6062	2341	50.5	90.0	134.5	130.8	233.1	348.3	44.26	59.56	68.3	54.3%	
Africa	1031	1730	2456	138.2%	29483	11383	35.0	58.7	83.3	90.6	152.0	215.8	39.66	51.56	61.14	54.2%	
America-Caribbean	40.65	48.58	50.64	24.6%	218.9	84.53	185.7	221.9	231.3	480.9	574.7	599.1	65.38	78.34	84.54	29.3%	
America-Central	42.5	63.22	77.34	82.0%	508.3	196.3	83.6	124.4	152.2	216.5	322.1	394.0	55.89	65.37	72.39	29.5%	
America-North	452.4	550.9	605.5	33.8%	20185	7793	22.4	27.3	30.0	58.1	70.7	77.7	81.81	86.65	88.68	8.4%	
America-South	392.9	480.8	510.9	30.0%	17468	6744	22.5	27.5	29.2	58.3	71.3	75.8	83.45	88.22	89.18	6.9%	
Americas	928.4	1143	1244	34.0%	38380	14819	24.2	29.8	32.4	62.6	77.1	83.9	80.6	85.78	87.7	8.8%	
Asia-East	1571	1631	1469	-6.5%	11500	4440	136.6	141.8	127.7	353.8	367.3	330.9	49.01	70.43	81.64	66.6%	
Asia-South Central	1727	2265	2560	48.2%	10327	3987	167.2	219.3	247.9	433.2	568.1	642.1	32.07	41.48	51.51	60.6%	
Asia-South East	589.4	729	769.8	30.6%	4341	1676	135.8	167.9	177.3	351.7	435.0	459.3	48.7	69.17	78.95	62.1%	
Asia-West	231.9	338.9	418.3	80.4%	4805	1855	48.3	70.5	87.1	125.0	182.7	225.5	66.3	73.28	78.25	18.0%	
Oceania	35.61	46.85	55.11	54.8%	8461	3267	4.2	5.5	6.5	10.9	14.3	16.9	70.93	70.36	69.3	-2.3%	
Asia with Oceania	4155	5011	5272	26.9%	39434	15225	105.4	127.1	133.7	272.9	329.1	346.3	43.08	57.35	66.22	53.7%	
Europe-East	293.9	260.5	220.6	-24.9%	18051	6969	16.3	14.4	12.2	42.2	37.4	31.7	68.43	74.69	77.78	13.7%	
Europe-North	99.17	106.2	107.9	8.8%	1640	633.4	60.5	64.8	65.8	156.6	167.7	170.4	84.52	88.36	89.14	5.5%	
Europe-South	152.7	145.8	126.4	-17.2%	1294	499.7	118.0	112.7	97.7	305.6	291.8	253.0	67.66	78.36	82.6	22.1%	
Europe-West	188.8	190.1	178	-5.7%	1087	419.5	173.7	174.9	163.8	450.1	453.2	424.3	77.85	83.32	85.67	10.0%	
Europe	726.3	694.5	626.1	-13.8%	22014	8500	33.0	31.5	28.4	85.4	81.7	73.7	73.15	80.23	83.24	13.8%	

Population, Land Area, and Human Development Index

	Population				Land Area		Population Density						Urban Population			
Base Case: Countries in Descending Year 2060 Population Sequence	Millions of people				Sq km	Sq mi	Persons per sq km			Persons per sq mi			Percent of total population			
	2010	2035	2060	% Chg	000s	000s	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg
AFRICA																
Ethiopia	84.99	140.9	191.7	125.6%	1104	426.4	77.0	127.6	173.6	199.3	330.4	449.6	17.18	26.29	39.43	129.5%
Tanzania, United Rep. of	45.03	88.08	136.2	202.5%	885.8	342	50.8	99.4	153.8	131.7	257.5	398.2	26.29	39.61	55.43	110.8%
Uganda	33.8	71.53	116.7	245.3%	199.8	77.15	169.2	358.0	584.1	438.1	927.2	1512.6	13.15	18.13	27.2	106.8%
Kenya	40.87	72.63	103.3	152.8%	569.1	219.7	71.8	127.6	181.5	186.0	330.6	470.2	22.01	31.37	44.29	101.2%
Madagascar	20.15	38.14	63.18	213.5%	581.5	224.5	34.7	65.6	108.7	89.8	169.9	281.4	31.04	42.33	53.07	71.0%
Mozambique	23.42	41.1	58.71	150.7%	786.4	303.6	29.8	52.3	74.7	77.1	135.4	193.4	38.36	59.12	74.44	94.1%
Malawi	15.69	32.37	53.77	242.7%	94.28	36.4	166.4	343.3	570.3	431.0	889.3	1477.2	18.8	28.88	43.17	129.6%
Zambia	13.26	24.97	36.93	178.5%	743.4	287	17.8	33.6	49.7	46.2	87.0	128.7	34.81	34.69	38.44	10.4%
Somalia	9.345	18	28.93	209.6%	627.3	242.2	14.9	28.7	46.1	38.6	74.3	119.4	37.34	43.81	51.71	38.5%
Rwanda	10.28	18.27	26.39	156.7%	24.67	9.525	416.7	740.6	1069.7	1079.3	1918.1	2770.6	19.53	31.34	47.22	141.8%
Zimbabwe	12.58	18.47	22.61	79.7%	386.9	149.4	32.5	47.7	58.4	84.2	123.6	151.3	38.26	39.77	44.04	15.1%
Burundi	8.538	14.2	20.45	139.5%	25.68	9.915	332.5	553.0	796.3	861.1	1432.2	2062.5	10.8	20.9	37	242.6%
Eritrea	5.223	9.316	13.42	156.9%	101	39	51.7	92.2	132.9	133.9	238.9	344.1	21.73	37.03	55.72	156.4%
Comoros	0.674	1.315	2.166	221.4%	1.86	0.718	362.4	707.0	1164.5	938.7	1831.5	3016.7	30.74	31.07	33.99	10.6%
Djibouti	0.879	1.14	1.256	42.9%	23.18	8.95	37.9	49.2	54.2	98.2	127.4	140.3	89.07	92	91.73	3.0%
Mauritius	1.281	1.334	1.196	-6.6%	2.03	0.784	631.0	657.1	589.2	1633.9	1701.5	1525.5	42.61	46.24	51.44	20.7%
Africa-Eastern	326	591.7	876.9	169.0%	6157	2377	52.9	96.1	142.4	137.1	248.9	368.9	23.49	33.05	45.4	93.3%
Congo, Democratic Rep. of	67.83	127.8	198.8	193.1%	2267	875.3	29.9	56.4	87.7	77.5	146.0	227.1	34.23	51.32	66.53	94.4%
Angola	18.99	34.28	49.27	159.5%	1247	481.4	15.2	27.5	39.5	39.4	71.2	102.3	58.79	84.44	91.66	55.9%
Cameroon	19.97	33.35	46.66	133.7%	472.7	182.5	42.2	70.6	98.7	109.4	182.7	255.7	57.33	75.12	82.9	44.6%
Chad	11.51	22.91	38.7	236.2%	1259	486.2	9.1	18.2	30.7	23.7	47.1	79.6	26.93	37.49	49.66	84.4%
Central African Rep.	4.507	7.129	9.946	120.7%	623	240.5	7.2	11.4	16.0	18.7	29.6	41.4	37.99	42.46	47.81	25.8%
Congo, Rep. of	3.752	6.075	7.914	110.9%	341.5	131.9	11.0	17.8	23.2	28.4	46.1	60.0	66.91	82.38	87.64	31.0%
Gabon	1.503	2.251	2.775	84.6%	257.7	99.49	5.8	8.7	10.8	15.1	22.6	27.9	86.14	92	92	6.8%
Equatorial Guinea	0.693	1.11	1.512	118.2%	28.05	10.83	24.7	39.6	53.9	64.0	102.5	139.6	40.12	51.45	61.77	54.0%
São Tomé and Príncipe	0.166	0.282	0.393	136.7%	0.96	0.371	172.9	293.8	409.4	447.4	760.1	1059.3	61.98	72.28	79.01	27.5%
Africa-Middle	128.9	235.1	355.9	176.1%	6497	2508	19.8	36.2	54.8	51.4	93.7	141.9	42.53	59.13	70.46	65.7%
Egypt	84.5	114.1	128.8	52.4%	995.4	384.3	84.9	114.6	129.4	219.9	296.9	335.2	41.09	45.52	51.96	26.5%
Sudan	43.22	70.47	91.96	112.8%	2376	917.4	18.2	29.7	38.7	47.1	76.8	100.2	45.55	71.64	84.1	84.6%
Algeria	35.42	45.94	49.61	40.1%	2382	919.6	14.9	19.3	20.8	38.5	50.0	53.9	66.58	81.58	86.8	30.4%
Morocco	32.38	40.73	43.42	34.1%	446.3	172.3	72.6	91.3	97.3	187.9	236.4	252.0	55.94	62.11	68.02	21.6%
Tunisia	10.54	12.78	13.27	25.9%	155.4	59.98	67.8	82.2	85.4	175.7	213.1	221.2	67.38	76.53	80.95	20.1%
Libya	6.549	8.996	10.31	57.4%	1760	679.4	3.7	5.1	5.9	9.6	13.2	15.2	75.59	80.51	83.87	11.0%
Africa-Northern	212.6	293.1	337.3	58.7%	8114	3133	26.2	36.1	41.6	67.9	93.6	107.7	50.87	62.19	70.03	37.7%

Patterns of Potential Human Progress					Multination Regional Analysis				Measures of Poverty, Health, Education, Infrastructure, and Governance							
Population, Land Area, and Human Development Index																
	Population				Land Area		Population Density						Urban Population			
Base Case: Countries in Descending Year 2060 Population Sequence	Millions of people				Sq km	Sq mi	Persons per sq km			Persons per sq mi			Percent of total population			
	2010	2035	2060	% Chg	000s	000s	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg
AFRICA continued																
South Africa	49.85	54.29	58.65	17.7%	1214	468.9	41.1	44.7	48.3	106.3	115.8	125.1	61.87	81.58	87.37	41.2%
Namibia	2.213	3.222	3.889	75.7%	823.3	317.9	2.7	3.9	4.7	7.0	10.1	12.2	39.21	56.32	70.2	79.0%
Lesotho	2.085	2.544	2.699	29.4%	30.36	11.72	68.7	83.8	88.9	177.9	217.1	230.3	28.01	51.98	71.22	154.3%
Botswana	1.979	2.44	2.678	35.3%	566.7	218.8	3.5	4.3	4.7	9.0	11.2	12.2	61.96	83.07	89.51	44.5%
Swaziland	1.202	1.69	2.022	68.2%	17.2	6.641	69.9	98.3	117.6	181.0	254.5	304.5	25.16	33.17	43.13	71.4%
Africa-Southern	57.33	64.18	69.94	22.0%	2652	1024	21.6	24.2	26.4	56.0	62.7	68.3	59	77.92	84.6	43.4%
Nigeria	158.3	272.9	394.8	149.4%	910.8	351.7	173.8	299.6	433.5	450.1	775.9	1122.5	49.83	69.75	80.07	60.7%
Niger	15.9	36.94	72.73	357.4%	1267	489.1	12.5	29.2	57.4	32.5	75.5	148.7	16.29	18.9	23.45	44.0%
Côte d'Ivoire	21.57	38.44	57.15	165.0%	318	122.8	67.8	120.9	179.7	175.7	313.0	465.4	45.84	54.96	63.67	38.9%
Burkina Faso	16.3	31.62	49.28	202.3%	273.6	105.6	59.6	115.6	180.1	154.4	299.4	466.7	20.61	33.24	49.87	142.0%
Ghana	24.33	37.51	46.8	92.4%	227.5	87.85	106.9	164.9	205.7	276.9	427.0	532.7	51.62	74.34	84.9	64.5%
Mali	13.32	26.4	41.25	209.7%	1220	471.1	10.9	21.6	33.8	28.3	56.0	87.6	38.42	57.73	72.05	87.5%
Senegal	12.87	23.41	35.5	175.8%	192.5	74.34	66.9	121.6	184.4	173.1	314.9	477.5	41.46	49.02	57.34	38.3%
Guinea	10.31	18.73	29.81	189.1%	245.7	94.87	42.0	76.2	121.3	108.7	197.4	314.2	34.27	45.17	55.57	62.2%
Benin	9.217	18.09	28.86	213.1%	110.6	42.71	83.3	163.6	260.9	215.8	423.6	675.7	40.33	49.86	60.03	48.8%
Togo	6.783	11.51	16.15	138.1%	54.39	21	124.7	211.6	296.9	323.0	548.1	769.0	38.57	53.13	64.77	67.9%
Sierra Leone	5.835	10.02	13.69	134.6%	71.62	27.65	81.5	139.9	191.1	211.0	362.4	495.1	38.61	45.93	55.2	43.0%
Liberia	4.124	7.605	11.17	170.9%	96.32	37.19	42.8	79.0	116.0	110.9	204.5	300.3	59.56	87.87	92	54.5%
Mauritania	3.369	5.695	8.073	139.6%	1031	398	3.3	5.5	7.8	8.5	14.3	20.3	42.52	49.47	57.27	34.7%
Gambia	1.751	3.419	5.271	201.0%	11.3	4.363	155.0	302.6	466.5	401.3	783.6	1208.1	57.35	73.13	81.27	41.7%
Guinea-Bissau	1.648	2.763	4.236	157.0%	28.12	10.86	58.6	98.3	150.6	151.7	254.4	390.1	27.58	29.25	31.96	15.9%
Cape Verde	0.513	0.658	0.711	38.6%	4.03	1.556	127.3	163.3	176.4	329.7	422.9	456.9	59.08	71.8	78.89	33.5%
Africa-Western	306.2	545.7	815.4	166.3%	6062	2341	50.5	90.0	134.5	130.8	233.1	348.3	44.26	59.56	68.3	54.3%

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Population				Land Area		Population Density						Urban Population			
	Millions of people				Sq km 000s	Sq mi 000s	Persons per sq km			Persons per sq mi			Percent of total population			
	2010	2035	2060	% Chg			2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg
AMERICAS																
Haiti	10.19	14.36	17	66.8%	27.56	10.64	369.7	521.0	616.8	957.7	1349.6	1597.7	48.63	80.25	90.11	85.3%
Dominican Rep.	10.23	13.27	14.69	43.6%	48.32	18.66	211.7	274.6	304.0	548.2	711.1	787.2	68.42	83.64	88.19	28.9%
Cuba	11.2	10.97	9.261	-17.3%	106.4	41.1	105.3	103.1	87.0	272.5	266.9	225.3	76.07	76.65	79.31	4.3%
Puerto Rico	3.979	4.344	4.244	6.7%	8.87	3.425	448.6	489.7	478.5	1161.8	1268.3	1239.1	98.79	98.79	98.75	-0.0%
Jamaica	2.713	3.135	3.152	16.2%	10.83	4.181	250.5	289.5	291.0	648.9	749.8	753.9	53.49	53.95	56.54	5.7%
Trinidad and Tobago	1.345	1.379	1.206	-10.3%	5.13	1.981	262.2	268.8	235.1	679.0	696.1	608.8	13.86	25.58	42.6	207.4%
Bahamas	0.346	0.407	0.406	17.3%	10.01	3.865	34.6	40.7	40.6	89.5	105.3	105.0	83.34	92	92	10.4%
Barbados	0.257	0.254	0.217	-15.6%	0.43	0.166	597.7	590.7	504.7	1548.2	1530.1	1307.2	43.39	56.82	67.36	55.2%
Saint Lucia	0.174	0.186	0.172	-1.1%	0.61	0.236	285.2	304.9	282.0	737.3	788.1	728.8	28	34.95	43.46	55.2%
Grenada	0.104	0.137	0.153	47.1%	0.34	0.131	305.9	402.9	450.0	793.9	1045.8	1167.9	31.14	29.34	29.35	-5.7%
Saint Vincent and the Grenadines	0.109	0.134	0.142	30.3%	0.39	0.151	279.5	343.6	364.1	721.9	887.4	940.4	47.94	47.86	50.44	5.2%
America-Caribbean	40.65	48.58	50.64	24.6%	218.9	84.53	185.7	221.9	231.3	480.9	574.7	599.1	65.38	78.34	84.54	29.3%
Guatemala	14.38	24.62	33.21	130.9%	107.2	41.37	134.1	229.7	309.8	347.6	595.1	802.8	49.54	62.08	72.39	46.1%
Honduras	7.616	11.72	14.5	90.4%	111.9	43.2	68.1	104.7	129.6	176.3	271.3	335.6	48.7	60.48	69.55	42.8%
Nicaragua	5.82	8.31	9.687	66.4%	120.3	46.46	48.4	69.1	80.5	125.3	178.9	208.5	56.99	59.91	65.03	14.1%
El Salvador	6.192	7.842	8.552	38.1%	20.72	8	298.8	378.5	412.7	774.0	980.3	1069.0	61.31	61.05	63.35	3.3%
Costa Rica	4.64	5.767	5.98	28.9%	51.06	19.71	90.9	112.9	117.1	235.4	292.6	303.4	64.56	80.81	86.37	33.8%
Panama	3.51	4.461	4.824	37.4%	74.34	28.7	47.2	60.0	64.9	122.3	155.4	168.1	74.95	92	92	22.7%
Belize	0.344	0.505	0.59	71.5%	22.81	8.807	15.1	22.1	25.9	39.1	57.3	67.0	52.81	84.98	92	74.2%
America-Central	42.5	63.22	77.34	82.0%	508.3	196.3	83.6	124.4	152.2	216.5	322.1	394.0	55.89	65.37	72.39	29.5%
United States of America	309.7	376.2	421.9	36.2%	9147	3532	33.9	41.1	46.1	87.7	106.5	119.5	82.14	85.53	87.67	6.7%
Mexico	108.5	133.9	138.7	27.8%	1944	750.6	55.8	68.9	71.3	144.6	178.4	184.8	81.31	89.38	90.99	11.9%
Canada	34.17	40.81	44.9	31.4%	9094	3511	3.8	4.5	4.9	9.7	11.6	12.8	80.44	88.01	91.05	13.2%
America-North	452.4	550.9	605.5	33.8%	20185	7793	22.4	27.3	30.0	58.1	70.7	77.7	81.81	86.65	88.68	8.4%
Brazil	195.5	229.3	234.1	19.7%	8459	3266	23.1	27.1	27.7	59.9	70.2	71.7	86.25	92	92	6.7%
Colombia	46.32	59.2	64.35	38.9%	1109	428.4	41.8	53.4	58.0	108.1	138.2	150.2	75.06	84.21	87.93	17.1%
Argentina	40.67	48.38	52.01	27.9%	2737	1057	14.9	17.7	19.0	38.5	45.8	49.2	91.81	92	92	0.2%
Peru	29.5	38.55	43.25	46.6%	1280	494.2	23.0	30.1	33.8	59.7	78.0	87.5	70.58	70.61	72.83	3.2%
Venezuela (Bolivarian Rep. of)	28.84	38.04	42.62	47.8%	882.1	340.6	32.7	43.1	48.3	84.7	111.7	125.1	93.98	93.98	93.91	-0.1%
Ecuador	13.77	18.26	20.5	48.9%	248.4	95.89	55.4	73.5	82.5	143.6	190.4	213.8	70.27	84.68	89.05	26.7%
Chile	17.14	19.99	20.33	18.6%	743.5	287.1	23.1	26.9	27.3	59.7	69.6	70.8	88.87	92	92	3.5%
Bolivia (Plurinational State of)	10.03	14.78	17.86	78.1%	1083	418.3	9.3	13.6	16.5	24.0	35.3	42.7	65.8	74.09	79.83	21.3%
Paraguay	6.462	9.359	11.12	72.1%	397.3	153.4	16.3	23.6	28.0	42.1	61.0	72.5	61.43	74.87	81.45	32.6%
Uruguay	3.356	3.656	3.699	10.2%	175	67.58	19.2	20.9	21.1	49.7	54.1	54.7	92.52	92.52	92.42	-0.1%
Guyana	0.761	0.769	0.65	-14.6%	196.8	76	3.9	3.9	3.3	10.0	10.1	8.6	28.26	29.92	34.03	20.4%
Suriname	0.525	0.535	0.471	-10.3%	156	60.23	3.4	3.4	3.0	8.7	8.9	7.8	75.55	90.89	91.89	21.6%
America-South	392.9	480.8	510.9	30.0%	17468	6744	22.5	27.5	29.2	58.3	71.3	75.8	83.45	88.22	89.18	6.9%

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Population				Land Area		Population Density						Urban Population			
	Millions of people				Sq km	Sq mi	Persons per sq km			Persons per sq mi			Percent of total population			
	2010	2035	2060	% Chg	000s	000s	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	1338	1406	1278	-4.5%	9327	3601	143.5	150.7	137.0	371.6	390.4	354.9	44.9	69.12	81.63	81.8%
Japan	127.4	115.3	95	-25.4%	364.5	140.7	349.5	316.3	260.6	905.5	819.5	675.2	66.82	71.96	75.78	13.4%
Korea, Rep. of	48.89	48.82	40.05	-18.1%	97.1	37.49	503.5	502.8	412.5	1304.1	1302.2	1068.3	81.88	87.55	89.77	9.6%
Korea, Dem. People's Rep. of	23.99	26.08	25.58	6.6%	120.4	46.49	199.3	216.6	212.5	516.0	561.0	550.2	64.33	72.25	76.97	19.6%
Taiwan, China	23.02	23.23	18.98	-17.5%	35.98	13.89	639.8	645.6	527.5	1657.3	1672.4	1366.5	87.16	95	94.84	8.8%
Hong Kong SAR, China	7.03	8.11	7.963	13.3%	1.042	0.402	6746.6	7783.1	7642.0	17487.6	20174.1	19808.5	100	98.45	99.64	-0.4%
Mongolia	2.701	3.465	3.823	41.5%	1554	599.8	1.7	2.2	2.5	4.5	5.8	6.4	58.67	67.44	73.79	25.8%
Asia-East	1571	1631	1469	-6.5%	11500	4440	136.6	141.8	127.7	353.8	367.3	330.9	49.01	70.43	81.64	66.6%
India	1171	1497	1655	41.3%	2973	1148	393.9	503.5	556.7	1020.0	1304.0	1441.6	30.1	38.77	48.54	61.3%
Pakistan	173.4	264.7	333.3	92.2%	770.9	297.6	224.9	343.4	432.4	582.7	889.4	1120.0	37.04	47.4	58.23	57.2%
Bangladesh	164.5	209	223.7	36.0%	130.2	50.26	1263.4	1605.2	1718.1	3273.0	4158.4	4450.9	25.4	37.38	51.23	101.7%
Afghanistan	30.61	61.54	100.9	229.6%	652.2	251.8	46.9	94.4	154.7	121.6	244.4	400.7	27.86	37.35	49.33	77.1%
Iran, Islamic Rep. of	73.86	87.32	87.69	18.7%	1629	628.8	45.3	53.6	53.8	117.5	138.9	139.5	69.6	84.68	88.92	27.8%
Nepal	29.86	41.87	47.89	60.4%	143.4	55.35	208.2	292.0	334.0	539.5	756.5	865.2	18.26	36.01	58.29	219.2%
Uzbekistan	28.23	37.31	41.19	45.9%	425.4	164.2	66.4	87.7	96.8	171.9	227.2	250.9	36.81	39.66	45.05	22.4%
Sri Lanka	20.45	23.52	23.66	15.7%	62.71	24.21	326.1	375.1	377.3	844.7	971.5	977.3	15.4	16.21	18.36	19.2%
Kazakhstan	16.1	16.68	15.73	-2.3%	2700	1042	6.0	6.2	5.8	15.5	16.0	15.1	59.27	87.8	92	55.2%
Tajikistan	7.07	10.35	12.37	75.0%	140	54.04	50.5	73.9	88.4	130.8	191.5	228.9	25.78	25.92	28.76	11.6%
Kyrgyz Rep.	5.364	7.503	8.456	57.6%	191.8	74.05	28.0	39.1	44.1	72.4	101.3	114.2	36.61	35.05	37.15	1.5%
Turkmenistan	5.177	6.785	7.773	50.1%	469.9	181.4	11.0	14.4	16.5	28.5	37.4	42.9	48.21	58.09	65.97	36.8%
Bhutan	0.707	0.915	1.019	44.1%	38.39	14.82	18.4	23.8	26.5	47.7	61.7	68.8	37.79	77.72	91.17	141.3%
Maldives	0.313	0.393	0.408	30.4%	0.3	0.116	1043.3	1310.0	1360.0	2698.3	3387.9	3517.2	40.87	81.96	93.05	127.7%
Asia-South Central	1727	2265	2560	48.2%	10327	3987	167.2	219.3	247.9	433.2	568.1	642.1	32.07	41.48	51.51	60.6%
Indonesia	232.6	283.5	296.1	27.3%	1812	699.5	128.4	156.5	163.4	332.5	405.3	423.3	55.38	82.13	89.97	62.5%
Philippines	93.65	134.6	155.6	66.2%	298.2	115.1	314.1	451.4	521.8	813.6	1169.4	1351.9	66.13	81.15	86.73	31.2%
Vietnam	88.36	108.1	111.3	26.0%	310.1	119.7	284.9	348.6	358.9	738.2	903.1	929.8	28.34	41.87	56.24	98.4%
Thailand	68.14	69.08	61.8	-9.3%	510.9	197.3	133.4	135.2	121.0	345.4	350.1	313.2	34.49	47.33	58.96	70.9%
Myanmar	50.48	58.87	60.52	19.9%	653.5	252.3	77.2	90.1	92.6	200.1	233.3	239.9	32.21	49.38	64.24	99.4%
Malaysia	27.93	37.2	41.9	50.0%	328.5	126.9	85.0	113.2	127.5	220.1	293.1	330.2	73.42	92	92	25.3%
Cambodia	15.05	19.83	22.2	47.5%	176.5	68.15	85.3	112.4	125.8	220.8	291.0	325.8	21.42	38.92	58.69	174.0%
Lao People's Dem. Rep.	6.437	8.902	10.36	60.9%	230.8	89.11	27.9	38.6	44.9	72.2	99.9	116.3	31.98	64.67	83.6	161.4%
Singapore	5.142	6.241	6.273	22.0%	0.7	0.27	7345.7	8915.7	8961.4	19044.4	23114.8	23233.3	98.73	100	100	1.3%
Timor-Leste	1.171	2.135	3.09	163.9%	14.87	5.741	78.7	143.6	207.8	204.0	371.9	538.2	26.98	34.4	44.81	66.1%
Brunei Darussalam	0.408	0.548	0.625	53.2%	5.27	2.035	77.4	104.0	118.6	200.5	269.3	307.1	74.01	88.24	92	24.3%
Asia-South East	589.4	729	769.8	30.6%	4341	1676	135.8	167.9	177.3	351.7	435.0	459.3	48.7	69.17	78.95	62.1%

Population, Land Area, and Human Development Index

	Population				Land Area		Population Density						Urban Population			
Base Case: Countries in Descending Year 2060 Population Sequence	Millions of people				Sq km	Sq mi	Persons per sq km			Persons per sq mi			Percent of total population			
	2010	2035	2060	% Chg	000s	000s	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	75.73	91.45	95.12	25.6%	769.6	297.2	98.4	118.8	123.6	254.8	307.7	320.1	66.86	80.72	86.13	28.8%
Iraq	32.3	60.27	84.61	162.0%	434.3	167.7	74.4	138.8	194.8	192.6	359.4	504.5	65.85	67.58	72.64	10.3%
Yemen, Rep. of	24.26	48.31	75.76	212.3%	528	203.9	45.9	91.5	143.5	119.0	236.9	371.6	31.53	48.22	65.03	106.2%
Saudi Arabia	25.99	36.58	42.48	63.4%	2150	830	12.1	17.0	19.8	31.3	44.1	51.2	88.29	92	92	4.2%
Syrian Arab Rep.	21.62	32.52	39.67	83.5%	183.6	70.9	117.8	177.1	216.1	304.9	458.7	559.5	51.93	62.12	70.85	36.4%
Jordan	6.093	10.34	13.57	122.7%	88.78	34.28	68.6	116.5	152.8	177.7	301.6	395.9	77.91	77.25	80.01	2.7%
Israel	7.577	10.75	13.17	73.8%	21.64	8.355	350.1	496.8	608.6	906.9	1286.7	1576.3	92.28	92.28	92.28	0.0%
Palestine	4.152	8.174	12.41	198.9%	6.02	2.324	689.7	1357.8	2061.5	1786.6	3517.2	5339.9	72.1	71.87	75.31	4.5%
Azerbaijan	8.883	10.81	11.13	25.3%	82.62	31.9	107.5	130.8	134.7	278.5	338.9	348.9	53.17	62.12	69.59	30.9%
United Arab Emirates	4.716	5.971	5.905	25.2%	83.6	32.28	56.4	71.4	70.6	146.1	185.0	182.9	100	100	99.66	-0.3%
Kuwait	2.864	4.396	5.703	99.1%	17.82	6.88	160.7	246.7	320.0	416.3	639.0	828.9	94.03	92.88	93.59	-0.5%
Lebanon	4.254	4.89	4.729	11.2%	10.23	3.95	415.8	478.0	462.3	1077.0	1238.0	1197.2	86.66	88.64	89.83	3.7%
Oman	2.906	3.907	4.315	48.5%	309.5	119.5	9.4	12.6	13.9	24.3	32.7	36.1	68.65	88.31	92	34.0%
Armenia	3.089	3.233	3.016	-2.4%	28.48	11	108.5	113.5	105.9	280.8	293.9	274.2	63.76	61.85	63.11	-1.0%
Georgia	4.214	3.465	2.954	-29.9%	69.49	26.83	60.6	49.9	42.5	157.1	129.1	110.1	55.9	72.89	79.68	42.5%
Qatar	1.55	1.833	1.667	7.5%	11.59	4.475	133.7	158.2	143.8	346.4	409.6	372.5	100	100	99.53	-0.5%
Bahrain	0.806	1.108	1.19	47.6%	0.76	0.293	1060.5	1457.9	1565.8	2750.9	3781.6	4061.4	100	100	99.9	-0.1%
Cyprus	0.88	0.939	0.85	-3.4%	9.24	3.568	95.2	101.6	92.0	246.6	263.2	238.2	88.17	92	92	4.3%
Asia-West	231.9	338.9	418.3	80.4%	4805	1855	48.3	70.5	87.1	125.0	182.7	225.5	66.3	73.28	78.25	18.0%
Australia	22.33	27.88	31.91	42.9%	7682	2966	2.9	3.6	4.2	7.5	9.4	10.8	89.11	92	92	3.2%
Papua New Guinea	6.891	11.06	14.38	108.7%	452.9	174.9	15.2	24.4	31.8	39.4	63.2	82.2	12.44	12.91	15.18	22.0%
New Zealand	4.364	5.079	5.346	22.5%	263.3	101.7	16.6	19.3	20.3	42.9	49.9	52.6	86.88	92	92	5.9%
Solomon Islands	0.535	0.945	1.407	163.0%	27.99	10.81	19.1	33.8	50.3	49.5	87.4	130.2	18.71	29.53	43.95	134.9%
Fiji	0.854	0.908	0.811	-5.0%	18.27	7.054	46.7	49.7	44.4	121.1	128.7	115.0	53.81	70.28	78.29	45.5%
Vanuatu	0.246	0.411	0.562	128.5%	12.19	4.707	20.2	33.7	46.1	52.3	87.3	119.4	24.94	38.5	54.33	117.8%
Micronesia (Federated States of)	0.112	0.18	0.242	116.1%	0.7	0.27	160.0	257.1	345.7	414.8	666.7	896.3	22.51	20.18	20.06	-10.9%
Tonga	0.104	0.171	0.236	126.9%	0.72	0.278	144.4	237.5	327.8	374.1	615.1	848.9	25.32	24.2	24.67	-2.6%
Samoa	0.179	0.211	0.215	20.1%	2.83	1.093	63.3	74.6	76.0	163.8	193.0	196.7	23.93	27.69	32.91	37.5%
Oceania	35.61	46.85	55.11	54.8%	8461	3267	4.2	5.5	6.5	10.9	14.3	16.9	70.93	70.36	69.3	-2.3%

Patterns of Potential Human Progress				Multination Regional Analysis				Measures of Poverty, Health, Education, Infrastructure, and Governance									
Population, Land Area, and Human Development Index																	
Base Case: Countries in Descending Year 2060 Population Sequence	Population				Land Area		Population Density						Urban Population				
	Millions of people				Sq km	Sq mi	Persons per sq km			Persons per sq mi			Percent of total population				
	2010	2035	2060	% Chg	000s	000s	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	
EUROPE																	
Russian Federation	141.8	126.6	108.8	-23.3%	16377	6323	8.7	7.7	6.6	22.4	20.0	17.2	72.8	78.58	81.06	11.3%	
Poland	38.17	35.57	30.06	-21.2%	304.2	117.5	125.5	116.9	98.8	324.9	302.7	255.8	61.22	64.12	67.79	10.7%	
Ukraine	45.76	36.76	29.82	-34.8%	579.3	223.7	79.0	63.5	51.5	204.6	164.3	133.3	68.27	79.52	82.93	21.5%	
Romania	21.45	19.12	15.64	-27.1%	230.1	88.83	93.2	83.1	68.0	241.5	215.2	176.1	54.58	59.72	64.25	17.7%	
Czech Rep.	10.56	10.29	9.348	-11.5%	77.25	29.83	136.7	133.2	121.0	354.0	345.0	313.4	73.28	79.26	82.26	12.3%	
Belarus	9.645	8.866	7.74	-19.8%	202.8	78.31	47.6	43.7	38.2	123.2	113.2	98.8	73.11	77.38	79.78	9.1%	
Hungary	10.01	8.7	7.111	-29.0%	90.53	34.95	110.6	96.1	78.5	286.4	248.9	203.5	68.32	78.61	82.01	20.0%	
Bulgaria	7.547	6.062	4.876	-35.4%	108.6	41.92	69.5	55.8	44.9	180.0	144.6	116.3	71.67	83.23	86.26	20.4%	
Slovak Rep.	5.429	5.199	4.393	-19.1%	48.09	18.57	112.9	108.1	91.3	292.4	280.0	236.6	56.85	62.85	68	19.6%	
Moldova, Rep. of	3.575	3.346	2.804	-21.6%	32.89	12.7	108.7	101.7	85.3	281.5	263.5	220.8	41.05	43.31	47.43	15.5%	
Europe-East	293.9	260.5	220.6	-24.9%	18051	6969	16.3	14.4	12.2	42.2	37.4	31.7	68.43	74.69	77.78	13.7%	
United Kingdom	62.27	67.46	69.16	11.1%	241.9	93.41	257.4	278.9	285.9	666.6	722.2	740.4	90.02	92	92	2.2%	
Sweden	9.385	9.937	9.994	6.5%	410.3	158.4	22.9	24.2	24.4	59.2	62.7	63.1	84.65	92	92	8.7%	
Denmark	5.564	5.912	6.023	8.2%	42.43	16.38	131.1	139.3	142.0	339.7	360.9	367.7	86.89	92	92	5.9%	
Ireland	4.474	5.416	5.945	32.9%	68.89	26.6	64.9	78.6	86.3	168.2	203.6	223.5	62	64.2	67.06	8.2%	
Norway	4.887	5.534	5.8	18.7%	305.5	117.9	16.0	18.1	19.0	41.5	46.9	49.2	77.57	87.96	91.01	17.3%	
Finland	5.363	5.505	5.324	-0.7%	303.9	117.3	17.6	18.1	17.5	45.7	46.9	45.4	63.91	73.4	78.24	22.4%	
Lithuania	3.322	3	2.547	-23.3%	62.67	24.2	53.0	47.9	40.6	137.3	124.0	105.2	67.17	72.04	75.21	12.0%	
Latvia	2.244	2.008	1.729	-23.0%	62.18	24.01	36.1	32.3	27.8	93.5	83.6	72.0	68.17	73.55	76.36	12.0%	
Estonia	1.339	1.09	0.962	-28.2%	42.39	16.37	31.6	25.7	22.7	81.8	66.6	58.8	69.53	80.33	82.92	19.3%	
Iceland	0.321	0.37	0.378	17.8%	100.2	38.71	3.2	3.7	3.8	8.3	9.6	9.8	91.26	86.24	85.94	-5.8%	
Europe-North	99.17	106.2	107.9	8.8%	1640	633.4	60.5	64.8	65.8	156.6	167.7	170.4	84.52	88.36	89.14	5.5%	
Italy	60.61	56.7	48.67	-19.7%	294.1	113.6	206.1	192.8	165.5	533.5	499.1	428.4	68.25	80.77	85.32	25.0%	
Spain	46.36	45.79	40.4	-12.9%	498.8	192.6	92.9	91.8	81.0	240.7	237.7	209.8	76.93	86.26	89.05	15.8%	
Greece	11.33	11.08	10.12	-10.7%	128.9	49.77	87.9	86.0	78.5	227.6	222.6	203.3	61.35	69.71	74.42	21.3%	
Portugal	10.64	9.883	8.283	-22.2%	91.47	35.32	116.3	108.0	90.6	301.2	279.8	234.5	60.7	74.7	79.88	31.6%	
Serbia	7.29	6.496	5.397	-26.0%	87.46	33.77	83.4	74.3	61.7	215.9	192.4	159.8	52.42	57.27	61.59	17.5%	
Croatia	4.43	3.994	3.337	-24.7%	55.96	21.61	79.2	71.4	59.6	205.0	184.8	154.4	57.72	63.44	67.44	16.8%	
Bosnia and Herzegovina	3.761	3.685	3.051	-18.9%	51	19.69	73.7	72.3	59.8	191.0	187.2	155.0	48.59	57.06	65.06	33.9%	
Albania	3.167	3.172	2.857	-9.8%	27.4	10.58	115.6	115.8	104.3	299.3	299.8	270.0	48.57	66.88	75.73	55.9%	
Macedonia, TFYR	2.043	1.988	1.708	-16.4%	25.22	9.737	81.0	78.8	67.7	209.8	204.2	175.4	68.48	80.12	84.45	23.3%	
Slovenia	2.065	1.937	1.643	-20.4%	20.14	7.776	102.5	96.2	81.6	265.6	249.1	211.3	47.72	50.5	54.49	14.2%	
Montenegro	0.626	0.63	0.582	-7.0%	13.45	5.193	46.5	46.8	43.3	120.5	121.3	112.1	60.02	59.68	61.46	2.4%	
Malta	0.418	0.402	0.337	-19.4%	0.32	0.124	1306.3	1256.3	1053.1	3371.0	3241.9	2717.7	93.56	97.82	97.91	4.6%	
Europe-South	152.7	145.8	126.4	-17.2%	1294	499.7	118.0	112.7	97.7	305.6	291.8	253.0	67.66	78.36	82.6	22.1%	
Germany	81.65	77.81	68.95	-15.6%	348.6	134.6	234.2	223.2	197.8	606.6	578.1	512.3	73.85	76.12	78.54	6.4%	
France	62.96	66.89	66.41	5.5%	547.7	211.5	115.0	122.1	121.3	297.7	316.3	314.0	80.17	87.01	89.19	11.3%	
Netherlands	16.62	17.54	16.98	2.2%	33.73	13.02	492.7	520.0	503.4	1276.5	1347.2	1304.1	82.88	92	92	11.0%	
Belgium	10.87	11.38	11.24	3.4%	30.28	11.69	359.0	375.8	371.2	929.9	973.5	961.5	97.47	97.47	97.47	0.0%	
Switzerland	7.815	7.792	6.822	-12.7%	41.29	15.94	189.3	188.7	165.2	490.3	488.8	428.0	73.7	89.47	92	24.8%	
Austria	8.391	8.031	6.811	-18.8%	82.43	31.83	101.8	97.4	82.6	263.6	252.3	214.0	67.55	76.68	81.3	20.4%	
Luxembourg	0.507	0.649	0.781	54.0%	2.59	1	195.8	250.6	301.5	507.0	649.0	781.0	82.01	89.83	92	12.2%	
Europe-West	188.8	190.1	178	-5.7%	1087	419.5	173.7	174.9	163.8	450.1	453.2	424.3	77.85	83.32	85.67	10.0%	

Population, Land Area, and Human Development Index

Base Case Source: International Futures Model Version 6.68, Nov 2013	Population Growth Rate				Total Fertility Rate				Population below 15 Years of Age				Population 65 Years and Older			
	Annual percent				Births per woman				Number in millions				Number in millions			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	1.145	0.653	0.226	-80.3%	2.487	2.173	1.968	-20.9%	1835	1895	1840	0.3%	521.6	1148	1838	252.4%
Africa	2.209	1.777	0.982	-55.5%	4.572	3.249	2.244	-50.9%	415.3	587.7	636.9	53.4%	36.3	83.88	211.7	483.2%
Americas	1.168	0.555	0.162	-86.1%	2.18	1.904	1.882	-13.7%	230.9	220.6	209.3	-9.4%	85.49	191.4	287.7	236.5%
Asia with Oceania	1.063	0.421	-0.024	-102.3%	2.199	1.937	1.887	-14.2%	1076	989.8	905.3	-15.9%	280.9	696.6	1146	308.0%
Europe	0.082	-0.301	-0.496	-704.9%	1.577	1.649	1.741	10.4%	112.2	95.78	87.29	-22.2%	117.8	174.4	190.5	61.7%
World	1.145	0.653	0.226	-80.3%	2.487	2.173	1.968	-20.9%	1835	1895	1840	0.3%	521.6	1148	1838	252.4%
Africa-Eastern	2.48	2.033	1.074	-56.7%	4.941	3.458	2.204	-55.4%	141.2	215.1	233.5	65.4%	10.03	22.59	64.99	548.0%
Africa-Middle	2.469	2.097	1.189	-51.8%	5.464	3.735	2.453	-55.1%	57.78	89.64	103.1	78.4%	3.719	8.02	21.26	471.7%
Africa-Northern	1.695	0.847	0.217	-87.2%	2.868	2.118	1.9	-33.8%	67.09	69.68	64.14	-4.4%	10.21	26.52	56.67	455.0%
Africa-Southern	0.75	0.361	0.257	-65.7%	2.529	1.937	1.9	-24.9%	17.71	15.16	13.59	-23.3%	2.601	5.642	10.73	312.5%
Africa-Western	2.44	2.026	1.173	-51.9%	5.369	3.573	2.368	-55.9%	131.5	198.2	222.5	69.2%	9.73	21.1	58.07	496.8%
Africa	2.209	1.777	0.982	-55.5%	4.572	3.249	2.244	-50.9%	415.3	587.7	636.9	53.4%	36.3	83.88	211.7	483.2%
America-Caribbean	0.911	0.388	-0.092	-110.1%	2.286	2.009	1.888	-17.4%	10.9	10.25	8.941	-18.0%	3.375	7.168	10.76	218.8%
America-Central	1.919	1.167	0.453	-76.4%	2.971	2.275	1.895	-36.2%	15.04	16.74	15.16	0.8%	2.197	5.554	12.76	480.8%
America-North	1.177	0.555	0.274	-76.7%	2.194	1.891	1.894	-13.7%	99.36	99.49	100.8	1.4%	52.15	109.1	144.2	176.5%
America-South	1.102	0.49	0.01	-99.1%	2.069	1.858	1.866	-9.8%	105.6	94.15	84.36	-20.1%	27.77	69.62	119.9	331.8%
Americas	1.168	0.555	0.162	-86.1%	2.18	1.904	1.882	-13.7%	230.9	220.6	209.3	-9.4%	85.49	191.4	287.7	236.5%
Asia-East	0.499	-0.211	-0.625	-225.3%	1.578	1.662	1.744	10.5%	296.2	230.4	199.8	-32.5%	149.8	350.9	450.6	200.8%
Asia-South Central	1.421	0.734	0.22	-84.5%	2.652	2.06	1.951	-26.4%	536.3	512.5	477.3	-11.0%	83.17	213.9	452.8	444.4%
Asia-South East	1.177	0.484	-0.018	-101.5%	2.189	1.936	1.883	-14.0%	160.9	150.3	132.5	-17.7%	32.94	92.64	163.7	397.0%
Asia-West	1.871	1.179	0.519	-72.3%	3.021	2.409	2.006	-33.6%	73.73	86.6	85.56	16.0%	11.1	31.25	67.5	508.1%
Oceania	1.442	0.856	0.491	-66.0%	2.502	2.166	1.923	-23.1%	8.527	9.914	10.19	19.5%	3.847	7.975	11.17	190.4%
Asia with Oceania	1.063	0.421	-0.024	-102.3%	2.199	1.937	1.887	-14.2%	1076	989.8	905.3	-15.9%	280.9	696.6	1146	308.0%
Europe-East	-0.237	-0.576	-0.761	-221.1%	1.448	1.565	1.679	16.0%	43.69	34.63	29.7	-32.0%	40.51	57.21	68.39	68.8%
Europe-North	0.528	0.138	0.001	-99.8%	1.995	1.884	1.891	-5.2%	17.19	17.3	17.31	0.7%	16.32	25.29	28.72	76.0%
Europe-South	0.154	-0.36	-0.755	-590.3%	1.422	1.548	1.667	17.2%	22.78	17.78	15.69	-31.1%	27.57	40.44	42.48	54.1%
Europe-West	0.288	-0.137	-0.302	-204.9%	1.669	1.703	1.776	6.4%	29.86	27.17	25.45	-14.8%	34.51	53.19	52.99	53.5%
Europe	0.082	-0.301	-0.496	-704.9%	1.577	1.649	1.741	10.4%	112.2	95.78	87.29	-22.2%	117.8	174.4	190.5	61.7%

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Population Growth Rate				Total Fertility Rate				Population below 15 Years of Age				Population 65 Years and Older			
	Annual percent				Births per woman				Number in millions				Number in millions			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	1.95	1.631	0.77	-60.5%	4.105	2.954	1.974	-51.9%	35.25	46.88	45.94	30.3%	2.829	6.283	17.2	508.0%
Tanzania, United Rep. of	2.933	2.316	1.09	-62.8%	5.548	3.696	1.922	-65.4%	20.14	33.72	35.79	77.7%	1.412	3.191	9.584	578.8%
Uganda	3.209	2.558	1.362	-57.6%	6.217	3.955	2.334	-62.5%	16.37	29.06	33.77	106.3%	0.847	1.954	6.605	679.8%
Kenya	2.571	1.916	0.872	-66.1%	4.738	3.364	2.047	-56.8%	17.35	25.54	26.02	50.0%	1.084	2.859	8.549	688.7%
Madagascar	2.609	2.311	1.786	-31.5%	4.59	3.683	3.221	-29.8%	8.685	14	20.08	131.2%	0.633	1.681	4.229	568.1%
Mozambique	2.164	1.879	0.912	-57.9%	4.919	3.259	2.009	-59.2%	10.32	15.1	15.18	47.1%	0.774	1.561	3.915	405.8%
Malawi	3.162	2.547	1.508	-52.3%	5.972	4.064	2.594	-56.6%	7.191	12.94	16.08	123.6%	0.484	1.048	3.177	556.4%
Zambia	2.725	2.122	0.941	-65.5%	6.225	3.579	1.912	-69.3%	6.148	9.551	9.552	55.4%	0.404	0.725	2.392	492.1%
Somalia	2.791	2.364	1.442	-48.3%	6.361	4.386	2.688	-57.7%	4.199	7.277	8.907	112.1%	0.254	0.643	1.354	433.1%
Rwanda	2.604	1.92	0.924	-64.5%	5.32	3.495	2.173	-59.2%	4.385	6.46	6.991	59.4%	0.273	0.636	1.893	593.4%
Zimbabwe	1.584	1.155	0.45	-71.6%	3.334	2.37	1.9	-43.0%	4.891	5.397	4.58	-6.4%	0.529	0.747	2.967	460.9%
Burundi	1.998	1.804	1.105	-44.7%	4.287	3.765	2.763	-35.5%	3.234	4.904	5.882	81.9%	0.244	0.635	1.684	590.2%
Eritrea	2.801	1.937	0.973	-65.3%	4.43	3.354	2.323	-47.6%	2.172	3.22	3.655	68.3%	0.13	0.264	0.826	535.4%
Comoros	3.166	2.402	1.61	-49.1%	4.997	3.926	2.913	-41.7%	0.287	0.479	0.654	127.9%	0.018	0.064	0.162	800.0%
Djibouti	1.087	0.697	-0.086	-107.9%	3.671	3.04	2.089	-43.1%	0.315	0.346	0.294	-6.7%	0.029	0.065	0.142	389.7%
Mauritius	0.33	-0.19	-0.626	-289.7%	1.492	1.598	1.7	13.9%	0.28	0.216	0.171	-38.9%	0.088	0.236	0.309	251.1%
Africa-Eastern	2.48	2.033	1.074	-56.7%	4.941	3.458	2.204	-55.4%	141.2	215.1	233.5	65.4%	10.03	22.59	64.99	548.0%
Congo, Democratic Rep. of	2.597	2.226	1.277	-50.8%	5.796	3.985	2.6	-55.1%	31.39	50.74	61.03	94.4%	1.807	3.738	9.316	415.6%
Angola	2.287	1.964	0.927	-59.5%	5.444	3.155	1.941	-64.3%	8.843	12.69	12.25	38.5%	0.471	1.222	3.776	701.7%
Cameroon	2.251	1.738	0.875	-61.1%	4.563	3.303	2.146	-53.0%	8.103	11.45	11.97	47.7%	0.701	1.499	4.041	476.5%
Chad	2.898	2.502	1.69	-41.7%	6.065	4.344	2.906	-52.1%	5.228	9.262	12.37	136.6%	0.331	0.703	1.996	503.0%
Central African Rep.	1.582	1.676	0.939	-40.6%	4.647	3.481	2.384	-48.7%	1.82	2.488	2.695	48.1%	0.179	0.296	0.734	310.1%
Congo, Rep. of	2.225	1.518	0.617	-72.3%	4.546	2.8	1.9	-58.2%	1.523	1.946	1.757	15.4%	0.138	0.3	0.791	473.2%
Gabon	1.954	1.178	0.57	-70.8%	3.124	2.255	1.9	-39.2%	0.533	0.596	0.53	-0.6%	0.065	0.166	0.419	544.6%
Equatorial Guinea	2.236	1.652	0.829	-62.9%	5.224	3.308	2.215	-57.6%	0.272	0.368	0.377	38.6%	0.02	0.082	0.14	600.0%
São Tomé and Príncipe	2.373	1.711	0.915	-61.4%	3.613	2.869	2.241	-38.0%	0.067	0.089	0.096	43.3%	0.006	0.014	0.043	616.7%
Africa-Middle	2.469	2.097	1.189	-51.8%	5.464	3.735	2.453	-55.1%	57.78	89.64	103.1	78.4%	3.719	8.02	21.26	471.7%
Egypt	1.665	0.722	0.166	-90.0%	2.695	1.9	1.9	-29.5%	26.65	25.95	23.54	-11.7%	4.251	10.35	21.63	408.8%
Sudan	2.284	1.506	0.63	-72.4%	4.36	2.807	1.9	-56.4%	17.32	22.23	20.52	18.5%	1.541	3.696	9.296	503.2%
Algeria	1.527	0.579	-0.074	-104.8%	2.301	1.9	1.9	-17.4%	9.581	9.015	8.482	-11.5%	1.627	5.091	11.3	594.5%
Morocco	1.3	0.51	-0.037	-102.8%	2.263	1.9	1.9	-16.0%	9.071	8.299	7.569	-16.6%	1.779	4.688	9.003	406.1%
Tunisia	1.143	0.366	-0.17	-114.9%	2.064	1.9	1.9	-7.9%	2.472	2.386	2.226	-10.0%	0.733	1.795	3.307	351.2%
Libya	1.96	0.848	0.124	-93.7%	2.605	1.9	1.9	-27.1%	1.992	1.796	1.802	-9.5%	0.282	0.91	2.127	654.3%
Africa-Northern	1.695	0.847	0.217	-87.2%	2.868	2.118	1.9	-33.8%	67.09	69.68	64.14	-4.4%	10.21	26.52	56.67	455.0%

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Population Growth Rate				Total Fertility Rate				Population below 15 Years of Age				Population 65 Years and Older			
	Annual percent				Births per woman				Number in millions				Number in millions			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	0.675	0.29	0.264	-60.9%	2.447	1.9	1.9	-22.4%	15.02	12.52	11.36	-24.4%	2.311	5.024	9.073	292.6%
Namibia	1.812	1.023	0.474	-73.8%	3.189	2.051	1.9	-40.4%	0.806	0.844	0.758	-6.0%	0.081	0.229	0.581	617.3%
Lesotho	0.755	0.47	-0.105	-113.9%	3.131	2.192	1.9	-39.3%	0.78	0.71	0.545	-30.1%	0.089	0.112	0.342	284.3%
Botswana	1.072	0.511	0.098	-90.9%	2.719	1.9	1.9	-30.1%	0.644	0.568	0.499	-22.5%	0.079	0.198	0.482	510.1%
Swaziland	1.36	1.014	0.327	-76.0%	3.357	2.574	1.9	-43.4%	0.462	0.51	0.427	-7.6%	0.04	0.079	0.247	517.5%
Africa-Southern	0.75	0.361	0.257	-65.7%	2.529	1.937	1.9	-24.9%	17.71	15.16	13.59	-23.3%	2.601	5.642	10.73	312.5%
Nigeria	2.307	1.911	1.02	-55.8%	5.523	3.467	2.182	-60.5%	67.79	98.08	102.7	51.5%	5.379	10.46	29.32	445.1%
Niger	3.442	3.169	2.205	-35.9%	7.088	5.202	3.417	-51.8%	7.786	16.4	26.25	237.1%	0.349	0.977	2.513	620.1%
Côte d'Ivoire	2.49	1.973	1.149	-53.9%	4.473	3.296	2.24	-49.9%	8.83	13.32	14.81	67.7%	0.817	1.919	5.232	540.4%
Burkina Faso	2.904	2.273	1.272	-56.2%	5.841	3.98	2.493	-57.3%	7.389	12.15	14.19	92.0%	0.361	0.981	2.964	721.1%
Ghana	2.07	1.285	0.645	-68.8%	4.225	2.568	1.9	-55.0%	9.389	11.21	9.683	3.1%	0.928	2.005	5.141	454.0%
Mali	2.713	2.343	1.174	-56.7%	6.338	3.935	2.395	-62.2%	6.282	10.52	12.14	93.3%	0.293	0.66	2.015	587.7%
Senegal	2.614	2.066	1.227	-53.1%	4.847	3.744	2.678	-44.7%	5.62	8.669	10.58	88.3%	0.31	0.651	1.925	521.0%
Guinea	1.758	2.275	1.427	-18.8%	5.268	3.631	2.577	-51.1%	4.424	6.905	8.595	94.3%	0.343	0.874	2.168	532.1%
Benin	3.043	2.311	1.429	-53.0%	5.321	3.749	2.621	-50.7%	4.027	6.713	8.308	106.3%	0.28	0.843	2.23	696.4%
Togo	2.377	1.72	0.974	-59.0%	4.037	3.099	2.308	-42.8%	2.689	3.709	4.005	48.9%	0.231	0.641	1.705	638.1%
Sierra Leone	2.369	1.753	0.774	-67.3%	5.04	3.056	1.9	-62.3%	2.509	3.53	3.354	33.7%	0.11	0.278	0.732	565.5%
Liberia	2.979	2.061	1.012	-66.0%	5.278	3.345	2.155	-59.2%	1.794	2.663	2.906	62.0%	0.115	0.294	0.733	537.4%
Mauritania	2.366	1.773	1.047	-55.7%	4.535	3.394	2.454	-45.9%	1.344	1.904	2.125	58.1%	0.091	0.25	0.633	595.6%
Gambia	3.191	2.197	1.265	-60.4%	4.914	3.519	2.474	-49.7%	0.77	1.229	1.468	90.6%	0.038	0.104	0.325	755.3%
Guinea-Bissau	2.079	1.933	1.453	-30.1%	5.07	4.008	3.108	-38.7%	0.681	1.014	1.321	94.0%	0.055	0.106	0.285	418.2%
Cape Verde	1.108	0.652	-0.059	-105.3%	2.24	1.9	1.9	-15.2%	0.163	0.143	0.123	-24.5%	0.03	0.059	0.145	383.3%
Africa-Western	2.44	2.026	1.173	-51.9%	5.369	3.573	2.368	-55.9%	131.5	198.2	222.5	69.2%	9.73	21.1	58.07	496.8%

Patterns of Potential Human Progress				Multination Regional Analysis					Measures of Poverty, Health, Education, Infrastructure, and Governance							
Population, Land Area, and Human Development Index																
	Population Growth Rate				Total Fertility Rate				Population below 15 Years of Age				Population 65 Years and Older			
Base Case: Countries in Descending Year 2060 Population Sequence	Annual percent				Births per woman				Number in millions				Number in millions			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	1.497	0.99	0.268	-82.1%	3.289	2.624	2.038	-38.0%	3.663	4.136	3.745	2.2%	0.448	0.845	2.003	347.1%
Dominican Rep.	1.468	0.645	0.117	-92.0%	2.596	1.9	1.9	-26.8%	3.174	2.91	2.565	-19.2%	0.642	1.613	3.097	382.4%
Cuba	0.146	-0.439	-0.853	-684.2%	1.459	1.574	1.684	15.4%	1.94	1.445	1.142	-41.1%	1.388	2.926	3.151	127.0%
Puerto Rico	0.559	0.091	-0.244	-143.6%	1.542	1.635	1.724	11.8%	0.837	0.676	0.584	-30.2%	0.51	0.912	1.235	142.2%
Jamaica	0.585	0.246	-0.251	-142.9%	2.331	1.9	1.9	-18.5%	0.788	0.667	0.554	-29.7%	0.213	0.447	0.648	204.2%
Trinidad and Tobago	0.441	-0.28	-0.75	-270.1%	1.64	1.708	1.773	8.1%	0.277	0.221	0.177	-36.1%	0.094	0.234	0.347	269.1%
Bahamas	0.97	0.238	-0.215	-122.2%	1.847	1.86	1.874	1.5%	0.078	0.074	0.067	-14.1%	0.024	0.07	0.099	312.5%
Barbados	0.211	-0.437	-0.74	-450.7%	1.519	1.618	1.713	12.8%	0.045	0.035	0.029	-35.6%	0.029	0.063	0.068	134.5%
Saint Lucia	0.538	-0.198	-0.311	-157.8%	1.982	1.9	1.9	-4.1%	0.045	0.036	0.028	-37.8%	0.012	0.027	0.045	275.0%
Grenada	1.349	0.71	0.142	-89.5%	2.209	1.9	1.9	-14.0%	0.029	0.028	0.026	-10.3%	0.007	0.015	0.034	385.7%
Saint Vincent and the Grenadines	0.996	0.491	0.013	-98.7%	2.047	1.9	1.9	-7.2%	0.029	0.027	0.024	-17.2%	0.007	0.017	0.03	328.6%
America-Caribbean	0.911	0.388	-0.092	-110.1%	2.286	2.009	1.888	-17.4%	10.9	10.25	8.941	-18.0%	3.375	7.168	10.76	218.8%
Guatemala	2.498	1.677	0.762	-69.5%	3.939	2.689	1.9	-51.8%	5.965	7.819	7.231	21.2%	0.621	1.487	4.069	555.2%
Honduras	2.079	1.249	0.488	-76.5%	3.077	2.307	1.9	-38.3%	2.8	3.161	2.817	0.6%	0.328	0.882	2.301	601.5%
Nicaragua	1.814	0.896	0.281	-84.5%	2.587	1.905	1.9	-26.6%	2.006	1.971	1.766	-12.0%	0.269	0.717	1.76	554.3%
El Salvador	1.187	0.593	0.059	-95.0%	2.149	1.9	1.9	-11.6%	1.98	1.733	1.519	-23.3%	0.432	0.84	1.824	322.2%
Costa Rica	1.346	0.44	-0.14	-110.4%	1.761	1.797	1.832	4.0%	1.155	1.031	0.908	-21.4%	0.303	0.945	1.629	437.6%
Panama	1.423	0.612	0.031	-97.8%	2.496	1.9	1.9	-23.9%	1.016	0.901	0.813	-20.0%	0.231	0.635	1.067	361.9%
Belize	1.846	0.962	0.251	-86.4%	2.716	2.025	1.9	-30.0%	0.121	0.126	0.107	-11.6%	0.014	0.047	0.114	714.3%
America-Central	1.919	1.167	0.453	-76.4%	2.971	2.275	1.895	-36.2%	15.04	16.74	15.16	0.8%	2.197	5.554	12.76	480.8%
United States of America	1.172	0.602	0.415	-64.6%	2.187	1.9	1.9	-13.1%	62.17	65.78	70.56	13.5%	40.44	80.78	100.4	148.3%
Mexico	1.256	0.44	-0.186	-114.8%	2.353	1.9	1.9	-19.3%	31.58	27.33	23.17	-26.6%	6.89	18.26	31.96	363.9%
Canada	0.973	0.5	0.374	-61.6%	1.744	1.785	1.824	4.6%	5.611	6.374	7.079	26.2%	4.824	10.03	11.83	145.2%
America-North	1.177	0.555	0.274	-76.7%	2.194	1.891	1.894	-13.7%	99.36	99.49	100.8	1.4%	52.15	109.1	144.2	176.5%
Brazil	0.859	0.328	-0.144	-116.8%	1.752	1.79	1.827	4.3%	49.76	42.02	36.49	-26.7%	13.69	36	60.41	341.3%
Colombia	1.455	0.619	0.08	-94.5%	2.384	1.9	1.9	-20.3%	13.31	12.06	11.17	-16.1%	2.602	8.085	13.89	433.8%
Argentina	1.029	0.486	0.097	-90.6%	2.179	1.9	1.9	-12.8%	10.11	9.371	8.711	-13.8%	4.304	7.227	11.96	177.9%
Peru	1.47	0.725	0.177	-88.0%	2.488	1.9	1.9	-23.6%	8.839	8.012	7.401	-16.3%	1.795	4.6	9.309	418.6%
Venezuela (Bolivarian Rep. of)	1.579	0.707	0.195	-87.7%	2.472	1.9	1.9	-23.1%	8.495	8.024	7.463	-12.1%	1.615	4.786	8.96	454.8%
Ecuador	1.555	0.741	0.175	-88.7%	2.452	1.9	1.9	-22.5%	4.177	3.848	3.539	-15.3%	0.86	2.258	4.389	410.3%
Chile	0.819	0.289	-0.126	-115.4%	1.838	1.854	1.87	1.7%	3.79	3.551	3.216	-15.1%	1.586	3.902	5.48	245.5%
Bolivia (Plurinational State of)	1.77	1.105	0.479	-72.9%	3.292	2.149	1.9	-42.3%	3.823	3.947	3.472	-9.2%	0.455	1.077	2.519	453.6%
Paraguay	1.838	1.01	0.415	-77.4%	2.887	2.143	1.9	-34.2%	2.167	2.358	2.099	-3.1%	0.33	0.854	1.888	472.1%
Uruguay	0.449	0.196	-0.096	-121.4%	1.942	1.9	1.9	-2.2%	0.756	0.68	0.606	-19.8%	0.462	0.66	0.905	95.9%
Guyana	0.226	-0.491	-0.938	-515.0%	2.283	1.9	1.9	-16.8%	0.256	0.167	0.109	-57.4%	0.033	0.093	0.135	309.1%
Suriname	0.326	-0.326	-0.635	-294.8%	2.308	1.9	1.9	-17.7%	0.15	0.11	0.079	-47.3%	0.034	0.076	0.104	205.9%
America-South	1.102	0.49	0.01	-99.1%	2.069	1.858	1.866	-9.8%	105.6	94.15	84.36	-20.1%	27.77	69.62	119.9	331.8%

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Population Growth Rate				Total Fertility Rate				Population below 15 Years of Age				Population 65 Years and Older			
	Annual percent				Births per woman				Number in millions				Number in millions			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	0.546	-0.17	-0.604	-210.6%	1.606	1.682	1.756	9.3%	260.4	202.1	175.8	-32.5%	109.6	287.5	385.4	251.6%
Japan	0.017	-0.672	-0.833	-5000.0%	1.352	1.494	1.631	20.6%	17.02	12.86	10.67	-37.3%	28.91	37.45	36.32	25.6%
Korea, Rep. of	0.365	-0.451	-1.054	-388.8%	1.298	1.455	1.605	23.7%	8.033	5.899	4.623	-42.4%	5.448	13.33	14.47	165.6%
Korea, Dem. People's Rep. of	0.486	0.057	-0.151	-131.1%	2.027	1.9	1.9	-6.3%	5.49	5.068	4.622	-15.8%	2.281	3.863	4.762	108.8%
Taiwan, China	0.463	-0.447	-1.04	-324.6%	1.388	1.521	1.649	18.8%	3.783	2.947	2.39	-36.8%	2.565	6.13	6.251	143.7%
Hong Kong SAR, China	1.095	0.2	-0.169	-115.4%	1.075	1.289	1.496	39.2%	0.809	0.872	0.956	18.2%	0.896	2.354	2.594	189.5%
Mongolia	1.506	0.645	0.104	-93.1%	2.58	1.9	1.9	-26.4%	0.746	0.708	0.689	-7.6%	0.11	0.334	0.728	561.8%
Asia-East	0.499	-0.211	-0.625	-225.3%	1.578	1.662	1.744	10.5%	296.2	230.4	199.8	-32.5%	149.8	350.9	450.6	200.8%
India	1.366	0.635	0.153	-88.8%	2.593	1.9	1.9	-26.7%	358.2	321.3	292	-18.5%	57.64	150	307.8	434.0%
Pakistan	1.891	1.262	0.507	-73.2%	3.361	2.683	1.942	-42.2%	61.32	75.02	71.07	15.9%	7.461	18.43	46.07	517.5%
Bangladesh	1.256	0.566	0.014	-98.9%	2.139	1.9	1.9	-11.2%	51.48	44.15	39.38	-23.5%	7.543	18.3	40.21	433.1%
Afghanistan	3.552	2.312	1.651	-53.5%	6.252	4.496	3.166	-49.4%	14.22	25.04	33.38	134.7%	0.685	1.52	4.368	537.7%
Iran, Islamic Rep. of	0.82	0.324	-0.397	-148.4%	1.617	1.69	1.761	8.9%	16.95	14.53	12.64	-25.4%	3.864	10.86	25.7	565.1%
Nepal	1.579	0.873	0.187	-88.2%	2.576	2.061	1.9	-26.2%	10.81	10.58	9.13	-15.5%	1.246	2.858	6.775	443.7%
Uzbekistan	1.631	0.64	0.063	-96.1%	2.568	1.9	1.9	-26.0%	8.289	7.852	7.276	-12.2%	1.229	3.621	8.163	564.2%
Sri Lanka	1.1	0.235	-0.22	-120.0%	2.412	1.9	1.9	-21.2%	5.087	4.466	4.021	-21.0%	1.67	3.825	5.331	219.2%
Kazakhstan	0.401	-0.034	-0.615	-253.4%	2.8	1.9	1.9	-32.1%	3.944	3.209	2.748	-30.3%	1.092	2.254	3.331	205.0%
Tajikistan	1.206	1.08	0.36	-70.1%	3.255	2.328	1.9	-41.6%	2.615	2.866	2.432	-7.0%	0.246	0.675	1.711	595.5%
Kyrgyz Rep.	1.991	0.816	0.172	-91.4%	2.98	2.098	1.9	-36.2%	1.612	1.803	1.626	0.9%	0.238	0.651	1.317	453.4%
Turkmenistan	1.436	0.827	0.191	-86.7%	2.392	1.9	1.9	-20.6%	1.513	1.413	1.327	-12.3%	0.213	0.712	1.742	717.8%
Bhutan	1.266	0.708	0.12	-90.5%	2.258	1.9	1.9	-15.9%	0.208	0.19	0.173	-16.8%	0.034	0.087	0.227	567.6%
Maldives	1.014	0.496	-0.268	-126.4%	1.571	1.657	1.739	10.7%	0.083	0.073	0.061	-26.5%	0.016	0.038	0.103	543.8%
Asia-South Central	1.421	0.734	0.22	-84.5%	2.652	2.06	1.951	-26.4%	536.3	512.5	477.3	-11.0%	83.17	213.9	452.8	444.4%
Indonesia	1.186	0.459	-0.075	-106.3%	2.104	1.9	1.9	-9.7%	62.89	55.89	49.72	-20.9%	12.92	37.39	67.1	419.3%
Philippines	1.835	0.931	0.278	-84.9%	3.094	2.238	1.9	-38.6%	33.19	35.45	29.75	-10.4%	3.404	11.56	24.92	632.1%
Vietnam	1.18	0.402	-0.164	-113.9%	1.854	1.866	1.877	1.2%	20.85	19.64	17.91	-14.1%	5.305	15.67	28.41	435.5%
Thailand	0.222	-0.239	-0.575	-359.0%	1.597	1.675	1.751	9.6%	13.99	11.19	9.324	-33.4%	6.056	12.89	15.48	155.6%
Myanmar	0.816	0.276	-0.014	-101.7%	1.956	1.9	1.9	-2.9%	12.94	11.9	10.81	-16.5%	2.588	6.536	11.58	347.4%
Malaysia	1.549	0.71	0.244	-84.2%	2.602	1.9	1.9	-27.0%	8.473	8.019	7.443	-12.2%	1.332	4.559	8.062	505.3%
Cambodia	1.358	0.669	0.172	-87.3%	2.457	1.9	1.9	-22.7%	4.801	4.47	4.088	-14.9%	0.573	1.63	3.842	570.5%
Lao People's Dem. Rep.	1.499	0.865	0.313	-79.1%	2.605	1.9	1.9	-27.1%	2.221	2.063	1.884	-15.2%	0.249	0.658	1.854	644.6%
Singapore	1.682	0.294	-0.104	-106.2%	1.242	1.413	1.578	27.1%	0.895	0.812	0.764	-14.6%	0.463	1.583	2.043	341.3%
Timor-Leste	2.205	2.038	0.964	-56.3%	4.898	3.182	1.988	-59.4%	0.541	0.754	0.741	37.0%	0.034	0.084	0.244	617.6%
Brunei Darussalam	1.811	0.866	0.258	-85.8%	2.015	1.9	1.9	-5.7%	0.107	0.101	0.103	-3.7%	0.015	0.077	0.151	906.7%
Asia-South East	1.177	0.484	-0.018	-101.5%	2.189	1.936	1.883	-14.0%	160.9	150.3	132.5	-17.7%	32.94	92.64	163.7	397.0%

Patterns of Potential Human Progress				Multination Regional Analysis				Measures of Poverty, Health, Education, Infrastructure, and Governance								
Population, Land Area, and Human Development Index																
Base Case: Countries in Descending Year 2060 Population Sequence	Population Growth Rate				Total Fertility Rate				Population below 15 Years of Age				Population 65 Years and Older			
	Annual percent				Births per woman				Number in millions				Number in millions			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	1.116	0.43	-0.099	-108.9%	2.071	1.9	1.9	-8.3%	19.97	17.77	15.83	-20.7%	4.526	11.93	21.35	371.7%
Iraq	3.082	1.938	0.858	-72.2%	4.731	2.994	1.9	-59.8%	13.94	20.34	19.25	38.1%	1.056	2.799	8.26	682.2%
Yemen, Rep. of	3.075	2.257	1.303	-57.6%	5.141	3.573	2.489	-51.6%	10.73	17.69	21.2	97.6%	0.619	1.6	5.606	805.7%
Saudi Arabia	1.804	0.937	0.288	-84.0%	2.697	1.9	1.9	-29.6%	7.888	7.706	7.409	-6.1%	0.769	3.718	8.692	1030.3%
Syrian Arab Rep.	1.866	1.189	0.516	-72.3%	2.923	2.182	1.9	-35.0%	7.977	8.384	7.386	-7.4%	0.852	2.662	6.372	647.9%
Jordan	2.665	1.539	0.66	-75.2%	3.874	2.681	1.9	-51.0%	2.286	3.07	2.813	23.1%	0.238	0.572	1.823	666.0%
Israel	2.243	1.02	0.615	-72.6%	2.906	1.986	1.9	-34.6%	2.064	2.273	2.336	13.2%	0.789	1.578	2.644	235.1%
Palestine	3.061	2.2	1.123	-63.3%	4.403	3.261	2.067	-53.1%	1.764	2.812	3.071	74.1%	0.114	0.398	1.205	957.0%
Azerbaijan	1.644	0.392	-0.124	-107.5%	2.6	1.9	1.9	-26.9%	1.856	1.896	1.825	-1.7%	0.582	1.625	2.607	347.9%
United Arab Emirates	1.682	0.459	-0.57	-133.9%	1.602	1.679	1.754	9.5%	0.803	0.746	0.719	-10.5%	0.02	0.801	2.329	11545.0%
Kuwait	2.495	1.521	0.722	-71.1%	2.2	1.9	1.9	-13.6%	0.765	0.786	0.926	21.0%	0.072	0.519	1.357	1784.7%
Lebanon	0.979	0.153	-0.414	-142.3%	1.685	1.741	1.795	6.5%	1.054	0.889	0.73	-30.7%	0.31	0.684	1.169	277.1%
Oman	1.467	0.826	-0.033	-102.2%	2.135	1.9	1.9	-11.0%	0.789	0.739	0.696	-11.8%	0.074	0.344	1.114	1405.4%
Armenia	0.608	-0.058	-0.461	-175.8%	1.754	1.792	1.829	4.3%	0.623	0.521	0.444	-28.7%	0.344	0.588	0.826	140.1%
Georgia	-0.546	-0.59	-0.683	-25.1%	1.562	1.65	1.734	11.0%	0.698	0.468	0.401	-42.6%	0.604	0.797	0.916	51.7%
Qatar	1.203	0.316	-1.048	-187.1%	2.17	1.9	1.9	-12.4%	0.209	0.198	0.214	2.4%	0.016	0.298	0.661	4031.3%
Bahrain	2.295	0.691	-0.096	-104.2%	2.586	1.9	1.9	-26.5%	0.161	0.182	0.201	24.8%	0.017	0.147	0.286	1582.4%
Cyprus	0.717	-0.152	-0.689	-196.1%	1.437	1.557	1.673	16.4%	0.156	0.13	0.109	-30.1%	0.102	0.195	0.281	175.5%
Asia-West	1.871	1.179	0.519	-72.3%	3.021	2.409	2.006	-33.6%	73.73	86.6	85.56	16.0%	11.1	31.25	67.5	508.1%
Australia	1.272	0.685	0.464	-63.5%	2.018	1.9	1.9	-5.8%	4.239	4.748	5.252	23.9%	3.002	6.096	8.084	169.3%
Papua New Guinea	2.247	1.474	0.673	-70.0%	3.96	2.809	1.9	-52.0%	2.691	3.473	3.248	20.7%	0.192	0.526	1.3	577.1%
New Zealand	1.004	0.358	0.095	-90.5%	2.242	1.9	1.9	-15.3%	0.894	0.877	0.868	-2.9%	0.568	1.131	1.365	140.3%
Solomon Islands	2.664	1.961	1.255	-52.9%	4.288	3.37	2.627	-38.7%	0.213	0.315	0.386	81.2%	0.017	0.047	0.122	617.6%
Fiji	0.721	-0.308	-0.608	-184.3%	2.638	1.934	1.9	-28.0%	0.248	0.201	0.145	-41.5%	0.041	0.107	0.157	282.9%
Vanuatu	2.4	1.644	0.833	-65.3%	3.85	2.949	2.149	-44.2%	0.094	0.127	0.133	41.5%	0.008	0.027	0.064	700.0%
Micronesia (Federated States of)	1.853	1.494	0.848	-54.2%	3.394	2.902	2.201	-35.2%	0.041	0.055	0.057	39.0%	0.004	0.011	0.028	600.0%
Tonga	2.187	1.71	0.842	-61.5%	3.962	3.052	2.036	-48.6%	0.039	0.053	0.054	38.5%	0.006	0.012	0.026	333.3%
Samoa	0.139	0.462	-0.366	-363.3%	3.803	2.799	1.965	-48.3%	0.068	0.064	0.046	-32.4%	0.009	0.019	0.028	211.1%
Oceania	1.442	0.856	0.491	-66.0%	2.502	2.166	1.923	-23.1%	8.527	9.914	10.19	19.5%	3.847	7.975	11.17	190.4%

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Population Growth Rate				Total Fertility Rate				Population below 15 Years of Age				Population 65 Years and Older			
	Annual percent				Births per woman				Number in millions				Number in millions			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	-0.227	-0.521	-0.711	-213.2%	1.476	1.586	1.692	14.6%	21.32	17.37	15.11	-29.1%	18.14	26.82	32.65	80.0%
Poland	0.031	-0.541	-0.801	-2683.9%	1.346	1.49	1.629	21.0%	5.644	4.387	3.681	-34.8%	5.198	8.527	10.56	103.2%
Ukraine	-0.611	-0.804	-0.841	-37.6%	1.492	1.598	1.7	13.9%	6.497	4.871	4.125	-36.5%	7.072	8.1	8.878	25.5%
Romania	-0.216	-0.626	-0.966	-347.2%	1.33	1.478	1.621	21.9%	3.259	2.357	1.884	-42.2%	3.199	4.29	5.19	62.2%
Czech Rep.	0.305	-0.351	-0.481	-257.7%	1.602	1.679	1.754	9.5%	1.48	1.38	1.325	-10.5%	1.566	2.38	2.881	84.0%
Belarus	-0.167	-0.436	-0.621	-271.9%	1.46	1.574	1.684	15.3%	1.447	1.22	1.085	-25.0%	1.308	1.83	2.204	68.5%
Hungary	-0.357	-0.721	-0.891	-149.6%	1.332	1.48	1.622	21.8%	1.472	1.106	0.899	-38.9%	1.653	2.017	2.27	37.3%
Bulgaria	-0.577	-0.808	-0.902	-56.3%	1.546	1.638	1.727	11.7%	1.035	0.758	0.65	-37.2%	1.323	1.531	1.527	15.4%
Slovak Rep.	0.133	-0.494	-0.853	-741.4%	1.286	1.446	1.599	24.3%	0.821	0.639	0.528	-35.7%	0.656	1.158	1.513	130.6%
Moldova, Rep. of	-0.151	-0.608	-0.897	-494.0%	1.474	1.585	1.691	14.7%	0.716	0.539	0.404	-43.6%	0.395	0.548	0.721	82.5%
Europe-East	-0.237	-0.576	-0.761	-221.1%	1.448	1.565	1.679	16.0%	43.69	34.63	29.7	-32.0%	40.51	57.21	68.39	68.8%
United Kingdom	0.592	0.182	0.029	-95.1%	2.056	1.9	1.9	-7.6%	10.81	11.06	11.18	3.4%	10.33	16.05	18.27	76.9%
Sweden	0.453	0.058	-0.034	-107.5%	2.018	1.9	1.9	-5.8%	1.552	1.603	1.589	2.4%	1.711	2.486	2.797	63.5%
Denmark	0.403	0.118	0.1	-75.2%	1.912	1.9	1.9	-0.6%	1.002	1.01	0.996	-0.6%	0.916	1.404	1.473	60.8%
Ireland	1.226	0.601	0.2	-83.7%	2.034	1.9	1.9	-6.6%	0.948	0.919	0.96	1.3%	0.522	1.065	1.478	183.1%
Norway	0.702	0.321	0.146	-79.2%	1.99	1.9	1.9	-4.5%	0.915	0.936	0.94	2.7%	0.718	1.302	1.497	108.5%
Finland	0.352	-0.118	-0.099	-128.1%	1.896	1.897	1.898	0.1%	0.887	0.884	0.854	-3.7%	0.924	1.462	1.456	57.6%
Lithuania	-0.241	-0.579	-0.765	-217.4%	1.416	1.542	1.663	17.4%	0.494	0.408	0.343	-30.6%	0.533	0.697	0.812	52.3%
Latvia	-0.207	-0.554	-0.701	-238.6%	1.518	1.617	1.713	12.8%	0.311	0.272	0.241	-22.5%	0.399	0.464	0.541	35.6%
Estonia	-0.63	-0.525	-0.506	19.7%	1.786	1.816	1.844	3.2%	0.205	0.153	0.147	-28.3%	0.23	0.275	0.289	25.7%
Iceland	0.961	0.311	-0.079	-108.2%	2.186	1.9	1.9	-13.1%	0.067	0.063	0.059	-11.9%	0.039	0.081	0.104	166.7%
Europe-North	0.528	0.138	0.001	-99.8%	1.995	1.884	1.891	-5.2%	17.19	17.3	17.31	0.7%	16.32	25.29	28.72	76.0%
Italy	0.049	-0.415	-0.763	-1657.1%	1.43	1.552	1.67	16.8%	8.524	6.8	6.017	-29.4%	12.33	17.17	16.54	34.1%
Spain	0.368	-0.234	-0.77	-309.2%	1.484	1.592	1.696	14.3%	6.937	5.523	5.09	-26.6%	7.868	12.53	13.79	75.3%
Greece	0.247	-0.19	-0.498	-301.6%	1.494	1.6	1.701	13.9%	1.65	1.404	1.338	-18.9%	2.102	2.936	3.203	52.4%
Portugal	-0.005	-0.466	-0.871	-17320.0%	1.246	1.416	1.58	26.8%	1.609	1.149	0.945	-41.3%	1.909	2.711	2.871	50.4%
Serbia	-0.395	-0.573	-0.856	-116.7%	1.266	1.431	1.589	25.5%	1.283	0.839	0.638	-50.3%	1.046	1.406	1.693	61.9%
Croatia	-0.153	-0.607	-0.794	-419.0%	1.436	1.557	1.673	16.5%	0.664	0.524	0.434	-34.6%	0.762	1.018	1.05	37.8%
Bosnia and Herzegovina	0.908	-0.534	-0.939	-203.4%	1.097	1.306	1.507	37.4%	0.566	0.411	0.32	-43.5%	0.528	0.899	1.094	107.2%
Albania	-0.009	-0.375	-0.572	-6255.6%	1.392	1.524	1.651	18.6%	0.718	0.471	0.354	-50.7%	0.306	0.607	0.905	195.8%
Macedonia, TFYR	0.161	-0.423	-0.789	-590.1%	1.388	1.521	1.649	18.8%	0.36	0.271	0.217	-39.7%	0.241	0.405	0.521	116.2%
Slovenia	0.15	-0.513	-0.766	-610.7%	1.482	1.591	1.695	14.4%	0.287	0.238	0.214	-25.4%	0.34	0.536	0.542	59.4%
Montenegro	0.274	-0.197	-0.408	-248.9%	1.646	1.712	1.776	7.9%	0.12	0.1	0.087	-27.5%	0.078	0.122	0.15	92.3%
Malta	0.189	-0.581	-0.822	-534.9%	1.322	1.472	1.617	22.3%	0.063	0.05	0.04	-36.5%	0.059	0.106	0.12	103.4%
Europe-South	0.154	-0.36	-0.755	-590.3%	1.422	1.548	1.667	17.2%	22.78	17.78	15.69	-31.1%	27.57	40.44	42.48	54.1%
Germany	0.061	-0.374	-0.515	-944.3%	1.388	1.521	1.649	18.8%	11	9.62	8.811	-19.9%	16.64	23.96	22.46	35.0%
France	0.541	0.111	-0.085	-115.7%	2.04	1.9	1.9	-6.9%	11.56	10.92	10.47	-9.4%	10.57	16.89	18.07	71.0%
Netherlands	0.437	0.018	-0.118	-127.0%	1.714	1.762	1.809	5.5%	2.941	2.728	2.56	-13.0%	2.544	4.547	4.515	77.5%
Belgium	0.436	0.06	-0.083	-119.0%	1.916	1.9	1.9	-0.8%	1.834	1.814	1.791	-2.3%	1.895	2.946	3.044	60.6%
Switzerland	0.277	-0.312	-0.693	-350.2%	1.502	1.605	1.705	13.5%	1.191	1.005	0.872	-26.8%	1.305	2.326	2.333	78.8%
Austria	0.058	-0.447	-0.805	-1487.9%	1.374	1.511	1.642	19.5%	1.236	0.987	0.827	-33.1%	1.477	2.375	2.379	61.1%
Luxembourg	1.326	0.924	0.725	-45.3%	1.598	1.677	1.752	9.6%	0.09	0.101	0.121	34.4%	0.071	0.144	0.188	164.8%
Europe-West	0.288	-0.137	-0.302	-204.9%	1.669	1.703	1.776	6.4%	29.86	27.17	25.45	-14.8%	34.51	53.19	52.99	53.5%

Population, Land Area, and Human Development Index

Base Case Source: International Futures Model Version 6.68, Nov 2013	Youth Bulge				Human Development Index				HDI with Higher Ceilings			
	Ratio persons 15–29 to total pop 15+				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	0.361	0.289	0.246	-31.9%	0.747	0.852	0.918	22.9%	0.625	0.715	0.773	23.7%
Africa	0.477	0.418	0.34	-28.7%	0.543	0.724	0.832	53.2%	0.457	0.613	0.702	53.6%
Americas	0.329	0.252	0.213	-35.3%	0.883	0.935	0.968	9.6%	0.74	0.782	0.817	10.4%
Asia with Oceania	0.361	0.265	0.218	-39.6%	0.738	0.863	0.939	27.2%	0.616	0.723	0.789	28.1%
Europe	0.236	0.193	0.179	-24.2%	0.914	0.959	0.981	7.3%	0.769	0.804	0.833	8.3%
World	0.361	0.289	0.246	-31.9%	0.747	0.852	0.918	22.9%	0.625	0.715	0.773	23.7%
Africa-Eastern	0.504	0.439	0.353	-30.0%	0.504	0.702	0.827	64.1%	0.424	0.593	0.697	64.4%
Africa-Middle	0.504	0.452	0.376	-25.4%	0.474	0.663	0.774	63.3%	0.408	0.567	0.659	61.5%
Africa-Northern	0.423	0.321	0.244	-42.3%	0.688	0.814	0.888	29.1%	0.569	0.681	0.745	30.9%
Africa-Southern	0.433	0.336	0.249	-42.5%	0.7	0.808	0.923	31.9%	0.609	0.693	0.78	28.1%
Africa-Western	0.484	0.442	0.357	-26.2%	0.484	0.717	0.831	71.7%	0.407	0.606	0.702	72.5%
Africa	0.477	0.418	0.34	-28.7%	0.543	0.724	0.832	53.2%	0.457	0.613	0.702	53.6%
America-Caribbean	0.357	0.273	0.225	-37.0%	0.738	0.822	0.89	20.6%	0.614	0.685	0.743	21.0%
America-Central	0.447	0.339	0.258	-42.3%	0.761	0.844	0.91	19.6%	0.633	0.703	0.759	19.9%
America-North	0.288	0.239	0.21	-27.1%	0.95	0.982	0.993	4.5%	0.796	0.821	0.847	6.4%
America-South	0.36	0.254	0.208	-42.2%	0.834	0.906	0.955	14.5%	0.7	0.758	0.798	14.0%
Americas	0.329	0.252	0.213	-35.3%	0.883	0.935	0.968	9.6%	0.74	0.782	0.817	10.4%
Asia-East	0.29	0.195	0.169	-41.7%	0.838	0.929	0.997	19.0%	0.703	0.778	0.839	19.3%
Asia-South Central	0.414	0.306	0.238	-42.5%	0.627	0.814	0.913	45.6%	0.518	0.683	0.766	47.9%
Asia-South East	0.378	0.268	0.219	-42.1%	0.77	0.859	0.923	19.9%	0.647	0.721	0.772	19.3%
Asia-West	0.415	0.327	0.267	-35.7%	0.795	0.868	0.928	16.7%	0.665	0.727	0.779	17.1%
Oceania	0.309	0.27	0.238	-23.0%	0.882	0.925	0.954	8.2%	0.736	0.779	0.817	11.0%
Asia with Oceania	0.361	0.265	0.218	-39.6%	0.738	0.863	0.939	27.2%	0.616	0.723	0.789	28.1%
Europe-East	0.264	0.201	0.176	-33.3%	0.854	0.91	0.95	11.2%	0.725	0.767	0.797	9.9%
Europe-North	0.24	0.214	0.2	-16.7%	0.957	0.993	0.999	4.4%	0.803	0.832	0.858	6.8%
Europe-South	0.206	0.174	0.162	-21.4%	0.936	0.97	0.991	5.9%	0.782	0.809	0.835	6.8%
Europe-West	0.214	0.185	0.181	-15.4%	0.967	0.996	1	3.4%	0.809	0.831	0.858	6.1%
Europe	0.236	0.193	0.179	-24.2%	0.914	0.959	0.981	7.3%	0.769	0.804	0.833	8.3%

Poverty and Income

Poverty below \$1.25 per Day						
Millions of people			Percent of population			
2010	2035	2060	2010	2035	2060	
1218	530.7	276.5	17.78	6.18	2.88	
390.8	302.6	188.5	37.90	17.49	7.68	
36.09	24.05	25.15	3.89	2.10	2.02	
790.2	203.7	62.75	19.02	4.07	1.19	
1.244	0.31	0.145	0.17	0.04	0.02	
1218	530.7	276.5	17.78	6.18	2.88	
149.7	155.1	90.12	45.92	26.21	10.28	
60.22	37.12	16.48	46.72	15.79	4.63	
15.64	14.99	5.97	7.36	5.11	1.77	
10.79	6.718	3.058	18.82	10.47	4.37	
154.4	88.61	72.88	50.42	16.24	8.94	
390.8	302.6	188.5	37.90	17.49	7.68	
9.71	8.055	7.852	23.89	16.58	15.51	
5.334	8.105	8.383	12.55	12.82	10.84	
4.366	2.791	2.291	0.97	0.51	0.38	
16.68	5.097	6.627	4.25	1.06	1.30	
36.09	24.05	25.15	3.89	2.10	2.02	
106	7.875	0.964	6.75	0.48	0.07	
568.9	160.4	41.9	32.94	7.08	1.64	
104.8	20.39	7.142	17.78	2.80	0.93	
7.385	13.5	12.18	3.18	3.98	2.91	
3.096	1.546	0.562	8.69	3.30	1.02	
790.2	203.7	62.75	19.02	4.07	1.19	
0.62	0.231	0.085	0.21	0.09	0.04	
0.003	0	0.001	0.00	0.00	0.00	
0.082	0.077	0.047	0.05	0.05	0.04	
0	0	0	0.00	0.00	0.00	
1.244	0.31	0.145	0.17	0.04	0.02	

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Youth Bulge				Human Development Index				HDI with Higher Ceilings			
	Ratio persons 15–29 to total pop 15+				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA												
Ethiopia	0.493	0.392	0.317	-35.7%	0.399	0.705	0.836	109.5%	0.317	0.594	0.705	122.4%
Tanzania, United Rep. of	0.499	0.468	0.364	-27.1%	0.569	0.73	0.898	57.8%	0.482	0.616	0.753	56.2%
Uganda	0.534	0.49	0.384	-28.1%	0.539	0.707	0.832	54.4%	0.459	0.597	0.701	52.7%
Kenya	0.515	0.434	0.341	-33.8%	0.616	0.724	0.826	34.1%	0.531	0.617	0.698	31.5%
Madagascar	0.472	0.421	0.373	-21.0%	0.542	0.667	0.725	33.8%	0.449	0.557	0.609	35.6%
Mozambique	0.488	0.451	0.352	-27.9%	0.433	0.682	0.828	91.2%	0.368	0.576	0.699	89.9%
Malawi	0.512	0.481	0.386	-24.6%	0.527	0.69	0.793	50.5%	0.449	0.582	0.668	48.8%
Zambia	0.517	0.485	0.361	-30.2%	0.515	0.738	0.876	70.1%	0.446	0.631	0.741	66.1%
Somalia	0.461	0.462	0.398	-13.7%	0.422	0.617	0.764	81.0%	0.356	0.521	0.648	82.0%
Rwanda	0.516	0.449	0.353	-31.6%	0.515	0.691	0.824	60.0%	0.443	0.586	0.697	57.3%
Zimbabwe	0.566	0.385	0.275	-51.4%	0.606	0.742	0.813	34.2%	0.533	0.633	0.688	29.1%
Burundi	0.517	0.395	0.359	-30.6%	0.445	0.586	0.699	57.1%	0.379	0.492	0.591	55.9%
Eritrea	0.498	0.436	0.36	-27.7%	0.516	0.632	0.762	47.7%	0.429	0.53	0.645	50.3%
Comoros	0.471	0.431	0.371	-21.2%	0.614	0.695	0.785	27.9%	0.51	0.578	0.656	28.6%
Djibouti	0.471	0.369	0.311	-34.0%	0.527	0.708	0.815	54.6%	0.438	0.602	0.69	57.5%
Mauritius	0.307	0.206	0.183	-40.4%	0.822	0.891	0.937	14.0%	0.69	0.747	0.786	13.9%
Africa-Eastern	0.504	0.439	0.353	-30.0%	0.504	0.702	0.827	64.1%	0.424	0.593	0.697	64.4%
Congo, Democratic Rep. of	0.513	0.465	0.397	-22.6%	0.419	0.6	0.716	70.9%	0.362	0.515	0.612	69.1%
Angola	0.508	0.45	0.335	-34.1%	0.583	0.829	0.931	59.7%	0.505	0.707	0.788	56.0%
Cameroon	0.49	0.421	0.339	-30.8%	0.554	0.706	0.825	48.9%	0.476	0.602	0.699	46.8%
Chad	0.5	0.464	0.399	-20.2%	0.384	0.656	0.777	102.3%	0.315	0.558	0.658	108.9%
Central African Rep.	0.486	0.415	0.352	-27.6%	0.42	0.608	0.75	78.6%	0.358	0.517	0.637	77.9%
Congo, Rep. of	0.464	0.41	0.306	-34.1%	0.652	0.792	0.862	32.2%	0.565	0.675	0.73	29.2%
Gabon	0.458	0.342	0.253	-44.8%	0.774	0.863	0.932	20.4%	0.661	0.73	0.785	18.8%
Equatorial Guinea	0.432	0.412	0.334	-22.7%	0.776	0.905	0.938	20.9%	0.678	0.777	0.8	18.0%
São Tomé and Príncipe	0.514	0.38	0.307	-40.3%	0.685	0.761	0.825	20.4%	0.579	0.641	0.693	19.7%
Africa-Middle	0.504	0.452	0.376	-25.4%	0.474	0.663	0.774	63.3%	0.408	0.567	0.659	61.5%
Egypt	0.421	0.317	0.232	-44.9%	0.698	0.824	0.885	26.8%	0.574	0.69	0.743	29.4%
Sudan	0.462	0.394	0.302	-34.6%	0.595	0.739	0.848	42.5%	0.502	0.621	0.715	42.4%
Algeria	0.422	0.279	0.21	-50.2%	0.751	0.861	0.929	23.7%	0.62	0.719	0.777	25.3%
Morocco	0.4	0.276	0.217	-45.8%	0.658	0.819	0.898	36.5%	0.533	0.681	0.751	40.9%
Tunisia	0.373	0.254	0.201	-46.1%	0.777	0.87	0.94	21.0%	0.643	0.724	0.784	21.9%
Libya	0.41	0.305	0.219	-46.6%	0.854	0.944	0.969	13.5%	0.714	0.788	0.809	13.3%
Africa-Northern	0.423	0.321	0.244	-42.3%	0.688	0.814	0.888	29.1%	0.569	0.681	0.745	30.9%

Poverty and Income

Poverty below \$1.25 per Day					
Millions of people			Percent of population		
2010	2035	2060	2010	2035	2060
28.03	15.62	0.791	32.98	11.09	0.41
29.72	26.72	0.488	66.00	30.34	0.36
9.962	5.166	1.832	29.47	7.22	1.57
7.408	9.591	3.248	18.13	13.21	3.14
13.73	29.08	41.63	68.14	76.25	65.89
13.86	5.902	0.457	59.18	14.36	0.78
11.16	19.64	14.13	71.13	60.67	26.28
8.083	4.015	0.173	60.96	16.08	0.47
5.364	9.368	7.191	57.40	52.04	24.86
7.542	9.815	5.817	73.37	53.72	22.04
4.514	5.531	4.455	35.88	29.95	19.70
6.883	10.82	7.619	80.62	76.20	37.26
3.008	2.961	1.383	57.59	31.78	10.31
0.312	0.726	0.851	46.29	55.21	39.29
0.131	0.175	0.055	14.90	15.35	4.38
0.031	0.01	0.002	2.42	0.75	0.17
149.7	155.1	90.12	45.92	26.21	10.28
38.4	26.4	7.052	56.61	20.66	3.55
8.203	0.299	0.001	43.20	0.87	0.00
1.992	1.468	0.337	9.97	4.40	0.72
6.735	5.496	5.942	58.51	23.99	15.35
2.853	3.245	2.749	63.30	45.52	27.64
1.944	0.144	0.357	51.81	2.37	4.51
0.057	0.017	0.002	3.79	0.76	0.07
0	0	0	0.00	0.00	0.00
0.035	0.05	0.041	21.08	17.73	10.43
60.22	37.12	16.48	46.72	15.79	4.63
0.168	0.603	0.29	0.20	0.53	0.23
14.51	14.26	5.562	33.57	20.24	6.05
0.583	0	0.001	1.65	0.00	0.00
0.261	0.114	0.108	0.81	0.28	0.25
0.027	0.01	0.009	0.26	0.08	0.07
0.082	0	0	1.25	0.00	0.00
15.64	14.99	5.97	7.36	5.11	1.77

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Youth Bulge				Human Development Index				HDI with Higher Ceilings			
	Ratio persons 15–29 to total pop 15+				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued												
South Africa	0.422	0.331	0.248	-41.2%	0.704	0.807	0.93	32.1%	0.614	0.694	0.786	28.0%
Namibia	0.466	0.353	0.247	-47.0%	0.729	0.867	0.923	26.6%	0.623	0.734	0.776	24.6%
Lesotho	0.531	0.382	0.27	-49.2%	0.57	0.725	0.82	43.9%	0.506	0.625	0.698	37.9%
Botswana	0.48	0.337	0.236	-50.8%	0.725	0.872	0.941	29.8%	0.627	0.742	0.795	26.8%
Swaziland	0.551	0.392	0.285	-48.3%	0.634	0.751	0.846	33.4%	0.557	0.644	0.718	28.9%
Africa-Southern	0.433	0.336	0.249	-42.5%	0.7	0.808	0.923	31.9%	0.609	0.693	0.78	28.1%
Nigeria	0.481	0.443	0.348	-27.7%	0.505	0.746	0.86	70.3%	0.434	0.635	0.727	67.5%
Niger	0.481	0.504	0.44	-8.5%	0.326	0.589	0.723	121.8%	0.254	0.489	0.608	139.4%
Côte d'Ivoire	0.479	0.409	0.335	-30.1%	0.528	0.719	0.842	59.5%	0.437	0.602	0.705	61.3%
Burkina Faso	0.513	0.453	0.373	-27.3%	0.393	0.683	0.808	105.6%	0.315	0.577	0.683	116.8%
Ghana	0.459	0.395	0.285	-37.9%	0.555	0.76	0.902	62.5%	0.467	0.645	0.76	62.7%
Mali	0.519	0.481	0.387	-25.4%	0.353	0.672	0.818	131.7%	0.284	0.564	0.692	143.7%
Senegal	0.511	0.442	0.376	-26.4%	0.502	0.672	0.763	52.0%	0.415	0.572	0.649	56.4%
Guinea	0.482	0.442	0.363	-24.7%	0.449	0.705	0.811	80.6%	0.361	0.589	0.68	88.4%
Benin	0.486	0.441	0.362	-25.5%	0.492	0.713	0.82	66.7%	0.395	0.593	0.686	73.7%
Togo	0.484	0.385	0.314	-35.1%	0.52	0.693	0.786	51.2%	0.425	0.58	0.658	54.8%
Sierra Leone	0.48	0.449	0.345	-28.1%	0.382	0.687	0.835	118.6%	0.318	0.585	0.71	123.3%
Liberia	0.487	0.448	0.355	-27.1%	0.464	0.67	0.784	69.0%	0.382	0.563	0.662	73.3%
Mauritania	0.469	0.402	0.338	-27.9%	0.536	0.693	0.79	47.4%	0.446	0.586	0.668	49.8%
Gambia	0.516	0.434	0.357	-30.8%	0.473	0.673	0.775	63.8%	0.389	0.567	0.656	68.6%
Guinea-Bissau	0.478	0.426	0.375	-21.5%	0.439	0.626	0.735	67.4%	0.371	0.535	0.624	68.2%
Cape Verde	0.469	0.284	0.22	-53.1%	0.742	0.837	0.902	21.6%	0.619	0.699	0.754	21.8%
Africa-Western	0.484	0.442	0.357	-26.2%	0.484	0.717	0.831	71.7%	0.407	0.606	0.702	72.5%

Poverty and Income

Poverty below \$1.25 per Day					
Millions of people			Percent of population		
2010	2035	2060	2010	2035	2060
7.928	3.807	0.718	15.90	7.01	1.22
0.939	0.761	0.782	42.43	23.62	20.11
0.816	0.84	0.508	39.14	33.02	18.82
0.381	0.242	0.196	19.25	9.92	7.32
0.726	1.067	0.854	60.40	63.14	42.24
10.79	6.718	3.058	18.82	10.47	4.37
96	19.98	34.64	60.64	7.32	8.77
6.692	13.88	9.452	42.09	37.57	13.00
5.086	4.07	0.484	23.58	10.59	0.85
8.908	12.08	5.027	54.65	38.20	10.20
6.552	2.414	0.108	26.93	6.44	0.23
6.972	7.853	1.715	52.34	29.75	4.16
4.167	8.67	7.298	32.38	37.04	20.56
4.557	2.682	1.553	44.20	14.32	5.21
4.419	6.989	5.919	47.94	38.63	20.51
2.635	4.52	2.849	38.85	39.27	17.64
2.895	0.354	0.076	49.61	3.53	0.56
3.412	2.159	1.434	82.74	28.39	12.84
0.64	0.699	0.494	19.00	12.27	6.12
0.566	1.039	0.642	32.32	30.39	12.18
0.802	1.181	1.161	48.67	42.74	27.41
0.073	0.042	0.024	14.23	6.38	3.38
154.4	88.61	72.88	50.42	16.24	8.94

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Youth Bulge				Human Development Index				HDI with Higher Ceilings			
	Ratio persons 15–29 to total pop 15+				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS												
Haiti	0.473	0.356	0.286	-39.5%	0.492	0.64	0.745	51.4%	0.4	0.532	0.624	56.0%
Dominican Rep.	0.392	0.301	0.219	-44.1%	0.808	0.906	0.973	20.4%	0.677	0.756	0.811	19.8%
Cuba	0.248	0.168	0.155	-37.5%	0.812	0.887	0.964	18.7%	0.678	0.739	0.801	18.1%
Puerto Rico	0.287	0.204	0.174	-39.4%	0.864	0.92	0.982	13.7%	0.718	0.764	0.817	13.8%
Jamaica	0.355	0.277	0.219	-38.3%	0.788	0.851	0.897	13.8%	0.659	0.713	0.752	14.1%
Trinidad and Tobago	0.355	0.224	0.185	-47.9%	0.884	0.951	0.971	9.8%	0.751	0.802	0.816	8.7%
Bahamas	0.338	0.231	0.202	-40.2%	0.91	0.943	0.96	5.5%	0.765	0.792	0.804	5.1%
Barbados	0.265	0.177	0.166	-37.4%	0.915	0.938	0.961	5.0%	0.768	0.785	0.801	4.3%
Saint Lucia	0.389	0.254	0.205	-47.3%	0.826	0.879	0.92	11.4%	0.691	0.734	0.769	11.3%
Grenada	0.444	0.278	0.211	-52.5%	0.817	0.878	0.924	13.1%	0.681	0.732	0.771	13.2%
Saint Vincent and the Grenadines	0.369	0.254	0.215	-41.7%	0.806	0.86	0.913	13.3%	0.676	0.719	0.764	13.0%
America-Caribbean	0.357	0.273	0.225	-37.0%	0.738	0.822	0.89	20.6%	0.614	0.685	0.743	21.0%
Guatemala	0.48	0.398	0.297	-38.1%	0.715	0.826	0.918	28.4%	0.592	0.687	0.766	29.4%
Honduras	0.472	0.342	0.257	-45.6%	0.744	0.826	0.878	18.0%	0.619	0.689	0.733	18.4%
Nicaragua	0.463	0.32	0.229	-50.5%	0.717	0.793	0.854	19.1%	0.592	0.659	0.712	20.3%
El Salvador	0.435	0.286	0.221	-49.2%	0.781	0.848	0.909	16.4%	0.652	0.71	0.762	16.9%
Costa Rica	0.371	0.227	0.189	-49.1%	0.88	0.932	0.964	9.5%	0.734	0.777	0.802	9.3%
Panama	0.356	0.274	0.215	-39.6%	0.867	0.95	0.991	14.3%	0.726	0.794	0.827	13.9%
Belize	0.463	0.32	0.226	-51.2%	0.777	0.891	0.94	21.0%	0.639	0.741	0.781	22.2%
America-Central	0.447	0.339	0.258	-42.3%	0.761	0.844	0.91	19.6%	0.633	0.703	0.759	19.9%
United States of America	0.264	0.231	0.212	-19.7%	0.975	1	1	2.6%	0.818	0.837	0.859	5.0%
Mexico	0.37	0.275	0.211	-43.0%	0.872	0.924	0.968	11.0%	0.729	0.772	0.808	10.8%
Canada	0.244	0.202	0.195	-20.1%	0.972	1	1	2.9%	0.814	0.836	0.857	5.3%
America-North	0.288	0.239	0.21	-27.1%	0.95	0.982	0.993	4.5%	0.796	0.821	0.847	6.4%
Brazil	0.352	0.231	0.195	-44.6%	0.826	0.901	0.955	15.6%	0.692	0.754	0.798	15.3%
Colombia	0.373	0.276	0.219	-41.3%	0.83	0.898	0.938	13.0%	0.696	0.753	0.785	12.8%
Argentina	0.327	0.254	0.212	-35.2%	0.887	0.945	0.98	10.5%	0.745	0.791	0.818	9.8%
Peru	0.392	0.281	0.216	-44.9%	0.818	0.905	0.965	18.0%	0.685	0.755	0.805	17.5%
Venezuela (Bolivarian Rep. of)	0.384	0.287	0.219	-43.0%	0.853	0.926	0.977	14.5%	0.717	0.776	0.816	13.8%
Ecuador	0.392	0.283	0.217	-44.6%	0.802	0.879	0.922	15.0%	0.667	0.732	0.769	15.3%
Chile	0.32	0.222	0.194	-39.4%	0.903	0.959	0.995	10.2%	0.756	0.801	0.828	9.5%
Bolivia (Plurinational State of)	0.439	0.348	0.25	-43.1%	0.741	0.827	0.9	21.5%	0.628	0.696	0.755	20.2%
Paraguay	0.438	0.322	0.242	-44.7%	0.793	0.845	0.893	12.6%	0.667	0.708	0.746	11.8%
Uruguay	0.286	0.231	0.204	-28.7%	0.888	0.941	0.983	10.7%	0.745	0.787	0.82	10.1%
Guyana	0.388	0.255	0.207	-46.6%	0.758	0.829	0.886	16.9%	0.643	0.698	0.742	15.4%
Suriname	0.357	0.269	0.216	-39.5%	0.804	0.884	0.951	18.3%	0.68	0.744	0.797	17.2%
America-South	0.36	0.254	0.208	-42.2%	0.834	0.906	0.955	14.5%	0.7	0.758	0.798	14.0%

Poverty and Income

Poverty below \$1.25 per Day					
Millions of people			Percent of population		
2010	2035	2060	2010	2035	2060
5.902	7.712	7.74	57.92	53.70	45.53
0.165	0.04	0.014	1.61	0.30	0.10
3.387	0.174	0.001	30.24	1.59	0.01
0.181	0.061	0.035	4.55	1.40	0.82
0.016	0.013	0.022	0.59	0.41	0.70
0.006	0	0	0.45	0.00	0.00
0	0	0	0.00	0.00	0.00
0	0	0	0.00	0.00	0.00
0.033	0.03	0.026	18.97	16.13	15.12
0.011	0.012	0.007	10.58	8.76	4.58
0.01	0.014	0.007	9.17	10.45	4.93
9.71	8.055	7.852	23.89	16.58	15.51
2.27	3.425	2.703	15.79	13.91	8.14
1.779	3.248	4.034	23.36	27.71	27.82
0.895	1.096	1.25	15.38	13.19	12.90
0.175	0.302	0.39	2.83	3.85	4.56
0.015	0.003	0.003	0.32	0.05	0.05
0.17	0.012	0.002	4.84	0.27	0.04
0.031	0.018	0.001	9.01	3.56	0.17
5.334	8.105	8.383	12.55	12.82	10.84
0	0	0	0.00	0.00	0.00
4.366	2.791	2.291	4.02	2.08	1.65
0	0	0	0.00	0.00	0.00
4.366	2.791	2.291	0.97	0.51	0.38
5.264	1.078	0.692	2.69	0.47	0.30
6.668	3.1	4.695	14.40	5.24	7.30
0.035	0.003	0.004	0.09	0.01	0.01
1.355	0.248	0.387	4.59	0.64	0.89
0.949	0.024	0	3.29	0.06	0.00
0.736	0.316	0.546	5.34	1.73	2.66
0.014	0	0	0.08	0.00	0.00
1.314	0.092	0.178	13.10	0.62	1.00
0.267	0.218	0.123	4.13	2.33	1.11
0	0	0	0.00	0.00	0.00
0.025	0.015	0.001	3.29	1.95	0.15
0.048	0.002	0	9.14	0.37	0.00
16.68	5.097	6.627	4.25	1.06	1.30

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Youth Bulge				Human Development Index				HDI with Higher Ceilings			
	Ratio persons 15–29 to total pop 15+				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA												
China	0.302	0.199	0.17	-43.7%	0.82	0.923	1	22.0%	0.688	0.773	0.84	22.1%
Japan	0.183	0.152	0.145	-20.8%	0.978	1	1	2.2%	0.816	0.839	0.866	6.1%
Korea, Rep. of	0.252	0.158	0.144	-42.9%	0.949	0.993	1	5.4%	0.795	0.83	0.853	7.3%
Korea, Dem. People's Rep. of	0.306	0.237	0.22	-28.1%	0.702	0.768	0.817	16.4%	0.596	0.646	0.685	14.9%
Taiwan, China	0.252	0.165	0.156	-38.1%	0.958	0.993	1	4.4%	0.804	0.831	0.845	5.1%
Hong Kong SAR, China	0.225	0.153	0.153	-32.0%	0.991	1	1	0.9%	0.827	0.849	0.856	3.5%
Mongolia	0.429	0.319	0.236	-45.0%	0.758	0.858	0.937	23.6%	0.644	0.725	0.787	22.2%
Asia-East	0.29	0.195	0.169	-41.7%	0.838	0.929	0.997	19.0%	0.703	0.778	0.839	19.3%
India	0.399	0.3	0.226	-43.4%	0.626	0.835	0.94	50.2%	0.518	0.7	0.788	52.1%
Pakistan	0.464	0.347	0.277	-40.3%	0.6	0.754	0.859	43.2%	0.489	0.63	0.719	47.0%
Bangladesh	0.431	0.278	0.224	-48.0%	0.568	0.759	0.873	53.7%	0.461	0.636	0.733	59.0%
Afghanistan	0.514	0.46	0.406	-21.0%	0.348	0.635	0.751	115.8%	0.287	0.546	0.644	124.4%
Iran, Islamic Rep. of	0.441	0.242	0.181	-59.0%	0.805	0.891	0.952	18.3%	0.674	0.746	0.797	18.2%
Nepal	0.456	0.323	0.245	-46.3%	0.568	0.717	0.81	42.6%	0.462	0.598	0.679	47.0%
Uzbekistan	0.445	0.305	0.225	-49.4%	0.759	0.842	0.895	17.9%	0.645	0.709	0.749	16.1%
Sri Lanka	0.321	0.272	0.219	-31.8%	0.793	0.875	0.941	18.7%	0.662	0.732	0.787	18.9%
Kazakhstan	0.36	0.326	0.234	-35.0%	0.822	0.919	0.953	15.9%	0.703	0.777	0.803	14.2%
Tajikistan	0.501	0.359	0.26	-48.1%	0.733	0.797	0.866	18.1%	0.623	0.673	0.726	16.5%
Kyrgyz Rep.	0.448	0.346	0.253	-43.5%	0.743	0.783	0.83	11.7%	0.631	0.661	0.698	10.6%
Turkmenistan	0.435	0.288	0.217	-50.1%	0.797	0.965	0.996	25.0%	0.681	0.811	0.832	22.2%
Bhutan	0.454	0.273	0.214	-52.9%	0.63	0.869	0.953	51.3%	0.514	0.728	0.798	55.3%
Maldives	0.477	0.238	0.186	-61.0%	0.817	0.882	0.914	11.9%	0.689	0.741	0.765	11.0%
Asia-South Central	0.414	0.306	0.238	-42.5%	0.627	0.814	0.913	45.6%	0.518	0.683	0.766	47.9%
Indonesia	0.37	0.257	0.213	-42.4%	0.777	0.874	0.933	20.1%	0.653	0.732	0.78	19.4%
Philippines	0.437	0.335	0.25	-42.8%	0.78	0.846	0.912	16.9%	0.656	0.71	0.762	16.2%
Vietnam	0.39	0.247	0.202	-48.2%	0.774	0.845	0.901	16.4%	0.646	0.707	0.751	16.3%
Thailand	0.288	0.209	0.192	-33.3%	0.804	0.879	0.926	15.2%	0.68	0.741	0.779	14.6%
Myanmar	0.369	0.255	0.224	-39.3%	0.661	0.799	0.912	38.0%	0.562	0.677	0.766	36.3%
Malaysia	0.376	0.284	0.221	-41.2%	0.859	0.923	0.976	13.6%	0.72	0.772	0.816	13.3%
Cambodia	0.482	0.303	0.229	-52.5%	0.631	0.784	0.88	39.5%	0.532	0.66	0.74	39.1%
Lao People's Dem. Rep.	0.48	0.304	0.226	-52.9%	0.642	0.822	0.94	46.4%	0.534	0.687	0.787	47.4%
Singapore	0.253	0.161	0.155	-38.7%	0.974	1	1	2.7%	0.814	0.864	0.887	9.0%
Timor-Leste	0.514	0.41	0.329	-36.0%	0.489	0.74	0.86	75.9%	0.397	0.617	0.722	81.9%
Brunei Darussalam	0.349	0.254	0.212	-39.3%	0.953	1	1	4.9%	0.799	0.841	0.857	7.3%
Asia-South East	0.378	0.268	0.219	-42.1%	0.77	0.859	0.923	19.9%	0.647	0.721	0.772	19.3%

Poverty and Income

Poverty below \$1.25 per Day					
Millions of people			Percent of population		
2010	2035	2060	2010	2035	2060
94.46	2.537	0.09	7.06	0.18	0.01
0	0	0	0.00	0.00	0.00
0	0	0	0.00	0.00	0.00
11.06	5.333	0.874	46.10	20.45	3.42
0	0	0	0.00	0.00	0.00
0	0	0	0.00	0.00	0.00
0.497	0.006	0	18.40	0.17	0.00
106	7.875	0.964	6.75	0.48	0.07
			0.00	0.00	0.00
416	66.55	7.315	35.53	4.45	0.44
35.93	49.95	9.862	20.72	18.87	2.96
74.99	19.51	0.936	45.59	9.33	0.42
12.91	3.813	5.221	42.18	6.20	5.17
0.107	0	0	0.14	0.00	0.00
15.78	18.83	17.1	52.85	44.97	35.71
10.84	0.281	0.209	38.40	0.75	0.51
0.879	0.137	0.049	4.30	0.58	0.21
0.003	0	0	0.02	0.00	0.00
1.155	1.265	1.175	16.34	12.22	9.50
0.032	0.072	0.022	0.60	0.96	0.26
0.128	0	0	2.47	0.00	0.00
0.13	0.01	0.008	18.39	1.09	0.79
0	0	0	0.00	0.00	0.00
568.9	160.4	41.9	32.94	7.08	1.64
			0.00	0.00	0.00
39.81	1.682	0.058	17.12	0.59	0.02
19.33	12.34	5.422	20.64	9.17	3.48
10.19	2.326	0.243	11.53	2.15	0.22
6.538	1.909	1.165	9.59	2.76	1.89
22.32	0.841	0.003	44.22	1.43	0.00
0.015	0.002	0.001	0.05	0.01	0.00
4.119	1.152	0.25	27.37	5.81	1.13
2.064	0.132	0.001	32.06	1.48	0.01
0	0	0	0.00	0.00	0.00
0.428	0.004	0	36.55	0.19	0.00
0	0	0	0.00	0.00	0.00
104.8	20.39	7.142	17.78	2.80	0.93

Population, Land Area, and Human Development Index

Base Case: Countries in Descending Year 2060 Population Sequence	Youth Bulge				Human Development Index				HDI with Higher Ceilings			
	Ratio persons 15–29 to total pop 15+				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued												
Turkey	0.364	0.255	0.211	-42.0%	0.835	0.908	0.971	16.3%	0.702	0.761	0.813	15.8%
Iraq	0.481	0.42	0.316	-34.3%	0.701	0.828	0.93	32.7%	0.584	0.693	0.781	33.7%
Yemen, Rep. of	0.548	0.442	0.354	-35.4%	0.605	0.731	0.821	35.7%	0.5	0.61	0.689	37.8%
Saudi Arabia	0.387	0.291	0.221	-42.9%	0.857	0.942	1	16.7%	0.718	0.789	0.836	16.4%
Syrian Arab Rep.	0.452	0.32	0.244	-46.0%	0.768	0.844	0.907	18.1%	0.637	0.705	0.756	18.7%
Jordan	0.49	0.377	0.28	-42.9%	0.792	0.855	0.917	15.8%	0.664	0.716	0.766	15.4%
Israel	0.311	0.29	0.224	-28.0%	0.941	0.993	1	6.3%	0.785	0.827	0.865	10.2%
Palestine	0.503	0.405	0.327	-35.0%	0.791	0.829	0.874	10.5%	0.664	0.695	0.73	9.9%
Azerbaijan	0.379	0.294	0.22	-42.0%	0.839	0.893	0.935	11.4%	0.711	0.752	0.782	10.0%
United Arab Emirates	0.393	0.167	0.149	-62.1%	0.938	1	1	6.6%	0.784	0.84	0.884	12.8%
Kuwait	0.38	0.249	0.215	-43.4%	0.945	1	1	5.8%	0.791	0.866	0.873	10.4%
Lebanon	0.356	0.228	0.192	-46.1%	0.829	0.895	0.939	13.3%	0.696	0.75	0.787	13.1%
Oman	0.496	0.253	0.204	-58.9%	0.88	0.954	0.996	13.2%	0.734	0.798	0.832	13.4%
Armenia	0.339	0.238	0.193	-43.1%	0.824	0.871	0.924	12.1%	0.694	0.731	0.772	11.2%
Georgia	0.283	0.202	0.174	-38.5%	0.81	0.88	0.93	14.8%	0.684	0.739	0.777	13.6%
Qatar	0.362	0.156	0.164	-54.7%	0.971	1	1	3.0%	0.817	0.887	0.902	10.4%
Bahrain	0.37	0.24	0.209	-43.5%	0.908	0.948	0.982	8.1%	0.761	0.795	0.822	8.0%
Cyprus	0.309	0.189	0.158	-48.9%	0.942	0.971	0.983	4.4%	0.788	0.811	0.818	3.8%
Asia-West	0.415	0.327	0.267	-35.7%	0.795	0.868	0.928	16.7%	0.665	0.727	0.779	17.1%
Australia	0.265	0.22	0.205	-22.6%	0.975	1	1	2.6%	0.815	0.843	0.863	5.9%
Papua New Guinea	0.446	0.392	0.311	-30.3%	0.578	0.743	0.861	49.0%	0.479	0.626	0.726	51.6%
New Zealand	0.266	0.23	0.203	-23.7%	0.95	0.985	1	5.3%	0.795	0.821	0.855	7.5%
Solomon Islands	0.46	0.398	0.341	-25.9%	0.662	0.756	0.814	23.0%	0.551	0.634	0.683	24.0%
Fiji	0.384	0.31	0.228	-40.6%	0.757	0.816	0.883	16.6%	0.64	0.687	0.741	15.8%
Vanuatu	0.461	0.377	0.306	-33.6%	0.738	0.805	0.864	17.1%	0.616	0.672	0.723	17.4%
Micronesia (Federated States of)	0.499	0.348	0.297	-40.5%	0.684	0.769	0.836	22.2%	0.569	0.643	0.701	23.2%
Tonga	0.416	0.37	0.307	-26.2%	0.8	0.832	0.883	10.4%	0.675	0.7	0.739	9.5%
Samoa	0.402	0.352	0.293	-27.1%	0.799	0.85	0.895	12.0%	0.674	0.713	0.748	11.0%
Oceania	0.309	0.27	0.238	-23.0%	0.882	0.925	0.954	8.2%	0.736	0.779	0.817	11.0%

Poverty and Income

Poverty below \$1.25 per Day					
Millions of people			Percent of population		
2010	2035	2060	2010	2035	2060
0.514	0.089	0.09	0.68	0.10	0.09
1.064	0.017	0	3.29	0.03	0.00
3.959	9.267	8.493	16.32	19.18	11.21
0	0	0	0.00	0.00	0.00
0.037	0.123	0.024	0.17	0.38	0.06
0.002	0.001	0	0.03	0.01	0.00
0	0	0	0.00	0.00	0.00
0.946	3.795	3.424	22.78	46.43	27.59
0.009	0	0	0.10	0.00	0.00
0	0	0	0.00	0.00	0.00
0	0	0	0.00	0.00	0.00
0.137	0.077	0.105	3.22	1.57	2.22
0	0	0	0.00	0.00	0.00
0.111	0.076	0.021	3.59	2.35	0.70
0.605	0.055	0.026	14.36	1.59	0.88
0	0	0	0.00	0.00	0.00
0	0	0	0.00	0.00	0.00
0	0	0	0.00	0.00	0.00
7.385	13.5	12.18	3.18	3.98	2.91
0	0	0	0.00	0.00	0.00
2.581	1.211	0.086	37.45	10.95	0.60
0	0	0	0.00	0.00	0.00
0.164	0.108	0.304	30.65	11.43	21.61
0.201	0.072	0.002	23.54	7.93	0.25
0.053	0.063	0.098	21.54	15.33	17.44
0.036	0.018	0.028	32.14	10.00	11.57
0.022	0.054	0.037	21.15	31.58	15.68
0.039	0.02	0.007	21.79	9.48	3.26
3.096	1.546	0.562	8.69	3.30	1.02

Population, Land Area, and Human Development Index

	Youth Bulge				Human Development Index				HDI with Higher Ceilings			
Base Case: Countries in Descending Year 2060 Population Sequence	Ratio persons 15–29 to total pop 15+				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE												
Russian Federation	0.272	0.21	0.183	-32.7%	0.848	0.914	0.952	12.3%	0.723	0.773	0.8	10.7%
Poland	0.269	0.182	0.153	-43.1%	0.904	0.956	0.994	10.0%	0.76	0.801	0.829	9.1%
Ukraine	0.259	0.205	0.185	-28.6%	0.807	0.843	0.894	10.8%	0.685	0.713	0.751	9.6%
Romania	0.245	0.179	0.157	-35.9%	0.856	0.902	0.943	10.2%	0.722	0.758	0.788	9.1%
Czech Rep.	0.234	0.199	0.178	-23.9%	0.925	0.958	0.995	7.6%	0.778	0.803	0.83	6.7%
Belarus	0.268	0.206	0.184	-31.3%	0.856	0.91	0.946	10.5%	0.727	0.768	0.795	9.4%
Hungary	0.227	0.182	0.164	-27.8%	0.892	0.933	0.97	8.7%	0.753	0.784	0.812	7.8%
Bulgaria	0.221	0.185	0.175	-20.8%	0.866	0.904	0.932	7.6%	0.73	0.759	0.779	6.7%
Slovak Rep.	0.272	0.179	0.153	-43.8%	0.908	0.953	0.988	8.8%	0.765	0.8	0.826	8.0%
Moldova, Rep. of	0.336	0.215	0.181	-46.1%	0.76	0.8	0.853	12.2%	0.644	0.676	0.717	11.3%
Europe-East	0.264	0.201	0.176	-33.3%	0.854	0.91	0.95	11.2%	0.725	0.767	0.797	9.9%
United Kingdom	0.241	0.216	0.201	-16.6%	0.96	0.997	1	4.2%	0.805	0.832	0.859	6.7%
Sweden	0.233	0.209	0.195	-16.3%	0.971	1	1	3.0%	0.812	0.843	0.87	7.1%
Denmark	0.219	0.208	0.206	-5.9%	0.956	0.992	1	4.6%	0.802	0.83	0.856	6.7%
Ireland	0.267	0.238	0.21	-21.3%	0.968	1	1	3.3%	0.811	0.843	0.86	6.0%
Norway	0.238	0.209	0.202	-15.1%	0.988	1	1	1.2%	0.827	0.851	0.871	5.3%
Finland	0.224	0.202	0.197	-12.1%	0.96	0.999	1	4.2%	0.804	0.834	0.862	7.2%
Lithuania	0.266	0.193	0.167	-37.2%	0.878	0.924	0.965	9.9%	0.743	0.778	0.808	8.7%
Latvia	0.254	0.202	0.176	-30.7%	0.875	0.924	0.959	9.6%	0.739	0.776	0.802	8.5%
Estonia	0.251	0.217	0.19	-24.3%	0.892	0.949	1	12.1%	0.753	0.797	0.837	11.2%
Iceland	0.282	0.226	0.197	-30.1%	0.973	1	1	2.8%	0.813	0.848	0.87	7.0%
Europe-North	0.24	0.214	0.2	-16.7%	0.957	0.993	0.999	4.4%	0.803	0.832	0.858	6.8%
Italy	0.183	0.166	0.161	-12.0%	0.955	0.985	1	4.7%	0.798	0.821	0.846	6.0%
Spain	0.206	0.182	0.164	-20.4%	0.951	0.987	1	5.2%	0.794	0.823	0.848	6.8%
Greece	0.204	0.182	0.171	-16.2%	0.937	0.963	0.989	5.5%	0.784	0.804	0.823	5.0%
Portugal	0.209	0.162	0.152	-27.3%	0.917	0.953	0.987	7.6%	0.766	0.795	0.822	7.3%
Serbia	0.259	0.181	0.157	-39.4%	0.84	0.891	0.944	12.4%	0.704	0.746	0.789	12.1%
Croatia	0.225	0.178	0.164	-27.1%	0.901	0.939	0.964	7.0%	0.757	0.786	0.804	6.2%
Bosnia and Herzegovina	0.253	0.156	0.136	-46.2%	0.847	0.907	0.942	11.2%	0.711	0.759	0.785	10.4%
Albania	0.354	0.193	0.154	-56.5%	0.851	0.906	0.944	10.9%	0.712	0.757	0.787	10.5%
Macedonia, TFYR	0.282	0.186	0.162	-42.6%	0.847	0.883	0.919	8.5%	0.712	0.74	0.768	7.9%
Slovenia	0.216	0.179	0.166	-23.1%	0.937	0.967	0.998	6.5%	0.786	0.809	0.832	5.9%
Montenegro	0.276	0.213	0.191	-30.8%	0.843	0.883	0.921	9.3%	0.706	0.739	0.77	9.1%
Malta	0.256	0.166	0.146	-43.0%	0.912	0.96	0.991	8.7%	0.759	0.8	0.825	8.7%
Europe-South	0.206	0.174	0.162	-21.4%	0.936	0.97	0.991	5.9%	0.782	0.809	0.835	6.8%
Germany	0.199	0.163	0.162	-18.6%	0.965	0.995	1	3.6%	0.808	0.831	0.857	6.1%
France	0.23	0.211	0.199	-13.5%	0.966	0.996	1	3.5%	0.807	0.83	0.861	6.7%
Netherlands	0.219	0.19	0.193	-11.9%	0.97	0.995	1	3.1%	0.813	0.832	0.853	4.9%
Belgium	0.216	0.204	0.199	-7.9%	0.966	0.996	1	3.5%	0.809	0.832	0.857	5.9%
Switzerland	0.216	0.169	0.16	-25.9%	0.982	1	1	1.8%	0.821	0.84	0.862	5.0%
Austria	0.221	0.162	0.153	-30.8%	0.969	0.999	1	3.2%	0.812	0.834	0.857	5.5%
Luxembourg	0.229	0.203	0.201	-12.2%	1	1	1	0.0%	0.844	0.866	0.879	4.1%
Europe-West	0.214	0.185	0.181	-15.4%	0.967	0.996	1	3.4%	0.809	0.831	0.858	6.1%

Poverty and Income

[illegible]

Poverty and Income

Base Case	Poverty below \$2 per Day						Poverty below \$5 per Day						Poverty below \$10 per Day					
Source: International Futures Model Version 6.68, Nov 2013	Millions of people			Percent of population			Millions of people			Percent of population			Millions of people			Percent of population		
	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060
World	2388	1314	672.9	34.87	15.30	7.01	4209	3544	2383	61.46	41.27	24.81	5087	5142	4313	74.27	59.88	44.91
Africa	598.8	578.3	399.5	58.08	33.43	16.27	891.7	1180	1098	86.49	68.19	44.7	987.6	1486	1720	95.79	85.92	70.06
Americas	75.09	47.53	47.16	8.09	4.16	3.79	217.3	157.4	140.2	23.4	13.76	11.27	361.4	312.4	273.4	38.93	27.32	21.97
Asia with Oceania	1710	686.9	225.6	41.16	13.71	4.28	3055	2192	1138	73.53	43.74	21.58	3593	3290	2291	86.48	65.65	43.46
Europe	4.942	1.19	0.668	0.68	0.17	0.11	45.47	14.44	6.725	6.261	2.079	1.074	141.1	50.61	26.52	19.43	7.287	4.236
World	2388	1314	672.9	34.87	15.30	7.01	4209	3544	2383	61.46	41.27	24.81	5087	5142	4313	74.27	59.88	44.91
Africa-Eastern	229.6	269.5	156.6	70.43	45.55	17.86	307.5	483	367.9	94.33	81.63	41.96	320.4	561.7	601.6	98.27	94.93	68.6
Africa-Middle	83.76	71.85	40.92	64.98	30.56	11.50	115.8	150.7	135.8	89.86	64.08	38.16	124.8	191.8	223.4	96.79	81.56	62.77
Africa-Northern	44.73	47.71	25.1	21.04	16.28	7.44	138.3	147.3	113.3	65.07	50.25	33.58	191.6	211.6	207.3	90.1	72.21	61.45
Africa-Southern	20.74	14.57	6.327	36.18	22.70	9.05	38.15	33.14	17.58	66.55	51.63	25.14	48.54	47.69	31.54	84.67	74.3	45.1
Africa-Western	219.9	174.7	170.5	71.82	32.01	20.91	291.9	365.5	463.1	95.33	66.98	56.79	302.4	473.4	656.5	98.76	86.75	80.51
Africa	598.8	578.3	399.5	58.08	33.43	16.27	891.7	1180	1098	86.49	68.19	44.7	987.6	1486	1720	95.79	85.92	70.06
America-Caribbean	15.05	11.74	11.29	37.02	24.17	22.29	26.7	22.68	17.82	65.69	46.69	35.19	33.66	33.6	26.02	82.79	69.16	51.38
America-Central	10.02	14.3	14.35	23.58	22.62	18.55	23.8	32.48	32.81	56.01	51.37	42.42	33.5	46.01	48.69	78.84	72.79	62.96
America-North	9.683	6.939	5.436	2.14	1.26	0.90	36.64	32.97	25.33	8.101	5.985	4.184	68.89	70.58	56.85	15.23	12.81	9.389
America-South	40.34	14.54	16.09	10.27	3.02	3.15	130.1	69.23	64.28	33.12	14.4	12.58	225.4	162.2	141.9	57.37	33.73	27.77
Americas	75.09	47.53	47.16	8.09	4.16	3.79	217.3	157.4	140.2	23.4	13.76	11.27	361.4	312.4	273.4	38.93	27.32	21.97
Asia-East	338.9	33.61	4.443	21.57	2.06	0.30	866.3	204.3	35.45	55.13	12.52	2.413	1188	531	120.1	75.59	32.55	8.175
Asia-South Central	1086	536.5	163	62.88	23.69	6.37	1601	1544	866.2	92.73	68.15	33.84	1681	2014	1662	97.36	88.94	64.94
Asia-South East	248.8	74.94	25.48	42.21	10.28	3.31	472.5	328	137.2	80.17	44.99	17.82	543.3	556.2	336.4	92.18	76.3	43.7
Asia-West	31.07	38.41	31.49	13.40	11.33	7.53	107.3	107	94.55	46.29	31.58	22.6	171.7	176.2	163.3	74.06	51.99	39.04
Oceania	4.957	3.491	1.228	13.92	7.45	2.23	7.801	8.723	4.579	21.91	18.62	8.309	9.213	12.06	9.204	25.87	25.75	16.7
Asia with Oceania	1710	686.9	225.6	41.16	13.71	4.28	3055	2192	1138	73.53	43.74	21.58	3593	3290	2291	86.48	65.65	43.46
Europe-East	3.55	1.036	0.477	1.21	0.40	0.22	39.24	11.17	4.842	13.35	4.288	2.195	123.9	39.19	19.68	42.15	15.04	8.921
Europe-North	0.136	0.033	0.022	0.14	0.03	0.02	1.327	0.559	0.338	1.338	0.526	0.313	4.386	2.18	1.272	4.423	2.052	1.179
Europe-South	0.358	0.302	0.184	0.23	0.21	0.15	4.547	3.487	1.834	2.977	2.393	1.451	15.11	11.73	7.1	9.889	8.047	5.618
Europe-West	0	0	0	0.00	0.00	0.00	0.028	0.008	0.003	0.015	0.004	0.002	1.203	0.479	0.162	0.637	0.252	0.091
Europe	4.942	1.19	0.668	0.68	0.17	0.11	45.47	14.44	6.725	6.261	2.079	1.074	141.1	50.61	26.52	19.43	7.287	4.236

Patterns of Potential Human Progress			Multination Regional Analysis										Measures of Poverty, Health, Education, Infrastructure, and Governance									
Poverty and Income																						
Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$2 per Day						Poverty below \$5 per Day						Poverty below \$10 per Day									
	Millions of people			Percent of population			Millions of people			Percent of population			Millions of people			Percent of population						
	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060				
AFRICA																						
Ethiopia	58.75	48	5.75	69.13	34.07	3.00	83.75	119.9	57.81	98.54	85.1	30.15	84.14	138.6	133.2	99	98.38	69.48				
Tanzania, United Rep. of	38.4	45.9	2.395	85.28	52.11	1.76	44.58	78.52	25.29	99	89.15	18.57	44.58	86.61	69.38	99	98.34	50.93				
Uganda	19.08	15.32	7.506	56.45	21.42	6.43	30.32	43.04	34.98	89.71	60.17	29.97	33.19	61.06	68.84	98.21	85.36	58.97				
Kenya	15.41	21.56	9.338	37.70	29.68	9.04	32.7	52.6	38.33	80.02	72.43	37.13	39.11	67.29	69	95.7	92.64	66.83				
Madagascar	18.14	35.84	55.45	90.02	93.97	87.77	19.94	37.76	62.08	98.94	99	98.26	19.95	37.76	62.55	99	99	99				
Mozambique	18.85	13.2	2.108	80.49	32.12	3.59	22.78	29.24	13.38	97.3	71.15	22.79	23.18	37.33	30.58	99	90.84	52.08				
Malawi	13.6	25.78	24.04	86.68	79.64	44.71	15.54	31.81	45.52	99	98.27	84.66	15.54	32.04	52.2	99	99	97.1				
Zambia	10.19	7.373	0.615	76.85	29.53	1.67	12.64	16.34	4.563	95.33	65.45	12.36	13.13	21.61	12.42	99	86.55	33.63				
Somalia	8.08	14.39	14.44	86.46	79.94	49.91	9.176	17.19	22.23	98.19	95.51	76.85	9.252	17.82	26.08	99	99	90.16				
Rwanda	8.72	12.47	9.023	84.82	68.25	34.19	10	16.55	17.27	97.28	90.6	65.43	10.18	17.81	22.24	99	97.46	84.26				
Zimbabwe	7.106	9.309	8.232	56.49	50.40	36.41	10.55	14.83	15.2	83.83	80.29	67.2	11.91	17.21	19.27	94.64	93.18	85.21				
Burundi	7.896	12.73	11.76	92.48	89.65	57.51	8.453	14.06	19.19	99	99	93.83	8.453	14.06	20.24	99	99	99				
Eritrea	4.53	6.186	4.581	86.73	66.40	34.14	5.136	8.577	9.428	98.33	92.07	70.27	5.171	9.171	11.98	99	98.44	89.32				
Comoros	0.439	0.949	1.198	65.13	72.17	55.31	0.633	1.254	1.871	93.87	95.31	86.42	0.667	1.302	2.093	99	99	96.64				
Djibouti	0.314	0.418	0.176	35.72	36.67	14.01	0.668	0.877	0.584	75.99	76.95	46.51	0.822	1.071	0.937	93.52	93.98	74.64				
Mauritius	0.126	0.054	0.015	9.84	4.05	1.25	0.674	0.462	0.195	52.63	34.62	16.28	1.105	0.98	0.581	86.27	73.43	48.53				
Africa-Eastern	229.6	269.5	156.6	70.43	45.55	17.86	307.5	483	367.9	94.33	81.63	41.96	320.4	561.7	601.6	98.27	94.93	68.6				
Congo, Democratic Rep. of	51.49	50.07	20.35	75.91	39.18	10.24	65.41	102.1	86.18	96.43	79.92	43.36	67.15	121.8	148.5	99	95.36	74.71				
Angola	10.39	0.607	0.004	54.71	1.77	0.01	16.23	3.818	0.106	85.47	11.14	0.215	18.25	9.976	0.782	96.13	29.1	1.588				
Cameroon	6.178	5.772	1.997	30.94	17.31	4.28	14.48	18.32	11.22	72.52	54.92	24.04	18.43	27.47	24.49	92.33	82.38	52.48				
Chad	9.036	10.03	12.89	78.51	43.78	33.31	11.05	17.84	27.55	96.04	77.84	71.2	11.39	21.28	35	99	92.86	90.46				
Central African Rep.	3.64	4.719	4.636	80.76	66.19	46.61	4.269	6.264	7.333	94.72	87.86	73.72	4.442	6.835	8.761	98.55	95.87	88.09				
Congo, Rep. of	2.672	0.403	0.897	71.22	6.63	11.33	3.517	1.671	3.06	93.74	27.51	38.67	3.708	3.251	5.211	98.84	53.51	65.85				
Gabon	0.272	0.125	0.022	18.10	5.55	0.79	0.637	0.411	0.114	42.41	18.27	4.123	0.959	0.789	0.309	63.79	35.06	11.13				
Equatorial Guinea	0	0	0	0.00	0.00	0.00	0.11	0.019	0.003	15.91	1.673	0.204	0.268	0.09	0.022	38.71	8.091	1.469				
São Tomé and Príncipe	0.078	0.122	0.115	46.99	43.26	29.26	0.139	0.232	0.271	83.71	82.22	68.86	0.16	0.271	0.353	96.23	96	89.91				
Africa-Middle	83.76	71.85	40.92	64.98	30.56	11.50	115.8	150.7	135.8	89.86	64.08	38.16	124.8	191.8	223.4	96.79	81.56	62.77				
Egypt	11.37	20.47	11.93	13.46	17.94	9.26	53.79	75.84	60.14	63.65	66.45	46.7	78.28	105.6	103.6	92.64	92.51	80.42				
Sudan	23.03	24.76	11.36	53.29	35.14	12.35	39.48	54.73	40.05	91.36	77.66	43.56	42.78	66.8	66.45	99	94.79	72.26				
Algeria	5.826	0.01	0.056	16.45	0.02	0.11	23.72	0.601	1.926	66.95	1.308	3.883	33.1	4.93	10.7	93.43	10.73	21.56				
Morocco	3.761	2.231	1.577	11.62	5.48	3.63	16.34	13.53	9.391	50.47	33.22	21.63	26.63	27.42	21.36	82.23	67.31	49.18				
Tunisia	0.45	0.24	0.171	4.27	1.88	1.29	3.332	2.558	1.765	31.62	20.02	13.3	7.142	6.881	5.235	67.78	53.84	39.44				
Libya	0.289	0	0	4.41	0.00	0.00	1.676	0	0.001	25.59	0.004	0.009	3.632	0.008	0.016	55.46	0.093	0.151				
Africa-Northern	44.73	47.71	25.1	21.04	16.28	7.44	138.3	147.3	113.3	65.07	50.25	33.58	191.6	211.6	207.3	90.1	72.21	61.45				

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$2 per Day						Poverty below \$5 per Day						Poverty below \$10 per Day					
	Millions of people			Percent of population			Millions of people			Percent of population			Millions of people			Percent of population		
	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060
	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060
AFRICA continued																		
South Africa	16.81	10.48	2.775	33.72	19.30	4.73	32.44	26.76	11.35	65.07	49.29	19.35	41.92	39.84	23.42	84.08	73.38	39.94
Namibia	1.171	1.05	1.105	52.91	32.59	28.41	1.67	1.833	2.028	75.45	56.9	52.16	1.938	2.388	2.726	87.59	74.11	70.09
Lesotho	1.174	1.221	0.827	56.31	48.00	30.64	1.689	1.842	1.48	81.02	72.42	54.83	1.924	2.189	1.955	92.27	86.07	72.43
Botswana	0.648	0.472	0.389	32.74	19.34	14.53	1.204	1.081	0.942	60.85	44.28	35.17	1.572	1.601	1.479	79.45	65.61	55.22
Swaziland	0.933	1.342	1.232	77.62	79.41	60.93	1.15	1.623	1.784	95.64	96.03	88.23	1.19	1.673	1.961	99	99	96.96
Africa-Southern	20.74	14.57	6.327	36.18	22.70	9.05	38.15	33.14	17.58	66.55	51.63	25.14	48.54	47.69	31.54	84.67	74.3	45.1
Nigeria	124.5	44.99	74.98	78.65	16.49	18.99	153.9	141.3	219.3	97.22	51.8	55.54	156.7	216.4	323.1	99	79.29	81.84
Niger	11.85	26.48	27.86	74.53	71.68	38.31	15.64	36.27	63.21	98.34	98.21	86.91	15.74	36.57	71.7	99	99	98.59
Côte d'Ivoire	9.944	10.22	2.133	46.10	26.59	3.73	18.59	27.43	15.15	86.18	71.36	26.52	21.06	35.69	34.13	97.65	92.83	59.73
Burkina Faso	12.81	20.55	13.12	78.59	64.99	26.62	15.96	30.07	35.34	97.96	95.1	71.72	16.14	31.31	45.86	99	99	93.07
Ghana	12.01	6.2	0.486	49.36	16.53	1.04	21.19	19.87	4.414	87.1	52.97	9.432	23.78	30.27	13.46	97.72	80.7	28.77
Mali	10.44	14.72	5.566	78.38	55.76	13.49	13.06	23.97	20.59	98.01	90.81	49.91	13.19	26.05	32.88	99	98.69	79.69
Senegal	7.566	14.99	14.67	58.79	64.03	41.32	11.86	22.05	28.38	92.18	94.2	79.95	12.74	23.18	33.71	98.98	99	94.96
Guinea	7.298	6.802	5.124	70.79	36.32	17.19	9.945	15.53	18.24	96.45	82.88	61.18	10.21	18.23	26.46	99	97.34	88.78
Benin	7.021	12.01	11.98	76.17	66.39	41.51	9.043	17.28	23.35	98.11	95.51	80.91	9.125	17.91	27.57	99	99	95.53
Togo	4.717	7.628	6.1	69.54	66.27	37.77	6.615	10.98	12.82	97.53	95.42	79.37	6.715	11.39	15.39	99	99	95.3
Sierra Leone	4.134	0.924	0.268	70.85	9.22	1.96	5.619	3.969	2.133	96.29	39.62	15.58	5.777	7.072	5.672	99	70.6	41.43
Liberia	3.858	3.568	3.051	93.55	46.92	27.31	4.083	6.472	8.098	99	85.1	72.5	4.083	7.38	10.43	99	97.04	93.4
Mauritania	1.385	1.738	1.449	41.11	30.52	17.95	2.87	4.416	4.993	85.2	77.54	61.85	3.293	5.449	7.18	97.76	95.68	88.94
Gambia	0.944	1.761	1.377	53.91	51.51	26.12	1.521	2.918	3.313	86.89	85.36	62.86	1.7	3.301	4.509	97.1	96.55	85.55
Guinea-Bissau	1.28	1.994	2.299	77.67	72.17	54.27	1.588	2.608	3.589	96.35	94.39	84.74	1.632	2.736	4.055	99	99	95.73
Cape Verde	0.162	0.108	0.068	31.58	16.41	9.56	0.349	0.303	0.231	67.98	46.02	32.46	0.452	0.47	0.409	88.2	71.41	57.56
Africa-Western	219.9	174.7	170.5	71.82	32.01	20.91	291.9	365.5	463.1	95.33	66.98	56.79	302.4	473.4	656.5	98.76	86.75	80.51

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$2 per Day						Poverty below \$5 per Day						Poverty below \$10 per Day					
	Millions of people			Percent of population			Millions of people			Percent of population			Millions of people			Percent of population		
	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060
AMERICAS																		
Haiti	7.781	10.28	10.72	76.36	71.59	63.06	9.511	12.96	14.33	93.32	90.23	84.32	10.01	13.89	15.9	98.18	96.72	93.54
Dominican Rep.	1.013	0.372	0.144	9.90	2.80	0.98	3.945	2.325	1.097	38.56	17.52	7.467	6.939	5.609	3.252	67.84	42.27	22.14
Cuba	5.447	0.586	0.007	48.63	5.34	0.08	10.17	5.029	0.462	90.77	45.83	4.988	11.09	9.325	2.886	99	84.99	31.16
Puerto Rico	0.511	0.234	0.134	12.84	5.39	3.16	1.684	1.166	0.742	42.33	26.85	17.48	2.777	2.401	1.723	69.78	55.26	40.59
Jamaica	0.172	0.151	0.19	6.34	4.82	6.03	0.878	0.867	0.897	32.37	27.66	28.47	1.73	1.834	1.795	63.77	58.52	56.94
Trinidad and Tobago	0.018	0	0	1.34	0.00	0.00	0.218	0	0.002	16.23	0.008	0.129	0.641	0.003	0.02	47.68	0.233	1.62
Bahamas	0	0	0	0.00	0.00	0.00	0.001	0.001	0	0.166	0.336	0.094	0.01	0.018	0.006	2.796	4.475	1.508
Barbados	0	0	0	0.00	0.00	0.00	0.017	0.015	0.002	6.63	5.839	0.967	0.102	0.094	0.025	39.56	36.95	11.32
Saint Lucia	0.065	0.062	0.056	37.36	33.33	32.56	0.139	0.142	0.131	79.8	76.17	76.31	0.166	0.175	0.162	95.6	94.27	94.5
Grenada	0.023	0.026	0.017	22.12	18.98	11.11	0.071	0.088	0.08	68.18	64.43	52.22	0.096	0.124	0.13	92.26	90.69	84.76
Saint Vincent and the Grenadines	0.021	0.029	0.017	19.27	21.64	11.97	0.071	0.091	0.075	64.73	68.17	52.68	0.099	0.124	0.119	90.49	92.35	84.1
America-Caribbean	15.05	11.74	11.29	37.02	24.17	22.29	26.7	22.68	17.82	65.69	46.69	35.19	33.66	33.6	26.02	82.79	69.16	51.38
Guatemala	4.052	6.095	5.069	28.18	24.76	15.26	8.915	13.79	13.24	62.01	56.03	39.86	12	19.28	20.82	83.49	78.31	62.71
Honduras	2.705	4.668	5.595	35.52	39.83	38.59	5.098	8.108	9.439	66.93	69.18	65.1	6.498	10.07	11.83	85.32	85.88	81.62
Nicaragua	1.819	2.271	2.407	31.25	27.33	24.85	4.317	5.74	5.938	74.17	69.07	61.3	5.438	7.548	8.192	93.44	90.84	84.57
El Salvador	0.745	1.089	1.194	12.03	13.89	13.96	2.751	3.532	3.508	44.43	45.04	41.01	4.579	5.696	5.667	73.95	72.64	66.26
Costa Rica	0.23	0.088	0.066	4.96	1.53	1.10	1.129	0.678	0.474	24.34	11.76	7.926	2.368	1.883	1.363	51.04	32.66	22.8
Panama	0.4	0.046	0.01	11.40	1.03	0.21	1.347	0.376	0.134	38.39	8.43	2.772	2.292	1.122	0.553	65.29	25.15	11.46
Belize	0.067	0.045	0.005	19.48	8.91	0.85	0.246	0.251	0.077	71.42	49.67	13.1	0.327	0.425	0.26	94.99	84.18	44.13
America-Central	10.02	14.3	14.35	23.58	22.62	18.55	23.8	32.48	32.81	56.01	51.37	42.42	33.5	46.01	48.69	78.84	72.79	62.96
United States of America	0	0	0	0.00	0.00	0.00	0.153	0.116	0.104	0.049	0.031	0.025	2.686	2.473	1.895	0.868	0.657	0.449
Mexico	9.683	6.939	5.436	8.92	5.18	3.92	36.49	32.85	25.23	33.62	24.53	18.19	66.03	68.06	54.93	60.85	50.82	39.6
Canada	0	0	0	0.00	0.00	0.00	0.003	0	0	0.009	0.001	0.001	0.169	0.047	0.024	0.494	0.115	0.054
America-North	9.683	6.939	5.436	2.14	1.26	0.90	36.64	32.97	25.33	8.101	5.985	4.184	68.89	70.58	56.85	15.23	12.81	9.389
Brazil	16.28	4.96	3.212	8.33	2.16	1.37	60.01	31.5	21.82	30.7	13.74	9.32	110.2	79.92	60.16	56.37	34.85	25.7
Colombia	11.87	6.45	9.069	25.63	10.90	14.09	25.74	18.86	23.62	55.58	31.86	36.71	35.71	32.04	37.71	77.09	54.12	58.61
Argentina	0.13	0.017	0.02	0.32	0.04	0.04	1.961	0.545	0.51	4.821	1.126	0.981	7.949	3.606	3.148	19.54	7.453	6.053
Peru	3.794	0.979	1.389	12.86	2.54	3.21	13.28	6.326	7.883	45.03	16.41	18.23	21.77	15.62	18.32	73.82	40.53	42.36
Venezuela (Bolivarian Rep. of)	2.854	0.153	0	9.90	0.40	0.00	12.57	2.693	0.037	43.58	7.081	0.087	21.77	10.72	0.678	75.5	28.18	1.592
Ecuador	1.879	0.975	1.504	13.65	5.34	7.34	6.269	4.652	6.094	45.52	25.48	29.73	10.14	9.578	11.58	73.62	52.47	56.48
Chile	0.226	0.017	0.008	1.32	0.09	0.04	1.643	0.269	0.135	9.589	1.347	0.665	4.63	1.32	0.714	27.02	6.605	3.51
Bolivia (Plurinational State of)	2.361	0.262	0.467	23.54	1.77	2.61	5.396	1.45	2.228	53.77	9.806	12.47	7.645	3.672	5.17	76.19	24.84	28.95
Paraguay	0.767	0.666	0.411	11.87	7.12	3.70	2.561	2.562	1.88	39.63	27.38	16.9	4.311	4.878	4.119	66.71	52.12	37.04
Uruguay	0.001	0	0	0.03	0.00	0.00	0.031	0.003	0.003	0.921	0.093	0.068	0.233	0.049	0.032	6.931	1.341	0.862
Guyana	0.081	0.055	0.006	10.64	7.15	0.92	0.336	0.274	0.063	44.14	35.67	9.672	0.572	0.521	0.196	75.2	67.8	30.12
Suriname	0.096	0.008	0	18.29	1.50	0.00	0.317	0.094	0.007	60.37	17.64	1.488	0.459	0.27	0.052	87.46	50.46	11.04
America-South	40.34	14.54	16.09	10.27	3.02	3.15	130.1	69.23	64.28	33.12	14.4	12.58	225.4	162.2	141.9	57.37	33.73	27.77

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$2 per Day						Poverty below \$5 per Day						Poverty below \$10 per Day					
	Millions of people			Percent of population			Millions of people			Percent of population			Millions of people			Percent of population		
	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060
ASIA with OCEANIA																		
China	320.7	21.82	1.219	23.97	1.55	0.10	840.6	179.9	19.94	62.81	12.79	1.561	1159	503.1	96.54	86.63	35.78	7.556
Japan	0	0	0	0.00	0.00	0.00	0	0	0	0	0	0	0.159	0.011	0.004	0.125	0.01	0.004
Korea, Rep. of	0	0	0	0.00	0.00	0.00	0.028	0	0.001	0.058	0.001	0.002	0.997	0.054	0.053	2.04	0.11	0.131
Korea, Dem. People's Rep. of	16.96	11.75	3.224	70.70	45.05	12.60	23.28	23.72	15.49	97.03	90.95	60.55	23.75	25.82	23.26	99	99	90.93
Taiwan, China	0	0	0	0.00	0.00	0.00	0.007	0	0	0.03	0	0	0.382	0.003	0.002	1.661	0.014	0.011
Hong Kong SAR, China	0	0	0	0.00	0.00	0.00	0.045	0	0.003	0.641	0.006	0.042	0.359	0.013	0.066	5.107	0.163	0.825
Mongolia	1.175	0.047	0	43.50	1.36	0.00	2.391	0.661	0.011	88.51	19.08	0.282	2.666	1.916	0.172	98.72	55.29	4.489
Asia-East	338.9	33.61	4.443	21.57	2.06	0.30	866.3	204.3	35.45	55.13	12.52	2.413	1188	531	120.1	75.59	32.55	8.175
India	785.7	273.4	49.06	67.10	18.26	2.96	1128	990.5	416.6	96.37	66.17	25.16	1159	1380	991.9	99	92.18	59.91
Pakistan	100.1	154.2	61.4	57.73	58.25	18.42	166.1	256.5	241.8	95.8	96.89	72.53	171.6	262.1	319.4	99	99	95.84
Bangladesh	124.5	61.33	6.13	75.68	29.34	2.74	162.2	171.2	62.89	98.63	81.88	28.12	162.8	204.4	149.5	99	97.78	66.82
Afghanistan	19.97	11.28	15.37	65.24	18.33	15.23	30.07	51	77.3	98.26	82.87	76.62	30.3	60.93	98.87	99	99	97.99
Iran, Islamic Rep. of	4.046	0.001	0	5.48	0.00	0.00	28.04	0.234	0.002	37.96	0.268	0.002	55.34	3.987	0.129	74.93	4.566	0.148
Nepal	22.21	27.56	25.3	74.38	65.82	52.83	28.48	38.15	38.29	95.38	91.1	79.96	29.56	41.04	44.18	99	98.02	92.24
Uzbekistan	18.54	1.55	1.296	65.67	4.15	3.15	27.12	13.11	12.96	96.06	35.14	31.45	27.95	27.58	29.32	99	73.92	71.17
Sri Lanka	5.176	1.508	0.587	25.31	6.41	2.48	14.58	8.502	4.291	71.29	36.14	18.13	19.06	16.49	10.76	93.19	70.12	45.47
Kazakhstan	0.024	0	0	0.15	0.00	0.00	1.449	0	0	9	0	0	7.367	0	0	45.74	0	0
Tajikistan	3.09	3.247	2.822	43.71	31.37	22.81	6.425	7.992	7.555	90.88	77.23	61.09	6.999	9.865	10.57	99	95.34	85.5
Kyrgyz Rep.	1.48	2.359	0.962	27.59	31.44	11.38	4.383	6.262	4.349	81.71	83.46	51.44	5.253	7.36	7.064	97.93	98.09	83.54
Turkmenistan	0.784	0	0	15.14	0.00	0.00	2.955	0	0	57.07	0	0	4.467	0.001	0	86.28	0.012	0
Bhutan	0.273	0.038	0.027	38.61	4.15	2.65	0.566	0.221	0.162	80.1	24.16	15.9	0.676	0.488	0.393	95.58	53.34	38.54
Maldives	0.021	0.001	0.001	6.71	0.25	0.25	0.157	0.029	0.027	50.01	7.257	6.738	0.273	0.153	0.143	87.14	38.96	35.03
Asia-South Central	1086	536.5	163	62.88	23.69	6.37	1601	1544	866.2	92.73	68.15	33.84	1681	2014	1662	97.36	88.94	64.94
Indonesia	112.4	16.68	1.204	48.32	5.88	0.41	210.6	125.5	28.6	90.52	44.26	9.657	230.3	233.6	115	99	82.38	38.83
Philippines	39.6	31.41	16.72	42.29	23.34	10.75	76.81	85.43	64.26	82.02	63.46	41.3	89.95	117.9	110.4	96.05	87.6	70.95
Vietnam	32.09	11.78	1.975	36.32	10.90	1.77	73.75	54.13	19.43	83.47	50.1	17.46	86.22	89.19	53.26	97.58	82.54	47.85
Thailand	16.88	7.106	4.305	24.77	10.29	6.97	39.57	25.33	16.41	58.07	36.67	26.55	55.12	44.23	31.35	80.88	64.02	50.72
Myanmar	34.37	3.326	0.029	68.09	5.65	0.05	48.09	20.16	1.144	95.27	34.25	1.891	49.98	40.41	7.551	99	68.66	12.48
Malaysia	0.304	0.064	0.041	1.09	0.17	0.10	2.99	1.149	0.727	10.7	3.089	1.735	9.148	5.305	3.588	32.75	14.26	8.564
Cambodia	8.309	3.802	1.191	55.21	19.17	5.36	13.41	11.34	6.08	89.1	57.15	27.38	14.76	16.57	12.53	98.05	83.55	56.44
Lao People's Dem. Rep.	4.086	0.722	0.019	63.48	8.11	0.18	6.15	4.105	0.488	95.54	46.11	4.705	6.373	7.231	2.367	99	81.22	22.84
Singapore	0	0	0	0.00	0.00	0.00	0.032	0.001	0	0.629	0.012	0.002	0.27	0.02	0.004	5.246	0.32	0.068
Timor-Leste	0.838	0.054	0	71.56	2.53	0.00	1.152	0.833	0.022	98.4	39.03	0.726	1.159	1.791	0.393	99	83.89	12.72
Brunei Darussalam	0	0	0	0.00	0.00	0.00	0	0	0	0.119	0	0	0.037	0	0	9.034	0	0
Asia-South East	248.8	74.94	25.48	42.21	10.28	3.31	472.5	328	137.2	80.17	44.99	17.82	543.3	556.2	336.4	92.18	76.3	43.7

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$2 per Day						Poverty below \$5 per Day						Poverty below \$10 per Day					
	Millions of people			Percent of population			Millions of people			Percent of population			Millions of people			Percent of population		
	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060
ASIA with OCEANIA continued																		
Turkey	4.701	1.442	1.112	6.21	1.58	1.17	29.13	17.31	12.04	38.47	18.93	12.66	56.16	48.65	36.63	74.16	53.2	38.51
Iraq	7.848	0.697	0.032	24.30	1.16	0.04	21.51	8.107	1.041	66.59	13.45	1.23	29.06	24.81	6.872	89.97	41.16	8.122
Yemen, Rep. of	10.9	23.12	22.69	44.93	47.86	29.95	21.42	42.83	53.42	88.3	88.65	70.51	23.91	47.57	68.99	98.56	98.47	91.06
Saudi Arabia	0	0	0	0.00	0.00	0.00	3.435	0.006	0	13.22	0.015	0	13.01	0.278	0.004	50.07	0.759	0.009
Syrian Arab Rep.	3.117	7.089	2.221	14.42	21.80	5.60	13.19	23.41	13.67	61.04	71.97	34.45	19.51	30.78	27.42	90.24	94.65	69.12
Jordan	0.151	0.115	0.037	2.48	1.11	0.27	1.577	1.783	0.893	25.87	17.25	6.58	3.878	5.456	3.961	63.65	52.78	29.18
Israel	0	0	0	0.00	0.00	0.00	0.05	0.009	0.001	0.662	0.084	0.008	0.485	0.179	0.03	6.406	1.665	0.231
Palestine	1.588	5.055	4.87	38.25	61.84	39.24	3.691	7.755	9.861	88.9	94.86	79.46	4.11	8.093	11.8	99	99	95.07
Azerbaijan	0.462	0	0	5.20	0.00	0.00	3.951	0.007	0.007	44.48	0.067	0.059	7.442	0.16	0.102	83.78	1.477	0.918
United Arab Emirates	0	0	0	0.00	0.00	0.00	0	0	0	0.002	0	0	0.006	0	0	0.134	0	0
Kuwait	0	0	0	0.00	0.00	0.00	0.197	0	0	6.887	0	0	0.995	0	0	34.72	0.002	0
Lebanon	0.468	0.278	0.317	11.00	5.69	6.70	2.633	2.101	1.909	61.9	42.96	40.38	3.947	3.97	3.593	92.79	81.18	75.98
Oman	0	0	0	0.00	0.00	0.00	1.048	0.077	0.001	36.07	1.983	0.025	2.051	0.453	0.019	70.59	11.59	0.451
Armenia	0.484	0.385	0.106	15.67	11.91	3.51	2.266	2.219	0.97	73.36	68.63	32.17	2.992	3.102	2.146	96.84	95.95	71.14
Georgia	1.351	0.23	0.105	32.06	6.64	3.55	3.228	1.433	0.74	76.6	41.36	25.07	3.995	2.683	1.692	94.81	77.43	57.28
Qatar	0	0	0	0.00	0.00	0.00	0.009	0	0	0.572	0	0	0.081	0	0	5.241	0	0
Bahrain	0	0	0	0.00	0.00	0.00	0.004	0	0	0.457	0.009	0	0.076	0.009	0	9.467	0.803	0.002
Cyprus	0	0	0	0.00	0.00	0.00	0.001	0.001	0.001	0.06	0.079	0.096	0.019	0.025	0.022	2.118	2.678	2.638
Asia-West	31.07	38.41	31.49	13.40	11.33	7.53	107.3	107	94.55	46.29	31.58	22.6	171.7	176.2	163.3	74.06	51.99	39.04
Australia	0	0	0	0.00	0.00	0.00	0.011	0.001	0.001	0.048	0.002	0.003	0.289	0.041	0.045	1.293	0.148	0.14
Papua New Guinea	4.114	2.838	0.4	59.70	25.66	2.78	6.079	6.852	2.584	88.22	61.95	17.96	6.692	9.381	6.264	97.11	84.82	43.55
New Zealand	0	0	0	0.00	0.00	0.00	0.022	0.006	0.001	0.496	0.125	0.01	0.271	0.123	0.017	6.217	2.43	0.318
Solomon Islands	0.263	0.22	0.522	49.16	23.28	37.10	0.444	0.553	1.012	82.92	58.45	71.95	0.51	0.778	1.263	95.41	82.32	89.8
Fiji	0.335	0.167	0.01	39.23	18.39	1.23	0.716	0.636	0.178	83.9	70.02	21.9	0.832	0.858	0.511	97.42	94.56	63.01
Vanuatu	0.089	0.111	0.168	36.18	27.01	29.89	0.19	0.27	0.386	77.42	65.86	68.77	0.232	0.362	0.503	94.37	88.09	89.6
Micronesia (Federated States of)	0.052	0.033	0.048	46.43	18.33	19.83	0.094	0.107	0.144	83.55	59.26	59.5	0.108	0.155	0.207	96.33	86.25	85.5
Tonga	0.038	0.083	0.063	36.54	48.54	26.69	0.092	0.16	0.181	88.78	93.29	76.97	0.103	0.169	0.227	99	99	96.13
Samoa	0.066	0.039	0.016	36.87	18.48	7.44	0.153	0.139	0.092	85.53	66.09	42.64	0.176	0.194	0.167	98.26	92.08	77.72
Oceania	4.957	3.491	1.228	13.92	7.45	2.23	7.801	8.723	4.579	21.91	18.62	8.309	9.213	12.06	9.204	25.87	25.75	16.7

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$2 per Day						Poverty below \$5 per Day						Poverty below \$10 per Day					
	Millions of people			Percent of population			Millions of people			Percent of population			Millions of people			Percent of population		
	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060	2010	2035	2060
EUROPE																		
Russian Federation	1.622	0	0.001	1.14	0.00	0.00	18.84	0.002	0.144	13.29	0.002	0.133	57.79	0.115	1.984	40.77	0.091	1.823
Poland	0.01	0	0	0.03	0.00	0.00	0.833	0.066	0.05	2.182	0.186	0.165	6.918	1.462	0.855	18.12	4.109	2.843
Ukraine	0.022	0	0	0.05	0.00	0.00	3.296	0.626	0.054	7.202	1.704	0.181	21.64	10.94	1.664	47.28	29.77	5.579
Romania	0.947	0.362	0.104	4.41	1.89	0.66	9.972	6.444	2.097	46.49	33.71	13.4	18.7	15.24	7.369	87.17	79.73	47.1
Czech Rep.	0	0	0	0.00	0.00	0.00	0.001	0	0	0.007	0	0	0.115	0.021	0.007	1.088	0.207	0.071
Belarus	0.005	0	0.002	0.05	0.00	0.03	0.73	0.09	0.188	7.569	1.011	2.423	4.721	1.53	1.593	48.94	17.26	20.58
Hungary	0.002	0	0	0.02	0.00	0.00	0.254	0.044	0.014	2.54	0.505	0.201	2.323	0.847	0.284	23.21	9.739	3.989
Bulgaria	0.49	0.263	0.249	6.49	4.34	5.11	2.492	1.699	1.271	33.02	28.03	26.06	4.874	3.684	2.653	64.58	60.78	54.4
Slovak Rep.	0.007	0.001	0.002	0.13	0.02	0.05	0.823	0.259	0.201	15.16	4.975	4.583	3.675	2.368	1.489	67.7	45.56	33.9
Moldova, Rep. of	0.445	0.409	0.12	12.45	12.22	4.28	2.004	1.941	0.823	56.07	58.01	29.36	3.121	2.984	1.784	87.29	89.16	63.61
Europe-East	3.55	1.036	0.477	1.21	0.40	0.22	39.24	11.17	4.842	13.35	4.288	2.195	123.9	39.19	19.68	42.15	15.04	8.921
United Kingdom	0	0	0	0.00	0.00	0.00	0.03	0.006	0.001	0.048	0.009	0.001	0.75	0.26	0.042	1.205	0.385	0.061
Sweden	0	0	0	0.00	0.00	0.00	0	0	0	0.001	0	0	0.025	0	0	0.269	0.004	0
Denmark	0	0	0	0.00	0.00	0.00	0	0	0	0.005	0	0	0.057	0.003	0	1.032	0.056	0.006
Ireland	0	0	0	0.00	0.00	0.00	0.008	0	0	0.184	0.001	0.001	0.161	0.003	0.004	3.588	0.064	0.072
Norway	0	0	0	0.00	0.00	0.00	0	0	0	0	0	0	0.002	0	0	0.039	0	0
Finland	0	0	0	0.00	0.00	0.00	0	0	0	0.001	0	0	0.01	0.001	0	0.185	0.015	0.009
Lithuania	0.132	0.032	0.021	3.97	1.07	0.82	1.107	0.521	0.31	33.34	17.38	12.18	2.378	1.607	1.034	71.57	53.56	40.6
Latvia	0.002	0	0.001	0.09	0.00	0.06	0.104	0.024	0.024	4.629	1.191	1.395	0.597	0.22	0.159	26.58	10.95	9.166
Estonia	0.002	0	0	0.15	0.00	0.00	0.077	0.007	0.002	5.757	0.64	0.256	0.4	0.086	0.031	29.86	7.857	3.273
Iceland	0	0	0	0.00	0.00	0.00	0	0	0	0.071	0	0	0.007	0	0	2.266	0	0
Europe-North	0.136	0.033	0.022	0.14	0.03	0.02	1.327	0.559	0.338	1.338	0.526	0.313	4.386	2.18	1.272	4.423	2.052	1.179
Italy	0	0	0	0.00	0.00	0.00	0.097	0.036	0.04	0.16	0.063	0.082	1.737	0.886	0.678	2.865	1.562	1.392
Spain	0	0	0	0.00	0.00	0.00	0.058	0.028	0.017	0.126	0.061	0.043	1.245	0.71	0.294	2.685	1.551	0.729
Greece	0	0	0	0.00	0.00	0.00	0.007	0.004	0.006	0.061	0.035	0.063	0.188	0.129	0.128	1.663	1.161	1.263
Portugal	0	0	0	0.00	0.00	0.00	0.073	0.071	0.099	0.687	0.721	1.195	0.726	0.713	0.685	6.82	7.215	8.275
Serbia	0.064	0.025	0.007	0.88	0.38	0.13	2.051	1.521	0.421	28.14	23.42	7.805	5.704	5.005	2.271	78.25	77.04	42.08
Croatia	0.001	0	0	0.02	0.00	0.00	0.074	0.021	0.009	1.675	0.538	0.267	0.703	0.332	0.132	15.87	8.32	3.952
Bosnia and Herzegovina	0.001	0	0	0.03	0.00	0.00	0.055	0.017	0.018	1.474	0.45	0.576	0.482	0.191	0.16	12.81	5.188	5.229
Albania	0.092	0.028	0.026	2.90	0.88	0.91	1.037	0.513	0.365	32.74	16.18	12.78	2.35	1.662	1.187	74.2	52.38	41.54
Macedonia, TFYR	0.112	0.132	0.078	5.48	6.64	4.57	0.634	0.752	0.448	31.04	37.82	26.23	1.295	1.438	0.962	63.38	72.31	56.32
Slovenia	0	0	0	0.00	0.00	0.00	0.002	0.001	0.002	0.08	0.043	0.103	0.056	0.034	0.034	2.711	1.747	2.075
Montenegro	0.089	0.116	0.073	14.22	18.41	12.54	0.457	0.523	0.409	73.01	83.08	70.26	0.607	0.623	0.561	97.03	99	96.44
Malta	0	0	0	0.00	0.00	0.00	0	0	0	0.099	0.032	0.117	0.013	0.007	0.009	3.039	1.65	2.797
Europe-South	0.358	0.302	0.184	0.23	0.21	0.15	4.547	3.487	1.834	2.977	2.393	1.451	15.11	11.73	7.1	9.889	8.047	5.618
Germany	0	0	0	0.00	0.00	0.00	0.001	0	0	0.001	0	0	0.117	0.025	0.012	0.143	0.032	0.018
France	0	0	0	0.00	0.00	0.00	0.022	0.006	0.002	0.035	0.01	0.003	0.814	0.361	0.093	1.294	0.54	0.139
Netherlands	0	0	0	0.00	0.00	0.00	0.002	0	0.001	0.009	0.002	0.003	0.102	0.036	0.027	0.617	0.207	0.158
Belgium	0	0	0	0.00	0.00	0.00	0.003	0.001	0.001	0.028	0.007	0.005	0.117	0.049	0.024	1.074	0.432	0.213
Switzerland	0	0	0	0.00	0.00	0.00	0.001	0	0	0.01	0.001	0.001	0.036	0.005	0.003	0.465	0.062	0.045
Austria	0	0	0	0.00	0.00	0.00	0	0	0	0.001	0	0	0.016	0.003	0.003	0.197	0.038	0.043
Luxembourg	0	0	0	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0	0.027	0.001	0
Europe-West	0	0	0	0.00	0.00	0.00	0.028	0.008	0.003	0.015	0.004	0.002	1.203	0.479	0.162	0.637	0.252	0.091

Poverty and Income

Base Case Source: International Futures Model Version 6.68, Nov 2013	Poverty below \$20 per Day						GDP at Market Exchange Rates				GDP per Capita at PPP				GDP at PPP			
	Millions of people			Percent of population			Billions in 2005 dollars				Thousands in 2005 dollars				Billions in 2010 dollars			
	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	5662	6313	6063	82.66	73.52	63.13	50,983	108,058	225,816	342.9%	9.743	15.85	26.59	172.9%	75,262.155	152,858.359	285,532.977	279.4%
Africa	1015	1628	2148	98.45	94.14	87.49	1,241	4,944	16,519	1231.1%	2.628	4.765	9.176	249.2%	3,004.204	9,136.797	24,970.398	731.2%
Americas	502.6	509.4	457.8	54.14	44.54	36.79	17,547	29,324	46,907	167.3%	21.51	28.42	39.64	84.3%	22,204.858	36,146.888	54,862.088	147.1%
Asia with Oceania	3843	4038	3368	92.5	80.57	63.88	15,939	51,251	132,441	730.9%	6.566	14.47	29.18	344.4%	30,295.109	80,522.886	170,782.412	463.7%
Europe	293.9	131.9	85.09	40.47	18.99	13.59	16,155	22,375	29,753	84.2%	22.89	32.66	47.07	105.6%	19,757.984	27,051.788	34,918.078	76.7%
World	5662	6313	6063	82.66	73.52	63.13	50,983	108,058	225,816	342.9%	9.743	15.85	26.59	172.9%	75,262.155	152,858.359	285,532.977	279.4%
Africa-Eastern	322.7	583	779.3	98.99	98.53	88.87	128.2	761.3	4,572	3466.3%	1.081	2.643	7.566	599.9%	390.856	1,734.077	7,353.754	1781.4%
Africa-Middle	127.1	213.4	281.8	98.59	90.74	79.16	116.2	778.4	2,458	2015.3%	1.713	4.668	8.6	402.0%	244.619	1,215.841	3,391.013	1286.2%
Africa-Northern	207.9	249	279.6	97.79	84.97	82.87	446.6	1193	2,509	461.8%	5.198	7.767	11.69	124.9%	1,225.741	2,525.808	4,372.016	256.7%
Africa-Southern	54.3	57.6	47.03	94.71	89.75	67.25	314.5	799.3	1,955	521.6%	9.253	16.35	30.51	229.7%	587.703	1,162.251	2,363.809	302.2%
Africa-Western	303.1	525.3	760.8	99	96.27	93.3	236	1,413	5,025	2029.2%	1.637	4.133	8.292	406.5%	555.285	2,498.820	7,489.807	1248.8%
Africa	1015	1628	2148	98.45	94.14	87.49	1,241	4,944	16,519	1231.1%	2.628	4.765	9.176	249.2%	3,004.204	9,136.797	24,970.398	731.2%
America-Caribbean	37.94	41.38	36.54	93.33	85.19	72.15	225.9	498.7	950.4	320.7%	5.692	10.43	17.42	206.0%	257.803	564.003	982.964	281.3%
America-Central	39.32	55.45	61.9	92.53	87.71	80.04	117.4	352.5	824.5	602.3%	5.602	8.831	13.85	147.2%	263.725	618.512	1,186.786	350.0%
America-North	115.4	127.5	107.7	25.52	23.14	17.79	15,144	22,857	34,338	126.7%	34.48	42.43	57.24	66.0%	17,360.897	26,033.882	38,609.427	122.4%
America-South	309.9	285	251.7	78.88	59.28	49.26	2,060	5,616	10,794	424.0%	9.93	16.76	24.88	150.6%	4,322.433	8,930.490	14,082.912	225.8%
Americas	502.6	509.4	457.8	54.14	44.54	36.79	17,547	29,324	46,907	167.3%	21.51	28.42	39.64	84.3%	22,204.858	36,146.888	54,862.088	147.1%
Asia-East	1350	958.6	331.1	85.94	58.76	22.54	10,177	30,143	72,693	614.3%	9.695	23.6	54.08	457.8%	16,802.354	42,553.140	87,883.621	423.0%
Asia-South Central	1704	2154	2220	98.72	95.08	86.74	1,867	10,568	37,369	1901.6%	3.263	8.542	18.57	469.1%	6,252.670	21,455.776	52,674.062	742.4%
Asia-South East	566.1	670.9	565.5	96.04	92.02	73.46	1,209	3,961	9,910	719.7%	4.743	9.279	16.82	254.6%	3,097.562	7,497.466	14,360.555	363.6%
Asia-West	209.2	239.6	236.3	90.21	70.68	56.49	1,757	4,931	9,950	466.3%	11.77	18.56	27.28	131.8%	3,149.738	7,224.914	13,071.571	315.0%
Oceania	12.96	15.12	14.7	36.38	32.27	26.67	929.6	1,648	2,520	171.1%	24.88	34.19	45.22	81.8%	992.785	1,791.591	2,792.603	181.3%
Asia with Oceania	3843	4038	3368	92.5	80.57	63.88	15,939	51,251	132,441	730.9%	6.566	14.47	29.18	344.4%	30,295.109	80,522.886	170,782.412	463.7%
Europe-East	223.3	87.05	60.52	75.98	33.41	27.44	1,909	3,952	5,598	193.2%	13.14	22.14	30.35	131.0%	4,968.317	7,482.321	8,649.430	74.1%
Europe-North	16.56	8.161	3.619	16.7	7.682	3.355	3,791	5,499	7,597	100.4%	31.71	45.16	64.43	103.2%	3,503.966	5,348.316	7,739.009	120.9%
Europe-South	43.61	33.56	21.72	28.55	23.02	17.19	3,540	4,282	5,187	46.5%	23.72	29.6	41.03	73.0%	4,261.453	5,072.654	6,098.066	43.1%
Europe-West	17.31	9.299	3.336	9.167	4.892	1.874	7,014	8,806	11,565	64.9%	32.52	42.04	60.96	87.5%	7,024.249	9,148.497	12,431.573	77.0%
Europe	293.9	131.9	85.09	40.47	18.99	13.59	16,155	22,375	29,753	84.2%	22.89	32.66	47.07	105.6%	19,757.984	27,051.788	34,918.078	76.7%

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$20 per Day						GDP at Market Exchange Rates				GDP per Capita at PPP				GDP at PPP			
	Millions of people			Percent of population			Billions in 2005 dollars				Thousands in 2005 dollars				Billions in 2010 dollars			
	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																		
Ethiopia	84.14	139.5	179.9	99	99	93.81	20.15	144.1	791.1	3826.1%	0.882	2.553	7.01	694.8%	83.025	398.342	1,488.797	1693.2%
Tanzania, United Rep. of	44.58	87.19	112.6	99	99	82.66	19.72	151.9	1,538	7699.2%	1.264	3.5	14.72	1064.6%	63.041	341.515	2,221.011	3423.1%
Uganda	33.46	69.21	97.61	99	96.75	83.62	13.7	107	571.3	4070.1%	1.043	2.9	7.273	597.3%	65.534	212.796	710.280	983.8%
Kenya	40.46	71.86	91.35	99	98.94	88.47	23.45	86.7	379.3	1517.5%	1.448	2.645	6.21	328.9%	39.048	229.855	940.579	2308.8%
Madagascar	19.95	37.76	62.55	99	99	99	5.837	11.58	21.35	265.8%	0.856	1.005	1.206	40.9%	20.726	145.778	572.700	2663.2%
Mozambique	23.18	40.37	47.11	99	98.23	80.24	9.104	88.45	431.4	4638.6%	0.799	3.202	8.805	1002.0%	19.120	42.471	84.421	341.5%
Malawi	15.54	32.04	53.23	99	99	99	3.95	14.45	68.44	1632.7%	0.7	1.22	2.844	306.3%	12.174	43.722	169.373	1291.3%
Zambia	13.13	24.1	22.99	99	96.51	62.25	9.799	79.27	478	4778.0%	1.308	4.312	14.26	990.2%	19.208	119.303	583.223	2936.3%
Somalia	9.252	17.82	27.99	99	99	96.76	2.08	7.205	46.12	2117.3%	0.527	1.004	3.094	487.1%	25.324	65.069	128.362	406.9%
Rwanda	10.18	18.09	24.98	99	99	94.67	3.69	26.05	141.1	3723.8%	1.033	2.943	7.942	668.8%	11.764	59.574	232.181	1873.6%
Zimbabwe	12.42	18.16	21.48	98.73	98.32	95	5.092	17.66	45.19	787.5%	1.791	3.134	5.05	182.0%	5.540	20.311	100.610	1716.0%
Burundi	8.453	14.06	20.24	99	99	99	1.392	3.057	8.87	537.2%	0.357	0.597	1.216	240.6%	3.373	9.388	27.538	716.4%
Eritrea	5.171	9.223	13.08	99	99	97.47	1.057	4.151	22.38	2017.3%	0.522	1.114	3.246	521.8%	3.020	11.498	48.242	1497.6%
Comoros	0.667	1.302	2.144	99	99	99	0.413	0.867	2.254	445.8%	1.084	1.436	2.344	116.2%	17.004	28.037	32.146	89.1%
Djibouti	0.87	1.128	1.157	99	99	92.13	0.909	1.937	4.514	396.6%	2.174	3.378	6.141	182.5%	2.148	4.326	8.667	303.5%
Mauritius	1.259	1.268	0.979	98.29	95.02	81.84	7.829	16.99	23.16	195.8%	11.98	18.96	24.26	102.5%	0.809	2.091	5.624	595.5%
Africa-Eastern	322.7	583	779.3	98.99	98.53	88.87	128.2	761.3	4,572	3466.3%	1.081	2.643	7.566	599.9%	390.856	1,734.077	7,353.754	1781.4%
Congo, Democratic Rep. of	67.15	126.5	185.4	99	99	93.29	9.439	40.49	207.5	2098.3%	0.311	0.763	2.184	602.3%	23.373	108.004	480.868	1957.3%
Angola	18.8	18.76	3.696	99	54.71	7.502	50.37	517.2	1,686	3247.2%	4.767	18.87	36.59	667.6%	42.570	130.491	390.034	816.2%
Cameroon	19.73	31.97	37.17	98.8	95.87	79.66	19.2	65.01	237.3	1135.9%	1.925	3.533	7.547	292.1%	100.272	716.373	1,997.248	1891.8%
Chad	11.39	22.56	37.93	99	98.48	98.02	5.919	31.06	93.59	1481.2%	1.097	2.52	4.336	295.3%	13.991	63.961	185.878	1228.6%
Central African Rep.	4.462	7.054	9.525	99	98.94	95.76	1.557	4.511	18.11	1063.1%	0.658	1.31	3.307	402.6%	3.284	10.346	36.433	1009.3%
Congo, Rep. of	3.714	4.741	6.848	99	78.04	86.54	7.845	34.95	72.96	830.0%	3.934	8.343	12.19	209.9%	16.350	56.140	106.885	553.7%
Gabon	1.225	1.248	0.669	81.53	55.47	24.11	9.954	28.77	60.85	511.3%	13.67	20.19	27.51	101.2%	22.764	50.336	84.576	271.5%
Equatorial Guinea	0.46	0.279	0.104	66.44	25.1	6.874	11.74	55.96	81.63	595.3%	28.27	64.53	63.99	126.4%	21.701	79.347	107.185	393.9%
São Tomé and Príncipe	0.164	0.279	0.385	99	99	98.03	0.153	0.402	0.94	514.4%	1.706	2.699	4.378	156.6%	0.313	0.843	1.905	507.8%
Africa-Middle	127.1	213.4	281.8	98.59	90.74	79.16	116.2	778.4	2,458	2015.3%	1.713	4.668	8.6	402.0%	244.619	1,215.841	3,391.013	1286.2%
Egypt	83.65	113	124.1	99	99	96.38	121	282.6	617.1	410.0%	5.23	7.058	10.25	96.0%	489.509	892.281	1,463.319	198.9%
Sudan	42.78	69.77	83.72	99	99	91.04	38.95	133.3	489.4	1156.5%	2.039	3.692	8.102	297.4%	97.614	288.233	825.263	745.4%
Algeria	35.07	18.3	28.55	99	39.83	57.55	116.5	290	601.8	416.6%	7.449	11.26	17.17	130.5%	292.332	572.810	943.791	222.8%
Morocco	31.31	37	33.5	96.69	90.84	77.15	75.55	187.5	369.4	388.9%	4.106	7.021	11.39	177.4%	147.329	316.813	548.108	272.0%
Tunisia	9.688	10.86	9.529	91.94	84.94	71.8	40.23	88.61	180.6	348.9%	7.621	11.36	17.84	134.1%	88.951	160.843	262.312	194.9%
Libya	5.396	0.108	0.147	82.39	1.201	1.424	54.39	210.9	250.3	360.2%	14.94	29.16	28.41	90.2%	110.007	294.828	329.222	199.3%
Africa-Northern	207.9	249	279.6	97.79	84.97	82.87	446.6	1,193	2,509	461.8%	5.198	7.767	11.69	124.9%	1,225.741	2,525.808	4,372.016	256.7%

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$20 per Day						GDP at Market Exchange Rates				GDP per Capita at PPP				GDP at PPP			
	Millions of people			Percent of population			Billions in 2005 dollars				Thousands in 2005 dollars				Billions in 2010 dollars			
	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																		
South Africa	47.17	48.72	37.46	94.61	89.73	63.87	289.1	711.1	1,766	510.9%	9.627	16.99	32.6	238.6%	531.713	1,021.443	2,117.991	298.3%
Namibia	2.097	2.799	3.272	94.75	86.86	84.13	8.99	36.59	76.25	748.2%	6.001	13.44	20.6	243.3%	14.711	47.954	88.763	503.4%
Lesotho	2.034	2.396	2.315	97.54	94.2	85.76	1.712	6.491	15.81	823.5%	1.49	3.858	7.859	427.4%	3.443	10.870	23.506	582.8%
Botswana	1.81	2.021	1.982	91.45	82.83	74	11.85	39.19	82.53	596.5%	14.48	26.03	37.32	157.7%	31.748	70.374	110.718	248.7%
Swaziland	1.19	1.673	2.002	99	99	99	2.919	5.96	13.86	374.8%	4.572	6.199	10.19	122.9%	6.088	11.609	22.830	275.0%
Africa-Southern	54.3	57.6	47.03	94.71	89.75	67.25	314.5	799.3	1,955	521.6%	9.253	16.35	30.51	229.7%	587.703	1,162.251	2,363.809	302.2%
Nigeria	156.7	257.6	376.4	99	94.38	95.34	155.2	1,066	3353	2060.4%	2.065	5.852	10.92	428.8%	362.230	1,769.054	4,775.450	1218.3%
Niger	15.74	36.57	72	99	99	99	4.334	13.17	42.35	877.2%	0.64	0.96	1.594	149.1%	39.358	184.992	874.779	2122.6%
Côte d'Ivoire	21.35	38.06	49.64	99	99	86.86	18.23	59.18	219.6	1104.6%	1.522	2.744	5.914	288.6%	36.378	116.866	374.415	929.2%
Burkina Faso	16.14	31.31	48.78	99	99	99	7.102	31.26	134.5	1793.8%	1.099	2.195	4.906	346.4%	19.840	76.899	267.740	1249.5%
Ghana	24.09	35.69	27	99	95.15	57.7	14.79	99.58	663.9	4388.8%	1.46	4.452	16.87	1055.5%	11.277	39.269	128.497	1039.5%
Mali	13.19	26.13	39.27	99	99	95.19	6.764	34.23	206.7	2955.9%	0.95	2.263	6.785	614.2%	14.024	66.176	310.055	2110.9%
Senegal	12.74	23.18	35.15	99	99	99	10.33	26.45	69.84	576.1%	1.699	2.438	3.964	133.3%	24.204	63.230	155.858	543.9%
Guinea	10.21	18.54	29.33	99	99	98.41	3.268	13.48	52.1	1494.2%	0.896	1.784	3.645	306.8%	10.233	37.021	120.300	1075.6%
Benin	9.125	17.91	28.57	99	99	99	5.246	18.27	68.15	1199.1%	1.258	2.165	4.373	247.6%	12.850	43.379	139.796	987.9%
Togo	6.715	11.39	15.98	99	99	99	2.467	7.216	19.86	705.0%	0.766	1.392	2.629	243.2%	5.752	17.746	47.034	717.6%
Sierra Leone	5.777	9.125	9.839	99	91.1	71.87	1.618	19.89	129.7	7916.1%	0.747	3.346	11.28	1410.0%	4.831	37.131	171.034	3440.5%
Liberia	4.083	7.529	11.06	99	99	99	0.949	6.85	26.5	2692.4%	0.364	1.412	3.634	898.4%	1.665	11.897	44.952	2599.9%
Mauritania	3.335	5.638	7.944	99	99	98.4	2.838	7.979	18.5	551.9%	1.757	2.823	4.398	150.3%	6.559	17.812	39.325	499.6%
Gambia	1.733	3.385	5.078	99	99	96.35	0.838	2.715	8.455	908.9%	1.192	1.916	3.448	189.3%	2.313	7.255	20.128	770.2%
Guinea-Bissau	1.632	2.736	4.193	99	99	99	0.664	1.73	4.193	531.5%	0.994	1.564	2.427	144.2%	1.814	4.787	11.388	527.6%
Cape Verde	0.498	0.586	0.568	97.15	89.08	79.85	1.348	4.097	7.112	427.6%	3.445	7.279	11.5	233.8%	1.957	5.306	9.055	362.6%
Africa-Western	303.1	525.3	760.8	99	96.27	93.3	236	1,413	5,025	2029.2%	1.637	4.133	8.292	406.5%	555.285	2,498.820	7,489.807	1248.8%

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$20 per Day						GDP at Market Exchange Rates				GDP per Capita at PPP				GDP at PPP			
	Millions of people			Percent of population			Billions in 2005 dollars				Thousands in 2005 dollars				Billions in 2010 dollars			
	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																		
Haiti	10.09	14.22	16.64	99	99	97.87	4.308	10.64	20.45	374.7%	0.92	1.638	2.663	189.5%	31.056	87.144	210.864	579.0%
Dominican Rep.	9.085	9.378	6.8	88.82	70.66	46.29	47.9	179.8	388.1	710.2%	8.315	17.34	28.47	242.4%	94.224	254.890	463.255	391.7%
Cuba	11.09	10.81	6.914	99	98.53	74.65	55.26	119.3	290.5	425.7%	2.466	7.066	20.26	721.6%	10.389	26.054	50.147	382.7%
Puerto Rico	3.544	3.524	2.873	89.06	81.11	67.7	75.75	110.4	161.5	113.2%	10.6	16.56	28.3	167.0%	47.422	80.850	134.994	184.7%
Jamaica	2.38	2.655	2.588	87.74	84.69	82.09	11.16	16.97	24.63	120.7%	6.769	8.498	11.32	67.2%	20.637	29.944	40.105	94.3%
Trinidad and Tobago	1.086	0.041	0.124	80.75	3.006	10.28	18.95	44.3	45.7	141.2%	22.95	39.33	42.86	86.8%	34.185	60.084	57.248	67.5%
Bahamas	0.065	0.1	0.044	18.74	24.65	10.95	7.461	10.23	10.51	40.9%	29.34	31.04	30.23	3.0%	11.244	14.002	13.581	20.8%
Barbados	0.215	0.208	0.102	83.51	81.65	46.77	2.971	3.568	3.993	34.4%	17.83	19.74	23	29.0%	5.150	5.640	5.620	9.1%
Saint Lucia	0.172	0.184	0.17	99	99	99	0.863	1.364	1.721	99.4%	8.688	11.41	14.19	63.3%	1.675	2.348	2.698	61.1%
Grenada	0.103	0.135	0.15	99	98.85	97.71	0.688	1.229	1.81	163.1%	7.395	10.21	13.55	83.2%	0.969	1.502	2.150	121.8%
Saint Vincent and the Grenadines	0.108	0.133	0.138	98.75	99	97.32	0.594	0.959	1.486	150.2%	8.025	10.12	13.67	70.3%	0.852	1.545	2.302	170.2%
America-Caribbean	37.94	41.38	36.54	93.33	85.19	72.15	225.9	498.7	950.4	320.7%	5.692	10.43	17.42	206.0%	257.803	564.003	982.964	281.3%
Guatemala	13.65	22.68	27.14	94.97	92.12	81.73	32.57	104.8	386.1	1085.4%	4.223	6.886	14.37	240.3%	67.251	187.761	528.501	685.9%
Honduras	7.249	11.14	13.36	95.18	95.04	92.13	11.53	27.21	53.07	360.3%	3.495	4.845	6.824	95.3%	29.488	62.908	109.599	271.7%
Nicaragua	5.762	8.183	9.298	99	98.47	95.98	5.565	13.6	24.29	336.5%	2.352	3.6	5.086	116.2%	48.386	84.121	136.362	181.8%
El Salvador	5.713	7.12	7.328	92.27	90.8	85.68	18.34	38.68	78.89	330.2%	7.054	9.684	14.39	104.0%	15.165	33.143	54.578	259.9%
Costa Rica	3.585	3.538	2.797	77.26	61.35	46.77	24.95	64.28	104.5	318.8%	10.15	16.32	21.72	114.0%	52.174	104.238	143.895	175.8%
Panama	3.02	2.296	1.507	86.03	51.48	31.24	23.16	100.7	171.6	640.9%	12.59	28.58	38.38	204.8%	48.951	141.236	205.042	318.9%
Belize	0.341	0.493	0.469	99	97.79	79.57	1.259	3.138	6.093	384.0%	6.064	9.129	13.48	122.3%	2.311	5.103	8.809	281.2%
America-Central	39.32	55.45	61.9	92.53	87.71	80.04	117.4	352.5	824.5	602.3%	5.602	8.831	13.85	147.2%	263.725	618.512	1,186.786	350.0%
United States of America	22.13	23.47	17.23	7.147	6.238	4.085	13,017	19,124	28,332	117.7%	42.04	50.84	67.15	59.7%	14,419.4	21,184.344	31,384.377	117.7%
Mexico	90.6	102.8	89.94	83.48	76.74	64.83	922.8	1,876	3,316	259.3%	12.84	18	26.36	105.3%	1,623.304	2,809.609	4,261.610	162.5%
Canada	2.693	1.262	0.536	7.879	3.094	1.193	1,204	1,858	2,690	123.4%	34.78	45.09	59.54	71.2%	1,318.193	2,039.928	2,963.440	124.8%
America-North	115.4	127.5	107.7	25.52	23.14	17.79	15,144	22,857	34,338	126.7%	34.48	42.43	57.24	66.0%	17,360.897	26,033.882	38,609.427	122.4%
Brazil	155.5	142.9	118.5	79.54	62.31	50.63	1,097	2733	4,884	345.2%	9.902	16.41	23.93	141.7%	2,144.577	4,167.303	6,205.537	189.4%
Colombia	42.17	44.48	50.24	91.04	75.13	78.07	183	551.2	1,059	478.7%	8.309	14.54	20.96	152.3%	426.257	953.539	1,493.228	250.3%
Argentina	19.47	13.2	11.52	47.86	27.29	22.15	253.7	705.5	1,387	446.7%	14.16	23.43	32.77	131.4%	638.167	1,256.173	1,887.582	195.8%
Peru	27.12	26.63	30.22	91.93	69.08	69.89	112.2	423.5	921.6	721.4%	8.335	16.62	25.32	203.8%	272.392	709.616	1,212.971	345.3%
Venezuela (Bolivarian Rep. of)	27.06	23.72	5.233	93.85	62.35	12.28	174.6	547.4	1,357	677.2%	10.69	19.05	34.7	224.6%	341.626	802.555	1,638.342	379.6%
Ecuador	12.61	14.3	16.49	91.56	78.32	80.47	44.02	107.4	167.2	279.8%	7.33	10.77	13.15	79.4%	257.066	544.585	816.544	217.6%
Chile	9.12	4.239	2.562	53.21	21.2	12.6	148.3	416.4	700.4	372.3%	13.5	24.52	36.14	167.7%	111.771	217.781	298.646	167.2%
Bolivia (Plurinational State of)	9.114	7	9.228	90.82	47.34	51.67	11.95	43.48	140.1	1072.4%	3.931	6.963	13.11	233.5%	43.700	113.986	259.432	493.7%
Paraguay	5.622	7.118	6.856	87	76.05	61.65	9.746	25.35	54.09	455.0%	4.532	6.528	9.402	107.5%	32.446	67.672	115.869	257.1%
Uruguay	0.915	0.343	0.22	27.26	9.385	5.936	23.02	54.05	106.9	364.4%	12.83	20.83	32.61	154.2%	47.699	84.354	133.593	180.1%
Guyana	0.711	0.693	0.391	93.44	90.18	60.19	1.021	2.053	4.094	301.0%	3.012	5.079	9.562	217.5%	2.539	4.326	6.883	171.1%
Suriname	0.514	0.443	0.184	97.9	82.96	39.13	2.187	6.029	11.91	444.6%	7.197	14.5	27.31	279.5%	4.193	8.601	14.284	240.7%
America-South	309.9	285	251.7	78.88	59.28	49.26	2,060	5,616	10,794	424.0%	9.93	16.76	24.88	150.6%	4,322.433	8,930.490	14,082.912	225.8%

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$20 per Day						GDP at Market Exchange Rates				GDP per Capita at PPP				GDP at PPP			
	Millions of people			Percent of population			Billions in 2005 dollars				Thousands in 2005 dollars				Billions in 2010 dollars			
	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																		
China	1299	925.6	302.4	97.07	65.81	23.67	3,838	21,512	62,579	1530.5%	6,721	21.29	54.3	707.9%	9,964.086	33,167.832	76,854.726	671.3%
Japan	8.865	2.011	0.549	6.958	1.745	0.578	4,639	5,366	6,310	36.0%	30.53	41	61.17	100.4%	4,264.451	5,179.828	6,370.367	49.4%
Korea, Rep. of	9.782	1.624	1.057	20.01	3.327	2.64	1,019	1,970	2,307	126.4%	26.61	44.16	61.2	130.0%	1,400.855	2,321.479	2,639.121	88.4%
Korea, Dem. People's Rep. of	23.75	25.82	25.32	99	99	99	24.46	36.96	53.05	116.9%	1.003	1.919	3.321	231.1%	27.044	56.257	95.496	253.1%
Taiwan, China	4.713	0.314	0.128	20.47	1.354	0.677	437.3	861.1	937.2	114.3%	31.44	48.56	59.51	89.3%	813.670	1,267.882	1,269.006	56.0%
Hong Kong SAR, China	1.529	0.173	0.575	21.75	2.129	7.22	215.6	373.7	423.2	96.3%	41.42	58.03	62.27	50.3%	322.573	521.301	549.216	70.3%
Mongolia	2.674	3.025	1.017	99	87.31	26.59	3.454	22.74	83.14	2307.1%	3.234	10.04	24.95	671.5%	9.675	38.560	105.689	992.4%
Asia-East	1350	958.6	331.1	85.94	58.76	22.54	10,177	30,143	72,693	614.3%	9.695	23.6	54.08	457.8%	16,802.354	42,553.140	87883.621	423.0%
India	1159	1482	1456	99	99	87.93	1,233	8,276	31,414	2447.8%	3.214	9.804	23.1	618.7%	4,169.518	16,258.242	42,360.934	916.0%
Pakistan	171.6	262.1	330	99	99	99	134.8	358.3	1,234	815.4%	2.399	3.549	7.117	196.7%	460.707	1,040.496	2,627.550	470.3%
Bangladesh	162.8	207	207.2	99	99	92.64	81.47	352.8	1,428	1652.8%	1.329	3.374	9.078	583.1%	242.151	781.397	2,248.704	828.6%
Afghanistan	30.3	60.93	99.89	99	99	99	11.34	56.92	204.1	1699.8%	1.252	2.452	4.418	252.9%	847.615	1,688.262	2,497.549	194.7%
Iran, Islamic Rep. of	70.22	24.16	2.685	95.06	27.66	3.062	241.8	708.4	1,457	502.6%	10.21	17.2	25.33	148.1%	42.437	167.157	493.829	1063.7%
Nepal	29.56	41.46	46.81	99	99	97.74	10.1	26.59	75.35	646.0%	1.064	1.784	3.571	235.6%	35.193	82.726	189.423	438.2%
Uzbekistan	27.95	35.51	38.93	99	95.19	94.52	21.49	100.2	239.5	1014.5%	2.748	6.304	10.4	278.5%	85.927	260.540	474.776	452.5%
Sri Lanka	20.25	21.66	17.81	99	92.08	75.27	33.25	129.4	384.5	1056.4%	4.626	10.3	21	354.0%	104.792	268.404	550.545	425.4%
Kazakhstan	14.01	0	0.011	87.01	0	0.072	77.25	346.8	527.2	582.5%	10.78	28.57	37.35	246.5%	192.192	527.947	650.795	238.6%
Tajikistan	6.999	10.24	11.96	99	99	96.67	3.184	12.97	45.68	1334.7%	1.859	3.665	7.516	304.3%	14.556	42.005	102.953	607.3%
Kyrgyz Rep.	5.31	7.427	8.222	99	99	97.23	3.029	7.106	17.91	491.3%	2.02	2.88	4.984	146.7%	12.008	23.927	46.680	288.7%
Turkmenistan	5.061	0.047	0	97.76	0.696	0	13.41	180.3	314.1	2242.3%	6.958	39.34	45.79	558.1%	39.901	295.655	394.243	888.1%
Bhutan	0.7	0.739	0.674	99	80.75	66.13	1.238	8.076	22.77	1739.3%	4.895	14.25	26.29	437.1%	3.834	14.434	29.665	673.8%
Maldives	0.309	0.321	0.312	98.83	81.5	76.63	1.483	3.995	5.48	269.5%	5.303	10.52	14.21	168.0%	1.839	4.584	6.417	249.0%
Asia-South Central	1704	2154	2220	98.72	95.08	86.74	1,867	10,568	37,369	1901.6%	3.263	8.542	18.57	469.1%	6,252.670	21,455.776	52,674.062	742.4%
Indonesia	230.3	277.2	227.6	99	97.75	76.85	377.8	1492	3,813	909.3%	4.128	9.186	16.9	309.4%	1,063.759	2,885.652	5,543.111	421.1%
Philippines	92.71	131.3	141.2	99	97.53	90.72	131.1	447.3	1,394	963.3%	3.344	6.213	12.55	275.3%	346.943	926.400	2,163.408	523.6%
Vietnam	87.48	104.7	88.63	99	96.92	79.63	74.27	250.5	575.6	675.0%	2.778	5.472	9.341	236.2%	271.838	654.894	1,152.045	323.8%
Thailand	63.96	59.07	46.11	93.86	85.51	74.62	210.1	523.3	1,030	390.2%	7.697	13.55	22.11	187.3%	581.008	1,036.841	1,513.167	160.4%
Myanmar	49.98	53.92	24.85	99	91.59	41.06	51.87	239.5	1,026	1878.0%	1.116	4.269	17.19	1440.3%	63.304	282.464	1,168.970	1746.6%
Malaysia	17.78	14.65	11.15	63.64	39.38	26.62	171.8	540.2	1,206	602.0%	13.19	22.26	33.56	154.4%	407.979	916.984	1,557.477	281.8%
Cambodia	14.9	19.08	18.26	99	96.18	82.26	8.693	48.67	158.2	1719.9%	1.785	4.958	10.61	494.4%	29.765	108.924	260.872	776.4%
Lao People's Dem. Rep.	6.373	8.629	5.946	99	96.92	57.37	4.022	33.73	173.6	4216.3%	2.146	7.312	21.24	889.7%	15.298	72.103	243.813	1493.8%
Singapore	1.17	0.23	0.062	22.74	3.685	0.982	169	359.7	478.6	183.2%	51.99	82.44	98.04	88.6%	296.098	569.930	681.258	130.1%
Timor-Leste	1.159	2.11	1.747	99	98.8	56.54	0.695	4.98	24.67	3449.6%	0.702	2.706	8.491	1109.5%	0.911	6.399	29.056	3091.0%
Brunei Darussalam	0.262	0	0	64.11	0	0.001	9.85	21.37	31.24	217.2%	45.71	60.7	68.42	49.7%	20.659	36.877	47.378	129.3%
Asia-South East	566.1	670.9	565.5	96.04	92.02	73.46	1,209	3,961	9,910	719.7%	4.743	9.279	16.82	254.6%	3,097.562	7,497.466	14,360.555	363.6%

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$20 per Day						GDP at Market Exchange Rates				GDP per Capita at PPP				GDP at PPP			
	Millions of people			Percent of population			Billions in 2005 dollars				Thousands in 2005 dollars				Billions in 2010 dollars			
	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																		
Turkey	71.49	77.83	67.7	94.4	85.11	71.17	565.1	1,540	3,091	447.0%	12.18	20.94	34.69	184.8%	1,161.653	2,412.760	4,157.759	257.9%
Iraq	31.76	44.89	24.74	98.35	74.49	29.24	38.84	318.5	1,585	3980.8%	3.056	8.582	22.11	623.5%	109.345	572.921	2,072.574	1795.5%
Yemen, Rep. of	24.02	47.83	74.56	99	99	98.42	20.71	65.24	202.8	879.2%	2.322	3.307	5.467	135.4%	618.227	1,436.734	2,390.494	286.7%
Saudi Arabia	22.57	3.917	0.187	86.85	10.71	0.439	362.6	1,109	1,971	443.6%	21.47	35.45	50.79	136.6%	62.399	177.016	458.824	635.3%
Syrian Arab Rep.	21.39	32.2	36.46	98.96	99	91.91	36.61	75.45	246	571.9%	4.263	5.292	10.33	142.3%	102.078	190.641	453.839	344.6%
Jordan	5.549	8.898	8.955	91.08	86.08	65.97	17.04	50.21	150.8	785.0%	4.698	7.342	13.74	192.5%	87.334	166.050	244.477	179.9%
Israel	2.165	1.422	0.376	28.57	13.22	2.852	164.1	423.6	873.6	432.4%	26.32	41.91	69.14	162.7%	203.904	460.880	931.168	356.7%
Palestine	4.11	8.093	12.29	99	99	99	5.842	12.44	41.87	616.7%	3.764	3.972	6.845	81.9%	31.703	84.066	206.593	551.6%
Azerbaijan	8.728	1.361	0.781	98.26	12.59	7.014	28.33	73.75	142.8	404.1%	8.876	13.87	19.82	123.3%	263.752	530.052	673.171	155.2%
United Arab Emirates	0.152	0.004	0	3.216	0.068	0	211.2	437.2	571.9	170.8%	50.5	80.14	102.9	103.8%	53.858	99.065	119.303	121.5%
Kuwait	2.17	0.01	0	75.76	0.238	0.006	91.34	301.6	406.8	345.4%	42.09	84.83	82.5	96.0%	21.269	38.405	53.725	152.6%
Lebanon	4.211	4.764	4.497	99	97.42	95.1	29.99	69.28	92.92	209.8%	11.43	18.29	22.77	99.2%	17.568	36.497	95.496	443.6%
Oman	2.688	1.443	0.176	92.5	36.92	4.082	41.3	103.5	169.5	310.4%	23.77	33.93	45.13	89.9%	16.627	28.823	49.638	198.5%
Armenia	3.058	3.201	2.843	99	99	94.27	5.912	13.22	30.92	423.0%	4.858	8.048	14.86	205.9%	76.522	146.886	215.787	182.0%
Georgia	4.172	3.318	2.513	99	95.77	85.07	8.241	21.32	37.19	351.3%	4.555	10.01	16.42	260.5%	133.482	413.075	521.190	290.5%
Qatar	0.368	0	0	23.74	0.003	0	92.58	259.1	267.1	188.5%	78.48	174.2	184.9	135.6%	134.701	353.700	341.404	153.5%
Bahrain	0.397	0.155	0.004	49.25	14	0.3	17.82	32.27	43.59	144.6%	30.94	35.28	41.29	33.5%	27.690	34.031	31.705	14.5%
Cyprus	0.181	0.226	0.187	20.53	24.11	22.04	19.18	25.64	24.92	29.9%	25.71	29.62	30.47	18.5%	27.627	43.312	54.423	97.0%
Asia-West	209.2	239.6	236.3	90.21	70.68	56.49	1,757	4,931	9,950	466.3%	11.77	18.56	27.28	131.8%	3,149.738	7,224.914	1,3071.571	315.0%
Australia	2.77	0.843	0.735	12.41	3.022	2.304	800.9	1,416	2,063	157.6%	33.99	48.83	62.99	85.3%	840.390	1,506.945	2,225.540	164.8%
Papua New Guinea	6.822	10.62	10.4	99	96.03	72.3	6.553	31.68	117.1	1687.0%	2.126	4.919	10.85	410.3%	16.228	60.261	172.918	965.5%
New Zealand	1.354	0.906	0.214	31.03	17.84	4.011	117.2	191.1	323.4	175.9%	24.21	33.85	56.47	133.3%	128.621	209.177	367.367	185.6%
Solomon Islands	0.53	0.898	1.372	99	94.97	97.5	0.556	1.78	3.326	498.2%	2.411	3.876	4.822	100.0%	3.417	5.382	8.970	162.5%
Fiji	0.845	0.899	0.75	99	99	92.5	3.022	4.122	7.125	135.8%	3.612	5.353	9.983	176.4%	1.429	4.058	7.515	425.9%
Vanuatu	0.244	0.4	0.55	99	97.44	97.88	0.509	1.302	2.179	328.1%	4.07	5.737	6.91	69.8%	1.109	2.610	4.300	287.8%
Micronesia (Federated States of)	0.111	0.175	0.235	99	97.44	96.97	0.248	0.546	0.946	281.5%	2.77	4.199	5.872	112.0%	0.783	1.387	2.206	181.6%
Tonga	0.103	0.169	0.233	99	99	99	0.263	0.503	1.357	416.0%	4.019	4.923	8.481	111.0%	0.343	0.837	1.574	358.4%
Samoa	0.177	0.208	0.206	99	99	95.65	0.431	0.806	1.398	224.4%	3.951	5.949	9.265	134.5%	0.463	0.934	2.213	378.0%
Oceania	12.96	15.12	14.7	36.38	32.27	26.67	929.6	1,648	2,520	171.1%	24.88	34.19	45.22	81.8%	992.785	1,791.591	2,792.603	181.3%

Poverty and Income

Base Case: Countries in Descending Year 2060 Population Sequence	Poverty below \$20 per Day						GDP at Market Exchange Rates				GDP per Capita at PPP				GDP at PPP			
	Millions of people			Percent of population			Billions in 2005 dollars				Thousands in 2005 dollars				Billions in 2010 dollars			
	2010	2035	2060	2010	2035	2060	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																		
Russian Federation	105	2.198	12.99	74.09	1.735	11.94	907.4	2,169	3,056	236.8%	13.97	25.49	33.34	138.7%	2,779.209	4,530.952	5,092.409	83.2%
Poland	22.05	10.05	5.773	57.77	28.26	19.21	382.7	799	1,102	188.0%	17.09	28.28	40.04	134.3%	299.975	323.902	425.481	41.8%
Ukraine	41.52	31.42	11.71	90.73	85.47	39.26	90.49	121.7	216.3	139.0%	5.919	7.955	12.88	117.6%	753.129	1,161.680	1,389.166	84.5%
Romania	21.24	18.76	13.02	99	98.15	83.2	114.3	171.4	253.1	121.4%	10.53	14.54	21.07	100.1%	300.335	369.765	438.398	46.0%
Czech Rep.	2.293	1.042	0.317	21.73	10.13	3.386	148.6	239.4	354.3	138.4%	22.33	29.83	42.25	89.2%	253.095	329.517	423.864	67.5%
Belarus	8.839	5.922	4.875	91.65	66.8	62.98	42.94	95.01	154.1	258.9%	12.85	21.05	28.81	124.2%	206.626	257.610	300.157	45.3%
Hungary	6.882	4.277	1.885	68.77	49.16	26.52	109.3	168.7	228	108.6%	16.89	24.22	34.53	104.4%	137.248	206.704	247.025	80.0%
Bulgaria	6.66	5.277	3.929	88.25	87.06	80.57	33.01	43.61	52.66	59.5%	11.48	14.83	18.05	57.2%	104.646	108.534	106.252	1.5%
Slovak Rep.	5.289	4.797	3.532	97.43	92.28	80.41	76.9	138.6	170.6	121.8%	19.73	29.97	40.47	105.1%	123.217	179.245	204.556	66.0%
Moldova, Rep. of	3.515	3.307	2.502	98.33	98.83	89.23	3.502	5.324	10.56	201.5%	2.737	3.889	7.12	160.1%	10.838	14.412	22.121	104.1%
Europe-East	223.3	87.05	60.52	75.98	33.41	27.44	1,909	3,952	5,598	193.2%	13.14	22.14	30.35	131.0%	4,968.317	7,482.321	8,649.430	74.1%
United Kingdom	7.075	3.749	0.78	11.36	5.557	1.127	2,338	3,341	4,723	102.0%	31.94	44.07	63.3	98.2%	2,139.620	3,198.135	4,709.530	120.1%
Sweden	0.999	0.088	0.008	10.64	0.885	0.085	400.1	602.8	837.2	109.2%	33.33	50.86	74.82	124.5%	359.780	581.306	859.998	139.0%
Denmark	1.25	0.272	0.042	22.46	4.595	0.693	256.1	345.9	465.3	81.7%	32.52	45.79	66.14	103.4%	226.766	339.334	499.411	120.2%
Ireland	1.088	0.114	0.099	24.32	2.109	1.669	202.3	352.7	438.4	116.7%	35.46	54.72	65.94	86.0%	189.988	283.774	414.383	118.1%
Norway	0.15	0.002	0	3.078	0.043	0.001	316.7	435.3	541.8	71.1%	46.34	62.07	80.38	73.5%	275.129	417.249	566.293	105.8%
Finland	0.375	0.085	0.029	6.989	1.547	0.55	205.3	288.4	398.4	94.1%	30.78	44.8	67.65	119.8%	180.262	336.672	445.261	147.0%
Lithuania	3.129	2.604	1.923	94.19	86.82	75.51	27.35	49.11	75.34	175.5%	15.02	22.82	33.28	121.6%	58.217	79.854	98.867	69.8%
Latvia	1.496	0.846	0.557	66.68	42.13	32.18	15.5	29.34	40.07	158.5%	13.22	21.06	27.67	109.3%	36.533	52.085	58.931	61.3%
Estonia	0.935	0.4	0.181	69.8	36.69	18.8	13.9	27.39	45.15	224.8%	16.43	29.61	49.57	201.7%	26.405	38.732	57.251	116.8%
Iceland	0.067	0.001	0	20.78	0.158	0	16.37	26.77	32.69	99.7%	32.4	52.77	70.94	119.0%	11.265	21.177	29.084	158.2%
Europe-North	16.56	8.161	3.619	16.7	7.682	3.355	3,791	5,499	7,597	100.4%	31.71	45.16	64.43	103.2%	3,503.966	5,348.316	7,739.009	120.9%
Italy	11.91	7.919	5.13	19.65	13.97	10.54	1,765	2,008	2,355	33.4%	26.51	32.67	45.9	73.1%	1,905.293	2,195.770	2,648.677	39.0%
Spain	9.322	6.43	2.447	20.11	14.04	6.057	1,182	1,542	1,949	64.9%	26.58	34.19	48.45	82.3%	1,446.069	1,836.930	2,297.042	58.8%
Greece	1.732	1.378	1.065	15.29	12.44	10.53	243.2	268.8	304.9	25.4%	24.97	26.88	31.37	25.6%	324.635	341.619	364.110	12.2%
Portugal	3.228	3.142	2.512	30.33	31.79	30.33	196.1	225.9	260.8	33.0%	21.2	24.71	32.19	51.8%	265.850	287.641	314.025	18.1%
Serbia	7.172	6.407	4.565	98.38	98.63	84.58	27.86	42.63	75.78	172.0%	10.02	13.46	21.02	109.8%	86.910	104.046	134.952	55.3%
Croatia	2.439	1.654	0.78	55.05	41.4	23.37	46.9	66.27	75.76	61.5%	15.92	21.21	25.72	61.6%	82.961	99.681	100.975	21.7%
Bosnia and Herzegovina	1.74	0.959	0.72	46.25	26.04	23.58	12.82	29.22	38.36	199.2%	7.235	12.67	17.13	136.8%	31.481	54.019	60.463	92.1%
Albania	3.039	2.746	2.174	95.96	86.58	76.09	10.73	23.55	34.55	222.0%	7.616	12.64	17.16	125.3%	27.177	45.160	55.245	103.3%
Macedonia, TFYR	1.799	1.854	1.417	88.07	93.25	83	7.063	9.206	13.93	97.2%	8.28	9.659	13.63	64.6%	51.605	61.869	70.397	36.4%
Slovenia	0.504	0.364	0.263	24.39	18.81	16	39.03	53.55	64.36	64.9%	23.62	30.18	40.5	71.5%	20.412	23.174	28.084	37.6%
Montenegro	0.62	0.623	0.576	99	99	99	2.804	3.813	5.243	87.0%	10.01	11.74	14.7	46.9%	8.003	9.444	10.923	36.5%
Malta	0.107	0.08	0.073	25.58	19.83	21.75	6.653	9.386	10.47	57.4%	22.51	28.14	33.28	47.8%	11.058	13.303	13.173	19.1%
Europe-South	43.61	33.56	21.72	28.55	23.02	17.19	3,540	4,282	5,187	46.5%	23.72	29.6	41.03	73.0%	4,261.453	5,072.654	6,098.066	43.1%
Germany	4.201	1.537	0.539	5.146	1.975	0.781	2,946	3,551	4,368	48.3%	33.14	42.88	60.82	83.5%	3,035.455	3,743.279	4,704.618	55.0%
France	9.005	5.705	1.74	14.3	8.529	2.62	2,203	2,946	4,396	99.5%	29.46	38.89	61.07	107.3%	2,155.634	3,022.536	4,713.343	118.7%
Netherlands	1.697	0.869	0.49	10.22	4.952	2.888	685.1	861	1,076	57.1%	36.32	44.76	59.69	64.3%	681.101	886.164	1,143.256	67.9%
Belgium	1.364	0.87	0.4	12.55	7.644	3.556	400.3	529.2	718.2	79.4%	32.63	42.59	60.32	84.9%	408.119	557.583	780.225	91.2%
Switzerland	0.547	0.148	0.073	7.003	1.897	1.074	411.7	461	493.6	19.9%	37.43	46.5	62.09	65.9%	335.218	416.334	469.076	39.9%
Austria	0.486	0.17	0.094	5.79	2.12	1.379	327.2	394.4	432.1	32.1%	34.92	45.31	60.19	72.4%	364.723	451.758	528.194	44.8%
Luxembourg	0.007	0.001	0	1.301	0.13	0.015	41.3	63.87	80.64	95.3%	70.32	88.39	96.34	37.0%	44.000	70.844	92.862	111.1%
Europe-West	17.31	9.299	3.336	9.167	4.892	1.874	7,014	8,806	11,565	64.9%	32.52	42.04	60.96	87.5%	7,024.249	9,148.497	12,431.573	77.0%

Health

Base Case

Source: International Futures
Model Version 6.68, Nov 2013

	Life Expectancy at Birth				Infant Mortality Rate				Child Mortality Probability				Adult Mortality Probability			
	Years				Deaths per 1,000 infants before 1 year of age				Deaths per 1,000 children before age 5				Deaths per 1,000 adults before age 60			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	70.09	75.34	79.09	12.8%	33.38	14.89	7.048	-78.9%	61.63	28.94	12.62	-79.5%	166	127.6	103	-38.0%
Africa	56.98	66.94	73.06	28.2%	72.11	31.19	12.18	-83.1%	118.5	52.35	20.77	-82.5%	326.2	208.7	149.5	-54.2%
Americas	76.67	80.46	83.35	8.7%	14.16	6.473	3.341	-76.4%	19.31	8.708	4.308	-77.7%	119.8	99.19	84.16	-29.7%
Asia with Oceania	70.69	76.33	80.33	13.6%	32.81	12.71	6.064	-81.5%	48.78	20.01	9.538	-80.4%	148.1	112.2	87.82	-40.7%
Europe	76.78	80.63	83.83	9.2%	6.609	3.993	2.606	-60.6%	8.83	5.198	3.372	-61.8%	138	104.2	80.55	-41.6%
World	70.09	75.34	79.09	12.8%	33.38	14.89	7.048	-78.9%	61.63	28.94	12.62	-79.5%	166	127.6	103	-38.0%
Africa-Eastern	55.91	66.84	73.4	31.3%	71.4	30.87	11.39	-84.0%	105.9	47.4	18.09	-82.9%	359.9	216.1	146.3	-59.3%
Africa-Middle	49.95	61.29	67.51	35.2%	106.6	47.57	20.77	-80.5%	172.1	81.01	36.49	-78.8%	372.3	270.9	217.7	-41.5%
Africa-Northern	69.75	74.6	77.92	11.7%	34.35	15.82	8.227	-76.0%	48.89	21.16	10.04	-79.5%	145.7	109.5	93.03	-36.1%
Africa-Southern	52.94	62.54	74.32	40.4%	50.36	37.24	15.97	-68.3%	69.46	51.51	22.5	-67.6%	515.6	343.5	166.8	-67.6%
Africa-Western	52.96	65.88	72.99	37.8%	88.65	32.03	10.6	-88.0%	141.4	53.83	18.87	-86.7%	362.6	219.2	147.4	-59.3%
Africa	56.98	66.94	73.06	28.2%	72.11	31.19	12.18	-83.1%	118.5	52.35	20.77	-82.5%	326.2	208.7	149.5	-54.2%
America-Caribbean	72.68	76.51	79.91	9.9%	26.47	16.55	9.829	-62.9%	42.03	27.55	15.37	-63.4%	150.1	121.6	96.33	-35.8%
America-Central	73.72	78.32	81.29	10.3%	21.94	8.926	4.289	-80.5%	29.62	11.66	5.48	-81.5%	145.4	120.5	106.9	-26.5%
America-North	79.42	82.4	85.01	7.0%	7.933	4.29	2.38	-70.0%	10.11	5.211	2.809	-72.2%	93.6	79.12	66.41	-29.0%
America-South	74.25	78.93	82.03	10.5%	19.21	7.634	3.693	-80.8%	24.67	9.881	4.738	-80.8%	146.4	115.1	99.51	-32.0%
Americas	76.67	80.46	83.35	8.7%	14.16	6.473	3.341	-76.4%	19.31	8.708	4.308	-77.7%	119.8	99.19	84.16	-29.7%
Asia-East	75.03	79.48	83.12	10.8%	18.22	7.313	3.635	-80.0%	22.34	9.015	4.435	-80.1%	105	79.16	58.85	-44.0%
Asia-South Central	65.98	73.75	78.62	19.2%	51.02	17.79	7.81	-84.7%	69.71	27.76	12.89	-81.5%	198.4	138.5	104.3	-47.4%
Asia-South East	71.82	76.82	80.75	12.4%	22.66	9.515	4.631	-79.6%	28.47	12.17	5.908	-79.2%	158.9	114.6	87.09	-45.2%
Asia-West	72.51	76.75	79.9	10.2%	24.79	12.19	6.896	-72.2%	32.41	15.17	8.362	-74.2%	122.7	91.94	79.46	-35.2%
Oceania	77.52	80.28	83.15	7.3%	14.05	8.328	3.467	-75.3%	25.91	14.76	5.157	-80.1%	100.2	91.95	80	-20.2%
Asia with Oceania	70.69	76.33	80.33	13.6%	32.81	12.71	6.064	-81.5%	48.78	20.01	9.538	-80.4%	148.1	112.2	87.82	-40.7%
Europe-East	70.96	75.62	79.46	12.0%	10.08	6.944	5.067	-49.7%	14.13	9.75	7.134	-49.5%	218.2	166	136.8	-37.3%
Europe-North	79.83	83.2	85.85	7.5%	4.35	2.141	1.189	-72.7%	5.226	2.555	1.418	-72.9%	82.54	62.32	49.68	-39.8%
Europe-South	80.56	83.29	85.87	6.6%	4.714	2.727	1.717	-63.6%	5.629	3.252	2.019	-64.1%	72.19	57.76	46.01	-36.3%
Europe-West	81.1	83.91	86.45	6.6%	3.527	1.908	1.045	-70.4%	4.326	2.34	1.284	-70.3%	73.54	59.52	49.44	-32.8%
Europe	76.78	80.63	83.83	9.2%	6.609	3.993	2.606	-60.6%	8.83	5.198	3.372	-61.8%	138	104.2	80.55	-41.6%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Life Expectancy at Birth				Infant Mortality Rate				Child Mortality Probability				Adult Mortality Probability			
	Years				Deaths per 1,000 infants before 1 year of age				Deaths per 1,000 children before age 5				Deaths per 1,000 adults before age 60			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	57.16	67.56	73.43	28.5%	74.02	26.55	7.753	-89.5%	109.8	41.06	12.18	-88.9%	305.2	195.4	136.3	-55.3%
Tanzania, United Rep. of	58.25	68.06	77.73	33.4%	57.35	29.24	4.797	-91.6%	85.79	44.85	7.331	-91.5%	347.6	203.4	108.3	-68.8%
Uganda	55.5	66.92	73.27	32.0%	70.28	30.36	11.28	-83.9%	107.6	48.16	18.15	-83.1%	371.5	214	148.5	-60.0%
Kenya	56.9	65.61	72.29	27.0%	60.97	37.88	15.99	-73.8%	91.27	58.03	24.97	-72.6%	369.9	227.5	159.8	-56.8%
Madagascar	62.31	70.47	72.78	16.8%	55.27	25.54	20.15	-63.5%	75.47	35.82	28.41	-62.4%	240	154.3	132.5	-44.8%
Mozambique	49.11	64.46	71.58	45.8%	87.07	26.52	7.927	-90.9%	132.8	41.87	12.4	-90.7%	478.5	276.5	184.4	-61.5%
Malawi	56.2	68.46	74.29	32.2%	81.24	39.1	20.88	-74.3%	109.5	54.3	29.42	-73.1%	378.9	183.6	105	-72.3%
Zambia	49.35	63.43	73.02	48.0%	85.79	34.46	9.46	-89.0%	133.8	55.26	14.67	-89.0%	481.4	281.6	173.5	-64.0%
Somalia	51.51	63.72	69.17	34.3%	103.8	36.99	10.88	-89.5%	160.9	60.81	18.35	-88.6%	340.1	240.7	188.7	-44.5%
Rwanda	51.99	64.58	71.32	37.2%	113.4	41.58	14.78	-87.0%	133.2	51.34	18.67	-86.0%	374.8	242.6	173.7	-53.7%
Zimbabwe	50.1	65.97	72.07	43.9%	53.98	29.59	17.19	-68.2%	81.21	46	27.23	-66.5%	578.7	257.3	179.1	-69.1%
Burundi	52.38	64.48	68.52	30.8%	90.27	38.8	19.83	-78.0%	140.4	63.43	33.13	-76.4%	376.1	237.4	202.8	-46.1%
Eritrea	61.33	66.12	69.26	12.9%	50.54	22.36	8.119	-83.9%	64.55	29.37	10.8	-83.3%	303.2	259.7	220.9	-27.1%
Comoros	67.18	72.41	76.64	14.1%	48.05	31.44	13.99	-70.9%	64.44	42.8	19.35	-70.0%	189.9	139.5	109.4	-42.4%
Djibouti	57.15	64.44	71.29	24.7%	81.96	47.64	19.85	-75.8%	109.4	65.35	27.89	-74.5%	311.9	222.3	158.3	-49.2%
Mauritius	72.25	76.15	78.97	9.3%	13.71	8.367	6.063	-55.8%	16.28	10.01	7.257	-55.4%	168.4	130.9	108.7	-35.5%
Africa-Eastern	55.91	66.84	73.4	31.3%	71.4	30.87	11.39	-84.0%	105.9	47.4	18.09	-82.9%	359.9	216.1	146.3	-59.3%
Congo, Democratic Rep. of	48.81	59.17	64.46	32.1%	111.8	49.76	21.66	-80.6%	184.3	86.38	38.76	-79.0%	367.8	301.6	261.3	-29.0%
Angola	49.32	65.97	73.39	48.8%	109.5	32.71	15.67	-85.7%	168.3	53.4	26.02	-84.5%	386.6	222.8	155.3	-59.8%
Cameroon	52.7	62.95	71.07	34.9%	85.48	48.49	19.71	-76.9%	132.2	77.54	32.38	-75.5%	381.6	249.5	173.6	-54.5%
Chad	50.01	61.47	69.67	39.3%	128.3	61.01	24.04	-81.3%	192	96.76	39.52	-79.4%	345.3	233.1	161.3	-53.3%
Central African Rep.	48.62	60.04	67.25	38.3%	99.16	51.02	21.19	-78.6%	154.3	83.05	35.56	-77.0%	450.8	302.7	228.5	-49.3%
Congo, Rep. of	54.5	66.47	72.12	32.3%	79.73	32.74	18.04	-77.4%	119	50.76	28.45	-76.1%	356.8	216.9	162.6	-54.4%
Gabon	62.5	70.7	76.52	22.4%	47.63	30.72	17.8	-62.6%	68.42	44.85	26.37	-61.5%	276.6	166	115.9	-58.1%
Equatorial Guinea	52.07	64.28	69.06	32.6%	95.2	48.9	38.59	-59.5%	148.1	77.9	62.82	-57.6%	356	238.5	186.2	-47.7%
São Tomé and Príncipe	66.62	71.71	75.57	13.4%	44.54	27.11	15.41	-65.4%	63.44	39.28	22.58	-64.4%	190.9	144.1	114.8	-39.9%
Africa-Middle	49.95	61.29	67.51	35.2%	106.6	47.57	20.77	-80.5%	172.1	81.01	36.49	-78.8%	372.3	270.9	217.7	-41.5%
Egypt	71.14	74.98	77.99	9.6%	28.22	16.64	10.67	-62.2%	31.67	18.86	12.16	-61.6%	131.9	100.1	82.56	-37.4%
Sudan	59.84	69.33	74.21	24.0%	65.95	18.73	5.247	-92.0%	97.35	28.77	8.127	-91.7%	257.3	177.5	136.2	-47.1%
Algeria	73.44	77.42	80.66	9.8%	22.46	14.55	9.472	-57.8%	28.22	18.42	12.05	-57.3%	111.3	84.93	70.68	-36.5%
Morocco	72.54	76.78	79.97	10.2%	30.34	13.44	6.925	-77.2%	32.85	14.79	7.668	-76.7%	114.2	86.37	69.44	-39.2%
Tunisia	74.85	78.97	82.28	9.9%	19.09	11.25	6.887	-63.9%	23.16	13.78	8.474	-63.4%	94.76	65.23	49.37	-47.9%
Libya	75.26	80.57	82.78	10.0%	13.69	6.41	5.472	-60.0%	15.21	7.174	6.129	-59.7%	109	70.8	60.36	-44.6%
Africa-Northern	69.75	74.6	77.92	11.7%	34.35	15.82	8.227	-76.0%	48.89	21.16	10.04	-79.5%	145.7	109.5	93.03	-36.1%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Life Expectancy at Birth				Infant Mortality Rate				Child Mortality Probability				Adult Mortality Probability			
	Years				Deaths per 1,000 infants before 1 year of age				Deaths per 1,000 children before age 5				Deaths per 1,000 adults before age 60			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	52.81	61.79	74.42	40.9%	50.3	39.24	16.51	-67.2%	69.02	54	23.13	-66.5%	517.2	355.6	164.9	-68.1%
Namibia	62.05	72.4	77.78	25.4%	33.69	13.48	7.475	-77.8%	44.81	18.28	10.18	-77.3%	341.8	190.2	131.6	-61.5%
Lesotho	46.75	60.77	68.98	47.6%	73.3	37.16	14.9	-79.7%	102.9	53.57	21.95	-78.7%	611.4	336.7	225.6	-63.1%
Botswana	55.31	68.34	75.12	35.8%	34.24	18.82	11.3	-67.0%	46.04	25.65	15.46	-66.4%	509.3	272.7	182.5	-64.2%
Swaziland	48.63	62.35	70.89	45.8%	69.96	45.07	24.22	-65.4%	98.54	64.78	35.55	-63.9%	566.9	293.3	180.8	-68.1%
Africa-Southern	52.94	62.54	74.32	40.4%	50.36	37.24	15.97	-68.3%	69.46	51.51	22.5	-67.6%	515.6	343.5	166.8	-67.6%
Nigeria	49.14	64.43	72.78	48.1%	103.3	33.36	9.162	-91.1%	158.4	54.24	15.18	-90.4%	415.9	247.9	162.4	-61.0%
Niger	53.84	65.51	71.23	32.3%	94.96	38.95	15.03	-84.2%	153.5	66.25	26.2	-82.9%	303.4	186	131.9	-56.5%
Côte d'Ivoire	59.68	70.4	77.16	29.3%	59.25	28.26	9.451	-84.0%	90.66	44.66	15.2	-83.2%	309.3	168.9	109.9	-64.5%
Burkina Faso	54.51	65.45	72.02	32.1%	78.11	33.28	11.86	-84.8%	157.3	70.83	25.92	-83.5%	284.3	182	129.7	-54.4%
Ghana	58.03	67.6	76.03	31.0%	64.24	25.77	3.425	-94.7%	90.37	37.43	5.048	-94.4%	316.5	207.4	128.4	-59.4%
Mali	50.2	66.88	71.59	42.6%	103	22.81	7.413	-92.8%	185.2	44.52	14.68	-92.1%	345.8	187.1	142.4	-58.8%
Senegal	57.16	62.31	67.54	18.2%	59.53	40.86	22.42	-62.3%	98.9	69.19	38.74	-60.8%	294.3	231	174.8	-40.6%
Guinea	60.13	71.28	75.78	26.0%	67.16	23.84	9.839	-85.3%	105	38.83	16.27	-84.5%	260.5	162.2	124.5	-52.2%
Benin	63.27	72.56	77.14	21.9%	57.25	25.49	12.39	-78.4%	89.08	40.91	20.16	-77.4%	226.5	142	107	-52.8%
Togo	64.02	70.58	75.66	18.2%	50.72	32.53	17.7	-65.1%	77.5	50.74	28.06	-63.8%	241.1	153.9	106.9	-55.7%
Sierra Leone	48.98	62.2	68.7	40.3%	103.3	27.91	6.808	-93.4%	150.2	43	10.59	-92.9%	434.8	285.2	194.7	-55.2%
Liberia	60.09	68.1	72.05	19.9%	69.04	23.11	11.03	-84.0%	94.14	32.74	15.8	-83.2%	287.4	204.4	154.9	-46.1%
Mauritania	58.24	65.26	70.97	21.9%	75.72	42.42	20.76	-72.6%	111	63.98	31.98	-71.2%	261.5	191.4	137.9	-47.3%
Gambia	57.47	66.26	70.1	22.0%	74.89	31.56	16.69	-77.7%	101.2	44.23	23.72	-76.6%	286.2	190.1	150.9	-47.3%
Guinea-Bissau	49.66	59.6	67.73	36.4%	108.9	65.86	31.36	-71.2%	172.2	108.5	53.5	-68.9%	368.9	263.6	193.8	-47.5%
Cape Verde	72.28	76.63	79.78	10.4%	22.05	10.68	6.633	-69.9%	25.45	12.52	7.809	-69.3%	129.4	92.44	73.59	-43.1%
Africa-Western	52.96	65.88	72.99	37.8%	88.65	32.03	10.6	-88.0%	141.4	53.83	18.87	-86.7%	362.6	219.2	147.4	-59.3%

Patterns of Potential Human Progress				Multination Regional Analysis					Measures of Poverty, Health, Education, Infrastructure, and Governance									
Base Case: Countries in Descending Year 2060 Population Sequence	Health																	
	Life Expectancy at Birth				Infant Mortality Rate				Child Mortality Probability				Adult Mortality Probability					
	Years				Deaths per 1,000 infants before 1 year of age				Deaths per 1,000 children before age 5				Deaths per 1,000 adults before age 60					
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg		
AMERICAS																		
Haiti	62.16	67.53	72.31	16.3%	60.58	40.9	23.56	-61.1%	76.88	52.71	30.81	-59.9%	250.2	176.3	126.6	-49.4%		
Dominican Rep.	73.29	79.64	83.85	14.4%	25.72	8.526	3.287	-87.2%	29.95	10.16	3.93	-86.9%	166.4	115	90.15	-45.8%		
Cuba	79.24	81.94	85.35	7.7%	4.938	2.338	0.956	-80.6%	6.685	3.179	1.305	-80.5%	87.53	71.31	53.12	-39.3%		
Puerto Rico	79.45	82.63	85.27	7.3%	7.265	3.176	1.544	-78.7%	8.669	3.802	1.849	-78.7%	91.34	74.26	62.43	-31.7%		
Jamaica	72.9	76.1	79.17	8.6%	23.49	12.8	6.441	-72.6%	27.17	15.04	7.576	-72.1%	158.4	141.7	124.1	-21.7%		
Trinidad and Tobago	70.51	76.3	79.1	12.2%	24.86	10.75	6.207	-75.0%	30.78	13.51	7.801	-74.7%	179.6	123.8	105.8	-41.1%		
Bahamas	75.26	78.47	80.59	7.1%	15.22	9.519	7.082	-53.5%	18.65	11.75	8.764	-53.0%	109.8	81.96	69.76	-36.5%		
Barbados	77.97	80.99	83.47	7.1%	11.61	6.326	3.534	-69.6%	13.32	7.3	4.076	-69.4%	77.33	58.57	47.17	-39.0%		
Saint Lucia	74.8	78.46	81.07	8.4%	12.38	5.327	2.795	-77.4%	15.94	6.933	3.656	-77.1%	130.3	106.4	94.58	-27.4%		
Grenada	76.1	79.43	82.09	7.9%	13.44	7.217	4.881	-63.7%	15.42	8.338	5.655	-63.3%	89.84	68.56	55.63	-38.1%		
Saint Vincent and the Grenadines	72.53	77.13	80.08	10.4%	21.93	11.09	6.577	-70.0%	25.46	12.98	7.73	-69.6%	127.9	82.43	68.45	-46.5%		
America-Caribbean	72.68	76.51	79.91	9.9%	26.47	16.55	9.829	-62.9%	42.03	27.55	15.37	-63.4%	150.1	121.6	96.33	-35.8%		
Guatemala	71.54	77.83	81.42	13.8%	27.58	8.315	3.174	-88.5%	35.25	10.9	4.18	-88.1%	169	131.3	111.2	-34.2%		
Honduras	73.15	77.87	80.75	10.4%	25.63	10.86	5.166	-79.8%	35.39	15.24	7.29	-79.4%	139.3	106	94.1	-32.4%		
Nicaragua	74.68	77.76	80.28	7.5%	18.9	12.07	7.817	-58.6%	22.24	14.33	9.307	-58.2%	147.3	122.1	107.2	-27.2%		
El Salvador	72.49	76.26	78.85	8.8%	19.87	9.682	4.955	-75.1%	23.58	11.7	5.979	-74.6%	192.7	171.7	163.4	-15.2%		
Costa Rica	79.51	82.55	84.7	6.5%	9.35	4.525	2.661	-71.5%	10.67	5.195	3.06	-71.3%	83.02	68.94	61.29	-26.2%		
Panama	76.43	81	83.77	9.6%	16.86	5.935	3.161	-81.3%	21.77	7.763	4.145	-81.0%	100.2	75.95	61.89	-38.2%		
Belize	77.53	82.18	85.15	9.8%	14.9	6.966	3.635	-75.6%	18.66	8.833	4.621	-75.2%	99.6	59.47	44.37	-55.5%		
America-Central	73.72	78.32	81.29	10.3%	21.94	8.926	4.289	-80.5%	29.62	11.66	5.48	-81.5%	145.4	120.5	106.9	-26.5%		
United States of America	79.93	82.78	85.35	6.8%	5.86	3.437	2.031	-65.3%	6.807	4.006	2.37	-65.2%	94.53	79.73	66.24	-29.9%		
Mexico	77.33	80.74	83.5	8.0%	14.82	7.195	3.728	-74.8%	17.78	8.711	4.526	-74.5%	100.1	84.1	72.26	-27.8%		
Canada	81.42	84.24	86.48	6.2%	4.843	2.615	1.5	-69.0%	5.535	2.997	1.721	-68.9%	68.54	55.7	48.13	-29.8%		
America-North	79.42	82.4	85.01	7.0%	7.933	4.29	2.38	-70.0%	10.11	5.211	2.809	-72.2%	93.6	79.12	66.41	-29.0%		
Brazil	73.61	78.78	82.02	11.4%	20.99	8.157	3.996	-81.0%	25.6	10.09	4.963	-80.6%	165	127	110.9	-32.8%		
Colombia	74.11	77.88	80.24	8.3%	17.41	7.12	3.568	-79.5%	23.45	9.714	4.88	-79.2%	138	121.1	117.2	-15.1%		
Argentina	76.33	80.37	83.45	9.3%	12.49	5.514	2.989	-76.1%	14.25	6.346	3.446	-75.8%	113.9	86.64	68.71	-39.7%		
Peru	74.24	79.63	83.33	12.2%	19.34	7.168	3.412	-82.4%	29.43	11.05	5.288	-82.0%	126.2	93.71	73.35	-41.9%		
Venezuela (Bolivarian Rep. of)	74.74	79.03	82.23	10.0%	15.72	5.744	2.303	-85.3%	19.89	7.346	2.956	-85.1%	127.4	104	91.91	-27.9%		
Ecuador	75.89	79.78	82.13	8.2%	19.7	8.595	4.817	-75.5%	23.55	10.42	5.852	-75.2%	121	103.4	96.96	-19.9%		
Chile	79.28	82.58	85.04	7.3%	6.862	3.3	1.861	-72.9%	8.291	4.009	2.264	-72.7%	88.78	71.44	61.44	-30.8%		
Bolivia (Plurinational State of)	67.21	73.74	78.24	16.4%	44.42	15.76	5.696	-87.2%	56.7	20.65	7.538	-86.7%	187.7	141.2	108.7	-42.1%		
Paraguay	72.78	76.83	80.15	10.1%	29.14	13.37	5.992	-79.4%	34.12	15.92	7.183	-78.9%	142.4	118.7	100.6	-29.4%		
Uruguay	77.32	80.98	84	8.6%	12.03	5.446	2.772	-77.0%	14.8	6.753	3.444	-76.7%	95.95	75.17	58.64	-38.9%		
Guyana	69.04	74.94	78.86	14.2%	41	15.48	6.48	-84.2%	50.58	19.56	8.255	-83.7%	168.5	126	102.1	-39.4%		
Suriname	70.09	75.17	80	14.1%	21.42	7.77	2.936	-86.3%	29.12	10.69	4.06	-86.1%	185.2	144.3	105.2	-43.2%		
America-South	74.25	78.93	82.03	10.5%	19.21	7.634	3.693	-80.8%	24.67	9.881	4.738	-80.8%	146.4	115.1	99.51	-32.0%		

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Life Expectancy at Birth				Infant Mortality Rate				Child Mortality Probability				Adult Mortality Probability			
	Years				Deaths per 1,000 infants before 1 year of age				Deaths per 1,000 children before age 5				Deaths per 1,000 adults before age 60			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	74.03	78.86	82.78	11.8%	20.06	8.011	3.983	-80.1%	23.51	9.581	4.783	-79.7%	110.1	81.45	59.14	-46.3%
Japan	83.74	86.35	88.55	5.7%	2.46	1.441	0.864	-64.9%	3.295	1.934	1.16	-64.8%	59.72	51.29	45.86	-23.2%
Korea, Rep. of	79.91	82.82	84.92	6.3%	3.856	1.748	0.976	-74.7%	4.923	2.235	1.249	-74.6%	77.36	62.22	55.2	-28.6%
Korea, Dem. People's Rep. of	68.19	73.57	76.96	12.9%	45.59	11.54	2.685	-94.1%	57.74	15.06	3.534	-93.9%	143.2	114.1	88.79	-38.0%
Taiwan, China	79.91	81.75	82.87	3.7%	3.856	2.318	1.635	-57.6%	4.923	2.961	2.088	-57.6%	77.36	65.27	59.5	-23.1%
Hong Kong SAR, China	82.95	84.54	85.4	3.0%	1.972	1.232	0.884	-55.2%	2.704	1.692	1.214	-55.1%	52.84	45.52	43.05	-18.5%
Mongolia	68.19	73.23	78.37	14.9%	34	13.69	6.225	-81.7%	40.53	16.62	7.605	-81.2%	219.4	171.5	124.5	-43.3%
Asia-East	75.03	79.48	83.12	10.8%	18.22	7.313	3.635	-80.0%	22.34	9.015	4.435	-80.1%	105	79.16	58.85	-44.0%
India	65.25	74.58	79.65	22.1%	50.65	12	4.988	-90.2%	67.14	16.46	6.887	-89.7%	209.2	139.4	100.7	-51.9%
Pakistan	67.94	72.5	78.27	15.2%	59.32	37.55	13.79	-76.8%	75.57	48.67	18.27	-75.8%	150.3	121.9	90.73	-39.6%
Bangladesh	67.73	72.26	77.55	14.5%	49.06	21.93	6.479	-86.8%	58.39	26.71	8.007	-86.3%	161.7	133.1	93.21	-42.4%
Afghanistan	45.5	57.23	63.67	39.9%	152	70.69	36.83	-75.8%	209.1	103.9	55.81	-73.3%	437.9	328.2	265.1	-39.5%
Iran, Islamic Rep. of	72.58	77.27	81	11.6%	25.84	13.49	8.162	-68.4%	33.89	17.9	10.89	-67.9%	125.6	97.84	78.65	-37.4%
Nepal	68.11	72.77	76.03	11.6%	36.27	16.89	7.901	-78.2%	43.94	20.82	9.815	-77.7%	177.9	135	106.9	-39.9%
Uzbekistan	68.87	75.08	79.54	15.5%	45.26	17.52	7.111	-84.3%	52.74	20.9	8.567	-83.8%	179.3	131.6	104.5	-41.7%
Sri Lanka	75	78.07	80.78	7.7%	11.77	6.762	4.306	-63.4%	13.56	7.841	5.003	-63.1%	132.4	115.8	106	-19.9%
Kazakhstan	66.34	73.71	77.27	16.5%	26.88	12.27	9.295	-65.4%	32.1	14.86	11.29	-64.8%	261.8	171.4	145.2	-44.5%
Tajikistan	67.79	72.41	77.56	14.4%	52.86	30.4	13.24	-75.0%	65.97	38.64	17.08	-74.1%	172.6	136.7	102.3	-40.7%
Kyrgyz Rep.	69.15	72.23	75.29	8.9%	31.52	22.05	13.48	-57.2%	39	27.54	16.97	-56.5%	190.1	161.3	139.5	-26.6%
Turkmenistan	66.26	78.85	82.88	25.1%	47.09	8.848	5.986	-87.3%	58.19	11.32	7.68	-86.8%	219.5	110.5	87.33	-60.2%
Bhutan	67.74	76.09	80.7	19.1%	39.46	13.99	7.634	-80.7%	53.96	19.61	10.77	-80.0%	181.8	113.1	84.48	-53.5%
Maldives	73.19	77.05	79.97	9.3%	12.36	6.941	4.503	-63.6%	18.13	10.27	6.683	-63.1%	102.1	64.35	49.51	-51.5%
Asia-South Central	65.98	73.75	78.62	19.2%	51.02	17.79	7.81	-84.7%	69.71	27.76	12.89	-81.5%	198.4	138.5	104.3	-47.4%
Indonesia	72.26	77.91	81.64	13.0%	21.66	7.431	4.116	-81.0%	26.86	9.368	5.201	-80.6%	154.9	108.9	83.98	-45.8%
Philippines	72.94	76.92	80.76	10.7%	16.03	9.282	5.199	-67.6%	20.86	12.17	6.846	-67.2%	153.9	121.1	96.76	-37.1%
Vietnam	75.37	78.35	81.72	8.4%	18.88	9.801	4.763	-74.8%	22.99	12.09	5.888	-74.4%	109.2	90.32	68.8	-37.0%
Thailand	70	74.33	77.68	11.0%	16.3	9.461	6.135	-62.4%	18.23	10.65	6.922	-62.0%	201.1	149.4	118.9	-40.9%
Myanmar	64.53	71.27	77.55	20.2%	52.02	20.16	5.174	-90.1%	65.6	26.17	6.817	-89.6%	219.5	150.2	93.85	-57.2%
Malaysia	75.22	79	82.45	9.6%	6.616	4.5	3.161	-52.2%	8.608	5.872	4.127	-52.1%	102.9	74.33	53.42	-48.1%
Cambodia	63.24	71.47	76.67	21.2%	56.67	20.32	6.779	-88.0%	73.14	27.05	9.145	-87.5%	238.5	154.5	113.6	-52.4%
Lao People's Dem. Rep.	66.85	75.24	80.49	20.4%	45.89	9.303	1.452	-96.8%	59.42	12.46	1.963	-96.7%	186.6	118.6	82.22	-55.9%
Singapore	80.93	85.17	88.03	8.8%	1.94	0.902	0.546	-71.9%	2.375	1.107	0.669	-71.8%	63.41	44.04	34.84	-45.1%
Timor-Leste	63.18	73.02	76.42	21.0%	58.75	9.689	4.079	-93.1%	77.17	13.3	5.638	-92.7%	232.8	128.5	99.19	-57.4%
Brunei Darussalam	77.97	81.94	84.5	8.4%	4.67	2.385	1.497	-67.9%	6.239	3.197	2.01	-67.8%	109.8	81.98	69.06	-37.1%
Asia-South East	71.82	76.82	80.75	12.4%	22.66	9.515	4.631	-79.6%	28.47	12.17	5.908	-79.2%	158.9	114.6	87.09	-45.2%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Life Expectancy at Birth				Infant Mortality Rate				Child Mortality Probability				Adult Mortality Probability			
	Years				Deaths per 1,000 infants before 1 year of age				Deaths per 1,000 children before age 5				Deaths per 1,000 adults before age 60			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	72.76	77.29	81.13	11.5%	23.97	14.25	9.357	-61.0%	26.88	16.12	10.63	-60.5%	116.5	81.37	60.21	-48.3%
Iraq	70.14	74.65	78.33	11.7%	31.04	10.84	4.801	-84.5%	37.24	13.24	5.897	-84.2%	145.6	117.4	98.91	-32.1%
Yemen, Rep. of	64.94	71.52	74.75	15.1%	49.96	17.89	8.605	-82.8%	62.94	23.17	11.24	-82.1%	214.1	154.8	128.4	-40.0%
Saudi Arabia	73.86	78.84	82.64	11.9%	17.37	10.68	7.738	-55.5%	19.72	12.22	8.878	-55.0%	117.4	78.43	58.12	-50.5%
Syrian Arab Rep.	75.08	78.68	81.82	9.0%	15.44	8.11	4.084	-73.5%	17.35	9.181	4.64	-73.3%	100.3	71.52	54.66	-45.5%
Jordan	73.69	77.15	80.74	9.6%	19.7	12.38	7.251	-63.2%	22.82	14.46	8.507	-62.7%	119.9	92.42	71.26	-40.6%
Israel	81.43	84.28	86.61	6.4%	3.576	1.812	0.976	-72.7%	4.494	2.282	1.231	-72.6%	60.44	46.73	38.44	-36.4%
Palestine	74.37	77.34	79.93	7.5%	18.36	9.641	4.473	-75.6%	20.94	11.09	5.171	-75.3%	109.8	90.33	77.96	-29.0%
Azerbaijan	71.32	76.43	80.27	12.5%	37.54	19.22	12.3	-67.2%	42.18	21.96	14.13	-66.5%	129.3	95.45	74.81	-42.1%
United Arab Emirates	77.97	82.97	86.67	11.2%	5.782	2.828	1.689	-70.8%	6.847	3.36	2.009	-70.7%	72.73	48.42	35.25	-51.5%
Kuwait	78.23	83.98	86.5	10.6%	5.395	2.119	1.329	-75.4%	6.979	2.754	1.728	-75.2%	62.02	34.51	26.69	-57.0%
Lebanon	72.95	76.83	79.71	9.3%	21.08	13.02	9.712	-53.9%	24.44	15.24	11.39	-53.4%	123.5	94.05	77.87	-36.9%
Oman	76.56	80.07	82.98	8.4%	6.399	4.358	3.101	-51.5%	7.84	5.357	3.815	-51.3%	82.62	58.78	44.41	-46.2%
Armenia	74.72	77.87	81.28	8.8%	24.2	16.61	10.41	-57.0%	26.29	18.15	11.43	-56.5%	113.6	93.56	73.94	-34.9%
Georgia	72.7	77.31	81.26	11.8%	29.88	14.08	8.568	-71.3%	30.62	14.63	8.936	-70.8%	126.9	94.37	72.74	-42.7%
Qatar	76.14	81.38	83.74	10.0%	9.772	3.662	2.328	-76.2%	12.27	4.635	2.949	-76.0%	82	51.05	42.11	-48.6%
Bahrain	76.24	79.04	81.5	6.9%	5.935	3.572	2.252	-62.1%	7.666	4.627	2.921	-61.9%	79.15	60.83	47.34	-40.2%
Cyprus	80.2	82.74	84.58	5.5%	4.205	2.511	1.717	-59.2%	4.736	2.832	1.939	-59.1%	55.18	42.05	36.02	-34.7%
Asia-West	72.51	76.75	79.9	10.2%	24.79	12.19	6.896	-72.2%	32.41	15.17	8.362	-74.2%	122.7	91.94	79.46	-35.2%
Australia	82.21	85.2	87.33	6.2%	4.381	2.128	1.243	-71.6%	5.179	2.522	1.475	-71.5%	60.6	47.49	40.99	-32.4%
Papua New Guinea	62.4	67.88	74.15	18.8%	48.07	23.93	6.738	-86.0%	60.88	30.97	8.868	-85.4%	283.1	225.7	164.3	-42.0%
New Zealand	80.98	83.94	86.49	6.8%	4.718	2.52	1.325	-71.9%	5.949	3.187	1.678	-71.8%	68.48	54.52	45.24	-33.9%
Solomon Islands	67.91	71.61	74.8	10.1%	37.92	25.56	17.82	-53.0%	46.29	31.52	22.13	-52.2%	180.4	145.6	119.2	-33.9%
Fiji	69.65	73.7	77.77	11.7%	17.24	13	8.369	-51.5%	21.37	16.17	10.45	-51.1%	196.2	146	108.4	-44.8%
Vanuatu	71.56	75.33	78.85	10.2%	25.26	18.65	13.41	-46.9%	29.72	22.08	15.95	-46.3%	139.2	105.1	81.16	-41.7%
Micronesia (Federated States of)	69.43	72.81	76.26	9.8%	32.07	20.27	12.46	-61.1%	38.6	24.65	15.26	-60.5%	163.1	132.9	105.6	-35.3%
Tonga	72.55	75.82	79.44	9.5%	20.99	18.39	12.84	-38.8%	24.66	21.66	15.19	-38.4%	140.9	109.5	84.08	-40.3%
Samoa	72.8	77.05	80.83	11.0%	20.56	13.69	9.1	-55.7%	24.17	16.19	10.81	-55.3%	139.8	101.9	76.79	-45.1%
Oceania	77.52	80.28	83.15	7.3%	14.05	8.328	3.467	-75.3%	25.91	14.76	5.157	-80.1%	100.2	91.95	80	-20.2%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Life Expectancy at Birth				Infant Mortality Rate				Child Mortality Probability				Adult Mortality Probability			
	Years				Deaths per 1,000 infants before 1 year of age				Deaths per 1,000 children before age 5				Deaths per 1,000 adults before age 60			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	68.46	74.04	78.12	14.1%	11.4	7.499	5.498	-51.8%	17.34	11.44	8.439	-51.3%	261.4	195.6	161.4	-38.3%
Poland	76.49	80.55	83.84	9.6%	5.638	3.701	2.793	-50.5%	6.737	4.432	3.348	-50.3%	127.4	94.54	76.77	-39.7%
Ukraine	69.51	72.91	77.29	11.2%	11.85	9.298	6.615	-44.2%	14.51	11.42	8.138	-43.9%	241.1	204.6	161.8	-32.9%
Romania	73.85	77.48	81.14	9.9%	13.2	9.71	7.063	-46.5%	15.72	11.6	8.461	-46.2%	138.3	108.3	87.66	-36.6%
Czech Rep.	77.36	80.46	83.52	8.0%	3.148	2.439	1.858	-41.0%	3.95	3.064	2.336	-40.9%	100.4	80.68	66.93	-33.3%
Belarus	70.65	75.26	78.63	11.3%	6.719	4.162	3.162	-52.9%	9.16	5.692	4.329	-52.7%	222.3	166.4	139.4	-37.3%
Hungary	74.55	77.9	81.03	8.7%	5.512	4.269	3.378	-38.7%	6.957	5.397	4.275	-38.6%	158.9	128.8	108.5	-31.7%
Bulgaria	74.41	77.66	80.65	8.4%	8.964	7.07	5.93	-33.8%	10.59	8.367	7.026	-33.7%	137.5	109.2	90.76	-34.0%
Slovak Rep.	75.65	79.48	82.74	9.4%	5.88	4	3.103	-47.2%	7.181	4.897	3.801	-47.1%	123.1	93.91	77.39	-37.1%
Moldova, Rep. of	69.51	72.39	75.75	9.0%	15.12	11.32	6.97	-53.9%	18.75	14.09	8.711	-53.5%	204.9	172.9	143.8	-29.8%
Europe-East	70.96	75.62	79.46	12.0%	10.08	6.944	5.067	-49.7%	14.13	9.75	7.134	-49.5%	218.2	166	136.8	-37.3%
United Kingdom	80.09	83.42	86.06	7.5%	4.8	2.24	1.174	-75.5%	5.645	2.644	1.386	-75.4%	75.22	56.71	45.59	-39.4%
Sweden	81.61	84.66	87.05	6.7%	2.485	1.253	0.71	-71.4%	3.074	1.553	0.88	-71.4%	59.26	46.01	39.4	-33.5%
Denmark	79.07	82.18	84.74	7.2%	3.876	1.824	0.969	-75.0%	4.619	2.181	1.159	-74.9%	86.5	67.43	55.79	-35.5%
Ireland	80.5	83.64	85.8	6.6%	3.866	1.983	1.272	-67.1%	4.468	2.296	1.474	-67.0%	67.53	51.59	45.35	-32.8%
Norway	81.3	84.15	86.37	6.2%	2.872	1.528	0.908	-68.4%	3.408	1.818	1.082	-68.3%	63.69	50.37	43.17	-32.2%
Finland	80.46	83.6	86.02	6.9%	2.643	1.303	0.705	-73.3%	3.244	1.602	0.868	-73.2%	86.45	68	56.95	-34.1%
Lithuania	73.05	76.97	80.45	10.1%	5.958	4.424	3.413	-42.7%	8.837	6.587	5.088	-42.4%	196	156.9	133.6	-31.8%
Latvia	73.78	77.71	81.27	10.2%	6.902	4.818	3.736	-45.9%	8.529	5.965	4.621	-45.8%	176.9	138.2	111	-37.3%
Estonia	74.51	78.86	83.22	11.7%	4.646	3.223	2.281	-50.9%	7.535	5.227	3.715	-50.7%	166.6	129	92.96	-44.2%
Iceland	82.34	85.57	87.7	6.5%	1.925	0.834	0.471	-75.5%	2.469	1.072	0.603	-75.6%	52.89	39.78	34.57	-34.6%
Europe-North	79.83	83.2	85.85	7.5%	4.35	2.141	1.189	-72.7%	5.226	2.555	1.418	-72.9%	82.54	62.32	49.68	-39.8%
Italy	81.67	84.31	86.83	6.3%	3.502	1.717	0.916	-73.8%	4.14	2.03	1.083	-73.8%	61.85	49.16	38.74	-37.4%
Spain	81.69	84.22	86.59	6.0%	3.527	1.835	1.007	-71.4%	4.29	2.236	1.228	-71.4%	67.84	55.07	43.5	-35.9%
Greece	80.13	82.78	85.39	6.6%	4.469	2.608	1.612	-63.9%	5.238	3.063	1.895	-63.8%	72.25	58.73	48.71	-32.6%
Portugal	79.45	82.26	84.89	6.8%	4.283	2.194	1.24	-71.0%	5.565	2.858	1.617	-70.9%	84.63	69.01	56.68	-33.0%
Serbia	74.82	77.99	81.4	8.8%	10.89	8.124	5.826	-46.5%	12.74	9.527	6.849	-46.2%	114.6	90.58	72.24	-37.0%
Croatia	77.22	80.32	82.89	7.3%	5.511	4.015	3.274	-40.6%	6.557	4.783	3.903	-40.5%	96.45	75.26	64.15	-33.5%
Bosnia and Herzegovina	75.95	79.72	83.07	9.4%	12.74	8.093	5.974	-53.1%	15.37	9.802	7.25	-52.8%	99.32	73.61	57.85	-41.8%
Albania	77.3	80.55	83.4	7.9%	17.15	12.23	9.548	-44.3%	19.35	13.86	10.85	-43.9%	69.93	55.12	46.23	-33.9%
Macedonia, TFYR	74.95	78.11	81.27	8.4%	13.68	9.861	7.072	-48.3%	15.44	11.17	8.028	-48.0%	102.6	78.11	61.82	-39.7%
Slovenia	79.08	81.96	84.51	6.9%	3.405	1.705	0.917	-73.1%	4.286	2.153	1.159	-73.0%	86.77	72.34	63.05	-27.3%
Montenegro	75.29	78.15	80.87	7.4%	7.744	5.722	4.374	-43.5%	8.97	6.65	5.095	-43.2%	120.1	96.4	80.67	-32.8%
Malta	80.21	82.91	85.16	6.2%	5.194	4.084	3.383	-34.9%	7.046	5.553	4.603	-34.7%	58.81	46.48	39.31	-33.2%
Europe-South	80.56	83.29	85.87	6.6%	4.714	2.727	1.717	-63.6%	5.629	3.252	2.019	-64.1%	72.19	57.76	46.01	-36.3%
Germany	80.5	83.41	86.17	7.0%	3.532	1.988	1.112	-68.5%	4.317	2.437	1.364	-68.4%	73.87	59.67	48.92	-33.8%
France	81.94	84.64	87.03	6.2%	3.293	1.703	0.891	-72.9%	4.038	2.094	1.096	-72.9%	78.58	63.48	52.57	-33.1%
Netherlands	80.57	83.04	85.29	5.9%	4.305	2.473	1.429	-66.8%	5.272	3.036	1.757	-66.7%	63.97	52	42.96	-32.8%
Belgium	80.86	83.73	86.13	6.5%	3.494	1.803	1.013	-71.0%	4.364	2.259	1.27	-70.9%	75.31	60.92	52.25	-30.6%
Switzerland	82.49	85.05	87.35	5.9%	3.508	1.809	0.968	-72.4%	4.994	2.582	1.384	-72.3%	52.11	43.5	36	-30.9%
Austria	80.76	83.65	86.18	6.7%	3.824	1.908	1.066	-72.1%	4.648	2.324	1.3	-72.0%	69.67	55.87	47.46	-31.9%
Luxembourg	80.31	83.61	85.9	7.0%	2.202	1.147	0.711	-67.7%	2.892	1.511	0.938	-67.6%	75.88	54.36	45.18	-40.5%
Europe-West	81.1	83.91	86.45	6.6%	3.527	1.908	1.045	-70.4%	4.326	2.34	1.284	-70.3%	73.54	59.52	49.44	-32.8%

Health

Base Case

Source: International Futures
Model Version 6.68, Nov 2013

	Calories per Capita				Undernourished Children				Adult Obesity Rate				Adult Smoking Rate			
	Available per person per day				Percent of all children				Percent of adults 30 years or older				Percent of adults who smoke tobacco			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	2791	2908	3061	9.7%	16.29	8.568	5.267	-67.7%	13.05	13.54	14.73	12.9%	24.08	23.43	22.71	-5.7%
Africa	2452	2568	2773	13.1%	20.83	11.76	6.385	-69.3%	10.14	9.395	10.06	-0.8%	10.46	11.27	12.16	16.3%
Americas	3208	3211	3271	2.0%	2.75	2.726	2.625	-4.5%	38.93	39.08	40.75	4.7%	24.06	23.41	23.3	-3.2%
Asia with Oceania	2672	2891	3110	16.4%	20.81	9.771	5.784	-72.2%	6.089	7.79	9.762	60.3%	25.72	26.32	26.43	2.8%
Europe	3415	3370	3363	-1.5%	1.408	1.601	1.79	27.1%	23.81	23.15	23	-3.4%	33.96	32.76	31.47	-7.3%
World	2791	2908	3061	9.7%	16.29	8.568	5.267	-67.7%	13.05	13.54	14.73	12.9%	24.08	23.43	22.71	-5.7%
Africa-Eastern	2055	2319	2675	30.2%	23.58	13.22	6.712	-71.5%	2.069	2.936	5.064	144.8%	9.216	10.33	11.66	26.5%
Africa-Middle	1861	2151	2490	33.8%	24.02	13.71	6.799	-71.7%	4.657	5.991	8.228	76.7%	8.122	9.281	10.08	24.1%
Africa-Northern	3013	2940	2993	-0.7%	11.61	6.737	4.661	-59.9%	25.57	23.57	23.53	-8.0%	15.81	17.12	18.31	15.8%
Africa-Southern	2916	3063	3294	13.0%	9.271	6.054	3.917	-57.7%	27.8	30.08	34.67	24.7%	17.15	18.51	19.74	15.1%
Africa-Western	2648	2762	2865	8.2%	25.12	12.72	6.779	-73.0%	7.019	7.819	8.562	22.0%	7.808	9.155	10.42	33.5%
Africa	2452	2568	2773	13.1%	20.83	11.76	6.385	-69.3%	10.14	9.395	10.06	-0.8%	10.46	11.27	12.16	16.3%
America-Caribbean	2596	2721	2891	11.4%	7.637	6.923	5.648	-26.0%	26.64	29.42	33.21	24.7%	22.88	21.64	20.9	-8.7%
America-Central	2444	2600	2846	16.4%	8.361	6.014	4.422	-47.1%	28.3	32.53	39.41	39.3%	17.88	18.21	18.78	5.0%
America-North	3616	3498	3470	-4.0%	1.709	1.97	2.133	24.8%	48.85	45.93	45.18	-7.5%	23.35	22.38	22.52	-3.6%
America-South	2884	3012	3137	8.8%	2.835	2.737	2.636	-7.0%	29.93	33.08	36.46	21.8%	25.67	25.45	25.15	-2.0%
Americas	3208	3211	3271	2.0%	2.75	2.726	2.625	-4.5%	38.93	39.08	40.75	4.7%	24.06	23.41	23.3	-3.2%
Asia-East	2964	3228	3417	15.3%	4.15	2.659	2.407	-42.0%	5.476	7.926	9.923	81.2%	32.91	34.71	34.07	3.5%
Asia-South Central	2381	2662	2965	24.5%	38.72	15.55	7.885	-79.6%	4.072	5.367	7.304	79.4%	18.25	19.49	21.01	15.1%
Asia-South East	2592	2793	3014	16.3%	18.39	9.719	6.145	-66.6%	4.515	5.597	7.235	60.2%	28.62	29.55	30.98	8.2%
Asia-West	3021	2990	3086	2.2%	9.04	6.413	4.621	-48.9%	25.71	25.06	26.15	1.7%	25.35	24.91	24.7	-2.6%
Oceania	2986	3075	3195	7.0%	4.571	3.124	2.011	-56.0%	29.19	29.45	30.5	4.5%	24.9	24.47	24.73	-0.7%
Asia with Oceania	2672	2891	3110	16.4%	20.81	9.771	5.784	-72.2%	6.089	7.79	9.762	60.3%	25.72	26.32	26.43	2.8%
Europe-East	3323	3316	3296	-0.8%	1.876	2.016	2.198	17.2%	23.32	23.46	23.27	-0.2%	40.18	39.83	38.81	-3.4%
Europe-North	3401	3396	3417	0.5%	1.684	1.838	1.985	17.9%	27.53	27.35	27.69	0.6%	30.83	28.91	27.58	-10.5%
Europe-South	3422	3317	3306	-3.4%	1.342	1.388	1.351	0.7%	24.05	22.68	22.69	-5.7%	29.79	29.23	27.78	-6.7%
Europe-West	3536	3452	3441	-2.7%	0.804	1.211	1.566	94.8%	22.47	20.88	20.25	-9.9%	29.23	27.86	27.27	-6.7%
Europe	3415	3370	3363	-1.5%	1.408	1.601	1.79	27.1%	23.81	23.15	23	-3.4%	33.96	32.76	31.47	-7.3%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Calories per Capita				Undernourished Children				Adult Obesity Rate				Adult Smoking Rate			
	Available per person per day				Percent of all children				Percent of adults 30 years or older				Percent of adults who smoke tobacco			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	1980	2315	2706	36.7%	34.6	17.27	7.037	-79.7%	0.149	0.93	2.444	1540.3%	3.193	4.321	5.617	75.9%
Tanzania, United Rep. of	2032	2369	2937	44.5%	16.2	9.943	3.814	-76.5%	3.052	5.134	10.57	246.3%	12.23	13.17	15.08	23.3%
Uganda	2211	2475	2759	24.8%	16.4	9.544	5.308	-67.6%	1.251	1.923	3.15	151.8%	9.865	10.78	11.91	20.7%
Kenya	2089	2286	2640	26.4%	16.4	11.02	5.88	-64.1%	1.652	2.202	3.866	134.0%	12.87	13.93	15.05	16.9%
Madagascar	2160	2124	2158	-0.1%	36.8	26.01	20.41	-44.5%	3.103	2.951	3.079	-0.8%	9.165	9.806	10.43	13.8%
Mozambique	2067	2477	2822	36.5%	18.3	8.685	3.894	-78.7%	2.662	4.562	7.092	166.4%	12.07	13.17	14.4	19.3%
Malawi	2172	2242	2467	13.6%	13.8	8.472	5.97	-56.7%	2.149	2.441	3.665	70.5%	11.67	12.16	12.73	9.1%
Zambia	1873	2317	2867	53.1%	14.9	6.712	3.42	-77.0%	1.198	2.778	6.618	452.4%	10.27	11.26	12.96	26.2%
Somalia	2120	2247	2581	21.7%	32.8	18.47	5.874	-82.1%	2.867	3.287	4.974	73.5%	13.75	14.43	15.27	11.1%
Rwanda	2085	2380	2720	30.5%	18	7.911	4.193	-76.7%	0.915	1.548	2.973	224.9%	8.856	9.914	11.24	26.9%
Zimbabwe	2238	2404	2600	16.2%	14	9.461	6.545	-53.3%	12.2	13.28	15.17	24.3%	11.7	12.78	13.57	16.0%
Burundi	1685	1838	2106	25.0%	35.2	21.01	10.58	-69.9%	1.777	2.279	3.618	103.6%	8.978	9.702	10.34	15.2%
Eritrea	1605	1897	2356	46.8%	34.5	24.2	10.29	-70.2%	0.101	0.136	1.069	958.4%	8.512	9.423	10.36	21.7%
Comoros	1884	1569	2269	20.4%	25	21.76	10.13	-59.5%	7.166	5.394	10.3	43.7%	16.81	16.36	16.06	-4.5%
Djibouti	2291	2407	2641	15.3%	29.6	18.31	9.617	-67.5%	6.498	7.213	9.051	39.3%	15.2	16.17	17.18	13.0%
Mauritius	2965	3055	3130	5.6%	13	9.548	7.057	-45.7%	18.86	20.14	21.19	12.4%	18.43	20.99	22.66	23.0%
Africa-Eastern	2055	2319	2675	30.2%	23.58	13.22	6.712	-71.5%	2.069	2.936	5.064	144.8%	9.216	10.33	11.66	26.5%
Congo, Democratic Rep. of	1605	1895	2285	42.4%	28.2	15.93	7.25	-74.3%	0.904	1.541	3.346	270.1%	7.671	8.392	9.154	19.3%
Angola	1973	2536	2955	49.8%	15.6	6.089	3.895	-75.0%	7.791	13.16	18.8	141.3%	9.929	13.15	14.02	41.2%
Cameroon	2269	2424	2703	19.1%	16.6	11.32	6.925	-58.3%	15.75	17.63	21.57	37.0%	7.812	8.76	9.817	25.7%
Chad	2056	2319	2540	23.5%	33.9	19.02	8.747	-74.2%	2.258	3.231	4.423	95.9%	8.055	8.933	9.751	21.1%
Central African Rep.	1986	2181	2496	25.7%	21.8	15.07	7.483	-65.7%	1.115	1.595	2.915	161.4%	8.98	9.756	10.62	18.3%
Congo, Rep. of	2512	2742	2903	15.6%	11.8	5.925	3.89	-67.0%	2.798	3.851	4.81	71.9%	6.554	8.446	9.674	47.6%
Gabon	2755	2893	3046	10.6%	8.8	6.238	3.903	-55.6%	14.82	16.15	17.88	20.6%	10.6	13.17	15.01	41.6%
Equatorial Guinea	2435	2880	3088	26.8%	10.6	6.107	4.351	-59.0%	17.24	23.69	27.22	57.9%	9.207	7.371	7.314	-20.6%
São Tomé and Príncipe	2684	2648	2690	0.2%	14.4	10.24	6.742	-53.2%	4.98	4.761	4.947	-0.7%	13.22	13.83	14.37	8.7%
Africa-Middle	1861	2151	2490	33.8%	24.02	13.71	6.799	-71.7%	4.657	5.991	8.228	76.7%	8.122	9.281	10.08	24.1%
Egypt	3195	3045	3023	-5.4%	6.8	6.366	5.42	-20.3%	42.98	39.58	39.17	-8.9%	15.09	16.03	17.1	13.3%
Sudan	2282	2459	2773	21.5%	31.7	10.46	4.818	-84.8%	5.673	6.756	9.255	63.1%	15.41	16.33	17.53	13.8%
Algeria	3153	3092	3120	-1.0%	3.7	3.314	3.018	-18.4%	15.04	14.4	14.71	-2.2%	15.93	18.18	19.76	24.0%
Morocco	3236	3155	3122	-3.5%	9.9	6.949	4.781	-51.7%	17.84	16.94	16.52	-7.4%	14.65	16.51	18.02	23.0%
Tunisia	3326	3206	3195	-3.9%	3.3	3.24	2.918	-11.6%	27.8	26.1	25.92	-6.8%	26.37	28.17	29.95	13.6%
Libya	3143	3240	3160	0.5%	5.6	3.806	3.421	-38.9%	23.95	25.44	24.32	1.5%	15.71	18.97	19.82	26.2%
Africa-Northern	3013	2940	2993	-0.7%	11.61	6.737	4.661	-59.9%	25.57	23.57	23.53	-8.0%	15.81	17.12	18.31	15.8%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Calories per Capita				Undernourished Children				Adult Obesity Rate				Adult Smoking Rate			
	Available per person per day				Percent of all children				Percent of adults 30 years or older				Percent of adults who smoke tobacco			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	2999	3136	3364	12.2%	8.7	5.892	3.854	-55.7%	29.78	32.47	37.45	25.8%	17.87	19.26	20.56	15.1%
Namibia	2383	2741	2993	25.6%	17.5	7.452	4.22	-75.9%	4.376	6.39	8.38	91.5%	20.08	21.34	22.14	10.3%
Lesotho	2476	2699	2889	16.7%	13.5	7.442	4.765	-64.7%	23.29	25.48	28.38	21.9%	9.864	11.28	12.38	25.5%
Botswana	2264	2656	3020	33.4%	11.2	6.514	4.093	-63.5%	16.39	22	28.52	74.0%	9.602	12.88	13.52	40.8%
Swaziland	2292	2453	2742	19.6%	7.3	5.854	3.791	-48.1%	15.31	17.07	21.3	39.1%	6.943	8.302	9.57	37.8%
Africa-Southern	2916	3063	3294	13.0%	9.271	6.054	3.917	-57.7%	27.8	30.08	34.67	24.7%	17.15	18.51	19.74	15.1%
Nigeria	2741	2914	3001	9.5%	26.7	11.18	5.605	-79.0%	7.608	8.902	9.645	26.8%	6.323	7.882	9.188	45.3%
Niger	2376	2338	2380	0.2%	39.9	27.17	15	-62.4%	2.989	2.826	2.972	-0.6%	10.56	11.24	11.89	12.6%
Côte d'Ivoire	2528	2573	2752	8.9%	29.4	17.22	8.393	-71.5%	4.275	4.51	5.49	28.4%	8.681	9.523	10.57	21.8%
Burkina Faso	2677	2710	2835	5.9%	26	14.03	6.452	-75.2%	1.556	1.617	1.96	26.0%	14.19	14.23	14.49	2.1%
Ghana	2907	3042	3288	13.1%	14.3	7.576	4.163	-70.9%	6.988	8.001	10.16	45.4%	4.502	5.868	8.107	80.1%
Mali	2614	2716	2935	12.3%	27.9	12.08	4.659	-83.3%	6.104	6.539	7.921	29.8%	10.84	11.73	12.89	18.9%
Senegal	2348	2397	2552	8.7%	14.5	10.85	7.044	-51.4%	9.855	10.12	11.32	14.9%	10.51	11.53	12.47	18.6%
Guinea	2568	2597	2682	4.4%	20.8	12.75	6.423	-69.1%	5.658	5.789	6.268	10.8%	9.886	10.65	11.46	15.9%
Benin	2533	2541	2666	5.3%	20.2	13.08	7.625	-62.3%	9.248	9.125	9.995	8.1%	8.726	9.638	10.58	21.2%
Togo	2161	2270	2443	13.0%	20.5	15.13	9.672	-52.8%	5.889	6.472	7.656	30.0%	8.213	9.015	9.767	18.9%
Sierra Leone	2170	2614	3014	38.9%	21.3	8.471	3.716	-82.6%	13.18	18.01	23.82	80.7%	8.556	9.709	11.42	33.5%
Liberia	2204	2546	2722	23.5%	20.4	6.703	4.077	-80.0%	12.32	16.1	18.44	49.7%	8.809	9.58	10.42	18.3%
Mauritania	2841	2791	2774	-2.4%	15.9	10.28	6.279	-60.5%	21.58	20.88	20.67	-4.2%	13.41	14.04	14.69	9.5%
Gambia	2385	2422	2561	7.4%	15.8	9.828	7.308	-53.7%	2.723	2.813	3.294	21.0%	14.87	15.71	16.57	11.4%
Guinea-Bissau	2306	2348	2440	5.8%	17.2	14.42	7.739	-55.0%	3.17	3.286	3.635	14.7%	8.366	9.122	9.831	17.5%
Cape Verde	2572	2778	2921	13.6%	11.8	7.079	4.813	-59.2%	14.16	16.4	18.21	28.6%	8.782	10.35	11.59	32.0%
Africa-Western	2648	2762	2865	8.2%	25.12	12.72	6.779	-73.0%	7.019	7.819	8.562	22.0%	7.808	9.155	10.42	33.5%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Calories per Capita				Undernourished Children				Adult Obesity Rate				Adult Smoking Rate			
	Available per person per day				Percent of all children				Percent of adults 30 years or older				Percent of adults who smoke tobacco			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	1870	2081	2318	24.0%	18.9	15.63	11.14	-41.1%	14.05	16.23	19.27	37.2%	20.78	19.96	19.27	-7.3%
Dominican Rep.	2295	2684	3031	32.1%	3.4	2.909	2.646	-22.2%	31.14	39.49	48.2	54.8%	12.97	14.24	15.26	17.7%
Cuba	3274	3348	3446	5.3%	3.4	2.861	2.635	-22.5%	32.16	33.55	35.49	10.4%	37.22	34.99	33.85	-9.1%
Puerto Rico	3052	3158	3383	10.8%	6.067	4.815	3.419	-43.6%	21.89	23.38	26.78	22.3%	20.95	21.43	22.38	6.8%
Jamaica	2852	2844	2913	2.1%	1.9	2.464	2.793	47.0%	31.59	31.46	32.86	4.0%	14.17	14.58	15.14	6.8%
Trinidad and Tobago	2725	3000	3131	14.9%	4.4	3.486	3.112	-29.3%	41.7	48.55	52.13	25.0%	21.45	23.07	23.93	11.6%
Bahamas	2713	2874	2982	9.9%	10.91	8.266	6.259	-42.6%	28.96	31.92	34.02	17.5%	22.7	22.67	22.62	-0.4%
Barbados	3056	3038	3074	0.6%	6.009	5.384	4.579	-23.8%	45.98	45.46	46.4	0.9%	10.83	12.78	14.68	35.5%
Saint Lucia	2738	2832	2928	6.9%	10.53	7.205	5.318	-49.5%	31.66	33.12	34.93	10.3%	19.26	19.81	20.24	5.1%
Grenada	2454	2675	2870	17.0%	15.02	9.969	6.921	-53.9%	22.55	26.12	29.74	31.9%	25.49	25.13	24.75	-2.9%
Saint Vincent and the Grenadines	2821	2840	2924	3.7%	9.292	7.494	5.571	-40.0%	20.38	20.68	21.97	7.8%	11.48	12.5	13.62	18.6%
America-Caribbean	2596	2721	2891	11.4%	7.637	6.923	5.648	-26.0%	26.64	29.42	33.21	24.7%	22.88	21.64	20.9	-8.7%
Guatemala	2159	2425	2839	31.5%	13	7.54	4.826	-62.9%	36.57	42.77	54.12	48.0%	14.1	15.23	16.94	20.1%
Honduras	2623	2663	2765	5.4%	8.6	6.738	5.131	-40.3%	15.45	15.9	17.24	11.6%	16.48	17.41	18.2	10.4%
Nicaragua	2403	2497	2629	9.4%	5.7	5.149	4.192	-26.5%	36.11	38.1	41.21	14.1%	22.08	21.28	20.62	-6.6%
El Salvador	2590	2704	2908	12.3%	6.6	5.392	4.191	-36.5%	19.35	20.94	24.11	24.6%	21.37	21.13	21.17	-0.9%
Costa Rica	2840	2992	3114	9.6%	1.1	1.619	2.052	86.5%	32.07	35.14	37.78	17.8%	17.15	18.5	19.59	14.2%
Panama	2484	2878	3124	25.8%	6.3	4.284	3.396	-46.1%	20.99	27.57	32.35	54.1%	23.39	24.66	23.51	0.5%
Belize	2718	2804	2931	7.8%	4.9	4.18	3.76	-23.3%	19.9	21.01	22.92	15.2%	26.36	25.76	25.43	-3.5%
America-Central	2444	2600	2846	16.4%	8.361	6.014	4.422	-47.1%	28.3	32.53	39.41	39.3%	17.88	18.21	18.78	5.0%
United States of America	3748	3594	3534	-5.7%	1.3	1.678	1.953	50.2%	52.43	48.51	47.05	-10.3%	22.96	21.39	21.39	-6.8%
Mexico	3266	3235	3278	0.4%	3.4	3.18	2.943	-13.4%	44.15	43.38	44.35	0.5%	24.82	25.72	26.71	7.6%
Canada	3532	3484	3458	-2.1%	0.05	0.685	1.316	2532.0%	31.36	30.55	30.13	-3.9%	22.14	20.48	20.12	-9.1%
America-North	3616	3498	3470	-4.0%	1.709	1.97	2.133	24.8%	48.85	45.93	45.18	-7.5%	23.35	22.38	22.52	-3.6%
Brazil	3113	3170	3213	3.2%	2.2	2.344	2.472	12.4%	24.23	25.15	25.89	6.9%	24.45	24.42	24.43	-0.1%
Colombia	2685	2887	3061	14.0%	3.4	2.942	2.672	-21.4%	30.57	34.56	38.3	25.3%	24.51	24.43	24.39	-0.5%
Argentina	2941	3108	3233	9.9%	2.3	2.383	2.443	6.2%	47.39	51.87	55.4	16.9%	29.5	29.13	28.21	-4.4%
Peru	2457	2760	3007	22.4%	4.5	3.704	3.237	-28.1%	36.17	43.23	49.7	37.4%	20.84	21.53	22.02	5.7%
Venezuela (Bolivarian Rep. of)	2632	2893	3197	21.5%	3.7	3.054	2.505	-32.3%	37.24	43.29	51.16	37.4%	30.61	29.57	28.23	-7.8%
Ecuador	2301	2568	2788	21.2%	6.2	4.855	3.921	-36.8%	17.89	21.89	25.68	43.5%	14.63	15.8	16.65	13.8%
Chile	2920	3101	3242	11.0%	0.5	1.162	1.666	233.2%	38.03	42.04	45.4	19.4%	37.87	36.43	33.98	-10.3%
Bolivia (Plurinational State of)	2064	2392	2783	34.8%	4.5	3.792	2.658	-40.9%	37.74	45.9	57.31	51.9%	32.82	30.37	28.67	-12.6%
Paraguay	2634	2684	2805	6.5%	3.4	3.875	3.68	8.2%	18.29	18.97	20.74	13.4%	24.26	23.69	23.32	-3.9%
Uruguay	2829	3005	3186	12.6%	6	4.84	3.866	-35.6%	36.35	40.15	44.38	22.1%	31.03	30.52	29.51	-4.9%
Guyana	2759	2802	2941	6.6%	10.8	7.37	5.656	-47.6%	18.12	18.63	20.6	13.7%	22.12	21.32	20.94	-5.3%
Suriname	2492	2781	3079	23.6%	7.5	4.909	3.659	-51.2%	18.33	22.62	27.78	51.6%	24.32	24.51	25.07	3.1%
America-South	2884	3012	3137	8.8%	2.835	2.737	2.636	-7.0%	29.93	33.08	36.46	21.8%	25.67	25.45	25.15	-2.0%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Calories per Capita				Undernourished Children				Adult Obesity Rate				Adult Smoking Rate			
	Available per person per day				Percent of all children				Percent of adults 30 years or older				Percent of adults who smoke tobacco			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	2981	3261	3456	15.9%	3.4	2.108	2.081	-38.8%	4.74	7.329	9.388	98.1%	33.59	35.81	35.05	4.3%
Japan	2812	2981	3212	14.2%	9.426	7.16	5.061	-46.3%	2.528	3.565	5.273	108.6%	29.42	28.32	27.68	-5.9%
Korea, Rep. of	3074	3194	3286	6.9%	5.769	4.636	3.845	-33.4%	15.51	17.13	18.46	19.0%	29.63	27.71	27.05	-8.7%
Korea, Dem. People's Rep. of	2087	2263	2457	17.7%	18.8	10.73	7.8	-58.5%	11.47	13.6	16.38	42.8%	33.18	33.44	33.51	1.0%
Taiwan, China	3453	3521	3492	1.1%	0.991	1.329	1.738	75.4%	27.22	28.43	28.01	2.9%	23.51	21.84	21.56	-8.3%
Hong Kong SAR, China	3554	3523	3428	-3.5%	0	0	0		28.89	28.44	26.81	-7.2%	22.55	21.58	21.79	-3.4%
Mongolia	2285	2730	3110	36.1%	5.3	3.156	2.467	-53.5%	27.83	37.23	46.78	68.1%	24.72	26.28	28.09	13.6%
Asia-East	2964	3228	3417	15.3%	4.15	2.659	2.407	-42.0%	5.476	7.926	9.923	81.2%	32.91	34.71	34.07	3.5%
India	2352	2708	3056	29.9%	43.5	15.21	7.523	-82.7%	2.742	4.526	7.025	156.2%	17.29	18.76	20.68	19.6%
Pakistan	2293	2409	2703	17.9%	31.3	19.04	8.847	-71.7%	4.359	4.941	6.859	57.4%	18.66	19.14	19.97	7.0%
Bangladesh	2281	2520	2852	25.0%	41.3	19.29	9.971	-75.9%	0.3	0.22	0.646	115.3%	23.97	24.74	26.02	8.6%
Afghanistan	2155	2342	2563	18.9%	32.9	18.28	9.902	-69.9%	1.917	2.521	3.526	83.9%	18.53	19.01	19.56	5.6%
Iran, Islamic Rep. of	3044	3089	3158	3.7%	9.5	7.364	5.702	-40.0%	26.29	27.09	28.28	7.6%	15.51	17.46	19	22.5%
Nepal	2360	2403	2574	9.1%	38.8	23.19	11.28	-70.9%	0.4	0.398	0.494	23.5%	26.23	24.36	22.67	-13.6%
Uzbekistan	2581	2765	2897	12.2%	4.4	3.542	3.393	-22.9%	17.89	20.51	22.57	26.2%	12.66	14.19	15.4	21.6%
Sri Lanka	2361	2655	3018	27.8%	21.6	12.19	7.488	-65.3%	0.249	0.701	1.819	630.5%	16.05	17.8	19.8	23.4%
Kazakhstan	3490	3601	3458	-0.9%	4.9	3.716	3.565	-27.2%	14	15.26	13.67	-2.4%	26.15	28.75	28.39	8.6%
Tajikistan	2118	2341	2650	25.1%	15	8.44	5.548	-63.0%	11.24	13.79	18.12	61.2%	26.76	26.12	25.72	-3.9%
Kyrgyz Rep.	2644	2607	2702	2.2%	2.7	2.856	3.193	18.3%	14.34	13.91	15.02	4.7%	23.32	24.2	25.07	7.5%
Turkmenistan	2731	3262	3260	19.4%	10.5	5.176	4.391	-58.2%	17.77	25.97	25.94	46.0%	28.27	30.06	28.22	-0.2%
Bhutan	2516	2867	3145	25.0%	12.7	6.548	4.452	-64.9%	15.14	19.63	23.87	57.7%	17.02	18.87	20.42	20.0%
Maldives	2685	2875	2980	11.0%	17.8	12.91	8.794	-50.6%	23.89	26.79	28.53	19.4%	26.94	27.55	28	3.9%
Asia-South Central	2381	2662	2965	24.5%	38.72	15.55	7.885	-79.6%	4.072	5.367	7.304	79.4%	18.25	19.49	21.01	15.1%
Indonesia	2538	2770	3004	18.4%	17.5	8.034	4.912	-71.9%	2.807	3.563	4.664	66.2%	34.67	35.76	37.48	8.1%
Philippines	2565	2721	2965	15.6%	20.7	12.47	7.684	-62.9%	4.34	5.208	6.904	59.1%	24.93	25.31	26.02	4.4%
Vietnam	2816	2886	2953	4.9%	20.2	11.26	7.621	-62.3%	0.606	0.73	0.877	44.7%	23.02	23.78	25.67	11.5%
Thailand	2539	2758	3003	18.3%	7	5.339	4.163	-40.5%	10.01	12.08	14.76	47.5%	21.33	23.16	24.98	17.1%
Myanmar	2465	2799	3184	29.2%	29.6	13.85	7.615	-74.3%	9.833	13.74	19.3	96.3%	28.11	27.88	29.16	3.7%
Malaysia	2923	3097	3251	11.2%	12.9	9.322	6.551	-49.2%	8.756	10.14	11.51	31.5%	29.4	31.97	33.23	13.0%
Cambodia	2268	2557	2826	24.6%	29	12.77	6.591	-77.3%	0.598	2.069	3.924	556.2%	21.83	21.92	21.95	0.5%
Lao People's Dem. Rep.	2240	2628	3033	35.4%	31.6	8.82	5.14	-83.7%	11.06	16.05	22.65	104.8%	38.45	38.45	39.19	1.9%
Singapore	3260	3346	3339	2.4%	3.3	3.015	2.93	-11.2%	2.74	3.15	3.13	14.2%	24.59	23.74	23.68	-3.7%
Timor-Leste	2066	2484	2871	39.0%	45.3	13.2	6.101	-86.5%	16.53	22.43	29.29	77.2%	24.4	25.03	26.1	7.0%
Brunei Darussalam	2968	3150	3281	10.5%	7.206	5.398	4.218	-41.5%	29.03	32.36	34.99	20.5%	27.47	26.32	25.59	-6.8%
Asia-South East	2592	2793	3014	16.3%	18.39	9.719	6.145	-66.6%	4.515	5.597	7.235	60.2%	28.62	29.55	30.98	8.2%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Calories per Capita				Undernourished Children				Adult Obesity Rate				Adult Smoking Rate			
	Available per person per day				Percent of all children				Percent of adults 30 years or older				Percent of adults who smoke tobacco			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	3517	3418	3396	-3.4%	3.5	3.327	3.117	-10.9%	29.94	28.37	28.11	-6.1%	36.82	36.9	36.24	-1.6%
Iraq	2535	2816	3158	24.6%	7.1	4.027	3.09	-56.5%	18.03	21.87	27.5	52.5%	13.83	15.67	17.8	28.7%
Yemen, Rep. of	2068	2247	2530	22.3%	43.1	20.41	9.867	-77.1%	5.781	7.033	9.54	65.0%	20.61	21.44	22.26	8.0%
Saudi Arabia	3144	3216	3277	4.2%	5.3	4.101	3.438	-35.1%	37.83	39.78	41.51	9.7%	15.6	17.28	17.31	11.0%
Syrian Arab Rep.	3034	2885	3000	-1.1%	10.1	8.202	6.195	-38.7%	23.62	21.53	23.13	-2.1%	23.63	24.33	25.41	7.5%
Jordan	3015	2988	3098	2.8%	1.9	2.426	2.508	32.0%	39.39	38.88	41.39	5.1%	35.58	35.83	36.68	3.1%
Israel	3527	3507	3510	-0.5%	0.109	0.724	1.3	1092.7%	31.27	30.84	30.88	-1.2%	24.17	22.87	22.23	-8.0%
Palestine	2020	2172	2529	25.2%	2.2	3.446	3.047	38.5%	7.428	8.407	11.45	54.1%	12.78	13.59	14.65	14.6%
Azerbaijan	2961	2997	3080	4.0%	8.4	5.009	4.125	-50.9%	28.78	29.36	30.8	7.0%	24.01	26.46	28.38	18.2%
United Arab Emirates	3171	3285	3294	3.9%	4.486	3.814	3.465	-22.8%	36.27	40.11	41.78	15.2%	19.64	18.23	16.64	-15.3%
Kuwait	3064	3283	3315	8.2%	1.7	1.815	2.117	24.5%	49.11	56.92	58.99	20.1%	23.88	22.53	22.05	-7.7%
Lebanon	3107	3142	3138	1.0%	4.2	3.842	3.569	-15.0%	30.02	30.55	30.41	1.3%	17.7	19.56	20.72	17.1%
Oman	2852	3002	3162	10.9%	8.6	5.89	4.548	-47.1%	15.3	17.47	19.94	30.3%	15	16.64	16.92	12.8%
Armenia	2280	2504	2825	23.9%	4.2	3.693	3.229	-23.1%	23.15	26.86	33.04	42.7%	26.75	28.6	30.73	14.9%
Georgia	2859	3021	3131	9.5%	1.1	1.556	2.022	83.8%	16.1	18.09	19.48	21.0%	29.37	31.01	32.63	11.1%
Qatar	3260	3256	3289	0.9%	4.8	4.314	3.751	-21.9%	27.68	28.42	30.25	9.3%	25.61	24.84	23.76	-7.2%
Bahrain	3447	3325	3279	-4.9%	7.6	6.553	5.426	-28.6%	34.5	33.09	33.29	-3.5%	17.38	15.65	14.08	-19.0%
Cyprus	3181	3144	3114	-2.1%	4.363	4.121	3.86	-11.5%	23.39	22.88	22.51	-3.8%	22.99	22.41	22.36	-2.7%
Asia-West	3021	2990	3086	2.2%	9.04	6.413	4.621	-48.9%	25.71	25.06	26.15	1.7%	25.35	24.91	24.7	-2.6%
Australia	3227	3324	3387	5.0%	0	0	0		34.26	36.2	37.51	9.5%	23.41	21.83	21.71	-7.3%
Papua New Guinea	2156	2464	2802	30.0%	18.1	9.552	5.074	-72.0%	2.639	4.57	7.443	182.0%	29.79	30.68	31.61	6.1%
New Zealand	3159	3218	3377	6.9%	4.638	3.931	3.233	-30.3%	42.75	44.08	47.91	12.1%	25.07	24.7	22.61	-9.8%
Solomon Islands	2422	2523	2598	7.3%	11.5	8.9	7.127	-38.0%	15.57	16.91	17.98	15.5%	26.87	27.46	28.05	4.4%
Fiji	3041	2970	3045	0.1%	6.9	5.699	4.212	-39.0%	31.51	30.27	31.61	0.3%	15.12	15.73	16.74	10.7%
Vanuatu	2740	2764	2779	1.4%	11.7	9.038	6.755	-42.3%	29.59	30.04	30.33	2.5%	30.37	30.65	30.8	1.4%
Micronesia (Federated States of)	2347	2499	2662	13.4%	16.85	10.66	6.465	-61.6%	75.8	83.62	92.42	21.9%	27.22	28.02	28.52	4.8%
Tonga	2999	2886	2943	-1.9%	6.781	6.353	5.024	-25.9%	74.79	69.6	72.16	-3.5%	38.39	37.77	37.39	-2.6%
Samoa	2886	2894	2942	1.9%	1.7	2.147	2.568	51.1%	61.97	62.18	63.89	3.1%	41.27	39.74	38.35	-7.1%
Oceania	2986	3075	3195	7.0%	4.571	3.124	2.011	-56.0%	29.19	29.45	30.5	4.5%	24.9	24.47	24.73	-0.7%

Health

	Calories per Capita				Undernourished Children				Adult Obesity Rate				Adult Smoking Rate			
	Available per person per day				Percent of all children				Percent of adults 30 years or older				Percent of adults who smoke tobacco			
Base Case: Countries in Descending Year 2060 Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	3376	3416	3367	-0.3%	1.914	1.861	2.039	6.5%	25.18	25.92	25.21	0.1%	44.94	44.88	43.84	-2.4%
Poland	3421	3405	3369	-1.5%	1.372	1.734	2.043	48.9%	22.99	22.8	22.3	-3.0%	34.49	34.4	32.3	-6.3%
Ukraine	3224	3079	3087	-4.2%	0.9	1.539	2.099	133.2%	20.41	18.62	18.67	-8.5%	39.55	38.52	38.23	-3.3%
Romania	3455	3312	3254	-5.8%	3.5	3.37	2.898	-17.2%	13.04	11.66	11.17	-14.3%	34.09	33.11	32.38	-5.0%
Czech Rep.	3260	3268	3324	2.0%	2.1	2.294	2.398	14.2%	31.09	31.22	32.26	3.8%	29.53	29.55	27.8	-5.9%
Belarus	3146	3170	3188	1.3%	1.3	1.723	2.152	65.5%	27.27	27.75	28.06	2.9%	38.88	39.29	39.64	2.0%
Hungary	3465	3418	3405	-1.7%	0.841	1.321	1.766	110.0%	22.97	22.3	22.12	-3.7%	37.16	36.04	34.2	-8.0%
Bulgaria	2766	2869	2985	7.9%	1.6	2.082	2.448	53.0%	25.3	27.04	29.11	15.1%	32.82	31.99	31.36	-4.4%
Slovak Rep.	2893	3062	3202	10.7%	8.266	6.349	4.839	-41.5%	24.41	27.25	29.78	22.0%	29.63	30.4	29.17	-1.6%
Moldova, Rep. of	2771	2720	2834	2.3%	3.2	3.269	3.165	-1.1%	13.68	13.05	14.33	4.8%	31.99	30.7	29.79	-6.9%
Europe-East	3323	3316	3296	-0.8%	1.876	2.016	2.198	17.2%	23.32	23.46	23.27	-0.2%	40.18	39.83	38.81	-3.4%
United Kingdom	3458	3420	3427	-0.9%	0.921	1.383	1.782	93.5%	33.02	32.31	32.42	-1.8%	32.86	30.66	28.92	-12.0%
Sweden	3110	3219	3334	7.2%	5.284	4.407	3.632	-31.3%	17.8	19.33	21.03	18.1%	21.24	19.66	19.56	-7.9%
Denmark	3416	3400	3442	0.8%	1.43	1.754	1.993	39.4%	14.03	13.83	14.33	2.1%	32.57	30.3	29.1	-10.7%
Ireland	3612	3583	3497	-3.2%	0	0	0		15.4	15.05	14.05	-8.8%	24.39	22.83	22.53	-7.6%
Norway	3464	3486	3485	0.6%	0.853	1.267	1.679	96.8%	15.8	16.08	16.06	1.6%	30.49	28.69	27.75	-9.0%
Finland	3221	3269	3361	4.3%	3.846	3.502	3.093	-19.6%	27.35	28.17	29.79	8.9%	25.76	24.5	24.13	-6.3%
Lithuania	3436	3415	3402	-1.0%	1.184	1.668	1.928	62.8%	21.14	20.85	20.67	-2.2%	30.04	30.64	30.72	2.3%
Latvia	2962	3060	3128	5.6%	7.288	5.665	4.307	-40.9%	18.09	19.32	20.24	11.9%	34.79	35.38	35.51	2.1%
Estonia	3154	3270	3387	7.4%	4.709	3.912	3.29	-30.1%	11.95	13.19	14.56	21.8%	36.2	36.47	33.86	-6.5%
Iceland	3362	3413	3439	2.3%	2.085	2.168	2.277	9.2%	28.78	29.67	30.13	4.7%	25.44	23.32	23.04	-9.4%
Europe-North	3401	3396	3417	0.5%	1.684	1.838	1.985	17.9%	27.53	27.35	27.69	0.6%	30.83	28.91	27.58	-10.5%
Italy	3646	3466	3401	-6.7%	0	0	0		20.65	18.35	17.59	-14.8%	23.37	23.49	22.31	-4.5%
Spain	3272	3255	3309	1.1%	3.202	3.153	2.956	-7.7%	24.9	24.63	25.5	2.4%	31.81	30.69	28.55	-10.2%
Greece	3725	3443	3297	-11.5%	0	0	0		33.96	29.05	26.76	-21.2%	47.41	45.94	44.22	-6.7%
Portugal	3584	3383	3307	-7.7%	0	0	0		23.02	20.23	19.25	-16.4%	31.19	30.71	30.04	-3.7%
Serbia	2710	2818	3011	11.1%	1.8	2.252	2.43	35.0%	27.38	29.34	33.09	20.9%	40.9	37.64	34.95	-14.5%
Croatia	2990	3033	3095	3.5%	1	1.592	2.096	109.6%	26.81	27.57	28.67	6.9%	31.21	30.69	29.67	-4.9%
Bosnia and Herzegovina	3078	3091	3081	0.1%	1.6	1.957	2.379	48.7%	25.64	25.86	25.68	0.2%	40.08	38.08	35.81	-10.7%
Albania	2880	2950	3011	4.5%	6.3	5.172	4.364	-30.7%	30.74	32.14	33.36	8.5%	21.8	23.34	24.51	12.4%
Macedonia, TFYR	3105	2982	3008	-3.1%	1.8	2.32	2.578	43.2%	21.53	19.98	20.45	-5.0%	26.98	26.44	26.26	-2.7%
Slovenia	3223	3218	3276	1.6%	3.814	3.599	3.253	-14.7%	26.87	26.82	27.85	3.6%	24.65	25.25	23.94	-2.9%
Montenegro	2447	2579	2777	13.5%	2.2	2.71	2.988	35.8%	13.47	14.7	16.84	25.0%	26.84	26.59	26.52	-1.2%
Malta	3611	3443	3324	-7.9%	0	0	0		43.65	39.92	37.46	-14.2%	26.9	27.04	26.33	-2.1%
Europe-South	3422	3317	3306	-3.4%	1.342	1.388	1.351	0.7%	24.05	22.68	22.69	-5.7%	29.79	29.23	27.78	-6.7%
Germany	3547	3471	3455	-2.6%	1.1	1.511	1.867	69.7%	31.1	29.77	29.49	-5.2%	28.82	27.65	27.31	-5.2%
France	3532	3452	3457	-2.1%	0.053	0.704	1.318	2386.8%	11.87	11.07	11.12	-6.3%	28.4	27.08	26.47	-6.8%
Netherlands	3278	3241	3285	0.2%	3.13	3.144	2.975	-5.0%	17.75	17.27	17.86	0.6%	33.39	31.66	30.49	-8.7%
Belgium	3694	3521	3443	-6.8%	0	0	0		18.39	16.26	15.36	-16.5%	25.12	23.71	23.67	-5.8%
Switzerland	3465	3406	3412	-1.5%	0.839	1.337	1.763	110.1%	23.21	22.33	22.42	-3.4%	24.8	23.96	23.87	-3.7%
Austria	3819	3664	3555	-6.9%	0	0	0		32.18	29.52	27.76	-13.7%	40.54	37.51	35.63	-12.1%
Luxembourg	3681	3602	3508	-4.7%	0	0	0		20.66	19.62	18.45	-10.7%	32.18	30.39	29.57	-8.1%
Europe-West	3536	3452	3441	-2.7%	0.804	1.211	1.566	94.8%	22.47	20.88	20.25	-9.9%	29.23	27.86	27.27	-6.7%

Health

Base Case

Source: International Futures
Model Version 6.68, Nov 2013

	Disability-Adjusted Life Years												Years (in Millions) Lived with Disabilities			
	Communicable diseases				Noncommunicable diseases				Injuries				Communicable diseases			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	536.4	259.5	107.3	-80.0%	723.7	845.7	893.3	23.4%	156.1	187.2	205.8	31.8%	107.3	62.1	30.58	-71.5%
Africa	280.6	155.9	60.17	-78.6%	104.2	145.8	202.4	94.2%	35.64	54.85	74.21	108.2%	43.55	31.14	14.82	-66.0%
Americas	20.36	11.13	5.517	-72.9%	97.9	116.5	121	23.6%	18.52	22.5	24.93	34.6%	6.634	3.906	2.182	-67.1%
Asia with Oceania	226.9	87.93	39.64	-82.5%	431.2	503.8	506.7	17.5%	89.16	99.72	98.18	10.1%	53.67	25.16	12.65	-76.4%
Europe	8.571	4.514	2.006	-76.6%	89.21	78.55	62.32	-30.1%	12.64	9.957	8.409	-33.5%	3.439	1.874	0.926	-73.1%
World	536.4	259.5	107.3	-80.0%	723.7	845.7	893.3	23.4%	156.1	187.2	205.8	31.8%	107.3	62.1	30.58	-71.5%
Africa-Eastern	89.35	52.18	19.37	-78.3%	30.52	45.76	65.43	114.4%	12.28	19.32	26.65	117.0%	14.54	10.98	4.891	-66.4%
Africa-Middle	56.03	35.2	16.02	-71.4%	15.3	22.52	33.87	121.4%	6.725	11.5	16.99	152.6%	8.822	7.081	4.064	-53.9%
Africa-Northern	12.45	5.298	2.155	-82.7%	19.76	26.19	32.36	63.8%	4.877	6.191	6.929	42.1%	2.406	1.302	0.604	-74.9%
Africa-Southern	15.91	10.43	3.4	-78.6%	4.865	5.218	5.581	14.7%	1.161	1.33	1.407	21.2%	2.042	1.284	0.506	-75.2%
Africa-Western	106.9	52.79	19.22	-82.0%	33.78	46.12	65.18	93.0%	10.59	16.5	22.23	109.9%	15.74	10.49	4.752	-69.8%
Africa	280.6	155.9	60.17	-78.6%	104.2	145.8	202.4	94.2%	35.64	54.85	74.21	108.2%	43.55	31.14	14.82	-66.0%
America-Caribbean	2.56	1.64	0.832	-67.5%	4.28	5.144	5.294	23.7%	0.712	0.879	0.894	25.6%	0.689	0.482	0.278	-59.7%
America-Central	1.89	0.937	0.405	-78.6%	4.093	5.571	7.071	72.8%	1.2	1.847	2.33	94.2%	0.511	0.284	0.141	-72.4%
America-North	4.979	3.581	1.869	-62.5%	46.87	56.11	56.78	21.1%	5.85	7.038	8.004	36.8%	1.877	1.391	0.84	-55.2%
America-South	10.93	4.973	2.411	-77.9%	42.66	49.68	51.83	21.5%	10.76	12.74	13.7	27.3%	3.557	1.748	0.924	-74.0%
Americas	20.36	11.13	5.517	-72.9%	97.9	116.5	121	23.6%	18.52	22.5	24.93	34.6%	6.634	3.906	2.182	-67.1%
Asia-East	26.53	10.28	4.717	-82.2%	161.1	171.8	144	-10.6%	26.35	24.28	19.47	-26.1%	9.117	3.888	1.901	-79.1%
Asia-South Central	164.4	61.1	26.83	-83.7%	185.8	222.7	243.8	31.2%	45.51	54.55	56.47	24.1%	34.39	15.76	7.786	-77.4%
Asia-South East	26.52	11.62	5.654	-78.7%	59.24	75.57	77.7	31.2%	12.53	13.92	13.18	5.2%	7.557	3.836	2.019	-73.3%
Asia-West	8.283	4.153	2.146	-74.1%	21.58	29.22	36.31	68.3%	4.342	6.433	8.398	93.4%	2.197	1.372	0.811	-63.1%
Oceania	1.178	0.785	0.296	-74.9%	3.488	4.507	4.913	40.9%	0.42	0.534	0.664	58.1%	0.414	0.304	0.135	-67.4%
Asia with Oceania	226.9	87.93	39.64	-82.5%	431.2	503.8	506.7	17.5%	89.16	99.72	98.18	10.1%	53.67	25.16	12.65	-76.4%
Europe-East	5.888	2.944	1.163	-80.2%	44.81	35.22	25.94	-42.1%	9.407	6.864	5.445	-42.1%	2.221	1.135	0.507	-77.2%
Europe-North	0.726	0.417	0.234	-67.8%	10.55	10.19	9.068	-14.0%	0.898	0.857	0.856	-4.7%	0.327	0.194	0.115	-64.8%
Europe-South	0.909	0.507	0.25	-72.5%	15.89	15.5	12.9	-18.8%	1.103	0.97	0.829	-24.8%	0.391	0.222	0.116	-70.3%
Europe-West	1.074	0.686	0.376	-65.0%	19.04	18.69	15.25	-19.9%	1.382	1.408	1.388	0.4%	0.512	0.336	0.193	-62.3%
Europe	8.571	4.514	2.006	-76.6%	89.21	78.55	62.32	-30.1%	12.64	9.957	8.409	-33.5%	3.439	1.874	0.926	-73.1%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Disability-Adjusted Life Years												Years (in Millions) Lived with Disabilities			
	Communicable diseases				Noncommunicable diseases				Injuries				Communicable diseases			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	20.02	9.038	2.34	-88.3%	8.424	11.84	15.5	84.0%	2.807	4.127	5.651	101.3%	3.302	2.025	0.642	-80.6%
Tanzania, United Rep. of	11.55	8.431	1.629	-85.9%	3.409	5.689	7.604	123.1%	1.322	2.312	3.181	140.6%	1.921	1.736	0.384	-80.0%
Uganda	10.45	6.811	2.678	-74.4%	2.786	4.746	7.829	181.0%	1.588	2.786	4.266	168.6%	1.683	1.443	0.719	-57.3%
Kenya	10.2	7.977	3.322	-67.4%	3.357	5.637	7.951	136.8%	1.687	2.724	3.74	121.7%	1.701	1.648	0.871	-48.8%
Madagascar	3.301	2.287	2.523	-23.6%	1.753	2.79	4.889	178.9%	0.422	0.668	1.041	146.7%	0.522	0.466	0.551	5.6%
Mozambique	8.725	3.429	0.965	-88.9%	2.982	3.56	4.788	60.6%	1.102	1.635	2.308	109.4%	1.343	0.672	0.213	-84.1%
Malawi	4.887	3.649	2.026	-58.5%	1.136	1.87	3.233	184.6%	0.273	0.467	0.674	146.9%	0.71	0.667	0.463	-34.8%
Zambia	5.305	2.884	0.772	-85.4%	1.527	2.109	2.794	83.0%	0.68	1.102	1.535	125.7%	0.783	0.539	0.161	-79.4%
Somalia	3.704	1.86	0.47	-87.3%	1.199	1.723	2.588	115.8%	0.809	1.242	1.457	80.1%	0.67	0.467	0.163	-75.7%
Rwanda	3.611	1.553	0.512	-85.8%	1.208	1.687	2.317	91.8%	0.551	0.789	0.937	70.1%	0.652	0.385	0.161	-75.3%
Zimbabwe	3.841	2.092	1.1	-71.4%	1.059	1.525	2.09	97.4%	0.4	0.536	0.61	52.5%	0.624	0.469	0.288	-53.8%
Burundi	2.804	1.536	0.817	-70.9%	0.906	1.346	2.072	128.7%	0.393	0.562	0.759	93.1%	0.468	0.341	0.221	-52.8%
Eritrea	0.676	0.432	0.133	-80.3%	0.477	0.853	1.341	181.1%	0.178	0.294	0.405	127.5%	0.115	0.087	0.033	-71.3%
Comoros	0.085	0.086	0.048	-43.5%	0.052	0.093	0.15	188.5%	0.012	0.021	0.029	141.7%	0.012	0.014	0.01	-16.7%
Djibouti	0.174	0.104	0.034	-80.5%	0.111	0.139	0.143	28.8%	0.04	0.044	0.043	7.5%	0.032	0.023	0.01	-68.8%
Mauritius	0.018	0.01	0.004	-77.8%	0.136	0.154	0.136	0.0%	0.016	0.015	0.013	-18.8%	0.003	0.002	0.001	-66.7%
Africa-Eastern	89.35	52.18	19.37	-78.3%	30.52	45.76	65.43	114.4%	12.28	19.32	26.65	117.0%	14.54	10.98	4.891	-66.4%
Congo, Democratic Rep. of	33.1	21.71	10.08	-69.5%	8.163	12.92	20.86	155.5%	3.736	6.721	10.46	180.0%	5.616	4.653	2.737	-51.3%
Angola	7.989	3.075	1.292	-83.8%	2.349	2.729	3.628	54.4%	1.123	1.861	2.476	120.5%	1.118	0.608	0.3	-73.2%
Cameroon	6.225	4.362	1.753	-71.8%	2.459	3.401	4.307	75.2%	0.913	1.35	1.826	100.0%	0.835	0.718	0.357	-57.2%
Chad	5.447	4.143	2.027	-62.8%	1.152	1.913	2.99	159.5%	0.437	0.789	1.217	178.5%	0.729	0.726	0.464	-36.4%
Central African Rep.	1.747	1.111	0.462	-73.6%	0.544	0.757	1.039	91.0%	0.237	0.346	0.455	92.0%	0.276	0.218	0.114	-58.7%
Congo, Rep. of	1.058	0.492	0.221	-79.1%	0.4	0.489	0.649	62.2%	0.187	0.311	0.395	111.2%	0.178	0.105	0.056	-68.5%
Gabon	0.221	0.144	0.072	-67.4%	0.121	0.173	0.222	83.5%	0.048	0.066	0.073	52.1%	0.033	0.025	0.015	-54.5%
Equatorial Guinea	0.224	0.145	0.098	-56.3%	0.098	0.111	0.145	48.0%	0.039	0.052	0.077	97.4%	0.033	0.024	0.019	-42.4%
São Tomé and Príncipe	0.018	0.014	0.009	-50.0%	0.014	0.021	0.03	114.3%	0.005	0.007	0.009	80.0%	0.003	0.003	0.002	-33.3%
Africa-Middle	56.03	35.2	16.02	-71.4%	15.3	22.52	33.87	121.4%	6.725	11.5	16.99	152.6%	8.822	7.081	4.064	-53.9%
Egypt	2.38	1.165	0.634	-73.4%	8.697	11.25	13.84	59.1%	1.055	1.281	1.304	23.6%	0.539	0.306	0.188	-65.1%
Sudan	7.499	2.798	0.731	-90.3%	4.611	6.12	8.069	75.0%	2.844	3.726	4.351	53.0%	1.313	0.684	0.221	-83.2%
Algeria	1.126	0.71	0.474	-57.9%	2.328	3.421	4.126	77.2%	0.39	0.507	0.57	46.2%	0.174	0.116	0.079	-54.6%
Morocco	0.96	0.381	0.169	-82.4%	2.687	3.557	4.089	52.2%	0.402	0.465	0.475	18.2%	0.185	0.09	0.047	-74.6%
Tunisia	0.363	0.191	0.108	-70.2%	0.879	1.103	1.254	42.7%	0.112	0.125	0.122	8.9%	0.141	0.081	0.05	-64.5%
Libya	0.124	0.052	0.04	-67.7%	0.554	0.737	0.984	77.6%	0.075	0.088	0.106	41.3%	0.054	0.025	0.02	-63.0%
Africa-Northern	12.45	5.298	2.155	-82.7%	19.76	26.19	32.36	63.8%	4.877	6.191	6.929	42.1%	2.406	1.302	0.604	-74.9%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Disability-Adjusted Life Years												Years (in Millions) Lived with Disabilities			
	Communicable diseases				Noncommunicable diseases				Injuries				Communicable diseases			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	14.17	9.583	3.083	-78.2%	4.044	4.282	4.507	11.4%	0.845	0.931	0.988	16.9%	1.802	1.141	0.44	-75.6%
Namibia	0.286	0.133	0.059	-79.4%	0.191	0.247	0.309	61.8%	0.063	0.095	0.112	77.8%	0.042	0.023	0.012	-71.4%
Lesotho	0.691	0.314	0.1	-85.5%	0.248	0.272	0.305	23.0%	0.128	0.144	0.139	8.6%	0.099	0.056	0.022	-77.8%
Botswana	0.394	0.182	0.072	-81.7%	0.239	0.246	0.259	8.4%	0.073	0.089	0.09	23.3%	0.052	0.029	0.014	-73.1%
Swaziland	0.37	0.218	0.086	-76.8%	0.144	0.171	0.202	40.3%	0.051	0.071	0.079	54.9%	0.047	0.035	0.018	-61.7%
Africa-Southern	15.91	10.43	3.4	-78.6%	4.865	5.218	5.581	14.7%	1.161	1.33	1.407	21.2%	2.042	1.284	0.506	-75.2%
Nigeria	65.37	28.26	8.246	-87.4%	19.96	25.19	33.78	69.2%	6.392	9.899	13.1	104.9%	9.702	5.766	2.134	-78.0%
Niger	6.403	4.935	2.682	-58.1%	1.321	2.404	4.624	250.0%	0.311	0.619	1.057	239.9%	0.898	0.95	0.675	-24.8%
Côte d'Ivoire	4.849	3.109	1.148	-76.3%	1.733	2.639	3.746	116.2%	0.656	0.986	1.291	96.8%	0.766	0.634	0.296	-61.4%
Burkina Faso	5.82	3.609	1.339	-77.0%	1.505	2.427	3.711	146.6%	0.537	0.867	1.205	124.4%	0.784	0.663	0.328	-58.2%
Ghana	4.901	2.204	0.441	-91.0%	2.624	3.37	3.782	44.1%	0.755	1.1	1.235	63.6%	0.769	0.434	0.096	-87.5%
Mali	6.164	1.84	0.543	-91.2%	1.454	1.922	3.07	111.1%	0.426	0.649	0.972	128.2%	0.863	0.427	0.167	-80.6%
Senegal	2.838	2.909	1.914	-32.6%	1.274	2.161	3.365	164.1%	0.318	0.535	0.762	139.6%	0.443	0.517	0.403	-9.0%
Guinea	2.451	1.171	0.555	-77.4%	0.972	1.334	2.105	116.6%	0.333	0.484	0.68	104.2%	0.345	0.23	0.136	-60.6%
Benin	1.871	1.192	0.66	-64.7%	0.791	1.23	1.918	142.5%	0.228	0.371	0.54	136.8%	0.261	0.218	0.145	-44.4%
Togo	1.21	0.991	0.556	-54.0%	0.48	0.812	1.189	147.7%	0.124	0.186	0.233	87.9%	0.173	0.17	0.115	-33.5%
Sierra Leone	2.241	0.79	0.185	-91.7%	0.607	0.917	1.288	112.2%	0.206	0.32	0.492	138.8%	0.333	0.157	0.043	-87.1%
Liberia	0.971	0.47	0.218	-77.5%	0.313	0.578	0.927	196.2%	0.064	0.119	0.19	196.9%	0.147	0.094	0.052	-64.6%
Mauritania	0.708	0.546	0.289	-59.2%	0.323	0.502	0.712	120.4%	0.109	0.159	0.202	85.3%	0.107	0.1	0.065	-39.3%
Gambia	0.368	0.22	0.13	-64.7%	0.176	0.29	0.49	178.4%	0.051	0.081	0.114	123.5%	0.053	0.043	0.03	-43.4%
Guinea-Bissau	0.673	0.539	0.31	-53.9%	0.21	0.296	0.411	95.7%	0.077	0.114	0.151	96.1%	0.094	0.091	0.065	-30.9%
Cape Verde	0.017	0.008	0.005	-70.6%	0.034	0.046	0.06	76.5%	0.007	0.009	0.01	42.9%	0.003	0.001	0.001	-66.7%
Africa-Western	106.9	52.79	19.22	-82.0%	33.78	46.12	65.18	93.0%	10.59	16.5	22.23	109.9%	15.74	10.49	4.752	-69.8%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Disability-Adjusted Life Years												Years (in Millions) Lived with Disabilities			
	Communicable diseases				Noncommunicable diseases				Injuries				Communicable diseases			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	1.691	1.267	0.68	-59.8%	1.097	1.542	1.971	79.7%	0.189	0.243	0.255	34.9%	0.412	0.354	0.219	-46.8%
Dominican Rep.	0.565	0.207	0.078	-86.2%	0.963	1.168	1.275	32.4%	0.263	0.34	0.341	29.7%	0.181	0.075	0.032	-82.3%
Cuba	0.076	0.042	0.023	-69.7%	1.146	1.22	0.87	-24.1%	0.104	0.105	0.096	-7.7%	0.029	0.015	0.007	-75.9%
Puerto Rico	0.034	0.017	0.009	-73.5%	0.507	0.567	0.539	6.3%	0.046	0.048	0.045	-2.2%	0.013	0.007	0.004	-69.2%
Jamaica	0.116	0.076	0.029	-75.0%	0.276	0.327	0.334	21.0%	0.073	0.106	0.121	65.8%	0.033	0.021	0.01	-69.7%
Trinidad and Tobago	0.056	0.021	0.008	-85.7%	0.189	0.192	0.175	-7.4%	0.027	0.025	0.023	-14.8%	0.016	0.006	0.003	-81.3%
Bahamas	0.008	0.004	0.002	-75.0%	0.035	0.046	0.048	37.1%	0.005	0.006	0.006	20.0%	0.002	0.001	0.001	-50.0%
Barbados	0.005	0.003	0.001	-80.0%	0.026	0.032	0.027	3.8%	0.001	0.001	0.001	0.0%	0.001	0.001	0.001	0.0%
Saint Lucia	0.003	0.001	0.001	-66.7%	0.02	0.022	0.021	5.0%	0.003	0.003	0.003	0.0%	0.001	0.001	0	
Grenada	0.002	0.001	0.001	-50.0%	0.01	0.013	0.016	60.0%	0.001	0.001	0.001	0.0%	0.001	0	0	
Saint Vincent and the Grenadines	0.004	0.001	0.001	-75.0%	0.012	0.015	0.016	33.3%	0.001	0.002	0.002	100.0%	0.001	0.001	0	
America-Caribbean	2.56	1.64	0.832	-67.5%	4.28	5.144	5.294	23.7%	0.712	0.879	0.894	25.6%	0.689	0.482	0.278	-59.7%
Guatemala	0.888	0.403	0.157	-82.3%	1.253	1.757	2.418	93.0%	0.492	0.857	1.187	141.3%	0.192	0.101	0.045	-76.6%
Honduras	0.468	0.221	0.094	-79.9%	0.777	1.115	1.474	89.7%	0.162	0.244	0.31	91.4%	0.162	0.089	0.043	-73.5%
Nicaragua	0.168	0.107	0.062	-63.1%	0.586	0.868	1.121	91.3%	0.122	0.155	0.166	36.1%	0.042	0.029	0.019	-54.8%
El Salvador	0.209	0.122	0.054	-74.2%	0.729	0.883	0.996	36.6%	0.297	0.431	0.488	64.3%	0.065	0.038	0.02	-69.2%
Costa Rica	0.04	0.022	0.011	-72.5%	0.389	0.521	0.573	47.3%	0.065	0.083	0.091	40.0%	0.014	0.008	0.004	-71.4%
Panama	0.104	0.055	0.025	-76.0%	0.334	0.392	0.441	32.0%	0.059	0.07	0.08	35.6%	0.032	0.016	0.009	-71.9%
Belize	0.013	0.007	0.003	-76.9%	0.025	0.036	0.047	88.0%	0.004	0.006	0.007	75.0%	0.004	0.002	0.001	-75.0%
America-Central	1.89	0.937	0.405	-78.6%	4.093	5.571	7.071	72.8%	1.2	1.847	2.33	94.2%	0.511	0.284	0.141	-72.4%
United States of America	2.693	2.3	1.231	-54.3%	32.76	38.55	38.31	16.9%	3.977	4.697	5.479	37.8%	1.063	0.915	0.567	-46.7%
Mexico	2.111	1.142	0.549	-74.0%	10.84	13.63	14.61	34.8%	1.593	2.019	2.141	34.4%	0.739	0.412	0.228	-69.1%
Canada	0.176	0.139	0.09	-48.9%	3.265	3.943	3.858	18.2%	0.281	0.322	0.384	36.7%	0.074	0.065	0.046	-37.8%
America-North	4.979	3.581	1.869	-62.5%	46.87	56.11	56.78	21.1%	5.85	7.038	8.004	36.8%	1.877	1.391	0.84	-55.2%
Brazil	5.127	2.126	1.033	-79.9%	22.84	25.6	25.01	9.5%	5.731	6.309	6.535	14.0%	1.812	0.839	0.435	-76.0%
Colombia	1.346	0.671	0.282	-79.0%	4.586	5.793	6.468	41.0%	1.782	2.427	2.899	62.7%	0.433	0.212	0.106	-75.5%
Argentina	0.811	0.484	0.254	-68.7%	4.449	4.922	5.34	20.0%	0.573	0.621	0.663	15.7%	0.262	0.155	0.095	-63.7%
Peru	1.047	0.509	0.304	-71.0%	2.848	3.408	3.895	36.8%	0.645	0.725	0.703	9.0%	0.259	0.135	0.083	-68.0%
Venezuela (Bolivarian Rep. of)	0.683	0.254	0.113	-83.5%	2.759	3.494	3.861	39.9%	0.903	1.193	1.311	45.2%	0.253	0.108	0.051	-79.8%
Ecuador	0.357	0.174	0.091	-74.5%	1.235	1.565	1.835	48.6%	0.358	0.487	0.559	56.1%	0.089	0.048	0.028	-68.5%
Chile	0.132	0.091	0.053	-59.8%	1.57	1.876	1.845	17.5%	0.232	0.264	0.284	22.4%	0.043	0.029	0.019	-55.8%
Bolivia (Plurinational State of)	0.979	0.427	0.178	-81.8%	1.172	1.579	1.961	67.3%	0.297	0.391	0.393	32.3%	0.255	0.135	0.063	-75.3%
Paraguay	0.328	0.186	0.083	-74.7%	0.684	0.928	1.133	65.6%	0.167	0.243	0.287	71.9%	0.115	0.07	0.036	-68.7%
Uruguay	0.048	0.027	0.011	-77.1%	0.369	0.364	0.348	-5.7%	0.04	0.042	0.042	5.0%	0.015	0.008	0.004	-73.3%
Guyana	0.048	0.016	0.005	-89.6%	0.085	0.088	0.078	-8.2%	0.019	0.019	0.015	-21.1%	0.016	0.006	0.002	-87.5%
Suriname	0.022	0.01	0.003	-86.4%	0.066	0.067	0.055	-16.7%	0.014	0.013	0.011	-21.4%	0.007	0.003	0.001	-85.7%
America-South	10.93	4.973	2.411	-77.9%	42.66	49.68	51.83	21.5%	10.76	12.74	13.7	27.3%	3.557	1.748	0.924	-74.0%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Disability-Adjusted Life Years												Years (in Millions) Lived with Disabilities			
	Communicable diseases				Noncommunicable diseases				Injuries				Communicable diseases			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	23.72	8.741	3.949	-83.4%	138.5	146.8	122.9	-11.3%	24.3	22.29	17.72	-27.1%	8.301	3.407	1.652	-80.1%
Japan	0.871	0.675	0.395	-54.6%	10.89	10.41	8.13	-25.3%	1.044	0.99	0.878	-15.9%	0.346	0.243	0.137	-60.4%
Korea, Rep. of	0.222	0.156	0.101	-54.5%	3.901	4.531	3.732	-4.3%	0.552	0.566	0.485	-12.1%	0.075	0.051	0.033	-56.0%
Korea, Dem. People's Rep. of	1.55	0.65	0.248	-84.0%	2.768	3.159	2.989	8.0%	0.282	0.284	0.257	-8.9%	0.346	0.166	0.069	-80.1%
Taiwan, China	0.022	0.011	0.006	-72.7%	3.732	4.96	4.369	17.1%	0.095	0.067	0.051	-46.3%	0.007	0.003	0.002	-71.4%
Hong Kong SAR, China	0.004	0.003	0.002	-50.0%	1.008	1.471	1.474	46.2%	0.013	0.012	0.012	-7.7%	0.001	0.001	0.001	0.0%
Mongolia	0.137	0.043	0.018	-86.9%	0.361	0.426	0.411	13.9%	0.063	0.077	0.07	11.1%	0.041	0.016	0.008	-80.5%
Asia-East	26.53	10.28	4.717	-82.2%	161.1	171.8	144	-10.6%	26.35	24.28	19.47	-26.1%	9.117	3.888	1.901	-79.1%
India	109.6	25.92	11.19	-89.8%	133.5	150.5	157.6	18.1%	31.56	37	36.53	15.7%	22.61	7.045	3.178	-85.9%
Pakistan	18.22	14.31	5.269	-71.1%	13.56	20.24	25.09	85.0%	3.403	4.841	5.864	72.3%	3.502	3.129	1.398	-60.1%
Bangladesh	12.75	6.328	2.166	-83.0%	13.66	20.51	22.68	66.0%	3.013	3.357	3.162	4.9%	2.912	1.691	0.637	-78.1%
Afghanistan	15.03	10.48	6.257	-58.4%	5.607	8.789	13.11	133.8%	2.476	4.071	5.821	135.1%	2.694	2.486	1.816	-32.6%
Iran, Islamic Rep. of	2.349	1.05	0.551	-76.5%	6.789	8.058	9.06	33.5%	2.509	2.548	2.272	-9.4%	0.952	0.469	0.269	-71.7%
Nepal	2.252	1.245	0.596	-73.5%	2.431	3.665	4.958	103.9%	0.412	0.521	0.591	43.4%	0.499	0.318	0.174	-65.1%
Uzbekistan	1.849	0.641	0.228	-87.7%	3.495	4.016	4.393	25.7%	0.536	0.595	0.581	8.4%	0.545	0.242	0.1	-81.7%
Sri Lanka	0.287	0.146	0.074	-74.2%	1.862	2.145	1.967	5.6%	0.593	0.712	0.746	25.8%	0.086	0.047	0.026	-69.8%
Kazakhstan	0.593	0.177	0.094	-84.1%	2.701	2.111	1.827	-32.4%	0.625	0.484	0.452	-27.7%	0.157	0.062	0.035	-77.7%
Tajikistan	0.762	0.513	0.239	-68.6%	0.764	1.014	1.242	62.6%	0.12	0.149	0.145	20.8%	0.227	0.178	0.095	-58.1%
Kyrgyz Rep.	0.291	0.198	0.11	-62.2%	0.624	0.885	1.048	67.9%	0.118	0.164	0.185	56.8%	0.081	0.063	0.039	-51.9%
Turkmenistan	0.384	0.071	0.043	-88.8%	0.664	0.615	0.713	7.4%	0.125	0.085	0.092	-26.4%	0.106	0.028	0.018	-83.0%
Bhutan	0.055	0.018	0.01	-81.8%	0.064	0.074	0.083	29.7%	0.022	0.021	0.021	-4.5%	0.012	0.005	0.003	-75.0%
Maldives	0.007	0.003	0.002	-71.4%	0.026	0.036	0.048	84.6%	0.002	0.002	0.002	0.0%	0.001	0.001	0.001	0.0%
Asia-South Central	164.4	61.1	26.83	-83.7%	185.8	222.7	243.8	31.2%	45.51	54.55	56.47	24.1%	34.39	15.76	7.786	-77.4%
Indonesia	10.15	3.618	1.946	-80.8%	20.71	26.75	27.37	32.2%	3.538	4.445	4.417	24.8%	2.873	1.167	0.664	-76.9%
Philippines	3.905	2.652	1.619	-58.5%	9.716	14.08	16.37	68.5%	1.072	1.726	2.1	95.9%	1.388	0.998	0.612	-55.9%
Vietnam	2.828	1.68	0.657	-76.8%	8.328	10.18	10.43	25.2%	1.224	1.441	1.549	26.6%	0.9	0.55	0.249	-72.3%
Thailand	2.267	0.978	0.409	-82.0%	10.63	11.14	9.351	-12.0%	2.267	2.251	1.925	-15.1%	0.521	0.254	0.124	-76.2%
Myanmar	3.846	1.149	0.275	-92.8%	4.136	5.854	5.462	32.1%	3.686	3.189	2.282	-38.1%	0.761	0.29	0.069	-90.9%
Malaysia	0.524	0.505	0.361	-31.1%	2.49	3.488	4.059	63.0%	0.29	0.346	0.343	18.3%	0.167	0.169	0.134	-19.8%
Cambodia	2.051	0.774	0.306	-85.1%	2.09	2.533	2.87	37.3%	0.264	0.294	0.311	17.8%	0.643	0.302	0.135	-79.0%
Lao People's Dem. Rep.	0.7	0.174	0.037	-94.7%	0.608	0.727	0.858	41.1%	0.14	0.166	0.173	23.6%	0.239	0.077	0.017	-92.9%
Singapore	0.04	0.041	0.028	-30.0%	0.396	0.586	0.598	51.0%	0.025	0.028	0.028	12.0%	0.014	0.012	0.007	-50.0%
Timor-Leste	0.201	0.042	0.014	-93.0%	0.098	0.15	0.24	144.9%	0.019	0.027	0.043	126.3%	0.047	0.015	0.006	-87.2%
Brunei Darussalam	0.005	0.003	0.002	-60.0%	0.045	0.076	0.088	95.6%	0.005	0.005	0.005	0.0%	0.003	0.002	0.001	-66.7%
Asia-South East	26.52	11.62	5.654	-78.7%	59.24	75.57	77.7	31.2%	12.53	13.92	13.18	5.2%	7.557	3.836	2.019	-73.3%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Disability-Adjusted Life Years												Years (in Millions) Lived with Disabilities			
	Communicable diseases				Noncommunicable diseases				Injuries				Communicable diseases			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	1.593	0.828	0.475	-70.2%	8.226	9.558	9.755	18.6%	0.749	0.767	0.735	-1.9%	0.513	0.298	0.181	-64.7%
Iraq	1.877	0.78	0.288	-84.7%	2.148	3.319	4.714	119.5%	1.303	2.564	3.802	191.8%	0.373	0.215	0.095	-74.5%
Yemen, Rep. of	2.743	1.381	0.666	-75.7%	2.197	3.665	6.237	183.9%	0.836	1.377	2.023	142.0%	0.489	0.331	0.191	-60.9%
Saudi Arabia	0.508	0.315	0.255	-49.8%	2.214	3.435	4.263	92.5%	0.57	0.59	0.548	-3.9%	0.219	0.146	0.121	-44.7%
Syrian Arab Rep.	0.424	0.229	0.104	-75.5%	1.908	2.728	3.536	85.3%	0.26	0.362	0.405	55.8%	0.184	0.111	0.055	-70.1%
Jordan	0.205	0.141	0.075	-63.4%	0.603	0.894	1.236	105.0%	0.106	0.16	0.185	74.5%	0.088	0.066	0.038	-56.8%
Israel	0.057	0.043	0.033	-42.1%	0.694	0.889	1.055	52.0%	0.042	0.065	0.089	111.9%	0.03	0.024	0.019	-36.7%
Palestine	0.133	0.096	0.036	-72.9%	0.34	0.598	0.933	174.4%	0.09	0.178	0.275	205.6%	0.061	0.05	0.021	-65.6%
Azerbaijan	0.423	0.164	0.09	-78.7%	1.034	1.207	1.175	13.6%	0.101	0.097	0.086	-14.9%	0.123	0.057	0.034	-72.4%
United Arab Emirates	0.025	0.032	0.035	40.0%	0.222	0.503	0.648	191.9%	0.047	0.052	0.039	-17.0%	0.01	0.012	0.015	50.0%
Kuwait	0.019	0.012	0.012	-36.8%	0.163	0.278	0.44	169.9%	0.026	0.027	0.032	23.1%	0.007	0.005	0.005	-28.6%
Lebanon	0.08	0.046	0.027	-66.3%	0.47	0.549	0.574	22.1%	0.069	0.075	0.075	8.7%	0.034	0.021	0.013	-61.8%
Oman	0.018	0.012	0.008	-55.6%	0.182	0.334	0.502	175.8%	0.029	0.026	0.027	-6.9%	0.008	0.006	0.004	-50.0%
Armenia	0.069	0.038	0.018	-73.9%	0.39	0.406	0.372	-4.6%	0.033	0.033	0.027	-18.2%	0.023	0.014	0.007	-69.6%
Georgia	0.085	0.024	0.011	-87.1%	0.551	0.428	0.322	-41.6%	0.043	0.032	0.025	-41.9%	0.026	0.009	0.005	-80.8%
Qatar	0.01	0.006	0.006	-40.0%	0.096	0.19	0.264	175.0%	0.026	0.017	0.013	-50.0%	0.004	0.003	0.003	-25.0%
Bahrain	0.008	0.007	0.005	-37.5%	0.058	0.137	0.178	206.9%	0.007	0.006	0.006	-14.3%	0.003	0.003	0.002	-33.3%
Cyprus	0.004	0.002	0.002	-50.0%	0.082	0.101	0.106	29.3%	0.005	0.006	0.006	20.0%	0.002	0.001	0.001	-50.0%
Asia-West	8.283	4.153	2.146	-74.1%	21.58	29.22	36.31	68.3%	4.342	6.433	8.398	93.4%	2.197	1.372	0.811	-63.1%
Australia	0.132	0.084	0.054	-59.1%	1.874	2.283	2.407	28.4%	0.19	0.206	0.243	27.9%	0.077	0.049	0.032	-58.4%
Papua New Guinea	0.912	0.598	0.17	-81.4%	0.911	1.365	1.612	76.9%	0.165	0.254	0.345	109.1%	0.287	0.215	0.073	-74.6%
New Zealand	0.027	0.015	0.008	-70.4%	0.403	0.461	0.424	5.2%	0.043	0.046	0.048	11.6%	0.016	0.009	0.005	-68.8%
Solomon Islands	0.047	0.044	0.038	-19.1%	0.077	0.126	0.186	141.6%	0.007	0.01	0.014	100.0%	0.014	0.015	0.014	0.0%
Fiji	0.031	0.018	0.009	-71.0%	0.142	0.154	0.133	-6.3%	0.01	0.009	0.006	-40.0%	0.01	0.007	0.004	-60.0%
Vanuatu	0.012	0.012	0.008	-33.3%	0.029	0.047	0.064	120.7%	0.002	0.003	0.004	100.0%	0.004	0.004	0.003	-25.0%
Micronesia (Federated States of)	0.006	0.006	0.004	-33.3%	0.016	0.024	0.033	106.3%	0.001	0.002	0.002	100.0%	0.002	0.002	0.002	0.0%
Tonga	0.004	0.004	0.003	-25.0%	0.015	0.022	0.028	86.7%	0.001	0.001	0.002	100.0%	0.001	0.002	0.001	0.0%
Samoa	0.007	0.004	0.002	-71.4%	0.022	0.025	0.025	13.6%	0.001	0.001	0.001	0.0%	0.002	0.002	0.001	-50.0%
Oceania	1.178	0.785	0.296	-74.9%	3.488	4.507	4.913	40.9%	0.42	0.534	0.664	58.1%	0.414	0.304	0.135	-67.4%

Health

Base Case: Countries in Descending Year 2060 Population Sequence	Disability-Adjusted Life Years												Years (in Millions) Lived with Disabilities			
	Communicable diseases				Noncommunicable diseases				Injuries				Communicable diseases			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	3.727	1.843	0.722	-80.6%	23.58	17.71	12.96	-45.0%	6.39	4.448	3.635	-43.1%	1.427	0.719	0.323	-77.4%
Poland	0.204	0.102	0.053	-74.0%	4.354	3.912	3.06	-29.7%	0.578	0.463	0.354	-38.8%	0.059	0.029	0.015	-74.6%
Ukraine	1.37	0.711	0.246	-82.0%	7.63	5.626	3.824	-49.9%	1.288	0.994	0.716	-44.4%	0.546	0.289	0.117	-78.6%
Romania	0.228	0.105	0.05	-78.1%	2.771	2.419	1.839	-33.6%	0.337	0.279	0.196	-41.8%	0.061	0.03	0.015	-75.4%
Czech Rep.	0.063	0.039	0.024	-61.9%	1.19	1.161	0.949	-20.3%	0.126	0.118	0.104	-17.5%	0.026	0.016	0.01	-61.5%
Belarus	0.105	0.04	0.018	-82.9%	1.529	1.219	0.936	-38.8%	0.335	0.258	0.204	-39.1%	0.039	0.017	0.008	-79.5%
Hungary	0.05	0.026	0.015	-70.0%	1.493	1.217	0.876	-41.3%	0.114	0.102	0.084	-26.3%	0.022	0.012	0.007	-68.2%
Bulgaria	0.05	0.024	0.013	-74.0%	1.087	0.838	0.591	-45.6%	0.089	0.064	0.049	-44.9%	0.013	0.007	0.004	-69.2%
Slovak Rep.	0.03	0.016	0.01	-66.7%	0.604	0.596	0.479	-20.7%	0.074	0.064	0.047	-36.5%	0.007	0.004	0.002	-71.4%
Moldova, Rep. of	0.062	0.038	0.014	-77.4%	0.57	0.525	0.429	-24.7%	0.077	0.073	0.056	-27.3%	0.022	0.013	0.005	-77.3%
Europe-East	5.888	2.944	1.163	-80.2%	44.81	35.22	25.94	-42.1%	9.407	6.864	5.445	-42.1%	2.221	1.135	0.507	-77.2%
United Kingdom	0.481	0.266	0.153	-68.2%	6.716	6.55	5.884	-12.4%	0.444	0.434	0.444	0.0%	0.22	0.126	0.076	-65.5%
Sweden	0.043	0.029	0.018	-58.1%	0.857	0.819	0.719	-16.1%	0.074	0.076	0.081	9.5%	0.021	0.014	0.009	-57.1%
Denmark	0.034	0.021	0.011	-67.6%	0.651	0.625	0.538	-17.4%	0.047	0.047	0.048	2.1%	0.016	0.01	0.006	-62.5%
Ireland	0.023	0.017	0.012	-47.8%	0.397	0.468	0.505	27.2%	0.04	0.044	0.052	30.0%	0.01	0.007	0.004	-60.0%
Norway	0.028	0.022	0.015	-46.4%	0.437	0.478	0.452	3.4%	0.045	0.047	0.053	17.8%	0.014	0.011	0.008	-42.9%
Finland	0.02	0.012	0.005	-75.0%	0.51	0.464	0.371	-27.3%	0.083	0.076	0.072	-13.3%	0.01	0.006	0.003	-70.0%
Lithuania	0.035	0.017	0.008	-77.1%	0.463	0.378	0.284	-38.7%	0.097	0.08	0.063	-35.1%	0.012	0.006	0.003	-75.0%
Latvia	0.035	0.02	0.007	-80.0%	0.322	0.256	0.195	-39.4%	0.042	0.034	0.028	-33.3%	0.013	0.007	0.003	-76.9%
Estonia	0.025	0.014	0.004	-84.0%	0.176	0.128	0.095	-46.0%	0.024	0.016	0.012	-50.0%	0.009	0.005	0.002	-77.8%
Iceland	0.001	0.001	0		0.023	0.026	0.025	8.7%	0.002	0.003	0.003	50.0%	0.001	0	0	
Europe-North	0.726	0.417	0.234	-67.8%	10.55	10.19	9.068	-14.0%	0.898	0.857	0.856	-4.7%	0.327	0.194	0.115	-64.8%
Italy	0.298	0.156	0.068	-77.2%	6.198	5.888	4.691	-24.3%	0.391	0.347	0.31	-20.7%	0.138	0.075	0.035	-74.6%
Spain	0.303	0.181	0.092	-69.6%	4.509	4.666	4.091	-9.3%	0.299	0.263	0.225	-24.7%	0.136	0.082	0.045	-66.9%
Greece	0.061	0.037	0.022	-63.9%	1.168	1.158	1.02	-12.7%	0.096	0.082	0.068	-29.2%	0.022	0.013	0.008	-63.6%
Portugal	0.098	0.053	0.025	-74.5%	1.216	1.17	0.973	-20.0%	0.088	0.077	0.063	-28.4%	0.039	0.021	0.01	-74.4%
Serbia	0.045	0.024	0.012	-73.3%	0.949	0.835	0.655	-31.0%	0.063	0.054	0.041	-34.9%	0.016	0.009	0.005	-68.8%
Croatia	0.024	0.012	0.007	-70.8%	0.545	0.473	0.366	-32.8%	0.047	0.042	0.036	-23.4%	0.011	0.006	0.004	-63.6%
Bosnia and Herzegovina	0.021	0.01	0.006	-71.4%	0.447	0.435	0.348	-22.1%	0.036	0.029	0.022	-38.9%	0.007	0.004	0.002	-71.4%
Albania	0.026	0.014	0.009	-65.4%	0.29	0.301	0.285	-1.7%	0.036	0.03	0.024	-33.3%	0.008	0.004	0.003	-62.5%
Macedonia, TFYR	0.019	0.01	0.005	-73.7%	0.244	0.248	0.208	-14.8%	0.013	0.013	0.011	-15.4%	0.007	0.004	0.002	-71.4%
Slovenia	0.01	0.006	0.003	-70.0%	0.211	0.208	0.162	-23.2%	0.027	0.025	0.022	-18.5%	0.004	0.002	0.001	-75.0%
Montenegro	0.004	0.002	0.002	-50.0%	0.071	0.072	0.063	-11.3%	0.006	0.006	0.005	-16.7%	0.002	0.001	0.001	-50.0%
Malta	0.002	0.001	0.001	-50.0%	0.043	0.046	0.038	-11.6%	0.002	0.002	0.002	0.0%	0.001	0.001	0	
Europe-South	0.909	0.507	0.25	-72.5%	15.89	15.5	12.9	-18.8%	1.103	0.97	0.829	-24.8%	0.391	0.222	0.116	-70.3%
Germany	0.413	0.283	0.154	-62.7%	8.789	8.304	6.475	-26.3%	0.509	0.48	0.443	-13.0%	0.192	0.133	0.076	-60.4%
France	0.402	0.23	0.128	-68.2%	5.964	5.915	5.035	-15.6%	0.553	0.595	0.61	10.3%	0.201	0.122	0.073	-63.7%
Netherlands	0.095	0.074	0.042	-55.8%	1.644	1.807	1.529	-7.0%	0.083	0.095	0.102	22.9%	0.042	0.032	0.019	-54.8%
Belgium	0.077	0.05	0.029	-62.3%	1.076	1.077	0.925	-14.0%	0.106	0.109	0.114	7.5%	0.036	0.024	0.015	-58.3%
Switzerland	0.047	0.029	0.013	-72.3%	0.651	0.682	0.549	-15.7%	0.056	0.057	0.054	-3.6%	0.022	0.013	0.006	-72.7%
Austria	0.034	0.017	0.008	-76.5%	0.876	0.857	0.677	-22.7%	0.07	0.066	0.058	-17.1%	0.017	0.009	0.004	-76.5%
Luxembourg	0.005	0.004	0.002	-60.0%	0.043	0.054	0.06	39.5%	0.004	0.005	0.007	75.0%	0.002	0.002	0.001	-50.0%
Europe-West	1.074	0.686	0.376	-65.0%	19.04	18.69	15.25	-19.9%	1.382	1.408	1.388	0.4%	0.512	0.336	0.193	-62.3%

Health

Base Case

Source: International Futures
Model Version 6.68, Nov 2013

	Years (in Millions) Lived with Disabilities (cont.)								Total Deaths				Deaths from Communicable Diseases			
	Noncommunicable diseases				Injuries				Annual deaths in millions				Annual deaths in thousands			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	AIDS 2010	2060	Diarrheal diseases 2010	2060
World	414.5	455.9	476.6	15.0%	48.77	56.85	60.76	24.6%	55.74	74.57	98.44	76.6%	1852	457.2	2537	1284
Africa	55.42	72	94.02	69.6%	10.96	16.12	20.59	87.9%	12.46	12.94	17.63	41.5%	1396	373.2	1111	229.5
Americas	62.35	72.62	76.22	22.2%	6.142	7.203	7.615	24.0%	5.856	9.323	12.79	118.4%	98.62	26.63	41.88	35.4
Asia with Oceania	251	270.1	271.7	8.2%	28.6	31.03	30.51	6.7%	29.42	43.2	58.67	99.4%	285.5	46.59	1376	1011
Europe	45.14	40.66	34.32	-24.0%	3.029	2.452	2.01	-33.6%	7.924	8.994	9.232	16.5%	71.36	10.85	8.768	7.436
World	414.5	455.9	476.6	15.0%	48.77	56.85	60.76	24.6%	55.74	74.57	98.44	76.6%	1852	457.2	2537	1284
Africa-Eastern	16.54	22.53	30.09	81.9%	3.536	5.402	6.918	95.6%	3.803	4.056	5.63	48.0%	629	159.7	350.6	65.3
Africa-Middle	8.28	10.98	14.64	76.8%	1.932	3.126	4.37	126.2%	2.108	2.13	2.812	33.4%	113.4	55.76	243	44.36
Africa-Northern	10.78	13.65	16.54	53.4%	1.806	2.225	2.368	31.1%	1.362	2.017	3.219	136.3%	27.77	6.165	48.99	17.28
Africa-Southern	2.387	2.42	2.538	6.3%	0.295	0.318	0.32	8.5%	0.817	0.79	0.718	-12.1%	351.4	81	38.79	14.21
Africa-Western	17.43	22.42	30.22	73.4%	3.386	5.052	6.615	95.4%	4.365	3.951	5.249	20.3%	274.9	70.5	429.2	88.35
Africa	55.42	72	94.02	69.6%	10.96	16.12	20.59	87.9%	12.46	12.94	17.63	41.5%	1396	373.2	1111	229.5
America-Caribbean	2.707	3.091	3.107	14.8%	0.228	0.276	0.281	23.2%	0.296	0.419	0.559	88.9%	14.21	2.233	7.047	2.818
America-Central	2.747	3.589	4.393	59.9%	0.405	0.599	0.716	76.8%	0.215	0.344	0.586	172.6%	9.4	3.197	6.692	2.193
America-North	30.26	36.05	37.22	23.0%	1.666	1.947	2.055	23.3%	2.984	4.828	6.227	108.7%	33.5	12.16	11.05	16.12
America-South	26.64	29.89	31.5	18.2%	3.843	4.381	4.563	18.7%	2.362	3.732	5.423	129.6%	41.51	9.038	17.09	14.27
Americas	62.35	72.62	76.22	22.2%	6.142	7.203	7.615	24.0%	5.856	9.323	12.79	118.4%	98.62	26.63	41.88	35.4
Asia-East	92.58	90.43	77.51	-16.3%	7.155	5.966	4.682	-34.6%	10.99	17.76	21.72	97.6%	39.94	8.96	24.61	15.67
Asia-South Central	106.1	116.6	125.8	18.6%	15.51	18.02	18.59	19.9%	13.42	17.25	24.7	84.1%	143	20.94	1266	945.9
Asia-South East	37.1	43.44	44.49	19.9%	4.191	4.582	4.166	-0.6%	3.545	5.787	8.254	132.8%	99.01	15.55	53.24	32.89
Asia-West	12.98	16.86	20.86	60.7%	1.631	2.318	2.911	78.5%	1.224	2.017	3.481	184.4%	2.275	0.628	30.38	15.79
Oceania	2.206	2.763	2.989	35.5%	0.12	0.145	0.165	37.5%	0.235	0.385	0.517	120.0%	1.312	0.515	1.351	1.163
Asia with Oceania	251	270.1	271.7	8.2%	28.6	31.03	30.51	6.7%	29.42	43.2	58.67	99.4%	285.5	46.59	1376	1011
Europe-East	19.53	15.64	12.45	-36.3%	2.076	1.534	1.164	-43.9%	3.947	3.833	3.587	-9.1%	61.15	9.066	0.931	0.282
Europe-North	6.1	5.919	5.484	-10.1%	0.265	0.249	0.233	-12.1%	0.919	1.157	1.271	38.3%	2.119	0.431	3.586	3.116
Europe-South	9.13	8.838	7.636	-16.4%	0.337	0.304	0.262	-22.3%	1.427	1.814	2.055	44.0%	5.039	0.861	0.82	0.774
Europe-West	10.92	10.78	9.152	-16.2%	0.391	0.404	0.38	-2.8%	1.715	2.301	2.43	41.7%	3.1	0.499	3.348	3.262
Europe	45.14	40.66	34.32	-24.0%	3.029	2.452	2.01	-33.6%	7.924	8.994	9.232	16.5%	71.36	10.85	8.768	7.436

Health

	Years (in Millions) Lived with Disabilities (cont.)								Total Deaths				Deaths from Communicable Diseases			
	Noncommunicable diseases				Injuries				Annual deaths in millions				Annual deaths in thousands			
													AIDS		Diarrheal diseases	
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2060	2010	2060
AFRICA																
Ethiopia	4.511	5.577	6.777	50.2%	0.78	1.106	1.381	77.1%	0.918	0.969	1.398	52.3%	67	14.98	120.4	11.07
Tanzania, United Rep. of	1.991	3.116	3.97	99.4%	0.371	0.612	0.754	103.2%	0.471	0.55	0.638	35.5%	96	28.78	31.93	6.512
Uganda	1.562	2.426	3.715	137.8%	0.451	0.766	1.078	139.0%	0.404	0.438	0.635	57.2%	77	22.47	37.2	7.923
Kenya	1.809	2.79	3.622	100.2%	0.448	0.703	0.897	100.2%	0.439	0.543	0.745	69.7%	107.5	24.35	33.54	12.64
Madagascar	0.914	1.406	2.39	161.5%	0.134	0.219	0.348	159.7%	0.172	0.217	0.398	131.4%	1	0.647	17.8	10.67
Mozambique	1.523	1.543	1.972	29.5%	0.307	0.435	0.57	85.7%	0.367	0.312	0.401	9.3%	81	20.13	18.73	0.782
Malawi	0.702	1.109	1.73	146.4%	0.083	0.142	0.196	136.1%	0.183	0.195	0.272	48.6%	59.88	20.33	12.56	4.204
Zambia	0.817	1.03	1.274	55.9%	0.195	0.297	0.371	90.3%	0.209	0.19	0.225	7.7%	56	15.46	15.58	1.787
Somalia	0.652	0.863	1.169	79.3%	0.324	0.502	0.582	79.6%	0.145	0.144	0.19	31.0%	1.6	1.022	19.8	1.092
Rwanda	0.621	0.743	0.959	54.4%	0.156	0.213	0.244	56.4%	0.146	0.137	0.189	29.5%	7.8	1.543	18.63	1.658
Zimbabwe	0.565	0.745	0.942	66.7%	0.103	0.137	0.152	47.6%	0.168	0.147	0.203	20.8%	59.22	6.309	5.051	3.644
Burundi	0.477	0.626	0.863	80.9%	0.109	0.157	0.206	89.0%	0.115	0.121	0.184	60.0%	11	1.863	14.52	2.474
Eritrea	0.25	0.377	0.509	103.6%	0.05	0.082	0.11	120.0%	0.041	0.062	0.111	170.7%	2.6	1.642	3.726	0.363
Comoros	0.029	0.05	0.077	165.5%	0.004	0.007	0.01	150.0%	0.004	0.007	0.012	200.0%	0.1	0.029	0.419	0.244
Djibouti	0.06	0.07	0.068	13.3%	0.016	0.018	0.016	0.0%	0.009	0.01	0.012	33.3%	1.1	0.156	0.656	0.22
Mauritius	0.058	0.06	0.053	-8.6%	0.005	0.005	0.004	-20.0%	0.01	0.015	0.018	80.0%	0.2	0.039	0.021	0.02
Africa-Eastern	16.54	22.53	30.09	81.9%	3.536	5.402	6.918	95.6%	3.803	4.056	5.63	48.0%	629	159.7	350.6	65.3
Congo, Democratic Rep. of	4.565	6.187	8.44	84.9%	1.002	1.724	2.524	151.9%	1.175	1.238	1.69	43.8%	29	31.65	139.1	20.5
Angola	1.236	1.39	1.768	43.0%	0.356	0.523	0.676	89.9%	0.309	0.237	0.317	2.6%	11	5.835	44.34	6.002
Cameroon	1.242	1.654	2.008	61.7%	0.294	0.427	0.543	84.7%	0.279	0.3	0.362	29.7%	39	9.031	24.22	9.569
Chad	0.622	0.985	1.468	136.0%	0.141	0.25	0.379	168.8%	0.197	0.207	0.249	26.4%	14	4.666	25.54	5.232
Central African Rep.	0.281	0.36	0.449	59.8%	0.061	0.088	0.112	83.6%	0.074	0.073	0.09	21.6%	11	2.406	5.224	1.294
Congo, Rep. of	0.213	0.248	0.314	47.4%	0.049	0.074	0.089	81.6%	0.049	0.046	0.065	32.7%	6.4	1.338	3.046	0.758
Gabon	0.064	0.089	0.112	75.0%	0.015	0.02	0.022	46.7%	0.013	0.016	0.023	76.9%	2.3	0.421	0.568	0.547
Equatorial Guinea	0.049	0.056	0.071	44.9%	0.012	0.016	0.023	91.7%	0.01	0.011	0.013	30.0%	0.7	0.412	0.832	0.441
São Tomé and Príncipe	0.007	0.01	0.014	100.0%	0.002	0.002	0.003	50.0%	0.001	0.002	0.003	200.0%	0.002	0	0.054	0.019
Africa-Middle	8.28	10.98	14.64	76.8%	1.932	3.126	4.37	126.2%	2.108	2.13	2.812	33.4%	113.4	55.76	243	44.36
Egypt	4.721	5.896	7.087	50.1%	0.395	0.457	0.447	13.2%	0.504	0.799	1.255	149.0%	0.5	0.266	4.302	1.017
Sudan	2.497	3.228	4.145	66.0%	1.06	1.362	1.488	40.4%	0.429	0.469	0.707	64.8%	25	5.271	30.9	2.496
Algeria	1.262	1.701	2.009	59.2%	0.123	0.156	0.174	41.5%	0.165	0.302	0.541	227.9%	1	0.289	8.71	11.95
Morocco	1.4	1.742	1.986	41.9%	0.157	0.172	0.172	9.6%	0.179	0.303	0.465	159.8%	1	0.277	4.404	1.282
Tunisia	0.543	0.641	0.727	33.9%	0.041	0.045	0.043	4.9%	0.06	0.096	0.152	153.3%	0.2	0.052	0.533	0.379
Libya	0.351	0.441	0.581	65.5%	0.03	0.034	0.043	43.3%	0.025	0.048	0.098	292.0%	0.065	0.01	0.144	0.154
Africa-Northern	10.78	13.65	16.54	53.4%	1.806	2.225	2.368	31.1%	1.362	2.017	3.219	136.3%	27.77	6.165	48.99	17.28

Health

Base Case: Countries in Year 2060 Descending Population Sequence	Years (in Millions) Lived with Disabilities (cont.)								Total Deaths				Deaths from Communicable Diseases			
	Noncommunicable diseases				Injuries				Annual deaths in millions				Annual deaths in thousands			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	AIDS		Diarrheal diseases	
													2010	2060	2010	2060
AFRICA continued																
South Africa	1.959	1.959	2.029	3.6%	0.206	0.211	0.211	2.4%	0.724	0.704	0.61	-15.7%	315	75.75	36.2	12.48
Namibia	0.104	0.128	0.157	51.0%	0.017	0.024	0.028	64.7%	0.018	0.021	0.032	77.8%	5.1	0.888	0.446	0.488
Lesotho	0.127	0.128	0.132	3.9%	0.037	0.04	0.036	-2.7%	0.034	0.026	0.03	-11.8%	13.87	1.779	1.008	0.389
Botswana	0.12	0.117	0.123	2.5%	0.021	0.024	0.023	9.5%	0.023	0.022	0.027	17.4%	9.9	1.328	0.378	0.557
Swaziland	0.076	0.088	0.097	27.6%	0.015	0.019	0.021	40.0%	0.017	0.016	0.018	5.9%	7.516	1.253	0.761	0.288
Africa-Southern	2.387	2.42	2.538	6.3%	0.295	0.318	0.32	8.5%	0.817	0.79	0.718	-12.1%	351.4	81	38.79	14.21
Nigeria	9.977	11.87	15.28	53.2%	2.055	2.987	3.865	88.1%	2.64	2.126	2.66	0.8%	170	42	249.6	31.53
Niger	0.722	1.27	2.274	215.0%	0.103	0.207	0.352	241.7%	0.226	0.246	0.337	49.1%	4	3.774	30.14	5.398
Côte d'Ivoire	0.998	1.477	1.981	98.5%	0.174	0.262	0.33	89.7%	0.215	0.246	0.334	55.3%	38	6.896	13.66	4.833
Burkina Faso	0.839	1.253	1.773	111.3%	0.179	0.286	0.376	110.1%	0.215	0.219	0.303	40.9%	9.2	2.066	24.36	3.797
Ghana	1.319	1.535	1.704	29.2%	0.243	0.334	0.363	49.4%	0.268	0.278	0.347	29.5%	21	4.003	28.38	24.33
Mali	0.787	0.907	1.322	68.0%	0.143	0.215	0.288	101.4%	0.219	0.147	0.234	6.8%	5.8	1.78	32.41	1.082
Senegal	0.668	1.087	1.571	135.2%	0.102	0.173	0.244	139.2%	0.134	0.185	0.276	106.0%	1.8	1.024	10.58	6.972
Guinea	0.522	0.682	1.03	97.3%	0.108	0.158	0.216	100.0%	0.105	0.107	0.165	57.1%	4.5	1.289	8.808	1.588
Benin	0.447	0.667	0.995	122.6%	0.074	0.121	0.17	129.7%	0.079	0.096	0.153	93.7%	3.3	1.024	7.537	2.712
Togo	0.281	0.441	0.595	111.7%	0.04	0.059	0.073	82.5%	0.053	0.075	0.114	115.1%	9.1	2.147	3.697	2.365
Sierra Leone	0.307	0.393	0.517	68.4%	0.066	0.095	0.129	95.5%	0.09	0.079	0.107	18.9%	3.3	2.291	8.476	0.559
Liberia	0.18	0.276	0.398	121.1%	0.02	0.036	0.055	175.0%	0.039	0.047	0.076	94.9%	2.3	1.273	3.768	0.54
Mauritania	0.172	0.252	0.34	97.7%	0.036	0.052	0.065	80.6%	0.034	0.045	0.064	88.2%	1	0.494	3.321	1.159
Gambia	0.091	0.138	0.217	138.5%	0.017	0.027	0.037	117.6%	0.018	0.021	0.038	111.1%	0.5	0.149	1.44	0.469
Guinea-Bissau	0.105	0.143	0.19	81.0%	0.025	0.037	0.05	100.0%	0.027	0.03	0.035	29.6%	1.1	0.28	2.929	0.898
Cape Verde	0.019	0.023	0.028	47.4%	0.002	0.003	0.003	50.0%	0.003	0.004	0.007	133.3%	0.005	0.001	0.136	0.118
Africa-Western	17.43	22.42	30.22	73.4%	3.386	5.052	6.615	95.4%	4.365	3.951	5.249	20.3%	274.9	70.5	429.2	88.35

Health

	Years (in Millions) Lived with Disabilities (cont.)								Total Deaths				Deaths from Communicable Diseases			
	Noncommunicable diseases				Injuries				Annual deaths in millions				Annual deaths in thousands			
													AIDS		Diarrheal diseases	
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2060	2010	2060
AMERICAS																
Haiti	0.687	0.909	1.063	54.7%	0.068	0.086	0.09	32.4%	0.09	0.114	0.163	81.1%	7.2	1.19	5.496	2.11
Dominican Rep.	0.617	0.724	0.791	28.2%	0.085	0.104	0.105	23.5%	0.061	0.085	0.126	106.6%	4.1	0.548	1.068	0.38
Cuba	0.693	0.677	0.494	-28.7%	0.025	0.026	0.026	4.0%	0.079	0.127	0.151	91.1%	0.1	0.019	0.19	0.157
Puerto Rico	0.355	0.395	0.378	6.5%	0.01	0.01	0.009	-10.0%	0.029	0.042	0.052	79.3%	0.04	0.004	0.009	0.01
Jamaica	0.175	0.201	0.205	17.1%	0.026	0.036	0.039	50.0%	0.019	0.026	0.035	84.2%	1.5	0.36	0.255	0.127
Trinidad and Tobago	0.115	0.109	0.099	-13.9%	0.01	0.009	0.008	-20.0%	0.01	0.014	0.019	90.0%	1	0.089	0.022	0.029
Bahamas	0.022	0.027	0.028	27.3%	0.002	0.002	0.002	0.0%	0.002	0.004	0.005	150.0%	0.138	0.016	0.003	0.002
Barbados	0.017	0.019	0.017	0.0%	0	0	0		0.002	0.003	0.003	50.0%	0.074	0.006	0.002	0.002
Saint Lucia	0.013	0.013	0.012	-7.7%	0.001	0.001	0.001	0.0%	0.001	0.001	0.002	100.0%	0.002	0	0.001	0
Grenada	0.006	0.008	0.01	66.7%	0	0	0		0.001	0.001	0.001	0.0%	0.001	0	0.001	0.001
Saint Vincent and the Grenadines	0.007	0.009	0.01	42.9%	0.001	0.001	0.001	0.0%	0.001	0.001	0.002	100.0%	0.052	0.001	0	0
America-Caribbean	2.707	3.091	3.107	14.8%	0.228	0.276	0.281	23.2%	0.296	0.419	0.559	88.9%	14.21	2.233	7.047	2.818
Guatemala	0.83	1.145	1.507	81.6%	0.154	0.259	0.336	118.2%	0.077	0.11	0.191	148.1%	3.9	1.858	4.763	1.17
Honduras	0.526	0.722	0.914	73.8%	0.062	0.089	0.107	72.6%	0.037	0.058	0.108	191.9%	1.9	0.312	0.964	0.344
Nicaragua	0.383	0.536	0.665	73.6%	0.04	0.052	0.056	40.0%	0.025	0.047	0.084	236.0%	0.5	0.172	0.427	0.247
El Salvador	0.49	0.569	0.63	28.6%	0.102	0.143	0.155	52.0%	0.04	0.057	0.085	112.5%	1.7	0.484	0.251	0.158
Costa Rica	0.266	0.331	0.358	34.6%	0.023	0.03	0.033	43.5%	0.019	0.04	0.067	252.6%	0.2	0.053	0.051	0.1
Panama	0.233	0.259	0.287	23.2%	0.022	0.024	0.026	18.2%	0.017	0.029	0.047	176.5%	1	0.284	0.223	0.156
Belize	0.019	0.026	0.032	68.4%	0.002	0.002	0.003	50.0%	0.001	0.002	0.004	300.0%	0.2	0.034	0.013	0.018
America-Central	2.747	3.589	4.393	59.9%	0.405	0.599	0.716	76.8%	0.215	0.344	0.586	172.6%	9.4	3.197	6.692	2.193
United States of America	20.76	24.67	25.28	21.8%	0.993	1.129	1.204	21.2%	2.254	3.539	4.324	91.8%	22	9.128	6.429	9.89
Mexico	7.465	8.919	9.439	26.4%	0.607	0.743	0.767	26.4%	0.489	0.882	1.404	187.1%	11	2.901	3.508	4.413
Canada	2.035	2.458	2.508	23.2%	0.066	0.075	0.084	27.3%	0.242	0.407	0.499	106.2%	0.5	0.136	1.114	1.815
America-North	30.26	36.05	37.22	23.0%	1.666	1.947	2.055	23.3%	2.984	4.828	6.227	108.7%	33.5	12.16	11.05	16.12
Brazil	13.78	14.85	14.81	7.5%	2.026	2.164	2.181	7.7%	1.22	1.906	2.7	121.3%	15	1.78	7.053	7.021
Colombia	3.081	3.686	4.12	33.7%	0.624	0.802	0.913	46.3%	0.246	0.445	0.679	176.0%	9.8	2.808	1.628	1.337
Argentina	2.785	3.066	3.357	20.5%	0.226	0.237	0.247	9.3%	0.298	0.396	0.531	78.2%	7	1.846	0.364	0.316
Peru	1.849	2.129	2.414	30.6%	0.249	0.278	0.268	7.6%	0.156	0.246	0.395	153.2%	3.3	0.998	1.88	2.184
Venezuela (Bolivarian Rep. of)	1.829	2.189	2.412	31.9%	0.307	0.385	0.411	33.9%	0.142	0.259	0.399	181.0%	1.4	0.191	1.553	1.458
Ecuador	0.802	0.964	1.102	37.4%	0.121	0.158	0.173	43.0%	0.067	0.118	0.194	189.6%	1.4	0.43	0.571	0.263
Chile	1.002	1.141	1.132	13.0%	0.085	0.094	0.098	15.3%	0.092	0.167	0.233	153.3%	1.1	0.269	0.167	0.392
Bolivia (Plurinational State of)	0.741	0.968	1.173	58.3%	0.115	0.149	0.149	29.6%	0.068	0.092	0.144	111.8%	0.5	0.184	3.062	0.994
Paraguay	0.458	0.592	0.697	52.2%	0.061	0.086	0.098	60.7%	0.034	0.058	0.092	170.6%	1	0.355	0.595	0.168
Uruguay	0.219	0.216	0.209	-4.6%	0.016	0.016	0.016	0.0%	0.029	0.035	0.041	41.4%	0.5	0.114	0.081	0.058
Guyana	0.055	0.052	0.043	-21.8%	0.007	0.007	0.005	-28.6%	0.005	0.006	0.008	60.0%	0.315	0.027	0.095	0.032
Suriname	0.039	0.038	0.033	-15.4%	0.005	0.005	0.004	-20.0%	0.004	0.005	0.006	50.0%	0.2	0.037	0.042	0.049
America-South	26.64	29.89	31.5	18.2%	3.843	4.381	4.563	18.7%	2.362	3.732	5.423	129.6%	41.51	9.038	17.09	14.27

Health

	Years (in Millions) Lived with Disabilities (cont.)								Total Deaths				Deaths from Communicable Diseases			
	Noncommunicable diseases				Injuries				Annual deaths in millions				Annual deaths in thousands			
													AIDS		Diarrheal diseases	
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2060	2010	2060
ASIA with OCEANIA																
China	78.47	75.03	64.23	-18.1%	6.664	5.488	4.275	-35.8%	9.194	14.87	18.65	102.8%	39	8.64	18.88	12.09
Japan	6.505	6.391	5.256	-19.2%	0.247	0.234	0.194	-21.5%	1.107	1.642	1.507	36.1%	0.1	0.196	2.249	2.48
Korea, Rep. of	2.309	2.45	2.025	-12.3%	0.116	0.121	0.105	-9.5%	0.275	0.556	0.711	158.5%	0.5	0.084	0.123	0.264
Korea, Dem. People's Rep. of	1.532	1.551	1.433	-6.5%	0.089	0.089	0.082	-7.9%	0.226	0.299	0.335	48.2%	0.24	0.026	2.873	0.395
Taiwan, China	2.794	3.687	3.262	16.8%	0.021	0.014	0.01	-52.4%	0.13	0.277	0.346	166.2%	0	0	0.186	0.213
Hong Kong SAR, China	0.759	1.102	1.111	46.4%	0.003	0.002	0.002	-33.3%	0.043	0.089	0.124	188.4%	0	0	0.072	0.083
Mongolia	0.216	0.213	0.2	-7.4%	0.015	0.017	0.014	-6.7%	0.018	0.028	0.04	122.2%	0.1	0.014	0.221	0.148
Asia-East	92.58	90.43	77.51	-16.3%	7.155	5.966	4.682	-34.6%	10.99	17.76	21.72	97.6%	39.94	8.96	24.61	15.67
India	76.06	79.32	83.8	10.2%	10.29	11.44	11.16	8.5%	9.452	11.55	16.13	70.7%	126.1	15.15	1029	855
Pakistan	7.734	10.88	12.63	63.3%	1.451	2.042	2.402	65.5%	1.125	1.698	2.53	124.9%	5.1	2.022	90.28	39.13
Bangladesh	8.118	10.14	10.48	29.1%	1.052	1.176	1.127	7.1%	1.067	1.644	2.461	130.6%	0.5	0.461	35.16	21.69
Afghanistan	2.777	4.008	5.683	104.6%	1.007	1.635	2.257	124.1%	0.587	0.64	0.863	47.0%	0.1	0.101	88.94	23.25
Iran, Islamic Rep. of	4.098	4.509	5.005	22.1%	0.96	0.949	0.869	-9.5%	0.404	0.633	1.116	176.2%	4.3	1.053	5.298	1.079
Nepal	1.453	1.939	2.355	62.1%	0.138	0.174	0.198	43.5%	0.179	0.273	0.464	159.2%	5	1.654	7.124	3.327
Uzbekistan	2.098	2.09	2.217	5.7%	0.205	0.209	0.19	-7.3%	0.181	0.262	0.405	123.8%	0.5	0.151	4.811	0.205
Sri Lanka	1.119	1.197	1.086	-2.9%	0.119	0.138	0.136	14.3%	0.133	0.218	0.273	105.3%	0.2	0.049	0.9	1.362
Kazakhstan	1.389	1.045	0.925	-33.4%	0.124	0.096	0.085	-31.5%	0.167	0.166	0.193	15.6%	0.3	0.029	0.327	0.028
Tajikistan	0.507	0.602	0.662	30.6%	0.056	0.068	0.065	16.1%	0.044	0.062	0.097	120.5%	0.5	0.18	2.816	0.454
Kyrgyz Rep.	0.371	0.483	0.544	46.6%	0.044	0.062	0.068	54.5%	0.036	0.057	0.086	138.9%	0.2	0.065	0.84	0.175
Turkmenistan	0.361	0.32	0.379	5.0%	0.049	0.025	0.025	-49.0%	0.038	0.039	0.071	86.8%	0.1	0.015	1.189	0.089
Bhutan	0.037	0.039	0.042	13.5%	0.008	0.007	0.007	-12.5%	0.005	0.006	0.01	100.0%	0	0.001	0.154	0.098
Maldives	0.016	0.021	0.025	56.3%	0.001	0.001	0.001	0.0%	0.002	0.002	0.005	150.0%	0.079	0.002	0.006	0.001
Asia-South Central	106.1	116.6	125.8	18.6%	15.51	18.02	18.59	19.9%	13.42	17.25	24.7	84.1%	143	20.94	1266	945.9
Indonesia	12.16	14.26	14.58	19.9%	1.155	1.536	1.551	34.3%	1.283	2.178	3.254	153.6%	8.7	2.285	21.53	8.698
Philippines	6.706	9.225	10.51	56.7%	0.236	0.337	0.371	57.2%	0.392	0.775	1.227	213.0%	0.2	0.321	4.845	4.364
Vietnam	5.584	5.852	5.736	2.7%	0.328	0.37	0.391	19.2%	0.445	0.832	1.306	193.5%	24	6.235	2.554	2.231
Thailand	6.446	6.656	5.727	-11.2%	0.781	0.795	0.679	-13.1%	0.675	0.861	0.95	40.7%	30	2.696	9.961	10.59
Myanmar	2.376	2.76	2.623	10.4%	1.507	1.338	0.965	-36.0%	0.442	0.614	0.72	62.9%	25	2.226	9.111	2.133
Malaysia	1.717	2.304	2.681	56.1%	0.066	0.079	0.081	22.7%	0.115	0.25	0.38	230.4%	3.9	1.207	0.21	0.66
Cambodia	1.369	1.474	1.602	17.0%	0.063	0.065	0.065	3.2%	0.117	0.155	0.226	93.2%	6.9	0.488	3.557	3.469
Lao People's Dem. Rep.	0.395	0.401	0.438	10.9%	0.04	0.043	0.043	7.5%	0.041	0.053	0.088	114.6%	0.1	0.033	1.105	0.675
Singapore	0.25	0.375	0.404	61.6%	0.006	0.006	0.006	0.0%	0.025	0.056	0.081	224.0%	0.2	0.05	0.015	0.048
Timor-Leste	0.065	0.085	0.123	89.2%	0.007	0.009	0.013	85.7%	0.009	0.009	0.017	88.9%	0.012	0.003	0.351	0.008
Brunei Darussalam	0.032	0.053	0.063	96.9%	0.001	0.001	0.001	0.0%	0.001	0.003	0.006	500.0%	0	0.001	0.004	0.019
Asia-South East	37.1	43.44	44.49	19.9%	4.191	4.582	4.166	-0.6%	3.545	5.787	8.254	132.8%	99.01	15.55	53.24	32.89

Health

	Years (in Millions) Lived with Disabilities (cont.)								Total Deaths				Deaths from Communicable Diseases			
	Noncommunicable diseases				Injuries				Annual deaths in millions				Annual deaths in thousands			
													AIDS		Diarrheal diseases	
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2060	2010	2060
ASIA with OCEANIA continued																
Turkey	4.727	5.139	5.26	11.3%	0.272	0.261	0.239	-12.1%	0.446	0.724	1.07	139.9%	0.1	0.095	1.602	1.685
Iraq	1.338	2.03	2.785	108.1%	0.447	0.844	1.218	172.5%	0.163	0.256	0.498	205.5%	0.323	0.085	9.796	8.07
Yemen, Rep. of	1.232	1.988	3.189	158.8%	0.331	0.543	0.766	131.4%	0.162	0.221	0.44	171.6%	0.2	0.076	15.43	3.452
Saudi Arabia	1.429	2.11	2.713	89.9%	0.238	0.24	0.215	-9.7%	0.097	0.204	0.403	315.5%	0.1	0.042	0.781	1.059
Syrian Arab Rep.	1.25	1.728	2.169	73.5%	0.112	0.156	0.169	50.9%	0.081	0.157	0.291	259.3%	0.216	0.04	0.774	0.691
Jordan	0.402	0.571	0.769	91.3%	0.04	0.058	0.064	60.0%	0.024	0.044	0.088	266.7%	0.1	0.022	0.225	0.077
Israel	0.484	0.619	0.736	52.1%	0.011	0.014	0.018	63.6%	0.041	0.068	0.101	146.3%	0.2	0.072	0.162	0.265
Palestine	0.24	0.407	0.61	154.2%	0.037	0.071	0.101	173.0%	0.013	0.029	0.064	392.3%	0.042	0.012	0.066	0.035
Azerbaijan	0.576	0.615	0.607	5.4%	0.042	0.038	0.032	-23.8%	0.064	0.095	0.127	98.4%	0.1	0.026	1.249	0.118
United Arab Emirates	0.164	0.302	0.409	149.4%	0.015	0.016	0.013	-13.3%	0.005	0.03	0.088	1660.0%	0.1	0.013	0.005	0.062
Kuwait	0.114	0.177	0.275	141.2%	0.009	0.009	0.011	22.2%	0.006	0.017	0.054	800.0%	0.1	0.02	0.005	0
Lebanon	0.264	0.297	0.316	19.7%	0.025	0.027	0.027	8.0%	0.028	0.043	0.062	121.4%	0.2	0.046	0.068	0.056
Oman	0.122	0.203	0.308	152.5%	0.012	0.011	0.011	-8.3%	0.007	0.018	0.048	585.7%	0.029	0.004	0.036	0.152
Armenia	0.228	0.23	0.209	-8.3%	0.013	0.012	0.01	-23.1%	0.026	0.034	0.039	50.0%	0.2	0.04	0.049	0.028
Georgia	0.248	0.186	0.151	-39.1%	0.014	0.01	0.007	-50.0%	0.051	0.048	0.045	-11.8%	0.1	0.014	0.12	0.012
Qatar	0.067	0.111	0.169	152.2%	0.009	0.005	0.005	-44.4%	0.003	0.012	0.034	1033.3%	0.015	0.002	0.004	0
Bahrain	0.041	0.089	0.119	190.2%	0.002	0.002	0.002	0.0%	0.002	0.008	0.017	750.0%	0.1	0.015	0.005	0.023
Cyprus	0.054	0.064	0.068	25.9%	0.002	0.002	0.002	0.0%	0.005	0.009	0.013	160.0%	0.05	0.005	0.003	0.005
Asia-West	12.98	16.86	20.86	60.7%	1.631	2.318	2.911	78.5%	1.224	2.017	3.481	184.4%	2.275	0.628	30.38	15.79
Australia	1.183	1.436	1.55	31.0%	0.056	0.059	0.064	14.3%	0.141	0.239	0.32	127.0%	0.1	0.066	0.084	0.119
Papua New Guinea	0.568	0.78	0.864	52.1%	0.045	0.065	0.081	80.0%	0.053	0.08	0.112	111.3%	1	0.431	1.059	0.731
New Zealand	0.252	0.286	0.268	6.3%	0.012	0.012	0.011	-8.3%	0.029	0.047	0.058	100.0%	0.1	0.012	0.06	0.107
Solomon Islands	0.053	0.084	0.122	130.2%	0.002	0.003	0.004	100.0%	0.003	0.005	0.01	233.3%	0.005	0.001	0.051	0.124
Fiji	0.092	0.097	0.084	-8.7%	0.003	0.003	0.002	-33.3%	0.005	0.008	0.01	100.0%	0.1	0.004	0.06	0.056
Vanuatu	0.021	0.032	0.043	104.8%	0.001	0.001	0.001	0.0%	0.001	0.002	0.004	300.0%	0.002	0.001	0.014	0.011
Micronesia (Federated States of)	0.011	0.016	0.022	100.0%	0	0.001	0.001		0.001	0.001	0.002	100.0%	0.001	0	0.009	0.008
Tonga	0.01	0.016	0.02	100.0%	0	0	0		0.001	0.001	0.001	0.0%	0.001	0	0.005	0.004
Samoa	0.015	0.017	0.017	13.3%	0	0	0		0.001	0.001	0.002	100.0%	0.002	0	0.009	0.003
Oceania	2.206	2.763	2.989	35.5%	0.12	0.145	0.165	37.5%	0.235	0.385	0.517	120.0%	1.312	0.515	1.351	1.163

Health

Base Case: Countries in Year 2060 Descending Population Sequence	Years (in Millions) Lived with Disabilities (cont.)								Total Deaths				Deaths from Communicable Diseases			
	Noncommunicable diseases				Injuries				Annual deaths in millions				Annual deaths in thousands			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	AIDS		Diarrheal diseases	
													2010	2060	2010	2060
EUROPE																
Russian Federation	10.13	7.84	6.267	-38.1%	1.287	0.904	0.705	-45.2%	2.047	1.874	1.763	-13.9%	40	6.276	0.617	0.147
Poland	2.077	1.847	1.545	-25.6%	0.198	0.156	0.115	-41.9%	0.373	0.461	0.463	24.1%	0.2	0.062	0.043	0.03
Ukraine	3.111	2.299	1.68	-46.0%	0.26	0.199	0.141	-45.8%	0.707	0.623	0.513	-27.4%	19	2.554	0.075	0.014
Romania	1.237	1.079	0.867	-29.9%	0.129	0.105	0.071	-45.0%	0.255	0.268	0.269	5.5%	0.5	0.036	0.056	0.011
Czech Rep.	0.603	0.592	0.52	-13.8%	0.041	0.038	0.032	-22.0%	0.107	0.137	0.135	26.2%	0.1	0.009	0.065	0.054
Belarus	0.657	0.535	0.44	-33.0%	0.067	0.053	0.041	-38.8%	0.136	0.128	0.124	-8.8%	1.1	0.088	0.004	0.001
Hungary	0.685	0.56	0.425	-38.0%	0.022	0.02	0.016	-27.3%	0.128	0.132	0.119	-7.0%	0.1	0.015	0.025	0.012
Bulgaria	0.465	0.366	0.28	-39.8%	0.031	0.022	0.016	-48.4%	0.103	0.099	0.085	-17.5%	0	0.005	0.02	0.005
Slovak Rep.	0.287	0.273	0.231	-19.5%	0.027	0.023	0.017	-37.0%	0.051	0.067	0.071	39.2%	0.05	0.004	0.011	0.006
Moldova, Rep. of	0.281	0.249	0.199	-29.2%	0.015	0.015	0.011	-26.7%	0.041	0.045	0.044	7.3%	0.1	0.016	0.014	0.002
Europe-East	19.53	15.64	12.45	-36.3%	2.076	1.534	1.164	-43.9%	3.947	3.833	3.587	-9.1%	61.15	9.066	0.931	0.282
United Kingdom	3.972	3.885	3.611	-9.1%	0.14	0.134	0.127	-9.3%	0.574	0.718	0.805	40.2%	0.5	0.143	2.943	2.412
Sweden	0.496	0.475	0.433	-12.7%	0.022	0.022	0.021	-4.5%	0.087	0.111	0.116	33.3%	0.1	0.022	0.135	0.149
Denmark	0.374	0.359	0.321	-14.2%	0.015	0.015	0.014	-6.7%	0.054	0.07	0.071	31.5%	0.1	0.022	0.144	0.127
Ireland	0.252	0.289	0.32	27.0%	0.012	0.013	0.014	16.7%	0.028	0.046	0.065	132.1%	0.1	0.027	0.038	0.066
Norway	0.265	0.288	0.282	6.4%	0.015	0.015	0.016	6.7%	0.039	0.055	0.065	66.7%	0.1	0.024	0.224	0.271
Finland	0.281	0.248	0.209	-25.6%	0.028	0.024	0.02	-28.6%	0.047	0.068	0.064	36.2%	0.1	0.02	0.094	0.081
Lithuania	0.213	0.177	0.142	-33.3%	0.019	0.016	0.012	-36.8%	0.042	0.042	0.04	-4.8%	0.11	0.017	0.005	0.003
Latvia	0.149	0.122	0.1	-32.9%	0.008	0.007	0.005	-37.5%	0.03	0.029	0.027	-10.0%	0.5	0.079	0.001	0.003
Estonia	0.083	0.061	0.051	-38.6%	0.005	0.003	0.002	-60.0%	0.017	0.016	0.014	-17.6%	0.5	0.074	0	0
Iceland	0.014	0.016	0.015	7.1%	0.001	0.001	0.001	0.0%	0.002	0.003	0.004	100.0%	0.009	0.001	0.002	0.003
Europe-North	6.1	5.919	5.484	-10.1%	0.265	0.249	0.233	-12.1%	0.919	1.157	1.271	38.3%	2.119	0.431	3.586	3.116
Italy	3.617	3.429	2.844	-21.4%	0.116	0.109	0.102	-12.1%	0.596	0.742	0.806	35.2%	1.9	0.315	0.182	0.147
Spain	2.747	2.779	2.506	-8.8%	0.092	0.082	0.07	-23.9%	0.384	0.519	0.657	71.1%	2.3	0.413	0.488	0.55
Greece	0.651	0.652	0.608	-6.6%	0.029	0.026	0.021	-27.6%	0.111	0.136	0.154	38.7%	0.1	0.021	0	0
Portugal	0.711	0.684	0.593	-16.6%	0.023	0.021	0.017	-26.1%	0.104	0.13	0.141	35.6%	0.5	0.08	0.061	0.041
Serbia	0.447	0.392	0.319	-28.6%	0.02	0.017	0.012	-40.0%	0.082	0.089	0.087	6.1%	0.1	0.015	0.017	0.006
Croatia	0.273	0.238	0.194	-28.9%	0.014	0.013	0.011	-21.4%	0.049	0.057	0.054	10.2%	0.05	0.004	0.016	0.007
Bosnia and Herzegovina	0.218	0.207	0.172	-21.1%	0.014	0.01	0.008	-42.9%	0.036	0.048	0.052	44.4%	0	0.003	0.005	0.001
Albania	0.173	0.166	0.153	-11.6%	0.014	0.011	0.009	-35.7%	0.019	0.03	0.039	105.3%	0.032	0.003	0.029	0.015
Macedonia, TFYR	0.123	0.121	0.105	-14.6%	0.005	0.005	0.004	-20.0%	0.018	0.025	0.027	50.0%	0.05	0.004	0.018	0.004
Slovenia	0.111	0.109	0.09	-18.9%	0.008	0.008	0.007	-12.5%	0.019	0.026	0.027	42.1%	0	0.002	0.003	0.002
Montenegro	0.032	0.033	0.031	-3.1%	0.002	0.002	0.001	-50.0%	0.006	0.008	0.008	33.3%	0.006	0.001	0	0
Malta	0.026	0.027	0.023	-11.5%	0.001	0.001	0.001	0.0%	0.003	0.005	0.005	66.7%	0.001	0	0.002	0.002
Europe-South	9.13	8.838	7.636	-16.4%	0.337	0.304	0.262	-22.3%	1.427	1.814	2.055	44.0%	5.039	0.861	0.82	0.774
Germany	4.807	4.618	3.818	-20.6%	0.142	0.136	0.12	-15.5%	0.822	1.06	1.06	29.0%	0.5	0.142	1.357	1.393
France	3.566	3.529	3.063	-14.1%	0.161	0.175	0.169	5.0%	0.519	0.707	0.784	51.1%	1.6	0.169	1.38	1.245
Netherlands	0.971	1.061	0.927	-4.5%	0.023	0.028	0.028	21.7%	0.136	0.207	0.22	61.8%	0.2	0.042	0.178	0.202
Belgium	0.633	0.643	0.578	-8.7%	0.028	0.028	0.027	-3.6%	0.098	0.129	0.14	42.9%	0.1	0.023	0.31	0.31
Switzerland	0.397	0.394	0.321	-19.1%	0.016	0.017	0.016	0.0%	0.061	0.091	0.106	73.8%	0.5	0.09	0.045	0.043
Austria	0.523	0.5	0.408	-22.0%	0.02	0.02	0.017	-15.0%	0.075	0.101	0.111	48.0%	0.1	0.017	0.069	0.057
Luxembourg	0.025	0.032	0.037	48.0%	0.001	0.002	0.002	100.0%	0.004	0.006	0.008	100.0%	0.1	0.015	0.009	0.012
Europe-West	10.92	10.78	9.152	-16.2%	0.391	0.404	0.38	-2.8%	1.715	2.301	2.43	41.7%	3.1	0.499	3.348	3.262

Health

Base Case Source: International Futures Model Version 6.68, Nov 2013	Deaths from Communicable Diseases (cont.)						Deaths from Noncommunicable Diseases									
	Annual deaths in thousands						Annual deaths in thousands									
	Malaria		Respiratory infections		Other comm diseases		Cardiovascular diseases		Diabetes		Digestive disorders		Malignant neoplasms		Mental health disorders	
	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
World	985.4	76.49	3589	2608	7358	2059	16455	33326	1226	3953	2098	4370	7322	15592	1248	4780
Africa	936.3	71.67	1385	535	3088	838.3	1641	6520	201.1	824.4	319.4	728	537	1996	165.3	686.7
Americas	1.114	0.286	234.6	339.9	374.7	214.1	1808	3502	264.9	877	296.2	808.5	1132	2424	318.7	1322
Asia with Oceania	47.87	4.519	1793	1579	3744	953.1	9041	19305	630.2	2005	1116	2335	3955	9223	458.9	1989
Europe	0.061	0.016	173.3	151.3	151	53.67	3929	3947	128.9	245.8	358.6	490	1675	1923	303	779.6
World	985.4	76.49	3589	2608	7358	2059	16455	33326	1226	3953	2098	4370	7322	15592	1248	4780
Africa-Eastern	182.8	14.85	403.6	153.4	943.1	247.2	427.4	2131	59.02	254.4	77.12	157	146	660.8	49.26	212.3
Africa-Middle	238	26.54	301.6	101.5	601.9	231.2	188.8	937	26.29	113.4	36.37	93.2	54.3	274.8	24.1	91.62
Africa-Northern	10.82	0.412	93.16	66.7	184.2	47.95	452.9	1454	30	128.3	103.6	278.9	120.5	319.1	25.19	109.5
Africa-Southern	0.677	0.205	58.93	36.16	105.8	19.77	88.22	157.7	20.81	59.93	11.91	25.68	57.22	133.1	8.206	29.65
Africa-Western	504	29.66	528.1	177.2	1253	292.3	483.9	1840	64.97	268.4	90.34	173.2	159	607.8	58.54	243.7
Africa	936.3	71.67	1385	535	3088	838.3	1641	6520	201.1	824.4	319.4	728	537	1996	165.3	686.7
America-Caribbean	0.614	0.186	18.85	18.42	38.34	21.45	90.21	195.8	12.99	37.84	12.61	28.4	42.42	105.4	9.091	37.27
America-Central	0.018	0.008	16.23	14.01	24.42	9.058	45.66	171.3	10.67	49.36	11.79	37.45	28.14	99.42	8.104	35.13
America-North	0.004	0.004	72.17	117.6	112.9	88.71	969.4	1554	136.3	407	139	390.5	660.1	1196	236.3	966.8
America-South	0.477	0.088	127.3	189.8	199	94.93	702.7	1581	104.9	382.8	132.8	352.1	401.5	1023	65.25	282.6
Americas	1.114	0.286	234.6	339.9	374.7	214.1	1808	3502	264.9	877	296.2	808.5	1132	2424	318.7	1322
Asia-East	0.262	0.296	341	488.8	542	180	4053	5381	244.2	618.6	326.4	868.1	2412	5016	139.6	613.8
Asia-South Central	26.04	1.884	1102	635.7	2579	510.8	3349	9102	227	801.3	585.2	939.8	906.8	2456	219.8	875.2
Asia-South East	17.17	1.62	278.1	387.2	482.9	204.9	1048	3124	121.5	380.1	155.9	367.6	424.2	1156	62.89	314.6
Asia-West	1.211	0.226	62.5	56.68	122.3	50.31	514.8	1543	31.42	184.1	40.66	136.2	155.8	475.6	23.07	122.9
Oceania	3.182	0.493	9.549	10.65	17.78	7.09	76.09	154.7	6.148	20.41	7.942	23.51	56.01	118.8	13.53	62.08
Asia with Oceania	47.87	4.519	1793	1579	3744	953.1	9041	19305	630.2	2005	1116	2335	3955	9223	458.9	1989
Europe-East	0.01	0.002	46.87	27.72	76.1	14.68	2374	2164	29.55	39.16	176.6	165.8	596.2	602.5	52.55	65.08
Europe-North	0.01	0.002	44.58	40	13.46	5.513	340.6	351.3	12.44	25.49	44.88	73.26	244	319	66.74	193.5
Europe-South	0.02	0.005	33.72	30.39	26.08	11.97	589	745.8	43.31	86.97	60.6	101.1	380.7	442	73.37	208.2
Europe-West	0.022	0.007	50.78	55.54	35.87	21.71	661	737.8	44.67	95.76	83.99	157.9	476.9	586	112.6	316.5
Europe	0.061	0.016	173.3	151.3	151	53.67	3929	3947	128.9	245.8	358.6	490	1675	1923	303	779.6

Health

Base Case: Countries in Year 2060 Descending Population Sequence	Deaths from Communicable Diseases (cont.)						Deaths from Noncommunicable Diseases									
	Annual deaths in thousands						Annual deaths in thousands									
	Malaria		Respiratory infections		Other comm diseases		Cardiovascular diseases		Diabetes		Digestive disorders		Malignant neoplasms		Mental health disorders	
	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
AFRICA																
Ethiopia	9.03	0.356	122.9	29.11	244.5	28.58	127.1	640.1	17.49	64.77	23.39	32.4	29.96	138.7	15.1	55.75
Tanzania, United Rep. of	37.66	0.955	47.89	19.91	113.6	11.89	49.11	239.8	6.752	31.24	8.076	21.91	14.66	58.27	5.189	28.24
Uganda	33.53	2.862	38.62	14.5	98.22	31.86	32.77	202.9	4.385	24.76	6.188	17.82	14.88	88.46	4.384	22.98
Kenya	7.654	1.68	33.4	28.49	106.8	48.53	41.86	215.1	5.626	32.43	6.721	25.16	25.67	112.3	4.816	23.68
Madagascar	2.47	1.042	23.4	21.02	51.01	45.23	28.36	120.8	3.801	20.03	4.81	13	12	58.07	3.062	14.93
Mozambique	44.32	0.4	31.48	2.422	70.16	4.643	40.82	175.6	5.624	17.25	8.293	6.002	11.36	38.75	4.873	17.95
Malawi	14.34	2.669	17.64	10.33	37.33	21.91	16.56	106.5	2.23	12.03	2.519	7.73	3.578	21.6	1.5	8.086
Zambia	15.02	0.328	19.75	5.449	42.22	4.346	18.72	72.91	2.518	10.8	3.877	7.971	5.43	20.85	2.543	10.59
Somalia	2.931	0.085	22.16	1.299	47.55	6.965	16.75	90.26	1.371	4.811	3.369	3.829	4.075	20.82	1.675	6.199
Rwanda	2.77	0.165	17.36	4.149	49.57	8.566	14.45	69.69	1.977	8.587	2.813	5.041	7.095	28.76	1.953	7.603
Zimbabwe	9.021	3.695	8.697	9.2	36.65	18.9	16.14	54.59	2.08	9.328	2.472	7.135	8.726	31.82	1.484	6.023
Burundi	3.68	0.521	14.43	5.778	33.26	12.76	11.72	73.52	1.618	7.352	2.306	5.216	4.064	22.23	1.501	5.569
Eritrea	0.044	0.002	4.365	0.854	8.501	1.352	7.068	53.38	1.045	4.558	1.331	2.046	2.704	15.64	0.715	3.389
Comoros	0.294	0.086	0.595	0.591	1.055	0.749	0.644	4.39	0.139	0.947	0.113	0.338	0.204	1.144	0.081	0.498
Djibouti	0.014	0.002	0.73	0.139	2.324	0.725	1.879	5.362	0.083	0.282	0.341	0.704	0.469	1.225	0.182	0.427
Mauritius	0	0	0.138	0.151	0.367	0.166	3.395	6.225	2.273	5.241	0.491	0.669	1.142	2.106	0.211	0.382
Africa-Eastern	182.8	14.85	403.6	153.4	943.1	247.2	427.4	2131	59.02	254.4	77.12	157	146	660.8	49.26	212.3
Congo, Democratic Rep. of	145.1	15.28	178	48.08	367.8	148.4	90.94	608.4	12.73	54.41	17.4	49.56	29.15	184.3	11.71	41.6
Angola	22.91	1.266	47.45	15.48	90.86	18.75	27.52	74.97	3.842	18.6	5.781	13.52	7.893	27.89	4.107	17.69
Cameroon	24.89	3.49	33.68	19.39	57.97	21.62	34.33	113.1	4.697	19.42	6.835	14.96	8.304	27.57	4.361	15.92
Chad	28.99	4.617	27.82	11.28	52.95	30.39	16.98	77.08	2.391	11.16	3.084	7.734	3.972	19.67	1.957	8.991
Central African Rep.	9.484	1.085	7.736	2.843	15.89	6.197	8.624	31.99	1.204	3.845	1.56	2.845	1.999	7.57	0.915	2.861
Congo, Rep. of	5.267	0.463	4.295	1.916	10.9	3.089	6.558	20.65	0.904	3.623	1.066	2.587	1.721	4.502	0.681	2.874
Gabon	0.53	0.119	1.194	1.528	2.576	1.207	2.39	6.995	0.321	1.457	0.353	1.233	0.758	1.801	0.194	1.006
Equatorial Guinea	0.806	0.208	1.295	0.912	2.583	1.27	1.27	2.857	0.174	0.757	0.268	0.68	0.374	0.822	0.151	0.6
São Tomé and Príncipe	0.026	0.014	0.137	0.09	0.31	0.204	0.203	0.905	0.025	0.129	0.025	0.072	0.137	0.686	0.022	0.073
Africa-Middle	238	26.54	301.6	101.5	601.9	231.2	188.8	937	26.29	113.4	36.37	93.2	54.3	274.8	24.1	91.62
Egypt	0.194	0.022	15.34	9.835	50.89	18.57	204.9	587.6	12.39	49.34	65.55	177.3	51.08	122.5	8.015	35.16
Sudan	10.62	0.39	44.43	8.094	89.18	9.636	89.23	318.2	7.066	28.18	16.2	29.51	15.18	55.2	6.707	24.13
Algeria	0	0	18.96	37.87	19.54	11.77	47.44	179.8	6.345	32.97	6.868	27.4	19.9	62.36	3.746	25.29
Morocco	0	0	7.794	4.338	15.72	3.481	76.4	246.3	2.945	11.51	11.18	29.59	21.88	46.17	4.99	16.7
Tunisia	0.009	0.001	5.731	5.134	6.927	3.564	23.6	72.82	0.81	3.505	2.524	8.602	9.114	21.44	1.151	4.815
Libya	0	0	0.903	1.428	1.917	0.924	11.35	49.62	0.444	2.785	1.327	6.522	3.313	11.4	0.58	3.359
Africa-Northern	10.82	0.412	93.16	66.7	184.2	47.95	452.9	1454	30	128.3	103.6	278.9	120.5	319.1	25.19	109.5

Health

Base Case: Countries in Year 2060 Descending Population Sequence	Deaths from Communicable Diseases (cont.)						Deaths from Noncommunicable Diseases									
	Annual deaths in thousands						Annual deaths in thousands									
	Malaria		Respiratory infections		Other comm diseases		Cardiovascular diseases		Diabetes		Digestive disorders		Malignant neoplasms		Mental health disorders	
	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
AFRICA continued																
South Africa	0.1	0.042	54.07	31.18	93.43	16.23	75.07	124.6	18.95	53.18	9.442	20.4	54.27	125.4	6.945	25.01
Namibia	0.547	0.158	1.063	1.595	2.407	0.79	3.52	10.71	0.53	2.337	0.685	1.811	0.56	1.988	0.263	1.534
Lesotho	0.001	0	1.753	1.03	5.234	0.863	4.391	10.2	0.597	1.588	0.749	1.104	0.909	2.243	0.443	1.119
Botswana	0.024	0.004	0.821	1.634	2.589	1.032	3.252	6.863	0.457	1.721	0.655	1.447	1.058	2.306	0.329	1.241
Swaziland	0.005	0.001	1.229	0.725	2.165	0.862	1.986	5.339	0.278	1.096	0.38	0.913	0.43	1.19	0.226	0.751
Africa-Southern	0.677	0.205	58.93	36.16	105.8	19.77	88.22	157.7	20.81	59.93	11.91	25.68	57.22	133.1	8.206	29.65
Nigeria	317.5	10.74	305.7	91.46	772.9	110.4	288.4	891.9	40.15	149.2	55.14	98.03	94.21	293.2	35.88	143.1
Niger	30.1	4.261	38.68	12.03	72.26	43.36	17.63	113.2	2.627	14.54	3.019	6.701	8.026	50	2.034	11.62
Côte d'Ivoire	20.78	1.921	21.68	11.58	46.3	15.83	26.92	125.9	3.748	17.8	4.811	10.68	4.815	26.21	2.819	14.01
Burkina Faso	35.65	2.759	31.98	9.567	57.04	21.56	18.58	112.2	2.697	15.18	3.538	8.393	6.044	35.41	2.501	12.35
Ghana	17.58	0.186	18.19	6.781	68.62	9.133	44.02	127.6	2.955	9.279	7.268	12.45	13.73	41.02	4.8	14.16
Mali	21.95	0.35	35.88	2.785	70.34	8.532	16.09	94.79	2.358	10.56	2.951	3.518	8.658	41.52	2.279	9.623
Senegal	11.88	4.313	16.22	16.21	40.92	37.12	18.87	74.41	2.797	14.62	3.361	10.89	7.541	36.4	1.896	8.945
Guinea	14.14	1.053	14.17	4.164	26.63	8.592	13.01	69.5	1.773	7.821	2.677	4.186	3.192	16.47	1.716	7.566
Benin	8.501	1.239	12.42	6.652	20.24	9.587	9.425	57.93	1.29	7.477	1.858	4.63	2.828	14.79	1.212	6.704
Togo	3.9	1.052	5.31	5.545	13.45	10	6.581	43.3	0.895	5.303	1.12	4.22	1.999	12.21	0.741	3.817
Sierra Leone	11.81	0.178	11.39	1.711	29.24	2.467	8.843	44.87	1.398	5.476	1.777	2.466	3.121	13.79	0.947	3.914
Liberia	3.781	0.234	5.322	2.068	12.41	3.093	4.365	35.92	0.621	2.986	0.789	2.129	1.34	10.81	0.456	2.177
Mauritania	1.305	0.289	4.671	2.944	10.09	5.596	4.801	20.71	0.706	3.692	0.869	2.319	1.55	7.239	0.54	2.495
Gambia	1.879	0.251	2.253	1.223	4.484	2.273	2.462	14.52	0.356	2.245	0.467	1.148	0.882	4.909	0.271	1.518
Guinea-Bissau	3.34	0.836	3.917	2.138	7.251	4.62	2.938	10.37	0.409	1.579	0.604	1.225	0.773	3.008	0.38	1.347
Cape Verde	0.001	0	0.34	0.325	0.382	0.133	0.971	2.591	0.196	0.655	0.098	0.245	0.277	0.787	0.075	0.321
Africa-Western	504	29.66	528.1	177.2	1253	292.3	483.9	1840	64.97	268.4	90.34	173.2	159	607.8	58.54	243.7

Health

	Deaths from Communicable Diseases (cont.)						Deaths from Noncommunicable Diseases									
	Annual deaths in thousands						Annual deaths in thousands									
	Malaria		Respiratory infections		Other comm diseases		Cardiovascular diseases		Diabetes		Digestive disorders		Malignant neoplasms		Mental health disorders	
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
AMERICAS																
Haiti	0.598	0.185	8.112	5.31	26.61	16.93	18.03	63.58	3.244	11.93	3.867	8.651	5.373	24.49	1.793	7.543
Dominican Rep.	0.016	0.001	3.153	2.602	7.061	2.033	19.38	47.99	2.737	9.688	3.012	8.664	7.368	19.47	0.87	4.155
Cuba	0	0	5.036	7.905	1.022	0.443	32.24	49.52	1.988	3.317	2.799	4.722	19.52	41.8	4.272	18.48
Puerto Rico	0	0	1.103	1.043	1.422	0.9	8.708	11.89	2.284	4.986	1.467	2.466	4.548	8.409	1.604	5.31
Jamaica	0	0	0.948	0.901	1.217	0.623	6.234	11.57	0.772	2.065	0.834	2.306	3.073	5.823	0.174	0.41
Trinidad and Tobago	0	0	0.245	0.332	0.582	0.221	3.418	6.201	1.405	4.064	0.415	1.026	1.356	2.866	0.232	0.835
Bahamas	0	0	0.034	0.065	0.104	0.098	0.676	2.087	0.12	0.526	0.073	0.222	0.355	0.913	0.054	0.261
Barbados	0	0	0.114	0.141	0.136	0.102	0.628	1.025	0.196	0.499	0.064	0.153	0.406	0.694	0.035	0.094
Saint Lucia	0	0	0.04	0.044	0.085	0.041	0.357	0.759	0.128	0.392	0.029	0.059	0.186	0.369	0.026	0.076
Grenada	0	0	0.037	0.043	0.04	0.024	0.232	0.541	0.059	0.204	0.021	0.06	0.119	0.331	0.012	0.041
Saint Vincent and the Grenadines	0	0	0.026	0.031	0.06	0.036	0.306	0.683	0.056	0.177	0.027	0.073	0.108	0.257	0.02	0.064
America-Caribbean	0.614	0.186	18.85	18.42	38.34	21.45	90.21	195.8	12.99	37.84	12.61	28.4	42.42	105.4	9.091	37.27
Guatemala	0.009	0.007	9.067	6.24	11.09	3.354	10.53	47.7	3.496	17.42	3.73	9.185	8.427	32.28	3.055	14.49
Honduras	0.009	0.001	2.061	1.04	5.616	1.656	9.462	42.15	1.706	8.871	2.139	8.9	4.382	15.2	0.972	3.769
Nicaragua	0	0	1.284	1.452	2.536	1.478	6.433	28.41	1.765	8.596	1.841	5.32	3.426	15.22	0.681	2.364
El Salvador	0	0	2.518	2.646	3.008	1.351	8.715	22.16	1.754	5.639	1.939	5.241	4.5	9.74	2.205	7.15
Costa Rica	0	0	0.411	0.923	0.668	0.308	5.72	17.58	0.827	3.853	1.406	5.915	4.134	15.02	0.787	4.932
Panama	0	0	0.829	1.5	1.37	0.805	4.557	11.99	1.043	4.427	0.68	2.617	3.147	11.26	0.386	2.306
Belize	0	0	0.057	0.204	0.132	0.106	0.246	1.313	0.081	0.556	0.051	0.272	0.122	0.708	0.019	0.114
America-Central	0.018	0.008	16.23	14.01	24.42	9.058	45.66	171.3	10.67	49.36	11.79	37.45	28.14	99.42	8.104	35.13
United States of America	0.004	0.004	50.33	77.18	68.66	51.76	763.8	1079	67.03	162.8	82.81	208.5	528.8	899	207.4	841.6
Mexico	0	0	15.29	29.23	39.61	33.38	126.1	352.6	60.82	220.1	46.9	154.5	60.13	174.8	9.782	44.97
Canada	0	0	6.552	11.22	4.675	3.57	79.46	122.4	8.413	24.07	9.331	27.5	71.11	122.5	19.03	80.2
America-North	0.004	0.004	72.17	117.6	112.9	88.71	969.4	1554	136.3	407	139	390.5	660.1	1196	236.3	966.8
Brazil	0.221	0.025	59.3	85.05	96.97	41.16	386.1	824.2	61.22	218.4	70.54	162.6	194.1	464.4	40.27	179
Colombia	0.146	0.028	9.074	11.55	17.65	6.71	67.74	198.8	8.619	37.27	11.3	42.89	40.76	134.1	2.606	9.368
Argentina	0	0	17.81	21.26	19.67	11.88	97.32	146.4	8.444	20.22	13.71	29.56	60.91	116.6	7.01	24.5
Peru	0.047	0.007	18.68	39.38	20.69	14.72	28.08	83.76	3.712	15.22	11.69	38.14	28.95	84.98	2.352	8.957
Venezuela (Bolivarian Rep. of)	0.016	0.015	4.183	7.883	12.01	4.702	45.69	133.9	9.774	41.01	6.177	19.2	23.13	79.31	1.909	8.76
Ecuador	0.002	0	4.195	6.486	6.624	4.082	15.59	54.99	3.949	17.08	3.701	13.37	13.07	42.23	1.601	6.305
Chile	0	0	3.968	10.13	2.974	2.751	26.63	49.62	3.709	12.18	6.8	17.62	21.82	55.43	5.787	33.43
Bolivia (Plurinational State of)	0.008	0.001	6.955	5.046	15.78	5.986	12.57	41.12	1.781	7.603	5.751	19.78	5.455	15.72	1.316	4.717
Paraguay	0	0	1.715	1.668	4.709	2.318	9.255	31.04	2.448	11.05	1.491	5.912	5.418	18.06	0.445	1.868
Uruguay	0	0	1.141	1.019	0.924	0.334	10.72	11.49	0.731	1.357	1.159	2.074	7.104	10.43	1.823	5.32
Guyana	0.024	0.007	0.166	0.209	0.661	0.213	1.486	3.651	0.344	0.958	0.225	0.452	0.322	0.899	0.07	0.197
Suriname	0.014	0.004	0.13	0.147	0.302	0.076	1.486	2.139	0.21	0.436	0.235	0.485	0.445	0.919	0.052	0.115
America-South	0.477	0.088	127.3	189.8	199	94.93	702.7	1581	104.9	382.8	132.8	352.1	401.5	1023	65.25	282.6

Health

	Deaths from Communicable Diseases (cont.)						Deaths from Noncommunicable Diseases									
	Annual deaths in thousands						Annual deaths in thousands									
Base Case: Countries in Year 2060 Descending Population Sequence	Malaria		Respiratory infections		Other comm diseases		Cardiovascular diseases		Diabetes		Digestive disorders		Malignant neoplasms		Mental health disorders	
	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
ASIA with OCEANIA																
China	0	0	180.2	299.5	464.7	144.7	3533	4674	172.7	435.3	257.8	720.4	1949	4308	101.3	466.7
Japan	0.001	0	121.7	147.5	27.21	14.63	343.8	361.6	14.56	25.67	44.28	92.69	340.5	424.2	22.97	58.24
Korea, Rep. of	0.004	0.001	7.558	22.05	8.859	10.47	80.07	153.1	15.01	47.16	12.99	38.38	81.32	186.8	12.77	82.51
Korea, Dem. People's Rep. of	0	0	29.61	18.7	39.39	9.671	72.13	151.1	6.316	11.16	8.602	9.231	28.81	64.13	2.454	5.856
Taiwan, China	0.186	0.212	0.433	0.567	0.291	0.08	13.52	19.5	26.69	72.81	1.171	3.334	6.543	13.6	0	0
Hong Kong SAR, China	0.072	0.083	0.184	0.221	0.052	0.027	4.122	6.72	8.842	26.32	0.409	1.302	2.359	5.054	0	0
Mongolia	0	0	1.289	0.227	1.594	0.372	6.392	15.63	0.034	0.218	1.174	2.809	3.518	14.17	0.154	0.506
Asia-East	0.262	0.296	341	488.8	542	180	4053	5381	244.2	618.6	326.4	868.1	2412	5016	139.6	613.8
India	22.19	1.481	672.3	298.9	1718	188	2193	5138	165.7	544.8	460.9	653.4	607.9	1465	135.2	448.1
Pakistan	0.832	0.177	147.3	148.4	284.5	108.2	272.6	1067	15.06	76.15	31.36	80.44	74.65	270	22.78	133.4
Bangladesh	2.894	0.198	111	118.3	261.8	73.13	314.3	1209	18.88	70.02	34.23	70.93	85.64	311.6	20.2	102.8
Afghanistan	0.106	0.025	104.6	25.42	183.6	97.24	82.12	316.9	3.188	14.76	15.13	36.79	15.02	73.92	10.55	45.05
Iran, Islamic Rep. of	0.003	0.001	14.23	15.38	27.87	10.53	171.2	520	8.43	42.56	8.181	36.35	47.81	137.9	12.41	72.14
Nepal	0.011	0.002	18.51	17.62	43.23	16.14	46.81	212.8	3.356	14.41	5.511	12.12	20	79.64	2.381	12.54
Uzbekistan	0	0	11.5	2.03	25.28	3.488	85.78	290.2	3.652	10.93	10.26	15.62	12.27	31.71	3.58	6.597
Sri Lanka	0	0	3.905	4.033	7.508	3.738	44.95	83.29	6.057	20.17	5.482	11.87	13.98	23.02	8.175	46.4
Kazakhstan	0.002	0	9.024	1.399	6.337	1.587	87.98	110.1	1.241	2.021	8.593	9.38	20.12	31.47	2.388	3.089
Tajikistan	0	0	4.147	1.993	10.91	5.814	14.18	56.89	0.599	2.497	1.352	4.27	2.959	11.7	0.904	1.756
Kyrgyz Rep.	0	0	2.081	0.848	3.706	1.778	16.13	47.6	0.313	0.994	2.195	4.889	3.167	10.27	0.532	1.22
Turkmenistan	0	0	3.157	0.783	4.795	0.689	18.12	44.98	0.448	1.588	1.836	3.271	2.787	8.548	0.545	1.205
Bhutan	0.001	0	0.49	0.483	1.04	0.323	1.269	3.702	0.071	0.337	0.158	0.346	0.433	1.541	0.104	0.688
Maldives	0.003	0	0.046	0.067	0.158	0.164	0.691	2.38	0.019	0.093	0.049	0.192	0.109	0.402	0.03	0.136
Asia-South Central	26.04	1.884	1102	635.7	2579	510.8	3349	9102	227	801.3	585.2	939.8	906.8	2456	219.8	875.2
Indonesia	5.548	0.558	128.3	144.7	189.8	80.04	389.7	1244	37.21	139.3	47.81	115.1	172.3	502.6	28.07	175.1
Philippines	0.172	0.04	35.06	120.6	76.05	47.24	117.8	455.4	15.03	65.47	19.06	74.94	39.35	134.4	4.21	17.69
Vietnam	0.102	0.018	17.69	23.28	45.9	14.48	162.7	578.5	11.61	48.42	18.64	49.78	58.92	191.6	9.733	52.76
Thailand	0.311	0.041	29.42	24.03	39.88	11.81	192.9	261	42.93	75.16	48.33	74.43	79.36	105.6	10.75	27.71
Myanmar	9.136	0.807	35.25	23.26	72.33	14.4	103.1	314	7.307	18.67	11.36	14.11	36.87	98.07	5.707	23.49
Malaysia	0.026	0.007	8.21	30.15	15.24	25.32	36.86	112.8	2.743	14.16	4.512	24.89	16.94	50.58	0.998	3.892
Cambodia	0.494	0.048	15.53	8.039	28.67	9.664	24.7	88.09	3.184	11.76	4.215	9.063	8.871	32.38	2.415	8.412
Lao People's Dem. Rep.	0.156	0.008	4.714	2.136	11.01	0.928	9.954	36.55	0.521	2.281	1.232	2.211	3.361	13.69	0.838	4.889
Singapore	0.001	0	3.477	10.78	0.45	0.6	8.414	22.29	0.68	3.303	0.537	2.627	7.351	22.65	0.082	0.228
Timor-Leste	1.226	0.094	0.366	0.071	3.466	0.356	1.292	8.853	0.096	0.448	0.172	0.223	0.61	3.378	0.072	0.416
Brunei Darussalam	0	0	0.043	0.127	0.074	0.067	0.428	1.891	0.15	1.11	0.034	0.2	0.228	1.036	0.022	0.052
Asia-South East	17.17	1.62	278.1	387.2	482.9	204.9	1048	3124	121.5	380.1	155.9	367.6	424.2	1156	62.89	314.6

Health

Base Case: Countries in Year 2060 Descending Population Sequence	Deaths from Communicable Diseases (cont.)						Deaths from Noncommunicable Diseases									
	Annual deaths in thousands						Annual deaths in thousands									
	Malaria		Respiratory infections		Other comm diseases		Cardiovascular diseases		Diabetes		Digestive disorders		Malignant neoplasms		Mental health disorders	
	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
ASIA with OCEANIA continued																
Turkey	0	0	15.44	16.44	25.65	8.883	219.8	503.7	9.832	32.8	12.29	29.77	79.72	188.7	6.26	31.42
Iraq	0	0	11.54	1.888	29.74	7.17	43.76	181.5	1.585	8.955	4.823	18.75	11.38	57.56	2.238	14.68
Yemen, Rep. of	1.202	0.224	19.14	5.34	35.49	10.08	38.54	207.4	1.537	9.986	6.402	17.83	8.726	47.21	3.358	18.23
Saudi Arabia	0.007	0.002	4.685	16.46	8.321	10.09	41.72	162.9	5.884	57.02	3.144	20.75	8.336	44.34	1.312	7.989
Syrian Arab Rep.	0	0	2.801	2.132	5.982	1.99	38.49	150.8	2.068	10.73	2.452	9.66	6.076	20.16	3.445	24.22
Jordan	0	0	1.073	1.427	2.86	1.759	9.201	38.68	1.686	10.71	0.751	4.117	2.653	10.43	0.461	1.793
Israel	0	0	1.09	1.854	2.044	2.286	11.17	16.27	2.69	9.048	1.362	5.185	11.02	26.97	2.348	10.89
Palestine	0	0	0.438	0.397	1.871	0.598	4.581	32.02	0.398	3.469	0.283	1.4	1.075	5.751	0.248	1.015
Azerbaijan	0	0	3.471	1.786	5.387	1.314	33.08	74.81	0.838	1.987	3.862	9.078	7.684	17.5	1.589	5.789
United Arab Emirates	0	0	0.195	4.463	0.387	2.945	1.816	33.46	0.148	9.263	0.156	3.896	0.617	11.4	0.059	0.618
Kuwait	0.001	0	0.259	1.828	0.299	0.803	2.946	25.04	0.243	5.908	0.17	1.828	0.793	8.718	0.048	0.569
Lebanon	0	0	0.582	0.685	1.324	0.698	12.68	28.44	0.443	1.503	1.336	3.964	5.399	10.19	0.568	1.883
Oman	0	0	0.066	0.14	0.233	0.136	3.829	21.53	0.542	6.849	0.274	3.003	0.753	5.214	0.104	0.917
Armenia	0	0	0.726	0.569	1.053	0.338	11.77	16.62	1.98	3.495	1.507	2.981	4.152	5.638	0.443	1.057
Georgia	0	0	0.797	0.124	1.242	0.165	37.86	35.99	0.753	0.639	1.485	1.074	5.456	4.857	0.281	0.246
Qatar	0	0	0.042	0.619	0.167	0.634	0.612	5.289	0.172	6.984	0.126	1.49	0.599	7.014	0.045	0.507
Bahrain	0	0	0.046	0.37	0.115	0.342	0.55	4.169	0.226	3.49	0.057	0.819	0.224	1.972	0.04	0.303
Cyprus	0	0	0.107	0.148	0.098	0.085	2.344	4.752	0.391	1.284	0.186	0.564	1.107	1.941	0.225	0.798
Asia-West	1.211	0.226	62.5	56.68	122.3	50.31	514.8	1543	31.42	184.1	40.66	136.2	155.8	475.6	23.07	122.9
Australia	0	0	3.094	5.26	3.02	2.486	48.88	84.42	3.884	12.51	4.762	15.32	41.25	81.41	10.78	49.72
Papua New Guinea	2.935	0.321	5.265	3.716	12.43	2.475	12.48	44.37	0.947	3.892	1.949	3.949	4.989	18.23	0.666	3.366
New Zealand	0	0	0.478	0.918	0.363	0.205	10.57	15.16	0.852	2.141	0.808	2.71	8.525	15.8	1.941	8.469
Solomon Islands	0.22	0.15	0.25	0.27	0.644	0.787	0.808	3.484	0.099	0.617	0.104	0.466	0.293	1.282	0.034	0.166
Fiji	0	0	0.239	0.267	0.712	0.572	2.17	3.874	0.22	0.607	0.174	0.522	0.674	1.29	0.069	0.194
Vanuatu	0.025	0.02	0.078	0.086	0.225	0.245	0.358	1.448	0.044	0.274	0.044	0.242	0.115	0.36	0.013	0.071
Micronesia (Federated States of)	0	0	0.057	0.056	0.116	0.112	0.22	0.719	0.027	0.129	0.028	0.089	0.053	0.207	0.009	0.033
Tonga	0.001	0	0.034	0.043	0.105	0.119	0.236	0.547	0.029	0.113	0.029	0.112	0.051	0.149	0.007	0.028
Samoa	0.002	0	0.055	0.032	0.166	0.089	0.365	0.691	0.046	0.132	0.044	0.101	0.056	0.098	0.012	0.032
Oceania	3.182	0.493	9.549	10.65	17.78	7.09	76.09	154.7	6.148	20.41	7.942	23.51	56.01	118.8	13.53	62.08

Health

	Deaths from Communicable Diseases (cont.)						Deaths from Noncommunicable Diseases									
	Annual deaths in thousands						Annual deaths in thousands									
	Malaria		Respiratory infections		Other comm diseases		Cardiovascular diseases		Diabetes		Digestive disorders		Malignant neoplasms		Mental health disorders	
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
EUROPE																
Russian Federation	0.004	0.001	20.49	9.12	45.19	7.902	1238	1090	9.755	9.726	84.74	78.35	264.4	271	19.82	21.57
Poland	0.002	0.001	9.914	8.535	4.43	1.134	185.5	215.7	6.98	13.11	17.97	23.78	97.04	121.7	7.132	12.41
Ukraine	0.003	0	1.643	0.493	16.92	2.964	469.7	364.9	2.288	1.5	30.67	19.76	76.18	52.7	13.62	10.88
Romania	0	0	5.518	2.645	3.57	0.852	157.6	174.4	2.22	2.855	14.94	14.59	45.2	42.63	2.11	3.636
Czech Rep.	0	0	3.13	3.093	1.304	0.655	54.25	63.93	2.049	4.063	4.845	6.893	28.31	34.47	1.515	2.893
Belarus	0	0	0.727	0.18	1.237	0.225	85.22	78.4	0.456	0.453	5.009	4.057	19.46	18.27	1.79	2.291
Hungary	0	0	0.875	0.62	1.002	0.364	64.41	52.36	2.833	3.628	8.216	8.052	31.36	27.86	4.273	7.99
Bulgaria	0	0	1.791	0.842	1.049	0.264	68.61	58.86	2.027	2.189	3.392	2.886	17.2	11.54	1.006	1.396
Slovak Rep.	0	0	1.869	1.849	0.488	0.178	27.48	39.47	0.604	1.269	2.951	3.862	11.57	15.93	0.763	1.455
Moldova, Rep. of	0.001	0	0.905	0.346	0.903	0.143	23.06	25.98	0.338	0.372	3.895	3.528	5.423	6.506	0.516	0.556
Europe-East	0.01	0.002	46.87	27.72	76.1	14.68	2374	2164	29.55	39.16	176.6	165.8	596.2	602.5	52.55	65.08
United Kingdom	0.005	0.001	35.66	29.6	7.675	2.263	193	201.4	6.519	13.71	29.93	48.57	159.1	207.2	41.88	121.9
Sweden	0.002	0.001	2.284	2.561	1.935	1.43	36.26	33.95	1.96	3.934	3.022	6.154	21.65	28.14	7.939	21.95
Denmark	0	0	1.785	1.604	1	0.461	17.17	17.09	1.328	2.339	2.947	4.576	15.99	19.17	4.231	10.66
Ireland	0	0	1.495	3.027	0.338	0.215	9.706	17.85	0.469	1.755	1.067	3.39	8.081	16.74	1.487	6.839
Norway	0.001	0	1.64	2.082	0.847	0.652	13.94	17.05	0.709	1.743	1.277	3.167	10.67	16.25	3.233	9.928
Finland	0.002	0	0.456	0.408	0.453	0.182	19.67	18.78	0.523	0.883	2.355	2.899	10.75	13	6.21	19.07
Lithuania	0	0	0.725	0.383	0.68	0.17	23.07	21.74	0.277	0.32	2.444	2.488	8.011	8.32	0.641	0.917
Latvia	0	0	0.33	0.158	0.348	0.078	17.7	15.52	0.408	0.479	1.077	1.146	5.718	5.632	0.513	0.698
Estonia	0	0	0.146	0.072	0.153	0.043	9.407	6.806	0.227	0.248	0.705	0.698	3.543	3.595	0.398	0.474
Iceland	0	0	0.062	0.108	0.029	0.019	0.68	1.092	0.026	0.079	0.051	0.176	0.526	0.993	0.203	0.994
Europe-North	0.01	0.002	44.58	40	13.46	5.513	340.6	351.3	12.44	25.49	44.88	73.26	244	319	66.74	193.5
Italy	0.007	0.001	8.829	6.961	10.5	4.266	239	285.3	20.97	39.74	24.44	37.1	171.6	184.8	31.61	81.08
Spain	0.009	0.003	10.71	11.45	8.378	4.87	125.8	164.8	10.43	26.38	19.86	41.49	102.1	139.7	31.59	106.1
Greece	0.001	0	4.896	4.698	1.54	0.85	54.71	74.66	1.394	2.611	2.775	4.985	29.86	34.44	1.592	3.202
Portugal	0.003	0	6.242	4.542	2.687	0.974	37.54	49.94	4.77	9.065	5.122	6.91	26.73	28.85	3.392	6.977
Serbia	0	0	0.431	0.228	0.981	0.289	48	50.17	2.518	3.597	3.01	3.687	16.75	15.45	1.891	3.217
Croatia	0	0	0.805	0.435	0.476	0.133	25.32	27.4	1.241	1.869	2.269	2.217	12.37	10.99	1.467	2.658
Bosnia and Herzegovina	0	0	0.249	0.174	0.421	0.13	23.7	36.05	0.636	1.052	0.893	1.065	6.335	7.743	0.37	0.837
Albania	0	0	0.635	0.919	0.405	0.215	10.6	22.4	0.174	0.443	0.327	0.847	3.571	6.875	0.595	2.206
Macedonia, TFYR	0	0	0.121	0.086	0.35	0.107	11.46	17.9	0.641	1.195	0.38	0.453	3.302	3.654	0.194	0.372
Slovenia	0	0	0.637	0.724	0.239	0.094	7.765	10.13	0.293	0.525	1.238	1.847	6.066	7.31	0.413	0.719
Montenegro	0	0	0.033	0.022	0.072	0.027	3.793	5.119	0.107	0.196	0.165	0.224	1.115	1.173	0.084	0.205
Malta	0	0	0.135	0.158	0.033	0.016	1.307	1.897	0.134	0.299	0.12	0.257	0.813	1.059	0.177	0.601
Europe-South	0.02	0.005	33.72	30.39	26.08	11.97	589	745.8	43.31	86.97	60.6	101.1	380.7	442	73.37	208.2
Germany	0.005	0.002	22.32	25.51	13.56	7.83	371.3	397	22.92	47.89	43.6	79.6	215.2	244.7	33.93	79.65
France	0.013	0.004	14.58	14.42	14.95	9.525	156.1	172.3	11.78	24.95	24.59	45.06	156.8	205.3	50.82	149.2
Netherlands	0.003	0.001	6.228	7.63	2.792	1.942	41.98	50.83	3.349	7.537	5.614	13.37	42.82	55.43	11.67	38.34
Belgium	0	0	4.824	4.944	2.723	1.551	34.09	37.27	1.653	3.539	4.465	8.895	25.17	30.62	6.628	18.95
Switzerland	0.001	0	1.459	1.647	0.906	0.454	23.25	34.2	1.469	3.81	2.521	5.629	16.04	22.17	6.161	21.43
Austria	0	0	1.258	1.211	0.823	0.294	32.82	43.28	3.443	7.867	3.031	4.844	19.9	25.89	3.143	7.856
Luxembourg	0	0	0.106	0.169	0.121	0.114	1.488	2.948	0.053	0.163	0.172	0.466	0.984	1.88	0.23	1.013
Europe-West	0.022	0.007	50.78	55.54	35.87	21.71	661	737.8	44.67	95.76	83.99	157.9	476.9	586	112.6	316.5

Health

Base Case Source: International Futures Model Version 6.68, Nov 2013	Deaths from Noncommunicable Diseases (cont.)				Deaths from Injuries					
	Annual deaths in thousands				Annual deaths in thousands					
	Respiratory conditions		Other noncomm diseases		Road traffic accidents		Other unintentional injuries		Intentional injuries	
	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
World	4028	15006	2209	4297	1184	2869	2259	4828	1386	2929
Africa	363.5	1439	442	947.6	237.9	944.3	345.4	655.5	286.6	838.8
Americas	368	1323	359.7	797.2	141.2	195.4	195.9	468.1	221	461.7
Asia with Oceania	2978	11569	1155	2214	718.4	1672	1387	3319	729.2	1444
Europe	315.4	669.6	250	335.2	85.09	55.95	326.5	379.8	147.9	182.8
World	4028	15006	2209	4297	1184	2869	2259	4828	1386	2929
Africa-Eastern	108.5	439	121.4	249.7	72.89	352.8	128.3	239.1	103.6	292.8
Africa-Middle	51.99	200.6	64.91	113.7	40.21	148.4	61.81	137.9	61.28	242.3
Africa-Northern	51.25	243.9	100.3	289.7	43.95	121	35.98	64.04	33.64	71.25
Africa-Southern	22.72	61.89	17	29.98	10.41	19.17	9.861	15.35	15.49	33.78
Africa-Western	129	493.3	138.4	264.5	70.42	303	109.4	199.1	72.61	198.7
Africa	363.5	1439	442	947.6	237.9	944.3	345.4	655.5	286.6	838.8
America-Caribbean	11.24	34.43	14.79	24.96	6.32	10.12	8.852	24.7	7.944	15.33
America-Central	7.59	40.04	16.11	43.77	5.075	10.44	8.852	22.44	16.61	48.23
America-North	209	657.7	186.1	372.7	51.3	51.47	98.1	237.1	68.75	159.2
America-South	140.2	590.6	142.7	355.8	78.47	123.4	80.11	183.9	127.7	239
Americas	368	1323	359.7	797.2	141.2	195.4	195.9	468.1	221	461.7
Asia-East	1466	5814	377.1	620.7	303.8	540.1	485.2	1091	236.2	457.2
Asia-South Central	1202	4343	507	892.6	276.7	777	660.8	1731	368	667.3
Asia-South East	230.6	1015	193.3	463.8	102.4	236.8	193.1	378.8	83.36	175.5
Asia-West	65.16	347.8	64.36	207.7	32.52	110.5	40.37	96.32	37.27	133.4
Oceania	14.05	48.52	13.08	29.42	2.942	7.674	7.911	21.43	4.325	10.38
Asia with Oceania	2978	11569	1155	2214	718.4	1672	1387	3319	729.2	1444
Europe-East	93.8	153.6	59.41	48.58	55.79	35.42	226.8	152.4	97.23	108.2
Europe-North	61.1	132.2	42.17	56.02	5.578	4.341	26.15	49.73	11.67	17.6
Europe-South	87.07	220.8	69.46	112.2	13.61	8.834	31.1	67.55	13.32	17.68
Europe-West	76.41	168.6	81.21	120.8	11.42	8.227	46.44	115.5	27.38	41.43
Europe	315.4	669.6	250	335.2	85.09	55.95	326.5	379.8	147.9	182.8

Education

Literacy			
Percent of population 15 and older			
2010	2035	2060	% Chg
81.84	94.18	99.44	21.5%
62.28	88.57	98.55	58.2%
94.21	97.59	99.8	5.9%
80.85	94.54	99.71	23.3%
99.27	99.93	100	0.7%
81.84	94.18	99.44	21.5%
61.34	87.87	98.31	60.3%
65.55	89.02	97.86	49.3%
67.88	90.88	99.57	46.7%
88.55	95.34	100	12.9%
53.11	87.09	98.54	85.5%
62.28	88.57	98.55	58.2%
82.1	90.15	96.42	17.4%
82.16	92.38	99.09	20.6%
98.43	99.43	100	1.6%
91.91	96.92	100	8.8%
94.21	97.59	99.8	5.9%
94.87	97.95	100	5.4%
63.3	90.96	99.52	57.2%
92.31	98.24	99.99	8.3%
85.77	93.88	99.37	15.9%
91.51	96.33	99.43	8.7%
80.85	94.54	99.71	23.3%
99.4	100	100	0.6%
99.98	100	100	0.0%
97.63	99.66	100	2.4%
100	100	100	0.0%
99.27	99.93	100	0.7%

Health

Base Case: Countries in Year 2060 Descending Population Sequence	Deaths from Noncommunicable Diseases (cont.)				Deaths from Injuries					
	Annual deaths in thousands				Annual deaths in thousands					
	Respiratory conditions		Other noncomm diseases		Road traffic accidents		Other unintentional injuries		Intentional injuries	
	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
AFRICA										
Ethiopia	33.95	114	33.63	59.18	19.86	105.4	30.61	53.67	22.6	49.51
Tanzania, United Rep. of	12.15	52.22	14.28	28.58	8.009	42.94	15.29	25.16	10.42	41.69
Uganda	8.693	46.31	10.48	25.34	7.538	49.54	17.19	34.55	12.44	42.52
Kenya	10.59	56.24	12.45	35.82	10.67	45.17	15.44	31.27	16.69	52.51
Madagascar	7.11	37.2	6.888	23.6	3.38	8.121	4.333	14.25	2.765	8.934
Mozambique	11.16	28.75	11.65	12.9	7.111	40.64	11.89	18.54	8.867	16.25
Malawi	3.224	18.84	5.178	14.18	1.427	6.365	3.844	10.35	1.664	7.078
Zambia	5.304	17.9	6.025	8.682	3.441	19.5	7.672	10.26	5.256	18.09
Somalia	2.461	8.77	5.554	8.533	1.308	4.958	5.777	9.413	9.108	21.72
Rwanda	4.027	15.02	4.677	7.902	3.414	12.31	5.91	8.406	4.008	9.651
Zimbabwe	3.892	18.19	4.251	10.79	2.8	7.271	3.517	6.621	4.212	9.222
Burundi	3.179	14.01	3.431	7.818	2.243	4.668	3.998	9.527	3.629	10.4
Eritrea	1.885	7.974	1.787	3.982	1.084	4.885	2.111	5.92	1.653	4.644
Comoros	0.185	1.287	0.182	0.738	0.085	0.241	0.131	0.426	0.08	0.27
Djibouti	0.211	0.74	0.562	0.968	0.332	0.645	0.369	0.42	0.11	0.134
Mauritius	0.485	1.591	0.372	0.727	0.191	0.187	0.223	0.349	0.136	0.185
Africa-Eastern	108.5	439	121.4	249.7	72.89	352.8	128.3	239.1	103.6	292.8
Congo, Democratic Rep. of	24.99	98.24	35.37	57.76	19.18	63.29	33.92	95.21	40.18	173.5
Angola	8.186	30.51	9.695	13.76	8.138	34.49	10.2	9.243	6.984	29.28
Cameroon	9.457	33.57	9.907	20.21	6.301	25.38	8.982	14.85	5.707	13.93
Chad	4.52	20.74	4.869	11.66	2.64	13.11	4.201	10.43	3.498	11.82
Central African Rep.	2.237	7.508	2.301	3.958	1.706	5.209	2.002	3.908	2.582	6.035
Congo, Rep. of	1.624	5.9	1.785	3.785	1.541	5.391	1.58	2.621	1.734	5.56
Gabon	0.565	2.511	0.525	1.631	0.391	0.824	0.482	1.011	0.319	1.039
Equatorial Guinea	0.355	1.37	0.408	0.793	0.279	0.543	0.379	0.518	0.256	1.124
São Tomé and Príncipe	0.054	0.26	0.046	0.105	0.032	0.119	0.061	0.119	0.016	0.042
Africa-Middle	51.99	200.6	64.91	113.7	40.21	148.4	61.81	137.9	61.28	242.3
Egypt	15.4	70.83	50.26	134	15.02	33.86	8.306	10.87	1.833	4.056
Sudan	12.7	47.05	22.1	57.45	16.57	50.75	16.35	19.92	26.28	50.61
Algeria	11.21	66.46	9.176	41.61	3.777	12.88	4.647	17.46	3.906	12.84
Morocco	8.481	39.42	13.18	37.84	5.73	16.58	4.469	9.64	1.009	2.155
Tunisia	2.452	12.55	3.647	10.86	1.958	4.559	1.221	2.88	0.332	0.786
Libya	1.017	7.575	1.931	7.925	0.893	2.365	0.985	3.271	0.282	0.8
Africa-Northern	51.25	243.9	100.3	289.7	43.95	121	35.98	64.04	33.64	71.25

Education

Literacy			
Percent of population 15 and older			
2010	2035	2060	% Chg
29.82	86.5	99.04	232.1%
72.9	87.94	98.13	34.6%
71.62	86.12	97.48	36.1%
87.01	94.85	100	14.9%
64.48	85.84	96.41	49.5%
55.06	80.95	95.91	74.2%
73.69	92.78	100	35.7%
70.88	94.5	100	41.1%
54.68	82.14	98.2	79.6%
70.67	85.04	97.06	37.3%
91.86	96.85	100	8.9%
66.57	80.31	95.39	43.3%
66.58	80.83	96.63	45.1%
74.15	85.08	96.67	30.4%
52.98	88.03	98.54	86.0%
87.9	94.43	99.63	13.3%
61.34	87.87	98.31	60.3%
66.99	89.18	97.55	45.6%
69.96	93.01	100	42.9%
70.68	88.94	98.47	39.3%
33.61	82.27	95.81	185.1%
55.23	80.94	96.06	73.9%
85.22	94.72	100	17.3%
87.71	93.99	100	14.0%
93.33	98.04	100	7.1%
88.78	95.3	100	12.6%
65.55	89.02	97.86	49.3%
66.37	92.84	100	50.7%
70.21	87.5	98.95	40.9%
72.65	92.19	100	37.6%
56.08	88.36	98.9	76.4%
77.56	92.03	100	28.9%
88.86	95.72	100	12.5%
67.88	90.88	99.57	46.7%

Patterns of Potential Human Progress		Multination Regional Analysis				Measures of Poverty, Health, Education, Infrastructure, and Governance									
		Health										Education			
		Deaths from Noncommunicable Diseases (cont.)				Deaths from Injuries						Literacy			
		Annual deaths in thousands				Annual deaths in thousands						Percent of population 15 and older			
Base Case: Countries in Year 2060		Respiratory conditions		Other noncomm diseases		Road traffic accidents		Other unintentional injuries		Intentional injuries					
Descending Population Sequence		2010	2060	2010	2060	2010	2060	2010	2060	2010	2060	2010	2035	2060	% Chg
AFRICA continued															
South Africa		19.58	52.05	13.64	23.12	8.061	13.41	6.367	9.462	12.77	27.57	88.72	95.01	100	12.7%
Namibia		0.583	2.229	0.834	2.45	0.638	1.7	0.673	1.761	0.582	1.916	88.51	99.33	100	13.0%
Lesotho		1.093	2.998	1.086	1.547	0.855	2.248	1.432	1.502	0.977	1.296	89.66	96.9	100	11.5%
Botswana		0.916	2.764	0.868	1.77	0.526	1.085	0.809	1.503	0.739	1.807	84.08	96.55	100	18.9%
Swaziland		0.552	1.851	0.575	1.099	0.327	0.726	0.579	1.125	0.423	1.192	86.93	94.14	100	15.0%
Africa-Southern		22.72	61.89	17	29.98	10.41	19.17	9.861	15.35	15.49	33.78	88.55	95.34	100	12.9%
Nigeria		76.82	260.4	83.03	137.9	43.1	182.1	63.65	97.54	43.62	120.5	60.82	90.06	100	64.4%
Niger		4.777	26.52	5.105	14.33	2.306	9.579	3.896	15.26	1.473	6.3	18.85	71.37	93.57	396.4%
Côte d'Ivoire		7.278	33.29	7.125	19.45	3.045	12.33	6.327	13.68	7.632	19.21	55.26	84.75	97.53	76.5%
Burkina Faso		5.091	27.51	6.054	14.91	3.028	16	6.231	13.46	2.841	8.017	28.73	85.89	98.92	244.3%
Ghana		11.13	34.97	10.62	15.72	5.967	22.3	8.241	12.02	5.291	13.16	66.62	93.62	100	50.1%
Mali		4.522	18.92	6.143	8.627	2.262	16.2	5.14	9.765	2.281	5.632	26.18	79.82	97.49	272.4%
Senegal		4.984	25.04	5.192	15.34	2.394	8.269	3.384	9.439	2.113	6.823	49.7	85.98	96.66	94.5%
Guinea		3.613	15.14	3.681	8.245	2.046	7.653	3.437	7.312	2.099	4.629	39.46	86.39	98.63	149.9%
Benin		2.499	14.84	3.059	8.782	1.558	6.65	2.37	5.684	1.29	3.832	41.65	83.42	96.14	130.8%
Togo		1.68	9.883	1.844	6.404	0.949	2.756	1.254	3.128	0.728	2.148	56.89	87.92	96.82	70.2%
Sierra Leone		2.479	8.15	2.266	3.576	1.564	11.22	2.165	3.365	1.303	2.827	40.92	85.5	98.72	141.3%
Liberia		1.127	5.021	1.238	2.862	0.535	2.822	0.672	2.326	0.438	1.73	59.05	85.1	96.97	64.2%
Mauritania		1.27	6.213	1.32	3.871	0.742	2.33	1.17	2.547	0.681	1.669	57.45	85.08	97.3	69.4%
Gambia		0.681	3.783	0.682	2.109	0.348	1.359	0.565	1.548	0.295	0.885	46.5	83.85	98.11	111.0%
Guinea-Bissau		0.816	2.87	0.845	1.836	0.507	1.255	0.813	1.723	0.457	1.119	52.2	84.2	96.21	84.3%
Cape Verde		0.219	0.803	0.178	0.475	0.067	0.199	0.104	0.243	0.066	0.169	84.8	93.38	100	17.9%
Africa-Western		129	493.3	138.4	264.5	70.42	303	109.4	199.1	72.61	198.7	53.11	87.09	98.54	85.5%

Health

	Deaths from Noncommunicable Diseases (cont.)				Deaths from Injuries					
	Annual deaths in thousands				Annual deaths in thousands					
	Respiratory conditions		Other noncomm diseases		Road traffic accidents		Other unintentional injuries		Intentional injuries	
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
AMERICAS										
Haiti	1.886	5.757	3.404	6.727	0.551	1.339	2.489	4.25	1.561	3.386
Dominican Rep.	2.526	11.33	2.169	3.961	3.796	6.282	1.409	3.518	2.023	4.97
Cuba	3.088	6.458	2.599	0.667	0.916	1.325	3.56	14.14	1.796	2.193
Puerto Rico	1.925	5.13	4.522	8.81	0.409	0.362	0.697	1.273	0.681	1.051
Jamaica	1.355	4.27	0.931	2.059	0.38	0.559	0.39	0.841	1.396	3.023
Trinidad and Tobago	0.245	0.786	0.691	1.399	0.18	0.154	0.179	0.387	0.392	0.533
Bahamas	0.064	0.249	0.118	0.46	0.037	0.043	0.059	0.164	0.032	0.066
Barbados	0.062	0.156	0.199	0.503	0.015	0.013	0.015	0.026	0.014	0.021
Saint Lucia	0.055	0.181	0.068	0.14	0.023	0.025	0.019	0.03	0.032	0.052
Grenada	0.014	0.051	0.042	0.119	0.006	0.008	0.016	0.034	0.002	0.006
Saint Vincent and the Grenadines	0.018	0.065	0.047	0.111	0.007	0.01	0.018	0.034	0.014	0.03
America-Caribbean	11.24	34.43	14.79	24.96	6.32	10.12	8.852	24.7	7.944	15.33
Guatemala	1.763	8.212	4.124	10.28	0.578	1.612	4.176	9.828	7.864	27.75
Honduras	1.229	7.372	2.625	8.055	0.772	1.715	1.091	2.41	1.733	5.825
Nicaragua	1.116	6.857	2.367	7.499	0.716	1.61	1.083	2.742	1.28	2.196
El Salvador	1.456	5.251	4.129	9.105	1.836	3.428	1.215	2.643	4.358	9.571
Costa Rica	1.168	7.453	1.425	4.551	0.684	1.079	0.796	3.698	0.657	1.318
Panama	0.82	4.649	1.367	3.935	0.444	0.872	0.449	0.974	0.69	1.471
Belize	0.037	0.244	0.077	0.34	0.044	0.119	0.042	0.149	0.028	0.102
America-Central	7.59	40.04	16.11	43.77	5.075	10.44	8.852	22.44	16.61	48.23
United States of America	164.6	455.7	131.9	219.2	38.3	35.44	74.41	163.3	47.19	111.7
Mexico	29.46	154.6	41.58	127.9	10.21	13.35	16.89	52.05	17.36	39.05
Canada	14.88	47.43	12.66	25.6	2.784	2.685	6.804	21.69	4.198	8.401
America-North	209	657.7	186.1	372.7	51.3	51.47	98.1	237.1	68.75	159.2
Brazil	71.08	301.1	66.23	145.6	44.7	56.42	36.93	96.77	70.75	116.1
Colombia	14.85	82.22	16.45	55.86	8.134	18.88	6.54	12.85	30.43	64.21
Argentina	28.71	85.85	19.54	41.3	4.133	4.6	8.118	15.19	5.131	10.98
Peru	6.35	29.07	12.24	42.29	4.678	11.81	11.32	20.25	1.569	3.646
Venezuela (Bolivarian Rep. of)	5.202	32.66	8.111	19.83	8.422	15.34	4.099	11.59	10.68	22.92
Ecuador	2.314	13.95	4.229	12.36	2.463	5.1	3.753	8.61	3.642	8.895
Chile	5.641	23.81	6.089	12.42	2.079	2.94	2.711	7.144	2.81	5.269
Bolivia (Plurinational State of)	3.058	12.68	5.249	16.81	1.827	4.92	4.376	6.997	0.619	1.836
Paraguay	0.814	4.319	2.315	6.256	1.519	2.743	1.301	2.863	1.196	3.665
Uruguay	1.988	4.356	1.754	2.014	0.26	0.315	0.705	1.239	0.535	0.976
Guyana	0.088	0.257	0.241	0.43	0.13	0.207	0.151	0.218	0.2	0.292
Suriname	0.095	0.265	0.255	0.579	0.121	0.113	0.116	0.165	0.163	0.243
America-South	140.2	590.6	142.7	355.8	78.47	123.4	80.11	183.9	127.7	239

Education

Literacy			
Percent of population 15 and older			
2010	2035	2060	% Chg
48.69	74.3	89.84	84.5%
88.24	94.7	99.4	12.6%
99.83	100	100	0.2%
90.48	94.61	100	10.5%
86.36	95.9	100	15.8%
98.74	100	100	1.3%
94.43	98.1	100	5.9%
99.7	100	100	0.3%
90.3	95.42	100	10.7%
88.25	95.35	100	13.3%
89.29	94.14	100	12.0%
82.1	90.15	96.42	17.4%
74.47	89.24	98.36	32.1%
83.59	95.01	100	19.6%
79.56	90.18	98.4	23.7%
84.1	92.75	100	18.9%
96.06	98.8	100	4.1%
93.61	97.39	100	6.8%
76.91	96.63	100	30.0%
82.16	92.38	99.09	20.6%
100	100	100	0.0%
93.44	97.64	100	7.0%
100	100	100	0.0%
98.43	99.43	100	1.6%
90.04	95.68	100	11.1%
93.24	98.06	100	7.3%
97.73	100	100	2.3%
89.59	95.1	100	11.6%
95.15	100	100	5.1%
84.21	94.28	100	18.8%
98.65	100	100	1.4%
90.7	96.09	100	10.3%
94.56	97.41	100	5.8%
98.27	100	100	1.8%
97.18	100	100	2.9%
94.62	98.42	100	5.7%
91.91	96.92	100	8.8%

Health

	Deaths from Noncommunicable Diseases (cont.)				Deaths from Injuries					
	Annual deaths in thousands				Annual deaths in thousands					
	Respiratory conditions		Other noncomm diseases		Road traffic accidents		Other unintentional injuries		Intentional injuries	
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
ASIA with OCEANIA										
China	1310	5351	258.1	339.9	284.5	519.6	436.4	978.6	188.5	395.3
Japan	61.13	153.2	58.58	119.7	6.482	4.791	33.6	70.05	29.76	32.05
Korea, Rep. of	14.51	78.05	10.67	24.55	7.835	8.917	9.766	34.8	12.92	23.35
Korea, Dem. People's Rep. of	15.51	34.14	9.521	14.42	2.375	4.141	4.331	7.031	3.648	4.516
Taiwan, China	48.14	144.5	29.47	88.83	1.68	0.922	0.418	0.22	0.77	0.809
Hong Kong SAR, China	16.25	51.65	10.01	32.21	0.203	0.199	0.071	0.07	0.161	0.243
Mongolia	0.482	1.921	0.745	1.011	0.772	1.515	0.651	0.507	0.504	0.922
Asia-East	1466	5814	377.1	620.7	303.8	540.1	485.2	1091	236.2	457.2
India	1017	3572	367.7	663.6	192.5	557.1	480.2	1298	264.8	428.4
Pakistan	56.49	263.8	36.92	46.19	14.21	65.34	48.35	160.6	24.37	69.48
Bangladesh	65.25	238.2	28.67	43.18	16.03	33.47	50.88	124.9	21.97	43.51
Afghanistan	10.34	40.97	25.37	52.96	8.843	35.03	19.09	35.35	20.42	64.78
Iran, Islamic Rep. of	16.69	92.99	20.72	50.15	33.35	59.96	27.72	67.56	5.741	8.61
Nepal	9.98	46.82	5.5	14.92	2.247	7.423	5.969	16.65	3.552	7.818
Uzbekistan	3.936	15.55	6.94	6.979	3.514	9.389	6.321	7.386	2.901	4.712
Sri Lanka	12.87	38.5	6.469	6.382	1.377	2.807	5.101	5.801	15.65	25.52
Kazakhstan	5.268	12.94	4.383	1.922	2.897	2.589	11.9	6.656	6.522	9.988
Tajikistan	1.226	5.33	1.698	2.465	0.286	0.933	1.779	2.586	0.232	0.591
Kyrgyz Rep.	1.966	9.174	1.335	2.514	0.879	1.828	1.591	3.117	0.709	1.447
Turkmenistan	1.022	4.907	1.008	0.911	0.413	0.85	1.495	1.353	0.953	2.068
Bhutan	0.268	1.099	0.111	0.091	0.103	0.315	0.328	0.745	0.137	0.309
Maldives	0.205	1.082	0.09	0.351	0.007	0.008	0.042	0.133	0.006	0.006
Asia-South Central	1202	4343	507	892.6	276.7	777	660.8	1731	368	667.3
Indonesia	90.83	446.7	52.57	126.6	35.63	86.58	43.78	115.3	31.21	65.43
Philippines	20.52	112.7	26.29	99.55	6.434	19.02	9.702	22.55	17.31	52.69
Vietnam	31.7	170.9	18.26	32.39	17.6	57.27	19.91	64.67	5.461	13.4
Thailand	47.58	117.9	69.96	136	29.08	28.85	26.1	51	18.57	23.14
Myanmar	22.2	61.18	10.12	13.47	3.493	19.65	85.88	105	5.493	9.358
Malaysia	8.034	56.84	7.551	32.22	7.005	14.54	2.568	9.964	0.654	2.361
Cambodia	5.733	27.26	5.659	12.47	1.9	6.005	2.376	3.507	2.94	4.939
Lao People's Dem. Rep.	2.722	12.51	1.029	0.656	0.822	3.604	2.185	4.933	1.032	2.53
Singapore	0.9	6.428	1.525	9.486	0.284	0.447	0.336	1.253	0.528	1.241
Timor-Leste	0.284	1.319	0.235	0.352	0.097	0.8	0.248	0.646	0.14	0.342
Brunei Darussalam	0.097	1.188	0.129	0.515	0.077	0.073	0.021	0.033	0.031	0.063
Asia-South East	230.6	1015	193.3	463.8	102.4	236.8	193.1	378.8	83.36	175.5

Education

Literacy			
Percent of population 15 and older			
2010	2035	2060	% Chg
93.98	97.62	100	6.4%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
97.49	100	100	2.6%
94.87	97.95	100	5.4%
62.75	91.34	100	59.4%
55.53	87.41	97.87	76.2%
55.9	90.21	99.18	77.4%
28	83.44	97.57	248.5%
85.02	94.14	100	17.6%
59.14	87.47	98.21	66.1%
99.34	100	100	0.7%
90.56	96.68	100	10.4%
99.68	100	100	0.3%
99.67	100	100	0.3%
99.24	100	100	0.8%
99.56	100	100	0.4%
52.81	92.7	100	89.4%
98.4	100	100	1.6%
63.3	90.96	99.52	57.2%
92.19	98.5	100	8.5%
95.42	98.48	100	4.8%
92.78	97.91	100	7.8%
93.72	99.42	100	6.7%
92.03	100	100	8.7%
92.46	96.64	100	8.2%
77.59	92.58	100	28.9%
71.78	91.21	100	39.3%
94.71	98.65	100	5.6%
50.6	86.82	98.31	94.3%
95.29	99.46	100	4.9%
92.31	98.24	99.99	8.3%

Health

	Deaths from Noncommunicable Diseases (cont.)				Deaths from Injuries					
	Annual deaths in thousands				Annual deaths in thousands					
	Respiratory conditions		Other noncomm diseases		Road traffic accidents		Other unintentional injuries		Intentional injuries	
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
ASIA with OCEANIA continued										
Turkey	39.83	192.9	13.61	15.53	6.376	11.12	10.71	28.28	4.272	8.886
Iraq	4.446	27.35	9.006	22.52	6.122	37.94	5.017	14.4	23.13	97
Yemen, Rep. of	4.473	28.29	9.713	33.39	6.888	29.32	7.03	17.86	3.748	11.36
Saudi Arabia	2.578	24.8	7.293	38.68	4.28	7.521	6.516	7.315	1.87	3.654
Syrian Arab Rep.	3.869	22.83	8.383	28.39	2.197	6.777	3.607	10.79	0.449	1.392
Jordan	0.795	4.935	2.108	6.778	1.231	3.778	0.906	2.347	0.313	1.122
Israel	2.388	9.016	4.377	12.58	0.293	0.383	1.033	4.177	0.751	2.376
Palestine	0.272	2.706	1.425	6.736	0.641	3.224	0.871	2.8	0.664	4.298
Azerbaijan	2.046	7.081	2.255	3.843	0.525	0.921	1.505	1.657	0.464	0.867
United Arab Emirates	0.089	4.328	0.391	13	0.956	4.167	0.225	0.418	0.088	0.1
Kuwait	0.095	1.99	0.383	5.123	0.416	1.05	0.211	0.923	0.07	0.183
Lebanon	1.299	5.103	1.877	4.424	1.112	1.998	0.811	1.954	0.489	1.005
Oman	0.238	3.284	0.544	4.948	0.218	0.676	0.319	0.843	0.109	0.193
Armenia	1.693	4.159	1.49	2.405	0.303	0.387	0.642	1.02	0.158	0.241
Georgia	0.561	0.617	0.659	0.42	0.374	0.319	0.597	0.449	0.546	0.502
Qatar	0.093	5.155	0.239	4.92	0.392	0.642	0.197	0.506	0.065	0.047
Bahrain	0.097	2.131	0.218	2.796	0.124	0.165	0.007	0.046	0.056	0.076
Cyprus	0.297	1.151	0.392	1.172	0.071	0.071	0.17	0.54	0.032	0.047
Asia-West	65.16	347.8	64.36	207.7	32.52	110.5	40.37	96.32	37.27	133.4
Australia	8.62	28.77	8.722	20.56	1.511	1.483	4.373	13.21	2.107	4.76
Papua New Guinea	2.81	11.41	1.891	3.614	0.935	5.632	2.331	5.143	1.635	4.397
New Zealand	1.908	5.577	1.499	2.602	0.411	0.359	0.798	2.471	0.51	0.999
Solomon Islands	0.153	0.909	0.226	0.868	0.031	0.094	0.114	0.247	0.02	0.079
Fiji	0.346	0.987	0.471	0.941	0.025	0.027	0.196	0.173	0.029	0.058
Vanuatu	0.066	0.348	0.09	0.363	0.011	0.032	0.037	0.083	0.008	0.035
Micronesia (Federated States of)	0.041	0.188	0.051	0.165	0.006	0.016	0.024	0.04	0.004	0.015
Tonga	0.043	0.162	0.055	0.148	0.004	0.016	0.015	0.032	0.004	0.016
Samoa	0.065	0.173	0.08	0.162	0.007	0.015	0.023	0.029	0.006	0.016
Oceania	14.05	48.52	13.08	29.42	2.942	7.674	7.911	21.43	4.325	10.38

Education

Literacy			
Percent of population 15 and older			
2010	2035	2060	% Chg
90.82	95.99	100	10.1%
78.06	91.3	100	28.1%
62.39	83.38	96.54	54.7%
86.13	94.97	100	16.1%
84.19	97.6	100	18.8%
92.2	97.77	100	8.5%
95.31	98.38	100	4.9%
94.6	100	100	5.7%
99.5	100	100	0.5%
89.19	94.09	100	12.1%
93.91	100	100	6.5%
89.61	95.05	100	11.6%
86.62	97.14	100	15.4%
99.53	100	100	0.5%
99.72	100	100	0.3%
94.72	98.74	100	5.6%
91.35	96.56	100	9.5%
97.93	100	100	2.1%
85.77	93.88	99.37	15.9%
100	100	100	0.0%
60.1	86.27	98.24	63.5%
100	100	100	0.0%
74	88.12	96.51	30.4%
92.94	97.15	100	7.6%
82.03	90.13	98.85	20.5%
75.76	88.58	97.24	28.4%
99.02	100	100	1.0%
98.78	100	100	1.2%
91.51	96.33	99.43	8.7%

Health

Base Case: Countries in Year 2060 Descending Population Sequence	Deaths from Noncommunicable Diseases (cont.)				Deaths from Injuries					
	Annual deaths in thousands				Annual deaths in thousands					
	Respiratory conditions		Other noncomm diseases		Road traffic accidents		Other unintentional injuries		Intentional injuries	
	2010	2060	2010	2060	2010	2060	2010	2060	2010	2060
EUROPE										
Russian Federation	42.93	70.37	27	15.55	32.9	20.9	154.2	87.09	66.32	74.97
Poland	10.65	22.79	9.991	15.27	5.558	3.717	11.39	17.57	6.305	6.876
Ukraine	15.67	18.88	7.138	2.134	8.409	4.853	34.04	19.89	11.66	11.38
Romania	7.078	12.66	3.861	3.98	2.853	2.062	6.428	5.618	2.801	3.09
Czech Rep.	2.81	5.575	2.391	4.048	0.904	0.601	3.47	6.443	1.594	2.26
Belarus	4.391	7.509	2.207	1.527	1.858	1.172	9.166	5.848	3.414	3.856
Hungary	5.289	7.761	2.912	1.909	1.166	0.702	3.316	5.083	2.541	2.94
Bulgaria	2.494	3.143	1.861	1.519	0.927	0.467	1.47	1.156	1.07	1.129
Slovak Rep.	1.017	2.352	1.116	1.77	0.693	0.509	1.464	1.857	0.658	0.845
Moldova, Rep. of	1.473	2.585	0.932	0.861	0.515	0.432	1.868	1.851	0.872	0.883
Europe-East	93.8	153.6	59.41	48.58	55.79	35.42	226.8	152.4	97.23	108.2
United Kingdom	46.62	100.3	29.48	40.36	3.045	2.434	12.49	26.57	5.252	8.322
Sweden	3.414	6.594	3.353	2.716	0.419	0.344	2.757	6.297	1.299	2.043
Denmark	3.526	6.226	2.734	3.445	0.304	0.242	1.538	3.456	0.737	1.178
Ireland	1.906	7.64	1.448	3.979	0.258	0.281	0.823	1.951	0.428	0.918
Norway	2.407	5.495	1.982	3.583	0.244	0.226	1.546	4.073	0.508	0.944
Finland	1.49	3.016	1.265	0.08	0.335	0.28	2.575	3.947	1.098	1.51
Lithuania	0.92	1.626	0.748	0.635	0.519	0.272	2.541	1.873	1.368	1.563
Latvia	0.378	0.472	0.73	0.768	0.303	0.174	1.091	0.883	0.625	0.719
Estonia	0.345	0.491	0.363	0.379	0.134	0.07	0.728	0.477	0.32	0.337
Iceland	0.096	0.319	0.067	0.077	0.018	0.017	0.059	0.203	0.041	0.067
Europe-North	61.1	132.2	42.17	56.02	5.578	4.341	26.15	49.73	11.67	17.6
Italy	31.94	74.64	30.45	45.34	5.454	3.239	15	37.34	4.487	5.542
Spain	34.49	97.61	22.91	40.22	3.017	1.927	7.836	16.69	3.734	5.216
Greece	6.5	16.76	3.805	7.523	1.664	1.075	1.619	2.024	0.51	0.711
Portugal	6.62	16.2	5.551	10.52	1.417	0.937	1.776	3.368	1.483	2.131
Serbia	2.868	4.633	2.42	2.57	0.712	0.551	0.995	1.179	1.046	1.443
Croatia	1.373	2.523	1.231	1.447	0.54	0.318	1.38	2.702	0.74	0.919
Bosnia and Herzegovina	0.998	2.278	0.921	1.152	0.204	0.216	0.624	0.726	0.386	0.458
Albania	0.582	2.072	0.821	1.272	0.208	0.296	0.566	0.682	0.226	0.292
Macedonia, TFYR	0.675	1.646	0.527	0.73	0.107	0.095	0.269	0.502	0.16	0.239
Slovenia	0.608	1.516	0.556	0.992	0.214	0.129	0.886	2.035	0.427	0.561
Montenegro	0.268	0.535	0.113	0.171	0.057	0.042	0.071	0.088	0.097	0.141
Malta	0.146	0.404	0.159	0.286	0.013	0.01	0.085	0.212	0.023	0.028
Europe-South	87.07	220.8	69.46	112.2	13.61	8.834	31.1	67.55	13.32	17.68
Germany	35.19	71.42	31.64	51.71	4.814	3.191	15.56	35.6	10.58	14.78
France	20.22	47.54	31.35	40.93	3.901	2.993	20.85	53.28	10.5	17.02
Netherlands	8.223	20.05	7.377	12.29	0.71	0.593	3.042	9.214	1.55	2.385
Belgium	7.29	16.14	4.652	7.189	1.011	0.716	2.811	6.519	2.063	3.089
Switzerland	2.376	6.192	2.516	2.816	0.333	0.286	1.869	5.297	1.284	2.126
Austria	2.934	6.705	3.545	5.528	0.614	0.418	2.19	5.249	1.334	1.88
Luxembourg	0.181	0.591	0.127	0.361	0.033	0.031	0.116	0.389	0.067	0.155
Europe-West	76.41	168.6	81.21	120.8	11.42	8.227	46.44	115.5	27.38	41.43

Education

Literacy			
Percent of population 15 and older			
2010	2035	2060	% Chg
99.56	100	100	0.4%
99.51	100	100	0.5%
99.69	100	100	0.3%
97.65	100	100	2.4%
100	100	100	0.0%
99.73	100	100	0.3%
99.37	100	100	0.6%
98.32	100	100	1.7%
99.68	100	100	0.3%
98.46	100	100	1.6%
99.4	100	100	0.6%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
99.7	100	100	0.3%
99.78	100	100	0.2%
99.79	100	100	0.2%
100	100	100	0.0%
99.98	100	100	0.0%
98.87	100	100	1.1%
97.68	99.99	100	2.4%
97.16	99.38	100	2.9%
94.91	98.43	100	5.4%
92.11	97.08	100	8.6%
98.76	100	100	1.3%
97.81	100	100	2.2%
95.94	98.53	100	4.2%
97.12	100	100	3.0%
99.68	100	100	0.3%
92.1	96.74	100	8.6%
91.1	97.33	100	9.8%
97.63	99.66	100	2.4%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%
100	100	100	0.0%

Education

Base Case

Source: International Futures
Model Version 6.68, Nov 2013

	Years of Education, Female Adults 25+				Years of Education, Male Adults 25+				Primary Enrollment Rate, Net				Lower Secondary Enrollment Rate, Gross			
	Number of years completed				Number of years completed				Percent of primary age children enrolled				Total enrollment as % of nominal age population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	6.294	7.782	9.522	51.3%	7.53	8.697	10.06	33.6%	88.97	96.65	99.48	11.8%	82.78	93.58	97.53	17.8%
Africa	3.925	5.723	8.047	105.0%	5.337	6.691	8.421	57.8%	73.58	89.49	98.35	33.7%	53.32	75.22	92.87	74.2%
Americas	9.348	10.83	12.12	29.7%	9.512	10.8	11.98	25.9%	93.41	99.46	99.83	6.9%	100.7	103.5	102.2	1.5%
Asia with Oceania	5.518	7.201	9.087	64.7%	7.106	8.417	9.941	39.9%	90.86	98	99.86	9.9%	82.97	96.55	98.25	18.4%
Europe	10.12	12.02	13.74	35.8%	10.48	12.18	13.62	30.0%	94.33	100	99.99	6.0%	100.5	101.5	100.5	0.0%
World	6.294	7.782	9.522	51.3%	7.53	8.697	10.06	33.6%	88.97	96.65	99.48	11.8%	82.78	93.58	97.53	17.8%
Africa-Eastern	3.263	5.072	7.379	126.1%	4.59	5.967	7.802	70.0%	85.01	93.76	99.86	17.5%	43.25	67.63	93.2	115.5%
Africa-Middle	4.819	6.752	9.124	89.3%	5.374	6.789	8.632	60.6%	46.32	73.45	89.58	93.4%	43.38	72.38	87.96	102.8%
Africa-Northern	4.537	7.04	9.11	100.8%	6.621	8.442	10.04	51.6%	82.31	96.15	99.98	21.5%	85.27	102.1	99.91	17.2%
Africa-Southern	8.011	9.255	11.33	41.4%	8.157	10.25	12.28	50.5%	83.92	99.58	99.83	19.0%	91.72	101.5	100	9.0%
Africa-Western	3.062	4.863	7.572	147.3%	4.697	6.075	7.993	70.2%	64.9	87.03	99.76	53.7%	38.84	67.17	91.13	134.6%
Africa	3.925	5.723	8.047	105.0%	5.337	6.691	8.421	57.8%	73.58	89.49	98.35	33.7%	53.32	75.22	92.87	74.2%
America-Caribbean	7.098	7.988	9.51	34.0%	8.305	9.28	10.76	29.6%	82.01	91.53	96.34	17.5%	78.02	92.02	96.82	24.1%
America-Central	5.815	8.206	9.735	67.4%	6.606	8.515	9.788	48.2%	93.57	98.03	99.88	6.7%	76.08	83.08	92.5	21.6%
America-North	11.37	12.32	13.37	17.6%	11.5	12.24	13.14	14.3%	93.89	99.99	100	6.5%	103.2	101	100.6	-2.5%
America-South	7.631	9.751	11.25	47.4%	7.668	9.608	11.06	44.2%	94.02	99.84	99.98	6.3%	102.7	110.2	106	3.2%
Americas	9.348	10.83	12.12	29.7%	9.512	10.8	11.98	25.9%	93.41	99.46	99.83	6.9%	100.7	103.5	102.2	1.5%
Asia-East	7.344	8.56	10.16	38.3%	8.613	9.59	10.94	27.0%	95.96	99.77	99.96	4.2%	92.86	102.1	98.99	6.6%
Asia-South Central	3.61	5.699	8.004	121.7%	5.787	7.328	9.133	57.8%	86.25	96.58	99.8	15.7%	73.03	93.45	97.31	33.2%
Asia-South East	5.936	8.323	10.09	70.0%	6.741	8.733	10.24	51.9%	91.95	98.9	99.97	8.7%	84.26	95.18	99.07	17.6%
Asia-West	5.567	7.705	9.609	72.6%	7.132	8.918	10.45	46.5%	89.08	97.79	99.71	11.9%	85.26	94	99.23	16.4%
Oceania	10.29	11.33	12.65	22.9%	10.41	11.66	12.9	23.9%	83.17	92.97	99.83	20.0%	92.15	92.17	103.4	12.2%
Asia with Oceania	5.518	7.201	9.087	64.7%	7.106	8.417	9.941	39.9%	90.86	98	99.86	9.9%	82.97	96.55	98.25	18.4%
Europe-East	10.12	11.56	12.92	27.7%	10.39	11.84	13.04	25.5%	89.55	100	99.99	11.7%	91.5	102.8	101.2	10.6%
Europe-North	10.15	12.63	14.58	43.6%	9.828	12.17	13.92	41.6%	97.08	100	100	3.0%	103.5	99.16	99.72	-3.7%
Europe-South	9.229	11.74	13.7	48.4%	9.837	12.03	13.73	39.6%	97.71	100	99.98	2.3%	107.6	100.5	100.1	-7.0%
Europe-West	10.92	12.62	14.36	31.5%	11.58	12.88	14.2	22.6%	97.35	99.99	99.99	2.7%	106.9	101.9	100.2	-6.3%
Europe	10.12	12.02	13.74	35.8%	10.48	12.18	13.62	30.0%	94.33	100	99.99	6.0%	100.5	101.5	100.5	0.0%

Education

Base Case: Countries in Year 2060 Descending Population Sequence	Years of Education, Female Adults 25+				Years of Education, Male Adults 25+				Primary Enrollment Rate, Net				Lower Secondary Enrollment Rate, Gross			
	Number of years completed				Number of years completed				Percent of primary age children enrolled				Total enrollment as % of nominal age population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	1.704	3.439	6.366	273.6%	2.921	3.762	6.098	108.8%	79.59	91.75	100	25.6%	43.45	89.77	103.7	138.7%
Tanzania, United Rep. of	4.461	5.612	8.225	84.4%	5.776	6.649	8.769	51.8%	95.43	97.53	100	4.8%	7.715	37.82	92.85	1103.5%
Uganda	3.803	6.276	8.569	125.3%	5.651	7.162	8.897	57.4%	92.39	95.73	100	8.2%	33.05	61.97	94.8	186.8%
Kenya	6.213	7.257	8.877	42.9%	7.683	8.405	9.514	23.8%	82.61	95.05	99.92	21.0%	89.91	98.92	112.7	25.3%
Madagascar	1.64	3.846	4.63	182.3%	2.862	4.909	5.406	88.9%	98.47	98.82	99.37	0.9%	42.74	34.94	42.26	-1.1%
Mozambique	0.746	2.921	5.89	689.5%	1.733	3.82	6.249	260.6%	92.5	96.65	100	8.1%	31.76	61.85	100.8	217.4%
Malawi	3.347	5.881	7.7	130.1%	5.171	7.672	9.165	77.2%	88.94	92.96	99.81	12.2%	51.7	59.29	85.97	66.3%
Zambia	5.784	8.566	10.35	78.9%	7.287	9.627	11.18	53.4%	90.92	97.79	99.64	9.6%	73.44	78.05	97.14	32.3%
Somalia	0.573	1.836	5.805	913.1%	1.873	3.002	5.812	210.3%	9.189	58.72	99.34	981.1%	10.1	59.04	85.09	742.5%
Rwanda	3.081	5.092	7.159	132.4%	3.645	5.814	7.542	106.9%	94.92	96.83	100	5.4%	35.76	48.38	94.55	164.4%
Zimbabwe	6.691	8.486	9.663	44.4%	7.809	9.469	10.4	33.2%	87.03	95.9	99.93	14.8%	59.36	68.77	80.51	35.6%
Burundi	2.15	3.904	5.416	151.9%	3.277	5.332	6.798	107.4%	98.64	99.64	99.6	1.0%	28.9	33.06	49.89	72.6%
Eritrea	0.549	1.625	4.233	671.0%	1.852	2.62	4.964	168.0%	35.66	71	98.53	176.3%	45.68	75.59	109.9	140.6%
Comoros	2.158	3.642	6.004	178.2%	3.342	3.937	5.573	66.8%	87.34	96.99	98.7	13.0%	49.54	67.34	76.5	54.4%
Djibouti	3.692	4.613	6.963	88.6%	4.762	5.422	7.12	49.5%	44.45	74.35	100	125.0%	31.24	69.46	105.6	238.0%
Mauritius	6.732	9.075	11.43	69.8%	7.645	9.915	11.82	54.6%	94	100	99.98	6.4%	96.46	90.93	101.7	5.4%
Africa-Eastern	3.263	5.072	7.379	126.1%	4.59	5.967	7.802	70.0%	85.01	93.76	99.86	17.5%	43.25	67.63	93.2	115.5%
Congo, Democratic Rep. of	5.214	7.697	10.18	95.2%	4.93	6.812	8.769	77.9%	32.42	61.75	81.7	152.0%	47.56	77.13	86.39	81.6%
Angola	5.421	6.599	9.209	69.9%	6.363	7.105	9.617	51.1%	30.03	91.51	100	233.0%	30.64	86.85	99.86	225.9%
Cameroon	5.095	6.808	8.67	70.2%	6.743	8.132	9.542	41.5%	91.28	94.83	100	9.6%	50.3	59.98	86.54	72.0%
Chad	2.186	2.959	5.253	140.3%	3.367	3.949	5.352	59.0%	59.45	70.84	98.59	65.8%	28.81	45.83	85.36	196.3%
Central African Rep.	2.305	3.544	5.66	145.6%	4.878	6.008	7.586	55.5%	66.66	79.55	98.21	47.3%	17.62	35.65	58.78	233.6%
Congo, Rep. of	2.071	3.937	6.424	210.2%	6.585	7.868	9.953	51.1%	58.91	88.97	100	69.8%	63.97	87.62	104.1	62.7%
Gabon	8.385	9.159	11.46	36.7%	6.581	7.369	9.74	48.0%	80.27	99.22	100	24.6%	61.69	95.83	100.1	62.3%
Equatorial Guinea	9.341	10.93	13.55	45.1%	9.994	10.99	13.07	30.8%	53.52	91.61	100	86.8%	34.36	101.2	97.67	184.3%
São Tomé and Príncipe	3.158	4.836	6.4	102.7%	4.267	4.929	6.024	41.2%	98	98.6	100	2.0%	71.28	82.21	104.6	46.7%
Africa-Middle	4.819	6.752	9.124	89.3%	5.374	6.789	8.632	60.6%	46.32	73.45	89.58	93.4%	43.38	72.38	87.96	102.8%
Egypt	5.298	8.406	10.31	94.6%	7.544	10.32	11.72	55.4%	93.61	99.99	99.95	6.8%	90.15	91.98	96.67	7.2%
Sudan	2.329	4.522	7.419	218.5%	3.956	5.569	8.002	102.3%	39.24	84.8	100	154.8%	52.52	117	100.9	92.1%
Algeria	5.884	7.616	9.204	56.4%	8.195	8.986	10.25	25.1%	93.83	99.97	100	6.6%	108.1	112.2	107.4	-0.6%
Morocco	3.167	5.834	7.916	150.0%	5.638	7.051	8.563	51.9%	89.72	98.64	99.99	11.4%	74.38	89.47	96.8	30.1%
Tunisia	5.463	8.337	10.55	93.1%	7.51	9.204	10.84	44.3%	97.89	100	99.97	2.1%	117.9	115.7	108.3	-8.1%
Libya	7.302	10.1	11.92	63.2%	7.225	9.602	11.48	58.9%	96.5	99.99	100	3.6%	116.1	99.05	98.22	-15.4%
Africa-Northern	4.537	7.04	9.11	100.8%	6.621	8.442	10.04	51.6%	82.31	96.15	99.98	21.5%	85.27	102.1	99.91	17.2%

Education

Base Case: Countries in Year 2060 Descending Population Sequence	Years of Education, Female Adults 25+				Years of Education, Male Adults 25+				Primary Enrollment Rate, Net				Lower Secondary Enrollment Rate, Gross			
	Number of years completed				Number of years completed				Percent of primary age children enrolled				Total enrollment as % of nominal age population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	8.067	9.226	11.35	40.7%	8.354	10.46	12.49	49.5%	84.05	99.83	99.9	18.9%	94.38	102.4	100.2	6.2%
Namibia	7.692	10.22	12.31	60.0%	7.028	9.978	12.37	76.0%	89.08	99.99	100	12.3%	86.12	110.4	106.9	24.1%
Lesotho	6.699	7.623	9.177	37.0%	4.519	6.356	8.791	94.5%	73.1	93.97	98.02	34.1%	50.64	83.86	88.64	75.0%
Botswana	8.686	10.73	12.38	42.5%	9.126	11	12.12	32.8%	86.94	100	100	15.0%	91.14	95.82	97.08	6.5%
Swaziland	7.441	8.683	10.5	41.1%	6.764	8.913	10.9	61.1%	82.77	98.64	99.72	20.5%	63.89	88.11	99.24	55.3%
Africa-Southern	8.011	9.255	11.33	41.4%	8.157	10.25	12.28	50.5%	83.92	99.58	99.83	19.0%	91.72	101.5	100	9.0%
Nigeria	3.578	5.394	8.422	135.4%	4.657	6.074	8.202	76.1%	61.42	88.03	100	62.8%	34.21	71.17	96.26	181.4%
Niger	0.811	2.212	5.06	523.9%	2.046	3.345	5.516	169.6%	57.47	71.45	99.38	72.9%	16.57	34.25	76.1	359.3%
Côte d'Ivoire	2.338	4.192	7.123	204.7%	4.22	4.892	6.949	64.7%	57.24	81.83	100	74.7%	32.35	52.45	89.74	177.4%
Burkina Faso	2.188	3.767	6.793	210.5%	3.37	4.507	6.892	104.5%	63.34	83.24	99.98	57.8%	26.53	54.85	83.84	216.0%
Ghana	4.809	7.649	9.993	107.8%	9.357	11.74	13.58	45.1%	75.88	99.84	99.99	31.8%	78.24	103	100.2	28.1%
Mali	0.997	3.596	6.529	554.9%	1.797	4.496	7.165	298.7%	72.97	89.78	100	37.0%	50.02	75.6	97.1	94.1%
Senegal	3.358	4.495	6.536	94.6%	5.667	6.25	7.422	31.0%	73.07	81.46	97.68	33.7%	40.4	58.14	84.88	110.1%
Guinea	1.739	3.895	6.626	281.0%	2.954	5.526	7.794	163.8%	72.94	91.8	99.98	37.1%	42.98	65.5	82.87	92.8%
Benin	2.038	4.329	6.383	213.2%	4.471	6.591	7.853	75.6%	92.6	96.94	99.89	7.9%	49.76	60.06	78.05	56.9%
Togo	3.285	3.962	5.692	73.3%	7.362	7.83	9.076	23.3%	79.19	90.97	99.13	25.2%	51.34	72.05	86.52	68.5%
Sierra Leone	2.03	4.606	7.176	253.5%	3.781	6.406	8.621	128.0%	44.48	81.57	100	124.8%	49.92	64.55	92.19	84.7%
Liberia	2.343	5.01	7.555	222.4%	5.57	6.573	7.987	43.4%	72.67	85.18	99.81	37.3%	39.27	60.81	83.07	111.5%
Mauritania	2.612	4.187	6.537	150.3%	4.923	5.938	7.8	58.4%	76.32	88.68	100	31.0%	25.51	47.29	75.89	197.5%
Gambia	1.984	4.324	6.558	230.5%	3.621	6.267	8.428	132.8%	67.15	76.28	100	48.9%	61.71	73.64	103.9	68.4%
Guinea-Bissau	1.968	2.905	4.954	151.7%	3.166	3.931	4.97	57.0%	52.1	76.93	89.16	71.1%	24.83	51.98	60.92	145.3%
Cape Verde	4.705	7.047	9.012	91.5%	5.701	7.028	8.579	50.5%	82.39	99.98	99.99	21.4%	100.7	123.7	116.4	15.6%
Africa-Western	3.062	4.863	7.572	147.3%	4.697	6.075	7.993	70.2%	64.9	87.03	99.76	53.7%	38.84	67.17	91.13	134.6%

Education

Base Case: Countries in Year 2060 Descending Population Sequence	Years of Education, Female Adults 25+				Years of Education, Male Adults 25+				Primary Enrollment Rate, Net				Lower Secondary Enrollment Rate, Gross			
	Number of years completed				Number of years completed				Percent of primary age children enrolled				Total enrollment as % of nominal age population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	2.883	3.602	5.63	95.3%	7.103	7.509	9.13	28.5%	53.22	73.89	89.13	67.5%	39.7	59.59	81.3	104.8%
Dominican Rep.	6.923	8.439	10.73	55.0%	6.888	8.415	10.58	53.6%	86.16	98.04	99.99	16.1%	87.69	109.1	106	20.9%
Cuba	10.02	11.4	12.67	26.4%	10.39	12	13.37	28.7%	99.28	99.97	99.98	0.7%	92.31	99.48	99.41	7.7%
Puerto Rico	7.181	9.403	11.31	57.5%	7.994	9.713	11.3	41.4%	91.11	100	100	9.8%	87.18	103.8	102.2	17.2%
Jamaica	9.809	10.3	11.25	14.7%	9.443	10.01	11.02	16.7%	80.22	96.69	99.96	24.6%	95.32	117.5	119.3	25.2%
Trinidad and Tobago	9.385	10.84	12.65	34.8%	9.093	10.69	12.57	38.2%	92.8	100	100	7.8%	91.05	104.1	102.2	12.2%
Bahamas	9.423	11	12.14	28.8%	10.07	11.16	12.14	20.6%	91.3	99.89	100	9.5%	97.22	98.54	97.93	0.7%
Barbados	9.485	10.37	11.42	20.4%	9.176	10.65	11.88	29.5%	99.65	100	99.94	0.3%	120.4	96.92	97.35	-19.1%
Saint Lucia	6.742	8.916	10.64	57.8%	7.587	9.342	10.75	41.7%	89.71	100	100	11.5%	104.9	100.7	101.2	-3.5%
Grenada	6.387	9.12	10.54	65.0%	7.259	8.664	9.821	35.3%	93.39	99.78	100	7.1%	115.3	116.6	117.3	1.7%
Saint Vincent and the Grenadines	6.568	8.371	10.24	55.9%	7.426	8.591	9.91	33.5%	94.56	100	99.93	5.7%	120.9	101.1	100.8	-16.6%
America-Caribbean	7.098	7.988	9.51	34.0%	8.305	9.28	10.76	29.6%	82.01	91.53	96.34	17.5%	78.02	92.02	96.82	24.1%
Guatemala	3.604	7.135	9.108	152.7%	4.606	7.873	9.477	105.8%	93.98	97.53	100	6.4%	62.34	69.15	88.37	41.8%
Honduras	6.26	8.274	9.449	50.9%	6.746	7.716	8.762	29.9%	95.78	96.72	100	4.4%	67.51	81.51	91.43	35.4%
Nicaragua	4.834	7.413	9.021	86.6%	6.745	8.294	9.402	39.4%	90.13	97.02	99.2	10.1%	77.72	93.68	94.92	22.1%
El Salvador	7.112	9.38	10.94	53.8%	8.02	9.982	11.2	39.7%	94.05	100	99.9	6.2%	82.23	81.34	87.5	6.4%
Costa Rica	8.379	9.677	10.73	28.1%	8.32	9.322	10.4	25.0%	89.52	99.98	99.86	11.6%	113.1	115	110.9	-1.9%
Panama	9.537	11.19	12.73	33.5%	9.238	10.75	12.34	33.6%	96.98	99.97	100	3.1%	87.35	105.1	104.3	19.4%
Belize	9.103	10.54	11.69	28.4%	9.261	10.3	11.42	23.3%	97.28	100	100	2.8%	86.93	92.58	100.5	15.6%
America-Central	5.815	8.206	9.735	67.4%	6.606	8.515	9.788	48.2%	93.57	98.03	99.88	6.7%	76.08	83.08	92.5	21.6%
United States of America	12.48	13.21	14.09	12.9%	12.41	12.99	13.76	10.9%	91.98	99.99	100	8.7%	99.01	100.5	100.1	1.1%
Mexico	8.185	9.738	11.13	36.0%	8.883	10.05	11.16	25.6%	98.05	99.99	100	2.0%	117.2	103.1	102.7	-12.4%
Canada	11.49	12.56	13.52	17.7%	11.49	12.53	13.37	16.4%	98.03	100	99.94	1.9%	96.91	98.71	99.35	2.5%
America-North	11.37	12.32	13.37	17.6%	11.5	12.24	13.14	14.3%	93.89	99.99	100	6.5%	103.2	101	100.6	-2.5%
Brazil	7.267	9.636	11.25	54.8%	7.081	9.398	11.07	56.3%	94.16	99.95	99.97	6.2%	107.1	118.7	111.2	3.8%
Colombia	7.285	9.497	10.73	47.3%	7.397	9.39	10.52	42.2%	89.63	99.99	100	11.6%	103.4	105	102	-1.4%
Argentina	9.42	11.39	12.86	36.5%	9.126	11.01	12.43	36.2%	99.99	100	100	0.0%	103.1	103.1	101.8	-1.3%
Peru	8.019	9.954	11.48	43.2%	9.306	10.3	11.5	23.6%	94.44	99.9	100	5.9%	98.5	100.9	102.2	3.8%
Venezuela (Bolivarian Rep. of)	6.311	8.32	10.22	61.9%	6.063	7.942	9.811	61.8%	91.9	99.99	100	8.8%	89.85	111.6	103.4	15.1%
Ecuador	7.427	9.635	10.92	47.0%	7.747	9.501	10.47	35.1%	96.32	99.79	100	3.8%	90.93	85.67	91.68	0.8%
Chile	9.587	10.65	11.66	21.6%	9.905	10.95	11.9	20.1%	94.91	99.99	99.96	5.3%	100.7	99.99	99.96	-0.7%
Bolivia (Plurinational State of)	8.44	10.03	11.27	33.5%	10.01	10.79	11.56	15.5%	91.28	99.85	100	9.6%	94.44	101.2	101.3	7.3%
Paraguay	7.541	8.478	9.747	29.3%	7.867	8.381	9.382	19.3%	87.39	94.42	99.8	14.2%	77.53	93.74	109.4	41.1%
Uruguay	8.65	10.36	11.82	36.6%	8.141	9.606	11.09	36.2%	98.65	99.99	100	1.4%	108	98.76	101.6	-5.9%
Guyana	7.826	9.296	10.75	37.4%	8.11	9.763	11.19	38.0%	86.85	99.98	99.95	15.1%	122	102.1	102.1	-16.3%
Suriname	6.328	7.895	9.766	54.3%	7.203	7.933	9.619	33.5%	89.17	99.67	100	12.1%	90.17	92.98	105.7	17.2%
America-South	7.631	9.751	11.25	47.4%	7.668	9.608	11.06	44.2%	94.02	99.84	99.98	6.3%	102.7	110.2	106	3.2%

Education

Base Case: Countries in Year 2060 Descending Population Sequence	Years of Education, Female Adults 25+				Years of Education, Male Adults 25+				Primary Enrollment Rate, Net				Lower Secondary Enrollment Rate, Gross			
	Number of years completed				Number of years completed				Percent of primary age children enrolled				Total enrollment as % of nominal age population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	6.871	8.157	9.866	43.6%	8.213	9.202	10.63	29.4%	96.01	100	100	4.2%	92.31	103	99.08	7.3%
Japan	11.2	12.27	13.28	18.6%	11.78	13.08	14.05	19.3%	99.96	100	100	0.0%	101.7	98.21	99.5	-2.2%
Korea, Rep. of	10.97	12.17	13.37	21.9%	12.34	13.71	14.7	19.1%	98.76	100	99.99	1.2%	98.75	100	99.95	1.2%
Korea, Dem. People's Rep. of	1.987	2.832	4.75	139.1%	3.183	3.758	5.343	67.9%	65.77	85.5	98.23	49.4%	41.64	75.89	90.66	117.7%
Taiwan, China	10.53	12.32	13.82	31.2%	11.61	12.91	14.02	20.8%	98	100	99.31	1.3%	115.9	99.65	98.56	-15.0%
Hong Kong SAR, China	9.749	10.73	12.76	30.9%	10.34	11.62	13.69	32.4%	93.51	100	99.9	6.8%	96.09	103.5	100.3	4.4%
Mongolia	8.45	10.33	11.71	38.6%	8.168	10.06	11.63	42.4%	90.5	100	100	10.5%	95.26	123.6	100.7	5.7%
Asia-East	7.344	8.56	10.16	38.3%	8.613	9.59	10.94	27.0%	95.96	99.77	99.96	4.2%	92.86	102.1	98.99	6.6%
India	3.216	5.759	8.323	158.8%	5.545	7.443	9.553	72.3%	89.9	99.14	99.98	11.2%	76.76	98.91	99.49	29.6%
Pakistan	3.351	4.172	6.478	93.3%	6.307	6.866	8.119	28.7%	66.32	87.12	99.94	50.7%	43.68	70.26	91.71	110.0%
Bangladesh	4.294	5.282	7.009	63.2%	5.235	5.894	7.449	42.3%	86.82	99.4	100	15.2%	56.38	80.54	88.18	56.4%
Afghanistan	1.324	3.979	6.43	385.6%	5.226	6.195	7.403	41.7%	28.79	60.24	96.35	234.7%	52.37	68.94	84.52	61.4%
Iran, Islamic Rep. of	6.235	8.097	9.799	57.2%	8.267	9.352	10.46	26.5%	99.48	99.98	99.99	0.5%	99.52	105.7	107.9	8.4%
Nepal	2.372	4.445	6.228	162.6%	4.201	5.427	7.021	67.1%	71.15	89.25	98.17	38.0%	67.09	92.62	98.89	47.4%
Uzbekistan	4.207	7.093	8.826	109.8%	5.24	7.726	9.065	73.0%	87.27	100	99.99	14.6%	96.53	109	106	9.8%
Sri Lanka	8.069	8.78	10.26	27.2%	8.354	9.072	10.31	23.4%	93.81	100	100	6.6%	107.6	104	101.8	-5.4%
Kazakhstan	10.3	12.13	13.82	34.2%	10.44	12.43	13.82	32.4%	90.63	100	100	10.3%	111.6	103.2	100.2	-10.2%
Tajikistan	9.963	10.62	11.5	15.4%	9.654	11.2	12.06	24.9%	97.33	100	100	2.7%	94.76	98.86	99.39	4.9%
Kyrgyz Rep.	9.243	11.58	12.93	39.9%	9.303	10.74	11.65	25.2%	83.53	95.45	100	19.7%	92.11	97.33	98.21	6.6%
Turkmenistan	6.253	8.923	11.33	81.2%	7.135	9.569	11.68	63.7%	86.58	99.98	99.92	15.4%	83.4	99.73	100.3	20.3%
Bhutan	5.479	8.186	10.22	86.5%	6.417	8.105	9.947	55.0%	87.38	99.15	100	14.4%	74.03	81.53	95.89	29.5%
Maldives	4.42	5.297	6.878	55.6%	5.037	5.903	7.496	48.8%	96.23	97.57	99.92	3.8%	122.4	131.4	130.1	6.3%
Asia-South Central	3.61	5.699	8.004	121.7%	5.787	7.328	9.133	57.8%	86.25	96.58	99.8	15.7%	73.03	93.45	97.31	33.2%
Indonesia	5.077	8.356	10.3	102.9%	6.59	9.235	10.79	63.7%	95.33	99.97	100	4.9%	89.25	87.88	93.15	4.4%
Philippines	8.802	9.586	10.35	17.6%	8.519	8.938	9.665	13.5%	91.69	97.32	100	9.1%	88.29	100	102.5	16.1%
Vietnam	5.25	6.92	8.727	66.2%	5.734	7.515	9.194	60.3%	94	99.99	100	6.4%	80.44	103.9	103	28.0%
Thailand	6.201	8.51	10.67	72.1%	6.945	8.746	10.52	51.5%	87.97	99.98	100	13.7%	90.22	117.7	114.9	27.4%
Myanmar	3.911	6.839	9.322	138.4%	4.037	6.779	9.072	124.7%	82.47	93.08	99.99	21.2%	60.17	78.5	97.52	62.1%
Malaysia	9.158	10.17	12	31.0%	9.905	10.91	12.58	27.0%	90.52	100	99.78	10.2%	92.66	106.2	103.4	11.6%
Cambodia	5.431	7.509	9.361	72.4%	6.179	8.231	9.785	58.4%	86.42	99.51	99.66	15.3%	58.24	75.12	89.48	53.6%
Lao People's Dem. Rep.	3.761	6.727	9.148	143.2%	5.426	8.122	10.12	86.5%	82.42	100	100	21.3%	52.79	81.64	93.35	76.8%
Singapore	8.341	10.55	12.42	48.9%	9.319	11.44	13.04	39.9%	91.9	100	99.95	8.8%	81.17	101.9	101.5	25.0%
Timor-Leste	1.202	5.232	7.865	554.3%	2.456	5.259	7.092	188.8%	82	93.75	99.14	20.9%	59.83	80.23	89.94	50.3%
Brunei Darussalam	8.508	10.71	12.7	49.3%	8.627	10.81	12.79	48.3%	92.9	99.96	99.95	7.6%	115.9	99.38	98.58	-14.9%
Asia-South East	5.936	8.323	10.09	70.0%	6.741	8.733	10.24	51.9%	91.95	98.9	99.97	8.7%	84.26	95.18	99.07	17.6%

Education

Base Case: Countries in Year 2060 Descending Population Sequence	Years of Education, Female Adults 25+				Years of Education, Male Adults 25+				Primary Enrollment Rate, Net				Lower Secondary Enrollment Rate, Gross			
	Number of years completed				Number of years completed				Percent of primary age children enrolled				Total enrollment as % of nominal age population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	5.462	7.761	9.573	75.3%	7.493	8.998	10.07	34.4%	94.69	100	99.91	5.5%	91.12	100.3	99.98	9.7%
Iraq	4.415	6.917	9.524	115.7%	6.7	8.553	10.74	60.3%	87.55	98.99	99.95	14.2%	63.33	90.48	102.6	62.0%
Yemen, Rep. of	1.226	3.374	6.05	393.5%	3.766	6.424	8.132	115.9%	72.69	88.3	98.61	35.7%	50.57	73.95	91.37	80.7%
Saudi Arabia	7.158	9.897	12.04	68.2%	8.256	10.46	12.37	49.8%	86.33	99.98	100	15.8%	102.3	101.2	99.54	-2.7%
Syrian Arab Rep.	4.482	7.655	9.408	109.9%	5.285	8.272	9.888	87.1%	94.53	99.94	100	5.8%	98.01	96.43	99.26	1.3%
Jordan	7.754	10.12	11.42	47.3%	9.452	11.25	12.67	34.0%	89.49	98.14	99.96	11.7%	94.88	96.4	99.83	5.2%
Israel	11.99	13.76	15.17	26.5%	11.83	13.47	14.88	25.8%	96.64	100	99.99	3.5%	72.6	90.95	99.87	37.6%
Palestine	4.9	7.51	10.02	104.5%	5.882	7.976	10.14	72.4%	75.21	88.58	100	33.0%	89.01	90.43	114.6	28.7%
Azerbaijan	6.789	9.186	11.29	66.3%	7.631	9.554	11.34	48.6%	85.19	99.99	100	17.4%	100.9	105.1	100.4	-0.5%
United Arab Emirates	9.124	10.76	12.29	34.7%	9.322	10.42	12.19	30.8%	89.69	100	99.99	11.5%	101	101.5	100.2	-0.8%
Kuwait	6.723	9.751	12.26	82.4%	5.75	8.282	11.61	101.9%	87.62	99.98	100	14.1%	97.24	101.6	99.63	2.5%
Lebanon	7.346	9.447	10.74	46.2%	8.147	9.491	10.47	28.5%	90.11	98.82	99.99	11.0%	88.63	91.91	97.7	10.2%
Oman	8.959	9.94	11.48	28.1%	9.64	10.18	11.49	19.2%	74.93	99.98	99.93	33.4%	88.35	103.7	99.6	12.7%
Armenia	10.9	11.54	12.36	13.4%	10.65	11.84	12.98	21.9%	84.06	99.99	100	19.0%	98.35	103.6	100.2	1.9%
Georgia	5.32	7.947	10.11	90.0%	6.27	9.242	11.09	76.9%	98.74	99.99	99.97	1.2%	95.54	99.55	99.93	4.6%
Qatar	8.044	10.19	12.11	50.5%	6.999	8.09	10.11	44.4%	93.39	99.97	99.73	6.8%	102.7	101.7	99.46	-3.2%
Bahrain	9.05	10.41	11.98	32.4%	9.663	10.82	12.31	27.4%	97.33	100	99.84	2.6%	101.2	98.95	98.83	-2.3%
Cyprus	9.016	11.07	12.65	40.3%	10.57	11.79	12.52	18.4%	98.7	100	99.92	1.2%	101.3	99.92	99.62	-1.7%
Asia-West	5.567	7.705	9.609	72.6%	7.132	8.918	10.45	46.5%	89.08	97.79	99.71	11.9%	85.26	94	99.23	16.4%
Australia	12.38	14.05	15.03	21.4%	11.68	13.76	15.12	29.5%	96.93	100	99.96	3.1%	113.6	103.7	103.6	-8.8%
Papua New Guinea	3.019	4.131	7.407	145.3%	5.607	6.204	8.236	46.9%	26.92	71.84	99.67	270.2%	19.11	62.36	107.1	460.4%
New Zealand	12.43	13.9	14.99	20.6%	12.6	13.87	14.98	18.9%	99.47	100	100	0.5%	103.9	97.72	99.3	-4.4%
Solomon Islands	3.92	5.357	6.685	70.5%	4.973	5.412	6.075	22.2%	80.62	86.28	97.95	21.5%	53.79	63.95	78.46	45.9%
Fiji	10.87	11.72	12.94	19.0%	11.21	12.34	13.41	19.6%	89.47	99.74	100	11.8%	93.86	107.3	104.5	11.3%
Vanuatu	5.073	5.846	7.928	56.3%	6.041	6.451	7.861	30.1%	96.63	99.65	100	3.5%	46.34	62.02	84.97	83.4%
Micronesia (Federated States of)	4.225	5.732	7.253	71.7%	5.256	6.092	6.967	32.6%	76.71	81.68	98.05	27.8%	99.52	105.9	122.8	23.4%
Tonga	10.24	11.21	12.07	17.9%	10.7	11.12	11.85	10.7%	96.55	96.21	100	3.6%	108.3	93.78	100.8	-6.9%
Samoa	5.007	7.262	9.016	80.1%	5.98	7.35	8.617	44.1%	89.54	97.17	100	11.7%	96.19	98.84	105.7	9.9%
Oceania	10.29	11.33	12.65	22.9%	10.41	11.66	12.9	23.9%	83.17	92.97	99.83	20.0%	92.15	92.17	103.4	12.2%

Education

Base Case: Countries in Year 2060 Descending Population Sequence	Years of Education, Female Adults 25+				Years of Education, Male Adults 25+				Primary Enrollment Rate, Net				Lower Secondary Enrollment Rate, Gross			
	Number of years completed				Number of years completed				Percent of primary age children enrolled				Total enrollment as % of nominal age population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	9.685	10.71	11.99	23.8%	10.02	10.91	11.95	19.3%	87.17	100	100	14.7%	85.15	104.2	102.2	20.0%
Poland	10	12.63	14.75	47.5%	9.89	12.67	14.67	48.3%	95.24	100	99.99	5.0%	99.57	98.22	98.7	-0.9%
Ukraine	11.22	12.36	13.18	17.5%	11.37	12.85	13.72	20.7%	88.88	100	100	12.5%	95.94	104.8	102.5	6.8%
Romania	10.15	11.98	13.44	32.4%	10.75	12.65	14.05	30.7%	90.31	100	99.99	10.7%	101.9	102.7	101.2	-0.7%
Czech Rep.	12.15	14.09	15.65	28.8%	12.51	13.86	15.01	20.0%	89.59	100	100	11.6%	99.21	100.1	98.98	-0.2%
Belarus	7.604	9.841	11.46	50.7%	8.386	10.94	12.49	48.9%	94.4	100	100	5.9%	95.68	101	100.8	5.4%
Hungary	11.54	12.84	13.81	19.7%	11.83	12.89	13.58	14.8%	89.69	100	100	11.5%	99.24	101.5	99.05	-0.2%
Bulgaria	9.957	11.36	12.7	27.5%	9.942	11.95	13.34	34.2%	95.8	99.99	99.98	4.4%	86.39	100.5	101	16.9%
Slovak Rep.	11.58	13.86	15.7	35.6%	11.54	14.52	16.65	44.3%	97.77	99.99	99.81	2.1%	93.74	100.3	98.38	4.9%
Moldova, Rep. of	9.529	11.36	12.86	35.0%	9.86	11.69	12.85	30.3%	87.52	100	99.98	14.2%	89.29	100	100	12.0%
Europe-East	10.12	11.56	12.92	27.7%	10.39	11.84	13.04	25.5%	89.55	100	99.99	11.7%	91.5	102.8	101.2	10.6%
United Kingdom	9.486	12.31	14.53	53.2%	9.029	11.7	13.66	51.3%	98	100	100	2.0%	103.1	98.62	99.63	-3.4%
Sweden	11.79	13.17	14.31	21.4%	11.43	12.75	13.97	22.2%	94.63	100	99.99	5.7%	103.2	101.2	100.3	-2.8%
Denmark	10.06	12.7	14.72	46.3%	10.5	13.27	15.16	44.4%	94.83	100	100	5.5%	117.5	99.08	99.89	-15.0%
Ireland	11.69	13.4	14.61	25.0%	11.53	13.22	14.32	24.2%	97.14	99.97	100	2.9%	105.3	100.6	99.39	-5.6%
Norway	12.68	14.59	15.85	25.0%	12.58	14.28	15.47	23.0%	97.97	100	99.99	2.1%	96.11	99.76	100	4.0%
Finland	10.34	13	14.99	45.0%	10.23	12.6	14.53	42.0%	96.05	100	99.99	4.1%	102.4	99.09	100	-2.3%
Lithuania	10.87	12.38	13.48	24.0%	10.95	12.22	13.03	19.0%	92.16	100	100	8.5%	99.54	99.88	99.47	-0.1%
Latvia	10.41	12.21	13.76	32.2%	10.44	11.74	12.77	22.3%	96.83	99.98	99.92	3.2%	101	100.4	98.91	-2.1%
Estonia	12.23	13.27	14.4	17.7%	11.73	12.63	13.72	17.0%	94.36	100	99.94	5.9%	102.4	100.2	99.27	-3.1%
Iceland	10.68	13.39	15.09	41.3%	10.13	12.74	14.5	43.1%	97.57	100	99.97	2.5%	100.7	99.33	99.9	-0.8%
Europe-North	10.15	12.63	14.58	43.6%	9.828	12.17	13.92	41.6%	97.08	100	100	3.0%	103.5	99.16	99.72	-3.7%
Italy	8.896	11.8	14.14	58.9%	9.739	12.34	14.35	47.3%	98.39	100	100	1.6%	102.3	100.1	100	-2.2%
Spain	10.23	12.46	14.14	38.2%	10.48	12.54	14.13	34.8%	99.76	100	99.97	0.2%	117.2	98.77	98.79	-15.7%
Greece	10.25	11.65	12.61	23.0%	10.76	12	12.75	18.5%	99.4	100	100	0.6%	104.3	97.07	97.21	-6.8%
Portugal	7.504	10.56	12.88	71.6%	7.981	10.04	11.85	48.5%	98.87	100	99.96	1.1%	118.2	99.46	99.35	-15.9%
Serbia	9.231	11.76	13.43	45.5%	9.892	11.92	13.35	35.0%	94.23	99.96	99.99	6.1%	99.3	107.7	105.6	6.3%
Croatia	8.556	11.55	13.85	61.9%	9.45	12.27	14.29	51.2%	90.82	100	99.95	10.1%	101.9	101	100.1	-1.8%
Bosnia and Herzegovina	6.339	8.382	10.51	65.8%	7.214	9.116	10.61	47.1%	86.9	99.99	99.91	15.0%	106.4	119	116.3	9.3%
Albania	10.16	11.26	12.72	25.2%	10.62	11.18	12.4	16.8%	82.66	100	99.93	20.9%	92.75	108.6	104.6	12.8%
Macedonia, TFYR	6.636	9.521	11.5	73.3%	7.489	10.15	11.85	58.2%	90.18	100	99.99	10.9%	91.94	100	99.69	8.4%
Slovenia	8.34	10.27	11.77	41.1%	9.762	10.76	11.75	20.4%	96.96	100	100	3.1%	95.51	100.8	100.6	5.3%
Montenegro	7.054	9.683	11.62	64.7%	7.875	9.682	11.04	40.2%	90.49	100	99.99	10.5%	91.25	106.6	106.6	16.8%
Malta	9.435	11.24	13.24	40.3%	10.46	12.37	14.15	35.3%	91.27	100	99.73	9.3%	99.1	108.1	104.6	5.5%
Europe-South	9.229	11.74	13.7	48.4%	9.837	12.03	13.73	39.6%	97.71	100	99.98	2.3%	107.6	100.5	100.1	-7.0%
Germany	11.87	12.83	14.41	21.4%	12.58	13.21	14.32	13.8%	97.62	100	99.99	2.4%	100.2	103.1	99.13	-1.1%
France	10.21	12.77	14.67	43.7%	10.68	12.77	14.27	33.6%	97.78	100	100	2.3%	110	99.57	99.48	-9.6%
Netherlands	10.91	11.93	13.39	22.7%	11.43	12.23	13.45	17.7%	98.75	100	100	1.3%	127.1	106.6	106.5	-16.2%
Belgium	10.47	12.65	14.29	36.5%	10.67	12.57	14.1	32.1%	93.51	99.99	100	6.9%	109.8	102.7	102.4	-6.7%
Switzerland	9.617	11.76	13.96	45.2%	10.98	12.64	14.18	29.1%	93.69	99.89	99.95	6.7%	111.5	99.68	100.1	-10.2%
Austria	8.877	11.55	13.69	54.2%	10.71	12.78	14.37	34.2%	97.37	100	99.99	2.7%	101.6	99.42	99.88	-1.7%
Luxembourg	9.779	12.03	14.08	44.0%	10.43	12.05	13.8	32.3%	94.09	99.9	100	6.3%	107.9	101.3	100.3	-7.0%
Europe-West	10.92	12.62	14.36	31.5%	11.58	12.88	14.2	22.6%	97.35	99.99	99.99	2.7%	106.9	101.9	100.2	-6.3%

Education

Infrastructure

Base Case Source: International Futures Model Version 6.68, Nov 2013	Upper Secondary Enrollment Rate, Gross				Tertiary Enrollment Rate, Gross				Knowledge Society Index				Roads			
	Total enrollment as % of nominal age population				Total enrollment as % of nominal age population				Index range: 0–100				Roads per Capita			
													Kilometers per million persons			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	61.66	74.81	86.88	40.9%	28.81	35.32	43.64	51.5%	52.21	59.91	75.97	45.5%	5117	5314	6030	17.8%
Africa	31.9	46.74	73.01	128.9%	9.47	17.86	29.65	213.1%	13.9	24.03	40.5	191.4%	2287	2561	3397	48.5%
Americas	80.97	90.6	94.99	17.3%	52.9	53.58	56.35	6.5%	58.41	66.39	77.12	32.0%	12060	11721	12150	0.7%
Asia with Oceania	58.21	77.4	89.86	54.4%	21.99	32.92	44.35	101.7%	45.93	53.64	77.68	69.1%	3362	3827	4792	42.5%
Europe	98.68	99.68	99.91	1.2%	64.15	65.88	67.14	4.7%	54.7	73.78	86.29	57.8%	10285	12325	14580	41.8%
World	61.66	74.81	86.88	40.9%	28.81	35.32	43.64	51.5%	52.21	59.91	75.97	45.5%	5117	5314	6030	17.8%
Africa-Eastern	17.83	35.4	70.82	297.2%	3.214	13.25	27.96	769.9%	4.395	14.03	32.47	638.8%	1817	1782	2492	37.1%
Africa-Middle	25.81	41.55	64.49	149.9%	4.757	11.8	24.14	407.5%	6.37	27.41	59.63	836.1%	2540	2737	3327	31.0%
Africa-Northern	54.37	73.48	82.82	52.3%	22.53	28.8	34.37	52.6%	18	29.03	35.28	96.0%	1818	3761	6731	270.2%
Africa-Southern	85.55	107.5	101.1	18.2%	13.78	25.21	41.09	198.2%	21	34.84	63.54	202.6%	8091	8649	9439	16.7%
Africa-Western	23.81	39.76	72.63	205.0%	8.236	18.74	30.94	275.7%	5.524	17.2	32.09	480.9%	1920	1970	2503	30.4%
Africa	31.9	46.74	73.01	128.9%	9.47	17.86	29.65	213.1%	13.9	24.03	40.5	191.4%	2287	2561	3397	48.5%
America-Caribbean	64.56	70.98	77.19	19.6%	43.48	42.08	41.66	-4.2%	29.91	40.51	57.11	90.9%	2747	3876	5111	86.1%
America-Central	53.42	67.02	83.27	55.9%	21.96	26.94	33.32	51.7%	13.38	27.67	39.95	198.6%	2767	3803	4636	67.5%
America-North	83.77	94.02	98.21	17.2%	66.3	66.14	68.83	3.8%	63.94	75.21	86.64	35.5%	18455	16612	16277	-11.8%
America-South	82.43	91.76	94.7	14.9%	41.8	43.86	46.5	11.2%	23.44	35.23	51.45	119.5%	6665	7952	9093	36.4%
Americas	80.97	90.6	94.99	17.3%	52.9	53.58	56.35	6.5%	58.41	66.39	77.12	32.0%	12060	11721	12150	0.7%
Asia-East	69.43	90.9	101	45.5%	29.46	41.65	60.77	106.3%	54.08	62.32	97.62	80.5%	3498	4352	6577	88.0%
Asia-South Central	45.68	66.76	83.8	83.5%	13.16	26.27	36.69	178.8%	17.11	32.76	49.93	191.8%	3109	3179	3403	9.5%
Asia-South East	58.26	79.87	89.09	52.9%	23.01	30.96	37.88	64.6%	23.48	31.43	42.6	81.4%	1989	2863	4037	103.0%
Asia-West	67.25	77.59	88.82	32.1%	28.92	35.68	43.26	49.6%	33.34	51.87	67.93	103.7%	4284	5159	6303	47.1%
Oceania	110.5	82.18	92.3	-16.5%	59.01	61.33	61.22	3.7%	67.55	87.48	90.54	34.0%	26399	22226	20782	-21.3%
Asia with Oceania	58.21	77.4	89.86	54.4%	21.99	32.92	44.35	101.7%	45.93	53.64	77.68	69.1%	3362	3827	4792	42.5%
Europe-East	88.05	97.81	97.81	11.1%	71.45	69.28	67.17	-6.0%	52.27	67.07	82.65	58.1%	7741	10510	13996	80.8%
Europe-North	102.4	98.77	99.95	-2.4%	63.45	68.73	69.58	9.7%	55.67	79.97	88.13	58.3%	16491	19669	20397	23.7%
Europe-South	103.7	97.87	98.46	-5.1%	65.8	64.99	67.55	2.7%	45.3	58.92	80.87	78.5%	10036	10998	12975	29.3%
Europe-West	108.6	104.1	103.5	-4.7%	51.64	59.74	64.78	25.4%	59.34	79.76	89.01	50.0%	11015	11514	12717	15.5%
Europe	98.68	99.68	99.91	1.2%	64.15	65.88	67.14	4.7%	54.7	73.78	86.29	57.8%	10285	12325	14580	41.8%

Education

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Upper Secondary Enrollment Rate, Gross				Tertiary Enrollment Rate, Gross				Knowledge Society Index			
	Total enrollment as % of nominal age population				Total enrollment as % of nominal age population				Index range: 0–100			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA												
Ethiopia	14.56	50.86	98.07	573.6%	3.601	13.91	32.3	797.0%	4.07	13.4	30.92	659.7%
Tanzania, United Rep. of	5.546	19.9	66.04	1090.8%	1.448	14.63	34.19	2261.2%	1.72	12.87	36.79	2039.0%
Uganda	14.56	27.32	62.22	327.3%	4.092	15.21	29.58	622.9%	6.149	16.33	30.36	393.7%
Kenya	43.29	53.85	76.77	77.3%	4.052	12.52	25.23	522.7%	3.516	11.23	23.31	563.0%
Madagascar	14.81	18.9	23.19	56.6%	3.583	6.2	8.907	148.6%	2.959	5.294	7.747	161.8%
Mozambique	11.51	27.48	90.9	689.7%	1.453	16.35	38.25	2532.5%	6.678	18.63	39.15	486.3%
Malawi	14.85	24.42	55.49	273.7%	0.578	7.608	17.67	2957.1%	0.777	6.207	14.95	1824.1%
Zambia	22.38	37.51	67.97	203.7%	2.405	19.03	32.67	1258.4%	1.227	13.88	33.17	2603.3%
Somalia	6.922	26.87	58.16	740.2%	2.518	7.305	21.71	762.2%	1.924	6.453	18.88	881.3%
Rwanda	17.41	29.45	69.24	297.7%	4.822	16.68	31.65	556.4%	1.541	12.25	27.73	1699.5%
Zimbabwe	29.98	38.68	54.84	82.9%	6.677	18.36	25.66	284.3%	5.533	13.31	21.28	284.6%
Burundi	10.84	17.01	32.12	196.3%	2.32	3.105	10.88	369.0%	3.93	3.897	11.69	197.5%
Eritrea	21.01	42.61	81.3	287.0%	1.979	8.333	19.8	900.5%	1.505	7.03	17.34	1052.2%
Comoros	34.4	38.26	50	45.3%	2.7	7.801	14.83	449.3%	2.392	6.684	12.84	436.8%
Djibouti	18.23	32.47	76.91	321.9%	3.468	11.78	26.54	665.3%	3.845	10.94	24.25	530.7%
Mauritius	80.53	91.85	99.71	23.8%	25.91	33.67	39.34	51.8%	17.64	30.03	41.15	133.3%
Africa-Eastern	17.83	35.4	70.82	297.2%	3.214	13.25	27.96	769.9%	4.395	14.03	32.47	638.8%
Congo, Democratic Rep. of	30.66	45.75	61.3	99.9%	5.09	6.834	17.26	239.1%	3.475	4.719	14.85	327.3%
Angola	15.69	43.5	83.93	434.9%	0.829	19.89	47.09	5580.3%	4.155	29.61	73.95	1679.8%
Cameroon	29.13	41.45	66.38	127.9%	9.026	18.72	27.6	205.8%	7.645	14.47	25.2	229.6%
Chad	17.01	23.12	59.9	252.1%	2.003	12.84	23.46	1071.2%	1.814	10.39	19.66	983.8%
Central African Rep.	7.75	14.33	29.91	285.9%	2.458	8.594	18.96	671.4%	3.809	7.718	18.43	383.9%
Congo, Rep. of	21.98	36.91	69.17	214.7%	6.443	24.64	33.78	424.3%	3.616	16.75	28.63	691.8%
Gabon	28.66	61.11	90.75	216.6%	7.115	23.85	42.53	497.8%	2.488	18.18	42.01	1588.5%
Equatorial Guinea	12.04	46.26	67.03	456.7%	3.282	28.3	42.71	1201.3%	23.9	61.11	74.05	209.8%
São Tomé and Príncipe	18.97	26.08	50.17	164.5%	4.399	15.98	24.13	448.5%	5.087	11.24	19.52	283.7%
Africa-Middle	25.81	41.55	64.49	149.9%	4.757	11.8	24.14	407.5%	6.37	27.41	59.63	836.1%
Egypt	68.91	81.98	89.44	29.8%	27.37	31.12	34.94	27.7%	15.84	22.57	30.53	92.7%
Sudan	27.63	68.8	76.46	176.7%	5.929	19.74	30.23	409.9%	7.99	16.29	28.44	255.9%
Algeria	58.32	75.3	87.57	50.2%	30.62	34.42	38.21	24.8%	21.58	29.76	39.1	81.2%
Morocco	36.67	48.58	66.43	81.2%	12.88	22.33	31.05	141.1%	14.87	24.26	34.27	130.5%
Tunisia	74.2	81.84	87.69	18.2%	33.74	36.66	39.56	17.2%	17.37	27.23	38.84	123.6%
Libya	77.39	93.99	96.83	25.1%	55.74	59.75	52.94	-5.0%	27.13	49.76	50.1	84.7%
Africa-Northern	54.37	73.48	82.82	52.3%	22.53	28.8	34.37	52.6%	18	29.03	35.28	96.0%

Roads			
Roads per Capita			
Kilometers per million persons			
2010	2035	2060	% Chg
634.8	1362	2293	261.2%
1944	1822	3110	60.0%
2093	1450	1895	-9.5%
1516	1672	2339	54.3%
2472	1582	1355	-45.2%
1295	1945	3596	177.7%
984.6	979.1	1279	29.9%
5037	3780	4819	-4.3%
2365	1749	2487	5.2%
1362	1300	1949	43.1%
7730	6241	5646	-27.0%
1443	1044	920.5	-36.2%
767.8	1384	2185	184.6%
1306	1325	1410	8.0%
3487	4001	5268	51.1%
1625	4669	5820	258.2%
1817	1782	2492	37.1%
2263	1619	1501	-33.7%
2708	5445	8831	226.1%
1445	2292	3172	119.5%
3476	2777	3423	-1.5%
5393	4118	3942	-26.9%
4531	5958	7670	69.3%
6110	12233	15281	150.1%
4156	14535	17813	328.6%
1928	2561	3123	62.0%
2540	2737	3327	31.0%
1192	2769	3637	205.1%
275.4	2500	10353	3659.3%
3184	5966	7935	149.2%
1804	3295	4532	151.2%
1841	4725	6628	260.0%
12704	15693	16687	31.4%
1818	3761	6731	270.2%

Education

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Upper Secondary Enrollment Rate, Gross				Tertiary Enrollment Rate, Gross				Knowledge Society Index			
	Total enrollment as % of nominal age population				Total enrollment as % of nominal age population				Index range: 0–100			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued												
South Africa	92.18	115.9	105.2	14.1%	14.9	25.94	42.35	184.2%	21.81	35.38	64.82	197.2%
Namibia	34.18	51.18	75.54	121.0%	8.932	23.27	35.22	294.3%	8.011	26.19	40.68	407.8%
Lesotho	26.82	46.8	65.85	145.5%	3.624	16.95	26.43	629.3%	1.501	13.03	23.37	1457.0%
Botswana	67.13	90.6	97.68	45.5%	7.577	27.77	47.58	528.0%	17.36	39.85	71	309.0%
Swaziland	37.17	59.47	83.1	123.6%	4.388	14.27	26.96	514.4%	6.421	15.32	27.75	332.2%
Africa-Southern	85.55	107.5	101.1	18.2%	13.78	25.21	41.09	198.2%	21	34.84	63.54	202.6%
Nigeria	26.53	47.1	88.6	234.0%	10.09	22.7	37.47	271.4%	5.993	18.48	33.17	453.5%
Niger	5.32	8.643	36.47	585.5%	1.435	6.501	14.03	877.7%	1.273	4.978	11.56	808.1%
Côte d'Ivoire	15.2	25.62	62.16	308.9%	8.37	16.26	28.07	235.4%	6.11	12.73	24.09	294.3%
Burkina Faso	9.771	21.83	51.44	426.5%	3.402	14.38	25.44	647.8%	2.951	10.65	21.38	624.5%
Ghana	34.99	57.93	79.37	126.8%	8.636	20.53	36.69	324.8%	3.902	16.67	39.19	904.4%
Mali	26.03	41.41	71.61	175.1%	6.044	15.23	28.63	373.7%	4.541	12.67	26.69	487.8%
Senegal	16.7	26.71	49.98	199.3%	8.053	15.38	22.17	175.3%	5.046	9.77	16.99	236.7%
Guinea	25.27	42.92	63.22	150.2%	9.203	15.49	23.51	155.5%	4.213	10.94	19.45	361.7%
Benin	22.92	32.89	51.02	122.6%	4.572	12.79	22.46	391.3%	4.038	10.48	19.44	381.4%
Togo	26.73	30.57	48.19	80.3%	3.844	10.57	18.53	382.0%	7.732	13.55	20.45	164.5%
Sierra Leone	18.94	34.72	75.34	297.8%	2.054	18.79	34.95	1601.6%	1.755	15.68	33.92	1832.8%
Liberia	33.28	46.76	66.15	98.8%	17.42	24.4	32.75	88.0%	10.61	17.89	26.28	147.7%
Mauritania	23.31	37.32	67.03	187.6%	3.794	15.42	23.52	519.9%	4.098	10.95	19.17	367.8%
Gambia	35.11	45.12	76.18	117.0%	1.234	10.05	20.13	1531.3%	1.806	7.759	16.98	840.2%
Guinea-Bissau	11.91	24.35	32.41	172.1%	0.585	7.928	15.18	2494.9%	0.929	6.836	12.89	1287.5%
Cape Verde	85.41	102.6	112.2	31.4%	14.87	27.06	34.4	131.3%	10.67	22.3	32.36	203.3%
Africa-Western	23.81	39.76	72.63	205.0%	8.236	18.74	30.94	275.7%	5.524	17.2	32.09	480.9%

Roads			
Roads per Capita			
Kilometers per million persons			
2010	2035	2060	% Chg
7263	7622	8262	13.8%
30035	25778	23906	-20.4%
2849	3275	4784	67.9%
13036	17534	21931	68.2%
2990	4220	5408	80.9%
8091	8649	9439	16.7%
1220	1643	2348	92.5%
1214	1396	1583	30.4%
3896	2592	2460	-36.9%
5675	3855	2974	-47.6%
2368	2269	3826	61.6%
1761	2411	3660	107.8%
1169	1808	2163	85.0%
2958	2052	2252	-23.9%
2061	1671	2080	0.9%
1109	1337	1731	56.1%
1937	2030	3707	91.4%
2570	1954	2418	-5.9%
4216	5084	5888	39.7%
2137	1653	1968	-7.9%
2670	2125	2284	-14.5%
2632	4432	6146	133.5%
1920	1970	2503	30.4%

Education

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Upper Secondary Enrollment Rate, Gross				Tertiary Enrollment Rate, Gross				Knowledge Society Index			
	Total enrollment as % of nominal age population				Total enrollment as % of nominal age population				Index range: 0–100			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS												
Haiti	13.15	21.09	38.95	196.2%	1.234	9.838	15.97	1194.2%	1.168	7.331	13.12	1023.3%
Dominican Rep.	71.22	91.31	96.69	35.8%	33.22	36.87	41.99	26.4%	17.79	32.58	51.93	191.9%
Cuba	87.1	94.46	97.99	12.5%	89.72	85.87	79.84	-11.0%	33.62	45.77	63.03	87.5%
Puerto Rico	89.73	92.05	94.98	5.9%	75.47	69.41	65.5	-13.2%	45.15	53	69.27	53.4%
Jamaica	84.79	86.55	94.16	11.1%	24.07	27.04	32.2	33.8%	12.7	18.99	26.5	108.7%
Trinidad and Tobago	85.91	91.44	97.08	13.0%	11.57	31.42	47.02	306.4%	5.32	43.9	61.17	1049.8%
Bahamas	89.16	93.3	93.8	5.2%	24.89	38.29	43.73	75.7%	33.85	46.15	54.03	59.6%
Barbados	79.01	83.19	88.66	12.2%	31.53	38.9	44.81	42.1%	33.11	38.8	46.11	39.3%
Saint Lucia	82.59	98.29	100.8	22.0%	16	27.02	35.32	120.8%	10.47	20.28	31.15	197.5%
Grenada	77.17	76.4	94.83	22.9%	53.53	49.14	45.36	-15.3%	16.87	25.18	34.54	104.7%
Saint Vincent and the Grenadines	91.37	88.93	91.69	0.4%	35.44	36.1	37.06	4.6%	12.51	20.28	29.53	136.1%
America-Caribbean	64.56	70.98	77.19	19.6%	43.48	42.08	41.66	-4.2%	29.91	40.51	57.11	90.9%
Guatemala	47.28	58.56	82.46	74.4%	17.71	24.47	33.61	89.8%	6.018	15.37	31.06	416.1%
Honduras	59.82	68.96	79.15	32.3%	18.64	22.54	27.04	45.1%	6.955	13.32	20.67	197.2%
Nicaragua	52.79	69.83	75.63	43.3%	18.05	22.22	26.09	44.5%	11.85	17.15	21.97	85.4%
El Salvador	46	60.21	82.42	79.2%	24.52	28.91	34.68	41.4%	12.08	20.51	30.97	156.4%
Costa Rica	71.47	84.76	96.57	35.1%	25.33	32.35	37.86	49.5%	18.42	30.08	39.59	114.9%
Panama	54.99	92.45	101.6	84.8%	45.1	50.27	56.58	25.5%	22.83	47.12	73.06	220.0%
Belize	52.63	67.56	84.11	59.8%	11.34	28.25	34.43	203.6%	14.7	23.68	33.69	129.2%
America-Central	53.42	67.02	83.27	55.9%	21.96	26.94	33.32	51.7%	13.38	27.67	39.95	198.6%
United States of America	89.31	98.94	99.98	11.9%	80.45	77.96	78.34	-2.6%	67.87	79.45	91.62	35.0%
Mexico	61.35	79.05	92.5	50.8%	27.19	32.53	40.18	47.8%	21.43	30.48	45.2	110.9%
Canada	104.7	97.81	99.15	-5.3%	62.26	67.49	68.07	9.3%	54.01	76.65	85.22	57.8%
America-North	83.77	94.02	98.21	17.2%	66.3	66.14	68.83	3.8%	63.94	75.21	86.64	35.5%
Brazil	92.17	95.76	93.79	1.8%	34.45	38.23	41.43	20.3%	29.79	39.7	50.35	69.0%
Colombia	76.99	95.12	96.97	26.0%	36.98	40.01	41.41	12.0%	20.17	30.88	39.57	96.2%
Argentina	66.53	80.9	93.96	41.2%	65.45	65	67.04	2.4%	12.74	30.78	55.55	336.0%
Peru	74.79	93.59	100.6	34.5%	34.48	38.56	42.74	24.0%	19.46	31.84	45.14	132.0%
Venezuela (Bolivarian Rep. of)	70.45	89.38	96.7	37.3%	68.65	62.68	63.35	-7.7%	12.21	28.01	61.8	406.1%
Ecuador	70.92	73.06	81.59	15.0%	42.41	40.57	38.32	-9.6%	13.35	21.76	28.48	113.3%
Chile	85.47	100.6	102.9	20.4%	54.79	54.68	58.1	6.0%	20.87	38.66	67.06	221.3%
Bolivia (Plurinational State of)	74.43	86.28	92.93	24.9%	38.32	39	40.81	6.5%	12.58	21.52	33.57	166.9%
Paraguay	55.26	59.76	85.25	54.3%	28.55	29.94	36.67	28.4%	17.9	23.04	34.22	91.2%
Uruguay	67.83	84.72	94.04	38.6%	62.64	58.68	59.29	-5.3%	15.08	29.54	55.87	270.5%
Guyana	70.49	101.8	102.5	45.4%	11.22	21.7	31.21	178.2%	3.619	14.16	27.48	659.3%
Suriname	55.26	80.54	102.2	84.9%	12.37	29.52	42.28	241.8%	11.86	28.42	51.16	331.4%
America-South	82.43	91.76	94.7	14.9%	41.8	43.86	46.5	11.2%	23.44	35.23	51.45	119.5%

Roads			
Roads per Capita			
Kilometers per million persons			
2010	2035	2060	% Chg
408.2	1125	1570	284.6%
1232	4076	5949	382.9%
2658	3830	6937	161.0%
6838	6886	7325	7.1%
8162	7322	7602	-6.9%
6186	8861	11347	83.4%
7783	14349	15954	105.0%
6226	6645	7785	25.0%
6954	6975	7704	10.8%
10837	9012	8587	-20.8%
7606	6619	6799	-10.6%
2747	3876	5111	86.1%
980.5	2434	3606	267.8%
1786	2938	3624	102.9%
3901	3446	3789	-2.9%
1620	3347	4324	166.9%
8645	8414	8513	-1.5%
4041	8616	11516	185.0%
8349	8456	10376	24.3%
2767	3803	4636	67.5%
21212	18518	17486	-17.6%
3411	5205	6583	93.0%
41250	36475	34873	-15.5%
18455	16612	16277	-11.8%
8960	9028	9354	4.4%
2796	5158	6760	141.8%
5689	9025	11065	94.5%
2692	6122	8659	221.7%
3334	6235	8977	169.3%
3206	4709	5737	78.9%
4576	8831	11734	156.4%
8386	7725	7928	-5.5%
5179	5270	6208	19.9%
23162	25827	27111	17.0%
10473	11849	15562	48.6%
8198	16282	25128	206.5%
6665	7952	9093	36.4%

Education

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Upper Secondary Enrollment Rate, Gross				Tertiary Enrollment Rate, Gross				Knowledge Society Index			
	Total enrollment as % of nominal age population				Total enrollment as % of nominal age population				Index range: 0–100			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA												
China	65.66	90.54	101.9	55.2%	24.53	38.07	60.1	145.0%	24.87	48.62	96.63	288.5%
Japan	100.1	100.6	103	2.9%	58.03	64.46	69.35	19.5%	73.89	96.99	105.9	43.3%
Korea, Rep. of	95.55	100	99.96	4.6%	84.86	88.59	83.76	-1.3%	76.54	108.3	112.8	47.4%
Korea, Dem. People's Rep. of	15.73	35.25	53.53	240.3%	4.295	14.4	20.95	387.8%	3.935	10.9	17.37	341.4%
Taiwan, China	116.4	99.03	98.57	-15.3%	55.56	65.52	64.66	16.4%	66.3	91.07	91.3	37.7%
Hong Kong SAR, China	72.01	103.5	100	38.9%	56.62	66.5	67.79	19.7%	22.88	50.18	67.4	194.6%
Mongolia	86.8	120.9	103.7	19.5%	52.69	60.16	63.86	21.2%	33.23	47.51	66.2	99.2%
Asia-East	69.43	90.9	101	45.5%	29.46	41.65	60.77	106.3%	54.08	62.32	97.62	80.5%
India	47.06	72.41	90.27	91.8%	13.48	28.25	39.79	195.2%	15.54	31.67	51.11	228.9%
Pakistan	24.87	39.2	62.26	150.3%	6.405	18.96	28.42	343.7%	12.41	18.7	29.62	138.7%
Bangladesh	31.48	54.07	77.44	146.0%	7.855	18.27	30.23	284.9%	11.43	20.67	33.86	196.2%
Afghanistan	23.92	29.39	48.17	101.4%	3.597	12.13	21.51	498.0%	1.49	9.176	18.03	1110.1%
Iran, Islamic Rep. of	73.47	90.59	97.89	33.2%	36.48	41.75	45.24	24.0%	26.5	38.02	50.66	91.2%
Nepal	24.22	41.91	59.83	147.0%	5.547	13.32	21.3	284.0%	10.45	16	23.71	126.9%
Uzbekistan	119.9	102.3	103.1	-14.0%	9.777	26.49	33.35	241.1%	10.54	22.1	31.17	195.7%
Sri Lanka	71.67	93.94	98.4	37.3%	5.325	21.15	34.73	552.2%	2.044	18.87	38.4	1778.7%
Kazakhstan	85.01	100.5	100.3	18.0%	40.14	51.57	62.87	56.6%	38.02	66.36	82.01	115.7%
Tajikistan	58.87	64.42	75.29	27.9%	19.75	26.7	33.63	70.3%	10.85	17.99	27.16	150.3%
Kyrgyz Rep.	64.93	75.61	83.22	28.2%	50.89	56.63	60.11	18.1%	40.87	42.47	46.72	14.3%
Turkmenistan	72.44	96.46	99.94	38.0%	19.48	49.45	59.21	204.0%	16.62	75.95	85.78	416.1%
Bhutan	38.42	57.69	89.6	133.2%	6.51	25.56	42.59	554.2%	4.35	26.03	50.71	1065.7%
Maldives	17.78	41.66	64.12	260.6%	20.72	29.55	34.03	64.2%	15.82	24.7	32	102.3%
Asia-South Central	45.68	66.76	83.8	83.5%	13.16	26.27	36.69	178.8%	17.11	32.76	49.93	191.8%
Indonesia	65.67	89.1	93.67	42.6%	21.26	29.26	35.89	68.8%	11.02	23.16	35.71	224.0%
Philippines	64.56	80.26	90.64	40.4%	28.68	33.57	40.5	41.2%	22.37	28.42	38.57	72.4%
Vietnam	47.32	68.49	76.4	61.5%	9.704	24.46	31.38	223.4%	9.727	19.26	28.47	192.7%
Thailand	62.8	86.59	93.43	48.8%	45.03	46.36	46.99	4.4%	26.88	36.1	46.3	72.2%
Myanmar	37.96	60.04	89.89	136.8%	10.72	22.53	36.05	236.3%	7.415	19.35	39.16	428.1%
Malaysia	49.67	75.66	86.9	75.0%	36.44	40.68	48.92	34.2%	16.92	33.35	60.1	255.2%
Cambodia	23.28	47.39	66.89	187.3%	7.023	19.2	29.67	322.5%	6.085	17.94	29.94	392.0%
Lao People's Dem. Rep.	34.36	73.13	91.93	167.5%	13.37	26.98	38.56	188.4%	6.874	22.45	43.38	531.1%
Singapore	111.3	100.9	100.5	-9.7%	43.81	59.45	64.58	47.4%	67.55	79	85.2	26.1%
Timor-Leste	61.31	73.64	82.54	34.6%	15.18	26.77	35.82	136.0%	8.438	21.31	34.46	308.4%
Brunei Darussalam	84.89	93.98	96.59	13.8%	17.17	33.29	49.6	188.9%	13.87	33.17	51.9	274.2%
Asia-South East	58.26	79.87	89.09	52.9%	23.01	30.96	37.88	64.6%	23.48	31.43	42.6	81.4%

Roads			
Roads per Capita			
Kilometers per million persons			
2010	2035	2060	% Chg
2993	3892	6263	109.3%
9508	10582	12757	34.2%
2168	4152	5463	152.0%
1300	1629	2240	72.3%
3969	3952	4793	20.8%
294.9	675.8	759.1	157.4%
18234	18484	19722	8.2%
3498	4352	6577	88.0%
3616	3492	3539	-2.1%
1494	1459	1893	26.7%
1455	1480	1550	6.5%
1377	1648	2077	50.8%
2697	5537	7798	189.1%
726.4	1296	1852	155.0%
2891	3348	4672	61.6%
4757	5205	5677	19.3%
6127	13258	18851	207.7%
3927	3477	4107	4.6%
6339	5435	5881	-7.2%
4636	11828	19600	322.8%
11386	12264	13392	17.6%
281.2	2658	3548	1161.7%
3109	3179	3403	9.5%
2182	2917	3904	78.9%
2136	1979	2656	24.3%
2112	2387	3327	57.5%
948	3927	6060	539.2%
534.9	2093	4810	799.2%
3535	5663	7220	104.2%
2542	2834	4177	64.3%
6388	6531	7902	23.7%
658.9	676.6	688.5	4.5%
1962	2021	3459	76.3%
7285	14391	16538	127.0%
1989	2863	4037	103.0%

Education

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Upper Secondary Enrollment Rate, Gross				Tertiary Enrollment Rate, Gross				Knowledge Society Index			
	Total enrollment as % of nominal age population				Total enrollment as % of nominal age population				Index range: 0–100			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued												
Turkey	72.48	89.07	96.11	32.6%	38.36	42.86	52.5	36.9%	32.99	44.33	70.74	114.4%
Iraq	38.56	65.17	88.03	128.3%	15.53	28.53	39.63	155.2%	13.68	27.03	45.91	235.6%
Yemen, Rep. of	39.74	55.79	76.97	93.7%	10.2	16.71	24.59	141.1%	7.155	12.89	21.09	194.8%
Saudi Arabia	91.37	100.2	98.08	7.3%	32.79	45.83	56.59	72.6%	11.24	46	68.63	510.6%
Syrian Arab Rep.	36.08	46.23	65.41	81.3%	14.86	21.84	31.79	113.9%	11.48	17.22	29.56	157.5%
Jordan	74.22	81.55	94.22	26.9%	40.64	40.5	44.7	10.0%	22.8	29.01	41.26	81.0%
Israel	108	91.89	99.76	-7.6%	59.76	65.6	68.31	14.3%	89.71	116.3	120.8	34.7%
Palestine	80.32	62.84	102.2	27.2%	45.69	37.66	44.08	-3.5%	17.97	19.22	32.45	80.6%
Azerbaijan	113.4	103.6	99.41	-12.3%	19.06	32.71	38.33	101.1%	18.67	29.19	37.97	103.4%
United Arab Emirates	86.68	98.76	99.8	15.1%	29.88	58.83	65.17	118.1%	59.38	80.47	90.34	52.1%
Kuwait	79.51	102.3	99.48	25.1%	18.89	61.09	72.38	283.2%	17.04	50.75	66.4	289.7%
Lebanon	75.37	89.72	98.31	30.4%	52.51	51.2	50.15	-4.5%	38.73	44.98	50.16	29.5%
Oman	91.04	104.1	98.69	8.4%	14.51	32.33	48.35	233.2%	30.11	54.54	78.25	159.9%
Armenia	82.62	97.69	97.89	18.5%	50.07	49.82	50.6	1.1%	29.81	36.51	46.34	55.5%
Georgia	89.5	94.33	97.69	9.2%	25.51	39.22	44.77	75.5%	20.32	32.08	41.6	104.7%
Qatar	75.87	93.79	98.73	30.1%	10.78	39.86	57.08	429.5%	5.255	33.69	53.59	919.8%
Bahrain	91.77	96.15	99.05	7.9%	51.21	57.02	60.19	17.5%	55.89	69.77	85.87	53.6%
Cyprus	95.44	100.1	100.1	4.9%	42.68	47.43	51.9	21.6%	35.05	47.77	58.79	67.7%
Asia-West	67.25	77.59	88.82	32.1%	28.92	35.68	43.26	49.6%	33.34	51.87	67.93	103.7%
Australia	140	100.7	100.6	-28.1%	76.94	80.14	76.57	-0.5%	70.46	91.52	94.26	33.8%
Papua New Guinea	16.83	33.17	74.9	345.0%	2.03	17.17	28.8	1318.7%	2.861	13.98	28.7	903.1%
New Zealand	134.8	101.6	104	-22.8%	78.41	77.27	79.22	1.0%	53.77	73.1	92.45	71.9%
Solomon Islands	19.12	25.4	37.32	95.2%	17.39	20.27	23.2	33.4%	8.848	13.68	19.02	115.0%
Fiji	62.49	75.35	87.55	40.1%	15.42	23.27	32.06	107.9%	12.11	18.52	29.84	146.4%
Vanuatu	45.84	59.2	90.73	97.9%	4.777	15.42	26.87	462.5%	3.77	13.23	23.4	520.7%
Micronesia (Federated States of)	74.04	72.5	90.05	21.6%	14.1	19.68	25.69	82.2%	9.324	15.26	21.74	133.2%
Tonga	90.59	87	101.5	12.0%	6.411	14.47	26.29	310.1%	3.851	11.18	24.38	533.1%
Samoa	67.34	72.08	102.2	51.8%	7.442	16	30.2	305.8%	9.209	16.98	29.77	223.3%
Oceania	110.5	82.18	92.3	-16.5%	59.01	61.33	61.22	3.7%	67.55	87.48	90.54	34.0%

Roads			
Roads per Capita			
Kilometers per million persons			
2010	2035	2060	% Chg
4849	5202	6808	40.4%
1280	2625	4315	237.1%
2939	2213	2471	-15.9%
8518	11064	13705	60.9%
3451	3869	5630	63.1%
1303	3174	4623	254.8%
2445	4646	4326	76.9%
1383	1498	1703	23.1%
5960	6732	7894	32.4%
870.5	12153	21812	2405.7%
2348	8047	7657	226.1%
1638	4457	5854	257.4%
21334	25490	24918	16.8%
2516	4635	6844	172.0%
4844	6586	9776	101.8%
5026	13448	15805	214.5%
5187	4357	4578	-11.7%
14106	13696	15461	9.6%
4284	5159	6303	47.1%
36654	31673	29305	-20.0%
2844	3928	5681	99.8%
21660	19891	20283	-6.4%
2600	4028	4609	77.3%
4028	5339	7644	89.8%
4350	5928	6614	52.0%
2143	3179	3998	86.6%
6538	4379	4632	-29.2%
4413	5669	7594	72.1%
26399	22226	20782	-21.3%

Education

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Upper Secondary Enrollment Rate, Gross				Tertiary Enrollment Rate, Gross				Knowledge Society Index			
	Total enrollment as % of nominal age population				Total enrollment as % of nominal age population				Index range: 0–100			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE												
Russian Federation	84.2	99.08	98.07	16.5%	74.2	73.99	71.66	-3.4%	61.78	75.13	87.81	42.1%
Poland	99.57	97.61	98.48	-1.1%	69.45	69.61	71.57	3.1%	47.39	64.63	88.73	87.2%
Ukraine	91.47	95.81	95.47	4.4%	79.45	69.86	61.23	-22.9%	41.61	45.22	52.13	25.3%
Romania	83.81	93.94	96.76	15.5%	65.56	62.07	58.63	-10.6%	44.54	50.06	56.81	27.5%
Czech Rep.	91.25	99.12	99.36	8.9%	58.22	58.7	65.2	12.0%	50.99	64.44	89.16	74.9%
Belarus	78.43	96.41	97.22	24.0%	73.65	69	64.06	-13.0%	28.47	41.11	56.48	98.4%
Hungary	95.77	105.1	102.2	6.7%	65.01	60.79	60.86	-6.4%	38.33	48.2	69.34	80.9%
Bulgaria	90.43	88.27	95.38	5.5%	51.04	48.39	44.35	-13.1%	28.11	33.63	37.55	33.6%
Slovak Rep.	90.42	95.99	98.43	8.9%	53.62	55.89	59.43	10.8%	35.53	52.65	72.57	104.2%
Moldova, Rep. of	85.63	96.52	99.57	16.3%	38.22	36.2	39.24	2.7%	28.49	28.92	40.31	41.5%
Europe-East	88.05	97.81	97.81	11.1%	71.45	69.28	67.17	-6.0%	52.27	67.07	82.65	58.1%
United Kingdom	96.03	97.59	99.32	3.4%	57.35	63.57	65.39	14.0%	50.87	76.3	84.34	65.8%
Sweden	103.8	100.4	100.2	-3.5%	71.03	81.6	82.27	15.8%	72.53	101.4	107.7	48.5%
Denmark	119.7	99.26	99.9	-16.5%	78.04	81.67	79.84	2.3%	52.06	81.72	95.71	83.8%
Ireland	129	107.8	108	-16.3%	58.24	62.38	63.63	9.3%	58.4	73.36	78.13	33.8%
Norway	127.5	99.88	100	-21.6%	73.13	76.08	75.49	3.2%	57.35	72.54	80.64	40.6%
Finland	118.2	99.19	99.95	-15.4%	89.64	91.19	87.63	-2.2%	78.32	101.5	108.1	38.0%
Lithuania	97.55	99.02	98.72	1.2%	77.36	73.18	71.91	-7.0%	48.58	57.89	76.74	58.0%
Latvia	95.69	99.45	98.96	3.4%	69.29	67.23	65.13	-6.0%	41.88	51.7	62.39	49.0%
Estonia	96.87	99.19	98.89	2.1%	63.7	68.88	76.58	20.2%	44.08	65.16	92.17	109.1%
Iceland	117.4	99.06	99.87	-14.9%	73.08	77.08	72.05	-1.4%	69.13	94.47	95.7	38.4%
Europe-North	102.4	98.77	99.95	-2.4%	63.45	68.73	69.58	9.7%	55.67	79.97	88.13	58.3%
Italy	99.44	99.97	100	0.6%	67.42	67.31	72.74	7.9%	45.7	59.4	84.1	84.0%
Spain	125	98.82	98.81	-21.0%	70.59	70.52	73.32	3.9%	45.9	63.45	86.7	88.9%
Greece	99.33	93.86	95.59	-3.8%	90.64	75.77	65.73	-27.5%	36.48	40.04	50.7	39.0%
Portugal	89.62	96.04	98.22	9.6%	60.19	59.97	62.21	3.4%	57.33	62.85	77.12	34.5%
Serbia	84.2	94.03	96.71	14.9%	49.85	47.42	45.49	-8.7%	28.02	35.79	47.07	68.0%
Croatia	87.05	100.4	100.1	15.0%	49.26	48.55	47.87	-2.8%	38.05	44.49	51.45	35.2%
Bosnia and Herzegovina	77.3	90.05	93.64	21.1%	36.98	41.15	41.9	13.3%	21.55	32.1	39.11	81.5%
Albania	52.92	80.64	84.77	60.2%	19.05	27.5	34.01	78.5%	14.21	26.74	36.77	158.8%
Macedonia, FYR	88.52	99.02	99.4	12.3%	16.77	30.41	35.33	110.7%	16.82	22.09	30.7	82.5%
Slovenia	97.72	98.47	99.17	1.5%	82.61	79.71	76.21	-7.7%	51.95	66.31	85.47	64.5%
Montenegro	93.1	86.49	89.75	-3.6%	38.69	39	39.62	2.4%	33.95	37.58	42.95	26.5%
Malta	103	103.2	100.1	-2.8%	32.18	39.19	46.77	45.3%	18.59	34.94	52.48	182.3%
Europe-South	103.7	97.87	98.46	-5.1%	65.8	64.99	67.55	2.7%	45.3	58.92	80.87	78.5%
Germany	104.4	107.3	106.1	1.6%	46.23	57.77	63.03	36.3%	57.99	81.89	90.11	55.4%
France	117.3	99.49	99.44	-15.2%	54.56	58.53	63.69	16.7%	64.32	80.84	89.31	38.9%
Netherlands	114.3	114.5	113.7	-0.5%	60.59	65.66	69.41	14.6%	58.18	75.32	85.59	47.1%
Belgium	107.6	100.8	100.7	-6.4%	62.97	67.82	69.59	10.5%	49.98	75.27	87.86	75.8%
Switzerland	84.75	98.09	100	18.0%	49.4	55.84	61.88	25.3%	62.65	76.8	87.29	39.3%
Austria	98.54	99.68	99.95	1.4%	54.71	70.5	78.2	42.9%	52.5	77.4	91.64	74.6%
Luxembourg	86.67	100.2	100.2	15.6%	9.958	31.84	51.28	415.0%	21.16	44.32	65.04	207.4%
Europe-West	108.6	104.1	103.5	-4.7%	51.64	59.74	64.78	25.4%	59.34	79.76	89.01	50.0%

Roads			
Roads per Capita			
Kilometers per million persons			
2010	2035	2060	% Chg
7049	10926	15301	117.1%
10075	11338	13723	36.2%
3707	4759	6836	84.4%
9269	10805	13777	48.6%
12506	13458	15196	21.5%
9829	12928	15620	58.9%
19894	23987	29698	49.3%
5331	7835	10164	90.7%
8090	9131	11559	42.9%
3577	3966	5847	63.5%
7741	10510	13996	80.8%
6873	7035	6884	0.2%
68327	100574	105204	54.0%
13238	13262	13721	3.6%
21604	19174	18282	-15.4%
19269	19376	21800	13.1%
14745	16440	20284	37.6%
24619	28631	34534	40.3%
30815	35576	42439	37.7%
43944	58289	72235	64.4%
40153	39592	42228	5.2%
16491	19669	20397	23.7%
8046	8845	10469	30.1%
14411	14983	17366	20.5%
10330	10571	11651	12.8%
7790	10025	12198	56.6%
6338	8512	10731	69.3%
6666	8823	11207	68.1%
5809	6562	8945	54.0%
5684	6586	7758	36.5%
6857	7276	8986	31.0%
18910	20751	24683	30.5%
8539	9175	10310	20.7%
7656	7930	9408	22.9%
10036	10998	12975	29.3%
7887	8542	9787	24.1%
15251	15442	16420	7.7%
8273	7991	8262	-0.1%
14204	13772	13973	-1.6%
9137	9809	11732	28.4%
12768	13812	16662	30.5%
10310	10718	9501	-7.8%
11015	11514	12717	15.5%

Infrastructure

Base Case Source: International Futures Model Version 6.68, Nov 2013	Roads (cont.)															
	Road Network Density				Population within 2 Km of an All-Season Road				Paved Roads				Cars, Buses, and Freight Vehicles			
	Km per 10 sq km of land area				Percent of rural population				Percent of total				Total per 1,000 people			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	2.709	3.527	4.477	65.3%	71.39	75.69	82.8	16.0%	58.73	71.85	79.22	34.9%	151	267.6	393.4	160.5%
Africa	0.8	1.503	2.829	253.6%	44.39	53.55	65.7	48.0%	26.1	49.38	63.7	144.1%	36.36	118.1	283.2	678.9%
Americas	2.917	3.492	3.94	35.1%	70.81	82.31	89.55	26.5%	49.81	63.98	71.89	44.3%	405.7	533	653.3	61.0%
Asia with Oceania	3.543	4.863	6.406	80.8%	77.02	82.53	90.44	17.4%	58.1	75.62	85.08	46.4%	70.3	216.6	351.1	399.4%
Europe	3.393	3.888	4.147	22.2%	89.55	96.24	98.29	9.8%	83.35	87.19	89.25	7.1%	447.7	569.3	664.4	48.4%
World	2.709	3.527	4.477	65.3%	71.39	75.69	82.8	16.0%	58.73	71.85	79.22	34.9%	151	267.6	393.4	160.5%
Africa-Eastern	0.962	1.713	3.549	268.9%	39.74	50	65.48	64.8%	21.9	38.56	60.33	175.5%	16.46	63.37	242.8	1375.1%
Africa-Middle	0.504	0.991	1.823	261.7%	29.64	36.44	45.94	55.0%	5.812	28.13	50.8	774.1%	14.85	68.71	141.9	855.6%
Africa-Northern	0.476	1.358	2.799	488.0%	57.02	77.14	89.61	57.2%	72.74	78.47	72.68	-0.1%	66.87	167.8	381.6	470.7%
Africa-Southern	1.749	2.093	2.489	42.3%	78.62	84.5	93.24	18.6%	20.23	47.39	62.42	208.6%	150.3	356.4	567.8	277.8%
Africa-Western	0.97	1.773	3.367	247.1%	45.14	53.54	63.66	41.0%	15.62	43.93	65.23	317.6%	24.09	143.9	323.3	1242.1%
Africa	0.8	1.503	2.829	253.6%	44.39	53.55	65.7	48.0%	26.1	49.38	63.7	144.1%	36.36	118.1	283.2	678.9%
America-Caribbean	5.1	8.601	11.82	131.8%	55.61	76.59	88.01	58.3%	65.71	73.58	79.2	20.5%	136.1	263.3	364.4	167.7%
America-Central	2.313	4.73	7.054	205.0%	55.77	68.74	80.92	45.1%	24.75	57.54	70.55	185.1%	107	258.3	450.7	321.2%
America-North	4.136	4.534	4.883	18.1%	82.35	91.74	97.22	18.1%	61.3	70.18	75.62	23.4%	662.8	719	773.6	16.7%
America-South	1.499	2.189	2.66	77.5%	63.84	76.37	83.6	31.0%	13.63	49.08	63.68	367.2%	169.8	383.3	570	235.7%
Americas	2.917	3.492	3.94	35.1%	70.81	82.31	89.55	26.5%	49.81	63.98	71.89	44.3%	405.7	533	653.3	61.0%
Asia-East	4.78	6.174	8.402	75.8%	96.44	99.18	99.01	2.7%	59.8	79.52	88.2	47.5%	104.7	325.4	505.8	383.1%
Asia-South Central	5.197	6.972	8.435	62.3%	65.17	76.99	88.81	36.3%	59.61	76.47	87.27	46.4%	21.32	114.6	219.9	931.4%
Asia-South East	2.701	4.808	7.159	165.0%	76.37	86.4	94.9	24.3%	49.4	69.62	79.97	61.9%	68.77	237.7	425.2	518.3%
Asia-West	2.067	3.639	5.487	165.5%	58.22	65.35	79.33	36.3%	63.45	79.46	86.36	36.1%	135.8	283.3	438.1	222.6%
Oceania	1.111	1.231	1.354	21.9%	76.65	81.99	91.24	19.0%	44.8	48.76	53.1	18.5%	527.5	545.4	618.8	17.3%
Asia with Oceania	3.543	4.863	6.406	80.8%	77.02	82.53	90.44	17.4%	58.1	75.62	85.08	46.4%	70.3	216.6	351.1	399.4%
Europe-East	1.26	1.517	1.71	35.7%	85.51	93.72	96.63	13.0%	75.81	83.68	86.68	14.3%	279.1	466.8	611.4	119.1%
Europe-North	9.969	12.74	13.41	34.5%	92.1	98.62	100	8.6%	64.9	73.47	78.07	20.3%	525.6	599.9	664.8	26.5%
Europe-South	11.84	12.39	12.67	7.0%	91.42	95.49	98.13	7.3%	94.99	95.7	95.86	0.9%	568.7	644.6	718	26.3%
Europe-West	19.14	20.14	20.83	8.8%	94.45	100	100	5.9%	97.72	98.55	98.9	1.2%	566	627.7	687.6	21.5%
Europe	3.393	3.888	4.147	22.2%	89.55	96.24	98.29	9.8%	83.35	87.19	89.25	7.1%	447.7	569.3	664.4	48.4%

Infrastructure

	Roads (cont.)															
	Road Network Density				Population within 2 Km of an All-Season Road				Paved Roads				Cars, Buses, and Freight Vehicles			
	Km per 10 sq km of land area				Percent of rural population				Percent of total				Total per 1,000 people			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
Base Case: Countries in Year 2060 Descending Population Sequence																
AFRICA																
Ethiopia	0.489	1.737	3.982	714.3%	38.65	53.23	69.13	78.9%	13.67	36	60.87	345.3%	7.302	29.78	237.3	3149.8%
Tanzania, United Rep. of	0.988	1.812	4.782	384.0%	44.04	53.2	75.91	72.4%	6.67	34.82	68	919.5%	32.34	169.6	450.7	1293.6%
Uganda	3.541	5.192	11.07	212.6%	30.41	42.36	62.6	105.9%	23	48.1	75.8	229.6%	7	28.83	179.5	2464.3%
Kenya	1.088	2.134	4.243	290.0%	45.88	53.65	66.71	45.4%	14.33	37.37	59.83	317.5%	21	53.32	282.8	1246.7%
Madagascar	0.857	1.037	1.472	71.8%	24.89	28.63	34.4	38.2%	11.6	19.06	28.29	143.9%	21.95	25.17	30	36.7%
Mozambique	0.386	1.017	2.685	595.6%	34.05	47.7	65.81	93.3%	20.78	29.46	52.98	155.0%	13	90.68	402.4	2995.4%
Malawi	1.639	3.361	7.297	345.2%	39.5	46.3	58.46	48.0%	45.02	57.05	63.97	42.1%	9	13.8	44.75	397.2%
Zambia	0.898	1.27	2.394	166.6%	67.39	74.56	89.73	33.2%	22	32.44	53.13	141.5%	18	144.4	437	2327.8%
Somalia	0.352	0.502	1.147	225.9%	35.7	38.85	51.11	43.2%	11.8	16.29	28.84	144.4%	2.671	4.878	28.68	973.8%
Rwanda	5.678	9.627	20.85	267.2%	59	69.2	87.62	48.5%	19	55.92	80	321.1%	4.337	17.87	34.91	704.9%
Zimbabwe	2.514	2.979	3.3	31.3%	54.61	59.37	63.86	16.9%	47.4	57.75	62.56	32.0%	51.89	138.7	340.8	556.8%
Burundi	4.798	5.772	7.33	52.8%	18.88	27.22	38	101.3%	10.44	27.93	46.94	349.6%	6	6.917	11.02	83.7%
Eritrea	0.397	1.277	2.902	631.0%	22.23	34.98	50.66	127.9%	21.8	26.53	40.6	86.2%	11	19.79	102.7	833.6%
Comoros	4.731	9.369	16.41	246.9%	72.96	78.28	85.14	16.7%	76.5	85	90.36	18.1%	23.37	26.57	40.23	72.1%
Djibouti	1.322	1.967	2.853	115.8%	84.07	88.7	96.24	14.5%	45	55.15	57.22	27.2%	18.97	43.39	158.2	733.9%
Mauritius	10.25	30.69	34.3	234.6%	73.54	100	100	36.0%	98	98.44	98.68	0.7%	159	262.7	371.1	133.4%
Africa-Eastern	0.962	1.713	3.549	268.9%	39.74	50	65.48	64.8%	21.9	38.56	60.33	175.5%	16.46	63.37	242.8	1375.1%
Congo, Democratic Rep. of	0.677	0.913	1.316	94.4%	29.64	34.7	42.8	44.4%	1.82	11.58	31.25	1617.0%	5.454	8.809	31.02	468.8%
Angola	0.413	1.497	3.49	745.0%	50.09	73.56	93.35	86.4%	10.4	45.19	70.7	579.8%	40	322	543.9	1259.8%
Cameroon	0.61	1.617	3.131	413.3%	20.64	37.15	54.46	163.9%	17.04	36.17	53.96	216.7%	11	36.12	195.6	1678.2%
Chad	0.318	0.505	1.052	230.8%	10.25	22.93	38.8	278.5%	1	13.86	32.52	3152.0%	6.083	20.75	64.62	962.3%
Central African Rep.	0.39	0.471	0.629	61.3%	39.12	42.32	49.01	25.3%	2.7	7.639	18.35	579.6%	7.949	15.1	68.84	766.0%
Congo, Rep. of	0.498	1.06	1.777	256.8%	52.11	64.07	73.37	40.8%	9.7	30.17	45.33	367.3%	26	166.7	373	1334.6%
Gabon	0.356	1.069	1.646	362.4%	45.65	65.54	77.43	69.6%	11.97	37.1	48.16	302.3%	144.4	341.2	525.9	264.2%
Equatorial Guinea	1.027	5.752	9.602	835.0%	73.19	100	100	36.6%	67.67	76.16	80.33	18.7%	208.6	379.1	537	157.4%
São Tomé and Príncipe	3.333	7.521	12.78	283.4%	89.79	98.75	100	11.4%	68.1	80.95	85.57	25.7%	2.828	10.24	37.14	1213.3%
Africa-Middle	0.504	0.991	1.823	261.7%	29.64	36.44	45.94	55.0%	5.812	28.13	50.8	774.1%	14.85	68.71	141.9	855.6%
Egypt	1.012	3.175	4.705	364.9%	81.88	95.35	100	22.1%	89.36	97.84	100	11.9%	43	109.7	271.3	530.9%
Sudan	0.05	0.742	4.007	7914.0%	12.75	38.38	70.03	449.3%	36.3	44.62	51.36	41.5%	28	85.91	378.5	1251.8%
Algeria	0.474	1.151	1.653	248.7%	62.43	75.12	83.54	33.8%	74.03	80.32	84.14	13.7%	112	288.1	515.2	360.0%
Morocco	1.309	3.007	4.409	236.8%	39.49	55.72	68.29	72.9%	70.32	83.16	86.24	22.6%	71	226	470.7	563.0%
Tunisia	1.249	3.887	5.662	353.3%	43	64.57	78.54	82.7%	75.18	80.77	83	10.4%	114	284.1	501.1	339.6%
Libya	0.473	0.802	0.978	106.8%	81.39	92.94	94.21	15.8%	57.2	68.35	69.24	21.0%	291	503.7	614.6	111.2%
Africa-Northern	0.476	1.358	2.799	488.0%	57.02	77.14	89.61	57.2%	72.74	78.47	72.68	-0.1%	66.87	167.8	381.6	470.7%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Roads (cont.)															
	Road Network Density				Population within 2 Km of an All-Season Road				Paved Roads				Cars, Buses, and Freight Vehicles			
	Km per 10 sq km of land area				Percent of rural population				Percent of total				Total per 1,000 people			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	2.982	3.407	3.99	33.8%	80.62	87.22	96.43	19.6%	20.3	53.87	71.04	250.0%	159	373.3	582.3	266.2%
Namibia	0.807	1.009	1.129	39.9%	61.22	70.58	76.88	25.6%	14.72	19.74	31.19	111.9%	109	358.7	572.5	425.2%
Lesotho	1.957	2.744	4.253	117.3%	72.24	80.49	91.63	26.8%	18.3	35.65	52.09	184.6%	19.71	105	402.1	1940.1%
Botswana	0.455	0.755	1.036	127.7%	83.16	94.04	100	20.3%	32.6	40.59	43.47	33.3%	153	366.9	537	251.0%
Swaziland	2.09	4.147	6.358	204.2%	69.1	78.65	88.61	28.2%	29.99	47.5	59.88	99.7%	89	171.6	399.4	348.8%
Africa-Southern	1.749	2.093	2.489	42.3%	78.62	84.5	93.24	18.6%	20.23	47.39	62.42	208.6%	150.3	356.4	567.8	277.8%
Nigeria	2.121	4.921	10.18	380.0%	52.64	67.07	81.9	55.6%	15	58.62	81.05	440.3%	31	229.6	481.3	1452.6%
Niger	0.152	0.407	0.909	498.0%	37.67	43.33	49.75	32.1%	20.65	23.2	25.99	25.9%	5	6.928	12.42	148.4%
Côte d'Ivoire	2.643	3.134	4.421	67.3%	53.17	56.13	64.24	20.8%	7.93	33.05	57.59	626.2%	20	50.96	250.4	1152.0%
Burkina Faso	3.381	4.456	5.357	58.4%	26.65	38.3	51.22	92.2%	16	27.93	51.6	222.5%	11	27.71	135.4	1130.9%
Ghana	2.532	3.74	7.87	210.8%	65.35	74.62	96.85	48.2%	12.59	44.94	74.06	488.2%	33	227.3	480.1	1354.8%
Mali	0.192	0.522	1.237	544.3%	14.13	28.78	47.78	238.1%	24.57	37.59	44.89	82.7%	9	28.25	243.3	2603.3%
Senegal	0.781	2.198	3.989	410.8%	30.9	43.32	53.98	74.7%	32	39.64	51.85	62.0%	23	40.43	103.4	349.6%
Guinea	1.241	1.564	2.732	120.1%	21.4	30.45	44.58	108.3%	16.5	24.67	43.85	165.8%	14	31.22	112.7	705.0%
Benin	1.718	2.732	5.428	215.9%	31.46	40	54.69	73.8%	20	36.72	57.33	186.7%	21	43.89	167.8	699.0%
Togo	1.383	2.83	5.14	271.7%	21.04	33.46	47.28	124.7%	31	36.79	49.83	60.7%	3.836	7.201	19.77	415.4%
Sierra Leone	1.578	2.84	7.086	349.0%	68.3	79.81	100	46.4%	8	34.17	67.06	738.3%	6.063	47.83	361.1	5855.8%
Liberia	1.1	1.543	2.804	154.9%	64.43	70.65	80.58	25.1%	6.2	18.1	40.83	558.5%	3.881	10.97	54.57	1306.1%
Mauritania	0.138	0.281	0.461	234.1%	32.75	40.49	47.79	45.9%	26.85	30.58	34.59	28.8%	12.55	28.2	70.86	464.6%
Gambia	3.312	5.001	9.18	177.2%	48.32	52.85	63.05	30.5%	19.32	39.72	58.75	204.1%	7	12.41	33.69	381.3%
Guinea-Bissau	1.565	2.088	3.441	119.9%	51.06	54.04	60.26	18.0%	27.94	33.78	39.63	41.8%	24.91	41.61	81.48	227.1%
Cape Verde	3.35	7.237	10.85	223.9%	89.34	100	100	11.9%	78	91.82	94.92	21.7%	94	357.4	571.5	508.0%
Africa-Western	0.97	1.773	3.367	247.1%	45.14	53.54	63.66	41.0%	15.62	43.93	65.23	317.6%	24.09	143.9	323.3	1242.1%

Infrastructure

	Roads (cont.)															
	Road Network Density				Population within 2 Km of an All-Season Road				Paved Roads				Cars, Buses, and Freight Vehicles			
	Km per 10 sq km of land area				Percent of rural population				Percent of total				Total per 1,000 people			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	1.509	5.862	9.685	541.8%	24.77	42.95	54.74	121.0%	24.3	48.7	61.25	152.1%	7.22	12.97	27.32	278.4%
Dominican Rep.	2.608	11.2	18.08	593.3%	68.83	97.64	100	45.3%	49.4	77.19	85.35	72.8%	123	315.2	480.4	290.6%
Cuba	2.797	3.948	6.036	115.8%	59.56	72.25	91.48	53.6%	49	56.98	68.41	39.6%	38	292.5	519.3	1266.6%
Puerto Rico	30.67	33.72	35.05	14.3%	98	100	100	2.0%	95	99.28	100	5.3%	642	747.9	804.5	25.3%
Jamaica	20.45	21.19	22.13	8.2%	93	94.79	99.06	6.5%	73.28	75.63	76.61	4.5%	188	290.7	466.7	148.2%
Trinidad and Tobago	16.22	23.82	26.67	64.4%	91	100	100	9.9%	51.1	81.74	87.7	71.6%	351	473.6	582.9	66.1%
Bahamas	2.69	5.839	6.466	140.4%	87.88	100	100	13.8%	57.4	66.29	66.19	15.3%	209.4	374.6	531.3	153.7%
Barbados	37.21	39.29	39.36	5.8%	100	100	100	0.0%	100	99.94	99.95	-0.0%	406	466.4	542.2	33.5%
Saint Lucia	19.84	21.25	21.69	9.3%	89.59	93.87	98.26	9.7%	66.82	70.34	73.72	10.3%	106.6	226.3	379.5	256.0%
Grenada	33.15	36.2	38.72	16.8%	98	100	100	2.0%	60.96	67.75	75.35	23.6%	190.8	324.9	466.7	144.6%
Saint Vincent and the Grenadines	21.26	22.75	24.76	16.5%	97	98.93	100	3.1%	70	72.49	75.02	7.2%	204	307.6	457.9	124.5%
America-Caribbean	5.1	8.601	11.82	131.8%	55.61	76.59	88.01	58.3%	65.71	73.58	79.2	20.5%	136.1	263.3	364.4	167.7%
Guatemala	1.315	5.59	11.17	749.4%	56.18	75.33	92.07	63.9%	34.5	62.48	77.77	125.4%	117	307.2	531.4	354.2%
Honduras	1.215	3.078	4.695	286.4%	43.71	56.55	65.37	49.6%	20.4	46.35	57.74	183.0%	97	193.5	381	292.8%
Nicaragua	1.887	2.38	3.05	61.6%	29.75	39.59	50.48	69.7%	11.62	32.89	46.7	301.9%	57	129.5	273	378.9%
El Salvador	4.84	12.67	17.85	268.8%	69.2	86.25	96.55	39.5%	19.8	67.94	81.01	309.1%	84	184.9	333.1	296.5%
Costa Rica	7.856	9.503	9.97	26.9%	85.04	92.25	96.41	13.4%	25.95	61.96	73.79	184.4%	163	371.6	549.3	237.0%
Panama	1.908	5.17	7.473	291.7%	84.04	100	100	19.0%	41.96	68.24	75.8	80.6%	130.7	368.5	532.8	307.7%
Belize	1.259	1.871	2.683	113.1%	80.84	86.66	94.4	16.8%	17	33.08	44.65	162.6%	178	365.6	577.5	224.4%
America-Central	2.313	4.73	7.054	205.0%	55.77	68.74	80.92	45.1%	24.75	57.54	70.55	185.1%	107	258.3	450.7	321.2%
United States of America	7.181	7.615	8.065	12.3%	87.58	95.33	100	14.2%	67.37	76.06	80.87	20.0%	809	820.8	831.5	2.8%
Mexico	1.904	3.586	4.698	146.7%	62.28	75.13	84.75	36.1%	35.28	66.36	75.01	112.6%	264	447.7	610.8	131.4%
Canada	1.55	1.637	1.722	11.1%	100	100	100	0.0%	39.87	44.43	51.25	28.5%	605	671.3	732.6	21.1%
America-North	4.136	4.534	4.883	18.1%	82.35	91.74	97.22	18.1%	61.3	70.18	75.62	23.4%	662.8	719	773.6	16.7%
Brazil	2.071	2.447	2.588	25.0%	56.66	66.59	74.75	31.9%	9.6	46.73	62.54	551.5%	198	429.1	619.5	212.9%
Colombia	1.167	2.752	3.92	235.9%	82.12	96.77	100	21.8%	14.4	55.45	69.49	382.6%	68.12	271.9	489.6	618.7%
Argentina	0.845	1.596	2.103	148.9%	81.86	94.52	100	22.2%	30	53.85	62.73	109.1%	314	522.4	647.8	106.3%
Peru	0.62	1.844	2.925	371.8%	49.78	69.64	81.98	64.7%	13.88	50.09	65.46	371.6%	68.78	304.7	518.9	654.4%
Venezuela (Bolivarian Rep. of)	1.09	2.689	4.338	298.0%	80.19	96.48	100	24.7%	33.6	59.36	73.08	117.5%	147	372	576.4	292.1%
Ecuador	1.778	3.462	4.735	166.3%	76.24	86.97	92.82	21.7%	14.82	53.23	65.58	342.5%	63	201.3	356.9	466.5%
Chile	1.055	2.374	3.208	204.1%	79.2	96.36	100	26.3%	22.45	56.48	67.31	199.8%	172	394	558.2	224.5%
Bolivia (Plurinational State of)	0.777	1.054	1.307	68.2%	50.32	57.27	65.65	30.5%	7.885	24.93	42.04	433.2%	68	235	483.3	610.7%
Paraguay	0.842	1.242	1.738	106.4%	56.11	61.54	68.14	21.4%	50.8	59.12	61.66	21.4%	82	181.7	357.2	335.6%
Uruguay	4.441	5.395	5.73	29.0%	89.64	98.91	100	11.6%	9.96	41.26	55.28	455.0%	176	389.9	566.1	221.6%
Guyana	0.405	0.463	0.514	26.9%	49.39	54.37	61.58	24.7%	7.4	12.55	19.37	161.8%	95	288.1	516	443.2%
Suriname	0.276	0.558	0.759	175.0%	83.92	97.07	100	19.2%	26.25	31.75	33.54	27.8%	238	485.1	653.7	174.7%
America-South	1.499	2.189	2.66	77.5%	63.84	76.37	83.6	31.0%	13.63	49.08	63.68	367.2%	169.8	383.3	570	235.7%

Infrastructure

	Roads (cont.)															
	Road Network Density				Population within 2 Km of an All-Season Road				Paved Roads				Cars, Buses, and Freight Vehicles			
	Km per 10 sq km of land area				Percent of rural population				Percent of total				Total per 1,000 people			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
Base Case: Countries in Year 2060 Descending Population Sequence																
ASIA with OCEANIA																
China	4.294	5.869	8.579	99.8%	97	100	100	3.1%	53.5	77.97	88.49	65.4%	42.48	296.9	499.1	1074.9%
Japan	33.24	33.46	33.25	0.0%	99	100	100	1.0%	80.11	88.24	90.31	12.7%	593	647	700.9	18.2%
Korea, Rep. of	10.91	20.88	22.53	106.5%	92.8	100	100	7.8%	79.25	92.12	93.75	18.3%	346	439.4	536.5	55.1%
Korea, Dem. People's Rep. of	2.591	3.527	4.759	83.7%	45.63	52.47	60.25	32.0%	6.4	36.71	53.24	731.9%	5.871	13.27	36.15	515.7%
Taiwan, China	25.4	25.51	25.28	-0.5%	98.93	100	100	1.1%	91.97	93.91	94.45	2.7%	610.1	617.3	665.2	9.0%
Hong Kong SAR, China	19.89	52.6	58.01	191.7%	100	100	100	0.0%	100	99.98	99.98	-0.0%	106.3	147.7	191.4	80.1%
Mongolia	0.317	0.412	0.485	53.0%	41.73	54.24	66.28	58.8%	3.5	12.24	26.07	644.9%	72	373.3	583	709.7%
Asia-East	4.78	6.174	8.402	75.8%	96.44	99.18	99.01	2.7%	59.8	79.52	88.2	47.5%	104.7	325.4	505.8	383.1%
India	14.24	17.58	19.71	38.4%	69.89	83.02	95.14	36.1%	59.54	74.96	88.21	48.2%	15	128.5	240	1500.0%
Pakistan	3.36	5.011	8.184	143.6%	63.41	68.21	78.96	24.5%	65.36	74.34	77.93	19.2%	11	26.51	128.4	1067.3%
Bangladesh	18.38	23.77	26.64	44.9%	43.34	57.42	72.68	67.7%	9.5	63.19	87.27	818.6%	3.465	5.868	9.888	185.4%
Afghanistan	0.646	1.555	3.213	397.4%	31.17	42.14	54.18	73.8%	29.3	43.29	54.08	84.6%	27	71.64	229.9	751.5%
Iran, Islamic Rep. of	1.223	2.969	4.199	243.3%	69.43	85.97	96.24	38.6%	73.3	83.38	85.83	17.1%	128	345.9	548.6	328.6%
Nepal	1.513	3.786	6.188	309.0%	19.39	35.15	50.43	160.1%	53.94	56.73	61.18	13.4%	5	9.78	35.72	614.4%
Uzbekistan	1.918	2.936	4.524	135.9%	65.25	74.72	84.84	30.0%	87.3	100	100	14.5%	26.5	152.8	384.6	1351.3%
Sri Lanka	15.51	19.52	21.42	38.1%	92	100	100	8.7%	81	91.96	94.9	17.2%	61	225.1	381.4	525.2%
Kazakhstan	0.365	0.819	1.098	200.8%	85.87	100	100	16.5%	88.49	100	100	13.0%	197	459	625.6	217.6%
Tajikistan	1.984	2.571	3.629	82.9%	79.9	84.3	92.69	16.0%	82.7	100	100	20.9%	38	131.8	402.9	960.3%
Kyrgyz Rep.	1.773	2.126	2.593	46.2%	81.78	83.27	88.11	7.7%	91.1	100	100	9.8%	59	110.9	312.9	430.3%
Turkmenistan	0.511	1.708	3.242	534.4%	85.6	100	100	16.8%	81.2	100	100	23.2%	106	414.7	610.4	475.8%
Bhutan	2.097	2.922	3.553	69.4%	53.9	70.63	83.56	55.0%	62	90.13	96.87	56.2%	47	328.5	549.3	1068.7%
Maldives	2.933	34.86	48.23	1544.4%	71.4	100	100	40.1%	100	99.4	99.32	-0.7%	23	37.68	59.5	158.7%
Asia-South Central	5.197	6.972	8.435	62.3%	65.17	76.99	88.81	36.3%	59.61	76.47	87.27	46.4%	21.32	114.6	219.9	931.4%
Indonesia	2.802	4.565	6.382	127.8%	94	100	100	6.4%	56.94	66.78	77.02	35.3%	77	344.7	562	629.9%
Philippines	6.709	8.933	13.86	106.6%	83.38	89.28	100	19.9%	20	64.98	82.73	313.7%	33	118.8	239	624.2%
Vietnam	6.017	8.319	11.94	98.4%	89.26	96.65	100	12.0%	47.62	65.9	77.6	63.0%	13	64.74	208.9	1506.9%
Thailand	1.264	5.31	7.33	479.9%	38.2	66.9	82.5	116.0%	98.5	100	100	1.5%	105.7	320	522.3	394.1%
Myanmar	0.413	1.885	4.455	978.7%	36.73	57.64	82.63	125.0%	11.85	40.33	67.43	469.0%	7	65.6	383.6	5380.0%
Malaysia	3.005	6.412	9.208	206.4%	86.3	100	100	15.9%	81.32	86.67	88.26	8.5%	334	538.1	661.2	98.0%
Cambodia	2.167	3.185	5.254	142.5%	87.33	95.84	100	14.5%	6.29	40.51	64.35	923.1%	20	141.9	431.5	2057.5%
Lao People's Dem. Rep.	1.782	2.519	3.548	99.1%	70.42	81.96	96.51	37.0%	13.68	33.09	59.35	333.8%	21	235.3	484.2	2205.7%
Singapore	48.4	60.32	61.7	27.5%	100	100	100	0.0%	100	99.98	100	0.0%	150	193.9	238.7	59.1%
Timor-Leste	1.545	2.902	7.186	365.1%	90	99.57	100	11.1%	16.92	33.63	59.13	249.5%	4.591	24.9	233.7	4990.4%
Brunei Darussalam	5.64	14.97	19.62	247.9%	80.66	100	100	24.0%	81.12	84.04	85.32	5.2%	696	725.9	756.8	8.7%
Asia-South East	2.701	4.808	7.159	165.0%	76.37	86.4	94.9	24.3%	49.4	69.62	79.97	61.9%	68.77	237.7	425.2	518.3%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Roads (cont.)															
	Road Network Density				Population within 2 Km of an All-Season Road				Paved Roads				Cars, Buses, and Freight Vehicles			
	Km per 10 sq km of land area				Percent of rural population				Percent of total				Total per 1,000 people			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	4.771	6.181	8.414	76.4%	73.02	82.54	95.51	30.8%	88.74	93.77	95.66	7.8%	138	351	529.7	283.8%
Iraq	0.952	3.643	8.406	783.0%	51.17	71.68	93.05	81.8%	84.3	97.46	100	18.6%	51.47	317.2	539.9	949.0%
Yemen, Rep. of	1.35	2.025	3.545	162.6%	23.24	33.35	48.15	107.2%	8.7	35.89	55.84	541.8%	35	67.4	194.9	456.9%
Saudi Arabia	1.03	1.883	2.708	162.9%	76.5	89.48	99.78	30.4%	21.47	56.66	70.13	226.6%	196.3	377.3	538.8	174.5%
Syrian Arab Rep.	4.063	6.852	12.16	199.3%	50.93	60.95	79.27	55.6%	90.25	95	99.98	10.8%	62	97.97	298.2	381.0%
Jordan	0.894	3.695	7.069	690.7%	82.19	99.06	100	21.7%	100	100	100	0.0%	146	325.5	546.8	274.5%
Israel	8.559	23.09	26.33	207.6%	90.99	100	100	9.9%	100	100	100	0.0%	313	396.2	460.7	47.2%
Palestine	9.541	20.34	35.1	267.9%	66.1	73.46	85.02	28.6%	91.73	97.58	100	9.0%	39	31.18	101.7	160.8%
Azerbaijan	6.408	8.806	10.64	66.0%	84.07	92.8	100	18.9%	50.6	68.73	74.51	47.3%	89	269	470.3	428.4%
United Arab Emirates	0.491	8.68	15.41	3038.5%	78	100	100	28.2%	100	99.71	100	0.0%	313	449.3	582.9	86.2%
Kuwait	3.773	19.85	24.5	549.4%	85.61	100	100	16.8%	85	91.41	93.62	10.1%	507	562.2	611.4	20.6%
Lebanon	6.813	21.31	27.06	297.2%	91.65	100	100	9.1%	95	98.58	98.7	3.9%	319.8	445.9	539.1	68.6%
Oman	2.003	3.218	3.474	73.4%	86.12	97.93	100	16.1%	46	56.02	58.53	27.2%	225	394.2	550.2	144.5%
Armenia	2.729	5.262	7.248	165.6%	86.35	98.81	100	15.8%	93.56	99.62	100	6.9%	105	302	526.9	401.8%
Georgia	2.937	3.284	4.155	41.5%	87.97	96.5	100	13.7%	94.07	100	100	6.3%	116	400	601	418.1%
Qatar	6.721	21.26	22.74	238.3%	86.15	100	100	16.1%	90	95.71	95.78	6.4%	724	741.1	770	6.4%
Bahrain	55.01	63.54	71.67	30.3%	99	100	100	1.0%	82.12	93.09	94.71	15.3%	509	481.4	483.1	-5.1%
Cyprus	13.43	13.91	14.23	6.0%	90.5	96.88	100	10.5%	64.94	73.35	75.34	16.0%	659	709.2	752	14.1%
Asia-West	2.067	3.639	5.487	165.5%	58.22	65.35	79.33	36.3%	63.45	79.46	86.36	36.1%	135.8	283.3	438.1	222.6%
Australia	1.065	1.15	1.217	14.3%	100	100	100	0.0%	43.45	47.67	51.68	18.9%	687	733.1	773.4	12.6%
Papua New Guinea	0.433	0.959	1.805	316.9%	66.57	76.86	88.93	33.6%	3.5	24.5	44.56	1173.1%	9	59.19	296.3	3192.2%
New Zealand	3.59	3.837	4.118	14.7%	83.14	89.85	100	20.3%	66.2	70.06	72.95	10.2%	733	784.8	811	10.6%
Solomon Islands	0.497	1.36	2.317	366.2%	75.64	85.51	90.36	19.5%	2.44	22.97	36.46	1394.3%	21.14	54.04	86.77	310.5%
Fiji	1.883	2.653	3.394	80.2%	74.49	80.9	90.28	21.2%	49.2	51.77	53.82	9.4%	175	361.9	574.8	228.5%
Vanuatu	0.878	1.997	3.049	247.3%	78.72	87.93	92.59	17.6%	23.9	33.1	40.7	70.3%	34.7	87.58	150.3	333.1%
Micronesia (Federated States of)	3.429	8.172	13.82	303.0%	81.92	93.3	100	22.1%	17.5	47.28	61.7	252.6%	36	81.02	161.8	349.4%
Tonga	9.444	10.41	15.16	60.5%	87.3	86.37	95.5	9.4%	27	49.2	65.23	141.6%	19.71	43.32	169.1	757.9%
Samoa	2.792	4.217	5.768	106.6%	76.08	83.82	92.54	21.6%	14.21	38.71	50.45	255.0%	59	144.1	343.7	482.5%
Oceania	1.111	1.231	1.354	21.9%	76.65	81.99	91.24	19.0%	44.8	48.76	53.1	18.5%	527.5	545.4	618.8	17.3%

Infrastructure

	Roads (cont.)															
	Road Network Density				Population within 2 Km of an All-Season Road				Paved Roads				Cars, Buses, and Freight Vehicles			
	Km per 10 sq km of land area				Percent of rural population				Percent of total				Total per 1,000 people			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	0.61	0.845	1.017	66.7%	87.86	97.45	100	13.8%	80.06	85.99	88.56	10.6%	245	465.7	603.1	146.2%
Poland	12.64	13.26	13.56	7.3%	95	100	100	5.3%	69.87	77.02	80.18	14.8%	495	639.8	723.3	46.1%
Ukraine	2.928	3.02	3.519	20.2%	59.5	64.61	73.93	24.3%	97.82	98.99	100	2.2%	152	283.6	509.5	235.2%
Romania	8.642	8.978	9.368	8.4%	94.79	99.79	100	5.5%	50.4	61.73	66.19	31.3%	219	401.1	586.3	167.7%
Czech Rep.	17.09	17.93	18.39	7.6%	97	100	100	3.1%	100	100	100	0.0%	513	611.5	691.7	34.8%
Belarus	4.674	5.651	5.961	27.5%	75.47	87.21	95.37	26.4%	98.64	100	100	1.4%	282	505.9	642.2	127.7%
Hungary	21.99	23.05	23.33	6.1%	98	100	100	2.0%	37.97	65.02	71.57	88.5%	384	541.9	659.7	71.8%
Bulgaria	3.706	4.375	4.566	23.2%	98	100	100	2.0%	98.4	99.97	99.99	1.6%	353	515.5	632.3	79.1%
Slovak Rep.	9.133	9.871	10.56	15.6%	91.72	99.27	100	9.0%	87.06	88.62	89.1	2.3%	319	474.2	602.8	89.0%
Moldova, Rep. of	3.889	4.035	4.985	28.2%	70.77	73.67	82.95	17.2%	85.8	91.93	96.28	12.2%	103.1	211.7	462.5	348.6%
Europe-East	1.26	1.517	1.71	35.7%	85.51	93.72	96.63	13.0%	75.81	83.68	86.68	14.3%	279.1	466.8	611.4	119.1%
United Kingdom	17.69	19.62	19.68	11.2%	96	100	100	4.2%	100	100	100	0.0%	526	587.4	645.3	22.7%
Sweden	15.63	24.36	25.62	63.9%	87.48	100	100	14.3%	34.36	56.98	65.63	91.0%	521	609.9	691.8	32.8%
Denmark	17.36	18.48	19.48	12.2%	99	100	100	1.0%	100	100	100	0.0%	477	567.3	651.6	36.6%
Ireland	14.03	15.07	15.78	12.5%	93	100	100	7.5%	100	100	100	0.0%	534	613.6	688.4	28.9%
Norway	3.083	3.51	4.139	34.3%	83.74	93.22	100	19.4%	80.7	84.5	85.85	6.4%	575	647.2	716.4	24.6%
Finland	2.602	2.978	3.553	36.5%	83.21	91.71	100	20.2%	65.47	67.89	70.3	7.4%	534	621.3	699.5	31.0%
Lithuania	13.05	13.7	14.03	7.5%	97	100	100	3.1%	29.43	54.76	62.42	112.1%	546	687.2	772.9	41.6%
Latvia	11.12	11.49	11.8	6.1%	90	100	100	11.1%	100	100	99.99	-0.0%	474	647	750.8	58.4%
Estonia	13.88	14.99	16.4	18.2%	88.89	100	100	12.5%	28.6	49.99	56.98	99.2%	477	648.9	726.7	52.3%
Iceland	1.286	1.463	1.594	24.0%	82.2	91.72	99.47	21.0%	38.41	44.57	48.08	25.2%	767	794.2	813.8	6.1%
Europe-North	9.969	12.74	13.41	34.5%	92.1	98.62	100	8.6%	64.9	73.47	78.07	20.3%	525.6	599.9	664.8	26.5%
Italy	16.58	17.05	17.32	4.5%	98	100	100	2.0%	100	100	100	0.0%	673	718.3	758.9	12.8%
Spain	13.4	13.76	14.06	4.9%	95	100	100	5.3%	99	100	100	1.0%	606	675.7	736.6	21.6%
Greece	9.079	9.085	9.143	0.7%	90	93.16	98.16	9.1%	91.8	92.7	92.66	0.9%	560	632.6	708.7	26.6%
Portugal	9.063	10.83	11.05	21.9%	88.78	96.48	100	12.6%	86	86.28	86.49	0.6%	509	602.1	695.7	36.7%
Serbia	5.283	6.322	6.622	25.3%	81.24	88.34	95.97	18.1%	63.16	64.79	66.59	5.4%	227	397	593.2	161.3%
Croatia	5.277	6.297	6.684	26.7%	86.04	93.45	98.66	14.7%	90.51	94.08	94.41	4.3%	388	540.5	655.8	69.0%
Bosnia and Herzegovina	4.284	4.741	5.352	24.9%	87.31	93.67	100	14.5%	52.3	58.99	63.41	21.2%	135	352	562.3	316.5%
Albania	6.569	7.625	8.089	23.1%	36.87	54.7	69.97	89.8%	39	61.82	69.33	77.8%	114	311.2	517	353.5%
Macedonia, TFYR	5.555	5.737	6.084	9.5%	80.93	82.91	88.74	9.7%	67.56	70.21	71.96	6.5%	144	232.4	428.8	197.8%
Slovenia	19.39	19.96	20.13	3.8%	95	100	100	5.3%	100	100	100	0.0%	565	650.4	722.7	27.9%
Montenegro	3.974	4.294	4.458	12.2%	81.22	83.87	87.37	7.6%	49.23	52.34	53.84	9.4%	377.1	479.7	614.2	62.9%
Malta	100	99.72	99.04	-1.0%	100	100	100	0.0%	87.53	90.61	91.27	4.3%	674	704.9	749.8	11.2%
Europe-South	11.84	12.39	12.67	7.0%	91.42	95.49	98.13	7.3%	94.99	95.7	95.86	0.9%	568.7	644.6	718	26.3%
Germany	18.47	19.07	19.36	4.8%	90.36	100	100	10.7%	100	100	100	0.0%	554	619.5	684.8	23.6%
France	17.53	18.86	19.91	13.6%	99	100	100	1.0%	100	100	100	0.0%	598	661.6	718.4	20.1%
Netherlands	40.75	41.56	41.59	2.1%	100	100	100	0.0%	90	91.5	92.9	3.2%	515	551	597.6	16.0%
Belgium	51	51.75	51.88	1.7%	100	100	100	0.0%	78.22	87.4	90.55	15.8%	543	590.4	638.6	17.6%
Switzerland	17.29	18.51	19.38	12.1%	100	100	100	0.0%	100	99.99	100	0.0%	567	628.9	694.7	22.5%
Austria	13	13.46	13.77	5.9%	95	100	100	5.3%	100	100	100	0.0%	562	635.9	708.3	26.0%
Luxembourg	20.18	26.88	28.65	42.0%	100	100	100	0.0%	100	99.99	99.99	-0.0%	747	740.2	733.2	-1.8%
Europe-West	19.14	20.14	20.83	8.8%	94.45	100	100	5.9%	97.72	98.55	98.9	1.2%	566	627.7	687.6	21.5%

Infrastructure

Base Case Source: International Futures Model Version 6.68, Nov 2013	Energy/Electricity												Water and Sanitation			
	Population with Access to Electricity				Electricity Generation Capacity				Household Use of Modern Forms of Energy				Access to Improved Drinking Water			
	Percent of population				Kilowatts				Percent of population				Percent of population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	78.23	89.57	95.56	22.2%	4986	8892	13941	179.6%	56.63	79.24	89.8	58.6%	88.48	94.56	97.56	10.3%
Africa	40.79	65.02	86.42	111.9%	132.1	353.7	909.6	588.6%	30.88	49.36	73.57	138.2%	66.14	79.77	92.06	39.2%
Americas	95.94	97.98	99.39	3.6%	1487	2160	2723	83.1%	86.8	94.05	97.58	12.4%	96.06	98.01	99.23	3.3%
Asia with Oceania	80.59	95.02	98.48	22.2%	2150	4865	8638	301.8%	49.81	83.54	94.36	89.4%	90.5	98.16	99.44	9.9%
Europe	95.06	97.51	99.23	4.4%	1211	1504	1660	37.1%	93.06	98.07	99.52	6.9%	98.88	99.71	99.98	1.1%
World	78.23	89.57	95.56	22.2%	4986	8892	13941	179.6%	56.63	79.24	89.8	58.6%	88.48	94.56	97.56	10.3%
Africa-Eastern	15.35	49.97	83.44	443.6%	12.79	74.85	316.4	2373.8%	10.73	32.13	70.7	558.9%	56.26	73.55	90.28	60.5%
Africa-Middle	18.07	45.87	73.69	307.8%	5.517	30.82	104.3	1790.5%	15.94	32.83	54.82	243.9%	54.01	73.11	87.08	61.2%
Africa-Northern	86.37	94.92	99.48	15.2%	56.58	107.1	173.8	207.2%	77.46	85.75	93.56	20.8%	84.23	94.18	99.85	18.5%
Africa-Southern	71.95	90.71	97.98	36.2%	45.46	76.73	119.1	162.0%	77.36	93.31	98.61	27.5%	90.42	95.83	99.63	10.2%
Africa-Western	39.94	70.52	88.78	122.3%	11.78	64.17	196	1563.8%	17.56	50.46	74.41	323.7%	64.65	79.75	92.28	42.7%
Africa	40.79	65.02	86.42	111.9%	132.1	353.7	909.6	588.6%	30.88	49.36	73.57	138.2%	66.14	79.77	92.06	39.2%
America-Caribbean	82.68	91.76	97.07	17.4%	17.64	35.46	54.05	206.4%	63.15	75.43	84.56	33.9%	86.31	88.85	90.58	4.9%
America-Central	82.47	91.92	97.23	17.9%	11.91	31.28	53.69	350.8%	54.52	71.21	86.39	58.5%	90.22	95.8	99.09	9.8%
America-North	98.58	98.84	99.63	1.1%	1233	1598	1833	48.7%	92.22	97.41	99.52	7.9%	98.3	98.96	99.83	1.6%
America-South	95.72	98.41	99.66	4.1%	225	494.8	782.1	247.6%	86.49	95.1	98.26	13.6%	95.11	98.14	99.4	4.5%
Americas	95.94	97.98	99.39	3.6%	1487	2160	2723	83.1%	86.8	94.05	97.58	12.4%	96.06	98.01	99.23	3.3%
Asia-East	98.25	99.1	99.54	1.3%	1400	2914	4779	241.4%	56.24	94.33	99.21	76.4%	92.2	99.99	100	8.5%
Asia-South Central	65.28	92.85	97.89	50.0%	331.4	1096	2525	661.9%	39.6	76.98	92.02	132.4%	90.21	97.41	99.2	10.0%
Asia-South East	74.62	93.74	99.15	32.9%	156.1	372.8	657.4	321.1%	45.82	75.15	91.75	100.2%	87.61	97.96	99.71	13.8%
Asia-West	90.51	93.93	97.46	7.7%	193.8	377.3	555	186.4%	88.47	93.61	96.47	9.0%	88.96	95.76	98.89	11.2%
Oceania	78.57	85.74	95.66	21.8%	69.03	104.6	122.2	77.0%	75.18	82.71	94.41	25.6%	87.7	91.55	95.48	8.9%
Asia with Oceania	80.59	95.02	98.48	22.2%	2150	4865	8638	301.8%	49.81	83.54	94.36	89.4%	90.5	98.16	99.44	9.9%
Europe-East	91.43	96.34	99.34	8.7%	386.9	485.2	560.9	45.0%	91.99	97.63	99.23	7.9%	97.45	99.54	100	2.6%
Europe-North	98.6	98.82	99.17	0.6%	206.6	270.5	294.3	42.4%	94.73	99.35	99.96	5.5%	99.69	99.66	99.92	0.2%
Europe-South	95.56	97.02	98.57	3.1%	264.4	312.7	310	17.2%	92.36	96.78	99.03	7.2%	99.7	99.81	99.99	0.3%
Europe-West	98.46	98.62	99.55	1.1%	358.2	445.6	504.9	41.0%	95	98.98	99.95	5.2%	100	99.92	100	0.0%
Europe	95.06	97.51	99.23	4.4%	1211	1504	1660	37.1%	93.06	98.07	99.52	6.9%	98.88	99.71	99.98	1.1%

Infrastructure

Base Case: Countries in Descending Year 2060 Population Sequence	Energy/Electricity												Water and Sanitation			
	Population with Access to Electricity				Electricity Generation Capacity				Household Use of Modern Forms of Energy				Access to Improved Drinking Water			
	Percent of population				Kilowatts				Percent of population				Percent of population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	15.68	60.54	92.38	489.2%	1.252	9.689	36.55	2819.3%	5	34.81	76.98	1439.6%	45	66.64	85.77	90.6%
Tanzania, United Rep. of	12.29	48.41	96.21	682.8%	0.972	10.13	98.04	9986.4%	5	29.59	93.27	1765.4%	53	70.8	93	75.5%
Uganda	9.09	55.36	89.8	887.9%	0.574	3.215	7.658	1234.1%	5	33.33	76.69	1433.8%	72	79.04	91.78	27.5%
Kenya	15.7	55.01	90.54	476.7%	1.786	8.337	26.87	1404.5%	31.35	49.55	80.55	156.9%	58.59	75.81	91.62	56.4%
Madagascar	20.95	30.27	43.54	107.8%	0.433	0.618	0.637	47.1%	5	9.048	16.52	230.4%	46	63.04	70.91	54.2%
Mozambique	12.99	59.19	93.5	619.8%	2.446	21.4	84.06	3336.6%	5	37.06	82.61	1552.2%	48	74.16	93.23	94.2%
Malawi	9.768	22.68	56.4	477.4%	0.297	0.748	1.699	472.1%	5	9.84	34.09	581.8%	83	89.02	100	20.5%
Zambia	18.56	57.75	95.54	414.8%	1.674	13.06	51.77	2992.6%	14.35	44.95	93.2	549.5%	60.4	78.95	94.95	57.2%
Somalia	8.125	21.18	60.38	643.1%	0.083	0.197	0.613	638.6%	5	9.481	38.61	672.2%	29	68.92	98.81	240.7%
Rwanda	5.947	38.5	84.82	1326.3%	0.058	0.287	0.591	919.0%	5	22.46	76.03	1420.6%	65	80.46	100	53.8%
Zimbabwe	44.62	63.51	80.49	80.4%	1.986	4.999	5.637	183.8%	28.81	45.98	65.9	128.7%	80	87.7	94.4	18.0%
Burundi	3.657	9.339	27.81	660.5%	0.055	0.092	0.094	70.9%	5	6.525	13.5	170.0%	72	77.98	89.2	23.9%
Eritrea	24.7	45.22	76.6	210.1%	0.137	0.203	0.218	59.1%	37.26	44.92	66.88	79.5%	61	67.15	84.38	38.3%
Comoros	15.73	23.26	39.26	149.6%	0.006	0.01	0.01	66.7%	23.99	26.66	34.95	45.7%	95	99.39	100	5.3%
Djibouti	51.8	73.07	93.07	79.7%	0.132	0.241	0.354	168.2%	86.68	90.69	95.4	10.1%	88	92.72	97.93	11.3%
Mauritius	100	99.67	99.91	-0.1%	0.899	1.616	1.633	81.6%	95	98.32	99.3	4.5%	99.38	99.67	100	0.6%
Africa-Eastern	15.35	49.97	83.44	443.6%	12.79	74.85	316.4	2373.8%	10.73	32.13	70.7	558.9%	56.26	73.55	90.28	60.5%
Congo, Democratic Rep. of	12.16	31.51	65.15	435.8%	2.481	10.77	38.83	1465.1%	5	12.35	38.16	663.2%	46	69.56	86.35	87.7%
Angola	30.97	88.38	98.01	216.5%	1.22	12.22	42.98	3423.0%	52.26	97.29	99.89	91.1%	51	79.08	89.86	76.2%
Cameroon	30.17	64.6	93.02	208.3%	1.122	6.013	18.9	1584.5%	19.4	46.66	80.48	314.8%	77	82.51	89.48	16.2%
Chad	5.147	28.35	60.48	1075.1%	0.031	0.094	0.127	309.7%	6.38	16.98	44.72	600.9%	51	65.01	82.79	62.3%
Central African Rep.	6.204	23.05	55.59	796.0%	0.047	0.115	0.207	340.4%	5	11.01	35.94	618.8%	67	70.03	79.96	19.3%
Congo, Rep. of	37.67	82.77	97.93	160.0%	0.153	0.316	0.757	394.8%	16.08	73.13	89.63	457.4%	71	89.37	99.36	39.9%
Gabon	36.95	70.18	95.98	159.8%	0.415	1.188	2.403	479.0%	72.5	95.33	99.36	37.0%	87.13	92.12	100	14.8%
Equatorial Guinea	32.28	73.27	93.94	191.0%	0.033	0.079	0.086	160.6%	94.82	100	100	5.5%	52	70.31	84.31	62.1%
São Tomé and Príncipe	50.99	71.31	88.43	73.4%	0.014	0.03	0.041	192.9%	28.52	47.31	67.17	135.5%	88.12	92.96	99.12	12.5%
Africa-Middle	18.07	45.87	73.69	307.8%	5.517	30.82	104.3	1790.5%	15.94	32.83	54.82	243.9%	54.01	73.11	87.08	61.2%
Egypt	99.94	100	100	0.1%	25.73	41.55	62.3	142.1%	95	96.08	97.52	2.7%	99	100	100	1.0%
Sudan	34.3	78.86	98.1	186.0%	2.604	9.145	35.93	1279.8%	10.09	52.18	81.82	710.9%	58	87.68	99.68	71.9%
Algeria	99.53	100	100	0.5%	11.01	18.95	27.78	152.3%	95	97.15	98.87	4.1%	82.99	92.54	99.84	20.3%
Morocco	99	100	100	1.0%	6.289	14.46	19.15	204.5%	93.17	95.43	97.57	4.7%	82.18	91.17	100	21.7%
Tunisia	99.61	100	100	0.4%	3.761	8.8	13.2	251.0%	95	97.12	98.96	4.2%	94	97.52	100	6.4%
Libya	100	100	100	0.0%	7.191	14.23	15.45	114.9%	95	99.51	99.44	4.7%	67.9	88.67	98.71	45.4%
Africa-Northern	86.37	94.92	99.48	15.2%	56.58	107.1	173.8	207.2%	77.46	85.75	93.56	20.8%	84.23	94.18	99.85	18.5%

Infrastructure

Base Case: Countries in Descending Year 2060 Population Sequence	Energy/Electricity												Water and Sanitation			
	Population with Access to Electricity				Electricity Generation Capacity				Household Use of Modern Forms of Energy				Access to Improved Drinking Water			
	Percent of population				Kilowatts				Percent of population				Percent of population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	77.7	93.94	98.73	27.1%	44.73	74.3	114.8	156.7%	82.73	96.29	99.75	20.6%	91.09	96.17	100	9.8%
Namibia	35.35	85.28	98.38	178.3%	0.393	1.641	3.338	749.4%	41.5	90.65	97.95	136.0%	93.07	100	100	7.4%
Lesotho	18.24	62.32	88.75	386.6%	0.076	0.23	0.301	296.1%	27.91	54.96	82.54	195.7%	78	89.69	96.61	23.9%
Botswana	49.23	84.13	98.64	100.4%	0.132	0.356	0.359	172.0%	57.54	97.35	99.74	73.3%	96	100	100	4.2%
Swaziland	31.52	49.55	86.89	175.7%	0.13	0.202	0.291	123.8%	39.18	54.64	86.64	121.1%	70	80.03	91.74	31.1%
Africa-Southern	71.95	90.71	97.98	36.2%	45.46	76.73	119.1	162.0%	77.36	93.31	98.61	27.5%	90.42	95.83	99.63	10.2%
Nigeria	49.21	86.19	99.74	102.7%	5.898	37.84	114.8	1846.4%	21.25	67.9	88.64	317.1%	58	76.87	91.31	57.4%
Niger	8.946	24.87	47.32	429.0%	0.145	0.375	0.578	298.6%	5	10.42	23.37	367.4%	49.49	61.56	74.91	51.4%
Côte d'Ivoire	45.51	67.92	88.37	94.2%	1.236	5.431	15.8	1178.3%	22.8	43.55	71.87	215.2%	79.8	90.67	99.68	24.9%
Burkina Faso	11.31	38.66	78.54	594.4%	0.26	0.84	1.866	617.7%	5	18.99	60.21	1104.2%	78.22	89.89	100	27.8%
Ghana	59.14	91.05	99.38	68.0%	2.026	11.71	46.26	2183.3%	14.12	60.48	94.69	570.6%	85.86	94.25	100	16.5%
Mali	20.99	55.21	89.75	327.6%	0.309	1.219	3.787	1125.6%	5	28.11	74.22	1384.4%	64	81.32	98.76	54.3%
Senegal	44.72	62.02	79.36	77.5%	0.68	2.235	4.475	558.1%	44.32	54.96	69.63	57.1%	71	81.35	92.8	30.7%
Guinea	23.7	52.02	84.06	254.7%	0.404	1.115	2.453	507.2%	5	23.18	57.73	1054.6%	74	82.87	100	35.1%
Benin	25.31	47.33	75.44	198.1%	0.06	0.232	0.543	805.0%	5.72	20.69	53.37	833.0%	74.75	83.06	92.76	24.1%
Togo	19.44	44.34	70.63	263.3%	0.09	0.1	0.123	36.7%	5	18.19	42.8	756.0%	62	72.06	80.82	30.4%
Sierra Leone	5.518	56.26	94.1	1605.3%	0.054	0.496	1.096	1929.6%	5	36.64	88.24	1664.8%	55	75.52	92.59	68.3%
Liberia	4.574	43.19	80.34	1656.4%	0.198	1.531	2.713	1270.2%	6.799	22.87	58.29	757.3%	73.74	92.89	100	35.6%
Mauritania	21.13	55.95	85.6	305.1%	0.255	0.647	0.934	266.3%	39.45	55.21	75.67	91.8%	49.5	73.17	91.76	85.4%
Gambia	27.52	58.14	85.09	209.2%	0.056	0.14	0.223	298.2%	5.34	26.84	56.87	965.0%	89	97.4	100	12.4%
Guinea-Bissau	11.5	28.48	63.29	450.3%	0.021	0.044	0.062	195.2%	5	12.14	37.18	643.6%	64.65	70.38	92.37	42.9%
Cape Verde	70.07	87.56	96.34	37.5%	0.092	0.22	0.288	213.0%	63.8	83.06	92.54	45.0%	88	95	99.49	13.1%
Africa-Western	39.94	70.52	88.78	122.3%	11.78	64.17	196	1563.8%	17.56	50.46	74.41	323.7%	64.65	79.75	92.28	42.7%

Infrastructure

	Energy/Electricity												Water and Sanitation			
	Population with Access to Electricity				Electricity Generation Capacity				Household Use of Modern Forms of Energy				Access to Improved Drinking Water			
	Percent of population				Kilowatts				Percent of population				Percent of population			
Base Case: Countries in Descending Year 2060 Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	40.33	74.9	92.68	129.8%	0.239	0.575	0.617	158.2%	6.96	36.95	57.89	731.8%	69	71.71	77.09	11.7%
Dominican Rep.	97.08	99.25	99.37	2.4%	2.487	9.591	20.24	713.8%	92.31	98.17	99.7	8.0%	86	91.6	95.16	10.7%
Cuba	97.21	100	100	2.9%	5.837	9.428	13.24	126.8%	66.31	82.22	97.65	47.3%	94	100	100	6.4%
Puerto Rico	96.34	97.62	99.6	3.4%	5.547	10.63	13.96	151.7%	95	98.07	99.73	5.0%	100	100	100	0.0%
Jamaica	93.31	94.09	96.14	3.0%	1.204	1.87	2.211	83.6%	78.06	82.94	89.24	14.3%	93	93.97	95.13	2.3%
Trinidad and Tobago	99.14	100	100	0.9%	1.418	2.263	2.71	91.1%	95	99.68	99.82	5.1%	93.68	97.52	100	6.7%
Bahamas	97.84	98	98.31	0.5%	0.501	0.519	0.491	-2.0%	95	96.25	95.75	0.8%	95.88	96.54	97.08	1.3%
Barbados	100	99.71	99.81	-0.2%	0.245	0.324	0.316	29.0%	95	96.29	97.83	3.0%	100	100	100	0.0%
Saint Lucia	98.92	99.86	100	1.1%	0.08	0.114	0.111	38.8%	95	96.73	97.87	3.0%	95.98	99.64	100	4.2%
Grenada	99.38	99.45	99.98	0.6%	0.033	0.059	0.071	115.2%	82.72	88.46	93.15	12.6%	94.22	97.53	99.4	5.5%
Saint Vincent and the Grenadines	98.7	99.69	100	1.3%	0.052	0.082	0.091	75.0%	83.88	88.38	93.27	11.2%	100	100	100	0.0%
America-Caribbean	82.68	91.76	97.07	17.4%	17.64	35.46	54.05	206.4%	63.15	75.43	84.56	33.9%	86.31	88.85	90.58	4.9%
Guatemala	81.64	94.44	99.28	21.6%	2.841	8.699	21.55	658.5%	33.98	63.84	89.39	163.1%	92	98.53	100	8.7%
Honduras	72.77	84.77	92.88	27.6%	1.775	3.671	4.764	168.4%	46.36	62.53	75.5	62.9%	87	94.04	99.47	14.3%
Nicaragua	73.13	85	94.43	29.1%	1.149	2.415	3.136	172.9%	42.91	58.52	71.37	66.3%	85	91.58	99.32	16.8%
El Salvador	88.38	93.03	97.19	10.0%	1.576	3.57	5.692	261.2%	77.15	85.77	93.74	21.5%	87.88	91.49	94.74	7.8%
Costa Rica	99.43	100	99.95	0.5%	2.602	6.305	8.399	222.8%	87.26	95.15	97.97	12.3%	97	98.85	99.96	3.1%
Panama	89.54	96.83	98.26	9.7%	1.861	6.392	9.844	429.0%	89.26	99.34	99.88	11.9%	93	96.44	97.83	5.2%
Belize	82.47	96.46	99.67	20.9%	0.106	0.231	0.311	193.4%	85.95	93.33	96.82	12.6%	98.02	100	100	2.0%
America-Central	82.47	91.92	97.23	17.9%	11.91	31.28	53.69	350.8%	54.52	71.21	86.39	58.5%	90.22	95.8	99.09	9.8%
United States of America	98.39	98.45	99.49	1.1%	1038	1311	1468	41.4%	95	98.85	99.93	5.2%	98.94	99.18	100	1.1%
Mexico	99.03	99.88	99.99	1.0%	60.96	114.5	174.1	185.6%	83.43	92.84	98.18	17.7%	96	98.02	99.28	3.4%
Canada	98.86	99.06	99.81	1.0%	133.7	172.9	191.5	43.2%	95	99.1	99.92	5.2%	99.81	100	100	0.2%
America-North	98.58	98.84	99.63	1.1%	1233	1598	1833	48.7%	92.22	97.41	99.52	7.9%	98.3	98.96	99.83	1.6%
Brazil	98.46	99.63	99.85	1.4%	109.3	219.2	308.5	182.3%	89.07	96.11	98.86	11.0%	98	100	100	2.0%
Colombia	94.82	99.27	99.97	5.4%	13.57	38.82	70.17	417.1%	86.91	95.43	98.4	13.2%	92.08	96.81	99.83	8.4%
Argentina	97.6	98.61	99.55	2.0%	32.83	64.08	85.77	161.3%	95	98.91	99.77	5.0%	97	98.39	99.5	2.6%
Peru	77.71	90.18	98.28	26.5%	8.375	35.13	71.18	749.9%	59.45	91.21	98.32	65.4%	85	91.39	95.08	11.9%
Venezuela (Bolivarian Rep. of)	99.11	99.94	100	0.9%	25.39	52.25	108.6	327.7%	89.15	97.13	99.78	11.9%	92.93	97.22	100	7.6%
Ecuador	93.7	97.84	99.55	6.2%	5.267	11.67	16.28	209.1%	95	97.25	98.17	3.3%	93	95.24	99.03	6.5%
Chile	98.99	99.66	99.92	0.9%	16.3	35.04	46.53	185.5%	95	99.17	99.88	5.1%	96	99.06	100	4.2%
Bolivia (Plurinational State of)	79.53	91.71	98.65	24.0%	1.561	4.215	9.292	495.3%	66.91	82.09	93.86	40.3%	87	99.8	100	14.9%
Paraguay	97.34	99.08	99.75	2.5%	9.096	28.01	56.88	525.3%	49.71	62.7	75.48	51.8%	86.14	91.3	96.54	12.1%
Uruguay	98.78	99.29	99.88	1.1%	2.585	4.97	6.979	170.0%	95	98.62	99.81	5.1%	100	100	100	0.0%
Guyana	77.37	92.16	99.07	28.0%	0.35	0.594	0.867	147.7%	90.62	94.39	97.42	7.5%	94.06	100	100	6.3%
Suriname	78.6	94.53	98.97	25.9%	0.389	0.849	1.047	169.2%	70.52	93.05	99.24	40.7%	92	97.06	100	8.7%
America-South	95.72	98.41	99.66	4.1%	225	494.8	782.1	247.6%	86.49	95.1	98.26	13.6%	95.11	98.14	99.4	4.5%

Infrastructure

Base Case: Countries in Descending Year 2060 Population Sequence	Energy/Electricity												Water and Sanitation			
	Population with Access to Electricity				Electricity Generation Capacity				Household Use of Modern Forms of Energy				Access to Improved Drinking Water			
	Percent of population				Kilowatts				Percent of population				Percent of population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	99.51	100	100	0.5%	964.4	2390	4253	341.0%	50.97	94.83	99.98	96.2%	91	100	100	9.9%
Japan	97.93	98.19	98.69	0.8%	286.3	312.1	308.7	7.8%	95	99.13	99.97	5.2%	100	100	100	0.0%
Korea, Rep. of	100	100	100	0.0%	83.8	121	123.5	47.4%	95	99.73	99.98	5.2%	97.96	100	100	2.1%
Korea, Dem. People's Rep. of	28.32	53.52	79.5	180.7%	9.5	9.425	9.425	-0.8%	14.72	30.94	56.37	282.9%	97.03	100	100	3.1%
Taiwan, China	98.59	98.89	98.95	0.4%	42.15	62.56	62.63	48.6%	99.61	99.98	100	0.4%	100	100	100	0.0%
Hong Kong SAR, China	100	99.78	99.98	-0.0%	12.81	16.71	16.23	26.7%	99.93	100	100	0.1%	100	99.78	100	0.0%
Mongolia	68.54	93.54	99.34	44.9%	0.833	2.911	6.063	627.9%	23.25	79.7	98.38	323.1%	82	97.69	100	22.0%
Asia-East	98.25	99.1	99.54	1.3%	1400	2914	4779	241.4%	56.24	94.33	99.21	76.4%	92.2	99.99	100	8.5%
India	68.43	100	100	46.1%	199.3	785.1	1943	874.9%	40.31	86.37	98.33	143.9%	92	100	100	8.7%
Pakistan	61.58	78.99	94.01	52.7%	20.36	46.18	104.7	414.2%	32.86	52.92	77.5	135.8%	92	96.4	100	8.7%
Bangladesh	44.09	79.02	100	126.8%	6.041	37.63	123.5	1944.4%	10.28	48.89	84.36	720.6%	81.82	87.68	100	22.2%
Afghanistan	17.8	41.98	73.33	312.0%	0.489	1.589	3.045	522.7%	13.71	27.26	57.18	317.1%	50.5	66.96	79.76	57.9%
Iran, Islamic Rep. of	98.64	99.9	100	1.4%	58.85	105.1	160.4	172.6%	95	98.36	99.57	4.8%	96	100	100	4.2%
Nepal	49.29	66.42	88.81	80.2%	0.734	2.552	5.094	594.0%	18.93	34.58	61.36	224.1%	89	94.86	100	12.4%
Uzbekistan	35.87	82.13	98.18	173.7%	11.55	25.66	39.28	240.1%	83.88	93.7	97.58	16.3%	87	100	100	14.9%
Sri Lanka	77.04	91.13	98.56	27.9%	2.713	9.896	20.52	656.4%	26.16	73.7	96	267.0%	91	100	100	9.9%
Kazakhstan	90.49	96.84	99.72	10.2%	18.73	36.15	40.97	118.7%	88.73	99.45	99.88	12.6%	95	100	100	5.3%
Tajikistan	57.07	76.89	96.43	69.0%	4.423	12.63	23.04	420.9%	78.17	85.54	94	20.3%	64	91.04	100	56.3%
Kyrgyz Rep.	83.52	92.22	98.78	18.3%	3.624	4.84	5.907	63.0%	62.61	70.85	80.31	28.3%	90	100	100	11.1%
Turkmenistan	70.02	96.28	99.75	42.5%	2.801	21.78	44.63	1493.4%	95	99.98	100	5.3%	84	99.87	100	19.0%
Bhutan	71.71	94.83	99.4	38.6%	1.714	6.561	10.09	488.7%	56.71	92.84	99.11	74.8%	96	100	100	4.2%
Maldives	100	95.29	99.14	-0.9%	0.065	0.149	0.186	186.2%	90.42	94.72	97.3	7.6%	98.1	100	100	1.9%
Asia-South Central	65.28	92.85	97.89	50.0%	331.4	1096	2525	661.9%	39.6	76.98	92.02	132.4%	90.21	97.41	99.2	10.0%
Indonesia	68.21	95.56	99.39	45.7%	34.06	112.8	212.6	524.2%	41.64	82.33	95.11	128.4%	82	99.17	100	22.0%
Philippines	88.05	97.51	99.68	13.2%	15.58	55.71	124	695.9%	52.9	72.96	89.73	69.6%	92.08	96.61	100	8.6%
Vietnam	93.92	100	100	6.5%	15.9	38.13	72.29	354.7%	39.73	61.99	77.71	95.6%	94.95	100	100	5.3%
Thailand	99.44	100	100	0.6%	49.22	67.81	68.04	38.2%	76.89	90.43	97.57	26.9%	96	100	100	4.2%
Myanmar	13.66	60.62	95.97	602.6%	1.922	9.968	53.05	2660.1%	5	42.35	95.4	1808.0%	83	94.01	100	20.5%
Malaysia	99.68	99.96	99.87	0.2%	25.4	46.75	63.55	150.2%	95	98.84	99.82	5.1%	99.72	99.96	100	0.3%
Cambodia	25.29	72.25	93.71	270.5%	0.431	2.484	5.273	1123.4%	9.03	54.33	86.3	855.7%	64	78.64	89.9	40.5%
Lao People's Dem. Rep.	55.43	98.32	100	80.4%	2.081	8.968	21.49	932.7%	5	74.49	97.15	1843.0%	67	99.41	100	49.3%
Singapore	100	99.97	100	0.0%	10.65	28.27	33.69	216.3%	95	99.97	100	5.3%	100	99.99	100	0.0%
Timor-Leste	21.7	61.51	90.12	315.3%	0.103	0.668	2.027	1868.0%	11.74	39.69	81.06	590.5%	68.69	93.75	100	45.6%
Brunei Darussalam	99.7	99.94	100	0.3%	0.736	1.229	1.371	86.3%	95	99.59	99.89	5.1%	100	100	100	0.0%
Asia-South East	74.62	93.74	99.15	32.9%	156.1	372.8	657.4	321.1%	45.82	75.15	91.75	100.2%	87.61	97.96	99.71	13.8%

Infrastructure

	Energy/Electricity												Water and Sanitation			
	Population with Access to Electricity				Electricity Generation Capacity				Household Use of Modern Forms of Energy				Access to Improved Drinking Water			
	Percent of population				Kilowatts				Percent of population				Percent of population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
Base Case: Countries in Descending Year 2060 Population Sequence																
ASIA with OCEANIA continued																
Turkey	100	100	99.9	-0.1%	46.35	107.2	181.5	291.6%	89	97.26	99.72	12.0%	100	100	100	0.0%
Iraq	89.4	95.79	99.44	11.2%	9.559	20.69	46.53	386.8%	94.56	97.64	99.74	5.5%	79	97.02	100	26.6%
Yemen, Rep. of	39.94	66.23	87	117.8%	1.375	3.63	10.02	628.7%	64.1	74.5	85.92	34.0%	55	80.16	94.19	71.3%
Saudi Arabia	99.55	99.98	100	0.5%	47.25	88.31	114.1	141.5%	95	99.51	99.96	5.2%	89.86	95.92	99.59	10.8%
Syrian Arab Rep.	92.91	98.44	99.88	7.5%	8.306	12.56	21.51	159.0%	95	96.12	98.14	3.3%	90	100	100	11.1%
Jordan	100	98.19	99.33	-0.7%	2.758	6.678	13.26	380.8%	95	96.3	98.6	3.8%	96.73	97.8	100	3.4%
Israel	99.84	99.65	99.99	0.2%	12.5	24.67	42.34	238.7%	95	99.62	100	5.3%	100	99.74	100	0.0%
Palestine	99.69	96.26	100	0.3%	0.14	0.263	0.499	256.4%	72.55	71.04	81.67	12.6%	84.75	85.58	99.6	17.5%
Azerbaijan	84.33	96.73	99.71	18.2%	5.815	13.55	19.1	228.5%	90.2	96.63	98.8	9.5%	80	100	100	25.0%
United Arab Emirates	100	100	100	0.0%	25.19	42.43	43.27	71.8%	95	99.96	100	5.3%	100	100	100	0.0%
Kuwait	100	100	100	0.0%	11.16	20.55	23.67	112.1%	95	100	99.99	5.3%	99.01	100	100	1.0%
Lebanon	100	99.03	99.56	-0.4%	2.244	4.41	4.928	119.6%	95	98.24	99.16	4.4%	100	99.03	100	0.0%
Oman	98.18	99.9	99.99	1.8%	4.438	6.426	6.845	54.2%	95	99.12	99.86	5.1%	88.96	100	100	12.4%
Armenia	90.18	94.93	99.3	10.1%	3.173	3.723	3.766	18.7%	95	97.03	99.05	4.3%	98.3	100	100	1.7%
Georgia	86.34	97.2	99.73	15.5%	4.568	4.974	5.111	11.9%	57.25	83.92	94.41	64.9%	98	100	100	2.0%
Qatar	100	100	99.99	-0.0%	4.092	10.94	12.09	195.5%	95	100	100	5.3%	100	100	100	0.0%
Bahrain	100	100	100	0.0%	3.432	4.364	4.487	30.7%	95	97.56	99.1	4.3%	100	100	100	0.0%
Cyprus	98.61	99.13	99.62	1.0%	1.471	1.936	1.937	31.7%	95	97.42	97.79	2.9%	100	100	100	0.0%
Asia-West	90.51	93.93	97.46	7.7%	193.8	377.3	555	186.4%	88.47	93.61	96.47	9.0%	88.96	95.76	98.89	11.2%
Australia	98.96	99.06	99.61	0.7%	58.37	87.96	98.98	69.6%	95	99.58	99.96	5.2%	100	100	100	0.0%
Papua New Guinea	9.703	50.51	88.28	809.8%	0.716	2.098	2.633	267.7%	10	39.92	85.62	756.2%	39.6	66.21	84.19	112.6%
New Zealand	98.97	99.87	99.99	1.0%	9.63	14.04	20	107.7%	95	99.01	99.98	5.2%	100	100	100	0.0%
Solomon Islands	17.36	47.86	69.93	302.8%	0.014	0.038	0.042	200.0%	13.34	34.13	55.03	312.5%	70	79.55	85.39	22.0%
Fiji	60	81.01	94.54	57.6%	0.222	0.322	0.387	74.3%	52	71.38	88.65	70.5%	98	100	100	2.0%
Vanuatu	30.19	65.78	89.55	196.6%	0.012	0.027	0.029	141.7%	15.13	50.74	73.82	387.9%	90	93.78	98.32	9.2%
Micronesia (Federated States of)	54	70.11	86.24	59.7%	0.014	0.027	0.033	135.7%	58.38	69.93	81.6	39.8%	93.46	97.71	99.87	6.9%
Tonga	92.47	98.13	99.33	7.4%	0.012	0.023	0.036	200.0%	59.1	67.77	80.59	36.4%	100	100	100	0.0%
Samoa	35.07	65.47	90.43	157.9%	0.041	0.067	0.067	63.4%	25.89	56.15	83.1	221.0%	96	100	100	4.2%
Oceania	78.57	85.74	95.66	21.8%	69.03	104.6	122.2	77.0%	75.18	82.71	94.41	25.6%	87.7	91.55	95.48	8.9%

Infrastructure

Base Case: Countries in Descending Year 2060 Population Sequence	Energy/Electricity												Water and Sanitation			
	Population with Access to Electricity				Electricity Generation Capacity				Household Use of Modern Forms of Energy				Access to Improved Drinking Water			
	Percent of population				Kilowatts				Percent of population				Percent of population			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	91.29	96.95	99.73	9.2%	226.7	284.1	342.8	51.2%	92.19	98.97	99.74	8.2%	97.12	100	100	3.0%
Poland	95.91	97.11	98.96	3.2%	33.26	48.92	53.1	59.7%	95	99.22	99.9	5.2%	100	100	100	0.0%
Ukraine	87.59	93.46	99.08	13.1%	54.48	55.81	58.73	7.8%	94.56	96.37	98.48	4.1%	98	100	100	2.0%
Romania	89.72	94.53	98.59	9.9%	20.72	24.21	24.27	17.1%	77.1	89.04	96.58	25.3%	89.18	93.69	100	12.1%
Czech Rep.	97.32	97.85	98.67	1.4%	18.49	21.92	22.03	19.1%	95	98.57	99.82	5.1%	100	100	100	0.0%
Belarus	84.96	98.44	99.89	17.6%	8.047	15.27	23.28	189.3%	95	99.08	99.75	5.0%	99.75	100	100	0.3%
Hungary	96.27	97.42	98.94	2.8%	8.838	11.04	11.17	26.4%	95	98.53	99.74	5.0%	100	100	100	0.0%
Bulgaria	93.48	97.5	99.74	6.7%	8.826	11.44	12.38	40.3%	88.68	93.95	96.61	8.9%	100	100	100	0.0%
Slovak Rep.	96.25	97.12	97.87	1.7%	6.931	11.5	12.05	73.9%	95	99.09	99.85	5.1%	100	100	100	0.0%
Moldova, Rep. of	83.23	91.11	98.55	18.4%	0.582	0.914	1.049	80.2%	85.23	88.78	93.72	10.0%	95.84	100	100	4.3%
Europe-East	91.43	96.34	99.34	8.7%	386.9	485.2	560.9	45.0%	91.99	97.63	99.23	7.9%	97.45	99.54	100	2.6%
United Kingdom	98.73	98.71	98.99	0.3%	89.66	111.4	122.2	36.3%	95	99.33	99.97	5.2%	100	99.79	100	0.0%
Sweden	99.05	99.88	99.99	0.9%	35.61	46.95	52.41	47.2%	95	99.74	100	5.3%	100	100	100	0.0%
Denmark	99.2	99.55	99.83	0.6%	13.43	14	13.97	4.0%	95	99.45	99.98	5.2%	100	100	100	0.0%
Ireland	97.64	97.12	97.63	-0.0%	7.72	12.03	13.21	71.1%	95	99.79	99.97	5.2%	100	98.86	99.18	-0.8%
Norway	98.74	99.86	99.99	1.3%	31.55	51.64	56.72	79.8%	95	99.65	99.98	5.2%	100	100	100	0.0%
Finland	98.99	99.35	99.93	0.9%	16.27	19.08	20.17	24.0%	95	99.52	99.99	5.3%	100	100	100	0.0%
Lithuania	96.28	97.14	99.03	2.9%	4.741	5.477	5.45	15.0%	95	98.61	99.77	5.0%	92.42	94.9	98.57	6.7%
Latvia	96.25	97.24	99.15	3.0%	2.164	2.443	2.415	11.6%	89.73	97.13	99.09	10.4%	98.71	100	100	1.3%
Estonia	97.67	99.73	99.98	2.4%	2.714	3.405	3.429	26.3%	83.6	98.21	99.94	19.5%	98.35	100	100	1.7%
Iceland	98.77	99.53	99.96	1.2%	2.784	4.127	4.316	55.0%	95	99.83	99.99	5.3%	100	100	100	0.0%
Europe-North	98.6	98.82	99.17	0.6%	206.6	270.5	294.3	42.4%	94.73	99.35	99.96	5.5%	99.69	99.66	99.92	0.2%
Italy	95.64	97.13	98.21	2.7%	105.3	121.1	119.6	13.6%	95	98.28	99.82	5.1%	100	99.9	100	0.0%
Spain	97.42	98.14	99.49	2.1%	101.6	126.1	126.2	24.2%	95	98.61	99.88	5.1%	100	99.98	100	0.0%
Greece	95.25	95.79	97.11	2.0%	14.75	14.28	12.94	-12.3%	95	96.41	98.36	3.5%	99.61	99.21	99.87	0.3%
Portugal	96.95	97.36	99.24	2.4%	18.33	22.19	21.91	19.5%	95	97.22	99.24	4.5%	99.39	99.58	100	0.6%
Serbia	90.93	94.49	98.35	8.2%	8.359	10.09	10.16	21.5%	84.99	91.83	97.81	15.1%	99	100	100	1.0%
Croatia	95.44	96.61	98.74	3.5%	4.025	4.417	4.405	9.4%	87.67	94.91	97.72	11.5%	98.73	99.59	100	1.3%
Bosnia and Herzegovina	84.82	91.81	95.35	12.4%	4.342	4.771	4.619	6.4%	50.81	80.76	91.31	79.7%	99	100	100	1.0%
Albania	89.27	94.9	98.46	10.3%	1.598	2.346	2.546	59.3%	78.27	90.85	95.94	22.6%	95	97.98	100	5.3%
Macedonia, FYR	91.87	95.63	99.21	8.0%	1.543	1.543	1.543	0.0%	63.46	72.73	86.42	36.2%	99.61	100	100	0.4%
Slovenia	96.45	97.02	99.37	3.0%	3.117	3.934	4.215	35.2%	91.55	97.19	99.53	8.7%	99.51	99.93	100	0.5%
Montenegro	90.5	94.57	95.89	6.0%	0.868	1.164	1.131	30.3%	84.79	89.44	93.53	10.3%	98	99.53	100	2.0%
Malta	98.32	98.51	98.7	0.4%	0.572	0.762	0.747	30.6%	95	98.03	99.16	4.4%	100	99.87	100	0.0%
Europe-South	95.56	97.02	98.57	3.1%	264.4	312.7	310	17.2%	92.36	96.78	99.03	7.2%	99.7	99.81	99.99	0.3%
Germany	98.36	98.52	99.6	1.3%	151.3	174.2	174	15.0%	95	99.01	99.95	5.2%	100	99.95	100	0.0%
France	98.34	98.59	99.58	1.3%	119.5	163.7	212.7	78.0%	95	98.96	99.97	5.2%	100	99.91	100	0.0%
Netherlands	98.77	98.88	99.33	0.6%	26.82	30.93	32.6	21.6%	95	98.77	99.9	5.2%	100	99.9	100	0.0%
Belgium	98.92	98.92	99.69	0.8%	17.87	26.27	34.71	94.2%	95	99.04	99.95	5.2%	100	99.91	100	0.0%
Switzerland	98.8	98.75	98.99	0.2%	19.64	25.18	25.7	30.9%	95	98.89	99.92	5.2%	100	99.75	100	0.0%
Austria	98.68	98.81	99.7	1.0%	21.28	23.67	23.57	10.8%	95	99.11	99.93	5.2%	100	99.95	100	0.0%
Luxembourg	98.72	98.6	98.98	0.3%	1.712	1.673	1.58	-7.7%	95	99.75	99.93	5.2%	100	99.59	99.88	-0.1%
Europe-West	98.46	98.62	99.55	1.1%	358.2	445.6	504.9	41.0%	95	98.98	99.95	5.2%	100	99.92	100	0.0%

Infrastructure

Base Case Source: International Futures Model Version 6.68, Nov 2013	Water and Sanitation (cont.)												Information and Communication Technology			
	Access to Improved Sanitation				Wastewater Collection Coverage				Land Area Equipped for Irrigation				Telephone Network Density			
	Percent of population				Percent of population				Thousand hectares (equals 10 sq km)				Lines per 100 persons			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	63.77	76.95	89	39.6%	40.06	49.17	55.8	39.3%	313173	342651	367126	17.2%	17.29	5.335	3.369	-80.5%
Africa	40.26	55.51	81.17	101.6%	20.14	24.15	34.65	72.0%	13730	15441	18182	32.4%	3.058	2.633	2.989	-2.3%
Americas	87.43	90.51	95.11	8.8%	62.58	75.29	81.83	30.8%	44352	48776	53478	20.6%	29.5	6.808	3.472	-88.2%
Asia with Oceania	59.39	78.21	90.11	51.7%	33.23	46.96	55.54	67.1%	227877	251266	268065	17.6%	14.1	5.589	3.502	-75.2%
Europe	91.58	94.54	98.11	7.1%	78.39	84.26	89.04	13.6%	27299	27249	27485	0.7%	39.92	7.783	3.522	-91.2%
World	63.77	76.95	89	39.6%	40.06	49.17	55.8	39.3%	313173	342651	367126	17.2%	17.29	5.335	3.369	-80.5%
Africa-Eastern	26.94	44.86	76.45	183.8%	5.701	10.44	22.26	290.5%	2455	3143	4141	68.7%	1.056	2.165	3.044	188.3%
Africa-Middle	32.53	48.2	77.56	138.4%	14.38	20.81	33.23	131.1%	176.9	447.3	1201	578.9%	0.757	2.199	2.853	276.9%
Africa-Northern	76.73	86.21	95.92	25.0%	47.69	52.47	61.55	29.1%	8456	8655	8823	4.3%	9.253	4.463	3.243	-65.0%
Africa-Southern	74.21	82.89	94.31	27.1%	59.93	73.33	80.09	33.6%	1561	1577	1601	2.6%	7.965	4.444	3.268	-59.0%
Africa-Western	26.01	49.2	80.58	209.8%	11.35	19.45	33.56	195.7%	1082	1620	2416	123.3%	0.937	2.131	2.862	205.4%
Africa	40.26	55.51	81.17	101.6%	20.14	24.15	34.65	72.0%	13730	15441	18182	32.4%	3.058	2.633	2.989	-2.3%
America-Caribbean	69.53	73.8	79.89	14.9%	32.7	46.19	54.31	66.1%	1303	1302	1302	-0.1%	10.09	4.547	3.204	-68.2%
America-Central	76.78	83.47	91.55	19.2%	47.89	64.26	72.28	50.9%	541	539.8	540	-0.2%	12.92	5.072	3.406	-73.6%
America-North	96.4	97.25	98.6	2.3%	70.71	83.7	89.14	26.1%	30155	31333	32230	6.9%	41.33	7.558	3.467	-91.6%
America-South	80.12	85.38	93.02	16.1%	57.91	70.03	77.34	33.6%	12353	15601	19406	57.1%	19.68	6.405	3.515	-82.1%
Americas	87.43	90.51	95.11	8.8%	62.58	75.29	81.83	30.8%	44352	48776	53478	20.6%	29.5	6.808	3.472	-88.2%
Asia-East	68.89	88.59	95.33	38.4%	49.3	78.62	85.7	73.8%	69389	71579	71703	3.3%	24.52	8.061	3.765	-84.6%
Asia-South Central	43.32	66.99	85.53	97.4%	14.39	22.22	35.62	147.5%	117415	131838	141964	20.9%	4.442	3.579	3.284	-26.1%
Asia-South East	69.13	82.91	93.38	35.1%	32.79	42.88	55.25	68.5%	22548	26596	30022	33.1%	12.68	6.282	3.772	-70.3%
Asia-West	85.74	89.48	93.32	8.8%	60.56	65.65	70.15	15.8%	15322	17029	18506	20.8%	16.42	5.525	3.439	-79.1%
Oceania	86.89	88.35	93.9	8.1%	67.09	68.44	69.65	3.8%	3203	4223	5869	83.2%	30.6	6.375	3.363	-89.0%
Asia with Oceania	59.39	78.21	90.11	51.7%	33.23	46.96	55.54	67.1%	227877	251266	268065	17.6%	14.1	5.589	3.502	-75.2%
Europe-East	80.84	87.4	96.02	18.8%	60.16	68.18	76.48	27.1%	10505	10493	10492	-0.1%	29.04	7.257	3.553	-87.8%
Europe-North	98.92	98.9	99.4	0.5%	92.24	94.94	96.67	4.8%	2456	2564	2645	7.7%	48.48	8.171	3.496	-92.8%
Europe-South	97.3	97.65	98.36	1.1%	87.97	91.71	93.74	6.6%	10539	10461	10574	0.3%	38.77	7.626	3.489	-91.0%
Europe-West	100	99.81	99.76	-0.2%	90.9	93.91	96.11	5.7%	3714	3650	3691	-0.6%	53.23	8.405	3.523	-93.4%
Europe	91.58	94.54	98.11	7.1%	78.39	84.26	89.04	13.6%	27299	27249	27485	0.7%	39.92	7.783	3.522	-91.2%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Water and Sanitation (cont.)												Information and Communication Technology			
	Access to Improved Sanitation				Wastewater Collection Coverage				Land Area Equipped for Irrigation				Telephone Network Density			
	Percent of population				Percent of population				Thousand hectares (equals 10 sq km)				Lines per 100 persons			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	21	45.21	75.07	257.5%	3.582	7.563	18.29	410.6%	290	470.8	729.1	151.4%	1.096	2.298	3.182	190.3%
Tanzania, United Rep. of	10	42.61	81.31	713.1%	2.345	9.75	26.56	1032.6%	184	321.7	521	183.2%	0.389	1.654	3.145	708.5%
Uganda	34	59.06	80.99	138.2%	6	8.429	18.39	206.5%	9	15.23	24.27	169.7%	0.979	2.605	3.222	229.1%
Kenya	32	49.81	75.35	135.5%	4.9	10.25	22.98	369.0%	103	144.2	200	94.2%	1.136	2.458	3.071	170.3%
Madagascar	15	24.54	33.33	122.2%	4.03	7.546	13.06	224.1%	1086	1143	1192	9.8%	0.831	1.852	2.394	188.1%
Mozambique	18	52.7	85.71	376.2%	5.984	15.43	34.25	472.4%	118	258.8	534.7	353.1%	0.376	1.738	2.988	694.7%
Malawi	51	71.33	85.44	67.5%	9.143	12.95	22.27	143.6%	59	76.16	86.13	46.0%	1.074	2.078	2.874	167.6%
Zambia	48	79.35	96.84	101.8%	14.64	18.92	30.96	111.5%	156	196.2	252.5	61.9%	0.688	2.076	3.181	362.4%
Somalia	23	37.16	74.6	224.3%	7.37	10.85	24.05	226.3%	200	205.5	211.1	5.5%	1.072	1.951	3.008	180.6%
Rwanda	55	80.84	95.48	73.6%	10.23	15.32	27.91	172.8%	9	18.25	33.49	272.1%	0.373	1.942	3.01	707.0%
Zimbabwe	40	57.03	73.26	83.2%	13.64	16.95	23.16	69.8%	174	196.5	219.5	26.1%	3.015	3.161	3.013	-0.1%
Burundi	46	57.78	76.15	65.5%	6.134	8.92	16	160.8%	23	37.23	57.59	150.4%	0.389	1.351	2.393	515.2%
Eritrea	14	28.34	59.43	324.5%	2.755	6.976	19.7	615.1%	21	34.47	53.35	154.0%	1.032	2.177	3.06	196.5%
Comoros	36	43.67	60.85	69.0%	9.653	10.68	15.3	58.5%	0.13	0.15	0.17	30.8%	2.863	2.889	2.877	0.5%
Djibouti	50	62.6	77.72	55.4%	40.79	44.87	51.92	27.3%	1	1.149	1.32	32.0%	2.079	3.06	3.062	47.3%
Mauritius	89	93.03	95	6.7%	25	36.16	46.21	84.8%	21.5	23.68	24.75	15.1%	29.84	7.329	3.55	-88.1%
Africa-Eastern	26.94	44.86	76.45	183.8%	5.701	10.44	22.26	290.5%	2455	3143	4141	68.7%	1.056	2.165	3.044	188.3%
Congo, Democratic Rep. of	24	43.62	75.99	216.6%	6.981	12.93	26.8	283.9%	11	72.13	358.6	3160.0%	0.064	1.695	2.758	4209.4%
Angola	58	83.32	90.71	56.4%	33.76	45.1	58.84	74.3%	80	218.5	515.3	544.1%	1.589	3.344	3.082	94.0%
Cameroon	49	61.79	76.63	56.4%	26.29	32.24	41.99	59.7%	29	48.33	75.46	160.2%	2.533	3.382	3.256	28.5%
Chad	13	38.2	68.59	427.6%	3.095	8.801	20.65	567.2%	30	52.01	84.03	180.1%	0.456	1.837	2.682	488.2%
Central African Rep.	34	50.07	77.61	128.3%	11.14	14.29	23.93	114.8%	1	9.967	67.07	6607.0%	0.273	1.587	2.727	898.9%
Congo, Rep. of	18	57.33	80.75	348.6%	11.77	25.55	42.39	260.2%	2	8.733	29.65	1382.5%	0.243	1.689	2.496	927.2%
Gabon	33	55.45	81.03	145.5%	28.57	35.85	50.97	78.4%	4	14.88	45.54	1038.5%	2.018	2.548	2.649	31.3%
Equatorial Guinea	89	91.01	92.7	4.2%	56.75	68.7	76.63	35.0%	9.9	12.73	14.81	49.6%	1.933	2.52	2.829	46.4%
São Tomé and Príncipe	26	45.12	66.73	156.7%	15.14	21.38	32.29	113.3%	10	10.07	10.18	1.8%	4.629	3.593	3.12	-32.6%
Africa-Middle	32.53	48.2	77.56	138.4%	14.38	20.81	33.23	131.1%	176.9	447.3	1201	578.9%	0.757	2.199	2.853	276.9%
Egypt	95	95.47	96.73	1.8%	38.33	39.72	48.66	27.0%	3650	3542	3542	-3.0%	11.86	5.081	3.34	-71.8%
Sudan	26	70.64	93.59	260.0%	10.8	26.75	46.9	334.3%	1863	2092	2217	19.0%	0.86	2.006	2.882	235.1%
Algeria	95	99.26	100	5.3%	86	92.02	94.95	10.4%	570	573.3	575.5	1.0%	8.24	4.411	3.224	-60.9%
Morocco	70	82.45	92.67	32.4%	70	76.7	82.75	18.2%	1458	1487	1524	4.5%	11.73	6.25	3.65	-68.9%
Tunisia	85	90.4	96.53	13.6%	57.27	65.44	73.2	27.8%	445	486.3	490.2	10.2%	12.3	5.246	3.411	-72.3%
Libya	97	100	99.88	3.0%	78.95	85.51	88.4	12.0%	470	473.6	474.6	1.0%	19.33	6.942	3.395	-82.4%
Africa-Northern	76.73	86.21	95.92	25.0%	47.69	52.47	61.55	29.1%	8456	8655	8823	4.3%	9.253	4.463	3.243	-65.0%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Water and Sanitation (cont.)												Information and Communication Technology			
	Access to Improved Sanitation				Wastewater Collection Coverage				Land Area Equipped for Irrigation				Telephone Network Density			
	Percent of population				Percent of population				Thousand hectares (equals 10 sq km)				Lines per 100 persons			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	79	88.93	95.71	21.2%	66	81.41	87.05	31.9%	1498	1502	1510	0.8%	8.428	4.571	3.304	-60.8%
Namibia	32	70.16	90.7	183.4%	12.56	26.31	45.16	259.6%	8	12.66	20.94	161.8%	6.657	4.403	3.252	-51.1%
Lesotho	26	56.42	74.75	187.5%	6.489	15.68	31.19	380.7%	3	3.935	4.9	63.3%	1.787	2.728	2.935	64.2%
Botswana	62	78.42	91.04	46.8%	43.88	54.47	67.43	53.7%	1.5	2.458	4.398	193.2%	6.847	4.232	3.02	-55.9%
Swaziland	57	70.89	90.91	59.5%	14.37	17.29	27.62	92.2%	50	55.31	60.22	20.4%	3.71	3.33	3.043	-18.0%
Africa-Southern	74.21	82.89	94.31	27.1%	59.93	73.33	80.09	33.6%	1561	1577	1601	2.6%	7.965	4.444	3.268	-59.0%
Nigeria	31	65.4	89.87	189.9%	14.25	24.33	41.26	189.5%	293	459.9	677	131.1%	0.663	1.969	2.781	319.5%
Niger	9	27.18	51.31	470.1%	1.476	4.053	8.341	465.1%	74	93.7	116.4	57.3%	0.539	1.723	2.514	366.4%
Côte d'Ivoire	24	44.38	70.42	193.4%	9.91	15.12	27.15	174.0%	73	108.5	153.5	110.3%	1.131	2.146	2.902	156.6%
Burkina Faso	17	45.67	77.41	355.4%	3.288	8.945	23.91	627.2%	30	49.64	63.43	111.4%	0.874	2.237	2.961	238.8%
Ghana	14	51.62	83.92	499.4%	6.607	19.23	41.33	525.5%	34	104.1	264.4	677.6%	1.139	2.495	3.464	204.1%
Mali	22	53.51	89.69	307.7%	7.359	15.69	33.55	355.9%	236	274.7	312.9	32.6%	0.744	2.071	3.106	317.5%
Senegal	52	61.33	74.55	43.4%	23	24.82	30.69	33.4%	120	150.5	183.4	52.8%	2.749	2.864	2.909	5.8%
Guinea	18	41.51	69.57	286.5%	11	16.79	26.35	139.5%	95	136.2	192.9	103.1%	0.18	1.644	2.645	1369.4%
Benin	13	37.13	63.42	387.8%	4.622	10.88	23.21	402.2%	12	27.61	55.58	363.2%	1.508	2.766	3.057	102.7%
Togo	13	33.45	57.32	340.9%	4.343	10.48	22.35	414.6%	7	15.94	31.75	353.6%	3.546	3.851	3.272	-7.7%
Sierra Leone	13	52.99	86.19	563.0%	4.346	12.83	31.34	621.1%	30	69.2	142.1	373.7%	0.239	1.959	3.2	1238.9%
Liberia	18	72.48	92.03	411.3%	9.777	26.88	44.61	356.3%	3	12.79	46.51	1450.3%	0.147	1.658	2.762	1778.9%
Mauritania	26	46.82	69.22	166.2%	9.93	14.94	27.23	174.2%	45	64.51	89.07	97.9%	2.069	3.055	2.972	43.6%
Gambia	68	82.18	89.86	32.1%	35.97	42.53	51.75	43.9%	2	5.246	11.96	498.0%	2.822	3.012	3.036	7.6%
Guinea-Bissau	20	33.44	61.17	205.9%	4.845	7.88	15.09	211.5%	25	44.21	72.28	189.1%	0.33	1.534	2.416	632.1%
Cape Verde	61	72.57	84.56	38.6%	34.83	40.77	49.94	43.4%	3	3.007	3.028	0.9%	14.51	6.146	3.643	-74.9%
Africa-Western	26.01	49.2	80.58	209.8%	11.35	19.45	33.56	195.7%	1082	1620	2416	123.3%	0.937	2.131	2.862	205.4%

Infrastructure

	Water and Sanitation (cont.)												Information and Communication Technology			
	Access to Improved Sanitation				Wastewater Collection Coverage				Land Area Equipped for Irrigation				Telephone Network Density			
	Percent of population				Percent of population				Thousand hectares (equals 10 sq km)				Lines per 100 persons			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	17	31.02	48.54	185.5%	7.396	14.56	26.36	256.4%	92	91.8	91.85	-0.2%	0.5	1.546	2.446	389.2%
Dominican Rep.	83	90.59	93.98	13.2%	31.4	55.49	66.92	113.1%	275	274	273.6	-0.5%	10.17	5.098	3.316	-67.4%
Cuba	91	98.7	99.1	8.9%	35.9	61.65	71.02	97.8%	870	870	870	0.0%	10.34	6.533	4.213	-59.3%
Puerto Rico	88.75	92.05	97.63	10.0%	80.32	81.99	87.24	8.6%	22	21.96	22	0.0%	23.79	6.635	3.639	-84.7%
Jamaica	80	84.62	90.89	13.6%	43.89	45.03	49.13	11.9%	25	24.85	24.88	-0.5%	9.597	4.39	3.107	-67.6%
Trinidad and Tobago	92	95.35	96.77	5.2%	25.2	41.13	54.8	117.5%	7	7	7	0.0%	21.86	6.348	3.273	-85.0%
Bahamas	100	99.08	98.85	-1.2%	91.86	92.57	92.93	1.2%	1	0.997	0.999	-0.1%	37.71	7.32	3.39	-91.0%
Barbados	100	99.37	99.3	-0.7%	56.23	60.3	67.72	20.4%	5	4.994	5	0.0%	50.3	8.271	3.601	-92.8%
Saint Lucia	65	76.9	85.78	32.0%	20.29	23.92	31.97	57.6%	3	3.096	3.186	6.2%	23.58	6.428	3.437	-85.4%
Grenada	97	99.4	99.85	2.9%	31.88	32.55	34.32	7.7%	2	2.194	2.2	10.0%	27.15	6.731	3.545	-86.9%
Saint Vincent and the Grenadines	85.06	88.44	94.36	10.9%	42.9	43.58	50.37	17.4%	1	1.031	1.071	7.1%	19.85	5.97	3.423	-82.8%
America-Caribbean	69.53	73.8	79.89	14.9%	32.7	46.19	54.31	66.1%	1303	1302	1302	-0.1%	10.09	4.547	3.204	-68.2%
Guatemala	78	89.36	94.8	21.5%	65.2	90.16	95.5	46.5%	200	199.3	199.2	-0.4%	10.41	4.885	3.573	-65.7%
Honduras	77	80.37	85.64	11.2%	35.68	39.56	46.72	30.9%	80	79.63	79.8	-0.3%	8.809	4.675	3.228	-63.4%
Nicaragua	52	68.4	83.32	60.2%	27.96	31.62	41.7	49.1%	61	61	61	0.0%	4.457	3.531	3.008	-32.5%
El Salvador	87	91.14	95.15	9.4%	54.88	55.98	60.38	10.0%	45	44.97	44.97	-0.1%	16.16	5.513	3.416	-78.9%
Costa Rica	95	97.24	97.74	2.9%	24.78	60.33	70.74	185.5%	108	108	108	0.0%	31.8	7.608	3.631	-88.6%
Panama	69	80.79	88.81	28.7%	58	68.24	74.41	28.3%	43	42.94	42.98	-0.0%	15.73	5.994	3.305	-79.0%
Belize	90	94.92	97.08	7.9%	15.1	50.28	66.33	339.3%	4	4	4	0.0%	9.719	4.757	3.287	-66.2%
America-Central	76.78	83.47	91.55	19.2%	47.89	64.26	72.28	50.9%	541	539.8	540	-0.2%	12.92	5.072	3.406	-73.6%
United States of America	100	99.55	99.69	-0.3%	71.4	86.81	92.03	28.9%	23000	24005	24577	6.9%	48.71	8.11	3.489	-92.8%
Mexico	85	90.81	94.88	11.6%	67.6	73.79	79.27	17.3%	6300	6296	6300	0.0%	17.54	5.787	3.389	-80.7%
Canada	100	99.87	99.86	-0.1%	74.3	87.6	92.48	24.5%	855	1033	1353	58.2%	50.04	8.284	3.506	-93.0%
America-North	96.4	97.25	98.6	2.3%	70.71	83.7	89.14	26.1%	30155	31333	32230	6.9%	41.33	7.558	3.467	-91.6%
Brazil	79	85.11	91.82	16.2%	53.4	66.58	74.6	39.7%	4500	7219	10495	133.2%	21.62	6.552	3.536	-83.6%
Colombia	77	88.25	95.78	24.4%	58.71	64.75	75.23	28.1%	900	900	900	0.0%	14.71	5.791	3.437	-76.6%
Argentina	90	91.14	94.08	4.5%	42.5	70.42	78.2	84.0%	1650	1648	1650	0.0%	24.75	6.712	3.47	-86.0%
Peru	71	81.42	88.3	24.4%	71	78.94	82.65	16.4%	1196	1194	1196	0.0%	10.87	5.507	3.412	-68.6%
Venezuela (Bolivarian Rep. of)	91	94.1	98.19	7.9%	86.5	92.14	94.95	9.8%	580	580	580	0.0%	24.44	8.363	3.883	-84.1%
Ecuador	92	93.86	95.95	4.3%	65.84	70.8	76.18	15.7%	960	1303	1520	58.3%	14.42	5.564	3.303	-77.1%
Chile	96	99	100	4.2%	95.9	98.82	99.87	4.1%	1900	1900	1900	0.0%	20.2	6.53	3.437	-83.0%
Bolivia (Plurinational State of)	27	57.32	88.22	226.7%	27	42.89	57.37	112.5%	175	362.6	671.9	283.9%	8.542	4.958	3.542	-58.5%
Paraguay	71	74.58	82.59	16.3%	17.97	34.67	45.47	153.0%	67	66.71	66.88	-0.2%	6.275	4.097	3.13	-50.1%
Uruguay	100	100	100	0.0%	89.03	90.73	93	4.5%	218	218	218	0.0%	28.56	7.337	3.63	-87.3%
Guyana	84	95.19	97.85	16.5%	7.2	27.62	33.99	372.1%	150	150	150	0.0%	19.86	7.079	3.926	-80.2%
Suriname	83	92.97	96.76	16.6%	62.87	70.2	79.85	27.0%	57	58.58	58.78	3.1%	16.19	5.93	3.615	-77.7%
America-South	80.12	85.38	93.02	16.1%	57.91	70.03	77.34	33.6%	12353	15601	19406	57.1%	19.68	6.405	3.515	-82.1%

Infrastructure

	Water and Sanitation (cont.)												Information and Communication Technology			
	Access to Improved Sanitation				Wastewater Collection Coverage				Land Area Equipped for Irrigation				Telephone Network Density			
	Percent of population				Percent of population				Thousand hectares (equals 10 sq km)				Lines per 100 persons			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
Base Case: Countries in Year 2060 Descending Population Sequence																
ASIA with OCEANIA																
China	64	90.35	94.88	48.2%	45.67	78.36	85.82	87.9%	64504	66702	66702	3.4%	21.95	8.128	3.809	-82.6%
Japan	100	99.68	99.67	-0.3%	67	80.22	86.46	29.0%	2506	2451	2475	-1.2%	31.94	6.856	3.323	-89.6%
Korea, Rep. of	100	100	100	0.0%	78.8	89.7	93.26	18.4%	806	806	806	0.0%	59.24	10.05	3.714	-93.7%
Korea, Dem. People's Rep. of	80	90.4	91.45	14.3%	47.9	52.06	59.99	25.2%	1460	1460	1460	0.0%	4.847	4.456	3.369	-30.5%
Taiwan, China	96.67	97.99	98.26	1.6%	90.44	93.01	94.58	4.6%	28.51	30.84	32.28	13.2%	70.78	9.969	3.685	-94.8%
Hong Kong SAR, China	97.32	98.39	98.86	1.6%	93.2	94.87	96.1	3.1%	0.025	0.027	0.028	12.0%	61.61	9.186	3.712	-94.0%
Mongolia	51	78.9	93.51	83.4%	28.79	40.16	55.81	93.9%	84	128.6	227.2	170.5%	7.012	5.027	3.718	-47.0%
Asia-East	68.89	88.59	95.33	38.4%	49.3	78.62	85.7	73.8%	69389	71579	71703	3.3%	24.52	8.061	3.765	-84.6%
India	34	70.72	85.51	151.5%	9.558	19.02	34.28	258.7%	66700	78336	87658	31.4%	2.865	3.624	3.388	18.3%
Pakistan	48	60.16	81.34	69.5%	16.11	21.11	33.36	107.1%	20200	20640	20640	2.2%	1.97	2.578	2.978	51.2%
Bangladesh	56	81.63	92.06	64.4%	12.79	18.5	32.55	154.5%	5100	5546	5694	11.6%	0.605	1.884	2.966	390.2%
Afghanistan	37	49.49	65.63	77.4%	9.119	12.34	21.46	135.3%	3199	3173	3195	-0.1%	0.446	1.66	2.528	466.8%
Iran, Islamic Rep. of	100	100	100	0.0%	73.49	79.92	85.27	16.0%	9133	10930	11432	25.2%	36.29	8.504	3.819	-89.5%
Nepal	31	46.79	70.68	128.0%	5.526	10.18	24.65	346.1%	1168	1295	1423	21.8%	2.809	3.259	3.175	13.0%
Uzbekistan	100	100	100	0.0%	33.68	39.62	45.11	33.9%	4223	4223	4223	0.0%	6.79	4.675	3.403	-49.9%
Sri Lanka	92	96.25	97.3	5.8%	16.87	22.09	28.69	70.1%	570	573.2	575.3	0.9%	17.16	7.731	4.056	-76.4%
Kazakhstan	97	99.08	99.1	2.2%	62.87	74.81	84.49	34.4%	3556	3556	3556	0.0%	25.03	8.45	3.67	-85.3%
Tajikistan	94	92.83	95.39	1.5%	22.12	24.81	29.47	33.2%	719	719	719	0.0%	5.345	4.193	3.476	-35.0%
Kyrgyz Rep.	93	94.23	95.72	2.9%	23.1	30.98	34.83	50.8%	1018	1017	1018	0.0%	9.415	4.566	3.371	-64.2%
Turkmenistan	98	100	100	2.0%	48.56	64.91	76.33	57.2%	1800	1800	1800	0.0%	10.31	6.309	3.483	-66.2%
Bhutan	44	69.97	83.45	89.7%	16.16	30.51	46.1	185.3%	28	30.21	30.6	9.3%	3.622	3.805	3.215	-11.2%
Maldives	97	94.88	97.46	0.5%	97	98.51	98.28	1.3%	0.297	0.314	0.334	12.5%	15.2	6.802	3.579	-76.5%
Asia-South Central	43.32	66.99	85.53	97.4%	14.39	22.22	35.62	147.5%	117415	131838	141964	20.9%	4.442	3.579	3.284	-26.1%
Indonesia	54	78.28	90.49	67.6%	29.16	42.16	55.79	91.3%	6722	7467	8117	20.8%	15.82	7.507	3.963	-74.9%
Philippines	74	86.75	93.45	26.3%	47.39	53.9	63.63	34.3%	1540	1923	2033	32.0%	7.274	5.243	3.659	-49.7%
Vietnam	76	91.3	97.71	28.6%	19.97	29.24	41.91	109.9%	4600	5613	6387	38.8%	18.67	7.787	3.958	-78.8%
Thailand	96	97.87	98.5	2.6%	34.88	41.77	53.79	54.2%	6415	7360	8319	29.7%	10.14	5.028	3.375	-66.7%
Myanmar	76	90.53	95.66	25.9%	21.33	28.76	42.53	99.4%	2275	3137	4025	76.9%	1.261	3.053	3.75	197.4%
Malaysia	96	96.93	97.27	1.3%	75.58	81.41	85.84	13.6%	365	371.5	376.8	3.2%	16.1	5.93	3.372	-79.1%
Cambodia	31	58.71	77.91	151.3%	6.307	13.28	28.32	349.0%	285	294.1	301.9	5.9%	2.538	3.799	3.43	35.1%
Lao People's Dem. Rep.	63	91.6	96.82	53.7%	18.13	34.93	53.35	194.3%	310	393.8	422.9	36.4%	1.663	2.883	3.36	102.0%
Singapore	100	99.97	99.72	-0.3%	100	99.98	99.72	-0.3%	0.231	0.261	0.276	19.5%	39	7.719	3.436	-91.2%
Timor-Leste	47	79.96	95.6	103.4%	11.06	17.42	28.03	153.4%	35	35.37	36.75	5.0%	0.213	1.664	2.961	1290.1%
Brunei Darussalam	97.39	98.84	98.99	1.6%	91.48	93.34	95.44	4.3%	1	1.304	1.872	87.2%	20.03	5.717	3.194	-84.1%
Asia-South East	69.13	82.91	93.38	35.1%	32.79	42.88	55.25	68.5%	22548	26596	30022	33.1%	12.68	6.282	3.772	-70.3%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Water and Sanitation (cont.)												Information and Communication Technology			
	Access to Improved Sanitation				Wastewater Collection Coverage				Land Area Equipped for Irrigation				Telephone Network Density			
	Percent of population				Percent of population				Thousand hectares (equals 10 sq km)				Lines per 100 persons			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	90	93.32	94.88	5.4%	74	79.91	83.8	13.2%	5215	5644	6004	15.1%	22.27	6.727	3.548	-84.1%
Iraq	73	89.74	94.78	29.8%	26.2	39.82	54.41	107.7%	3525	3836	4249	20.5%	5.052	4.384	3.638	-28.0%
Yemen, Rep. of	53	65.89	79.49	50.0%	34.5	41.86	48.64	41.0%	680	734	784.8	15.4%	4.35	3.488	3.104	-28.6%
Saudi Arabia	94.33	97.46	98.48	4.4%	85.66	90.25	92.88	8.4%	1731	2592	3217	85.8%	15.18	5.492	3.14	-79.3%
Syrian Arab Rep.	95	96.58	98.05	3.2%	48.01	55.11	62.69	30.6%	1238	1247	1250	1.0%	19.94	6.416	3.83	-80.8%
Jordan	98	96.32	97.65	-0.4%	61	68.99	73.4	20.3%	94.8	95.08	95.42	0.7%	7.839	4.359	3.374	-57.0%
Israel	100	99.63	99.98	-0.0%	96.72	99.89	99.98	3.4%	225	224.7	225	0.0%	44.16	8.216	3.51	-92.1%
Palestine	92	88.16	93.86	2.0%	58.7	76.61	79.05	34.7%	21	26.67	33.93	61.6%	9.368	4.416	3.363	-64.1%
Azerbaijan	82	93.56	96.7	17.9%	31.6	46.24	58.32	84.6%	1433	1433	1433	0.0%	16.33	6.243	3.488	-78.6%
United Arab Emirates	98	98.84	99.11	1.1%	78.3	91.63	94.53	20.7%	230	232.1	232.3	1.0%	19.7	5.764	3.159	-84.0%
Kuwait	100	100	99.76	-0.2%	96.84	98.88	99.25	2.5%	10	14.29	15.84	58.4%	20.69	5.898	3.18	-84.6%
Lebanon	98	99.04	99.06	1.1%	67.4	79.48	83.9	24.5%	90	99.91	110.1	22.3%	21	6.969	3.472	-83.5%
Oman	99	100	100	1.0%	81.9	89.21	92.39	12.8%	59	68.98	70.86	20.1%	10.2	4.646	2.994	-70.6%
Armenia	90	93.88	96.64	7.4%	67.2	69.28	74.15	10.3%	274	274	274	0.0%	19.08	6.452	3.78	-80.2%
Georgia	95	99.08	99.1	4.3%	52.25	63.78	72.38	38.5%	433	433	433	0.0%	13.72	6.024	3.611	-73.7%
Qatar	100	100	100	0.0%	99.48	100	100	0.5%	13	24.66	28.31	117.8%	16.95	5.759	3.16	-81.4%
Bahrain	96.36	98.87	98.93	2.7%	91	96.29	96.55	6.1%	4	4.081	4.091	2.3%	18.07	5.642	3.156	-82.5%
Cyprus	100	99.66	99.36	-0.6%	40	64.55	76.5	91.3%	46	46	46	0.0%	37.58	7.532	3.437	-90.9%
Asia-West	85.74	89.48	93.32	8.8%	60.56	65.65	70.15	15.8%	15322	17029	18506	20.8%	16.42	5.525	3.439	-79.1%
Australia	100	99.88	99.9	-0.1%	87	92.9	95.41	9.7%	2550	3512	5153	102.1%	38.89	7.552	3.413	-91.2%
Papua New Guinea	45	62.91	82.35	83.0%	6.798	8.701	13.86	103.9%	11.88	15.25	17.79	49.7%	1.767	3.192	3.276	85.4%
New Zealand	96.09	98.86	99.1	3.1%	80	88.22	91.88	14.9%	619	670.8	670.8	8.4%	42.81	7.93	3.491	-91.8%
Solomon Islands	32	48.65	64.19	100.6%	6.075	10.18	18.44	203.5%	2.772	2.946	3.102	11.9%	1.561	2.461	2.578	65.2%
Fiji	83	83.43	93.95	13.2%	43	48.05	57.08	32.7%	3	3.986	5.148	71.6%	15.92	5.92	3.72	-76.6%
Vanuatu	57	66.95	79.16	38.9%	14.04	18.5	28.42	102.4%	6.171	6.649	7.007	13.5%	2.086	2.564	2.658	27.4%
Micronesia (Federated States of)	25	47.9	71.63	186.5%	5.454	8.165	12.92	136.9%	7.425	7.908	8.356	12.5%	7.611	4.433	3.166	-58.4%
Tonga	96	96.4	99.34	3.5%	23.89	23.91	25.36	6.2%	1.023	1.099	1.156	13.0%	29.79	8.35	3.988	-86.6%
Samoa	98	99.13	99.9	1.9%	23.29	25.43	29.44	26.4%	2.178	2.342	2.468	13.3%	19.28	7.313	3.788	-80.4%
Oceania	86.89	88.35	93.9	8.1%	67.09	68.44	69.65	3.8%	3203	4223	5869	83.2%	30.6	6.375	3.363	-89.0%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Water and Sanitation (cont.)												Information and Communication Technology			
	Access to Improved Sanitation				Wastewater Collection Coverage				Land Area Equipped for Irrigation				Telephone Network Density			
	Percent of population				Percent of population				Thousand hectares (equals 10 sq km)				Lines per 100 persons			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	70	85.96	95.48	36.4%	55.2	65	74.88	35.7%	4300	4300	4300	0.0%	31.45	7.553	3.553	-88.7%
Poland	90	91.41	95.72	6.4%	63	70.25	77.61	23.2%	116	114.9	115.2	-0.7%	24.69	6.834	3.421	-86.1%
Ukraine	94	95.7	97.16	3.4%	64.42	68.98	76.13	18.2%	2175	2175	2175	0.0%	28.48	7.104	3.742	-86.9%
Romania	73	81.34	91.52	25.4%	43	47.75	58.71	36.5%	3157	3157	3157	0.0%	20.94	6.357	3.504	-83.3%
Czech Rep.	98	98.04	98.5	0.5%	81	84.26	88.14	8.8%	21	20.48	20.43	-2.7%	20.95	6.033	3.271	-84.4%
Belarus	93	96.77	97.78	5.1%	91.3	95.09	96.68	5.9%	131	131	131	0.0%	43.13	9.445	3.853	-91.1%
Hungary	100	99.74	99.83	-0.2%	77	93.92	95.51	24.0%	140	135.4	137.5	-1.8%	29.82	7.099	3.511	-88.2%
Bulgaria	100	100	99.88	-0.1%	70	75.98	82.59	18.0%	102	101.5	101.9	-0.1%	29.36	7.023	3.48	-88.1%
Slovak Rep.	100	99.65	99.5	-0.5%	61	71.16	78.19	28.2%	135	129.8	125.7	-6.9%	20.12	6.104	3.274	-83.7%
Moldova, Rep. of	85	92.42	98	15.3%	60	67.77	72.85	21.4%	228.3	228.3	228.3	0.0%	32.5	7.991	4.028	-87.6%
Europe-East	80.84	87.4	96.02	18.8%	60.16	68.18	76.48	27.1%	10505	10493	10492	-0.1%	29.04	7.257	3.553	-87.8%
United Kingdom	100	99.61	99.6	-0.4%	97.7	98.17	98.63	1.0%	213	212.6	212.8	-0.1%	53.71	8.512	3.532	-93.4%
Sweden	100	100	99.99	-0.0%	86	91.27	94.39	9.8%	160	160	160	0.0%	53.46	8.534	3.536	-93.4%
Denmark	100	99.89	99.83	-0.2%	87.9	93.13	95.72	8.9%	435	434.1	434.5	-0.1%	47.26	8.071	3.48	-92.6%
Ireland	99	98.49	98.78	-0.2%	95	98.91	99.66	4.9%	1386	1485	1560	12.6%	46.49	8.004	3.434	-92.6%
Norway	100	100	100	0.0%	83	89.87	93.56	12.7%	104	104	104	0.0%	34.85	7.108	3.354	-90.4%
Finland	100	99.91	99.84	-0.2%	81	88.49	92.74	14.5%	77	77	77	0.0%	23.3	6.14	3.217	-86.2%
Lithuania	86	87.92	94.28	9.6%	62	66.03	74.6	20.3%	1.34	1.297	1.319	-1.6%	22.08	6.418	3.438	-84.4%
Latvia	78	84.24	93.55	19.9%	71	74.18	79.46	11.9%	0.8	0.799	0.8	0.0%	23.63	6.706	3.464	-85.3%
Estonia	95	97.16	98.24	3.4%	81	95.49	97.29	20.1%	4	4	4	0.0%	35.96	8.02	3.563	-90.1%
Iceland	100	100	100	0.0%	90	93.22	95.46	6.1%	75.27	85.23	90.09	19.7%	63.72	9.043	3.595	-94.4%
Europe-North	98.92	98.9	99.4	0.5%	92.24	94.94	96.67	4.8%	2456	2564	2645	7.7%	48.48	8.171	3.496	-92.8%
Italy	95.73	96.42	97.23	1.6%	94	95.64	97.03	3.2%	3950	3932	3942	-0.2%	35.67	7.281	3.413	-90.4%
Spain	100	99.76	99.78	-0.2%	100	99.78	99.76	-0.2%	3818	3787	3810	-0.2%	43.2	7.997	3.495	-91.9%
Greece	98	97.51	97.92	-0.1%	88	93.76	95.16	8.1%	1555	1517	1534	-1.4%	45.81	7.976	3.511	-92.3%
Portugal	100	99.44	99.56	-0.4%	86	99.71	99.54	15.7%	584	558.2	576.3	-1.3%	42.01	7.87	3.578	-91.5%
Serbia	92	94.52	97.47	5.9%	55	68.33	73.65	33.9%	89	93.78	115.9	30.2%	40.53	8.456	3.866	-90.5%
Croatia	99	98.88	99.08	0.1%	46	58.05	69.25	50.5%	31	40.76	40.78	31.5%	42.37	8.073	3.602	-91.5%
Bosnia and Herzegovina	95	97.89	98.98	4.2%	38	47.89	57.43	51.1%	3	6.064	11.14	271.3%	26.56	7.083	3.626	-86.3%
Albania	94	96.01	96.82	3.0%	47.6	55.19	66.77	40.3%	365	377.7	393.1	7.7%	10.35	5.464	3.349	-67.6%
Macedonia, TFYR	88	92.23	96.56	9.7%	49	61.46	71.57	46.1%	128	128	128	0.0%	20.05	5.88	3.431	-82.9%
Slovenia	100	99.71	99.8	-0.2%	63	66.69	74.95	19.0%	10	14.02	14.03	40.3%	45.01	8.323	3.579	-92.0%
Montenegro	90	92.76	93.79	4.2%	35	51.32	56.64	61.8%	2.3	3.62	4.923	114.0%	26.84	6.506	3.432	-87.2%
Malta	100	99.64	99.32	-0.7%	98	98.84	99.09	1.1%	3.2	3.196	3.198	-0.1%	59.38	9.694	3.738	-93.7%
Europe-South	97.3	97.65	98.36	1.1%	87.97	91.71	93.74	6.6%	10539	10461	10574	0.3%	38.77	7.626	3.489	-91.0%
Germany	100	99.84	99.78	-0.2%	94.5	97.09	98.2	3.9%	485	484.7	485	0.0%	55.4	8.556	3.54	-93.6%
France	100	99.75	99.8	-0.2%	82	86.48	91.78	11.9%	2600	2537	2577	-0.9%	56.06	8.604	3.552	-93.7%
Netherlands	100	99.75	99.73	-0.3%	99	99.85	99.73	0.7%	460	459.5	460	0.0%	43.15	7.731	3.439	-92.0%
Belgium	100	99.74	99.72	-0.3%	95	99.83	99.72	5.0%	23	22.98	23	0.0%	43.31	7.771	3.445	-92.0%
Switzerland	100	99.47	99.26	-0.7%	98.5	99.7	99.43	0.9%	25	24.93	24.95	-0.2%	58.56	8.664	3.539	-94.0%
Austria	100	99.8	99.73	-0.3%	94	97.6	98.6	4.9%	117	116.3	116.6	-0.3%	38.66	7.403	3.395	-91.2%
Luxembourg	100	99.39	99.36	-0.6%	95	97.44	98.08	3.2%	4.29	4.627	4.858	13.2%	53.68	8.296	3.502	-93.5%
Europe-West	100	99.81	99.76	-0.2%	90.9	93.91	96.11	5.7%	3714	3650	3691	-0.6%	53.23	8.405	3.523	-93.4%

Infrastructure

Base Case Source: International Futures Model Version 6.68, Nov 2013	Information and Communication Technology (cont.)								Spending on Infrastructure							
	Mobile Phone Usage				Mobile Broadband Usage				Spending on Core Infrastructure				Total (Core + Other) Infrastructure Spending			
	Subscriptions per 100 persons				Subscriptions per 100 persons				Billions in 2005 dollars				Billions in 2005 dollars			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	77.88	153.4	154.6	98.5%	13.04	144	151.8	1064.1%	1138	1478	1738	52.7%	2061	3757	6812	230.5%
Africa	52.82	149.8	152.9	189.5%	3.361	136.6	151.7	4413.5%	62.42	196.2	340.4	445.3%	85.4	289	697.4	716.6%
Americas	94.47	154.2	154.1	63.1%	21.7	143.3	151.8	599.5%	193.5	271.1	281.2	45.3%	463.6	731	1178	154.1%
Asia with Oceania	71.17	153.9	155.2	118.1%	7.646	145.6	151.8	1885.4%	664.6	849.1	949	42.8%	968.2	2127	4094	322.8%
Europe	129.9	157.2	156.8	20.7%	46.38	152.1	151.8	227.3%	216.9	159.6	166.5	-23.2%	540.4	605.8	838.4	55.1%
World	77.88	153.4	154.6	98.5%	13.04	144	151.8	1064.1%	1138	1478	1738	52.7%	2061	3757	6812	230.5%
Africa-Eastern	31.84	149.3	152.6	379.3%	1.789	134.6	151.6	8374.0%	11.5	56.45	126.9	1003.5%	13.58	67.19	210.2	1447.9%
Africa-Middle	29.64	134.2	151.8	412.1%	0.865	129.7	151.5	17414.5%	3.822	22.61	41.54	986.9%	5.942	35.41	88.4	1387.7%
Africa-Northern	84.04	155.6	155.5	85.0%	3.622	134.4	151.8	4091.1%	23.23	42.35	59.34	155.4%	31.58	72.63	142.8	352.2%
Africa-Southern	96.49	153.4	153.7	59.3%	14.29	147.8	151.8	962.3%	8.2	15.26	20.53	150.4%	14.34	30.94	66.42	363.2%
Africa-Western	55.05	153.7	152.7	177.4%	3.856	141.7	151.7	3834.1%	15.67	59.54	92.03	487.3%	19.95	82.84	189.6	850.4%
Africa	52.82	149.8	152.9	189.5%	3.361	136.6	151.7	4413.5%	62.42	196.2	340.4	445.3%	85.4	289	697.4	716.6%
America-Caribbean	57.85	153.9	152.7	164.0%	2.502	143.2	151.8	5967.1%	3.579	7.738	8.245	130.4%	7.696	16.77	26.67	246.5%
America-Central	114.8	157.2	155.6	35.5%	3.205	132.1	151.8	4636.3%	5.122	10.57	11.23	119.3%	7.385	16.94	26.13	253.8%
America-North	86.17	152.9	153.1	77.7%	38.22	149.2	151.7	296.9%	127.7	140.7	156.6	22.6%	352.1	476	769.3	118.5%
America-South	105.6	155.4	155.3	47.1%	6.681	137.9	151.8	2172.1%	57.15	112	105.1	83.9%	96.4	221.3	355.6	268.9%
Americas	94.47	154.2	154.1	63.1%	21.7	143.3	151.8	599.5%	193.5	271.1	281.2	45.3%	463.6	731	1178	154.1%
Asia-East	68.35	153.6	154.5	126.0%	12.68	140.1	151.8	1097.2%	393.8	376.5	381.9	-3.0%	594.6	1234	2330	291.9%
Asia-South Central	61.43	154.7	154.6	151.7%	0.22	151.3	151.8	68900.0%	141.1	287.4	348.1	146.7%	168.4	473.9	1024	508.1%
Asia-South East	97.21	150.8	157.6	62.1%	8.481	139	151.8	1689.9%	64.96	97.45	114.9	76.9%	86.74	182.7	318.9	267.7%
Asia-West	94.22	157.5	157.7	67.4%	18.55	147.2	151.8	718.3%	50.58	72.78	87.06	72.1%	85.63	187.1	342.9	300.4%
Oceania	87.2	152.2	153.3	75.8%	60.59	149.9	151.7	150.4%	14.06	14.94	17.05	21.3%	32.9	49	78.19	137.7%
Asia with Oceania	71.17	153.9	155.2	118.1%	7.646	145.6	151.8	1885.4%	664.6	849.1	949	42.8%	968.2	2127	4094	322.8%
Europe-East	141.9	160.7	160.7	13.2%	44.54	150.1	151.7	240.6%	64.36	59.98	61.95	-3.7%	102	152.2	220	115.7%
Europe-North	127.6	155.4	154.6	21.2%	48.22	153.2	151.8	214.8%	44.54	31.22	33.41	-25.0%	121.5	136.8	193.7	59.4%
Europe-South	124.7	155.1	154.7	24.1%	56.48	152.4	151.8	168.8%	53.92	28.33	28.03	-48.0%	125.2	110.1	137.4	9.7%
Europe-West	116.9	155	154.7	32.3%	39.45	153.9	151.8	284.8%	55.16	41.6	44.17	-19.9%	194.9	211.1	292.1	49.9%
Europe	129.9	157.2	156.8	20.7%	46.38	152.1	151.8	227.3%	216.9	159.6	166.5	-23.2%	540.4	605.8	838.4	55.1%

Infrastructure

	Information and Communication Technology (cont.)								Spending on Infrastructure							
	Mobile Phone Usage				Mobile Broadband Usage				Spending on Core Infrastructure				Total (Core + Other) Infrastructure Spending			
	Subscriptions per 100 persons				Subscriptions per 100 persons				Billions in 2005 dollars				Billions in 2005 dollars			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	7.857	151.9	151.6	1829.5%	0.205	151.9	151.6	73851.2%	1.249	10.22	19.29	1444.4%	1.489	11.48	29.9	1908.1%
Tanzania, United Rep. of	46.8	153.6	151.5	223.7%	2.336	132.7	151.5	6385.4%	1.796	10.83	35.26	1863.3%	2.157	13.1	62.26	2786.4%
Uganda	38.38	154.5	154.5	302.6%	1.524	133.7	151.8	9860.6%	1.36	6.028	11.9	775.0%	1.545	7.638	22.99	1388.0%
Kenya	61.63	154	153.6	149.2%	8.941	137.7	151.8	1597.8%	2.115	7.746	14.04	563.8%	2.546	9.194	23.42	819.9%
Madagascar	39.79	153.9	153.9	286.8%	0.12	92.2	151.6	126233.3%	0.644	1.745	3.384	425.5%	0.707	1.903	3.721	426.3%
Mozambique	30.89	153.3	151.5	390.4%	0.808	151.9	151.5	18650.0%	0.762	7.363	14.08	1747.8%	0.916	8.238	21.37	2233.0%
Malawi	20.39	153.6	153.6	653.3%	N/A	101.6	151.8	N/A	0.459	1.99	4.275	831.4%	0.512	2.209	5.414	957.4%
Zambia	37.8	154	154	307.4%	0.067	153.7	151.8	226467.2%	1.046	4.661	13.65	1205.0%	1.225	6.194	23.39	1809.4%
Somalia	6.947	62.67	149.8	2056.3%	N/A	62.67	149.8	N/A	0.251	1.012	3.135	1149.0%	0.288	1.205	4.769	1555.9%
Rwanda	33.4	154.1	153	358.1%	0.296	153.7	151.8	51183.8%	0.442	1.68	2.891	554.1%	0.504	2.09	5.612	1013.5%
Zimbabwe	59.66	153.8	153.4	157.1%	N/A	152.4	151.8	N/A	0.825	1.317	1.836	122.5%	0.919	1.602	2.804	205.1%
Burundi	13.72	149.9	151.4	1003.5%	N/A	149.6	151.4	N/A	0.219	0.846	1.362	521.9%	0.244	0.881	1.488	509.8%
Eritrea	3.527	73.69	151.4	4192.6%	N/A	73.69	151.4	N/A	0.086	0.557	1.314	1427.9%	0.104	0.655	2.01	1832.7%
Comoros	22.49	153.5	153.5	582.5%	N/A	147.3	151.8	N/A	0.026	0.102	0.198	661.5%	0.033	0.118	0.253	666.7%
Djibouti	18.64	142.4	151.5	712.8%	0.016	142.4	151.5	946775.0%	0.073	0.112	0.152	108.2%	0.09	0.135	0.229	154.4%
Mauritius	91.67	154.8	153.3	67.2%	14.35	149.1	151.8	957.8%	0.145	0.243	0.152	4.8%	0.299	0.537	0.595	99.0%
Africa-Eastern	31.84	149.3	152.6	379.3%	1.789	134.6	151.6	8374.0%	11.5	56.45	126.9	1003.5%	13.58	67.19	210.2	1447.9%
Congo, Democratic Rep. of	17.21	117.7	151.4	779.7%	0.074	117.7	151.4	204494.6%	0.756	5.47	13.87	1734.7%	0.839	5.773	15.73	1774.9%
Angola	46.69	153.8	151.9	225.3%	4.753	143.4	151.8	3093.8%	1.256	8.894	13.89	1005.9%	2.219	17.48	47.92	2059.5%
Cameroon	41.61	153.4	151.4	263.9%	0.809	136.8	151.4	18614.5%	0.721	3.835	7.055	878.5%	1.077	4.738	10.8	902.8%
Chad	23.29	153.6	152.5	554.8%	N/A	150.9	151.7	N/A	0.385	2.005	3.689	858.2%	0.493	2.491	5.666	1049.3%
Central African Rep.	23.18	154.3	154.3	565.7%	N/A	150.6	151.8	N/A	0.164	0.48	0.926	464.6%	0.188	0.56	1.28	580.9%
Congo, Rep. of	93.96	155.5	155.5	65.5%	N/A	150.5	151.7	N/A	0.324	0.914	1.053	225.0%	0.473	1.708	2.813	494.7%
Gabon	106.9	155.8	155.8	45.7%	N/A	147.7	151.8	N/A	0.11	0.578	0.713	548.2%	0.306	1.163	2.255	636.9%
Equatorial Guinea	57.01	154.3	153.4	169.1%	N/A	151.7	151.8	N/A	0.093	0.407	0.295	217.2%	0.33	1.461	1.871	467.0%
São Tomé and Príncipe	61.97	154.1	153.1	147.1%	0.431	108.1	151.8	35120.4%	0.015	0.03	0.042	180.0%	0.018	0.037	0.062	244.4%
Africa-Middle	29.64	134.2	151.8	412.1%	0.865	129.7	151.5	17414.5%	3.822	22.61	41.54	986.9%	5.942	35.41	88.4	1387.7%
Egypt	87.11	155.2	155.2	78.2%	4.732	130.7	151.8	3107.9%	10.43	15.97	17.27	65.6%	12.75	21.84	34.7	172.2%
Sudan	40.54	154.3	154.3	280.6%	1.192	129.1	151.8	12634.9%	1.421	7.382	24.92	1653.7%	1.912	13.56	55.88	2822.6%
Algeria	92.42	155.1	155.1	67.8%	N/A	148.1	151.8	N/A	4.13	8.079	7.497	81.5%	6.372	15.11	23.48	268.5%
Morocco	100.1	155.7	155.7	55.5%	3.572	129.7	151.8	4149.7%	3.251	5.548	5.269	62.1%	4.688	9.609	14.28	204.6%
Tunisia	106	155.8	155.8	47.0%	N/A	147.1	151.8	N/A	1.109	2.486	2.211	99.4%	1.889	4.405	6.502	244.2%
Libya	171.5	171.5	171.5	0.0%	31	154.1	151.8	389.7%	2.887	2.89	2.178	-24.6%	3.964	8.105	7.924	99.9%
Africa-Northern	84.04	155.6	155.5	85.0%	3.622	134.4	151.8	4091.1%	23.23	42.35	59.34	155.4%	31.58	72.63	142.8	352.2%

Infrastructure

	Information and Communication Technology (cont.)								Spending on Infrastructure							
	Mobile Phone Usage				Mobile Broadband Usage				Spending on Core Infrastructure				Total (Core + Other) Infrastructure Spending			
	Subscriptions per 100 persons				Subscriptions per 100 persons				Billions in 2005 dollars				Billions in 2005 dollars			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	100.5	153.8	153.7	52.9%	16.07	151.5	151.8	844.6%	7.072	13.4	18.52	161.9%	12.72	27.11	59.78	370.0%
Namibia	67.21	154.8	154.8	130.3%	2.967	125.4	151.7	5012.9%	0.512	0.905	0.898	75.4%	0.685	1.819	3.025	341.6%
Lesotho	32.18	139.6	151.3	370.2%	N/A	115.6	151.3	N/A	0.097	0.256	0.285	193.8%	0.129	0.347	0.436	238.0%
Botswana	117.8	156.1	156.1	32.5%	5.949	130.5	151.8	2451.7%	0.443	0.507	0.554	25.1%	0.677	1.36	2.653	291.9%
Swaziland	61.78	154.3	154	149.3%	N/A	145.4	151.8	N/A	0.076	0.199	0.269	253.9%	0.132	0.309	0.523	296.2%
Africa-Southern	96.49	153.4	153.7	59.3%	14.29	147.8	151.8	962.3%	8.2	15.26	20.53	150.4%	14.34	30.94	66.42	363.2%
Nigeria	55.1	153.9	151.8	175.5%	7.351	142.6	151.6	1962.3%	7.689	34.32	44.08	473.3%	10.58	51.61	105.5	897.2%
Niger	24.53	153.5	151.5	517.6%	N/A	145.6	151.5	N/A	0.394	2.445	5.494	1294.4%	0.469	2.604	6.17	1215.6%
Côte d'Ivoire	75.54	154.2	153.9	103.7%	N/A	149.6	151.8	N/A	1.242	3.745	6.821	449.2%	1.578	4.747	11.45	625.6%
Burkina Faso	34.66	154.4	154.4	345.5%	N/A	147.6	151.8	N/A	1.142	2.981	4.866	326.1%	1.272	3.603	8.073	534.7%
Ghana	71.49	154.9	154.6	116.3%	N/A	110.8	151.8	N/A	1.735	5.42	10.9	528.2%	2.007	7.292	26.54	1222.4%
Mali	47.66	154.3	154.2	223.5%	N/A	151.8	151.8	N/A	0.659	2.318	4.868	638.7%	0.763	2.851	8.494	1013.2%
Senegal	67.11	153.9	152.3	126.9%	N/A	145.2	151.8	N/A	0.499	1.547	2.83	467.1%	0.631	1.852	3.798	501.9%
Guinea	40.07	154.5	154.5	285.6%	N/A	151.6	151.8	N/A	0.501	1.423	3.095	517.8%	0.555	1.711	4.625	733.3%
Benin	79.94	154.8	154.3	93.0%	N/A	146.7	151.8	N/A	0.637	1.519	2.752	332.0%	0.733	1.843	4.051	452.7%
Togo	40.69	154.2	154.2	279.0%	N/A	150.2	151.8	N/A	0.24	0.794	1.264	426.7%	0.284	0.93	1.673	489.1%
Sierra Leone	34.09	133.7	152.4	347.1%	0.016	133.7	151.8	948650.0%	0.135	1.063	1.913	1317.0%	0.164	1.432	4.813	2834.8%
Liberia	39.34	153.4	151.3	284.6%	N/A	120.2	151.3	N/A	0.189	0.79	1.297	586.2%	0.205	0.858	1.608	684.4%
Mauritania	79.34	155.1	155.1	95.5%	4.218	129.8	151.6	3494.1%	0.356	0.605	0.908	155.1%	0.408	0.767	1.375	237.0%
Gambia	85.53	154.9	154.4	80.5%	0.478	101.6	151.8	31657.3%	0.113	0.278	0.472	317.7%	0.128	0.325	0.656	412.5%
Guinea-Bissau	39.21	154.2	154.2	293.3%	N/A	149.4	151.8	N/A	0.072	0.195	0.382	430.6%	0.083	0.24	0.539	549.4%
Cape Verde	74.97	154.4	153.3	104.5%	2.979	130.1	151.8	4995.7%	0.068	0.1	0.092	35.3%	0.094	0.169	0.244	159.6%
Africa-Western	55.05	153.7	152.7	177.4%	3.856	141.7	151.7	3834.1%	15.67	59.54	92.03	487.3%	19.95	82.84	189.6	850.4%

Infrastructure

	Information and Communication Technology (cont.)								Spending on Infrastructure							
	Mobile Phone Usage				Mobile Broadband Usage				Spending on Core Infrastructure				Total (Core + Other) Infrastructure Spending			
	Subscriptions per 100 persons				Subscriptions per 100 persons				Billions in 2005 dollars				Billions in 2005 dollars			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	40.03	153.8	152.7	281.5%	N/A	151.1	151.8	N/A	0.28	1.018	1.131	303.9%	0.358	1.192	1.482	314.0%
Dominican Rep.	89.58	154.6	151.9	69.6%	1.576	130	151.7	9525.6%	0.804	3.073	3.614	349.5%	1.735	6.013	9.688	458.4%
Cuba	8.909	153.1	153.2	1619.6%	N/A	153.1	151.8	N/A	1.039	1.364	1.602	54.2%	1.813	3.773	8.096	346.6%
Puerto Rico	78.26	153.3	153.3	95.9%	13.98	148.2	151.8	985.8%	0.786	1.183	1.083	37.8%	2.271	3.154	4.674	105.8%
Jamaica	113.2	154.1	151.3	33.7%	2.509	123.2	151.3	5930.3%	0.305	0.481	0.395	29.5%	0.52	0.728	0.777	49.4%
Trinidad and Tobago	141.2	156.8	156.8	11.0%	13.8	150.9	151.8	1000.0%	0.169	0.428	0.263	55.6%	0.55	1.412	1.405	155.5%
Bahamas	124.9	155.5	154.1	23.4%	8.174	139	151.8	1757.1%	0.088	0.091	0.066	-25.0%	0.239	0.271	0.267	11.7%
Barbados	128.1	156.1	155.3	21.2%	N/A	146.1	151.8	N/A	0.045	0.036	0.033	-26.7%	0.104	0.102	0.116	11.5%
Saint Lucia	102.9	153.5	152.1	47.8%	N/A	100.6	151.8	N/A	0.028	0.023	0.02	-28.6%	0.044	0.049	0.054	22.7%
Grenada	116.7	155.8	153.9	31.9%	16.67	142.5	151.7	810.0%	0.017	0.022	0.02	17.6%	0.031	0.043	0.055	77.4%
Saint Vincent and the Grenadines	120.5	155.7	155.1	28.7%	N/A	99.62	151.8	N/A	0.019	0.018	0.018	-5.3%	0.03	0.034	0.052	73.3%
America-Caribbean	57.85	153.9	152.7	164.0%	2.502	143.2	151.8	5967.1%	3.579	7.738	8.245	130.4%	7.696	16.77	26.67	246.5%
Guatemala	125.6	155.1	153	21.8%	3.508	127.2	151.8	4227.3%	1.603	4.002	5.274	229.0%	2.223	5.689	11.54	419.1%
Honduras	125.1	155.6	153.5	22.7%	4.469	129.3	151.8	3296.7%	0.925	1.469	1.567	69.4%	1.143	1.879	2.466	115.7%
Nicaragua	65.14	154.5	154.5	137.2%	2.6	126.3	151.7	5734.6%	0.433	0.9	0.943	117.8%	0.534	1.173	1.547	189.7%
El Salvador	124.3	156	155.7	25.3%	5.545	133	151.8	2637.6%	0.623	1.258	1.121	79.9%	0.978	1.985	2.629	168.8%
Costa Rica	65.14	154.6	154.6	137.3%	0.3	153	151.8	50500.0%	0.851	1.325	0.986	15.9%	1.339	2.656	3.031	126.4%
Panama	184.7	184.3	183.2	-0.8%	N/A	150	151.8	N/A	0.641	1.527	1.245	94.2%	1.097	3.404	4.66	324.8%
Belize	62.32	152.3	153.1	145.7%	2.506	117.4	151.8	5957.5%	0.046	0.09	0.096	108.7%	0.07	0.153	0.252	260.0%
America-Central	114.8	157.2	155.6	35.5%	3.205	132.1	151.8	4636.3%	5.122	10.57	11.23	119.3%	7.385	16.94	26.13	253.8%
United States of America	89.86	152.9	152.8	70.0%	51.69	152.9	151.7	193.5%	96.7	96.99	107.3	11.0%	278.5	358.3	589.3	111.6%
Mexico	80.55	154.3	154.1	91.3%	8.38	140.5	151.8	1711.5%	13.21	25.21	25.84	95.6%	31.41	61.15	92.4	194.2%
Canada	70.66	148	152.8	116.2%	10.93	144.7	151.8	1288.8%	17.75	18.54	23.47	32.2%	42.22	56.6	87.53	107.3%
America-North	86.17	152.9	153.1	77.7%	38.22	149.2	151.7	296.9%	127.7	140.7	156.6	22.6%	352.1	476	769.3	118.5%
Brazil	104.1	155.8	155.7	49.6%	7.136	138.3	151.8	2027.2%	31.36	54.2	44	40.3%	52.81	108.9	156.2	195.8%
Colombia	93.76	154.5	154.5	64.8%	2.165	128.2	151.8	6911.5%	3.398	11.46	10.61	212.2%	6.751	22.62	35.51	426.0%
Argentina	141.8	156.2	156.2	10.2%	9.682	145.2	151.8	1467.9%	6.729	10.02	10.32	53.4%	10.98	21.7	35.75	225.6%
Peru	100.1	155.2	154.7	54.5%	4.257	133.1	151.8	3465.9%	3.255	10.14	9.882	203.6%	5.438	17.93	28.46	423.4%
Venezuela (Bolivarian Rep. of)	96.2	154.6	154.6	60.7%	15.96	152	151.8	851.1%	4.086	10.83	13.35	226.7%	7.509	22.3	57.35	663.8%
Ecuador	102.2	154.5	152.8	49.5%	2.864	128.6	151.7	5196.8%	1.773	3.19	2.603	46.8%	2.626	4.878	5.775	119.9%
Chile	116	156.1	156	34.5%	4.456	132.5	151.8	3306.6%	3.604	6.027	5.471	51.8%	6.534	14.49	20.94	220.5%
Bolivia (Plurinational State of)	72.3	154.9	154.9	114.2%	0.173	151.8	151.8	87645.7%	0.82	1.88	2.539	209.6%	0.974	2.692	5.815	497.0%
Paraguay	91.64	154.2	152.6	66.5%	1.491	125.6	151.8	10081.1%	0.919	2.595	4.84	426.7%	1.048	2.88	5.582	432.6%
Uruguay	131.7	156.4	156.4	18.8%	5.075	134.5	151.8	2891.1%	1.003	1.406	1.198	19.4%	1.456	2.499	3.467	138.1%
Guyana	73.61	152.4	153.1	108.0%	6.725	132.2	151.8	2157.2%	0.104	0.134	0.171	64.4%	0.123	0.19	0.32	160.2%
Suriname	169.6	168.7	168.2	-0.8%	0.77	137.9	151.8	19614.3%	0.104	0.145	0.139	33.7%	0.146	0.245	0.439	200.7%
America-South	105.6	155.4	155.3	47.1%	6.681	137.9	151.8	2172.1%	57.15	112	105.1	83.9%	96.4	221.3	355.6	268.9%

Infrastructure

	Information and Communication Technology (cont.)								Spending on Infrastructure							
	Mobile Phone Usage				Mobile Broadband Usage				Spending on Core Infrastructure				Total (Core + Other) Infrastructure Spending			
	Subscriptions per 100 persons				Subscriptions per 100 persons				Billions in 2005 dollars				Billions in 2005 dollars			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	64.04	154.4	154.4	141.1%	1.012	139.1	151.8	14900.0%	341.2	336.8	345.1	1.1%	414.2	1026	2083	402.9%
Japan	95.39	153.5	153.1	60.5%	91.53	153.5	151.7	65.7%	30.31	23.6	22.22	-26.7%	124.2	124.4	151	21.6%
Korea, Rep. of	105.4	154.6	154.6	46.7%	95.55	154.2	151.7	58.8%	14.37	9.379	7.867	-45.3%	34.92	51.9	59.02	69.0%
Korea, Dem. People's Rep. of	1.774	93.01	151.5	8440.0%	0.767	93.01	151.5	19652.3%	0.028	0.613	1.276	4457.1%	0.039	0.736	1.738	4356.4%
Taiwan, China	119.9	155.6	155.1	29.4%	76.23	154.2	151.6	98.9%	6.098	4.222	3.32	-45.6%	14.96	21.39	21.05	40.7%
Hong Kong SAR, China	190.2	190	189.1	-0.6%	65.94	154.1	151.5	129.8%	1.463	1.046	0.969	-33.8%	5.869	8.084	9.635	64.2%
Mongolia	91.09	155.4	155.4	70.6%	1.093	132	151.8	13788.4%	0.339	0.799	1.165	243.7%	0.393	1.289	4.266	985.5%
Asia-East	68.35	153.6	154.5	126.0%	12.68	140.1	151.8	1097.2%	393.8	376.5	381.9	-3.0%	594.6	1234	2330	291.9%
India	61.42	154.8	154.8	152.0%	0.101	152.7	151.8	150197.0%	87.79	192	227.6	159.3%	103.7	321.5	739.9	613.5%
Pakistan	59.21	154.6	154.6	161.1%	N/A	146.7	151.8	N/A	13.73	26.1	40.24	193.1%	16.25	34.4	73.83	354.3%
Bangladesh	46.17	154.2	154.2	234.0%	N/A	153.5	151.8	N/A	6.239	17.9	23.07	269.8%	7.307	22.98	47.53	550.5%
Afghanistan	41.39	153.4	151	264.8%	N/A	150.3	151	N/A	1.973	4.873	8.514	331.5%	2.181	5.465	10.76	393.4%
Iran, Islamic Rep. of	91.25	155.4	155.4	70.3%	N/A	148.8	151.8	N/A	17.52	21.45	21.4	22.1%	22.25	44.03	73.76	231.5%
Nepal	30.69	154.3	154.3	402.8%	0.005	150.5	151.8	3035900.0%	1.162	2.68	3.58	208.1%	1.301	3.109	5.274	305.4%
Uzbekistan	76.34	155	155	103.0%	1.321	143.3	151.8	11391.3%	3.456	4.878	6.438	86.3%	3.859	8.42	15.7	306.8%
Sri Lanka	83.22	155.2	155.2	86.5%	8.985	144.8	151.8	1589.5%	3.608	3.463	3.94	9.2%	4.243	6.916	15.17	257.5%
Kazakhstan	123.3	156.1	156.1	26.6%	N/A	150.2	151.8	N/A	3.289	6.217	4.737	44.0%	4.488	12.53	17.09	280.8%
Tajikistan	86.37	155.3	155.3	79.8%	2.888	133	151.8	5156.2%	0.392	1.12	1.822	364.8%	0.441	1.369	3.119	607.3%
Kyrgyz Rep.	91.86	155.5	155.5	69.3%	1.513	113.3	151.8	9933.0%	0.289	0.472	0.886	206.6%	0.326	0.599	1.32	304.9%
Turkmenistan	63.42	154.8	154.8	144.1%	N/A	153.7	151.8	N/A	1.493	5.912	5.416	262.8%	1.753	12	19.34	1003.3%
Bhutan	54.32	153.5	151.6	179.1%	3.055	138.9	151.6	4862.4%	0.159	0.364	0.476	199.4%	0.182	0.475	0.89	389.0%
Maldives	156.5	155.2	151	-3.5%	32.23	153.9	151	368.5%	0.034	0.059	0.033	-2.9%	0.062	0.096	0.112	80.6%
Asia-South Central	61.43	154.7	154.6	151.7%	0.22	151.3	151.8	68900.0%	141.1	287.4	348.1	146.7%	168.4	473.9	1024	508.1%
Indonesia	91.72	155.4	155.4	69.4%	9.317	144.5	151.8	1529.3%	23.91	32.77	39.84	66.6%	29.65	66.06	112.5	279.4%
Philippines	85.67	154.8	153.5	79.2%	13.38	148.1	151.8	1034.5%	7.186	18.72	21.12	193.9%	9.664	26.45	45.49	370.7%
Vietnam	175.3	175.3	175.3	0.0%	0.205	152.4	151.8	73948.8%	15.31	12.35	16.54	8.0%	16.54	19.93	40.07	142.3%
Thailand	100.8	155.7	155.7	54.5%	3.519	131.5	151.8	4213.7%	9.964	12.04	9.384	-5.8%	14.04	24.16	33.17	136.3%
Myanmar	1.238	61.99	151.4	12129.4%	0.006	61.99	151.4	2523233.3%	1.189	7.272	12.77	974.0%	2.135	11.15	29.73	1292.5%
Malaysia	121.3	156.1	155.9	28.5%	22.78	153.7	151.7	565.9%	4.604	7.913	7.597	65.0%	7.995	18.64	30.9	286.5%
Cambodia	57.65	154.6	154.6	168.2%	5.126	140	151.8	2861.4%	0.869	2.204	2.579	196.8%	1.018	3.104	5.591	449.2%
Lao People's Dem. Rep.	64.56	154.8	154.8	139.8%	0.495	154.2	151.8	30566.7%	0.48	1.293	2.62	445.8%	0.54	2.401	8.022	1385.6%
Singapore	143.7	157	156.9	9.2%	112.7	154.2	151.6	34.5%	1.298	2.434	1.585	22.1%	4.774	9.887	11.66	144.2%
Timor-Leste	53.42	153.4	151.3	183.2%	N/A	153.4	151.3	N/A	0.081	0.254	0.645	696.3%	0.092	0.294	0.919	898.9%
Brunei Darussalam	109.1	155.7	155.7	42.7%	58.83	154.2	151.6	157.7%	0.081	0.206	0.173	113.6%	0.282	0.66	0.835	196.1%
Asia-South East	97.21	150.8	157.6	62.1%	8.481	139	151.8	1689.9%	64.96	97.45	114.9	76.9%	86.74	182.7	318.9	267.7%

Infrastructure

	Information and Communication Technology (cont.)								Spending on Infrastructure							
	Mobile Phone Usage				Mobile Broadband Usage				Spending on Core Infrastructure				Total (Core + Other) Infrastructure Spending			
	Subscriptions per 100 persons				Subscriptions per 100 persons				Billions in 2005 dollars				Billions in 2005 dollars			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
Base Case: Countries in Year 2060 Descending Population Sequence																
ASIA with OCEANIA continued																
Turkey	84.9	151.1	152.8	80.0%	16.46	145.1	151.8	822.2%	12.79	19.37	21.52	68.3%	23.91	50.72	81.61	241.3%
Iraq	75.78	155	155	104.5%	N/A	151.6	151.8	N/A	3.062	11.05	16.5	438.9%	3.794	18.73	59.69	1473.3%
Yemen, Rep. of	46.09	154.4	154.4	235.0%	N/A	144.2	151.8	N/A	1.362	4.729	8.421	518.3%	1.748	6.008	12.95	640.8%
Saudi Arabia	187.9	187.9	187.9	0.0%	44.35	154.2	151.7	242.1%	11.04	13.45	13.1	18.7%	18.3	42.01	76.09	315.8%
Syrian Arab Rep.	57.31	154.5	154.5	169.6%	0.548	141.6	151.8	27600.7%	4.572	4.927	7.85	71.7%	5.269	7.746	19.37	267.6%
Jordan	107	154.1	151.5	41.6%	N/A	146.3	151.5	N/A	0.724	2.216	2.846	293.1%	1.05	2.909	5.331	407.7%
Israel	133.1	155.1	155	16.5%	90.62	154.2	151.7	67.4%	2.14	3.435	3.842	79.5%	5.449	11.49	23.05	323.0%
Palestine	45.79	153.4	152.8	233.7%	9.195	126.6	151.8	1550.9%	0.292	0.768	1.073	267.5%	0.403	0.908	1.924	377.4%
Azerbaijan	99.04	155.6	155.6	57.1%	15.74	150.5	151.8	864.4%	2.322	2.16	2.669	14.9%	2.874	4.485	7.837	172.7%
United Arab Emirates	145.5	157.1	157.1	8.0%	70.4	154.2	151.8	115.6%	4.895	3.894	3.599	-26.5%	9.237	16.44	22.97	148.7%
Kuwait	160.8	160.8	160.8	0.0%	61.61	154.2	151.7	146.2%	1.142	2.355	1.539	34.8%	3.01	9.316	11.61	285.7%
Lebanon	68	153.7	151.4	122.6%	N/A	148	151.4	N/A	0.406	0.904	0.623	53.4%	0.996	1.901	2.102	111.0%
Oman	165.5	165.5	165.5	0.0%	80.94	154.2	151.8	87.5%	2.752	1.04	1.133	-58.8%	3.581	3.621	5.647	57.7%
Armenia	125	156.3	156.3	25.0%	2.426	118.7	151.8	6157.2%	0.424	0.553	0.536	26.4%	0.537	0.877	1.429	166.1%
Georgia	73.36	154.8	154.8	111.0%	16.6	151.5	151.8	814.5%	0.581	0.551	0.643	10.7%	0.718	1.029	1.646	129.2%
Qatar	132.4	156.5	156.5	18.2%	35.33	154.2	151.8	329.7%	0.989	0.922	0.717	-27.5%	2.917	7.161	7.564	159.3%
Bahrain	124.2	154.4	154.4	24.3%	89.62	154.2	151.8	69.4%	0.74	0.254	0.261	-64.7%	1.101	0.989	1.291	17.3%
Cyprus	93.7	152.4	153	63.3%	88.7	152.4	151.6	70.9%	0.351	0.202	0.191	-45.6%	0.737	0.728	0.754	2.3%
Asia-West	94.22	157.5	157.7	67.4%	18.55	147.2	151.8	718.3%	50.58	72.78	87.06	72.1%	85.63	187.1	342.9	300.4%
Australia	101	153	153.1	51.6%	80.3	153	151.7	88.9%	11.74	11.55	12.28	4.6%	28	40.65	62.55	123.4%
Papua New Guinea	27.84	153.8	152.9	449.2%	N/A	148	151.8	N/A	0.35	1.387	2.301	557.4%	0.472	1.91	4.564	866.9%
New Zealand	114.9	155.9	155.9	35.7%	83.25	154.2	151.7	82.2%	1.82	1.695	2.082	14.4%	4.176	6.012	10.39	148.8%
Solomon Islands	5.575	95.52	151.3	2613.9%	N/A	95.52	151.3	N/A	0.013	0.093	0.132	915.4%	0.023	0.11	0.17	639.1%
Fiji	116.2	155.4	154.6	33.0%	1.578	124.7	151.8	9519.8%	0.083	0.096	0.11	32.5%	0.14	0.162	0.257	83.6%
Vanuatu	119	155.1	153.5	29.0%	N/A	145.9	151.7	N/A	0.037	0.049	0.063	70.3%	0.047	0.07	0.11	134.0%
Micronesia (Federated States of)	24.78	106.3	151.4	511.0%	N/A	106.3	151.4	N/A	0.004	0.021	0.026	550.0%	0.008	0.027	0.039	387.5%
Tonga	52.18	149.9	151.5	190.3%	N/A	144.9	151.5	N/A	0.007	0.02	0.03	328.6%	0.012	0.027	0.053	341.7%
Samoa	91.43	154	152.1	66.4%	N/A	146	151.8	N/A	0.013	0.026	0.025	92.3%	0.022	0.038	0.051	131.8%
Oceania	87.2	152.2	153.3	75.8%	60.59	149.9	151.7	150.4%	14.06	14.94	17.05	21.3%	32.9	49	78.19	137.7%

Infrastructure

	Information and Communication Technology (cont.)								Spending on Infrastructure							
	Mobile Phone Usage				Mobile Broadband Usage				Spending on Core Infrastructure				Total (Core + Other) Infrastructure Spending			
	Subscriptions per 100 persons				Subscriptions per 100 persons				Billions in 2005 dollars				Billions in 2005 dollars			
Base Case: Countries in Year 2060																
Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	166.3	166.3	166.3	0.0%	65.13	154.2	151.7	132.9%	37.04	35.18	37.88	2.3%	54.98	91.46	138.6	152.1%
Poland	120.2	155.9	155.8	29.6%	35.93	154.1	151.7	322.2%	7.349	6.645	6.002	-18.3%	14.96	22.19	30.62	104.7%
Ukraine	118.7	154.1	154.1	29.8%	5.747	127.4	151.8	2541.4%	4.816	5.197	5.609	16.5%	6.457	7.864	10.9	68.8%
Romania	114.7	156	156	36.0%	30.74	154	151.8	393.8%	3.672	3.408	3.368	-8.3%	5.913	7.012	9.514	60.9%
Czech Rep.	136.6	156.2	155.9	14.1%	38.01	154.1	151.8	299.4%	2.916	2.209	2.243	-23.1%	5.895	6.749	9.561	62.2%
Belarus	107.7	155.9	155.9	44.8%	39.05	154.2	151.8	288.7%	3.943	2.118	2.444	-38.0%	4.707	4.865	6.862	45.8%
Hungary	120.3	155.6	155.6	29.3%	30.27	154	151.8	401.5%	2.06	2.529	1.957	-5.0%	4.233	5.767	6.668	57.5%
Bulgaria	141.2	156.8	156.8	11.0%	35.01	154.1	151.7	333.3%	1.304	1.065	1.125	-13.7%	1.952	2.037	2.452	25.6%
Slovak Rep.	108.5	154	153.2	41.2%	37.17	154	151.7	308.1%	0.885	1.29	0.924	4.4%	2.422	3.786	4.174	72.3%
Moldova, Rep. of	88.58	155.4	155.4	75.4%	4.332	130.7	151.8	3404.2%	0.373	0.331	0.391	4.8%	0.431	0.452	0.698	61.9%
Europe-East	141.9	160.7	160.7	13.2%	44.54	150.1	151.7	240.6%	64.36	59.98	61.95	-3.7%	102	152.2	220	115.7%
United Kingdom	130.2	155.6	154.6	18.7%	42.07	154.1	151.8	260.8%	16.65	10.95	12.85	-22.8%	64.04	72.2	106.3	66.0%
Sweden	113.5	153.8	153.8	35.5%	96.25	153.8	151.7	57.6%	16.64	9.724	9.624	-42.2%	24.76	22.72	30.23	22.1%
Denmark	124.4	156	155.9	25.3%	49.78	154.2	151.7	204.7%	1.508	1.33	1.392	-7.7%	6.704	8.407	12.09	80.3%
Ireland	105.2	153	151.4	43.9%	41.88	153	151.4	261.5%	1.87	1.663	1.57	-16.0%	5.985	6.517	8.07	34.8%
Norway	113.1	153.8	153.8	36.0%	42.22	153.8	151.8	259.5%	3.32	3.451	3.681	10.9%	9.813	14.2	19.15	95.1%
Finland	156.4	158.6	158.6	1.4%	94.94	154.2	151.7	59.8%	1.587	1.625	1.877	18.3%	5.745	7.573	10.79	87.8%
Lithuania	147.2	156.7	156.5	6.3%	6.252	133.5	151.8	2328.0%	0.831	0.988	0.823	-1.0%	1.372	1.925	2.464	79.6%
Latvia	102.4	153.1	152.9	49.3%	11.17	145.6	151.8	1259.0%	0.617	0.652	0.659	6.8%	0.923	1.193	1.562	69.2%
Estonia	123.2	155.1	155.1	25.9%	22.4	153.7	151.8	577.7%	0.881	0.588	0.653	-25.9%	1.157	1.243	1.883	62.7%
Iceland	108.7	153.7	153.7	41.4%	9.776	145.6	151.8	1452.8%	0.639	0.255	0.289	-54.8%	0.971	0.859	1.156	19.1%
Europe-North	127.6	155.4	154.6	21.2%	48.22	153.2	151.8	214.8%	44.54	31.22	33.41	-25.0%	121.5	136.8	193.7	59.4%
Italy	135.4	155.9	155.5	14.8%	56.7	154.1	151.7	167.5%	19.37	10.07	9.908	-48.8%	54.96	48.47	58.31	6.1%
Spain	111.8	153.5	153.5	37.3%	65.46	153.5	151.8	131.9%	22.07	11.22	11.27	-48.9%	45.9	42.22	54.39	18.5%
Greece	108.2	153.2	151.5	40.0%	83.34	153.2	151.5	81.8%	3.098	1.681	1.68	-45.8%	7.993	5.594	6.947	-13.1%
Portugal	142.3	156	155.6	9.3%	59.14	154.1	151.8	156.7%	4.921	1.748	1.789	-63.6%	8.848	5.584	7.146	-19.2%
Serbia	129.2	156.4	156.4	21.1%	9.899	140.8	151.8	1433.5%	1.482	1.007	1.03	-30.5%	2.027	1.898	2.855	40.8%
Croatia	144.5	156.8	156.7	8.4%	43.79	153.6	151.7	246.4%	0.781	0.64	0.601	-23.0%	1.712	1.94	2.373	38.6%
Bosnia and Herzegovina	80.15	154.4	153	90.9%	3.281	121.3	151.8	4526.6%	0.456	0.554	0.436	-4.4%	0.704	1.009	1.185	68.3%
Albania	141.9	156.9	156.9	10.6%	49.76	154.2	151.7	204.9%	0.568	0.501	0.418	-26.4%	0.776	0.998	1.246	60.6%
Macedonia, TFYR	104.5	155.7	155.7	49.0%	28.5	153.9	151.8	432.6%	0.306	0.248	0.246	-19.6%	0.443	0.448	0.568	28.2%
Slovenia	104.5	153.6	153.6	47.0%	30.88	153.6	151.8	391.6%	0.562	0.504	0.496	-11.7%	1.346	1.548	1.919	42.6%
Montenegro	185.3	184.8	183.9	-0.8%	21.14	152.7	151.8	618.1%	0.131	0.101	0.099	-24.4%	0.186	0.175	0.205	10.2%
Malta	109.3	155.3	154.8	41.6%	27.12	153.9	151.8	459.7%	0.177	0.063	0.058	-67.2%	0.311	0.24	0.262	-15.8%
Europe-South	124.7	155.1	154.7	24.1%	56.48	152.4	151.8	168.8%	53.92	28.33	28.03	-48.0%	125.2	110.1	137.4	9.7%
Germany	127	156.2	156.1	22.9%	41.53	154.1	151.8	265.5%	24.04	13.92	13.9	-42.2%	83.83	84.41	108.7	29.7%
France	99.7	153.6	153.4	53.9%	33.59	153.6	151.8	351.9%	18.89	18.67	20.71	9.6%	63.45	75.79	117.6	85.3%
Netherlands	116.2	153.8	153.4	32.0%	27.88	153.8	151.8	444.5%	4.574	2.737	2.906	-36.5%	18.52	19.39	25.46	37.5%
Belgium	113.5	154.8	154.6	36.2%	49.47	154.2	151.7	206.7%	3.178	2.912	3.195	0.5%	11.3	13.2	18.54	64.1%
Switzerland	123.6	155.7	154.2	24.8%	45.7	154.1	151.7	231.9%	1.339	1.342	1.385	3.4%	7.11	7.296	8.441	18.7%
Austria	145.8	157	156.9	7.6%	66.47	154.2	151.7	128.2%	2.974	1.869	1.932	-35.0%	9.626	9.712	11.62	20.7%
Luxembourg	143.3	156.2	154.5	7.8%	51.57	154.1	151.6	194.0%	0.158	0.145	0.142	-10.1%	1.016	1.288	1.721	69.4%
Europe-West	116.9	155	154.7	32.3%	39.45	153.9	151.8	284.8%	55.16	41.6	44.17	-19.9%	194.9	211.1	292.1	49.9%

Infrastructure

Base Case Source: International Futures Model Version 6.68, Nov 2013	Spending on Infrastructure (cont.)															
	Spending on Roads				Spending on Electricity				Spending on Water and Sanitation				Spending on ICT			
	Percent of core spending				Percent of core spending				Percent of core spending				Percent of core spending			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	29.1	27.37	28.52	-2.0%	44.3	43.48	44.79	1.1%	8.761	9.389	9.116	4.1%	17.84	19.76	17.57	-1.5%
Africa	28.29	28.14	30.41	7.5%	25.13	28.2	33.37	32.8%	14.46	10.98	11	-23.9%	32.12	32.68	25.22	-21.5%
Americas	34.93	37.65	35.39	1.3%	42.09	40.59	43.63	3.7%	7.124	7.122	7.45	4.6%	15.85	14.64	13.53	-14.6%
Asia with Oceania	24.89	21.95	24.15	-3.0%	47.89	48.44	49.43	3.2%	9.802	10.18	9.405	-4.1%	17.42	19.42	17.02	-2.3%
Europe	36.99	37.76	37.93	2.5%	40.91	40.78	43.69	6.8%	5.369	7.114	6.443	20.0%	16.73	14.34	11.94	-28.6%
World	29.1	27.37	28.52	-2.0%	44.3	43.48	44.79	1.1%	8.761	9.389	9.116	4.1%	17.84	19.76	17.57	-1.5%
Africa-Eastern	34.82	19.65	24.44	-29.8%	13.23	31.72	40.32	204.8%	15.96	11.4	11.1	-30.5%	35.99	37.23	24.14	-32.9%
Africa-Middle	34.27	32.54	30.6	-10.7%	16.57	25.78	31.28	88.8%	17.66	8.939	10.5	-40.5%	31.5	32.75	27.62	-12.3%
Africa-Northern	21.42	38.7	46.82	118.6%	36.45	24.14	25.46	-30.2%	13.65	11.36	9.779	-28.4%	28.48	25.81	17.94	-37.0%
Africa-Southern	37.89	34.54	30.53	-19.4%	34.51	43.28	52.45	52.0%	11.15	7.12	5.745	-48.5%	16.44	15.06	11.28	-31.4%
Africa-Western	27.21	25.36	27.96	2.8%	14.27	24.81	25.56	79.1%	15.51	12.08	13.04	-15.9%	43.02	37.75	33.44	-22.3%
Africa	28.29	28.14	30.41	7.5%	25.13	28.2	33.37	32.8%	14.46	10.98	11	-23.9%	32.12	32.68	25.22	-21.5%
America-Caribbean	28.86	28.97	27.41	-5.0%	39	40.12	44.73	14.7%	11.13	8.823	8.372	-24.8%	21	22.08	19.49	-7.2%
America-Central	18.04	32.07	31.51	74.7%	34.61	34.42	34.06	-1.6%	12.09	9.536	10.69	-11.6%	35.27	23.97	23.75	-32.7%
America-North	39.14	37.18	38.2	-2.4%	44.33	44.03	44.26	-0.2%	5.202	6.436	6.231	19.8%	11.32	12.35	11.31	-0.1%
America-South	27.42	39.35	32.24	17.6%	37.96	36.88	43.64	15.0%	10.72	7.638	8.848	-17.5%	23.9	16.12	15.27	-36.1%
Americas	34.93	37.65	35.39	1.3%	42.09	40.59	43.63	3.7%	7.124	7.122	7.45	4.6%	15.85	14.64	13.53	-14.6%
Asia-East	21.51	17.2	25.04	16.4%	58.65	59.54	56.1	-4.3%	8.078	8.202	6.827	-15.5%	11.76	15.05	12.03	2.3%
Asia-South Central	31.19	22.99	18.27	-41.4%	28.46	41.42	48.28	69.6%	14.9	12.15	11.82	-20.7%	25.44	23.44	21.63	-15.0%
Asia-South East	25.27	25.76	28.37	12.3%	26.84	35.2	39.93	48.8%	11.62	13.26	11.02	-5.2%	36.28	25.78	20.68	-43.0%
Asia-West	28.54	33.63	34.27	20.1%	47.55	38.28	40.06	-15.8%	7.767	8.834	8.881	14.3%	16.14	19.26	16.78	4.0%
Oceania	41.2	40.11	44.12	7.1%	40.21	39.85	35.15	-12.6%	5.818	8.379	9.657	66.0%	12.78	11.66	11.07	-13.4%
Asia with Oceania	24.89	21.95	24.15	-3.0%	47.89	48.44	49.43	3.2%	9.802	10.18	9.405	-4.1%	17.42	19.42	17.02	-2.3%
Europe-East	39.66	37.18	38.56	-2.8%	29.48	40.2	43.15	46.4%	6.375	8.054	6.882	8.0%	24.48	14.57	11.4	-53.4%
Europe-North	54.48	46.74	43.47	-20.2%	31.05	36.92	41.68	34.2%	3.681	5.032	4.642	26.1%	10.8	11.3	10.21	-5.5%
Europe-South	24.72	35.12	36.95	49.5%	56.19	39.38	40.01	-28.8%	5.993	8.71	8.721	45.5%	13.09	16.79	14.32	9.4%
Europe-West	31.74	33.37	33.38	5.2%	46.79	45.66	48.14	2.9%	5.102	6.213	5.794	13.6%	16.37	14.75	12.68	-22.5%
Europe	36.99	37.76	37.93	2.5%	40.91	40.78	43.69	6.8%	5.369	7.114	6.443	20.0%	16.73	14.34	11.94	-28.6%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Spending on Infrastructure (cont.)															
	Spending on Roads				Spending on Electricity				Spending on Water and Sanitation				Spending on ICT			
	Percent of core spending				Percent of core spending				Percent of core spending				Percent of core spending			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	27.33	21.11	29.18	6.8%	19.63	27.54	28.12	43.3%	32.51	11.05	12.32	-62.1%	20.52	40.3	30.38	48.1%
Tanzania, United Rep. of	30.65	22.28	24.69	-19.4%	9.833	32.12	53.14	440.4%	9.398	10.41	7.411	-21.1%	50.12	35.18	14.76	-70.6%
Uganda	38.71	19.83	26.49	-31.6%	8.09	24.13	22.54	178.6%	15.14	13.56	17.07	12.7%	38.06	42.49	33.89	-11.0%
Kenya	16.61	20.4	24.61	48.2%	15.63	28.73	33.22	112.5%	14.64	10.91	15.09	3.1%	53.13	39.95	27.08	-49.0%
Madagascar	26.26	13.95	14.86	-43.4%	14.84	7.798	9.478	-36.1%	17.78	14.77	14.78	-16.9%	41.12	63.48	60.89	48.1%
Mozambique	30.45	13.29	20.15	-33.8%	22.32	56.38	56.99	155.3%	13.61	8.659	7.726	-43.2%	33.61	21.67	15.13	-55.0%
Malawi	40.19	17.28	19.62	-51.2%	7.963	9.329	18.08	127.1%	27.36	16.39	18.12	-33.8%	24.48	57.01	44.19	80.5%
Zambia	65.66	15.96	20.92	-68.1%	7.241	54.21	63.48	776.7%	9.993	8.451	5.42	-45.8%	17.11	21.38	10.18	-40.5%
Somalia	63.58	19.75	26.53	-58.3%	9.21	8.975	15	62.9%	23.04	19	17.14	-25.6%	4.163	52.27	41.34	893.0%
Rwanda	26.69	23.38	29.29	9.7%	8.494	18.09	20.88	145.8%	20.5	19.14	16.76	-18.2%	44.31	39.39	33.08	-25.3%
Zimbabwe	61.28	35.21	33.75	-44.9%	10.11	23.37	20.25	100.3%	4.193	11.25	14.5	245.8%	24.42	30.17	31.5	29.0%
Burundi	33.18	13.5	15.4	-53.6%	9.661	3.703	9.31	-3.6%	30.79	14.34	19.01	-38.3%	26.37	68.45	56.28	113.4%
Eritrea	31.98	21.69	29.23	-8.6%	33.78	12.88	14.31	-57.6%	25.16	14.5	18.13	-27.9%	9.074	50.93	38.32	322.3%
Comoros	45.6	25.75	24.37	-46.6%	8.226	6.342	13.61	65.5%	19.1	14.5	17.73	-7.2%	27.08	53.41	44.28	63.5%
Djibouti	64.97	34.04	38.69	-40.4%	16.52	19.46	25.75	55.9%	8	7.989	8.628	7.9%	10.51	38.51	26.93	156.2%
Mauritius	13.07	34.36	26.98	106.4%	50.08	40	40.02	-20.1%	9.229	6.257	8.219	-10.9%	27.63	19.38	24.79	-10.3%
Africa-Eastern	34.82	19.65	24.44	-29.8%	13.23	31.72	40.32	204.8%	15.96	11.4	11.1	-30.5%	35.99	37.23	24.14	-32.9%
Congo, Democratic Rep. of	42.63	13.68	16.84	-60.5%	11.17	23.14	30.38	172.0%	24.38	10.19	12.56	-48.5%	21.82	52.98	40.23	84.4%
Angola	29.23	43.22	42.34	44.9%	25.14	32.24	37.65	49.8%	17.02	7.178	7.058	-58.5%	28.61	17.36	12.96	-54.7%
Cameroon	23.27	25.39	27.67	18.9%	15.18	30.91	38.17	151.4%	21.08	8.94	9.56	-54.6%	40.47	34.75	24.6	-39.2%
Chad	45.43	28.52	33.07	-27.2%	7.789	9.654	9.621	23.5%	12.67	12.72	14.85	17.2%	34.11	49.1	42.46	24.5%
Central African Rep.	47.15	25.49	29.88	-36.6%	5.586	8.285	15.04	169.2%	16.07	14.53	17.91	11.4%	31.19	51.69	37.18	19.2%
Congo, Rep. of	30.45	45.75	47.26	55.2%	16.06	14.89	11.4	-29.0%	8.03	11.64	15.06	87.5%	45.47	27.72	26.28	-42.2%
Gabon	35.03	58.84	46.79	33.6%	19.63	20.52	30.43	55.0%	10.73	5.557	8.874	-17.3%	34.61	15.08	13.91	-59.8%
Equatorial Guinea	61.47	80.55	66.42	8.1%	10.92	4.4	6.285	-42.4%	11.21	3.951	8.415	-24.9%	16.4	11.1	18.88	15.1%
São Tomé and Príncipe	44.94	35.75	35.69	-20.6%	7.249	14.51	14.49	99.9%	12.07	11.8	14.97	24.0%	35.74	37.94	34.85	-2.5%
Africa-Middle	34.27	32.54	30.6	-10.7%	16.57	25.78	31.28	88.8%	17.66	8.939	10.5	-40.5%	31.5	32.75	27.62	-12.3%
Egypt	13.43	35.33	27.02	101.2%	36.69	25.25	34.5	-6.0%	15.73	11.91	13.97	-11.2%	34.15	27.51	24.51	-28.2%
Sudan	8.315	34.18	63.34	661.8%	38.14	18.66	19.35	-49.3%	17.77	15.08	6.504	-63.4%	35.77	32.08	10.8	-69.8%
Algeria	28.5	47.04	47.42	66.4%	41.75	22.07	23.44	-43.9%	11.84	8.493	8.321	-29.7%	17.91	22.4	20.82	16.2%
Morocco	27.51	35.2	36.91	34.2%	26.35	25.18	22.65	-14.0%	14.51	12.07	13.92	-4.1%	31.62	27.54	26.52	-16.1%
Tunisia	17.96	37.51	35.74	99.0%	39.51	32.1	34.55	-12.6%	18.37	10.86	10.69	-41.8%	24.16	19.53	19.02	-21.3%
Libya	41.11	53.24	47.9	16.5%	37.35	28.95	28.18	-24.6%	3.881	5.806	8.098	108.7%	17.66	12	15.82	-10.4%
Africa-Northern	21.42	38.7	46.82	118.6%	36.45	24.14	25.46	-30.2%	13.65	11.36	9.779	-28.4%	28.48	25.81	17.94	-37.0%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Spending on Infrastructure (cont.)															
	Spending on Roads				Spending on Electricity				Spending on Water and Sanitation				Spending on ICT			
	Percent of core spending				Percent of core spending				Percent of core spending				Percent of core spending			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	32.56	32.15	27.79	-14.6%	39.09	46.61	56.34	44.1%	11.91	6.982	5.398	-54.7%	16.44	14.26	10.47	-36.3%
Namibia	82.96	51.27	55.77	-32.8%	3.808	27.22	21.61	467.5%	3.088	6.488	7.894	155.6%	10.14	15.02	14.73	45.3%
Lesotho	51.04	31.15	42.94	-15.9%	15.37	18.69	15.78	2.7%	13.99	11.7	10.89	-22.2%	19.6	38.46	30.39	55.1%
Botswana	68.62	66.65	69.91	1.9%	4.898	7.758	6.036	23.2%	6.634	7.503	8.295	25.0%	19.84	18.09	15.76	-20.6%
Swaziland	34.53	41.74	40.56	17.5%	12.44	14.4	21.74	74.8%	17.55	12.42	11.8	-32.8%	35.47	31.45	25.9	-27.0%
Africa-Southern	37.89	34.54	30.53	-19.4%	34.51	43.28	52.45	52.0%	11.15	7.12	5.745	-48.5%	16.44	15.06	11.28	-31.4%
Nigeria	19.61	25.93	27.7	41.3%	17.1	27.56	25.07	46.6%	18.58	12.86	13.62	-26.7%	44.71	33.65	33.6	-24.8%
Niger	22.63	17.35	17.45	-22.9%	8.415	8.271	13.75	63.4%	15.59	9.57	13.25	-15.0%	53.37	64.81	55.55	4.1%
Côte d'Ivoire	27.48	26.18	27.58	0.4%	8.791	24.37	29.36	234.0%	10.52	7.855	10.75	2.2%	53.2	41.6	32.31	-39.3%
Burkina Faso	60.99	31.87	28.83	-52.7%	4.913	11.6	16.67	239.3%	10.26	12.17	15.4	50.1%	23.84	44.36	39.09	64.0%
Ghana	25.85	22.43	29.14	12.7%	21.33	38.3	47.04	120.5%	13.69	11.02	8.626	-37.0%	39.13	28.25	15.19	-61.2%
Mali	44.22	28.98	35.05	-20.7%	5.636	15.39	19.46	245.3%	13.22	13.37	14.66	10.9%	36.92	42.26	30.82	-16.5%
Senegal	16.6	24.04	26.34	58.7%	24.06	18.24	21.07	-12.4%	17.28	9.748	11.35	-34.3%	42.06	47.97	41.25	-1.9%
Guinea	31.89	19.66	25.47	-20.1%	9.039	15.92	21.44	137.2%	13.01	13.2	16.44	26.4%	46.06	51.23	36.66	-20.4%
Benin	22.23	23.14	29.51	32.7%	6.549	12.98	13.35	103.8%	10.18	13.3	15.31	50.4%	61.04	50.58	41.84	-31.5%
Togo	25.22	19.51	24.99	-0.9%	13.5	10.48	12.03	-10.9%	13.12	12.7	15.2	15.9%	48.16	57.32	47.78	-0.8%
Sierra Leone	50.97	30.47	43.69	-14.3%	11.59	17.6	17.29	49.2%	22.59	11.78	13.08	-42.1%	14.85	40.16	25.94	74.7%
Liberia	35.04	13.7	24.23	-30.9%	7.67	34.78	33.48	336.5%	17.67	10.12	11.35	-35.8%	39.62	41.4	30.94	-21.9%
Mauritania	61.06	35.22	35.63	-41.6%	5.964	16.44	16.44	175.7%	6.403	10.39	14.57	127.5%	26.57	37.95	33.37	25.6%
Gambia	22.97	24.19	28.2	22.8%	8.671	11.3	12.65	45.9%	14.67	12.95	15.67	6.8%	53.69	51.57	43.48	-19.0%
Guinea-Bissau	48.02	21.11	23.53	-51.0%	4.328	8.257	15.43	256.5%	13.38	15.54	19.08	42.6%	34.27	55.09	41.96	22.4%
Cape Verde	46.64	44.21	46.09	-1.2%	17.07	22.22	18.78	10.0%	9.89	8.108	10.41	5.3%	26.41	25.47	24.72	-6.4%
Africa-Western	27.21	25.36	27.96	2.8%	14.27	24.81	25.56	79.1%	15.51	12.08	13.04	-15.9%	43.02	37.75	33.44	-22.3%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Spending on Infrastructure (cont.)															
	Spending on Roads				Spending on Electricity				Spending on Water and Sanitation				Spending on ICT			
	Percent of core spending				Percent of core spending				Percent of core spending				Percent of core spending			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	7.501	23.82	22.59	201.2%	21.92	15.37	12.39	-43.5%	14.95	10.39	14.18	-5.2%	55.63	50.43	50.84	-8.6%
Dominican Rep.	23.4	33.65	24.55	4.9%	25.76	41.01	56.36	118.8%	16.58	8.25	6.136	-63.0%	34.26	17.09	12.95	-62.2%
Cuba	22.12	25.02	39.91	80.4%	61.21	38.93	32.7	-46.6%	11.27	13.78	11.25	-0.2%	5.401	22.28	16.13	198.6%
Puerto Rico	42.71	19.33	17.14	-59.9%	34.83	62.35	64.82	86.1%	6.958	4.808	5.67	-18.5%	15.51	13.51	12.36	-20.3%
Jamaica	45.55	30.82	35.49	-22.1%	26.2	36.16	31.01	18.4%	8.453	8.962	8.628	2.1%	19.8	24.05	24.87	25.6%
Trinidad and Tobago	29.88	37.74	33.03	10.5%	34.58	45.89	45.1	30.4%	7.71	4.921	7.232	-6.2%	27.83	11.46	14.65	-47.4%
Bahamas	39.82	58.07	47.79	20.0%	38.95	19.72	26.69	-31.5%	5.677	5.633	6.226	9.7%	15.55	16.58	19.29	24.1%
Barbados	22.79	29.16	31.27	37.2%	48.86	36.71	37.65	-22.9%	7.243	8.853	10.18	40.5%	21.11	25.28	20.9	-1.0%
Saint Lucia	35.76	33.99	36.73	2.7%	43.45	26.83	27.07	-37.7%	6.94	9.454	9.133	31.6%	13.85	29.73	27.06	95.4%
Grenada	46.56	38.61	43.41	-6.8%	15.19	26.89	21.8	43.5%	10.01	10.53	9.944	-0.7%	28.24	23.97	24.84	-12.0%
Saint Vincent and the Grenadines	31.31	30.67	39.52	26.2%	46.89	29.69	24.44	-47.9%	4.309	9.092	11.45	165.7%	17.49	30.55	24.59	40.6%
America-Caribbean	28.86	28.97	27.41	-5.0%	39	40.12	44.73	14.7%	11.13	8.823	8.372	-24.8%	21	22.08	19.49	-7.2%
Guatemala	7.303	28.23	31.47	330.9%	34.95	33.76	34.49	-1.3%	18.21	11.86	11.59	-36.4%	39.54	26.15	22.46	-43.2%
Honduras	9.427	29.73	29.66	214.6%	30.95	28.47	24.91	-19.5%	11.54	10.47	12.82	11.1%	48.08	31.33	32.61	-32.2%
Nicaragua	30.33	26.23	28.24	-6.9%	34.82	27.67	21.9	-37.1%	9.22	11.78	15.49	68.0%	25.63	34.31	34.37	34.1%
El Salvador	11.6	35.89	29.86	157.4%	40.18	31.42	36.4	-9.4%	10.31	8.745	9.063	-12.1%	37.9	23.94	24.67	-34.9%
Costa Rica	40.06	37.49	31.75	-20.7%	39.04	39.76	42.13	7.9%	6.538	6.973	7	7.1%	14.36	15.78	19.13	33.2%
Panama	24.07	39.38	36.41	51.3%	27.96	44.23	45.54	62.9%	8.598	4.14	4.983	-42.0%	39.38	12.25	13.07	-66.8%
Belize	45.19	42.48	49.25	9.0%	29.69	25.87	19.99	-32.7%	11.74	8.724	10.12	-13.8%	13.38	22.92	20.64	54.3%
America-Central	18.04	32.07	31.51	74.7%	34.61	34.42	34.06	-1.6%	12.09	9.536	10.69	-11.6%	35.27	23.97	23.75	-32.7%
United States of America	41.65	36.03	39.35	-5.5%	43.24	46.97	43.19	-0.1%	4.523	6.154	6.407	41.7%	10.59	10.85	11.05	4.3%
Mexico	18.64	35.29	30.47	63.5%	44.19	34.73	44.43	0.5%	13.31	9.332	8.175	-38.6%	23.86	20.65	16.93	-29.0%
Canada	40.78	45.82	41.46	1.7%	50.37	41.29	48.93	-2.9%	2.871	3.972	3.287	14.5%	5.98	8.918	6.32	5.7%
America-North	39.14	37.18	38.2	-2.4%	44.33	44.03	44.26	-0.2%	5.202	6.436	6.231	19.8%	11.32	12.35	11.31	-0.1%
Brazil	30.86	41.52	31.99	3.7%	35.47	34.31	39.86	12.4%	10.25	7.96	11.3	10.2%	23.42	16.21	16.85	-28.1%
Colombia	22.85	39.25	32.6	42.7%	27.86	32.64	39.31	41.1%	18.43	8.382	9.266	-49.7%	30.86	19.72	18.82	-39.0%
Argentina	33.26	41.77	40.44	21.6%	35.49	34.85	37.3	5.1%	7.629	6.696	7.296	-4.4%	23.62	16.69	14.97	-36.6%
Peru	9.318	37.93	32.06	244.1%	37.84	40.94	47.36	25.2%	14.33	6.16	6.274	-56.2%	38.51	14.96	14.3	-62.9%
Venezuela (Bolivarian Rep. of)	15.6	32.72	31.06	99.1%	50.51	46.97	53.89	6.7%	8.969	6.348	4.625	-48.4%	24.92	13.97	10.43	-58.1%
Ecuador	10.56	37.83	30.49	188.7%	50.37	27.6	28.14	-44.1%	17.94	12.72	15.32	-14.6%	21.13	21.85	26.05	23.3%
Chile	15.07	39.93	34.46	128.7%	58.59	40.93	46.69	-20.3%	10.58	7.055	7.088	-33.0%	15.76	12.09	11.77	-25.3%
Bolivia (Plurinational State of)	49.65	34.02	39.13	-21.2%	16.16	26.39	25.85	60.0%	13.19	14.89	14.73	11.7%	21	24.7	20.29	-3.4%
Paraguay	31.24	11.57	8.896	-71.5%	55.22	75.95	82.96	50.2%	4.255	3.276	1.898	-55.4%	9.292	9.207	6.243	-32.8%
Uruguay	52.9	61.1	53.97	2.0%	24.87	24.14	30.65	23.2%	6.243	4.748	5.592	-10.4%	15.98	10.02	9.797	-38.7%
Guyana	38.93	28.31	33.58	-13.7%	29.81	31.31	40.32	35.3%	17.92	19.4	14.05	-21.6%	13.34	20.98	12.05	-9.7%
Suriname	40.77	41.8	47.43	16.3%	15.68	37.94	33.57	114.1%	12.29	6.852	7.898	-35.7%	31.26	13.41	11.11	-64.5%
America-South	27.42	39.35	32.24	17.6%	37.96	36.88	43.64	15.0%	10.72	7.638	8.848	-17.5%	23.9	16.12	15.27	-36.1%

Infrastructure

	Spending on Infrastructure (cont.)															
	Spending on Roads				Spending on Electricity				Spending on Water and Sanitation				Spending on ICT			
	Percent of core spending				Percent of core spending				Percent of core spending				Percent of core spending			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
Base Case: Countries in Year 2060 Descending Population Sequence																
ASIA with OCEANIA																
China	21.58	16.09	24.86	15.2%	59.55	60.7	56.67	-4.8%	8.535	8.368	6.815	-20.2%	10.33	14.84	11.66	12.9%
Japan	30	31.56	31.79	6.0%	45.79	46.9	48.83	6.6%	5.147	5.95	5.85	13.7%	19.07	15.59	13.53	-29.1%
Korea, Rep. of	8.089	22	18.41	127.6%	64.41	53.08	57.58	-10.6%	4.456	7.89	7.769	74.3%	23.04	17.03	16.24	-29.5%
Korea, Dem. People's Rep. of	12.63	21.61	22.66	79.4%	40.03	22.85	22.51	-43.8%	41.94	19.73	21.18	-49.5%	5.398	35.82	33.65	523.4%
Taiwan, China	10.25	12.9	15.27	49.0%	61.36	63.15	60.72	-1.0%	5.625	5.735	5.876	4.5%	22.77	18.22	18.13	-20.4%
Hong Kong SAR, China	1.524	6.432	3.712	143.6%	57.39	55.33	59.57	3.8%	7.425	10.33	8.747	17.8%	33.66	27.9	27.98	-16.9%
Mongolia	57.1	39.62	43.95	-23.0%	10.83	35.31	38.33	253.9%	7.951	9.696	8.062	1.4%	24.12	15.38	9.656	-60.0%
Asia-East	21.51	17.2	25.04	16.4%	58.65	59.54	56.1	-4.3%	8.078	8.202	6.827	-15.5%	11.76	15.05	12.03	2.3%
India	31.33	21.86	15.68	-50.0%	30.28	45	53.07	75.3%	12.4	11.61	10.95	-11.7%	25.99	21.53	20.3	-21.9%
Pakistan	21.03	17.91	19.7	-6.3%	17.6	24.78	34.13	93.9%	33.93	17.62	17.36	-48.8%	27.44	39.69	28.81	5.0%
Bangladesh	16.69	21.37	9.71	-41.8%	25.96	34.24	49.72	91.5%	22.55	13.73	13.18	-41.6%	34.8	30.66	27.38	-21.3%
Afghanistan	41.35	22.75	28.84	-30.3%	7.393	10.91	11.92	61.2%	21.19	14.32	12.4	-41.5%	30.06	52.02	46.83	55.8%
Iran, Islamic Rep. of	25.7	30.68	30.51	18.7%	42.2	42.73	46.78	10.9%	12.13	11.16	9.692	-20.1%	19.97	15.42	13.02	-34.8%
Nepal	21.3	18.48	21.57	1.3%	24.01	18.7	19.64	-18.2%	19.89	16.09	19.14	-3.8%	34.8	46.73	39.64	13.9%
Uzbekistan	55.06	24.35	32.24	-41.4%	10.02	38.6	37.51	274.4%	10.97	14.9	13.38	22.0%	23.95	22.15	16.88	-29.5%
Sri Lanka	59.27	28.11	24.44	-58.8%	10.95	34.75	45.76	317.9%	6.918	11.45	10.71	54.8%	22.86	25.68	19.08	-16.5%
Kazakhstan	48.98	48.54	47.97	-2.1%	19.49	35.41	32.38	66.1%	12.27	7.529	10.16	-17.2%	19.27	8.527	9.496	-50.7%
Tajikistan	60.51	13.07	23.43	-61.3%	13.77	59.16	51.61	274.8%	8.93	9.323	10.03	12.3%	16.79	18.45	14.94	-11.0%
Kyrgyz Rep.	63	27.43	36.27	-42.4%	11.79	26.44	28.47	141.5%	9.535	18.72	16.17	69.6%	15.67	27.41	19.09	21.8%
Turkmenistan	60.4	32.15	34.06	-43.6%	10.48	58.96	56.25	436.7%	13.74	4.6	5.01	-63.5%	15.39	4.29	4.684	-69.6%
Bhutan	34.08	13.27	18.36	-46.1%	61.86	81.23	75.45	22.0%	1.378	1.623	1.951	41.6%	2.675	3.875	4.236	58.4%
Maldives	4.841	44.04	27.85	475.3%	28.21	26.22	22.19	-21.3%	12.9	6.947	11.87	-8.0%	54.05	22.8	38.08	-29.5%
Asia-South Central	31.19	22.99	18.27	-41.4%	28.46	41.42	48.28	69.6%	14.9	12.15	11.82	-20.7%	25.44	23.44	21.63	-15.0%
Indonesia	36.72	23.4	27.55	-25.0%	19.45	33.48	39.98	105.6%	9.077	14.58	11.18	23.2%	34.76	28.54	21.29	-38.8%
Philippines	20.64	21.38	24.29	17.7%	19.31	39.76	41.3	113.9%	20.71	10.75	9.92	-52.1%	39.33	28.12	24.49	-37.7%
Vietnam	19.64	18.5	26.6	35.4%	18.88	31.78	38.66	104.8%	7.541	18.59	13.69	81.5%	53.94	31.13	21.05	-61.0%
Thailand	10.02	40.71	31.84	217.8%	56.87	24.62	29.37	-48.4%	14.18	13.98	17.85	25.9%	18.93	20.69	20.94	10.6%
Myanmar	15.02	28.38	33.67	124.2%	24.43	34.16	42.25	72.9%	57.91	15.55	8.628	-85.1%	2.65	21.9	15.45	483.0%
Malaysia	34.15	36.18	37.7	10.4%	29.86	39.39	37.16	24.4%	8.646	7.08	7.061	-18.3%	27.35	17.35	18.08	-33.9%
Cambodia	21.72	34.87	39.39	81.4%	16.87	22.93	22.62	34.1%	13.82	10.37	9.901	-28.4%	47.59	31.83	28.09	-41.0%
Lao People's Dem. Rep.	26.4	27.75	23.76	-10.0%	48.38	47.44	60.78	25.6%	8.73	9.826	5.898	-32.4%	16.49	14.99	9.562	-42.0%
Singapore	2.635	1.268	1.617	-38.6%	57.93	86.97	81.76	41.1%	4.48	3.028	4.065	-9.3%	34.95	8.735	12.56	-64.1%
Timor-Leste	22.19	20.71	26.96	21.5%	20.72	39.63	48.52	134.2%	13.94	10.06	7.557	-45.8%	43.14	29.6	16.97	-60.7%
Brunei Darussalam	37.58	54.2	47.63	26.7%	34.14	32.32	36	5.4%	5.752	3.482	4.503	-21.7%	22.54	9.995	11.87	-47.3%
Asia-South East	25.27	25.76	28.37	12.3%	26.84	35.2	39.93	48.8%	11.62	13.26	11.02	-5.2%	36.28	25.78	20.68	-43.0%

Infrastructure

Base Case: Countries in Year 2060 Descending Population Sequence	Spending on Infrastructure (cont.)															
	Spending on Roads				Spending on Electricity				Spending on Water and Sanitation				Spending on ICT			
	Percent of core spending				Percent of core spending				Percent of core spending				Percent of core spending			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	35.8	27.45	29.74	-16.9%	40.4	45.18	49.09	21.5%	11.38	8.384	7.318	-35.7%	12.41	18.99	13.85	11.6%
Iraq	15.88	37.37	37.26	134.6%	39.93	26.14	32.98	-17.4%	17.86	11.47	11.25	-37.0%	26.33	25.02	18.52	-29.7%
Yemen, Rep. of	30.29	27.55	27.05	-10.7%	17.94	16.5	22.81	27.1%	16.61	12.79	14.79	-11.0%	35.15	43.16	35.35	0.6%
Saudi Arabia	12.79	42.84	40	212.7%	62.49	39.08	41.96	-32.9%	4.107	7.086	6.566	59.9%	20.61	11	11.47	-44.3%
Syrian Arab Rep.	64.93	31.82	48.37	-25.5%	15.37	26.42	24.24	57.7%	8.697	14.07	10.09	16.0%	11	27.69	17.3	57.3%
Jordan	10.34	33.61	30.36	193.6%	57.3	38.78	45.3	-20.9%	12.85	7.916	7.718	-39.9%	19.52	19.69	16.62	-14.9%
Israel	9.311	18.89	9.531	2.4%	61.17	62.86	72.79	19.0%	5.328	6.226	5.811	9.1%	24.2	12.02	11.87	-51.0%
Palestine	40.56	26.81	21.29	-47.5%	10.42	13.65	15.81	51.7%	18.13	13.71	18.61	2.6%	30.89	45.83	44.3	43.4%
Azerbaijan	55.86	24.74	29.14	-47.8%	16.45	41.82	46.01	179.7%	9.471	14.82	11.65	23.0%	18.23	18.62	13.21	-27.5%
United Arab Emirates	0.725	51.55	49.94	6788.3%	91.79	40.76	42.59	-53.6%	1.48	2.39	2.248	51.9%	6.003	5.3	5.227	-12.9%
Kuwait	9.947	24.65	20.17	102.8%	69.91	64.2	61.4	-12.2%	3.336	3.029	5.275	58.1%	16.81	8.119	13.15	-21.8%
Lebanon	35.11	38.43	28.94	-17.6%	25.46	35.09	39.16	53.8%	10.6	6.993	8.355	-21.2%	28.82	19.49	23.54	-18.3%
Oman	66.34	54.94	57.12	-13.9%	22.06	25.63	25.64	16.2%	1.886	5.441	4.95	162.5%	9.708	13.99	12.29	26.6%
Armenia	23.79	37.53	41.57	74.7%	28.23	28.26	28.01	-0.8%	11.73	11.85	12.46	6.2%	36.25	22.36	17.96	-50.5%
Georgia	37.42	33.41	45.81	22.4%	35	33.57	29.34	-16.2%	9.349	13.34	11.16	19.4%	18.23	19.68	13.69	-24.9%
Qatar	32.08	26.63	23.25	-27.5%	54.29	64.59	67.39	24.1%	3.527	2.049	1.93	-45.3%	10.1	6.737	7.431	-26.4%
Bahrain	8.652	14.92	17.13	98.0%	82.63	64.18	63.46	-23.2%	1.543	5.44	5.039	226.6%	7.179	15.46	14.37	100.2%
Cyprus	21.11	40.54	41.07	94.6%	58.37	35.83	36.77	-37.0%	3.742	8.036	8.091	116.2%	16.78	15.6	14.06	-16.2%
Asia-West	28.54	33.63	34.27	20.1%	47.55	38.28	40.06	-15.8%	7.767	8.834	8.881	14.3%	16.14	19.26	16.78	4.0%
Australia	42.53	40.96	46.67	9.7%	41.83	41.68	34.28	-18.0%	4.674	8.366	10.32	120.8%	10.97	8.999	8.727	-20.4%
Papua New Guinea	28.6	36.72	41.2	44.1%	22.82	23.18	27.06	18.6%	9.751	9.272	9.122	-6.5%	38.83	30.82	22.62	-41.7%
New Zealand	36.05	36.85	32.96	-8.6%	35.31	45.18	52.64	49.1%	12.18	7.768	6.19	-49.2%	16.45	10.2	8.207	-50.1%
Solomon Islands	50.03	45.76	37.62	-24.8%	16.62	10.76	11.35	-31.7%	21.16	7.849	10.35	-51.1%	12.19	35.63	40.69	233.8%
Fiji	25.25	37.84	41.22	63.2%	18.32	22.71	26.82	46.4%	5.816	7.163	8.248	41.8%	50.62	32.29	23.72	-53.1%
Vanuatu	29.38	43.5	41.71	42.0%	5.376	12.97	11.32	110.6%	10.44	10.6	14.43	38.2%	54.81	32.93	32.54	-40.6%
Micronesia (Federated States of)	25.58	40.36	36.78	43.8%	28.64	18.77	16.5	-42.4%	25.92	10.32	12.79	-50.7%	19.86	30.55	33.93	70.8%
Tonga	47.82	33.08	43.19	-9.7%	13.13	21.72	18.47	40.7%	7.419	9.644	9.9	33.4%	31.63	35.55	28.44	-10.1%
Samoa	21.03	46.27	48.66	131.4%	16.68	19.19	16.05	-3.8%	6.533	6.375	7.743	18.5%	55.75	28.17	27.54	-50.6%
Oceania	41.2	40.11	44.12	7.1%	40.21	39.85	35.15	-12.6%	5.818	8.379	9.657	66.0%	12.78	11.66	11.07	-13.4%

Infrastructure

	Spending on Infrastructure (cont.)															
	Spending on Roads				Spending on Electricity				Spending on Water and Sanitation				Spending on ICT			
	Percent of core spending				Percent of core spending				Percent of core spending				Percent of core spending			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	37.16	37.86	38.31	3.1%	30.26	42.18	46.73	54.4%	4.908	7.608	5.603	14.2%	27.68	12.35	9.363	-66.2%
Poland	46.96	38.77	41.92	-10.7%	26.09	37.81	34.88	33.7%	5.6	5.856	7.24	29.3%	21.36	17.57	15.96	-25.3%
Ukraine	21.93	21.19	30.95	41.1%	46.25	41.77	41	-11.4%	12.62	13.29	11.62	-7.9%	19.21	23.75	16.43	-14.5%
Romania	34.15	37.87	41.03	20.1%	26.99	28.78	28.03	3.9%	12.59	14.99	16.09	27.8%	26.27	18.36	14.84	-43.5%
Czech Rep.	43.58	39.99	41.38	-5.0%	36.32	39.59	40.35	11.1%	5.713	5.21	5.027	-12.0%	14.39	15.21	13.24	-8.0%
Belarus	70.21	34.05	31.82	-54.7%	9.462	47.81	54.44	475.4%	6.388	5.436	4.13	-35.3%	13.95	12.71	9.61	-31.1%
Hungary	53.27	65.45	61.43	15.3%	20.93	19.11	21.78	4.1%	7.396	4.193	5.2	-29.7%	18.41	11.24	11.59	-37.0%
Bulgaria	37.89	28.83	30.57	-19.3%	28.54	43.74	48.88	71.3%	6.917	8.605	6.689	-3.3%	26.65	18.82	13.86	-48.0%
Slovak Rep.	30	27.58	33.72	12.4%	34.34	53.9	44.78	30.4%	10.17	5.564	6.514	-35.9%	25.48	12.96	14.98	-41.2%
Moldova, Rep. of	28.36	25.98	45.89	61.8%	24.64	22.01	16.95	-31.2%	14.02	19.2	15.61	11.3%	32.98	32.8	21.55	-34.7%
Europe-East	39.66	37.18	38.56	-2.8%	29.48	40.2	43.15	46.4%	6.375	8.054	6.882	8.0%	24.48	14.57	11.4	-53.4%
United Kingdom	36.7	26.14	22.14	-39.7%	39.85	45.78	54.43	36.6%	5.762	7.734	6.455	12.0%	17.7	20.35	16.98	-4.1%
Sweden	84.06	75.89	72.08	-14.3%	11.37	19.23	23.2	104.0%	0.865	1.553	1.449	67.5%	3.699	3.326	3.27	-11.6%
Denmark	39.06	39.09	41.85	7.1%	35.06	38.07	36.24	3.4%	7.146	8.252	8.072	13.0%	18.74	14.58	13.84	-26.1%
Ireland	34.35	43.94	44.4	29.3%	48.58	31.31	29.31	-39.7%	10.03	13.22	14.2	41.6%	7.043	11.53	12.09	71.7%
Norway	23.88	24.69	28.74	20.4%	67.16	67.5	63.99	-4.7%	2.365	2.401	2.218	-6.2%	6.591	5.412	5.05	-23.4%
Finland	31	39.68	44.55	43.7%	38.12	44.4	42.48	11.4%	4.902	4.63	3.947	-19.5%	25.98	11.29	9.023	-65.3%
Lithuania	56.04	65.85	60.97	8.8%	29.86	20.3	24.46	-18.1%	3.967	3.21	4.696	18.4%	10.14	10.64	9.872	-2.6%
Latvia	71.86	71.58	73.13	1.8%	14.6	14.23	14.35	-1.7%	3.607	3.652	4.211	16.7%	9.936	10.54	8.307	-16.4%
Estonia	70.34	69.83	74.85	6.4%	22.5	21.5	18.6	-17.3%	1.966	2.626	1.869	-4.9%	5.196	6.038	4.678	-10.0%
Iceland	19.16	30.34	33.67	75.7%	77.32	58.51	57.77	-25.3%	1.876	5.789	4.434	136.4%	1.641	5.36	4.123	151.2%
Europe-North	54.48	46.74	43.47	-20.2%	31.05	36.92	41.68	34.2%	3.681	5.032	4.642	26.1%	10.8	11.3	10.21	-5.5%
Italy	19.85	30.22	31.57	59.0%	59.91	42.08	43.57	-27.3%	8.303	9.401	9.216	11.0%	11.93	18.3	15.64	31.1%
Spain	22.02	38.86	41.27	87.4%	62.86	40.48	40.07	-36.3%	4.018	7.398	7.29	81.4%	11.1	13.26	11.37	2.4%
Greece	25.58	40.13	42.02	64.3%	42.03	24.9	25.65	-39.0%	9.033	14.31	13.6	50.6%	23.36	20.66	18.73	-19.8%
Portugal	36.26	33.36	32.49	-10.4%	49.57	40.4	44.2	-10.8%	3.407	7.753	8.538	150.6%	10.76	18.49	14.77	37.3%
Serbia	53.23	29.17	35.33	-33.6%	23.03	39.69	38.57	67.5%	4.719	8.494	9.351	98.2%	19.02	22.64	16.75	-11.9%
Croatia	41.78	42.47	42.66	2.1%	24.12	28.89	30.03	24.5%	8.823	8.355	9.573	8.5%	25.28	20.28	17.73	-29.9%
Bosnia and Herzegovina	32.39	33.04	31.31	-3.3%	39.73	36.58	39.6	-0.3%	5.694	6.351	6.936	21.8%	22.18	24.03	22.16	-0.1%
Albania	34.59	33.4	32.98	-4.7%	16.1	31.45	26.89	67.0%	10.66	14.68	18.33	72.0%	38.65	20.46	21.8	-43.6%
Macedonia, TFYR	38.43	31.69	38.34	-0.2%	22.97	27.13	25.37	10.4%	7.851	14.86	14.14	80.1%	30.76	26.32	22.15	-28.0%
Slovenia	51.85	49.38	51.04	-1.6%	27.01	34.21	33.85	25.3%	5.099	3.986	4.604	-9.7%	16.04	12.42	10.5	-34.5%
Montenegro	41.41	27.88	31.69	-23.5%	25.37	43.66	42.1	65.9%	4.121	6.312	6.431	56.1%	29.09	22.14	19.77	-32.0%
Malta	71.27	29.83	30.38	-57.4%	12.84	42.52	44.57	247.1%	3.219	6.913	6.547	103.4%	12.67	20.73	18.5	46.0%
Europe-South	24.72	35.12	36.95	49.5%	56.19	39.38	40.01	-28.8%	5.993	8.71	8.721	45.5%	13.09	16.79	14.32	9.4%
Germany	19.52	28.91	31.18	59.7%	58.56	45.45	46.31	-20.9%	4.667	7.45	6.716	43.9%	17.25	18.19	15.79	-8.5%
France	50.92	36.98	35.52	-30.2%	28.69	46.04	49.21	71.5%	5.273	5.254	5.17	-2.0%	15.11	11.72	10.1	-33.2%
Netherlands	22.69	30.14	28.89	27.3%	56.88	40	44.21	-22.3%	6.583	9.037	8.495	29.0%	13.85	20.82	18.4	32.9%
Belgium	32.14	34.9	30.03	-6.6%	43.61	47.89	54.72	25.5%	6.136	4.574	4.145	-32.4%	18.12	12.64	11.11	-38.7%
Switzerland	23.3	29.36	31.4	34.8%	47.56	51.28	50.7	6.6%	5.601	5.001	4.759	-15.0%	23.54	14.36	13.14	-44.2%
Austria	26.31	35.21	40.05	52.2%	53.76	44.93	43.62	-18.9%	3.973	5.795	5.075	27.7%	15.95	14.07	11.26	-29.4%
Luxembourg	25.87	39.5	33.8	30.7%	52.06	36.89	38.95	-25.2%	4.224	7.292	8.132	92.5%	17.85	16.32	19.12	7.1%
Europe-West	31.74	33.37	33.38	5.2%	46.79	45.66	48.14	2.9%	5.102	6.213	5.794	13.6%	16.37	14.75	12.68	-22.5%

Governance

Base Case Source: International Futures Model Version 6.68, Nov 2013	Security								Capacity							
	Internal War Occurrence				IFs Country Performance Risk Index				Corruption Perceptions Index				Government Effectiveness			
	Probability: 0–1				Index range: 0–1				Index range: 1–10 (higher is less corrupt)				Index range: 0–5			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	0.143	0.09	0.062	-56.6%	0.309	0.267	0.239	-22.7%	4.003	4.95	5.838	45.8%	2.438	2.856	3.215	31.9%
Africa	0.206	0.125	0.086	-58.3%	0.386	0.334	0.291	-24.6%	2.856	3.436	4.135	44.8%	1.718	2.225	2.695	56.9%
Americas	0.06	0.022	0.02	-66.7%	0.274	0.238	0.218	-20.4%	4.197	5.139	6.088	45.1%	2.56	2.97	3.295	28.7%
Asia with Oceania	0.204	0.144	0.093	-54.4%	0.32	0.273	0.244	-23.8%	3.8	4.957	5.94	56.3%	2.424	2.87	3.224	33.0%
Europe	0.035	0.013	0.014	-60.0%	0.216	0.192	0.179	-17.1%	5.795	6.892	7.804	34.7%	3.365	3.619	3.857	14.6%
World	0.143	0.09	0.062	-56.6%	0.309	0.267	0.239	-22.7%	4.003	4.95	5.838	45.8%	2.438	2.856	3.215	31.9%
Africa-Eastern	0.238	0.146	0.123	-48.3%	0.39	0.342	0.295	-24.4%	2.769	3.153	3.822	38.0%	1.703	2.164	2.668	56.7%
Africa-Middle	0.278	0.158	0.1	-64.0%	0.423	0.349	0.305	-27.9%	2.189	3.452	4.361	99.2%	1.248	1.98	2.463	97.4%
Africa-Northern	0.351	0.273	0.209	-40.5%	0.362	0.318	0.287	-20.7%	2.917	3.686	4.335	48.6%	1.91	2.347	2.81	47.1%
Africa-Southern	0.061	0.018	0	-100.0%	0.336	0.279	0.238	-29.2%	4.28	5.233	6.424	50.1%	2.531	3.01	3.385	33.7%
Africa-Western	0.126	0.064	0.022	-82.5%	0.387	0.34	0.298	-23.0%	2.85	3.056	3.53	23.9%	1.669	2.133	2.594	55.4%
Africa	0.206	0.125	0.086	-58.3%	0.386	0.334	0.291	-24.6%	2.856	3.436	4.135	44.8%	1.718	2.225	2.695	56.9%
America-Caribbean	0.001	0.001	0.006	500.0%	0.273	0.24	0.222	-18.7%	4.818	5.462	6.065	25.9%	2.726	3.077	3.334	22.3%
America-Central	0.058	0	0	-100.0%	0.286	0.249	0.229	-19.9%	3.357	4.332	5.241	56.1%	2.17	2.646	3.043	40.2%
America-North	0.067	0	0	-100.0%	0.211	0.183	0.167	-20.9%	6.367	7.658	8.67	36.2%	3.656	3.855	4.071	11.4%
America-South	0.113	0.06	0.05	-55.8%	0.284	0.243	0.221	-22.2%	3.575	4.683	5.959	66.7%	2.361	2.841	3.213	36.1%
Americas	0.06	0.022	0.02	-66.7%	0.274	0.238	0.218	-20.4%	4.197	5.139	6.088	45.1%	2.56	2.97	3.295	28.7%
Asia-East	0.058	0	0	-100.0%	0.258	0.217	0.192	-25.6%	4.943	6.559	8.233	66.6%	2.952	3.382	3.678	24.6%
Asia-South Central	0.338	0.258	0.171	-49.4%	0.364	0.305	0.269	-26.1%	2.514	3.665	4.646	84.8%	1.903	2.481	2.862	50.4%
Asia-South East	0.269	0.209	0.134	-50.2%	0.328	0.269	0.236	-28.0%	3.518	4.575	5.753	63.5%	2.415	2.958	3.406	41.0%
Asia-West	0.201	0.127	0.09	-55.2%	0.316	0.274	0.248	-21.5%	4.187	5.601	6.52	55.7%	2.601	2.969	3.288	26.4%
Oceania	0.04	0.033	0	-100.0%	0.3	0.272	0.248	-17.3%	4.484	4.898	5.242	16.9%	2.478	2.774	3.085	24.5%
Asia with Oceania	0.204	0.144	0.093	-54.4%	0.32	0.273	0.244	-23.8%	3.8	4.957	5.94	56.3%	2.424	2.87	3.224	33.0%
Europe-East	0.076	0.05	0.055	-27.6%	0.253	0.221	0.204	-19.4%	3.61	4.818	6.092	68.8%	2.517	2.92	3.304	31.3%
Europe-North	0.001	0	0	-100.0%	0.187	0.161	0.149	-20.3%	7.62	8.859	9.4	23.4%	4.028	4.204	4.337	7.7%
Europe-South	0.06	0.015	0.014	-76.7%	0.234	0.214	0.202	-13.7%	4.45	5.326	6.418	44.2%	2.89	3.197	3.499	21.1%
Europe-West	0.001	0	0	-100.0%	0.18	0.159	0.146	-18.9%	7.957	9.196	10	25.7%	4.188	4.282	4.412	5.3%
Europe	0.035	0.013	0.014	-60.0%	0.216	0.192	0.179	-17.1%	5.795	6.892	7.804	34.7%	3.365	3.619	3.857	14.6%

Governance

Base Case: Countries in Year 2060 Descending Population Sequence	Security								Capacity							
	Internal War Occurrence				IFs Country Performance Risk Index				Corruption Perceptions Index				Government Effectiveness			
	Probability: 0–1				Index range: 0–1				Index range: 1–10 (higher is less corrupt)				Index range: 0–5			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	0.35	0.057	0	-100.0%	0.386	0.309	0.256	-33.7%	2.7	3.32	4.209	55.9%	2.15	2.69	3.195	48.6%
Tanzania, United Rep. of	0.001	0	0	-100.0%	0.362	0.318	0.247	-31.8%	2.7	3.2	4.998	85.1%	1.996	2.561	3.426	71.6%
Uganda	0.8	0.683	0.494	-38.3%	0.393	0.339	0.285	-27.5%	2.5	3.031	4.088	63.5%	1.984	2.531	3.046	53.5%
Kenya	0.15	0	0	-100.0%	0.343	0.303	0.272	-20.7%	2.1	2.575	3.262	55.3%	1.97	2.356	2.854	44.9%
Madagascar	0.001	0	0	-100.0%	0.389	0.369	0.353	-9.3%	2.6	2.806	3.017	16.0%	1.662	1.736	1.817	9.3%
Mozambique	0.1	0	0	-100.0%	0.387	0.319	0.268	-30.7%	2.7	3.146	4.096	51.7%	1.976	2.689	3.133	58.6%
Malawi	0.001	0	0	-100.0%	0.368	0.34	0.297	-19.3%	3.4	3.299	3.43	0.9%	2.068	2.248	2.632	27.3%
Zambia	0.001	0	0	-100.0%	0.368	0.316	0.256	-30.4%	3	3.453	4.917	63.9%	1.698	2.474	3.289	93.7%
Somalia	1	0.727	0.751	-24.9%	0.578	0.495	0.41	-29.1%	1.1	1.427	1.997	81.5%	0.259	0.857	1.737	570.7%
Rwanda	0.45	0.329	0.24	-46.7%	0.423	0.373	0.316	-25.3%	4	3.961	4.344	8.6%	2.447	2.869	3.269	33.6%
Zimbabwe	0.001	0	0	-100.0%	0.373	0.321	0.284	-23.9%	2.4	3.02	3.592	49.7%	0.963	1.625	2.198	128.2%
Burundi	0.75	0.539	0.482	-35.7%	0.438	0.385	0.342	-21.9%	1.8	2.342	2.658	47.7%	1.408	1.687	2.006	42.5%
Eritrea	0.001	0	0	-100.0%	0.44	0.382	0.319	-27.5%	2.6	2.867	3.379	30.0%	1.132	1.592	2.229	96.9%
Comoros	0.001	0.001	0	-100.0%	0.368	0.359	0.327	-11.1%	2.1	2.377	2.726	29.8%	0.769	1.188	1.693	120.2%
Djibouti	0.2	0	0	-100.0%	0.387	0.329	0.285	-26.4%	3.2	3.455	3.776	18.0%	1.51	1.97	2.48	64.2%
Mauritius	0.001	0	0	-100.0%	0.238	0.211	0.199	-16.4%	5.4	6.17	6.664	23.4%	3.263	3.546	3.692	13.1%
Africa-Eastern	0.238	0.146	0.123	-48.3%	0.39	0.342	0.295	-24.4%	2.769	3.153	3.822	38.0%	1.703	2.164	2.668	56.7%
Congo, Democratic Rep. of	0.95	0.817	0.713	-24.9%	0.51	0.442	0.391	-23.3%	2	2.165	2.463	23.2%	0.779	1.334	1.974	153.4%
Angola	0.6	0.299	0.105	-82.5%	0.498	0.346	0.281	-43.6%	1.9	3.94	6.501	242.2%	1.377	2.807	3.379	145.4%
Cameroon	0.001	0	0	-100.0%	0.368	0.334	0.293	-20.4%	2.2	2.645	3.413	55.1%	1.616	2.021	2.56	58.4%
Chad	0.5	0.209	0.08	-84.0%	0.464	0.392	0.338	-27.2%	1.7	2.143	2.693	58.4%	1	1.624	2.012	101.2%
Central African Rep.	0.3	0.044	0	-100.0%	0.443	0.388	0.339	-23.5%	2.1	2.378	2.787	32.7%	1.041	1.552	2.186	110.0%
Congo, Rep. of	0.15	0.007	0	-100.0%	0.444	0.348	0.307	-30.9%	2.1	2.827	3.537	68.4%	1.265	1.991	2.432	92.3%
Gabon	0.001	0	0	-100.0%	0.349	0.294	0.263	-24.6%	2.8	4.179	5.576	99.1%	1.647	2.262	2.483	50.8%
Equatorial Guinea	0.001	0.044	0	-100.0%	0.38	0.282	0.242	-36.3%	1.9	7.525	8.759	361.0%	0.822	2.194	2.784	238.7%
São Tomé and Príncipe	0.001	0	0	-100.0%	0.347	0.315	0.29	-16.4%	3	3.262	3.519	17.3%	1.687	2.034	2.354	39.5%
Africa-Middle	0.278	0.158	0.1	-64.0%	0.423	0.349	0.305	-27.9%	2.189	3.452	4.361	99.2%	1.248	1.98	2.463	97.4%
Egypt	0.4	0.345	0.212	-47.0%	0.358	0.333	0.309	-13.7%	3.1	3.404	3.885	25.3%	2.068	2.418	2.778	34.3%
Sudan	1	0.907	0.791	-20.9%	0.476	0.396	0.345	-27.5%	1.6	2.044	2.857	78.6%	1.133	1.711	2.374	109.5%
Algeria	0.7	0.383	0.253	-63.9%	0.356	0.301	0.269	-24.4%	2.9	3.671	4.556	57.1%	1.938	2.42	2.965	53.0%
Morocco	0.001	0	0	-100.0%	0.327	0.296	0.277	-15.3%	3.4	3.802	4.318	27.0%	2.33	2.688	3.013	29.3%
Tunisia	0.001	0	0	-100.0%	0.3	0.276	0.257	-14.3%	4.3	4.577	5.141	19.6%	2.694	2.937	3.23	19.9%
Libya	0.001	0	0	-100.0%	0.357	0.305	0.266	-25.5%	2.2	4.621	5.255	138.9%	1.299	1.907	2.499	92.4%
Africa-Northern	0.351	0.273	0.209	-40.5%	0.362	0.318	0.287	-20.7%	2.917	3.686	4.335	48.6%	1.91	2.347	2.81	47.1%

Governance

Base Case: Countries in Year 2060 Descending Population Sequence	Security								Capacity							
	Internal War Occurrence				IFs Country Performance Risk Index				Corruption Perceptions Index				Government Effectiveness			
	Probability: 0–1				Index range: 0–1				Index range: 1–10 (higher is less corrupt)				Index range: 0–5			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	0.3	0.089	0	-100.0%	0.306	0.249	0.201	-34.3%	4.5	5.643	7.785	73.0%	2.882	3.285	3.684	27.8%
Namibia	0.001	0	0	-100.0%	0.335	0.267	0.231	-31.0%	4.4	5.482	6.519	48.2%	2.593	3.194	3.541	36.6%
Lesotho	0.001	0	0	-100.0%	0.352	0.295	0.251	-28.7%	3.5	4.12	4.851	38.6%	2.184	2.759	3.141	43.8%
Botswana	0.001	0	0	-100.0%	0.294	0.241	0.212	-27.9%	5.8	7.205	8.509	46.7%	3.019	3.51	3.823	26.6%
Swaziland	0.001	0	0	-100.0%	0.392	0.344	0.293	-25.3%	3.2	3.714	4.456	39.3%	1.979	2.302	2.738	38.4%
Africa-Southern	0.061	0.018	0	-100.0%	0.336	0.279	0.238	-29.2%	4.28	5.233	6.424	50.1%	2.531	3.01	3.385	33.7%
Nigeria	0.25	0.031	0	-100.0%	0.43	0.334	0.29	-32.6%	2.4	2.961	3.754	56.4%	1.317	2.099	2.75	108.8%
Niger	0.001	0	0	-100.0%	0.406	0.389	0.338	-16.7%	2.6	2.576	2.8	7.7%	1.791	1.9	2.112	17.9%
Côte d'Ivoire	0.001	0	0	-100.0%	0.412	0.367	0.315	-23.5%	2.2	2.471	2.967	34.9%	1.174	1.656	2.168	84.7%
Burkina Faso	0.001	0	0	-100.0%	0.396	0.349	0.298	-24.7%	3.1	3.21	3.56	14.8%	1.963	2.32	2.749	40.0%
Ghana	0.001	0	0	-100.0%	0.323	0.272	0.236	-26.9%	4.1	4.226	5.526	34.8%	2.455	3.013	3.704	50.9%
Mali	0.25	0.024	0	-100.0%	0.401	0.335	0.283	-29.4%	2.7	2.92	3.633	34.6%	1.628	2.176	2.879	76.8%
Senegal	0.4	0.224	0.136	-66.0%	0.371	0.345	0.306	-17.5%	2.9	3.036	3.275	12.9%	2.015	2.247	2.55	26.6%
Guinea	0.1	0	0	-100.0%	0.391	0.341	0.303	-22.5%	2	2.362	2.852	42.6%	1.354	1.849	2.358	74.2%
Benin	0.001	0	0	-100.0%	0.348	0.323	0.293	-15.8%	2.8	2.952	3.318	18.5%	1.995	2.222	2.54	27.3%
Togo	0.001	0	0	-100.0%	0.381	0.355	0.319	-16.3%	2.4	2.555	2.757	14.9%	1.116	1.565	2.019	80.9%
Sierra Leone	0.55	0.464	0.186	-66.2%	0.436	0.346	0.277	-36.5%	2.4	2.807	4.023	67.6%	1.312	2.278	3.101	136.4%
Liberia	0.35	0.278	0.035	-90.0%	0.419	0.353	0.299	-28.6%	3.3	3.29	3.559	7.8%	1.253	2.03	2.558	104.2%
Mauritania	0.001	0	0	-100.0%	0.392	0.357	0.327	-16.6%	2.3	2.514	2.786	21.1%	1.568	1.954	2.304	46.9%
Gambia	0.001	0	0	-100.0%	0.393	0.357	0.312	-20.6%	3.2	3.285	3.476	8.6%	1.829	2.078	2.39	30.7%
Guinea-Bissau	0.1	0.001	0	-100.0%	0.405	0.366	0.331	-18.3%	2.1	2.489	2.86	36.2%	1.457	1.807	2.117	45.3%
Cape Verde	0.001	0	0	-100.0%	0.294	0.256	0.241	-18.0%	5.1	5.237	5.332	4.5%	2.479	2.932	3.202	29.2%
Africa-Western	0.126	0.064	0.022	-82.5%	0.387	0.34	0.298	-23.0%	2.85	3.056	3.53	23.9%	1.669	2.133	2.594	55.4%

Governance

	Security								Capacity							
	Internal War Occurrence				IFs Country Performance Risk Index				Corruption Perceptions Index				Government Effectiveness			
	Probability: 0–1				Index range: 0–1				Index range: 1–10 (higher is less corrupt)				Index range: 0–5			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	0.001	0	0	-100.0%	0.402	0.364	0.329	-18.2%	2.2	2.678	3.094	40.6%	0.892	1.476	1.969	120.7%
Dominican Rep.	0.001	0	0	-100.0%	0.283	0.239	0.209	-26.1%	3	4.588	6.382	112.7%	1.875	2.666	3.262	74.0%
Cuba	0.001	0.008	0.061	6000.0%	0.283	0.239	0.213	-24.7%	3.7	4.382	5.998	62.1%	2.256	2.883	3.502	55.2%
Puerto Rico	0.001	0	0	-100.0%	0.26	0.232	0.215	-17.3%	5.8	6.175	7.195	24.1%	2.843	3.211	3.601	26.7%
Jamaica	0.001	0	0	-100.0%	0.261	0.24	0.228	-12.6%	3.3	3.805	4.393	33.1%	2.682	2.891	3.115	16.1%
Trinidad and Tobago	0.001	0	0	-100.0%	0.272	0.209	0.19	-30.1%	3.6	6.576	7.798	116.6%	2.755	3.349	3.453	25.3%
Bahamas	0.001	0	0	-100.0%	0.222	0.195	0.191	-14.0%	7.3	7.633	7.512	2.9%	3.571	3.711	3.751	5.0%
Barbados	0.001	0	0	-100.0%	0.206	0.192	0.187	-9.2%	7.8	7.576	7.418	-4.9%	3.908	3.898	3.887	-0.5%
Saint Lucia	0.001	0	0	-100.0%	0.258	0.226	0.213	-17.4%	7	6.903	6.681	-4.6%	3.312	3.458	3.53	6.6%
Grenada	0.001	0	0	-100.0%	0.29	0.255	0.238	-17.9%	3.5	4.105	4.625	32.1%	2.668	2.977	3.166	18.7%
Saint Vincent and the Grenadines	0.001	0	0	-100.0%	0.268	0.247	0.234	-12.7%	5.8	5.661	5.617	-3.2%	3.223	3.327	3.438	6.7%
America-Caribbean	0.001	0.001	0.006	500.0%	0.273	0.24	0.222	-18.7%	4.818	5.462	6.065	25.9%	2.726	3.077	3.334	22.3%
Guatemala	0.3	0	0	-100.0%	0.333	0.286	0.256	-23.1%	3.2	3.737	4.841	51.3%	1.795	2.327	2.958	64.8%
Honduras	0.001	0	0	-100.0%	0.308	0.282	0.261	-15.3%	2.4	3.194	3.937	64.0%	1.833	2.25	2.618	42.8%
Nicaragua	0.001	0	0	-100.0%	0.295	0.264	0.246	-16.6%	2.5	3.187	3.803	52.1%	1.54	2.007	2.405	56.2%
El Salvador	0.1	0	0	-100.0%	0.274	0.241	0.227	-17.2%	3.6	4.331	5.11	41.9%	2.505	2.852	3.191	27.4%
Costa Rica	0.001	0	0	-100.0%	0.242	0.209	0.197	-18.6%	5.3	6.149	6.758	27.5%	2.819	3.206	3.474	23.2%
Panama	0.001	0	0	-100.0%	0.259	0.214	0.191	-26.3%	3.6	5.989	7.587	110.8%	2.637	3.332	3.685	39.7%
Belize	0.001	0	0	-100.0%	0.289	0.251	0.222	-23.2%	2.9	3.74	4.651	60.4%	2.061	2.547	2.971	44.2%
America-Central	0.058	0	0	-100.0%	0.286	0.249	0.229	-19.9%	3.357	4.332	5.241	56.1%	2.17	2.646	3.043	40.2%
United States of America	0.001	0	0	-100.0%	0.192	0.171	0.155	-19.3%	7.1	8.594	10	40.8%	3.939	4.088	4.287	8.8%
Mexico	0.2	0	0	-100.0%	0.269	0.228	0.206	-23.4%	3.1	4.421	6.011	93.9%	2.666	3.093	3.478	30.5%
Canada	0.001	0	0	-100.0%	0.172	0.152	0.141	-18.0%	8.9	9.959	10	12.4%	4.364	4.383	4.448	1.9%
America-North	0.067	0	0	-100.0%	0.211	0.183	0.167	-20.9%	6.367	7.658	8.67	36.2%	3.656	3.855	4.071	11.4%
Brazil	0.001	0	0	-100.0%	0.269	0.232	0.217	-19.3%	3.7	4.83	5.94	60.5%	2.571	3.059	3.42	33.0%
Colombia	1	0.684	0.596	-40.4%	0.338	0.283	0.261	-22.8%	3.5	4.509	5.459	56.0%	2.643	3.071	3.452	30.6%
Argentina	0.001	0	0	-100.0%	0.25	0.214	0.191	-23.6%	2.9	4.79	6.594	127.4%	2.289	2.924	3.397	48.4%
Peru	0.35	0.034	0	-100.0%	0.285	0.227	0.204	-28.4%	3.5	4.964	6.374	82.1%	2.293	2.926	3.335	45.4%
Venezuela (Bolivarian Rep. of)	0.001	0	0	-100.0%	0.322	0.279	0.245	-23.9%	2	3.805	6.421	221.1%	1.484	2.051	2.219	49.5%
Ecuador	0.001	0	0	-100.0%	0.295	0.252	0.23	-22.0%	2.5	3.59	4.459	78.4%	1.826	2.398	2.789	52.7%
Chile	0.001	0	0	-100.0%	0.227	0.204	0.188	-17.2%	7.2	7.999	8.832	22.7%	3.677	3.952	4.111	11.8%
Bolivia (Plurinational State of)	0.001	0	0	-100.0%	0.313	0.269	0.237	-24.3%	2.8	3.512	4.629	65.3%	2.049	2.384	3.018	47.3%
Paraguay	0.001	0	0	-100.0%	0.308	0.273	0.248	-19.5%	2.2	3.025	3.856	75.3%	1.578	2.112	2.551	61.7%
Uruguay	0.001	0	0	-100.0%	0.224	0.205	0.189	-15.6%	6.9	7.373	8.307	20.4%	3.154	3.486	3.804	20.6%
Guyana	0.001	0	0	-100.0%	0.283	0.243	0.225	-20.5%	2.7	3.457	4.35	61.1%	2.363	2.74	3.072	30.0%
Suriname	0.001	0	0	-100.0%	0.287	0.242	0.212	-26.1%	3	4.338	6.285	109.5%	2.41	2.986	3.391	40.7%
America-South	0.113	0.06	0.05	-55.8%	0.284	0.243	0.221	-22.2%	3.575	4.683	5.959	66.7%	2.361	2.841	3.213	36.1%

Governance

	Security								Capacity							
	Internal War Occurrence				IFs Country Performance Risk Index				Corruption Perceptions Index				Government Effectiveness			
	Probability: 0–1				Index range: 0–1				Index range: 1–10 (higher is less corrupt)				Index range: 0–5			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	0.4	0	0	-100.0%	0.32	0.249	0.2	-37.5%	3.5	5.464	9.554	173.0%	2.623	3.37	3.966	51.2%
Japan	0.001	0	0	-100.0%	0.183	0.168	0.153	-16.4%	7.8	8.824	10	28.2%	3.895	4.063	4.302	10.4%
Korea, Rep. of	0.001	0	0	-100.0%	0.211	0.175	0.155	-26.5%	5.4	7.871	10	85.2%	3.689	4.057	4.27	15.7%
Korea, Dem. People's Rep. of	0.001	0	0	-100.0%	0.402	0.342	0.3	-25.4%	1	1.671	2.309	130.9%	0.63	1.215	1.785	183.3%
Taiwan, China	0.001	0	0	-100.0%	0.199	0.166	0.152	-23.6%	5.8	8.306	9.975	72.0%	3.705	4.015	4.182	12.9%
Hong Kong SAR, China	0.001	0	0	-100.0%	0.188	0.164	0.16	-14.9%	8.4	10	10	19.0%	4.235	4.393	4.389	3.6%
Mongolia	0.001	0	0	-100.0%	0.301	0.256	0.223	-25.9%	2.7	3.781	5.792	114.5%	1.888	2.562	2.849	50.9%
Asia-East	0.058	0	0	-100.0%	0.258	0.217	0.192	-25.6%	4.943	6.559	8.233	66.6%	2.952	3.382	3.678	24.6%
India	1	0.887	0.424	-57.6%	0.38	0.312	0.261	-31.3%	3.3	3.984	5.418	64.2%	2.492	3.15	3.627	45.5%
Pakistan	0.722	0.549	0.447	-38.1%	0.382	0.331	0.28	-26.7%	2.3	2.862	3.592	56.2%	1.734	2.143	2.702	55.8%
Bangladesh	0.05	0	0	-100.0%	0.36	0.291	0.258	-28.3%	2.4	2.925	3.739	55.8%	1.658	2.329	2.985	80.0%
Afghanistan	1	0.871	0.775	-22.5%	0.524	0.444	0.398	-24.0%	1.4	1.707	2.047	46.2%	1.033	1.587	2.07	100.4%
Iran, Islamic Rep. of	0.1	0	0	-100.0%	0.348	0.305	0.27	-22.4%	2.2	3.632	5.046	129.4%	1.998	2.236	2.663	33.3%
Nepal	0.55	0.249	0.142	-74.2%	0.397	0.329	0.286	-28.0%	2.2	2.881	3.527	60.3%	1.732	2.112	2.556	47.6%
Uzbekistan	0.001	0	0	-100.0%	0.392	0.308	0.279	-28.8%	1.6	2.514	3.412	113.3%	1.7	2.514	2.877	69.2%
Sri Lanka	0.95	0.87	0.601	-36.7%	0.333	0.303	0.267	-19.8%	3.2	3.891	5.211	62.8%	2.333	2.89	3.399	45.7%
Kazakhstan	0.001	0	0	-100.0%	0.329	0.272	0.232	-29.5%	2.9	5.418	6.961	140.0%	2.219	2.733	2.958	33.3%
Tajikistan	0.35	0.182	0	-100.0%	0.355	0.312	0.277	-22.0%	2.1	2.601	3.341	59.1%	1.601	2.111	2.628	64.1%
Kyrgyz Rep.	0.001	0	0	-100.0%	0.286	0.252	0.226	-21.0%	2	2.708	3.514	75.7%	1.868	2.17	2.55	36.5%
Turkmenistan	0.001	0	0	-100.0%	0.394	0.31	0.285	-27.7%	1.6	6.072	7.341	358.8%	0.925	2.172	1.909	106.4%
Bhutan	0.001	0	0	-100.0%	0.306	0.243	0.216	-29.4%	5.7	6.437	7.363	29.2%	3.068	3.675	3.947	28.7%
Maldives	0.001	0	0	-100.0%	0.309	0.251	0.226	-26.9%	2.3	3.674	4.526	96.8%	2.285	2.908	3.192	39.7%
Asia-South Central	0.338	0.258	0.171	-49.4%	0.364	0.305	0.269	-26.1%	2.514	3.665	4.646	84.8%	1.903	2.481	2.862	50.4%
Indonesia	0.55	0.422	0.179	-67.5%	0.331	0.272	0.237	-28.4%	2.8	3.729	4.824	72.3%	2.306	2.875	3.288	42.6%
Philippines	1	0.877	0.753	-24.7%	0.345	0.3	0.265	-23.2%	2.4	3.195	4.328	80.3%	2.396	2.819	3.248	35.6%
Vietnam	0.001	0	0	-100.0%	0.336	0.284	0.258	-23.2%	2.7	3.468	4.215	56.1%	2.191	2.61	2.808	28.2%
Thailand	0.35	0.084	0	-100.0%	0.309	0.26	0.239	-22.7%	3.5	4.484	5.672	62.1%	2.585	3.056	3.449	33.4%
Myanmar	1	0.916	0.536	-46.4%	0.447	0.366	0.302	-32.4%	1.4	2.12	3.871	176.5%	0.833	1.853	2.878	245.5%
Malaysia	0.001	0	0	-100.0%	0.261	0.222	0.197	-24.5%	4.4	5.727	7.287	65.6%	3.595	3.884	4.083	13.6%
Cambodia	0.05	0	0	-100.0%	0.363	0.284	0.249	-31.4%	2.1	3.085	4.162	98.2%	1.676	2.449	3.019	80.1%
Lao People's Dem. Rep.	0.001	0	0	-100.0%	0.389	0.306	0.262	-32.6%	2.1	3.098	5.047	140.3%	1.56	2.446	3.223	106.6%
Singapore	0.001	0	0	-100.0%	0.22	0.182	0.171	-22.3%	9.3	10	10	7.5%	4.745	4.782	4.656	-1.9%
Timor-Leste	0.001	0	0	-100.0%	0.369	0.289	0.256	-30.6%	2.5	2.998	3.875	55.0%	1.292	2.209	2.925	126.4%
Brunei Darussalam	0.001	0	0	-100.0%	0.239	0.189	0.157	-34.3%	5.5	8.427	10	81.8%	3.384	3.552	3.891	15.0%
Asia-South East	0.269	0.209	0.134	-50.2%	0.328	0.269	0.236	-28.0%	3.518	4.575	5.753	63.5%	2.415	2.958	3.406	41.0%

Governance

	Security								Capacity							
	Internal War Occurrence				IFs Country Performance Risk Index				Corruption Perceptions Index				Government Effectiveness			
	Probability: 0–1				Index range: 0–1				Index range: 1–10 (higher is less corrupt)				Index range: 0–5			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
Base Case: Countries in Year 2060 Descending Population Sequence																
ASIA with OCEANIA continued																
Turkey	0.85	0.478	0.426	-49.9%	0.309	0.256	0.231	-25.2%	4.4	5.521	7.111	61.6%	2.853	3.319	3.717	30.3%
Iraq	0.8	0.7	0.253	-68.4%	0.38	0.34	0.266	-30.0%	1.5	2.626	4.865	224.3%	1.276	1.949	2.858	124.0%
Yemen, Rep. of	0.4	0.106	0	-100.0%	0.425	0.365	0.324	-23.8%	2.2	2.459	2.862	30.1%	1.469	1.846	2.305	56.9%
Saudi Arabia	0.001	0	0	-100.0%	0.339	0.291	0.261	-23.0%	4.7	6.457	8.365	78.0%	2.419	2.834	3.076	27.2%
Syrian Arab Rep.	0.001	0	0	-100.0%	0.334	0.299	0.271	-18.9%	2.5	3.018	3.955	58.2%	1.95	2.249	2.789	43.0%
Jordan	0.001	0	0	-100.0%	0.304	0.282	0.261	-14.1%	4.7	4.638	5.025	6.9%	2.579	2.845	3.225	25.0%
Israel	1	0.982	0.922	-7.8%	0.255	0.231	0.204	-20.0%	6.1	8.038	10	63.9%	3.74	4.008	4.307	15.2%
Palestine	0.001	0	0	-100.0%	0.326	0.315	0.28	-14.1%	2.965	3.164	3.652	23.2%	2.071	2.234	2.676	29.2%
Azerbaijan	0.35	0.021	0	-100.0%	0.382	0.321	0.285	-25.4%	2.4	3.416	4.492	87.2%	1.668	1.971	2.495	49.6%
United Arab Emirates	0.001	0	0	-100.0%	0.287	0.225	0.209	-27.2%	6.3	10	10	58.7%	3.283	3.586	3.537	7.7%
Kuwait	0.001	0	0	-100.0%	0.355	0.303	0.291	-18.0%	4.5	10	10	122.2%	2.601	3.068	3.166	21.7%
Lebanon	0.05	0	0	-100.0%	0.289	0.253	0.241	-16.6%	2.5	3.76	4.618	84.7%	2.155	2.751	3.136	45.5%
Oman	0.001	0	0	-100.0%	0.328	0.26	0.23	-29.9%	5.3	6.863	8.346	57.5%	3.086	3.478	3.709	20.2%
Armenia	0.001	0	0	-100.0%	0.277	0.252	0.238	-14.1%	2.6	3.327	4.414	69.8%	2.349	2.765	3.226	37.3%
Georgia	0.15	0	0	-100.0%	0.28	0.237	0.222	-20.7%	3.8	4.524	5.248	38.1%	2.787	3.261	3.53	26.7%
Qatar	0.001	0	0	-100.0%	0.294	0.236	0.217	-26.2%	7.7	10	10	29.9%	3.435	3.897	3.942	14.8%
Bahrain	0.001	0	0.014	1300.0%	0.313	0.28	0.257	-17.9%	4.9	6.078	7.309	49.2%	3.094	3.354	3.516	13.6%
Cyprus	0.001	0	0	-100.0%	0.205	0.185	0.18	-12.2%	6.3	6.928	7.093	12.6%	3.996	4.019	3.979	-0.4%
Asia-West	0.201	0.127	0.09	-55.2%	0.316	0.274	0.248	-21.5%	4.187	5.601	6.52	55.7%	2.601	2.969	3.288	26.4%
Australia	0.001	0	0	-100.0%	0.175	0.154	0.148	-15.4%	8.7	10	10	14.9%	4.314	4.364	4.393	1.8%
Papua New Guinea	0.35	0.298	0	-100.0%	0.42	0.36	0.29	-31.0%	2.1	2.612	3.615	72.1%	1.752	2.262	2.936	67.6%
New Zealand	0.001	0	0	-100.0%	0.169	0.153	0.141	-16.6%	9.3	9.864	10	7.5%	4.367	4.393	4.5	3.0%
Solomon Islands	0.001	0	0	-100.0%	0.357	0.33	0.326	-8.7%	2.8	3.107	3.329	18.9%	1.556	2.04	2.321	49.2%
Fiji	0.001	0	0	-100.0%	0.318	0.286	0.261	-17.9%	4	4.061	4.486	12.2%	1.768	2.172	2.712	53.4%
Vanuatu	0.001	0	0	-100.0%	0.322	0.298	0.28	-13.0%	3.6	3.794	3.914	8.7%	2.227	2.523	2.699	21.2%
Micronesia (Federated States of)	0.001	0	0	-100.0%	0.352	0.307	0.282	-19.9%	2.754	3.197	3.511	27.5%	1.709	2.132	2.442	42.9%
Tonga	0.001	0	0	-100.0%	0.292	0.288	0.26	-11.0%	3	3.215	3.766	25.5%	2.167	2.364	2.761	27.4%
Samoa	0.001	0	0	-100.0%	0.293	0.27	0.248	-15.4%	4.1	4.235	4.561	11.2%	2.446	2.717	3	22.6%
Oceania	0.04	0.033	0	-100.0%	0.3	0.272	0.248	-17.3%	4.484	4.898	5.242	16.9%	2.478	2.774	3.085	24.5%

Governance

	Security								Capacity							
	Internal War Occurrence				IFs Country Performance Risk Index				Corruption Perceptions Index				Government Effectiveness			
	Probability: 0–1				Index range: 0–1				Index range: 1–10 (higher is less corrupt)				Index range: 0–5			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	0.7	0.495	0.502	-28.3%	0.324	0.268	0.236	-27.2%	2.1	4.252	5.848	178.5%	2.1	2.541	2.984	42.1%
Poland	0.001	0	0	-100.0%	0.215	0.183	0.164	-23.7%	5.3	6.803	8.308	56.8%	3.196	3.585	3.875	21.2%
Ukraine	0.001	0	0	-100.0%	0.269	0.244	0.227	-15.6%	2.4	3.061	4.009	67.0%	1.723	2.209	2.775	61.1%
Romania	0.001	0	0	-100.0%	0.243	0.217	0.203	-16.5%	3.7	4.455	5.437	46.9%	2.346	2.774	3.169	35.1%
Czech Rep.	0.001	0	0	-100.0%	0.211	0.184	0.163	-22.7%	4.6	5.957	7.864	71.0%	3.502	3.73	3.974	13.5%
Belarus	0.001	0.009	0.048	4700.0%	0.315	0.278	0.27	-14.3%	2.5	4.004	5.39	115.6%	1.366	2.067	2.633	92.8%
Hungary	0.001	0	0	-100.0%	0.219	0.196	0.181	-17.4%	4.7	5.793	7.215	53.5%	3.197	3.492	3.787	18.5%
Bulgaria	0.001	0	0	-100.0%	0.243	0.224	0.215	-11.5%	3.6	4.37	5.073	40.9%	2.508	2.871	3.185	27.0%
Slovak Rep.	0.001	0	0	-100.0%	0.214	0.182	0.162	-24.3%	4.3	6.047	7.737	79.9%	3.358	3.672	3.912	16.5%
Moldova, Rep. of	0.05	0	0	-100.0%	0.272	0.238	0.223	-18.0%	2.9	3.436	4.038	39.2%	1.873	2.258	2.741	46.3%
Europe-East	0.076	0.05	0.055	-27.6%	0.253	0.221	0.204	-19.4%	3.61	4.818	6.092	68.8%	2.517	2.92	3.304	31.3%
United Kingdom	0.001	0	0	-100.0%	0.186	0.162	0.145	-22.0%	7.6	9.093	10	31.6%	4.058	4.215	4.394	8.3%
Sweden	0.001	0	0	-100.0%	0.16	0.138	0.132	-17.5%	9.2	10	10	8.7%	4.501	4.606	4.687	4.1%
Denmark	0.001	0	0	-100.0%	0.162	0.141	0.134	-17.3%	9.3	10	10	7.5%	4.664	4.676	4.693	0.6%
Ireland	0.001	0	0	-100.0%	0.185	0.157	0.148	-20.0%	8	10	10	25.0%	3.811	4.115	4.266	11.9%
Norway	0.001	0	0	-100.0%	0.171	0.145	0.135	-21.1%	8.6	10	10	16.3%	4.291	4.384	4.43	3.2%
Finland	0.001	0	0	-100.0%	0.161	0.14	0.133	-17.4%	9.2	10	10	8.7%	4.738	4.741	4.777	0.8%
Lithuania	0.001	0	0	-100.0%	0.224	0.197	0.18	-19.6%	5	6.082	7.436	48.7%	3.221	3.489	3.741	16.1%
Latvia	0.001	0	0	-100.0%	0.228	0.201	0.185	-18.9%	4.3	5.531	6.565	52.7%	3.197	3.535	3.742	17.0%
Estonia	0.001	0	0	-100.0%	0.204	0.177	0.154	-24.5%	6.5	7.885	10	53.8%	3.724	4.046	4.3	15.5%
Iceland	0.001	0	0	-100.0%	0.187	0.155	0.139	-25.7%	8.5	10	10	17.6%	4.078	4.231	4.344	6.5%
Europe-North	0.001	0	0	-100.0%	0.187	0.161	0.149	-20.3%	7.62	8.859	9.4	23.4%	4.028	4.204	4.337	7.7%
Italy	0.001	0	0	-100.0%	0.213	0.19	0.167	-21.6%	3.9	5.425	7.768	99.2%	3.015	3.341	3.741	24.1%
Spain	0.001	0	0	-100.0%	0.192	0.175	0.155	-19.3%	6.1	7.302	9.303	52.5%	3.482	3.714	4.003	15.0%
Greece	0.001	0	0	-100.0%	0.215	0.203	0.191	-11.2%	3.5	4.529	5.832	66.6%	3.02	3.246	3.515	16.4%
Portugal	0.001	0	0	-100.0%	0.204	0.188	0.174	-14.7%	6	6.552	7.543	25.7%	3.537	3.659	3.849	8.8%
Serbia	0.2	0	0	-100.0%	0.252	0.235	0.243	-3.6%	3.5	4.362	5.602	60.1%	2.396	2.814	3.289	37.3%
Croatia	0.25	0.178	0.174	-30.4%	0.24	0.208	0.197	-17.9%	4.1	5.134	5.967	45.5%	3.119	3.396	3.586	15.0%
Bosnia and Herzegovina	0.211	0	0	-100.0%	0.304	0.299	0.285	-6.3%	3.2	4.103	4.755	48.6%	1.773	2.432	2.886	62.8%
Albania	0.05	0	0	-100.0%	0.272	0.241	0.238	-12.5%	3.3	4.165	4.834	46.5%	2.226	2.729	3.089	38.8%
Macedonia, TFYR	0.001	0	0	-100.0%	0.252	0.222	0.208	-17.5%	4.1	4.535	5.16	25.9%	2.34	2.643	3.034	29.7%
Slovenia	0.001	0	0	-100.0%	0.203	0.188	0.174	-14.3%	6.4	7.197	8.427	31.7%	3.531	3.722	3.951	11.9%
Montenegro	0.001	0	0	-100.0%	0.249	0.227	0.216	-13.3%	3.7	4.153	4.682	26.5%	2.585	2.851	3.121	20.7%
Malta	0.001	0	0	-100.0%	0.217	0.19	0.18	-17.1%	5.6	6.453	7.148	27.6%	3.653	3.819	3.921	7.3%
Europe-South	0.06	0.015	0.014	-76.7%	0.234	0.214	0.202	-13.7%	4.45	5.326	6.418	44.2%	2.89	3.197	3.499	21.1%
Germany	0.001	0	0	-100.0%	0.168	0.151	0.138	-17.9%	7.9	9.108	10	26.6%	4.052	4.174	4.352	7.4%
France	0.001	0	0	-100.0%	0.188	0.169	0.148	-21.3%	6.8	8.078	10	47.1%	3.939	4.081	4.326	9.8%
Netherlands	0.001	0	0	-100.0%	0.172	0.155	0.146	-15.1%	8.8	9.721	10	13.6%	4.231	4.275	4.377	3.5%
Belgium	0.001	0	0	-100.0%	0.187	0.163	0.146	-21.9%	7.1	8.515	10	40.8%	4.09	4.192	4.351	6.4%
Switzerland	0.001	0	0	-100.0%	0.174	0.152	0.14	-19.5%	8.7	9.748	10	14.9%	4.41	4.434	4.508	2.2%
Austria	0.001	0	0	-100.0%	0.178	0.155	0.142	-20.2%	7.9	9.202	10	26.6%	4.385	4.43	4.496	2.5%
Luxembourg	0.001	0	0	-100.0%	0.191	0.169	0.163	-14.7%	8.5	10	10	17.6%	4.206	4.387	4.475	6.4%
Europe-West	0.001	0	0	-100.0%	0.18	0.159	0.146	-18.9%	7.957	9.196	10	25.7%	4.188	4.282	4.412	5.3%

Governance

Base Case Source: International Futures Model Version 6.68, Nov 2013	Capacity (cont.)				Inclusion											
	Government Regulatory Quality				Polity Autocracy/Democracy Score				Freedom House Index (Inverted)				Gender Empowerment Measure			
	Index range: 0–5				Index range: 0–20				Index range: 2–14				Values below 1 indicate female disadvantage			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	2.447	2.841	3.177	29.8%	13.99	15.21	16.16	15.5%	8.258	9.364	10.1	22.3%	0.455	0.499	0.546	20.0%
Africa	1.812	2.264	2.694	48.7%	11.79	12.96	14.29	21.2%	6.694	8.047	9.244	38.1%	0.328	0.365	0.424	29.3%
Americas	2.54	2.953	3.272	28.8%	16.75	18.13	18.72	11.8%	11.85	12.37	12.81	8.1%	0.638	0.705	0.767	20.2%
Asia with Oceania	2.321	2.769	3.124	34.6%	11.33	13.03	14.35	26.7%	7.255	8.765	9.601	32.3%	0.403	0.462	0.518	28.5%
Europe	3.441	3.655	3.846	11.8%	18.53	18.97	19.17	3.5%	11.55	11.96	12.23	5.9%	0.694	0.756	0.817	17.7%
World	2.447	2.841	3.177	29.8%	13.99	15.21	16.16	15.5%	8.258	9.364	10.1	22.3%	0.455	0.499	0.546	20.0%
Africa-Eastern	1.709	2.146	2.626	53.7%	12.19	13.38	14.77	21.2%	6.736	8.474	10.01	48.6%	0.423	0.483	0.575	35.9%
Africa-Middle	1.422	2.051	2.496	75.5%	8.993	10.55	12.23	36.0%	4.168	5.332	6.535	56.8%	0.247	0.276	0.318	28.7%
Africa-Northern	1.855	2.276	2.7	45.6%	6.667	8.738	10.71	60.6%	4.553	4.852	5.17	13.6%	0.286	0.329	0.365	27.6%
Africa-Southern	2.456	2.939	3.316	35.0%	14.4	16.25	17.41	20.9%	11.73	12.94	13.68	16.6%	0.672	0.771	0.897	33.5%
Africa-Western	1.916	2.288	2.676	39.7%	14.06	14.46	15.33	9.0%	8.256	9.895	10.91	32.1%	0.225	0.248	0.293	30.2%
Africa	1.812	2.264	2.694	48.7%	11.79	12.96	14.29	21.2%	6.694	8.047	9.244	38.1%	0.328	0.365	0.424	29.3%
America-Caribbean	2.582	2.964	3.242	25.6%	15.47	17.12	17.81	15.1%	8.441	9.605	10.45	23.8%	0.528	0.586	0.632	19.7%
America-Central	2.522	2.91	3.208	27.2%	17.88	19.12	19.48	8.9%	9.546	10.08	10.75	12.6%	0.519	0.596	0.661	27.4%
America-North	3.639	3.829	4.02	10.5%	19.33	19.89	20	3.5%	13.04	13.18	13.38	2.6%	0.739	0.792	0.859	16.2%
America-South	2.238	2.748	3.151	40.8%	16.63	18.02	18.78	12.9%	11.08	12.02	12.69	14.5%	0.547	0.631	0.689	26.0%
Americas	2.54	2.953	3.272	28.8%	16.75	18.13	18.72	11.8%	11.85	12.37	12.81	8.1%	0.638	0.705	0.767	20.2%
Asia-East	2.796	3.226	3.539	26.6%	14.43	15.38	16.22	12.4%	4.296	4.781	5.151	19.9%	0.537	0.634	0.753	40.2%
Asia-South Central	1.583	2.222	2.673	68.9%	10.2	12.33	13.82	35.5%	9.613	11.58	12.15	26.4%	0.261	0.314	0.362	38.7%
Asia-South East	2.295	2.84	3.274	42.7%	12.02	14	15.22	26.6%	8.133	9.472	10.49	29.0%	0.465	0.544	0.598	28.6%
Asia-West	2.726	3.035	3.296	20.9%	9.052	10.95	12.64	39.6%	6.684	7.037	7.466	11.7%	0.36	0.412	0.461	28.1%
Oceania	2.324	2.645	2.974	28.0%	14.39	15.28	16.05	11.5%	12.73	12.96	13.39	5.2%	0.713	0.748	0.779	9.3%
Asia with Oceania	2.321	2.769	3.124	34.6%	11.33	13.03	14.35	26.7%	7.255	8.765	9.601	32.3%	0.403	0.462	0.518	28.5%
Europe-East	2.844	3.151	3.427	20.5%	16.7	17.55	18.02	7.9%	8.429	8.846	9.123	8.2%	0.552	0.61	0.647	17.2%
Europe-North	3.957	4.122	4.247	7.3%	19.54	19.76	19.87	1.7%	13.95	13.98	13.99	0.3%	0.806	0.873	0.937	16.3%
Europe-South	3.033	3.294	3.535	16.6%	18.84	19.4	19.48	3.4%	13.13	13.53	13.78	5.0%	0.735	0.774	0.824	12.1%
Europe-West	4.047	4.146	4.275	5.6%	19.54	19.6	19.64	0.5%	14	14	14	0.0%	0.825	0.876	0.95	15.2%
Europe	3.441	3.655	3.846	11.8%	18.53	18.97	19.17	3.5%	11.55	11.96	12.23	5.9%	0.694	0.756	0.817	17.7%

Governance

	Capacity (cont.)				Inclusion											
	Government Regulatory Quality				Polity Autocracy/Democracy Score				Freedom House Index (Inverted)				Gender Empowerment Measure			
	Index range: 0–5				Index range: 0–20				Index range: 2–14				Values below 1 indicate female disadvantage			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	1.646	2.305	2.919	77.3%	11	13.27	15.39	39.9%	4	5.211	6.449	61.2%	0.464	0.569	0.667	43.8%
Tanzania, United Rep. of	2.056	2.549	3.349	62.9%	9	10.45	13.4	48.9%	10	12.45	14	40.0%	0.539	0.577	0.724	34.3%
Uganda	2.353	2.742	3.15	33.9%	9	10.71	13.62	51.3%	7	8.852	10.62	51.7%	0.591	0.646	0.779	31.8%
Kenya	2.41	2.692	3.039	26.1%	18	18.61	18.05	0.3%	9	10.24	12.06	34.0%	0.289	0.324	0.37	28.0%
Madagascar	1.914	1.929	1.957	2.2%	10	11.31	12.66	26.6%	6	6.399	6.769	12.8%	0.398	0.438	0.476	19.6%
Mozambique	2.131	2.763	3.2	50.2%	15	15.48	17.43	16.2%	9	12.7	14	55.6%	0.35	0.391	0.496	41.7%
Malawi	1.923	2.126	2.543	32.2%	16	15.81	16.81	5.1%	9	10.61	12.9	43.3%	0.255	0.27	0.315	23.5%
Zambia	2.015	2.657	3.373	67.4%	17	17.15	18.75	10.3%	9	11.58	14	55.6%	0.426	0.458	0.573	34.5%
Somalia	0.12	0.68	1.496	1146.7%	3	4.569	6.65	121.7%	2	2.481	3.295	64.8%	0.278	0.279	0.326	17.3%
Rwanda	2.32	2.704	3.083	32.9%	6	7.625	9.783	63.1%	5	6.371	7.751	55.0%	0.284	0.324	0.389	37.0%
Zimbabwe	0.47	1.272	1.966	318.3%	11	13.9	15.9	44.5%	4	4.518	4.964	24.1%	0.398	0.503	0.571	43.5%
Burundi	1.394	1.728	2.03	45.6%	16	18	18.02	12.6%	6	7.169	8.81	46.8%	0.337	0.419	0.446	32.3%
Eritrea	0.251	0.899	1.717	584.1%	3	5.215	7.898	163.3%	2	2.515	3.276	63.8%	0.404	0.466	0.551	36.4%
Comoros	1.077	1.433	1.856	72.3%	19	18.7	17.83	-6.2%	9	9.804	11.18	24.2%	0.285	0.307	0.341	19.6%
Djibouti	1.871	2.242	2.634	40.8%	12	13.6	14.57	21.4%	5	5.528	6.289	25.8%	0.298	0.35	0.386	29.5%
Mauritius	3.393	3.609	3.711	9.4%	20	19.71	19.63	-1.9%	13	14	14	7.7%	0.538	0.614	0.644	19.7%
Africa-Eastern	1.709	2.146	2.626	53.7%	12.19	13.38	14.77	21.2%	6.736	8.474	10.01	48.6%	0.423	0.483	0.575	35.9%
Congo, Democratic Rep. of	0.919	1.414	1.995	117.1%	15	15.17	15.68	4.5%	4	5.466	7.098	77.5%	0.201	0.222	0.254	26.4%
Angola	1.463	2.662	3.233	121.0%	8	9.638	12.01	50.1%	5	6.256	6.982	39.6%	0.278	0.339	0.432	55.4%
Cameroon	1.782	2.116	2.575	44.5%	6	7.733	9.828	63.8%	4	4.566	5.286	32.1%	0.339	0.378	0.432	27.4%
Chad	1.432	1.897	2.187	52.7%	8	9.088	10.59	32.4%	3	3.647	4.152	38.4%	0.285	0.31	0.352	23.5%
Central African Rep.	1.351	1.76	2.28	68.8%	9	10.22	11.4	26.7%	6	7.274	9.006	50.1%	0.205	0.234	0.264	28.8%
Congo, Rep. of	1.207	1.877	2.323	92.5%	6	7.383	9.302	55.0%	5	5.781	6.257	25.1%	0.206	0.23	0.268	30.1%
Gabon	1.893	2.449	2.72	43.7%	13	14.96	16.49	26.8%	5	5.334	5.672	13.4%	0.437	0.508	0.57	30.4%
Equatorial Guinea	1.114	2.271	2.804	151.7%	5	7.699	10.44	108.8%	2	2.23	2.269	13.5%	0.614	0.756	0.796	29.6%
São Tomé and Príncipe	1.64	2.012	2.344	42.9%	10.93	13.05	14.35	31.3%	12	13.39	14	16.7%	0.292	0.366	0.41	40.4%
Africa-Middle	1.422	2.051	2.496	75.5%	8.993	10.55	12.23	36.0%	4.168	5.332	6.535	56.8%	0.247	0.276	0.318	28.7%
Egypt	2.341	2.57	2.83	20.9%	7	8.895	10.81	54.4%	5	5.394	5.799	16.0%	0.287	0.327	0.364	26.8%
Sudan	1.168	1.672	2.276	94.9%	8	9.337	11.09	38.6%	2	2.321	2.721	36.1%	0.219	0.25	0.296	35.2%
Algeria	1.364	1.998	2.623	92.3%	12	14.11	15.4	28.3%	5	5.395	5.805	16.1%	0.315	0.375	0.415	31.7%
Morocco	2.433	2.712	2.962	21.7%	4	6.396	8.687	117.2%	7	7.837	8.6	22.9%	0.318	0.382	0.421	32.4%
Tunisia	2.492	2.751	3.043	22.1%	6	8.056	9.833	63.9%	4	4.337	4.705	17.6%	0.254	0.294	0.321	26.4%
Libya	1.331	1.951	2.465	85.2%	3	5.632	8.432	181.1%	2	2.233	2.262	13.1%	0.452	0.542	0.578	27.9%
Africa-Northern	1.855	2.276	2.7	45.6%	6.667	8.738	10.71	60.6%	4.553	4.852	5.17	13.6%	0.286	0.329	0.365	27.6%

Governance

	Capacity (cont.)				Inclusion											
	Government Regulatory Quality				Polity Autocracy/Democracy Score				Freedom House Index (Inverted)				Gender Empowerment Measure			
	Index range: 0–5				Index range: 0–20				Index range: 2–14				Values below 1 indicate female disadvantage			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	2.891	3.29	3.676	27.2%	19	19.83	20	5.3%	12	13.23	14	16.7%	0.687	0.785	0.917	33.5%
Namibia	2.631	3.214	3.553	35.0%	16	18.35	20	25.0%	12	13.89	14	16.7%	0.62	0.735	0.844	36.1%
Lesotho	1.902	2.55	2.993	57.4%	18	19.62	20	11.1%	10	12.27	14	40.0%	0.591	0.72	0.828	40.1%
Botswana	2.959	3.452	3.753	26.8%	18	19.6	19.94	10.8%	11	12.07	12.77	16.1%	0.55	0.672	0.77	40.0%
Swaziland	1.897	2.192	2.606	37.4%	1	3.833	7.133	613.3%	4	4.29	4.716	17.9%	0.492	0.6	0.685	39.2%
Africa-Southern	2.456	2.939	3.316	35.0%	14.4	16.25	17.41	20.9%	11.73	12.94	13.68	16.6%	0.672	0.771	0.897	33.5%
Nigeria	1.783	2.403	2.911	63.3%	14	14.18	15.36	9.7%	8	9.919	11.25	40.6%	0.198	0.218	0.26	31.3%
Niger	2.008	2.025	2.191	9.1%	13	12.4	13.36	2.8%	7	8.038	9.442	34.9%	0.279	0.267	0.308	10.4%
Côte d'Ivoire	1.585	1.962	2.387	50.6%	14	14.53	15.09	7.8%	3	3.463	4.09	36.3%	0.157	0.179	0.206	31.2%
Burkina Faso	2.374	2.588	2.884	21.5%	10	11.14	12.69	26.9%	8	9.567	11.47	43.4%	0.28	0.317	0.372	32.9%
Ghana	2.616	3.098	3.689	41.0%	18	18.4	18.45	2.5%	13	14	14	7.7%	0.313	0.348	0.428	36.7%
Mali	2.009	2.43	3.024	50.5%	17	16.87	17.72	4.2%	11	13.95	14	27.3%	0.237	0.261	0.326	37.6%
Senegal	2.228	2.407	2.65	18.9%	17	17.46	17.78	4.6%	10	10.92	12.21	22.1%	0.265	0.298	0.332	25.3%
Guinea	1.419	1.881	2.364	66.6%	15	15.19	16.11	7.4%	6	7.307	8.66	44.3%	0.25	0.272	0.317	26.8%
Benin	2.173	2.364	2.662	22.5%	17	17.01	17.71	4.2%	12	13.86	14	16.7%	0.271	0.296	0.342	26.2%
Togo	1.633	1.923	2.22	35.9%	8	9.51	10.81	35.1%	7	8.149	9.447	35.0%	0.182	0.213	0.237	30.2%
Sierra Leone	1.774	2.543	3.234	82.3%	17	16.88	18.1	6.5%	10	14	14	40.0%	0.281	0.306	0.388	38.1%
Liberia	1.447	2.121	2.619	81.0%	16	16.06	17.13	7.1%	9	13.15	14	55.6%	0.276	0.297	0.347	25.7%
Mauritania	1.672	1.99	2.282	36.5%	8	9.159	10.34	29.3%	5	5.61	6.247	24.9%	0.163	0.183	0.203	24.5%
Gambia	2.115	2.257	2.469	16.7%	5	6.919	9.034	80.7%	6	6.886	7.93	32.2%	0.315	0.368	0.42	33.3%
Guinea-Bissau	1.359	1.746	2.087	53.6%	16	16.47	16.9	5.6%	8	9.073	10.15	26.9%	0.327	0.361	0.397	21.4%
Cape Verde	2.458	2.872	3.136	27.6%	20	19.18	18.76	-6.2%	14	14	14	0.0%	0.313	0.408	0.45	43.8%
Africa-Western	1.916	2.288	2.676	39.7%	14.06	14.46	15.33	9.0%	8.256	9.895	10.91	32.1%	0.225	0.248	0.293	30.2%

Patterns of Potential Human Progress				Multination Regional Analysis				Measures of Poverty, Health, Education, Infrastructure, and Governance											
Governance																			
Base Case: Countries in Year 2060 Descending Population Sequence	Capacity (cont.)				Inclusion														
	Government Regulatory Quality				Polity Autocracy/Democracy Score				Freedom House Index (Inverted)				Gender Empowerment Measure						
	Index range: 0–5				Index range: 0–20				Index range: 2–14				Values below 1 indicate female disadvantage						
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg			
AMERICAS																			
Haiti	1.476	1.931	2.284	54.7%	15	16.87	17.77	18.5%	7	8.077	9.146	30.7%	0.349	0.423	0.47	34.7%			
Dominican Rep.	2.333	2.991	3.443	47.6%	18	19.6	19.84	10.2%	12	13.6	14	16.7%	0.55	0.639	0.73	32.7%			
Cuba	0.871	1.789	2.676	207.2%	3	6.123	8.921	197.4%	3	3.627	4.248	41.6%	0.676	0.738	0.795	17.6%			
Puerto Rico	3.324	3.548	3.785	13.9%	15.57	16.85	17.53	12.6%	14	14	14	0.0%	0.4	0.447	0.488	22.0%			
Jamaica	2.779	2.968	3.155	13.5%	19	19.51	19.36	1.9%	11	11.47	12.08	9.8%	0.526	0.569	0.606	15.2%			
Trinidad and Tobago	2.992	3.475	3.569	19.3%	20	20	20	0.0%	12	13.01	13.34	11.2%	0.801	0.962	1	24.8%			
Bahamas	3.013	3.307	3.467	15.1%	18.15	19.77	19.82	9.2%	14	14	14	0.0%	0.73	0.799	0.813	11.4%			
Barbados	2.952	3.196	3.405	15.3%	16.88	18.43	18.91	12.0%	14	14	14	0.0%	0.632	0.683	0.699	10.6%			
Saint Lucia	2.93	3.193	3.355	14.5%	15.06	17.55	18.73	24.4%	14	14	14	0.0%	0.591	0.69	0.734	24.2%			
Grenada	2.835	3.118	3.265	15.2%	14.65	17.15	18	22.9%	13	13.91	14	7.7%	0.361	0.441	0.48	33.0%			
Saint Vincent and the Grenadines	2.898	3.089	3.257	12.4%	14.86	16.5	17.03	14.6%	14	14	14	0.0%	0.369	0.42	0.446	20.9%			
America-Caribbean	2.582	2.964	3.242	25.6%	15.47	17.12	17.81	15.1%	8.441	9.605	10.45	23.8%	0.528	0.586	0.632	19.7%			
Guatemala	2.346	2.742	3.197	36.3%	18	19.04	18.84	4.7%	8	8.945	10.18	27.3%	0.39	0.45	0.54	38.5%			
Honduras	2.299	2.634	2.887	25.6%	17	19.28	19.82	16.6%	8	8.591	9.197	15.0%	0.589	0.688	0.759	28.9%			
Nicaragua	2.213	2.516	2.752	24.4%	19	19.59	19.79	4.2%	8	8.875	9.549	19.4%	0.542	0.652	0.724	33.6%			
El Salvador	2.873	3.151	3.374	17.4%	18	19.63	19.71	9.5%	11	11.75	12.62	14.7%	0.539	0.639	0.697	29.3%			
Costa Rica	3.005	3.319	3.528	17.4%	20	20	20	0.0%	14	14	14	0.0%	0.685	0.807	0.856	25.0%			
Panama	2.864	3.46	3.738	30.5%	19	19.77	20	5.3%	13	14	14	7.7%	0.604	0.705	0.772	27.8%			
Belize	2.053	2.548	2.977	45.0%	14.15	16.52	18.22	28.8%	13	14	14	7.7%	0.507	0.593	0.658	29.8%			
America-Central	2.522	2.91	3.208	27.2%	17.88	19.12	19.48	8.9%	9.546	10.08	10.75	12.6%	0.519	0.596	0.661	27.4%			
United States of America	3.949	4.065	4.226	7.0%	20	20	20	0.0%	14	14	14	0.0%	0.767	0.813	0.876	14.2%			
Mexico	2.799	3.204	3.535	26.3%	18	19.68	20	11.1%	10	10.61	11.29	12.9%	0.629	0.706	0.776	23.4%			
Canada	4.168	4.217	4.299	3.1%	20	20	20	0.0%	14	14	14	0.0%	0.83	0.892	0.951	14.6%			
America-North	3.639	3.829	4.02	10.5%	19.33	19.89	20	3.5%	13.04	13.18	13.38	2.6%	0.739	0.792	0.859	16.2%			
Brazil	2.669	3.133	3.44	28.9%	18	19.62	19.53	8.5%	12	13.18	14	16.7%	0.504	0.587	0.63	25.0%			
Colombia	2.741	3.133	3.434	25.3%	17	18.62	19.47	14.5%	9	9.949	10.57	17.4%	0.508	0.581	0.633	24.6%			
Argentina	1.745	2.511	3.094	77.3%	18	19.62	19.89	10.5%	12	13.05	13.78	14.8%	0.699	0.781	0.844	20.7%			
Peru	2.971	3.411	3.641	22.6%	19	19.84	20	5.3%	11	12.33	13.18	19.8%	0.64	0.746	0.825	28.9%			
Venezuela (Bolivarian Rep. of)	0.911	1.652	2.13	133.8%	7	9.607	12.34	76.3%	6	6.634	7.278	21.3%	0.581	0.676	0.783	34.8%			
Ecuador	1.344	2.043	2.569	91.1%	15	17.14	18.64	24.3%	10	10.77	11.22	12.2%	0.622	0.708	0.762	22.5%			
Chile	3.973	4.126	4.186	5.4%	20	19.66	19.61	-2.0%	14	14	14	0.0%	0.526	0.603	0.65	23.6%			
Bolivia (Plurinational State of)	1.724	2.2	2.87	66.5%	17	18.28	19.37	13.9%	10	11.11	12.31	23.1%	0.511	0.57	0.644	26.0%			
Paraguay	2.171	2.57	2.86	31.7%	18	19.45	19.39	7.7%	10	10.71	11.47	14.7%	0.51	0.581	0.637	24.9%			
Uruguay	2.866	3.237	3.598	25.5%	20	19.65	19.6	-2.0%	14	14	14	0.0%	0.551	0.603	0.654	18.7%			
Guyana	1.923	2.436	2.89	50.3%	16	18.31	19.36	21.0%	11	12.27	13.71	24.6%	0.59	0.681	0.729	23.6%			
Suriname	1.818	2.531	3.106	70.8%	14.58	16.49	18.14	24.4%	12	13.51	14	16.7%	0.56	0.644	0.729	30.2%			
America-South	2.238	2.748	3.151	40.8%	16.63	18.02	18.78	12.9%	11.08	12.02	12.69	14.5%	0.547	0.631	0.689	26.0%			

Governance

	Capacity (cont.)				Inclusion											
	Government Regulatory Quality				Polity Autocracy/Democracy Score				Freedom House Index (Inverted)				Gender Empowerment Measure			
	Index range: 0–5				Index range: 0–20				Index range: 2–14				Values below 1 indicate female disadvantage			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	2.293	3.024	3.62	57.9%	3	6.037	9.198	206.6%	3	3.584	4.078	35.9%	0.533	0.637	0.768	44.1%
Japan	3.484	3.722	4.026	15.6%	20	19.79	19.81	-1.0%	13	13.6	14	7.7%	0.567	0.605	0.659	16.2%
Korea, Rep. of	3.42	3.844	4.085	19.4%	18	19.79	19.93	10.7%	13	13.98	14	7.7%	0.554	0.638	0.688	24.2%
Korea, Dem. People's Rep. of	0.052	0.753	1.419	2628.8%	1	3.635	6.221	522.1%	2	2.356	2.692	34.6%	0.38	0.421	0.435	14.5%
Taiwan, China	3.665	3.945	4.097	11.8%	20	20	20	0.0%	13	13.87	14	7.7%	0.652	0.745	0.783	20.1%
Hong Kong SAR, China	4.39	4.466	4.399	0.2%	19.02	19.2	19.36	1.8%	9	9.469	9.7	7.8%	0.773	0.87	0.884	14.4%
Mongolia	2.265	2.829	3.125	38.0%	20	19.23	19.03	-4.8%	12	14	14	16.7%	0.41	0.479	0.561	36.8%
Asia-East	2.796	3.226	3.539	26.6%	14.43	15.38	16.22	12.4%	4.296	4.781	5.151	19.9%	0.537	0.634	0.753	40.2%
India	2.111	2.795	3.296	56.1%	19	18.88	18.25	-3.9%	11	13.59	14	27.3%	0.226	0.271	0.323	42.9%
Pakistan	1.918	2.3	2.787	45.3%	16	17.82	18.76	17.3%	7	7.634	8.771	25.3%	0.386	0.459	0.514	33.2%
Bangladesh	1.658	2.329	2.941	77.4%	15	17.06	17.54	16.9%	9	10.99	13.19	46.6%	0.264	0.323	0.355	34.5%
Afghanistan	0.968	1.45	1.862	92.4%	3	4.452	6.022	100.7%	4	4.726	5.377	34.4%	0.111	0.126	0.142	27.9%
Iran, Islamic Rep. of	0.813	1.423	2.106	159.0%	3	5.731	8.256	175.2%	4	4.372	4.661	16.5%	0.331	0.422	0.464	40.2%
Nepal	1.757	2.177	2.612	48.7%	16	18.43	19.51	21.9%	8	9.208	10.76	34.5%	0.486	0.594	0.666	37.0%
Uzbekistan	0.909	1.783	2.315	154.7%	1	3.52	6.297	529.7%	2	2.379	2.612	30.6%	0.305	0.377	0.425	39.3%
Sri Lanka	2.307	2.801	3.263	41.4%	14	14.91	16.06	14.7%	7	8.007	8.95	27.9%	0.389	0.422	0.469	20.6%
Kazakhstan	2.163	2.692	2.954	36.6%	4	6.433	9.386	134.7%	5	5.779	6.052	21.0%	0.532	0.604	0.674	26.7%
Tajikistan	1.482	1.986	2.507	69.2%	7	9.117	11.09	58.4%	5	5.731	6.495	29.9%	0.294	0.343	0.384	30.6%
Kyrgyz Rep.	2.242	2.486	2.79	24.4%	17	18.65	19.64	15.5%	6	6.551	7.29	21.5%	0.575	0.643	0.71	23.5%
Turkmenistan	0.418	1.745	1.848	342.1%	1	3.797	6.669	566.9%	2	2.608	2.706	35.3%	0.356	0.512	0.561	57.6%
Bhutan	1.306	2.343	3.025	131.6%	13	15.94	17.19	32.2%	7	8.418	9.316	33.1%	0.331	0.437	0.498	50.5%
Maldives	2.108	2.804	3.12	48.0%	13.81	17.9	18.87	36.6%	9	10.16	10.79	19.9%	0.429	0.584	0.628	46.4%
Asia-South Central	1.583	2.222	2.673	68.9%	10.2	12.33	13.82	35.5%	9.613	11.58	12.15	26.4%	0.261	0.314	0.362	38.7%
Indonesia	2.141	2.749	3.16	47.6%	18	19.35	19.06	5.9%	11	12.87	14	27.3%	0.408	0.48	0.526	28.9%
Philippines	2.249	2.701	3.117	38.6%	18	19.53	19.64	9.1%	10	11.19	12.51	25.1%	0.56	0.631	0.706	26.1%
Vietnam	1.9	2.354	2.636	38.7%	3	6.084	9.007	200.2%	4	4.597	5.089	27.2%	0.554	0.661	0.708	27.8%
Thailand	2.702	3.121	3.445	27.5%	14	15.67	16.65	18.9%	7	7.777	8.458	20.8%	0.514	0.573	0.61	18.7%
Myanmar	0.251	1.314	2.363	841.4%	4	6.282	8.412	110.3%	2	2.707	3.436	71.8%	0.285	0.336	0.38	33.3%
Malaysia	3.117	3.509	3.811	22.3%	16	17.71	19.09	19.3%	8	8.675	9.273	15.9%	0.542	0.616	0.684	26.2%
Cambodia	2.056	2.726	3.176	54.5%	12	15.06	16.74	39.5%	5	6.174	7.082	41.6%	0.427	0.547	0.613	43.6%
Lao People's Dem. Rep.	1.498	2.31	3.03	102.3%	3	5.634	8.333	177.8%	3	3.845	4.58	52.7%	0.298	0.394	0.473	58.7%
Singapore	4.313	4.415	4.365	1.2%	8	10.15	12.14	51.8%	7	7.501	7.746	10.7%	0.786	0.948	1	27.2%
Timor-Leste	1.4	2.27	2.918	108.4%	17	18.57	18.3	7.6%	9	12.84	14	55.6%	0.28	0.353	0.428	52.9%
Brunei Darussalam	3.62	3.773	3.992	10.3%	19.27	20	20	3.8%	5	5.257	5.41	8.2%	0.825	0.949	1	21.2%

Governance

	Capacity (cont.)				Inclusion											
	Government Regulatory Quality				Polity Autocracy/Democracy Score				Freedom House Index (Inverted)				Gender Empowerment Measure			
	Index range: 0–5				Index range: 0–20				Index range: 2–14				Values below 1 indicate female disadvantage			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
Asia-South East	2.295	2.84	3.274	42.7%	12.02	14	15.22	26.6%	8.133	9.472	10.49	29.0%	0.465	0.544	0.598	28.6%
ASIA with OCEANIA continued																
Turkey	2.825	3.275	3.623	28.2%	17	18.63	19	11.8%	10	10.98	11.86	18.6%	0.379	0.448	0.504	33.0%
Iraq	1.447	2.085	2.914	101.4%	13	14.1	16.4	26.2%	5	6.106	7.137	42.7%	0.386	0.442	0.553	43.3%
Yemen, Rep. of	1.927	2.157	2.469	28.1%	8	9.48	10.85	35.6%	5	5.516	6.185	23.7%	0.135	0.167	0.197	45.9%
Saudi Arabia	2.665	2.969	3.152	18.3%	1	3.409	6.079	507.9%	3	3.263	3.461	15.4%	0.299	0.352	0.4	33.8%
Syrian Arab Rep.	1.581	1.932	2.51	58.8%	3	5.625	8.398	179.9%	3	3.202	3.617	20.6%	0.415	0.495	0.558	34.5%
Jordan	2.74	2.918	3.203	16.9%	7	8.76	10.57	51.0%	5	5.47	6.069	21.4%	0.23	0.265	0.301	30.9%
Israel	3.745	3.94	4.178	11.6%	20	19.87	20	0.0%	13	13.94	14	7.7%	0.705	0.77	0.9	27.7%
Palestine	2.794	2.777	3.012	7.8%	12.94	14.37	15.53	20.0%	5	5.184	5.832	16.6%	0.317	0.364	0.41	29.3%
Azerbaijan	2.101	2.324	2.672	27.2%	3	5.345	7.96	165.3%	5	5.453	5.822	16.4%	0.385	0.434	0.481	24.9%
United Arab Emirates	2.869	3.259	3.373	17.6%	2	5.377	8.325	316.3%	5	5.329	5.548	11.0%	0.691	0.913	1	44.7%
Kuwait	2.657	3.099	3.182	19.8%	3	5.417	7.416	147.2%	7	7.775	7.929	13.3%	0.241	0.329	0.333	38.2%
Lebanon	2.568	3.048	3.294	28.3%	17	18.37	18.12	6.6%	8	8.689	9.044	13.1%	0.212	0.249	0.263	24.1%
Oman	3.008	3.337	3.547	17.9%	2	5.171	8.147	307.4%	5	5.28	5.53	10.6%	0.453	0.59	0.646	42.6%
Armenia	2.8	3.088	3.403	21.5%	15	16.45	17.23	14.9%	6	6.559	7.216	20.3%	0.412	0.456	0.488	18.4%
Georgia	3.089	3.468	3.637	17.7%	16	17.31	17.83	11.4%	9	10.49	11.48	27.6%	0.408	0.46	0.492	20.6%
Qatar	3.061	3.592	3.73	21.9%	1	4.492	7.561	656.1%	5	5.509	5.63	12.6%	0.445	0.7	0.719	61.6%
Bahrain	3.281	3.43	3.519	7.3%	2	5.12	8.151	307.6%	5	5.13	5.296	5.9%	0.605	0.684	0.72	19.0%
Cyprus	3.913	3.935	3.906	-0.2%	20	19.86	19.9	-0.5%	14	14	14	0.0%	0.603	0.674	0.691	14.6%
Asia-West	2.726	3.035	3.296	20.9%	9.052	10.95	12.64	39.6%	6.684	7.037	7.466	11.7%	0.36	0.412	0.461	28.1%
Australia	4.138	4.221	4.274	3.3%	20	20	20	0.0%	14	14	14	0.0%	0.87	0.953	1	14.9%
Papua New Guinea	1.946	2.385	2.966	52.4%	14	14.5	15.56	11.1%	9	10.68	12.47	38.6%	0.228	0.254	0.297	30.3%
New Zealand	4.284	4.305	4.407	2.9%	20	20	20	0.0%	14	14	14	0.0%	0.841	0.9	1	18.9%
Solomon Islands	1.286	1.836	2.187	70.1%	18	18.35	18.02	0.1%	9	9.953	10.48	16.4%	0.301	0.334	0.363	20.6%
Fiji	1.828	2.175	2.654	45.2%	6	7.94	10.13	68.8%	6	6.467	7.18	19.7%	0.381	0.41	0.449	17.8%
Vanuatu	1.717	2.135	2.437	41.9%	13.14	14.37	15.37	17.0%	12	12.85	13.54	12.8%	0.321	0.363	0.398	24.0%
Micronesia (Federated States of)	1.588	2.057	2.388	50.4%	12.16	14.5	15.28	25.7%	14	14	14	0.0%	0.305	0.383	0.412	35.1%
Tonga	1.9	2.156	2.599	36.8%	13.11	13.78	14.77	12.7%	10	10.4	11.43	14.3%	0.363	0.381	0.412	13.5%
Samoa	2.227	2.533	2.858	28.3%	13.06	14.08	15.32	17.3%	12	13.12	14	16.7%	0.431	0.466	0.511	18.6%
Oceania	2.324	2.645	2.974	28.0%	14.39	15.28	16.05	11.5%	12.73	12.96	13.39	5.2%	0.713	0.748	0.779	9.3%

Governance

	Capacity (cont.)				Inclusion											
	Government Regulatory Quality				Polity Autocracy/Democracy Score				Freedom House Index (Inverted)				Gender Empowerment Measure			
	Index range: 0–5				Index range: 0–20				Index range: 2–14				Values below 1 indicate female disadvantage			
Base Case: Countries in Year 2060 Descending Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	2.137	2.614	3.009	40.8%	14	15.57	16.74	19.6%	5	5.469	5.712	14.2%	0.556	0.62	0.657	18.2%
Poland	3.485	3.763	3.957	13.5%	20	19.95	20	0.0%	14	14	14	0.0%	0.631	0.713	0.767	21.6%
Ukraine	1.97	2.379	2.853	44.8%	16	16.84	17.28	8.0%	10	10.59	11.43	14.3%	0.461	0.486	0.506	9.8%
Romania	3.163	3.373	3.548	12.2%	19	19.64	19.46	2.4%	12	12.77	13.59	13.3%	0.512	0.551	0.578	12.9%
Czech Rep.	3.769	3.911	4.068	7.9%	18	18.88	19.54	8.6%	14	14	14	0.0%	0.664	0.704	0.752	13.3%
Belarus	1.339	1.996	2.529	88.9%	3	5.546	8.038	167.9%	3	3.278	3.46	15.3%	0.427	0.472	0.501	17.3%
Hungary	3.532	3.709	3.894	10.2%	20	19.79	19.79	-1.1%	14	14	14	0.0%	0.59	0.631	0.668	13.2%
Bulgaria	3.121	3.318	3.466	11.1%	19	19.56	19.71	3.7%	12	12.63	13.13	9.4%	0.613	0.641	0.657	7.2%
Slovak Rep.	3.523	3.763	3.939	11.8%	20	20	20	0.0%	14	14	14	0.0%	0.663	0.743	0.791	19.3%
Moldova, Rep. of	2.4	2.684	3.009	25.4%	18	19.7	19.63	9.1%	10	10.87	12.13	21.3%	0.547	0.613	0.641	17.2%
Europe-East	2.844	3.151	3.427	20.5%	16.7	17.55	18.02	7.9%	8.429	8.846	9.123	8.2%	0.552	0.61	0.647	17.2%
United Kingdom	4.246	4.319	4.415	4.0%	20	20	20	0.0%	14	14	14	0.0%	0.79	0.851	0.934	18.2%
Sweden	4.21	4.35	4.468	6.1%	20	20	20	0.0%	14	14	14	0.0%	0.909	0.995	1	10.0%
Denmark	4.401	4.446	4.497	2.2%	20	20	20	0.0%	14	14	14	0.0%	0.896	0.96	1	11.6%
Ireland	4.161	4.331	4.367	5.0%	20	20	20	0.0%	14	14	14	0.0%	0.722	0.8	0.85	17.7%
Norway	3.956	4.112	4.23	6.9%	20	20	20	0.0%	14	14	14	0.0%	0.906	0.982	1	10.4%
Finland	4.329	4.401	4.501	4.0%	20	20	20	0.0%	14	14	14	0.0%	0.902	0.977	1	10.9%
Lithuania	3.48	3.664	3.84	10.3%	20	19.88	20	0.0%	14	14	14	0.0%	0.628	0.689	0.736	17.2%
Latvia	3.477	3.729	3.855	10.9%	18	19.13	19.79	9.9%	12	12.95	13.56	13.0%	0.648	0.701	0.737	13.7%
Estonia	3.922	4.165	4.329	10.4%	19	19.91	20	5.3%	14	14	14	0.0%	0.665	0.724	0.802	20.6%
Iceland	3.39	3.706	3.963	16.9%	18.4	18.68	18.94	2.9%	14	14	14	0.0%	0.859	0.978	1	16.4%
Europe-North	3.957	4.122	4.247	7.3%	19.54	19.76	19.87	1.7%	13.95	13.98	13.99	0.3%	0.806	0.873	0.937	16.3%
Italy	3.369	3.58	3.859	14.5%	20	20	20	0.0%	13	13.66	14	7.7%	0.741	0.773	0.824	11.2%
Spain	3.662	3.821	4.032	10.1%	20	20	20	0.0%	14	14	14	0.0%	0.835	0.88	0.948	13.5%
Greece	3.151	3.329	3.549	12.6%	20	19.91	19.94	-0.3%	13	13.26	13.62	4.8%	0.677	0.694	0.714	5.5%
Portugal	3.259	3.437	3.672	12.7%	20	20	20	0.0%	14	14	14	0.0%	0.753	0.796	0.833	10.6%
Serbia	2.46	2.871	3.308	34.5%	18	19.34	19.99	11.1%	12	12.8	13.78	14.8%	0.621	0.675	0.715	15.1%
Croatia	3.052	3.342	3.524	15.5%	19	19.84	19.84	4.4%	13	13.86	14	7.7%	0.618	0.66	0.682	10.4%
Bosnia and Herzegovina	2.399	2.883	3.153	31.4%	14.6	16.09	16.56	13.4%	9	9.997	10.61	17.9%	0.359	0.406	0.423	17.8%
Albania	2.731	3.094	3.304	21.0%	19	19.37	18.97	-0.2%	10	10.87	11.48	14.8%	0.364	0.427	0.45	23.6%
Macedonia, TFYR	2.782	2.985	3.247	16.7%	19	19.93	20	5.3%	10	10.52	11.26	12.6%	0.641	0.708	0.74	15.4%
Slovenia	3.202	3.453	3.739	16.8%	20	19.9	20	0.0%	14	14	14	0.0%	0.641	0.682	0.724	12.9%
Montenegro	2.428	2.735	3.023	24.5%	19	19.52	19.2	1.1%	11	11.52	12.08	9.8%	0.485	0.519	0.538	10.9%
Malta	3.901	3.997	4.013	2.9%	17.48	18.9	19.25	10.1%	14	14	14	0.0%	0.531	0.584	0.606	14.1%
Europe-South	3.033	3.294	3.535	16.6%	18.84	19.4	19.48	3.4%	13.13	13.53	13.78	5.0%	0.735	0.774	0.824	12.1%
Germany	4.077	4.162	4.298	5.4%	20	20	20	0.0%	14	14	14	0.0%	0.852	0.909	0.977	14.7%
France	3.812	3.955	4.191	9.9%	19	19.17	19.34	1.8%	14	14	14	0.0%	0.779	0.825	0.915	17.5%
Netherlands	4.295	4.299	4.355	1.4%	20	20	20	0.0%	14	14	14	0.0%	0.882	0.933	0.991	12.4%
Belgium	3.775	3.927	4.126	9.3%	18	18.35	18.68	3.8%	14	14	14	0.0%	0.874	0.922	0.998	14.2%
Switzerland	4.146	4.209	4.313	4.0%	20	20	20	0.0%	14	14	14	0.0%	0.822	0.885	0.951	15.7%
Austria	4.028	4.135	4.257	5.7%	20	20	20	0.0%	14	14	14	0.0%	0.744	0.815	0.874	17.5%
Luxembourg	4.194	4.333	4.386	4.6%	19.76	19.68	19.44	-1.6%	14	14	14	0.0%	0.542	0.591	0.609	12.4%
Europe-West	4.047	4.146	4.275	5.6%	19.54	19.6	19.64	0.5%	14	14	14	0.0%	0.825	0.876	0.95	15.2%

Governance

Base Case Source: International Futures Model Version 6.68, Nov 2013	Policy Orientation												Summary Indices			
	Economic Freedom Index				Economic Integration Index				Globalization Index				IFs Governance Security Index			
	Index range: 1–10				Index range: 0–100				Index range: 0–100				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	7.371	7.417	7.643	3.7%	16.35	20.13	20.86	27.6%	33.15	38.86	39.95	20.5%	0.617	0.73	0.814	31.9%
Africa	6.312	6.635	7.171	13.6%	13.08	17.89	18.75	43.3%	42.32	46.51	44.94	6.2%	0.589	0.708	0.778	32.1%
Americas	7.731	7.719	7.79	0.8%	11.98	17.65	20.45	70.7%	35.84	40.5	41.67	16.3%	0.857	0.916	0.937	9.3%
Asia with Oceania	7.048	7.281	7.639	8.4%	11.84	16.14	19.09	61.2%	28.05	33.84	35.55	26.7%	0.529	0.67	0.788	49.0%
Europe	7.384	7.508	7.694	4.2%	25.79	32.99	30.5	18.3%	45.9	53.4	54.08	17.8%	0.852	0.908	0.927	8.8%
World	7.371	7.417	7.643	3.7%	16.35	20.13	20.86	27.6%	33.15	38.86	39.95	20.5%	0.617	0.73	0.814	31.9%
Africa-Eastern	6.328	6.95	7.719	22.0%	10.48	15.2	15.1	44.1%	41.21	49.44	50.68	23.0%	0.634	0.748	0.814	28.4%
Africa-Middle	4.991	5.272	5.502	10.2%	22.9	25	29.62	29.3%	39.46	47.17	48.71	23.4%	0.351	0.493	0.587	67.2%
Africa-Northern	6.185	6.517	6.767	9.4%	13.02	19.04	16.1	23.7%	47.43	44.03	36.88	-22.2%	0.536	0.609	0.678	26.5%
Africa-Southern	7.045	7.394	7.74	9.9%	9.924	13.78	18.29	84.3%	40.52	40.2	42.49	4.9%	0.709	0.858	0.942	32.9%
Africa-Western	6.215	6.886	7.468	20.2%	13.97	16.77	18.26	30.7%	41.5	45.14	40.67	-2.0%	0.654	0.792	0.85	30.0%
Africa	6.312	6.635	7.171	13.6%	13.08	17.89	18.75	43.3%	42.32	46.51	44.94	6.2%	0.589	0.708	0.778	32.1%
America-Caribbean	6.529	6.836	7.105	8.8%	11.03	14.8	15.49	40.4%	35.82	40.54	44.61	24.5%	0.842	0.875	0.893	6.1%
America-Central	7.436	7.8	8.059	8.4%	16.3	20.76	19.53	19.8%	50.65	53.89	44.84	-11.5%	0.793	0.886	0.907	14.4%
America-North	7.974	8.069	8.215	3.0%	12.15	18.58	21.71	78.7%	44.53	48.72	49.95	12.2%	0.917	0.967	0.983	7.2%
America-South	6.087	6.367	6.48	6.5%	10.55	13.9	16.96	60.8%	24.23	29.32	31.08	28.3%	0.797	0.866	0.891	11.8%
Americas	7.731	7.719	7.79	0.8%	11.98	17.65	20.45	70.7%	35.84	40.5	41.67	16.3%	0.857	0.916	0.937	9.3%
Asia-East	7.146	7.377	7.801	9.2%	10.37	15.36	20.77	100.3%	22.29	31.45	40.14	80.1%	0.675	0.909	0.953	41.2%
Asia-South Central	6.342	7.005	7.488	18.1%	7.974	11.68	13.59	70.4%	30.29	32.62	31.45	3.8%	0.372	0.491	0.695	86.8%
Asia-South East	6.802	7.043	7.186	5.6%	24.98	25.67	20.43	-18.2%	32.61	36.67	35.38	8.5%	0.56	0.663	0.769	37.3%
Asia-West	6.932	7.206	7.33	5.7%	14.27	21.35	24.98	75.1%	35.36	44.21	42.08	19.0%	0.573	0.702	0.796	38.9%
Oceania	7.925	8.079	8.234	3.9%	13.98	20.68	23.95	71.3%	50.51	57.1	56.06	11.0%	0.886	0.903	0.955	7.8%
Asia with Oceania	7.048	7.281	7.639	8.4%	11.84	16.14	19.09	61.2%	28.05	33.84	35.55	26.7%	0.529	0.67	0.788	49.0%
Europe-East	6.683	6.902	7.079	5.9%	18.55	27.16	22.43	20.9%	33.74	38.51	39.68	17.6%	0.698	0.789	0.808	15.8%
Europe-North	7.767	7.958	8.149	4.9%	32.87	40.18	37.44	13.9%	62.86	70.05	68.63	9.2%	0.967	0.99	0.999	3.3%
Europe-South	7.082	7.199	7.368	4.0%	15.9	22	22.25	39.9%	40.79	49.89	50.65	24.2%	0.925	0.954	0.973	5.2%
Europe-West	7.515	7.645	7.832	4.2%	28.8	36.34	33.47	16.2%	59.26	66.2	64.57	9.0%	0.973	0.991	1	2.8%
Europe	7.384	7.508	7.694	4.2%	25.79	32.99	30.5	18.3%	45.9	53.4	54.08	17.8%	0.852	0.908	0.927	8.8%

Governance

	Policy Orientation												Summary Indices			
	Economic Freedom Index				Economic Integration Index				Globalization Index				IFs Governance Security Index			
	Index range: 1–10				Index range: 0–100				Index range: 0–100				Index range: 0–1			
Base Case: Countries in Descending Year 2060 Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA																
Ethiopia	5.71	6.404	7.047	23.4%	6.044	10.39	9.607	59.0%	46.45	48.43	49.75	7.1%	0.589	0.812	0.894	51.8%
Tanzania, United Rep. of	6.32	6.949	7.851	24.2%	9.729	15.1	15.92	63.6%	36.47	48.36	55.78	52.9%	0.787	0.832	0.903	14.7%
Uganda	6.9	7.691	8.449	22.4%	10.95	14.62	13.77	25.8%	49.15	60.24	54.82	11.5%	0.357	0.469	0.619	73.4%
Kenya	7.09	7.531	8.079	13.9%	7.109	12.84	12.62	77.5%	35.93	47.5	45.05	25.4%	0.732	0.847	0.878	19.9%
Madagascar	6.29	6.419	6.553	4.2%	16.34	23.2	27.7	69.5%	39.71	50.25	52.05	31.1%	0.76	0.781	0.797	4.9%
Mozambique	5.74	6.562	7.11	23.9%	14.64	16.15	17.68	20.8%	46.68	49.54	53.2	14.0%	0.713	0.831	0.882	23.7%
Malawi	5.93	6.254	6.755	13.9%	9.399	19.66	16.47	75.2%	36.77	48.9	49.21	33.8%	0.782	0.81	0.853	9.1%
Zambia	7.13	7.909	8.718	22.3%	19.72	24.2	22.74	15.3%	39.95	52	57.82	44.7%	0.781	0.834	0.894	14.5%
Somalia	5.028	5.438	6.085	21.0%	5.745	15.58	12.05	109.7%	13.9	25.89	24.09	73.3%	0.072	0.292	0.365	406.9%
Rwanda	6.2	6.918	7.592	22.5%	4.891	11.74	12.55	156.6%	34.82	47.09	50.79	45.9%	0.502	0.613	0.714	42.2%
Zimbabwe	2.89	3.06	3.199	10.7%	13.08	17.52	17.39	33.0%	43.26	51.27	51.63	19.3%	0.777	0.829	0.866	11.5%
Burundi	5.54	5.961	6.399	15.5%	6.37	10.19	15.19	138.5%	37.61	46.16	48.04	27.7%	0.337	0.496	0.567	68.2%
Eritrea	5.021	5.447	6.021	19.9%	10.32	13.47	12.98	25.8%	40.67	47.68	48.46	19.2%	0.71	0.768	0.831	17.0%
Comoros	5.458	5.586	5.801	6.3%	7.01	11.51	17.55	150.4%	48.5	53.79	51.75	6.7%	0.781	0.791	0.823	5.4%
Djibouti	5.873	6.18	6.513	10.9%	21.09	23.44	20.33	-3.6%	40.9	51.78	52.4	28.1%	0.663	0.821	0.865	30.5%
Mauritius	7.62	7.882	8.015	5.2%	14.69	19.57	18.93	28.9%	63.31	57.56	41.26	-34.8%	0.912	0.939	0.951	4.3%
Africa-Eastern	6.328	6.95	7.719	22.0%	10.48	15.2	15.1	44.1%	41.21	49.44	50.68	23.0%	0.634	0.748	0.814	28.4%
Congo, Democratic Rep. of	5	5.537	6.148	23.0%	14.8	21.25	22.38	51.2%	39.99	49.01	50.76	26.9%	0.165	0.299	0.402	143.6%
Angola	4.04	4.817	5.132	27.0%	29.47	25.76	32.92	11.7%	36.52	34.65	42.67	16.8%	0.352	0.654	0.816	131.8%
Cameroon	5.79	6.115	6.552	13.2%	8.185	11.63	13.53	65.3%	36.76	47.92	41.62	13.2%	0.781	0.816	0.857	9.7%
Chad	5.09	5.534	5.801	14.0%	22.35	24.31	23.97	7.2%	41.13	51.06	52.49	27.6%	0.436	0.653	0.772	77.1%
Central African Rep.	4.79	5.188	5.679	18.6%	7.23	12.09	12.35	70.8%	37.81	46.25	48.02	27.0%	0.557	0.74	0.811	45.6%
Congo, Rep. of	4.44	4.829	5.04	13.5%	40.07	41.4	30.44	-24.0%	51.39	59.9	58.99	14.8%	0.631	0.798	0.843	33.6%
Gabon	5.8	6.025	6.009	3.6%	11.28	16.01	28.62	153.7%	50.04	49.03	49.44	-1.2%	0.801	0.856	0.887	10.7%
Equatorial Guinea	7.405	8.055	8.074	9.0%	25.97	32.09	37.12	42.9%	40.56	50.38	46.42	14.4%	0.77	0.846	0.908	17.9%
São Tomé and Príncipe	5.729	5.976	6.211	8.4%	22.79	24.59	21.86	-4.1%	44.02	51.89	51.94	18.0%	0.802	0.835	0.86	7.2%
Africa-Middle	4.991	5.272	5.502	10.2%	22.9	25	29.62	29.3%	39.46	47.17	48.71	23.4%	0.351	0.493	0.587	67.2%
Egypt	6.68	6.932	7.216	8.0%	12.67	15.26	14.08	11.1%	59.33	42.65	34.87	-41.2%	0.592	0.645	0.735	24.2%
Sudan	5.835	6.253	6.763	15.9%	12.24	13.93	14.38	17.5%	37.46	48.29	43.34	15.7%	0.174	0.3	0.409	135.1%
Algeria	5.34	5.637	5.951	11.4%	10.71	17.37	11.96	11.7%	28.91	29.09	25.94	-10.3%	0.444	0.658	0.755	70.0%
Morocco	6.16	6.48	6.77	9.9%	10.84	14.89	15.6	43.9%	53.07	55.31	40.29	-24.1%	0.822	0.854	0.873	6.2%
Tunisia	6.39	6.607	6.865	7.4%	17.49	22.42	22.09	26.3%	56.26	54.51	42.26	-24.9%	0.849	0.874	0.893	5.2%
Libya	7.024	7.331	7.559	7.6%	19.04	31.92	30.85	62.0%	17.85	38.54	35.89	101.1%	0.792	0.845	0.884	11.6%
Africa-Northern	6.185	6.517	6.767	9.4%	13.02	19.04	16.1	23.7%	47.43	44.03	36.88	-22.2%	0.536	0.609	0.678	26.5%

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	Index range: 1-10				Index range: 0-100				Index range: 0-100				Index range: 0-1			
Base Case: Countries in Descending Year 2060 Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued																
South Africa	7.06	7.406	7.762	9.9%	9.168	12.85	17.93	95.6%	38.55	35.9	40.64	5.4%	0.694	0.856	0.949	36.7%
Namibia	6.83	7.311	7.57	10.8%	14.48	15.26	17.01	17.5%	42.01	54.91	42.23	0.5%	0.815	0.883	0.919	12.8%
Lesotho	6.36	6.939	7.348	15.5%	38.29	41.59	33.14	-13.4%	58.59	70.03	69.66	18.9%	0.797	0.855	0.899	12.8%
Botswana	7.12	7.458	7.654	7.5%	16.89	22.12	23.3	38.0%	60.5	66.37	52.86	-12.6%	0.856	0.909	0.938	9.6%
Swaziland	6.317	6.534	6.85	8.4%	25.91	30.28	24.22	-6.5%	55.43	67.72	46.67	-15.8%	0.758	0.806	0.857	13.1%
Africa-Southern	7.045	7.394	7.74	9.9%	9.924	13.78	18.29	84.3%	40.52	40.2	42.49	4.9%	0.709	0.858	0.942	32.9%
Nigeria	6.31	6.971	7.484	18.6%	14.96	16.87	19.26	28.7%	38.67	37.84	29.21	-24.5%	0.595	0.801	0.86	44.5%
Niger	5.11	5.297	5.577	9.1%	14.02	21.86	24.6	75.5%	48.72	52.55	51.99	6.7%	0.743	0.761	0.812	9.3%
Côte d'Ivoire	6.09	6.392	6.74	10.7%	12.12	16.7	18.65	53.9%	37.59	48.75	44.26	17.7%	0.737	0.783	0.835	13.3%
Burkina Faso	5.87	6.281	6.752	15.0%	8.342	15.8	13.02	56.1%	40.74	49.27	49.54	21.6%	0.753	0.801	0.852	13.1%
Ghana	6.8	7.49	8.31	22.2%	11.53	14.78	15.92	38.1%	42.86	49.95	54.94	28.2%	0.827	0.878	0.914	10.5%
Mali	6.28	6.843	7.557	20.3%	10.53	17.51	14.51	37.8%	48.93	56.75	53	8.3%	0.624	0.803	0.867	38.9%
Senegal	5.72	5.936	6.217	8.7%	9.983	12.71	13.98	40.0%	37.5	47.49	49	30.7%	0.579	0.693	0.776	34.0%
Guinea	5.344	5.732	6.11	14.3%	12.19	19.18	17.54	43.9%	49.26	55.69	51.49	4.5%	0.709	0.809	0.847	19.5%
Benin	5.89	6.145	6.479	10.0%	8.512	15.72	20.27	138.1%	48.54	56.99	53.92	11.1%	0.802	0.827	0.857	6.9%
Togo	5.9	6.273	6.656	12.8%	13.98	19.61	20.58	47.2%	51.85	61.64	57.86	11.6%	0.769	0.795	0.831	8.1%
Sierra Leone	5.97	6.885	7.673	28.5%	6.462	9.059	9.448	46.2%	47.36	50.6	52.27	10.4%	0.439	0.573	0.78	77.7%
Liberia	4.807	5.517	6.034	25.5%	43.72	43.12	39.45	-9.8%	59.76	63.1	58.76	-1.7%	0.556	0.658	0.834	50.0%
Mauritania	6.05	6.337	6.596	9.0%	24.58	24.87	21.55	-12.3%	42.57	52.97	52.23	22.7%	0.757	0.793	0.823	8.7%
Gambia	5.515	5.794	6.125	11.1%	18.64	20.93	18.39	-1.3%	42.94	49.99	50.23	17.0%	0.756	0.793	0.838	10.8%
Guinea-Bissau	4.84	5.08	5.276	9.0%	9.947	13.49	13.22	32.9%	48.62	58.87	59.75	22.9%	0.695	0.784	0.819	17.8%
Cape Verde	6.148	6.523	6.744	9.7%	19.66	20.66	19.44	-1.1%	57.45	66.08	67.36	17.2%	0.855	0.894	0.909	6.3%
Africa-Western	6.215	6.886	7.468	20.2%	13.97	16.77	18.26	30.7%	41.5	45.14	40.67	-2.0%	0.654	0.792	0.85	30.0%

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Base Case: Countries in Descending Year 2060 Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS																
Haiti	6.44	6.826	7.136	10.8%	6.353	10.5	14.11	122.1%	47.47	57.99	60.19	26.8%	0.747	0.786	0.821	9.9%
Dominican Rep.	6.27	6.653	6.898	10.0%	11.84	15	17.97	51.8%	47.4	41.61	44.66	-5.8%	0.867	0.911	0.941	8.5%
Cuba	5.949	6.558	7.149	20.2%	2.596	4.514	7.925	205.3%	15.85	18.64	24.18	52.6%	0.867	0.907	0.907	4.6%
Puerto Rico	6.82	7.071	7.35	7.8%	6.887	12.16	14.14	105.3%	14.37	23.11	29.53	105.5%	0.889	0.918	0.935	5.2%
Jamaica	7.19	7.326	7.484	4.1%	24.94	28.32	24.45	-2.0%	58.01	49.83	39.82	-31.4%	0.888	0.91	0.922	3.8%
Trinidad and Tobago	7.07	7.487	7.51	6.2%	33.54	38.21	38.21	13.9%	27.8	46.64	46.05	65.6%	0.878	0.941	0.96	9.3%
Bahamas	7.1	7.157	7.145	0.6%	23.34	28.4	26.16	12.1%	55.92	43.05	38.72	-30.8%	0.928	0.955	0.959	3.3%
Barbados	6.75	6.828	6.91	2.4%	19.85	24.56	21.6	8.8%	60.68	48.65	43.2	-28.8%	0.943	0.958	0.963	2.1%
Saint Lucia	6.701	6.886	7.016	4.7%	40.93	42.82	34.46	-15.8%	65.57	65.63	45.59	-30.5%	0.891	0.924	0.937	5.2%
Grenada	6.604	6.811	6.937	5.0%	37.33	37.77	33.09	-11.4%	56.73	61.61	54.09	-4.7%	0.86	0.895	0.912	6.0%
Saint Vincent and the Grenadines	6.653	6.802	6.962	4.6%	38.37	40.27	33.89	-11.7%	54.03	62.21	57.71	6.8%	0.881	0.903	0.916	4.0%
America-Caribbean	6.529	6.836	7.105	8.8%	11.03	14.8	15.49	40.4%	35.82	40.54	44.61	24.5%	0.842	0.875	0.893	6.1%
Guatemala	7.25	7.597	8.053	11.1%	9.219	12.38	14.07	52.6%	52.07	50.61	37.26	-28.4%	0.667	0.864	0.894	34.0%
Honduras	7.48	7.723	7.939	6.1%	20.41	25.25	22.61	10.8%	55.31	65.75	53.92	-2.5%	0.841	0.868	0.889	5.7%
Nicaragua	6.96	7.226	7.435	6.8%	22.1	25.15	22.11	0.0%	54.42	64.67	64.43	18.4%	0.854	0.886	0.904	5.9%
El Salvador	7.48	7.727	7.957	6.4%	9.708	13.19	13.65	40.6%	54.4	50.6	39.56	-27.3%	0.826	0.909	0.923	11.7%
Costa Rica	7.56	7.833	7.997	5.8%	17.86	21.41	20.96	17.4%	48.1	43.4	41.71	-13.3%	0.908	0.941	0.953	5.0%
Panama	7.65	8.136	8.309	8.6%	25.86	29.88	32.13	24.2%	24.38	38.3	43.22	77.3%	0.891	0.936	0.959	7.6%
Belize	6.87	7.138	7.365	7.2%	26.02	29.82	25.72	-1.2%	59.68	69.66	47.72	-20.0%	0.86	0.899	0.928	7.9%
America-Central	7.436	7.8	8.059	8.4%	16.3	20.76	19.53	19.8%	50.65	53.89	44.84	-11.5%	0.793	0.886	0.907	14.4%
United States of America	8.06	8.166	8.319	3.2%	11.07	17.65	21.52	94.4%	49.59	51.03	51.43	3.7%	0.958	0.979	0.995	3.9%
Mexico	6.85	7.102	7.322	6.9%	13.22	17.06	17.51	32.5%	24.66	37.72	41.39	67.8%	0.781	0.922	0.944	20.9%
Canada	7.91	8.045	8.211	3.8%	23.04	29.72	28.93	25.6%	61.76	63.57	62.58	1.3%	0.977	0.998	1	2.4%
America-North	7.974	8.069	8.215	3.0%	12.15	18.58	21.71	78.7%	44.53	48.72	49.95	12.2%	0.917	0.967	0.983	7.2%
Brazil	6	6.252	6.422	7.0%	7.99	10.36	12.23	53.1%	12.57	22.84	26.55	111.2%	0.88	0.918	0.933	6.0%
Colombia	5.81	6.13	6.395	10.1%	12.45	15.05	14.98	20.3%	46.1	34.14	29.89	-35.2%	0.312	0.525	0.591	89.4%
Argentina	6.1	6.36	6.517	6.8%	9.618	13.46	16.17	68.1%	22.89	32.76	36.73	60.5%	0.899	0.936	0.959	6.7%
Peru	7.26	7.701	7.937	9.3%	11.08	12.34	14.89	34.4%	33.81	30.54	31.25	-7.6%	0.69	0.906	0.946	37.1%
Venezuela (Bolivarian Rep. of)	4.33	4.486	4.463	3.1%	11.43	19.03	32.31	182.7%	35.49	34.51	43.66	23.0%	0.828	0.871	0.905	9.3%
Ecuador	5.83	6.071	6.19	6.2%	11.03	13.48	13.97	26.7%	33.87	27.14	23.11	-31.8%	0.854	0.898	0.92	7.7%
Chile	8.14	8.497	8.732	7.3%	26.19	29.74	28.13	7.4%	26.41	34.59	38.96	47.5%	0.922	0.946	0.962	4.3%
Bolivia (Plurinational State of)	6.18	6.443	6.925	12.1%	19.03	27.12	16.35	-14.1%	55	67.61	47.41	-13.8%	0.836	0.881	0.913	9.2%
Paraguay	6.38	6.611	6.787	6.4%	13.34	16.83	16.89	26.6%	52.01	41.37	27.75	-46.6%	0.841	0.877	0.902	7.3%
Uruguay	6.95	7.196	7.429	6.9%	10.8	14.07	17.44	61.5%	28.81	30.03	34.46	19.6%	0.926	0.945	0.961	3.8%
Guyana	5.98	6.282	6.568	9.8%	29.23	29.45	27.3	-6.6%	64.11	68.29	69	7.6%	0.866	0.907	0.925	6.8%
Suriname	6.588	6.977	7.242	9.9%	6.466	10.24	16.22	150.9%	42.45	54.84	50.23	18.3%	0.863	0.908	0.938	8.7%
America-South	6.087	6.367	6.48	6.5%	10.55	13.9	16.96	60.8%	24.23	29.32	31.08	28.3%	0.797	0.866	0.891	11.8%

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Base Case: Countries in Descending Year 2060 Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA																
China	6.54	7.237	7.783	19.0%	10.63	14.17	20.48	92.7%	19.44	29.72	39.83	104.9%	0.63	0.901	0.95	50.8%
Japan	7.46	7.612	7.822	4.9%	5.69	11.16	17.21	202.5%	32.37	44.29	45.39	40.2%	0.966	0.982	0.997	3.2%
Korea, Rep. of	7.45	7.751	7.929	6.4%	12.31	19.46	25.25	105.1%	54.11	46.07	45.44	-16.0%	0.938	0.975	0.995	6.1%
Korea, Dem. People's Rep. of	5.411	5.768	6.103	12.8%	5.782	8.141	10.47	81.1%	5.714	12.93	14.15	147.6%	0.748	0.808	0.85	13.6%
Taiwan, China	7.62	7.854	7.963	4.5%	9.286	17.3	23.04	148.1%	54	39.38	39.12	-27.6%	0.95	0.984	0.998	5.1%
Hong Kong SAR, China	8.97	9.183	9.23	2.9%	100	117.4	85.68	-14.3%	100	84.64	72.14	-27.9%	0.961	0.986	0.99	3.0%
Mongolia	6.91	7.495	7.749	12.1%	24.84	27.75	34.6	39.3%	56.34	63.2	69.39	23.2%	0.849	0.894	0.927	9.2%
Asia-East	7.146	7.377	7.801	9.2%	10.37	15.36	20.77	100.3%	22.29	31.45	40.14	80.1%	0.675	0.909	0.953	41.2%
India	6.45	7.117	7.61	18.0%	6.755	9.446	12.95	91.7%	25.01	25.9	29.59	18.3%	0.27	0.395	0.677	150.7%
Pakistan	6.01	6.302	6.722	11.8%	5.75	9.38	9.545	66.0%	35.73	39.58	24.02	-32.8%	0.407	0.545	0.646	58.7%
Bangladesh	5.93	6.487	7.033	18.6%	4.547	7.967	7.349	61.6%	46.84	56.31	38.14	-18.6%	0.765	0.859	0.892	16.6%
Afghanistan	5.544	5.986	6.34	14.4%	7.565	16.69	14.24	88.2%	38.45	48.37	49.21	28.0%	0.126	0.27	0.365	189.7%
Iran, Islamic Rep. of	5.99	6.138	6.38	6.5%	7.968	18.94	20.98	163.3%	38.68	29.92	30.41	-21.4%	0.752	0.845	0.88	17.0%
Nepal	5.58	5.952	6.374	14.2%	3.704	9.884	12.62	240.7%	47.38	58.46	59.37	25.3%	0.478	0.696	0.793	65.9%
Uzbekistan	6.013	6.755	7.119	18.4%	16.73	19.45	18.58	11.1%	41.19	30.37	24.39	-40.8%	0.757	0.842	0.871	15.1%
Sri Lanka	6.1	6.554	6.971	14.3%	7.447	10.77	12.01	61.3%	53.8	61.48	43.67	-18.8%	0.342	0.412	0.583	70.5%
Kazakhstan	7.12	7.614	7.81	9.7%	29.73	42.52	34.18	15.0%	34.83	45.35	43.23	24.1%	0.82	0.878	0.918	12.0%
Tajikistan	5.78	6.198	6.644	14.9%	13.02	13.04	14.12	8.4%	51.31	60.84	63.28	23.3%	0.62	0.747	0.873	40.8%
Kyrgyz Rep.	6.8	7.032	7.352	8.1%	21.21	23.95	22.25	4.9%	58.79	64.25	64.54	9.8%	0.864	0.898	0.924	6.9%
Turkmenistan	6.568	7.498	7.112	8.3%	22.74	31.89	49.2	116.4%	23.47	44.79	48.93	108.5%	0.755	0.84	0.865	14.6%
Bhutan	6.358	6.97	7.306	14.9%	11.99	18.59	19.58	63.3%	38.44	56.25	63.55	65.3%	0.843	0.907	0.934	10.8%
Maldives	6.406	6.833	6.998	9.2%	22.22	23.68	22.82	2.7%	47.1	57.29	42.9	-8.9%	0.84	0.899	0.924	10.0%
Asia-South Central	6.342	7.005	7.488	18.1%	7.974	11.68	13.59	70.4%	30.29	32.62	31.45	3.8%	0.372	0.491	0.695	86.8%
Indonesia	6.35	6.855	7.215	13.6%	7.468	9.918	12.5	67.4%	31.18	30.6	30.06	-3.6%	0.544	0.667	0.824	51.5%
Philippines	6.83	7.267	7.713	12.9%	10.39	13.43	14.06	35.3%	32.22	33.28	33.94	5.3%	0.305	0.412	0.508	66.6%
Vietnam	6.22	6.673	6.943	11.6%	26.39	30.74	26.31	-0.3%	64.35	69.08	52.05	-19.1%	0.814	0.866	0.892	9.6%
Thailand	7.04	7.435	7.748	10.1%	21.06	26.15	24.44	16.0%	12.26	25.78	29.66	141.9%	0.666	0.849	0.911	36.8%
Myanmar	3.69	4.238	4.777	29.5%	0	3.423	3.982		0	12.04	19.91		0.203	0.326	0.58	185.7%
Malaysia	6.88	7.211	7.466	8.5%	30.58	37.98	34.22	11.9%	34.31	37.93	40.36	17.6%	0.888	0.928	0.953	7.3%
Cambodia	5.756	6.348	6.769	17.6%	20.03	24.65	22.78	13.7%	52.68	57.04	56.9	8.0%	0.762	0.866	0.901	18.2%
Lao People's Dem. Rep.	5.866	6.568	7.179	22.4%	12.71	19.41	18.45	45.2%	41.44	52.43	60.38	45.7%	0.761	0.844	0.888	16.7%
Singapore	8.66	8.96	9.086	4.9%	82.82	99.14	86.47	4.4%	65.92	77.3	71.6	8.6%	0.929	0.968	0.979	5.4%
Timor-Leste	5.198	5.904	6.461	24.3%	14.85	20.6	18.49	24.5%	40.37	49.83	53.07	31.5%	0.781	0.861	0.894	14.5%
Brunei Darussalam	7.692	7.8	8.022	4.3%	15	26.28	27.91	86.1%	57.07	52.3	49.86	-12.6%	0.911	0.961	0.993	9.0%
Asia-South East	6.802	7.043	7.186	5.6%	24.98	25.67	20.43	-18.2%	32.61	36.67	35.38	8.5%	0.56	0.663	0.769	37.3%

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	Economic Freedom Index				Economic Integration Index				Globalization Index				IFs Governance Security Index			
	Index range: 1–10				Index range: 0–100				Index range: 0–100				Index range: 0–1			
Base Case: Countries in Descending Year 2060 Population Sequence	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued																
Turkey	6.42	6.758	7.034	9.6%	7.097	11.28	15.26	115.0%	22.32	28.79	34.84	56.1%	0.416	0.655	0.706	69.7%
Iraq	6.077	6.555	7.215	18.7%	7.981	14.13	14.01	75.5%	41.62	51.75	59.48	42.9%	0.37	0.46	0.757	104.6%
Yemen, Rep. of	5.913	6.182	6.539	10.6%	9.456	11.85	14.22	50.4%	53.33	59.21	30.39	-43.0%	0.525	0.732	0.826	57.3%
Saudi Arabia	7.241	7.54	7.694	6.3%	17.44	24.35	34.91	100.2%	23.58	49.05	54.94	133.0%	0.811	0.859	0.889	9.6%
Syrian Arab Rep.	5.76	5.939	6.319	9.7%	9.169	13.25	13.02	42.0%	43.69	27.56	22.31	-48.9%	0.815	0.851	0.879	7.9%
Jordan	7.4	7.71	8.132	9.9%	26.04	26.91	24.22	-7.0%	45.49	55.44	43.73	-3.9%	0.845	0.868	0.889	5.2%
Israel	6.69	6.922	7.187	7.4%	18.88	23.96	28.21	49.4%	41.44	52.62	51.53	24.3%	0.395	0.428	0.485	22.8%
Palestine	6.201	6.258	6.56	5.8%	14.08	18.95	15.95	13.3%	24.3	29.5	25.18	3.6%	0.824	0.835	0.87	5.6%
Azerbaijan	6.46	6.672	7.008	8.5%	24.89	40.55	28.76	15.5%	59.15	51.67	39.04	-34.0%	0.593	0.819	0.865	45.9%
United Arab Emirates	7.58	7.812	7.767	2.5%	19.42	31.78	48.51	149.8%	35.43	54.68	59.5	67.9%	0.862	0.925	0.941	9.2%
Kuwait	7.46	7.764	7.726	3.6%	16	32.43	41.68	160.5%	26.91	54.65	57.22	112.6%	0.794	0.847	0.859	8.2%
Lebanon	6.864	7.147	7.258	5.7%	22.24	23.77	24.5	10.2%	63.5	73.59	56.2	-11.5%	0.836	0.897	0.909	8.7%
Oman	7.36	7.745	7.997	8.7%	15.46	21.87	28.22	82.5%	36.15	51.17	49.78	37.7%	0.822	0.89	0.92	11.9%
Armenia	7.17	7.493	7.868	9.7%	15.44	18.13	18.05	16.9%	45.26	53.83	45.49	0.5%	0.872	0.898	0.912	4.6%
Georgia	7.25	7.786	8.103	11.8%	20.63	21.59	21.37	3.6%	56.94	68.02	70.77	24.3%	0.795	0.913	0.928	16.7%
Qatar	8.015	8.396	8.388	4.7%	12.13	35.87	57.77	376.3%	23.57	56.09	62.6	165.6%	0.855	0.914	0.933	9.1%
Bahrain	7.56	7.785	7.933	4.9%	35.21	40.67	40.48	15.0%	32.21	54.81	56.68	76.0%	0.837	0.87	0.886	5.9%
Cyprus	7.36	7.432	7.448	1.2%	35.57	39.89	34.29	-3.6%	39.82	45.2	41.96	5.4%	0.945	0.965	0.97	2.6%
Asia-West	6.932	7.206	7.33	5.7%	14.27	21.35	24.98	75.1%	35.36	44.21	42.08	19.0%	0.573	0.702	0.796	38.9%
Australia	7.89	8.053	8.185	3.7%	13.42	20.41	23.93	78.3%	53.21	59.87	59.49	11.8%	0.975	0.996	1	2.6%
Papua New Guinea	6.71	7.185	7.826	16.6%	19.38	23.71	22.77	17.5%	41.66	52.78	50.42	21.0%	0.555	0.641	0.86	55.0%
New Zealand	8.3	8.492	8.762	5.6%	17.01	21.93	24.56	44.4%	48.13	48.7	52.27	8.6%	0.981	0.997	1	1.9%
Solomon Islands	5.935	6.186	6.281	5.8%	26.28	28.4	23.2	-11.7%	54.6	60.06	55.61	1.8%	0.792	0.82	0.824	4.0%
Fiji	6.64	6.903	7.295	9.9%	27.14	30.7	25.07	-7.6%	60.3	68.44	45.96	-23.8%	0.832	0.864	0.889	6.9%
Vanuatu	6.248	6.444	6.543	4.7%	31.12	32.92	27.12	-12.9%	53.64	60.57	59.03	10.0%	0.828	0.852	0.87	5.1%
Micronesia (Federated States of)	6.018	6.259	6.423	6.7%	6.011	11.12	12	99.6%	41.63	48.51	49.5	18.9%	0.798	0.843	0.868	8.8%
Tonga	6.24	6.347	6.625	6.2%	10.91	13.67	15.62	43.2%	48.03	51.11	52.46	9.2%	0.857	0.862	0.89	3.9%
Samoa	6.23	6.46	6.701	7.6%	12.62	16.18	14.62	15.8%	56.24	64.31	64.54	14.8%	0.856	0.88	0.902	5.4%
Oceania	7.925	8.079	8.234	3.9%	13.98	20.68	23.95	71.3%	50.51	57.1	56.06	11.0%	0.886	0.903	0.955	7.8%

Governance

Base Case: Countries in Descending Year 2060 Population Sequence	Policy Orientation												Summary Indices			
	Economic Freedom Index				Economic Integration Index				Globalization Index				IFs Governance Security Index			
	Index range: 1–10				Index range: 0–100				Index range: 0–100				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE																
Russian Federation	6.5	6.754	6.95	6.9%	14.68	27.51	20.03	36.4%	34.16	39.93	41.14	20.4%	0.476	0.635	0.662	39.1%
Poland	6.78	7.033	7.206	6.3%	15.2	20.68	21.19	39.4%	27.9	40.25	43.27	55.1%	0.935	0.967	0.986	5.5%
Ukraine	5.68	5.841	6.073	6.9%	16.74	21.13	21.27	27.1%	41.63	29.19	25.66	-38.4%	0.88	0.906	0.923	4.9%
Romania	6.79	6.966	7.133	5.1%	14.67	18.11	17.1	16.6%	25.24	36.11	38.45	52.3%	0.906	0.933	0.947	4.5%
Czech Rep.	7.09	7.253	7.434	4.9%	25.53	32.22	30.08	17.8%	20.47	40.11	45.64	123.0%	0.938	0.966	0.987	5.2%
Belarus	6.934	7.231	7.412	6.9%	13.9	19.06	22.51	61.9%	38.17	34.21	40.54	6.2%	0.834	0.867	0.856	2.6%
Hungary	7.33	7.523	7.717	5.3%	54.22	60.29	49.09	-9.5%	38.87	48.97	48.01	23.5%	0.93	0.954	0.969	4.2%
Bulgaria	6.74	6.89	7.006	3.9%	33.17	36.33	32.35	-2.5%	35.05	42.6	41.84	19.4%	0.906	0.926	0.935	3.2%
Slovak Rep.	7.52	7.75	7.916	5.3%	20.7	29.12	28.19	36.2%	25.24	38.82	41.17	63.1%	0.936	0.968	0.988	5.6%
Moldova, Rep. of	6.34	6.573	6.899	8.8%	21.88	24.42	22.34	2.1%	52.15	54.22	51.17	-1.9%	0.853	0.912	0.927	8.7%
Europe-East	6.683	6.902	7.079	5.9%	18.55	27.16	22.43	20.9%	33.74	38.51	39.68	17.6%	0.698	0.789	0.808	15.8%
United Kingdom	7.89	8.073	8.275	4.9%	33.45	40.2	35.63	6.5%	62.31	69.57	67.13	7.7%	0.964	0.988	1	3.7%
Sweden	7.28	7.496	7.687	5.6%	39.62	47.15	43.3	9.3%	85.79	84.77	81.74	-4.7%	0.99	1	1	1.0%
Denmark	7.74	7.931	8.122	4.9%	28.87	36.12	35.85	24.2%	76.19	80.45	79.27	4.0%	0.988	1	1	1.2%
Ireland	7.98	8.221	8.325	4.3%	44.4	52.48	53.4	20.3%	59.31	70.31	70.36	18.6%	0.965	0.993	1	3.6%
Norway	7.53	7.685	7.802	3.6%	21.53	30.5	37.19	72.7%	70.77	77.67	79.11	11.8%	0.978	1	1	2.2%
Finland	7.62	7.822	8.046	5.6%	25.14	31.88	33.25	32.3%	53.67	64.07	65.01	21.1%	0.988	1	1	1.2%
Lithuania	7.38	7.602	7.806	5.8%	19.64	24.41	24.43	24.4%	24.91	37.26	40.93	64.3%	0.925	0.953	0.97	4.9%
Latvia	7.22	7.491	7.65	6.0%	19.64	24.4	23.11	17.7%	28.89	41.9	42.08	45.7%	0.922	0.949	0.965	4.7%
Estonia	7.81	8.173	8.477	8.5%	39.72	44.75	40.04	0.8%	43.22	47.11	48.01	11.1%	0.946	0.973	0.996	5.3%
Iceland	7.53	7.725	7.871	4.5%	50.07	58.75	56.67	13.2%	64.09	53.73	50.98	-20.5%	0.962	0.995	1	4.0%
Europe-North	7.767	7.958	8.149	4.9%	32.87	40.18	37.44	13.9%	62.86	70.05	68.63	9.2%	0.967	0.99	0.999	3.3%
Italy	6.95	7.054	7.222	3.9%	11.3	17.07	18.84	66.7%	30.78	41.05	45.39	47.5%	0.937	0.96	0.983	4.9%
Spain	7.32	7.452	7.634	4.3%	23.4	29.28	27.26	16.5%	44.36	57.76	60.91	37.3%	0.958	0.975	0.995	3.9%
Greece	7.11	7.145	7.221	1.6%	8.923	13.53	16.15	81.0%	31.19	40.79	44.25	41.9%	0.934	0.947	0.959	2.7%
Portugal	7.19	7.271	7.409	3.0%	18.29	24.06	21.85	19.5%	53.38	50.58	48.5	-9.1%	0.945	0.962	0.976	3.3%
Serbia	6.47	6.673	6.92	7.0%	17.59	22.18	21.35	21.4%	74.76	71.04	48.85	-34.7%	0.798	0.915	0.907	13.7%
Croatia	6.33	6.496	6.589	4.1%	18.88	23.49	22.33	18.3%	41.8	35.65	32.59	-22.0%	0.785	0.852	0.866	10.3%
Bosnia and Herzegovina	6.1	6.43	6.592	8.1%	16.95	20.92	20.12	18.7%	60.4	69.64	53.68	-11.1%	0.741	0.851	0.865	16.7%
Albania	7.06	7.349	7.508	6.3%	16.12	19.08	21.3	32.1%	54.11	68.43	53.75	-0.7%	0.853	0.909	0.912	6.9%
Macedonia, FYR	6.4	6.495	6.673	4.3%	18.71	22.72	21.77	16.4%	66.62	68.21	48.31	-27.5%	0.897	0.928	0.942	5.0%
Slovenia	6.9	7.02	7.169	3.9%	17.71	25.66	25.33	43.0%	31.63	40.11	43.97	39.0%	0.946	0.962	0.976	3.2%
Montenegro	6.58	6.674	6.782	3.1%	25.74	32.98	26.14	1.6%	60.67	60.96	38.41	-36.7%	0.901	0.923	0.934	3.7%
Malta	7.54	7.686	7.783	3.2%	41.65	46.67	41.77	0.3%	43.69	45.18	43.81	0.3%	0.932	0.96	0.97	4.1%
Europe-South	7.082	7.199	7.368	4.0%	15.9	22	22.25	39.9%	40.79	49.89	50.65	24.2%	0.925	0.954	0.973	5.2%
Germany	7.5	7.635	7.818	4.2%	19.33	26.71	27.77	43.7%	56.24	61.56	60.97	8.4%	0.982	0.999	1	1.8%
France	7.43	7.578	7.815	5.2%	23.82	30.16	28.4	19.2%	54.66	63.64	62.01	13.4%	0.961	0.981	1	4.1%
Netherlands	7.56	7.673	7.831	3.6%	54.96	63.35	52.31	-4.8%	83.56	87	82.78	-0.9%	0.977	0.995	1	2.4%
Belgium	7.18	7.318	7.5	4.5%	62.68	71.53	57.96	-7.5%	73.16	82.8	77.23	5.6%	0.962	0.987	1	4.0%
Switzerland	8.19	8.314	8.479	3.5%	40.55	49.1	41.86	3.2%	63.56	67.11	62.83	-1.1%	0.976	0.998	1	2.5%
Austria	7.67	7.81	7.964	3.8%	29.11	37.64	35.12	20.6%	50.95	59.62	57.29	12.4%	0.971	0.995	1	3.0%
Luxembourg	7.65	7.765	7.806	2.0%	88.45	100.8	89.3	1.0%	94.86	104.9	100.1	5.5%	0.958	0.981	0.987	3.0%
Europe-West	7.515	7.645	7.832	4.2%	28.8	36.34	33.47	16.2%	59.26	66.2	64.57	9.0%	0.973	0.991	1	2.8%

Governance

Base Case Source: International Futures Model Version 6.68, Nov 2013	Summary Indices (cont.)											
	IFs Governance Capacity Index				IFs Governance Inclusion Index				IFs Governance Index (Aggregate)			
	Index range: 0–1				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
World	0.454	0.516	0.619	36.3%	0.558	0.614	0.664	19.0%	0.543	0.62	0.699	28.7%
Africa	0.412	0.396	0.481	16.7%	0.462	0.508	0.574	24.2%	0.488	0.538	0.611	25.2%
Americas	0.568	0.697	0.81	42.6%	0.773	0.831	0.869	12.4%	0.733	0.815	0.872	19.0%
Asia with Oceania	0.393	0.473	0.603	53.4%	0.491	0.569	0.63	28.3%	0.471	0.571	0.674	43.1%
Europe	0.719	0.832	0.907	26.1%	0.799	0.844	0.884	10.6%	0.79	0.862	0.906	14.7%
World	0.454	0.516	0.619	36.3%	0.558	0.614	0.664	19.0%	0.543	0.62	0.699	28.7%
Africa-Eastern	0.381	0.356	0.471	23.6%	0.506	0.57	0.658	30.0%	0.507	0.558	0.648	27.8%
Africa-Middle	0.386	0.345	0.46	19.2%	0.408	0.446	0.498	22.1%	0.382	0.428	0.515	34.8%
Africa-Northern	0.553	0.591	0.673	21.7%	0.328	0.398	0.462	40.9%	0.472	0.533	0.604	28.0%
Africa-Southern	0.631	0.739	0.866	37.2%	0.797	0.868	0.939	17.8%	0.713	0.822	0.916	28.5%
Africa-Western	0.318	0.316	0.389	22.3%	0.47	0.486	0.532	13.2%	0.48	0.531	0.59	22.9%
Africa	0.412	0.396	0.481	16.7%	0.462	0.508	0.574	24.2%	0.488	0.538	0.611	25.2%
America-Caribbean	0.43	0.486	0.6	39.5%	0.588	0.68	0.739	25.7%	0.62	0.68	0.744	20.0%
America-Central	0.428	0.454	0.524	22.4%	0.715	0.782	0.815	14.0%	0.646	0.707	0.749	15.9%
America-North	0.663	0.822	0.927	39.8%	0.857	0.894	0.929	8.4%	0.812	0.894	0.947	16.6%
America-South	0.488	0.607	0.736	50.8%	0.701	0.78	0.818	16.7%	0.662	0.751	0.815	23.1%
Americas	0.568	0.697	0.81	42.6%	0.773	0.831	0.869	12.4%	0.733	0.815	0.872	19.0%
Asia-East	0.427	0.562	0.767	79.6%	0.397	0.509	0.635	59.9%	0.5	0.66	0.785	57.0%
Asia-South Central	0.34	0.391	0.502	47.6%	0.548	0.587	0.609	11.1%	0.42	0.49	0.602	43.3%
Asia-South East	0.37	0.445	0.561	51.6%	0.572	0.661	0.71	24.1%	0.501	0.59	0.68	35.7%
Asia-West	0.552	0.602	0.691	25.2%	0.449	0.509	0.568	26.5%	0.525	0.605	0.685	30.5%
Oceania	0.735	0.786	0.86	17.0%	0.815	0.832	0.853	4.7%	0.812	0.84	0.889	9.5%
Asia with Oceania	0.393	0.473	0.603	53.4%	0.491	0.569	0.63	28.3%	0.471	0.571	0.674	43.1%
Europe-East	0.577	0.726	0.801	38.8%	0.669	0.725	0.762	13.9%	0.648	0.747	0.79	21.9%
Europe-North	0.849	0.956	0.992	16.8%	0.901	0.936	0.968	7.4%	0.906	0.96	0.986	8.8%
Europe-South	0.707	0.792	0.888	25.6%	0.86	0.883	0.909	5.7%	0.831	0.877	0.923	11.1%
Europe-West	0.876	0.938	1	14.2%	0.901	0.928	0.967	7.3%	0.917	0.953	0.989	7.9%
Europe	0.719	0.832	0.907	26.1%	0.799	0.844	0.884	10.6%	0.79	0.862	0.906	14.7%

Governance

Base Case: Countries in Descending Year 2060 Population Sequence	Summary Indices (cont.)											
	IFs Governance Capacity Index				IFs Governance Inclusion Index				IFs Governance Index (Aggregate)			
	Index range: 0–1				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA												
Ethiopia	0.411	0.375	0.493	20.0%	0.507	0.616	0.718	41.6%	0.502	0.601	0.702	39.8%
Tanzania, United Rep. of	0.373	0.373	0.561	50.4%	0.494	0.55	0.697	41.1%	0.552	0.585	0.72	30.4%
Uganda	0.313	0.316	0.437	39.6%	0.521	0.591	0.73	40.1%	0.397	0.459	0.595	49.9%
Kenya	0.375	0.388	0.445	18.7%	0.595	0.627	0.636	6.9%	0.567	0.621	0.653	15.2%
Madagascar	0.358	0.311	0.378	5.6%	0.449	0.502	0.555	23.6%	0.522	0.531	0.577	10.5%
Mozambique	0.349	0.318	0.471	35.0%	0.55	0.582	0.684	24.4%	0.537	0.577	0.679	26.4%
Malawi	0.439	0.354	0.456	3.9%	0.528	0.53	0.578	9.5%	0.583	0.565	0.629	7.9%
Zambia	0.386	0.334	0.454	17.6%	0.638	0.658	0.755	18.3%	0.602	0.609	0.701	16.4%
Somalia	0.316	0.312	0.35	10.8%	0.214	0.254	0.329	53.7%	0.201	0.286	0.348	73.1%
Rwanda	0.389	0.35	0.483	24.2%	0.292	0.353	0.439	50.3%	0.394	0.438	0.545	38.3%
Zimbabwe	0.456	0.454	0.543	19.1%	0.474	0.599	0.683	44.1%	0.569	0.627	0.697	22.5%
Burundi	0.402	0.309	0.482	19.9%	0.569	0.66	0.673	18.3%	0.436	0.488	0.574	31.7%
Eritrea	0.337	0.335	0.375	11.3%	0.277	0.363	0.473	70.8%	0.441	0.489	0.559	26.8%
Comoros	0.289	0.325	0.404	39.8%	0.617	0.621	0.616	-0.2%	0.563	0.579	0.614	9.1%
Djibouti	0.538	0.408	0.536	-0.4%	0.449	0.515	0.557	24.1%	0.55	0.581	0.653	18.7%
Mauritius	0.626	0.692	0.816	30.4%	0.769	0.8	0.813	5.7%	0.769	0.81	0.86	11.8%
Africa-Eastern	0.381	0.356	0.471	23.6%	0.506	0.57	0.658	30.0%	0.507	0.558	0.648	27.8%
Congo, Democratic Rep. of	0.419	0.301	0.417	-0.5%	0.475	0.49	0.519	9.3%	0.353	0.364	0.446	26.3%
Angola	0.407	0.536	0.739	81.6%	0.339	0.41	0.516	52.2%	0.366	0.534	0.691	88.8%
Cameroon	0.334	0.308	0.375	12.3%	0.319	0.382	0.462	44.8%	0.478	0.502	0.564	18.0%
Chad	0.19	0.318	0.415	118.4%	0.342	0.382	0.441	28.9%	0.323	0.451	0.543	68.1%
Central African Rep.	0.239	0.227	0.314	31.4%	0.327	0.373	0.417	27.5%	0.375	0.447	0.514	37.1%
Congo, Rep. of	0.601	0.403	0.506	-15.8%	0.253	0.3	0.366	44.7%	0.495	0.5	0.572	15.6%
Gabon	0.64	0.709	0.779	21.7%	0.544	0.628	0.697	28.1%	0.661	0.731	0.788	19.2%
Equatorial Guinea	0.595	0.876	0.938	57.6%	0.432	0.571	0.659	52.5%	0.599	0.764	0.835	39.4%
São Tomé and Príncipe	0.405	0.36	0.529	30.6%	0.419	0.509	0.564	34.6%	0.542	0.568	0.651	20.1%
Africa-Middle	0.386	0.345	0.46	19.2%	0.408	0.446	0.498	22.1%	0.382	0.428	0.515	34.8%
Egypt	0.49	0.548	0.659	34.5%	0.318	0.386	0.452	42.1%	0.467	0.526	0.615	31.7%
Sudan	0.58	0.602	0.643	10.9%	0.31	0.358	0.425	37.1%	0.355	0.42	0.493	38.9%
Algeria	0.631	0.635	0.728	15.4%	0.458	0.541	0.592	29.3%	0.511	0.611	0.692	35.4%
Morocco	0.575	0.604	0.687	19.5%	0.259	0.351	0.428	65.3%	0.552	0.603	0.663	20.1%
Tunisia	0.611	0.628	0.707	15.7%	0.277	0.349	0.406	46.6%	0.579	0.617	0.669	15.5%
Libya	0.557	0.731	0.763	37.0%	0.301	0.412	0.5	66.1%	0.55	0.663	0.716	30.2%
Africa-Northern	0.553	0.591	0.673	21.7%	0.328	0.398	0.462	40.9%	0.472	0.533	0.604	28.0%

Governance

Base Case: Countries in Descending Year 2060 Population Sequence	Summary Indices (cont.)											
	IFs Governance Capacity Index				IFs Governance Inclusion Index				IFs Governance Index (Aggregate)			
	Index range: 0–1				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AFRICA continued												
South Africa	0.627	0.749	0.889	41.8%	0.818	0.888	0.958	17.1%	0.713	0.831	0.932	30.7%
Namibia	0.621	0.615	0.756	21.7%	0.71	0.827	0.922	29.9%	0.715	0.775	0.866	21.1%
Lesotho	0.675	0.706	0.651	-3.6%	0.745	0.85	0.914	22.7%	0.739	0.804	0.821	11.1%
Botswana	0.79	0.86	0.925	17.1%	0.725	0.826	0.883	21.8%	0.79	0.865	0.916	15.9%
Swaziland	0.512	0.533	0.615	20.1%	0.271	0.396	0.521	92.3%	0.514	0.578	0.664	29.2%
Africa-Southern	0.631	0.739	0.866	37.2%	0.797	0.868	0.939	17.8%	0.713	0.822	0.916	28.5%
Nigeria	0.265	0.298	0.355	34.0%	0.449	0.464	0.514	14.5%	0.436	0.521	0.577	32.3%
Niger	0.321	0.272	0.371	15.6%	0.465	0.443	0.488	4.9%	0.51	0.492	0.557	9.2%
Côte d'Ivoire	0.358	0.337	0.404	12.8%	0.428	0.453	0.48	12.1%	0.508	0.524	0.573	12.8%
Burkina Faso	0.382	0.352	0.428	12.0%	0.39	0.437	0.503	29.0%	0.508	0.53	0.594	16.9%
Ghana	0.432	0.424	0.517	19.7%	0.606	0.634	0.676	11.6%	0.622	0.645	0.702	12.9%
Mali	0.371	0.316	0.421	13.5%	0.544	0.552	0.606	11.4%	0.513	0.557	0.631	23.0%
Senegal	0.407	0.346	0.415	2.0%	0.558	0.585	0.61	9.3%	0.514	0.542	0.601	16.9%
Guinea	0.295	0.28	0.362	22.7%	0.5	0.516	0.561	12.2%	0.501	0.535	0.59	17.8%
Benin	0.385	0.335	0.387	0.5%	0.561	0.573	0.614	9.4%	0.582	0.578	0.619	6.4%
Togo	0.358	0.334	0.391	9.2%	0.291	0.344	0.389	33.7%	0.473	0.491	0.537	13.5%
Sierra Leone	0.301	0.252	0.486	61.5%	0.565	0.575	0.646	14.3%	0.435	0.467	0.638	46.7%
Liberia	0.453	0.305	0.542	19.6%	0.538	0.55	0.602	11.9%	0.516	0.504	0.659	27.7%
Mauritania	0.388	0.353	0.447	15.2%	0.282	0.32	0.36	27.7%	0.476	0.489	0.543	14.1%
Gambia	0.388	0.363	0.468	20.6%	0.282	0.357	0.436	54.6%	0.476	0.504	0.581	22.1%
Guinea-Bissau	0.362	0.34	0.454	25.4%	0.563	0.592	0.621	10.3%	0.54	0.572	0.631	16.9%
Cape Verde	0.641	0.571	0.699	9.0%	0.657	0.684	0.694	5.6%	0.718	0.716	0.768	7.0%
Africa-Western	0.318	0.316	0.389	22.3%	0.47	0.486	0.532	13.2%	0.48	0.531	0.59	22.9%

Governance

Base Case: Countries in Descending Year 2060 Population Sequence	Summary Indices (cont.)											
	IFs Governance Capacity Index				IFs Governance Inclusion Index				IFs Governance Index (Aggregate)			
	Index range: 0–1				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
AMERICAS												
Haiti	0.266	0.286	0.432	62.4%	0.549	0.633	0.679	23.7%	0.521	0.568	0.644	23.6%
Dominican Rep.	0.391	0.495	0.666	70.3%	0.725	0.809	0.861	18.8%	0.661	0.739	0.823	24.5%
Cuba	0.442	0.517	0.612	38.5%	0.413	0.522	0.621	50.4%	0.574	0.649	0.713	24.2%
Puerto Rico	0.687	0.803	0.852	24.0%	0.589	0.644	0.682	15.8%	0.722	0.789	0.823	14.0%
Jamaica	0.52	0.573	0.642	23.5%	0.738	0.772	0.787	6.6%	0.715	0.752	0.784	9.7%
Trinidad and Tobago	0.68	0.829	0.89	30.9%	0.9	0.981	1	11.1%	0.819	0.917	0.95	16.0%
Bahamas	0.708	0.784	0.847	19.6%	0.819	0.894	0.902	10.1%	0.818	0.878	0.903	10.4%
Barbados	0.89	0.879	0.871	-2.1%	0.738	0.802	0.822	11.4%	0.857	0.88	0.885	3.3%
Saint Lucia	0.788	0.745	0.834	5.8%	0.672	0.784	0.835	24.3%	0.784	0.818	0.869	10.8%
Grenada	0.523	0.482	0.557	6.5%	0.547	0.65	0.69	26.1%	0.643	0.675	0.72	12.0%
Saint Vincent and the Grenadines	0.66	0.615	0.754	14.2%	0.556	0.623	0.648	16.5%	0.699	0.714	0.773	10.6%
America-Caribbean	0.43	0.486	0.6	39.5%	0.588	0.68	0.739	25.7%	0.62	0.68	0.744	20.0%
Guatemala	0.335	0.362	0.424	26.6%	0.645	0.701	0.741	14.9%	0.549	0.642	0.687	25.1%
Honduras	0.409	0.424	0.473	15.6%	0.72	0.826	0.875	21.5%	0.657	0.706	0.746	13.5%
Nicaragua	0.402	0.409	0.548	36.3%	0.746	0.816	0.857	14.9%	0.667	0.703	0.77	15.4%
El Salvador	0.464	0.512	0.587	26.5%	0.719	0.81	0.841	17.0%	0.67	0.744	0.784	17.0%
Costa Rica	0.629	0.717	0.802	27.5%	0.842	0.904	0.928	10.2%	0.793	0.854	0.894	12.7%
Panama	0.562	0.68	0.849	51.1%	0.777	0.847	0.886	14.0%	0.743	0.821	0.898	20.9%
Belize	0.478	0.466	0.555	16.1%	0.607	0.71	0.785	29.3%	0.649	0.692	0.756	16.5%
America-Central	0.428	0.454	0.524	22.4%	0.715	0.782	0.815	14.0%	0.646	0.707	0.749	15.9%
United States of America	0.719	0.906	1	39.1%	0.883	0.906	0.938	6.2%	0.853	0.93	0.978	14.7%
Mexico	0.425	0.534	0.683	60.7%	0.765	0.845	0.888	16.1%	0.657	0.767	0.838	27.5%
Canada	0.915	0.998	1	9.3%	0.915	0.946	0.975	6.6%	0.936	0.981	0.992	6.0%
America-North	0.663	0.822	0.927	39.8%	0.857	0.894	0.929	8.4%	0.812	0.894	0.947	16.6%
Brazil	0.531	0.665	0.797	50.1%	0.702	0.784	0.804	14.5%	0.704	0.789	0.845	20.0%
Colombia	0.459	0.512	0.606	32.0%	0.679	0.756	0.803	18.3%	0.483	0.598	0.667	38.1%
Argentina	0.364	0.557	0.697	91.5%	0.799	0.881	0.919	15.0%	0.688	0.791	0.859	24.9%
Peru	0.46	0.521	0.644	40.0%	0.795	0.869	0.913	14.8%	0.648	0.765	0.834	28.7%
Venezuela (Bolivarian Rep. of)	0.407	0.607	0.821	101.7%	0.465	0.578	0.7	50.5%	0.567	0.685	0.809	42.7%
Ecuador	0.363	0.488	0.605	66.7%	0.686	0.782	0.847	23.5%	0.634	0.723	0.791	24.8%
Chile	0.716	0.795	0.916	27.9%	0.763	0.793	0.815	6.8%	0.8	0.845	0.898	12.3%
Bolivia (Plurinational State of)	0.333	0.455	0.574	72.4%	0.681	0.742	0.806	18.4%	0.616	0.693	0.764	24.0%
Paraguay	0.364	0.403	0.532	46.2%	0.705	0.777	0.803	13.9%	0.637	0.686	0.746	17.1%
Uruguay	0.798	0.828	0.915	14.7%	0.775	0.793	0.817	5.4%	0.833	0.855	0.898	7.8%
Guyana	0.635	0.578	0.708	11.5%	0.695	0.798	0.849	22.2%	0.732	0.761	0.827	13.0%
Suriname	0.529	0.584	0.814	53.9%	0.645	0.734	0.818	26.8%	0.679	0.742	0.857	26.2%
America-South	0.488	0.607	0.736	50.8%	0.701	0.78	0.818	16.7%	0.662	0.751	0.815	23.1%

Governance

Base Case: Countries in Descending Year 2060 Population Sequence	Summary Indices (cont.)											
	IFs Governance Capacity Index				IFs Governance Inclusion Index				IFs Governance Index (Aggregate)			
	Index range: 0–1				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA												
China	0.375	0.516	0.745	98.7%	0.341	0.47	0.614	80.1%	0.449	0.629	0.77	71.5%
Japan	0.83	0.941	0.989	19.2%	0.783	0.797	0.825	5.4%	0.86	0.907	0.937	9.0%
Korea, Rep. of	0.646	0.854	1	54.8%	0.727	0.814	0.843	16.0%	0.77	0.881	0.946	22.9%
Korea, Dem. People's Rep. of	0.244	0.331	0.436	78.7%	0.215	0.301	0.373	73.5%	0.402	0.48	0.553	37.6%
Taiwan, China	0.79	0.915	0.999	26.5%	0.826	0.873	0.892	8.0%	0.855	0.924	0.963	12.6%
Hong Kong SAR, China	0.92	1	1	8.7%	0.862	0.915	0.926	7.4%	0.914	0.967	0.972	6.3%
Mongolia	0.564	0.602	0.79	40.1%	0.705	0.72	0.756	7.2%	0.706	0.739	0.824	16.7%
Asia-East	0.427	0.562	0.767	79.6%	0.397	0.509	0.635	59.9%	0.5	0.66	0.785	57.0%
India	0.338	0.398	0.517	53.0%	0.588	0.608	0.618	5.1%	0.399	0.467	0.604	51.4%
Pakistan	0.321	0.358	0.434	35.2%	0.593	0.675	0.726	22.4%	0.44	0.526	0.602	36.8%
Bangladesh	0.292	0.298	0.387	32.5%	0.507	0.588	0.616	21.5%	0.522	0.582	0.632	21.1%
Afghanistan	0.223	0.187	0.415	86.1%	0.131	0.174	0.222	69.5%	0.16	0.211	0.334	108.8%
Iran, Islamic Rep. of	0.555	0.682	0.752	35.5%	0.241	0.354	0.438	81.7%	0.516	0.627	0.69	33.7%
Nepal	0.321	0.329	0.413	28.7%	0.643	0.758	0.82	27.5%	0.481	0.595	0.676	40.5%
Uzbekistan	0.347	0.424	0.579	66.9%	0.177	0.277	0.37	109.0%	0.427	0.514	0.606	41.9%
Sri Lanka	0.385	0.444	0.566	47.0%	0.544	0.584	0.636	16.9%	0.424	0.48	0.595	40.3%
Kazakhstan	0.35	0.593	0.848	142.3%	0.366	0.463	0.572	56.3%	0.512	0.645	0.779	52.1%
Tajikistan	0.303	0.328	0.456	50.5%	0.322	0.4	0.469	45.7%	0.415	0.491	0.599	44.3%
Kyrgyz Rep.	0.378	0.453	0.598	58.2%	0.712	0.788	0.846	18.8%	0.651	0.713	0.789	21.2%
Turkmenistan	0.428	0.745	0.867	102.6%	0.203	0.351	0.447	120.2%	0.462	0.646	0.726	57.1%
Bhutan	0.608	0.555	0.639	5.1%	0.49	0.617	0.679	38.6%	0.647	0.693	0.751	16.1%
Maldives	0.449	0.478	0.544	21.2%	0.56	0.74	0.786	40.4%	0.616	0.705	0.751	21.9%
Asia-South Central	0.34	0.391	0.502	47.6%	0.548	0.587	0.609	11.1%	0.42	0.49	0.602	43.3%
Indonesia	0.358	0.449	0.57	59.2%	0.654	0.724	0.74	13.1%	0.519	0.613	0.711	37.0%
Philippines	0.314	0.388	0.489	55.7%	0.73	0.804	0.844	15.6%	0.449	0.534	0.614	36.7%
Vietnam	0.412	0.459	0.611	48.3%	0.352	0.483	0.579	64.5%	0.526	0.602	0.694	31.9%
Thailand	0.474	0.564	0.634	33.8%	0.607	0.678	0.721	18.8%	0.582	0.697	0.755	29.7%
Myanmar	0.194	0.263	0.385	98.5%	0.243	0.325	0.4	64.6%	0.213	0.305	0.455	113.6%
Malaysia	0.562	0.696	0.832	48.0%	0.671	0.751	0.819	22.1%	0.707	0.792	0.868	22.8%
Cambodia	0.283	0.303	0.426	50.5%	0.513	0.65	0.725	41.3%	0.519	0.606	0.684	31.8%
Lao People's Dem. Rep.	0.315	0.315	0.46	46.0%	0.224	0.338	0.445	98.7%	0.433	0.499	0.598	38.1%
Singapore	0.821	0.816	0.811	-1.2%	0.593	0.728	0.803	35.4%	0.781	0.837	0.865	10.8%
Timor-Leste	0.296	0.305	0.429	44.9%	0.565	0.641	0.671	18.8%	0.547	0.603	0.665	21.6%
Brunei Darussalam	0.775	0.921	1	29.0%	0.894	0.975	1	11.9%	0.86	0.952	0.998	16.0%
Asia-South East	0.37	0.445	0.561	51.6%	0.572	0.661	0.71	24.1%	0.501	0.59	0.68	35.7%

Governance

Base Case: Countries in Descending Year 2060 Population Sequence	Summary Indices (cont.)											
	IFs Governance Capacity Index				IFs Governance Inclusion Index				IFs Governance Index (Aggregate)			
	Index range: 0–1				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
ASIA with OCEANIA continued												
Turkey	0.623	0.712	0.856	37.4%	0.615	0.69	0.727	18.2%	0.551	0.686	0.763	38.5%
Iraq	0.348	0.418	0.616	77.0%	0.518	0.573	0.687	32.6%	0.412	0.484	0.687	66.7%
Yemen, Rep. of	0.419	0.411	0.442	5.5%	0.268	0.321	0.37	38.1%	0.404	0.488	0.546	35.1%
Saudi Arabia	0.735	0.823	0.918	24.9%	0.175	0.261	0.352	101.1%	0.573	0.648	0.72	25.7%
Syrian Arab Rep.	0.404	0.468	0.527	30.4%	0.282	0.388	0.489	73.4%	0.5	0.569	0.632	26.4%
Jordan	0.533	0.496	0.588	10.3%	0.29	0.351	0.415	43.1%	0.556	0.572	0.631	13.5%
Israel	0.745	0.902	1	34.2%	0.852	0.882	0.95	11.5%	0.664	0.737	0.812	22.3%
Palestine	0.439	0.545	0.575	31.0%	0.482	0.541	0.593	23.0%	0.582	0.64	0.679	16.7%
Azerbaijan	0.492	0.551	0.688	39.8%	0.267	0.351	0.44	64.8%	0.451	0.573	0.664	47.2%
United Arab Emirates	0.815	0.996	1	22.7%	0.396	0.591	0.708	78.8%	0.691	0.838	0.883	27.8%
Kuwait	0.725	1	1	37.9%	0.196	0.3	0.352	79.6%	0.572	0.715	0.737	28.8%
Lebanon	0.473	0.562	0.731	54.5%	0.531	0.584	0.585	10.2%	0.613	0.681	0.741	20.9%
Oman	0.765	0.843	0.917	19.9%	0.277	0.424	0.527	90.3%	0.621	0.719	0.788	26.9%
Armenia	0.45	0.493	0.581	29.1%	0.581	0.639	0.675	16.2%	0.635	0.677	0.722	13.7%
Georgia	0.528	0.568	0.653	23.7%	0.604	0.663	0.692	14.6%	0.642	0.715	0.758	18.1%
Qatar	0.885	1	1	13.0%	0.248	0.462	0.548	121.0%	0.663	0.792	0.827	24.7%
Bahrain	0.686	0.803	0.865	26.1%	0.353	0.47	0.564	59.8%	0.625	0.714	0.772	23.5%
Cyprus	0.815	0.846	0.855	4.9%	0.801	0.834	0.843	5.2%	0.854	0.882	0.889	4.1%
Asia-West	0.552	0.602	0.691	25.2%	0.449	0.509	0.568	26.5%	0.525	0.605	0.685	30.5%
Australia	0.82	0.928	1	22.0%	0.935	0.976	1	7.0%	0.91	0.967	1	9.9%
Papua New Guinea	0.39	0.431	0.563	44.4%	0.464	0.49	0.538	15.9%	0.47	0.521	0.653	38.9%
New Zealand	0.965	0.993	1	3.6%	0.921	0.95	1	8.6%	0.955	0.98	1	4.7%
Solomon Islands	0.389	0.273	0.545	40.1%	0.6	0.626	0.632	5.3%	0.594	0.573	0.667	12.3%
Fiji	0.504	0.551	0.681	35.1%	0.34	0.404	0.478	40.6%	0.559	0.606	0.682	22.0%
Vanuatu	0.508	0.4	0.537	5.7%	0.489	0.541	0.583	19.2%	0.608	0.598	0.664	9.2%
Micronesia (Federated States of)	0.403	0.303	0.544	35.0%	0.457	0.554	0.588	28.7%	0.553	0.567	0.667	20.6%
Tonga	0.517	0.449	0.593	14.7%	0.509	0.535	0.575	13.0%	0.628	0.615	0.686	9.2%
Samoa	0.608	0.499	0.639	5.1%	0.542	0.585	0.638	17.7%	0.669	0.655	0.726	8.5%
Oceania	0.735	0.786	0.86	17.0%	0.815	0.832	0.853	4.7%	0.812	0.84	0.889	9.5%

Governance

Base Case: Countries in Descending Year 2060 Population Sequence	Summary Indices (cont.)											
	IFs Governance Capacity Index				IFs Governance Inclusion Index				IFs Governance Index (Aggregate)			
	Index range: 0–1				Index range: 0–1				Index range: 0–1			
	2010	2035	2060	% Chg	2010	2035	2060	% Chg	2010	2035	2060	% Chg
EUROPE												
Russian Federation	0.519	0.713	0.792	52.6%	0.628	0.699	0.747	18.9%	0.541	0.682	0.734	35.7%
Poland	0.706	0.84	0.915	29.6%	0.816	0.855	0.884	8.3%	0.819	0.887	0.928	13.3%
Ukraine	0.575	0.653	0.7	21.7%	0.631	0.664	0.685	8.6%	0.695	0.741	0.77	10.8%
Romania	0.622	0.7	0.772	24.1%	0.731	0.766	0.775	6.0%	0.753	0.8	0.831	10.4%
Czech Rep.	0.641	0.798	0.893	39.3%	0.782	0.824	0.864	10.5%	0.787	0.863	0.915	16.3%
Belarus	0.585	0.7	0.769	31.5%	0.289	0.375	0.451	56.1%	0.569	0.647	0.692	21.6%
Hungary	0.73	0.79	0.861	17.9%	0.795	0.81	0.829	4.3%	0.818	0.851	0.886	8.3%
Bulgaria	0.64	0.705	0.754	17.8%	0.781	0.81	0.821	5.1%	0.776	0.814	0.837	7.9%
Slovak Rep.	0.558	0.781	0.887	59.0%	0.831	0.872	0.895	7.7%	0.775	0.873	0.923	19.1%
Moldova, Rep. of	0.551	0.611	0.702	27.4%	0.724	0.799	0.811	12.0%	0.709	0.774	0.814	14.8%
Europe-East	0.577	0.726	0.801	38.8%	0.669	0.725	0.762	13.9%	0.648	0.747	0.79	21.9%
United Kingdom	0.831	0.955	1	20.3%	0.895	0.926	0.967	8.0%	0.897	0.956	0.989	10.3%
Sweden	0.96	1	1	4.2%	0.954	0.998	1	4.8%	0.968	0.999	1	3.3%
Denmark	0.965	1	1	3.6%	0.948	0.98	1	5.5%	0.967	0.993	1	3.4%
Ireland	0.769	0.92	0.961	25.0%	0.861	0.9	0.925	7.4%	0.865	0.937	0.962	11.2%
Norway	0.93	1	1	7.5%	0.953	0.991	1	4.9%	0.954	0.997	1	4.8%
Finland	0.96	1	1	4.2%	0.951	0.988	1	5.2%	0.966	0.996	1	3.5%
Lithuania	0.677	0.804	0.872	28.8%	0.814	0.841	0.868	6.6%	0.805	0.866	0.903	12.2%
Latvia	0.612	0.764	0.828	35.3%	0.774	0.829	0.863	11.5%	0.769	0.847	0.885	15.1%
Estonia	0.78	0.864	1	28.2%	0.808	0.86	0.901	11.5%	0.844	0.899	0.966	14.5%
Iceland	0.892	1	1	12.1%	0.889	0.956	0.974	9.6%	0.915	0.984	0.991	8.3%
Europe-North	0.849	0.956	0.992	16.8%	0.901	0.936	0.968	7.4%	0.906	0.96	0.986	8.8%
Italy	0.695	0.771	0.888	27.8%	0.87	0.886	0.912	4.8%	0.834	0.872	0.928	11.3%
Spain	0.754	0.865	0.965	28.0%	0.918	0.94	0.974	6.1%	0.876	0.927	0.978	11.6%
Greece	0.6	0.726	0.792	32.0%	0.839	0.845	0.855	1.9%	0.791	0.84	0.869	9.9%
Portugal	0.78	0.828	0.877	12.4%	0.877	0.898	0.916	4.4%	0.867	0.896	0.923	6.5%
Serbia	0.675	0.718	0.78	15.6%	0.76	0.821	0.857	12.8%	0.745	0.818	0.848	13.8%
Croatia	0.7	0.757	0.798	14.0%	0.784	0.826	0.837	6.8%	0.757	0.812	0.834	10.2%
Bosnia and Herzegovina	0.66	0.705	0.738	11.8%	0.545	0.605	0.626	14.9%	0.648	0.72	0.743	14.7%
Albania	0.511	0.57	0.719	40.7%	0.657	0.698	0.699	6.4%	0.673	0.725	0.777	15.5%
Macedonia, TFYR	0.655	0.721	0.758	15.7%	0.795	0.852	0.87	9.4%	0.783	0.834	0.857	9.5%
Slovenia	0.813	0.86	0.921	13.3%	0.821	0.839	0.862	5.0%	0.86	0.887	0.92	7.0%
Montenegro	0.578	0.602	0.695	20.2%	0.717	0.747	0.749	4.5%	0.732	0.758	0.793	8.3%
Malta	0.78	0.823	0.857	9.9%	0.702	0.764	0.784	11.7%	0.805	0.849	0.871	8.2%
Europe-South	0.707	0.792	0.888	25.6%	0.86	0.883	0.909	5.7%	0.831	0.877	0.923	11.1%
Germany	0.895	0.955	1	11.7%	0.926	0.954	0.989	6.8%	0.934	0.97	0.996	6.6%
France	0.84	0.904	1	19.0%	0.864	0.892	0.941	8.9%	0.889	0.926	0.98	10.2%
Netherlands	0.94	0.986	1	6.4%	0.941	0.966	0.995	5.7%	0.953	0.983	0.998	4.7%
Belgium	0.855	0.926	1	17.0%	0.887	0.92	0.966	8.9%	0.901	0.944	0.989	9.8%
Switzerland	0.833	0.933	1	20.0%	0.911	0.943	0.976	7.1%	0.907	0.958	0.992	9.4%
Austria	0.895	0.96	1	11.7%	0.872	0.907	0.937	7.5%	0.913	0.954	0.979	7.2%
Luxembourg	0.905	1	1	10.5%	0.765	0.787	0.79	3.3%	0.876	0.923	0.926	5.7%
Europe-West	0.876	0.938	1	14.2%	0.901	0.928	0.967	7.3%	0.917	0.953	0.989	7.9%

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