Towards a Better Global Economy Project: Overview and Policy Options

Jere R. Behrman and Shahrokh Fardoust

Abstract

The time has come to seriously think about how improvements in official global governance, coupled with and reenforced by rising activism of "global citizens," can lead to welfare-enhancing and equitable results for global citizens through better national and international policies. Toward a Better Global Economy policy research project seeks to propose policies that both support long-term global economic growth and enhance the welfare of the world's citizens, by fostering global cooperation and, where possible and sensible, the harmonization of policies on fiscal and financial issues, trade and the movement of labor, capital, and technology; health, education, and population; and the environment. The research commissioned for the project identify national and global policy measures that address the issues faced by citizens around the globe, enhance their welfare, and promote global economic growth. The studies and their policy implications, described in this paper, are intended to stimulate public interest and facilitate the exchange of ideas and policy dialogue.

Keywords: Long-term economic growth, mega-trends, poverty, inequality, middle-class, globalization, international trade and finance, population, human development, migration, the environment, climate change, global governance, global citizen, global welfare, multilateral institutions

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1. Introduction

The objective of the "Toward a Better Global Economy" policy research project is to identify the longer-term implications for average citizens around the world, and related policy options, of major developments in the global economy. Some of these developments have been ongoing for decades, but the Great Recession of 2008–09 changed the landscape for finance, trade, and economic growth in some important respects. The legacies of the crisis—high unemployment levels, massive excess capacities, and high debt levels—have reduced the standard of living of millions of people, and there are major risks that the global recovery will remain slow and sputtering.

Demographic changes and fundamental forces of convergence and competition are likely to bring about further massive shifts in both the sectoral and geographical composition of global output and employment, as the center of gravity of the global economy moves toward Asia and emerging economies elsewhere. New challenges, such as risks of widespread increased income and wealth inequality and degradation of the environment and climate change, will require fundamental reforms at the national level as well as truly global policy responses, which will need to convene all legitimate institutions, old and new, to reach solutions that address these complex and difficult global challenges and protect and improve the lives of all global citizens.

The overarching goals of this research project are to propose policies that ultimately both support global economic growth and enhance the welfare of the world's citizens, regardless of their national origin, ethnicity, race, gender, or age. It seeks to do so by fostering global cooperation and, where possible and sensible, the harmonization of policies on monetary and fiscal issues;

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trade and the movement of labor, capital, and technology; health, education, and population; and the environment.

In contrast to many other recent studies that focus on megatrends, this research program is concerned with income distribution (both as a key determinant of the relationship between economic growth and poverty reduction and as a barometer of social stability) and the ethical aspects of globalization within a long-term horizon. It focuses on long-term policies at both the national and global levels and the key tensions among them, using a common economic framework.

A variety of megatrends, identified by the studies that underpin this Project, are relevant. First, the pace of global economic growth is likely to be slower and unemployment higher in the next decade than in the previous two (mainly as a result of demographic, structural, and technological changes that are rendering manufacturing more capital and skill intensive), although emerging and developing economies as a group are still expected to continue to grow at a faster pace than today's advanced economies, at least for a while. Ultimately, economic growth will depend primarily on what happens domestically. The challenge is therefore to design an architecture that respects the domestic priorities of individual countries and their current social and political conditions while ensuring that major cross-border spillovers and global public goods are addressed

Second, the rapid convergence phase in the world economy during the last two decades was associated with a surge in world trade in goods and services, ushering in an era of hyperglobalization. During this period, growth was strong, lifting the largest number of people in history out of poverty. In the aftermath of the global 2008–09 crisis, globalization-reversing forces have set in. Countering them will require actions at both national and international levels to address the relative economic decline in the West and sustain growth in the Rest. In this context, China, along with other middle-income countries, must remain open to trade and support the integration of poorer countries. Collective action needs to be taken to strengthen the institutional underpinnings of globalization. Trade is likely to be an engine of growth and global poverty reduction over the long-term but only if more low-income countries become part of the international manufactures supply chains.

Third, rapid globalization led to substantial increases in financial interdependence and the monetization of national economies over the last two decades. Financial development has had a positive impact on economic growth at adequate levels of financial depth, but this effect vanishes, or even becomes negative, when finance becomes excessive. Excessive finance incubates economic booms and asset price bubbles that end in financial crises, followed by low rates of economic growth for sustained periods. Too little finance is not desirable—but too much is not desirable either. The ongoing structural changes in the global economy will have important implications for global financial markets as well as the international monetary system. A likely medium-term scenario is that the Chinese yuan will become fully convertible, joining the U.S. dollar and the euro as the third major reserve currency. Whether the new multicurrency monetary system will be stable will depend on the macro-financial policies in each of the reserve-issuing countries or blocs of countries and the degree of policy coordination and cooperation among them.

Fourth, population growth rates have plummeted in most world regions. Regions in which this decline has been slower will increase their share of the global population. Thanks to population momentum, Asia's share of the world population will rise, and Africa's share will rise even more, as a result of its late demographic transition. Overall, the world population will increase by about 2.2 billion people, to about 8.3 billion, between 2000 and 2030. Continuing rapid urbanization, particularly in Asia and Africa, will mean that urban population will rise from about half of the world population to about two-thirds by 2030, with most urban growth expected to occur in Asia and Africa.

Fifth, current patterns of energy and resource use, agricultural practices, and urbanization will lead to risks of increased costs and decreased productivity that will reduce growth, as conventionally measured, with sharp unpredictable threshold effects possible. The impact will be felt differentially across countries. Environmental damage already imposes a deadweight loss to the economy approaching 10 percent in many emerging economies—even before adding likely impacts from climate change. Moreover, the costs of resource depletion will not be borne equally. The bottom half of the income distribution—both across and within countries—will suffer most from the direct effects, which will include higher prices of food, fuel, and fiber and lower rates of growth and job creation. The right combination of technology, markets, and policy may be able to accelerate the transition to a low-carbon economy with no or little impact on aggregate growth.

Other key changes at the global level include the reduction and reversal of gender differentials in human resources that traditionally favored men and boys; the rapid expansion of the middle class in most emerging economies, with concomitant increases in demands on natural resources; and substantial shifts in economic activities to the developing world, with probable increasing shares of economic interactions among countries in the developing world.

These megatrends and shifts imply at least two types of challenges. First, addressing all of them requires both national and coordinated international actions, which may be particularly difficult at a time when many countries are facing severe fiscal and financial difficulties. Second, some policies and the underlying megatrends are likely to be complementary and thus reinforce one another (examples include improvements in infrastructure and human development indicators or openness to trade and economic growth). But other megatrends (such as the increased size of the middle class in developing countries, environmental degradation and climate change, the rapid expansion of automation/robotics and job creation, the expected slowdown in the pace of economic growth, and the continuation of globalization in its current mode) are likely to create serious tensions, making policy formulation and implementation increasingly challenging. In all these dimensions, there is also tension between market forces (or a laissez-faire approach) and multilateral action at the international level and tension between inward-looking national responses to the changing world and collective international responses.

An important implication of this Project's findings is that globalization is a process that can be pushed in one direction or another, as more and more citizens concern themselves with global issues and international spillover effects of their national policies. Empowered by the Internet and other forms of social media, rapidly emerging global citizens may join wide-ranging and spreading global communities to enhance the ethical aspects of the current mode of globalization, checking the capture of important financial and political levers of the state by only a few.

As many have predicted, the coming decade could witness the beginning of the end of the dominant status of the United States in the global economy. The emergence of the BRICs, particularly China and India, represents a flip side of the anticipated shift in the United States' position. What is not predictable is whether developing countries, including China, India, and other emerging market economies, will continue to grow rapidly on a sustained basis. Their ability to do so will depend almost entirely on whether today's emerging market and developing countries are able to implement the structural transformations needed to make their growth process more socially inclusive and environmentally sustainable.

Related critical questions remain about whether the recent ascendancy of many emerging economies from low-income to middle-income status can be replicated by currently low-income countries and the extent to which such possibilities depend on the international system and the national policies of current middle- and high-income countries. For these reasons, the next decades will be crucial to the world's success in moving toward a better global economy.

The Towards a Better Global Economy Project

It is in this context that the Global Citizen Foundation (GCF) commissioned the research reported in this Project, which identifies national and global policy measures that address the issues faced by citizens around the globe, enhance their welfare, and promote global economic growth. The studies are intended to stimulate public interest and facilitate the exchange of ideas and policy dialogue. It is hoped that they will help lay the foundation for developments that allow citizens across the world to exchange ideas and reveal their preferences for the formulation and implementation of policies that improve their economic and social welfare.

Fluctuations in international trade, financial markets, and commodity prices, as well as the tendency of institutions at both the national and international level to favor the interests of the better-off and more powerful, pose substantial risks for citizens of all countries. The papers commissioned for this Project examine the factors—including scarce resources, policies, and institutions—that are most likely to facilitate the process of beneficial economic growth in low-income and middle-income, as well as in high-income economies.

The ultimate goal of the Project is to identify the key global trends and their potential distributional implications and to help craft a set of policies that could lead to improvements in the economic well-being of all citizens of the world and to disseminate the results broadly. The main purpose of the effort is to inform the debate about how the global economy best moves forward. Toward these ends, a small core group of leading economists with varied expertise in the academic, policy, and private sector worlds was established to guide the Project through several stages. Members of this group, along with a group of leading experts who reviewed and commented on their research, prepared the following papers:

- The Past, Present, and Future of Economic Growth (Professor Dani Rodrik) [Rodrik 2013]
- Population Quantity, Quality, and Mobility (Professors Jere R. Behrman and Hans-Peter Kohler) [Behrman and Kohler 2013]
- The Hyperglobalization of Trade and Its Future (Dr. Arvind Subramanian and Mr. Martin Kessler) [Subramanian and Kessler 2013]
- Does Finance Accelerate or Retard Growth? Theory and Evidence (Professors Franklin Allen, Elena Carletti, Jun "QJ" Qian, and Patricio Valenzuela) [Allen and others 2013]
- Resource Depletion, Climate Change, and Economic Growth (Dr. Andrew Steer) [Steer 2013]
- Global Markets, Global Citizens, and Global Governance in the 21st Century (Dr. Nancy Birdsall, with Mr. Christian Meyer and Ms. Alexis Sowa) [Birdsall and others 2013]
- Towards a Better Global Economy Project: Overview and Policy Options (Professor Jere Behrman and Dr. Shahrokh Fardoust) [Behrman and Fardoust 2013].

All of the studies consider a horizon that extends well into the 21st century. All of them address economic growth, equity, and the welfare of average citizens as well as ethical aspects of the current mode of globalization based primarily on market forces and determined to a large extent by national interests rather than a multilateral framework and approach.

The papers were prepared through team work and close collaboration of the Project's research team members, including a series of virtual meetings and in-person workshops in Geneva, Switzerland in December 2012 and at the University of Pennsylvania in Philadelphia in March 2013. Together with their policy implications and the commentaries by the Project's peer reviewers, the Project papers provide a framework for discussion and exchange of views at the High-Level Conference on Towards a Better Global Economy, July 11–13, 2013, in Geneva. The objective of the conference is to highlight longer-term implications, and related policy options, for citizens around the world of major recent and projected future developments in the global economy. Participants also are examining ways in which global citizens can deliberate on policy options and reveal their preferences for policies that would enhance their welfare.

Section 2 of this paper motivates the analysis presented in the rest of the Project by identifying the current conditions of the global economy and proposing possible long-term growth scenarios. Section 3 briefly summarizes each working paper and the comments by the peer reviewers: Prof.

Chang-Tai Hsieh, Dr. Stijn Claessens, Dr. Kemal Derviş, Prof. Bernard Hoekman, Prof. Ronald Lee, Dr. Pratap Mehta, and Mr. Jeremy Oppenheim. Section 4 considers policy options for improving the prospects for growth and welfare of average citizens.

2. The Global Economy in the First Half of the 21st Century

A number of leading economists, including several Nobel laureates, believe that in order for the world economy to recover in a robust and stable way and to adjust to other major changes, such as the aging and shifting distribution of the world population, governments and international organizations need to devise policies that will increase and stabilize global growth. Doing so, they argue, requires a reexamination of how the global financial and trading system works.

An important part of the global economic and financial system is the current global international monetary system. Figuring out how to replace the dollar-based system with a global system is an extraordinarily important and challenging policy area. Other important policy issues relate to humanizing finance; improving the quality and content of educational and health systems; devising better structures for the development and sharing of new technologies to promote sustainable and inclusive growth; and reducing barriers to international factor movements, including the movement of people. Political economy and distributional considerations are key to sustainability and inclusiveness of economic growth over the longer term.

Large proportions of the population in both advanced and developing countries view current policy responses as inadequate and inherently unfair, yielding outcomes that favor the wealthy and powerful. New policies are urgently needed to accelerate economic growth, improve welfare, restore investor and household confidence, increase fairness in the global economy, and exploit new opportunities.

The global economy became more interconnected and complex over the past three decades. Predicting future trends has become increasingly difficult, as a result of the rapid pace of economic and financial globalization; technological progress; and enhanced connectivity, including through electronic social networks. Small and seemingly isolated events can have wide-ranging regional or even global consequences. The self-immolation of street vendor Mohamed Bouazizi in December 2010, for instance, sparked the Tunisian revolution and subsequent upheavals in other countries in that region. The bankruptcy of Lehman Brothers in

September 2008 led to one of the largest single-day drops in the history of the United States stock market and helped spread the United States financial crisis to the rest of the world.

The World Economy in 2013

A variety of major forces are likely to influence long-term growth. They include the multispeed recovery, the slowdown in growth, the fragility of the international financial system, changes in world trade, depletion of natural resources, the rise and volatility of world food prices, demographic changes, massive infrastructure deficits in developing countries, climate change, the inadequacy of official global governance, and the rise of citizen activism. The following key challenges facing the global economy were identified and covered by the background research for this Project.

The multispeed recovery

Although still fragile, the global economy is gradually moving forward at multiple speeds, according to recent assessments by the International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development (OECD). In the United States, the combination of an improved financial system and improved household and investor confidence is driving renewed growth and employment generation. In Japan, a radical new expansionary policy is being implemented to spur growth. In contrast, unemployment is high and rising in most countries in the euro area, protracted stagnation in which can adversely affect recovery elsewhere. Meanwhile, many emerging and developing economies are experiencing sustained recovery and solid growth, though some emerging economies are experiencing inflationary pressures and high and rising asset prices. Oil exporters have benefited from high oil prices: in 2012 their combined export proceeds exceeded an unprecedented $2.3 trillion. Such a diverse, multiple-path set of economic trajectories is likely to require adjustments to both internal and external imbalances. Current account imbalances remain large and are expected to rise over the medium term, which may pose a major risk to the global economy. In 2012, the United States recorded a current account deficit of $475 billion, whereas the Euro area (mainly Germany and Nordic countries) had a combined surplus of more than $220 billion, Japan and developing Asia had a combined surplus of $200 billion, and oil exporters had a combined current account surplus of about $600 billion. Moreover, unorthodox monetary policies through quantitative easing by the United States and Japan could generate shock waves, through massive swings in capital flows, particularly as they begin to be withdrawn. Adjusting the composition of national fiscal and monetary policy stances by the major advanced economies in a cooperative fashion to facilitate rebalancing and avoid potentially adverse spillover effects will be challenging but probably highly desirable.

The slowdown in growth

Many developing countries experienced unprecedented economic growth and development over the past two decades. In several Asian economies, the period of sustained high growth was much longer. In the process, significant knowledge was accumulated about important dimensions of the development process, including the determinants and impacts of technological change, financial market development, human resources, and interactions between demographic change and international economic change. This progress has been far from universal, however. To date, many fragile and postconflict states, including many countries in Sub-Saharan Africa, have benefited in only a limited way, if at all.

Moreover, the projected decade-long period of slow growth in advanced economies is likely to have significant adverse implications for growth and poverty reduction in many developing countries. Developing countries that have thrived in recent decades— in part by engaging extensively in the international economy—are at risk of finding lower demand for their trade and less supply of international finance, as a result of slow growth in the advanced economies and concomitant new barriers to international economic interactions. Poorer developing economies that wish to emulate the recent success of the developing economies that have thrived are likely to find it more difficult than before to expand their engagement in the international economy for similar reasons (Rodrik 2013).

The fragility of the international financial system

Many experts believe the international financial system remains fragile in the aftermath of the 2008–09 crisis. They believe that the growing interconnectedness of banking and financial markets, the increased complexity of supply chains in the world trading system, and the predominance of the dollar as an international reserve currency all played important roles in the amplification of the United States housing crisis into a full-fledged global economic and financial crisis.

Beyond the broad risks associated with the global recovery, most current forecasts indicate that that the fallout from the crisis will change the landscape for finance and growth over the next decade or so. Many developing countries are likely to face reduced access to global capital flows for a protracted period. In particular, syndicated cross-border bond and bank lending, as well as portfolio equity flows, are likely to be constrained by the new global financial environment. Foreign bank participation in developing country domestic financial systems may also be limited by the need for parent banks in advanced countries to build up their capital in more restrictive regulatory environments, as well as by financial protectionism that puts pressure on banks to concentrate more on home markets. Lower-income countries may suffer the most from this shrinkage, as their already small share of total private capital flows dwindles and is not expected to bounce back anytime soon.

The experience of the last two decades has shown that financial development has a positive impact on economic growth at adequate levels of financial depth but that the effect vanishes, or even becomes negative, when finance becomes excessive. Excessive finance incubates economic booms and asset prices bubbles that end in financial crises, with low rates of economic growth for sustained periods (Allen and others 2013).

Changes in world trade

The post–World War II period witnessed a phenomenal rise in trade among nations, with the volume of trade increasing 27-fold between 1950 and 2008, three times more than the growth in global GDP. Rising globalization has been associated with strong economic growth that helped improve economic performance in many trading countries and lifted hundreds of millions of persons out of poverty. A key feature of this era of hyperglobalization has been the rise of multinational corporations and the sharp surge in flows of foreign direct investment, resulting in further increases in cross-border flows of goods and services and deeper integration.

After reaching the highest level ever recorded in 2008, world merchandise trade fell by more than 20 percent, its largest decline since World War II, as a result of the 2008–09 crisis. Although world exports of merchandise and commercial services trade have since recovered, regaining their precrisis level in 2010 and reaching a record level of $22.5 trillion in 2012, the pace of growth of world trade is significantly slower than it was in the previous decade. Moreover, recovery has been uneven, and short-term prospects for more rapid growth remain subdued, largely as a result of slow economic growth in advanced economies. World merchandise trade growth fell to only 2 percent (no growth in dollar terms) in 2012, down from 5.2 percent in 2011, and is expected to remain sluggish in 2013. World trade in commercial services (transport, travel, other services) grew only 2 percent in value terms in 2012, compared with 11 percent in 2011.

The relative share of advanced economies in world trade fell from 60 percent in the precrisis period to 52 percent by 2012. At the same time, the relative share of emerging and developing economies rose, from 40 percent to 48 percent. China's share in world merchandise exports reached 11.5 percent—a larger share than that of any other country, including the United States (8.7 percent), Germany (7.9 percent), or Japan (4.5 percent). The United States continued to be the leading importer of goods, with 12.9 percent of world imports in 2012. It also continued to run the largest trade deficit, accumulating massive external debt (albeit in its own currency).

These major global imbalances and shifts have been reinforced by the rising importance of South-South trade, which now accounts for about 56 percent of trade in emerging and developing economies, up from only 40 percent in the mid-1990s. Much of this shift reflects the rising prominence of global supply chains. As a result, although the rising trend in global integration has slowed considerably in advanced economies, it appears to be continuing in emerging and developing economies. Although short-term prospects for global trade remain uncertain and are unlikely to receive a boost from the long-stalled Doha negotiations, on balance, strong forces are likely to sustain the process of international specialization and fragmentation of production that has been a driver of trade growth in recent decades. There were no major increases in trade barriers in reaction to the sharp economic downturn after the 2008 global financial crisis. Trade is likely to be an engine of growth and global poverty reduction over the long term—but only if more low-income countries become part of the international supply chains that produce manufactures.

The open, rules-based trading system has delivered immense benefits for many, especially today's emerging market economies. Preserving it, by continuing to resist protectionism, will ensure that low-income countries can also make successful growth transitions. Cooperation to preserve globalization, even if not in its most hyper current incarnation, is therefore of critical importance (Subramanian and Kessler 2013).

Depletion of natural resources

The earth's natural resources are being depleted at what appears to be increasing rates, causing sharp movements in their prices. These relative price increases are likely to benefit owners and producers and induce expanded supplies; they will also reduce demand and increase the efficiency with which these resources and commodities are utilized. But sharp increases in prices will adversely affect users of these commodities, particularly the urban poor and middle class.

Price spikes have already increased hunger, intensified conflict and social unrest, and caused extinction of species. Soaring commodity prices have been a hallmark of the global economic boom in recent years. When the global financial crisis erupted in 2008, the resulting contraction in global output resulted in the crashing of commodity prices; the end of the commodity boom seemed imminent. Instead, commodity prices rebounded in the early stages of the recovery, leaving prices of many commodities near or above precrisis peaks, though by mid-2013 many commodity prices (energy and nonenergy) had retreated below their 2012 levels and remain well below their 2008 peak.

Physical constraints are expected to dominate the future evolution of oil output and prices. World oil production has plateaued since 2005, despite historically high prices, and excess capacity has been near historic lows. At the same time, demand from emerging economies continues to grow, in part as a result of the precautionary stocking of crude oil. Despite the discovery and development of massive shale gas and oil fields in the United States, the five-year forward price of oil remained around $90 a barrel (about the marginal cost of shale oil production in the United States), up from $20 in the early 2000s, and there is a large risk premium associated with political and social tensions across the Middle East. Both the real price of oil, which is already near a historically high level, and the balance of payments surplus of oil exporters are likely to increase substantially over the coming decade. Some recent predictions indicate that small additional increases in world oil production are likely to come at the cost of a permanent near doubling in real oil prices over the coming decade Fardoust (2012).

Rise and volatility of world food prices

Over the past decade, the interaction between low initial stocks and supply disruptions—including severe droughts in several major food-producing countries reinforced by policy-induced incentives for inefficient use of agricultural lands in many economies—has been an important factor in surges in food prices. Limited expansion of agricultural land, rising production costs (through high fertilizer prices caused by high oil prices), growing resource constraints (particularly water), increasing pressures from environmental problems and climate change, and rising demand from China and for biofuels have kept food prices well above historical averages. According to recent reports by the OECD and the Food and Agriculture Organization (FAO), this situation is expected to continue over the medium term for both crop and livestock products. With the ratio of stocks to consumption expected to remain at historical lows for many commodities, commodity prices are expected to remain high over the next decade, with significant risks for further price rises, which will shift real income from consumers to suppliers. Another significant increase in oil prices is likely to slow world economic growth, pushing up food prices and leading to inflationary pressures in many developing countries, potentially derailing their growth. The combination of adverse climate, high oil prices, and rapidly growing demand has led to sharply higher food prices. The spike in food prices in the second half of 2010 alone was estimated to have driven more than 40 million people into poverty (Steer 2013), though the increased demand for poor rural laborers in agriculture-based economies probably worked in the opposite direction.

Demographic changes

Recent decades have seen unprecedented changes in the quality, quality, and mobility of world population. The world population doubled from 3.5 billion in 1970 to more than 7 billion in 2010—a rate of increase never experience for a sustained period before and not likely ever to be experienced again. Long-term projections indicate world population exceeding 8 billion by 2030 and 9.5 billion by 2050. Over the period 1970–2010, the quality of the population—as measured by schooling and health, nutrition and life expectancy—improved markedly, reducing some aspects of cross-country inequalities, though many lower-income countries continue to experience poor social indicators, massive poverty, and widespread malnutrition as a result of poor-quality social services, weak delivery systems, and inadequate resources.

Long-term projections also indicate significant demographic shifts, with important implications for global savings, investment, human resource development, growth, and climate change. In the advanced economies, particularly Europe and Japan, the average age is high and rising (the United States is somewhat of an outlier, in part because of migration). China and a number of other East and Southeast Asian developing countries also have rapidly aging populations, because they are at the stage of the demographic transition in which fertility has been rapidly declining. These trends are well known. What is less well known is that between now and 2050, the increase in the average age of the population will be larger in Latin America and the Caribbean and in South Asia (with Sub-Saharan Africa lagging some) than in Europe or East Asia, according to projections by the United Nations' Population Division. Increasing old-age dependency has already intensified pressures on private and public intergenerational transfers and pension systems in the economies that have aged more rapidly to date.

These huge demographic shifts have important implications for advanced and developing countries. Some middle-income developing countries may be able to enjoy a "demographic bonus" that will transitorily accelerate economic growth; exploiting this dividend may be an option in the future for many currently poorer but still high-fertility developing countries. Their ability to realize this potential probably depends on the right policy choices and a thriving international economy, however. The differential age structures across countries in the coming decades will increase the potential social gains that can be obtained from more liberalized international migration (Behrman and Kohler 2013).

Massive infrastructure deficits in developing countries

Infrastructure is essential to spur economic growth and reduce poverty. Slow progress in expanding the availability in infrastructure has significant adverse effects on households, particularly poor households. Fay and others (2011) estimate that more than 25 percent of households in developing countries have no access to electricity. Connectivity is particularly weak in Africa, where nearly 70 percent of the population remains unconnected to electric grids. Although access to power has increased, nearly 900 million people are still without access to improved water sources. The sanitation situation is much worse, with 2.6 billion people still lacking access to improved sanitation. Only 70 percent of the rural population in developing countries (and just 33 percent in Africa) has access to all-weather roads. Massive infrastructure deficits also affect productivity and thus firms' ability to compete in domestic and international markets. The unreliability of existing infrastructure also reduces firms' profitability and ability to invest and expand. Meeting developing countries' infrastructure needs would cost an estimated \$1.25–\$1.5 trillion (in 2008 dollars). Current spending levels are about 60 percent of that level. To meet the infrastructure development need, annual infrastructure spending would need to more than double over the medium term (Bhattacharya, Romani, and Stern 2012).

The type and scale of infrastructure investment have profound implications for environmental sustainability. Impediments to private sector investment in infrastructure can impede the adoption of newer green technologies.

Climate change

Responding to climate change has become one of the world's foremost economic policy challenges, because mitigation policies may affect economic growth, saving and investment levels, capital flows, and exchange rates. A "green growth" development policy agenda would address the critical need to decouple economic progress from environmental degradation. This agenda includes investment in natural resources key to economic development, particularly water. It also includes investment in technological innovation and infrastructure to reduce greenhouse gases and other damage to the environment while stimulating green jobs and accelerating overall economic progress. Policies to increase green infrastructure and enhance green growth focus on increasing demand for green products and production processes, promoting green public investment and procurement, and stimulating technological innovation expenditures with potential to enhance overall productivity and growth while also reducing environmental burdens. Examples of such policies include public investments in energy-efficient infrastructure (power transmission and transport systems) and more efficient water management systems; environmental pricing, including carbon emissions trading, more efficient water tariffs, and taxes on pollution residuals; research and development (R&D) programs and incentives for technology diffusion that enhance eco-efficient development clusters and first-mover advantages in providing new green technologies, including renewable energy; and public information campaigns, such as eco-labeling. The appropriate mix of measures depends on the overall state of development; economic structure and comparative advantages; the nature of governance institutions; and the status of international agreements for protecting the global environment, especially agreements that combat climate change and ameliorate its impacts (Steer 2013).

Inadequacy of official global governance and rise of citizen activism

The global market—built on the capitalist system and on democratic and accountable government as the political guardian of that system—was badly shaken by the 2008–09 global financial crisis. It will probably survive the next several decades, but it is not entirely secure. As Acemoglu and Robinson (2012) argue, democracy and accountability are the hallmark of "inclusive politics." Democratic and accountable politics in turn help sustain inclusive economics and, they argue, the nation-state itself. As Birdsall and others (2013) note in their paper for this Project, the official governance of the global market is inadequate in representing and protecting the bottom half of the world's population, who live on just $3 a day in the developing world. It is inadequate to manage collective action to deal with climate change or further liberalization of international trade to reduce protection against exports of poorer developing countries. There is also a global political problem: in the advanced economies, where the middle class has seen its real income eroded in many countries and is no longer benefiting from economic growth, there is growing suspicion of the costs of "globalization" and lack of confidence that the global "system" is fair. But, as Birdsall and others (2013) argue, there is also an opportunity, as worldwide surveys show that citizens everywhere are becoming more aware and more active in seeking changes in the global norms and rules that could make the global system and the global economy fairer—in processes if not outcomes—and less environmentally harmful. Across the world more people, especially the more educated, see themselves as "global citizens," aware that what happens inside their own country matters for others outside and that what happens outside matters for them and for their children and grandchildren. Global citizenship is seen not in opposition to but alongside national citizenship. This sense is highest among the young and better educated, suggesting that over time it will increase.

Illustrative Long-term Scenarios for the World Economy

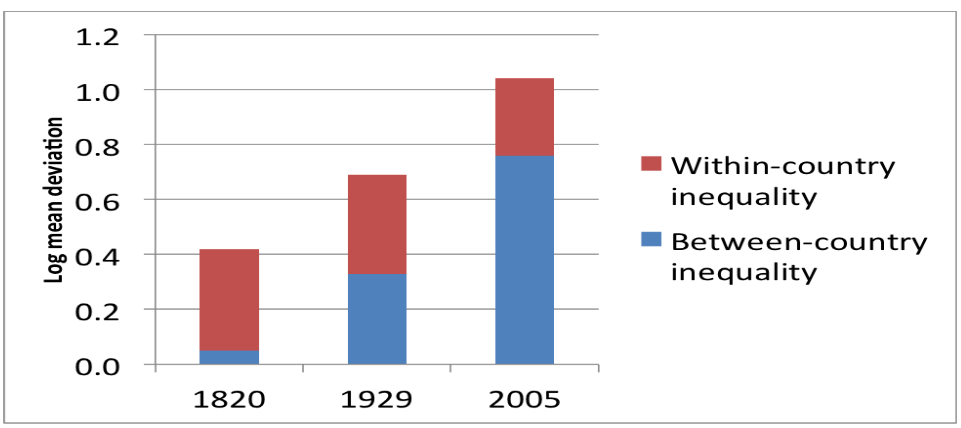
In recent years, researchers and international organizations have developed a number of long-term forecasting models that focus on productivity, convergence, technological progress and catch-up, and economic growth (see, for example, Bergheim 2008; Dadush and Shaw 2011; Hughs and others 2009; OECD 2012; Poncet 2006; World Bank 2011, 2013). These studies use different economic models to investigate a variety of long-term economic issues, such as consequences of policy scenarios relating to specific issues, such as public sector debt, the business climate, patterns of human development and poverty, trade reform and globalization, the international monetary system, and climate change. Another set of studies focuses on emerging megatrends and to a lesser extent productivity and growth modeling. Only a few studies have attempted to combine growth- and productivity-based forecasts with analysis of megatrends in a meaningful way to construct a vision of the future.

There is now widespread agreement and support among economists for growth models in which each country is projected to converge to its own steady-state trend of real income per capita, as determined by the interactions between country-specific structural conditions and polices and global technological advancement. Although all countries are expected to grow at more or less the global rate of technical progress in the long run, cross-country gaps in per capita incomes are expected to persist for some time, largely as a result of differences in the level of technology (as poorer countries will be catching up with the leading economies while the technological frontier will be moving outward, as a result of technical progress and innovation); human capital and its quality; and overall capital intensity (physical capital per unit of labor).

It is also important to consider "fundamental structural changes" that took place in the global economy in the last two decades. Derviş (2012) identifies three such trends. First, since roughly 1990, the pace of per capita income growth in emerging and developing economies has accelerated in a sustainable manner and is substantially above that in advanced economies.

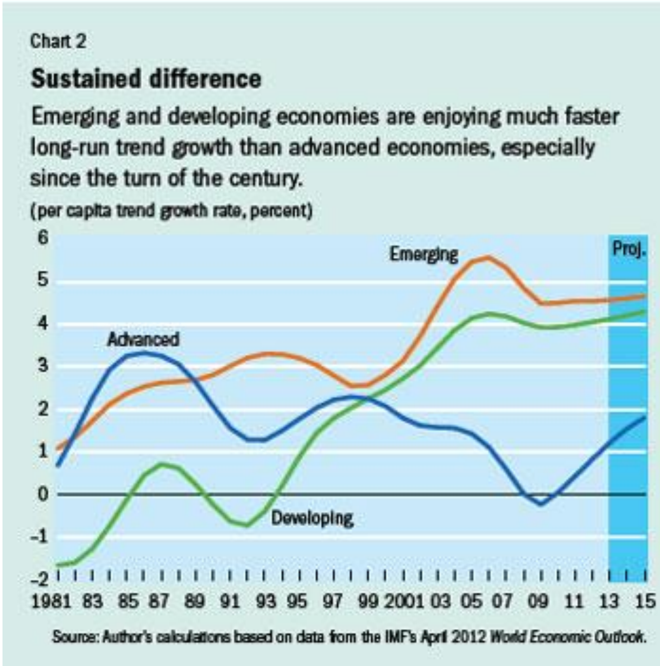
Recent data suggest that although there remains linkage between growth in advanced economies and growth in developing and emerging economies, the long-term trends and cyclical movements between the growth rates of the two groups of countries need to be distinguished. Derviş calls this this a major structural shift in the dynamics of the world economy. Second, there is continued cyclical interdependence between growth in developing and emerging economies and growth in advanced economies: the decoupling of growth rates has not led to delinking of their cyclical movements.

Figure 1 Global Income Inequality, 1820–2005



Source: Rodrik 2013 (figure 2.2 in chapter 2 of this volume), based on Milanovic 2011.

Figure 2 Per Capita Trend GDP Growth in Emerging, Developing, and Advanced Economies, 1981–2015



Source: Derviş 2012.

Third, in recent years, the distribution of income in many countries has become more unequal (figure 1), while and the new convergence has reduced the distance between advanced and developing economies (figure 2). – with Population- weighted inequality measures (Gini) indicateing an increase in within- country inequality between 1988 and 2008 and a reduction in between- country inequality between 1988 and 2008, mainly due toas a result of the relatively rapid economic growth of China and India— – an outcome of the new convergence (Milanovic (2013). The result has been a growing divergence between the richest income earners in the world and the poorest segment of the world population. This trend may make it more difficult for a given rate of economic growth to reduce poverty by as much as it did in the last 20 years.

These structural changes in the global economy have important implications for the growth dynamics in the global economy in the next 15–20 years and possibly beyond. Table 1 displays some recent long-term economic projections (GDP per capita) for illustrative purposes.

Table 1 The Global Economy: Long-term Projections of per Capita Income Growth (annual percentage change)

Country or country group	*1820–1950*	*1950–2006*	*1995–2011*	*OECD (2012) 2011–30*	*Maddison (2008) 2006–30*	*Conference Board (2012) 2017–25*[a]	*Hughes and others (2009) 2005–30*
World	0.9	2.5	2.5	3.1	2.0	1.5–2.6	2.4
Advanced economies	1.2	2.5	1.5	1.7	1.8	0.8–1.6	1.9
United States	1.6	2.1	1.5	1.5	1.6	0.9-1.3	2.1
Western Europe	1.0	2.9	1.4	1.5	1.3	0.7–1.7	1.8
Japan	0.8	4.5	0.8	1.4	1.2	1.1–1.8	1.9
Developing and emerging economies	0.5	2.7	5.6	5.2	2.5	2.3–3.5	
China	–0.1	4.8	9.3	6.4	4.1	3.5–4.6	5.2
India	0.9	2.6	5.8	5.6	4.2	2.0–3.1	3.9

Source: Authors' calculations, based on Maddison. 2008. "The West and the Rest in the World Economy," *World Economics* 9 (4); OECD. 2012. "Looking to 2060: Long-Term Global Growth Prospects." OECD Policy Paper No. 03; The Conference Board. 2012. "Projecting Economic Growth for Medium- to Long-term." Hughes and others. 2009. *Patterns of Potential Human Progress: Reducing Global Poverty*, vol. 1. Oxford University Press.

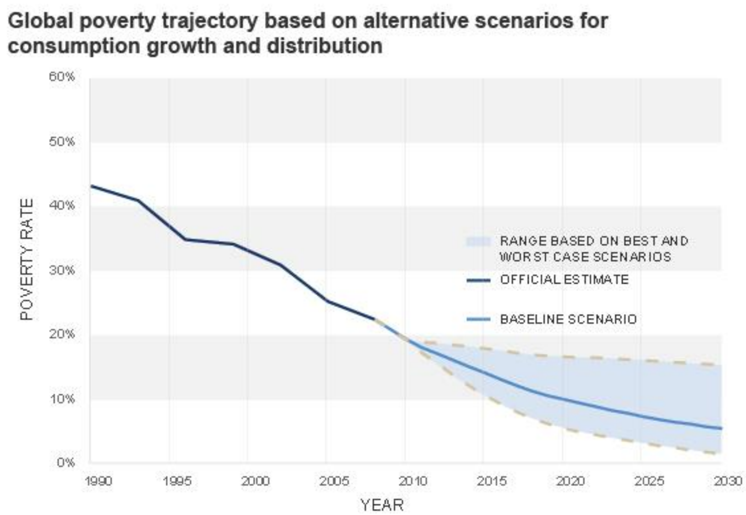
a. The lower bound is the pessimistic scenario, the upper bound the optimistic scenario. Figures were adjusted by the authors for population growth to convert to per capita terms.

Three important characteristics of the projections in table 1 are noteworthy. First, for both advanced and developing economies, growth since the middle of the 20th century has been exceptionally rapid by historical standards. Second, since the mid-1990s, growth in developing and emerging economies, particularly China and India, has been faster than in any other major economy or group of countries since at least the 1820s (and probably ever, though data are limited for earlier periods). This rapid growth pulled hundreds of millions of people out of poverty and created large middle classes in these countries (figure 3) (Ravallion 2013).

Third, all of the projections reported in table 1 indicate a significant slowdown in the pace of per capita income growth in advanced economies (the United States, Japan, and Western Europe) during the next 15–20 years. Although the pace of growth in developing countries and emerging countries economies is also projected to slow somewhat, it is projected to remain well above that of the advanced economies.

Given these trends, either growth will have to be a faster and more inclusive growth (spurred, for example, by a growth strategy with a strong rural and agricultural growth component) will be needed or a given pace of growth will need to be supplemented with other proven antipoverty measures, such as conditional cash transfers to poorer families.

Figure 3 Global Poverty, 1990–2030



Source: Chandy, Ledlie, and Penciakova 2013.

At least three forces are assumed to drive growth and globalization over the next two decades: the speed of convergence between developed and developing countries, the rate of technological progress, and the pace of structural transformations and institutional reforms. A more gradual convergence—as well as headwinds that slow the pace of technological progress and structural transformation—could result in a slower pace of economic growth over the long run. A more rapid pace of convergence and structural transformation could speed the pace of growth of per capita income over the long run. There is a range of views, including among members of this Project’s team, on the probable rate of future convergence between low-income and higher-income countries and how it will compare with that during the first decade of the 2000s.

A 2012 OECD policy paper presents the results from a new model for projecting growth of OECD and major non–OECD economies over the long term. It assumes no major macroeconomic and financial crisis in the relevant time horizon and continued strong performance by the BRICs, particularly China, albeit at a somewhat slower pace than the past decade. It also assumes away major climate change, war, or regional conflict–induced disasters with global consequences.

These assumptions may result in optimistic projections. The projections do not incorporate substantial changes that could occur as a result of possible policy changes such as relaxed restrictions on international migration, however; if these changes materialize, the projections may underestimate future growth.

Main characteristics of this projections exercise include the following (reported only for 2011–30 for the OECD):

- Global GDP could grow at about 3 percent a year over the next 50 years—about 2 percent in per capita terms. This growth will be enabled by continued fiscal and structural reforms and sustained by the rising share of relatively rapidly growing emerging market countries in global output.
- Growth of non–OECD countries will continue to outpace growth within the OECD, but the difference will narrow, largely as a result of the convergence effect (technology catch-up). The average annual growth in non–OECD countries will decline from more than 7 percent over the last decade to about 5 percent in the 2020s and to about half that by the 2050s, whereas annual trend growth for the OECD will average about 1.75– 2.25 percent.
- If all goes well for emerging economies and today's advanced economies continue to grow at a relatively slow pace, the next 30–50 years will see major changes in the relative size of world economies. Rapid growth in China and India will make their combined GDP measured at 2005 purchasing power parity (PPP) surpass that of the G7 economies and exceed that of the entire current OECD membership by 2060.
- Notwithstanding rapid growth in low-income and emerging market countries, large cross-country differences in living standards will still persist in 2060. Income per capita in the poorest economies will more than quadruple by 2060, and China and India will experience more than a sevenfold increase. But living standards in these countries and some other emerging market countries will still be only 25–60 percent as high as in the leading countries in terms of per capita income in 2060.

- In the absence of more ambitious policy changes, larger imbalances could undermine growth. As the current cycle unwinds, the scale of global current account imbalances may increase, returning to precrisis peaks by 2030. Government indebtedness by many OECD countries will exceed thresholds at which there is evidence of adverse effects on interest rates and growth. Global interest rates may therefore start to rise over the long term. Bolder structural reforms and more ambitious fiscal policy could raise long-run living standards by an average of 16 percent relative to the baseline scenario of moderate policy improvements (OECD 2012). Ambitious product market reforms that raise productivity growth could increase global GDP by an average of about 10 percent. Policies that induce convergence toward best practice labor force participation could increase GDP by almost 6 percent on average.

Megatrends

Policy makers and researchers across the world need to see the big picture if they are to deal effectively with specific challenges and opportunities over the long term. Among the many books and studies that have been published in this area in recent years, a few include lists of issues similar to the ones identified for this research program. These studies tackle the big picture from different angles, with varying success.

In *Megachange: The World in 2050*, Daniel Franklin, John Andrews, and their colleagues at the *Economist* identify the trends that are transforming the world and predict how they may shape the world by 2050. The book offers a straightforward survey of the world, together with a cautiously optimistic outlook for the global economy. According to the authors, "There is every chance that the world in 2050 will be richer, healthier, more connected, more sustainable, more productive, more innovative, better educated, with less inequality between rich and poor and between men and women, and with more opportunity for billions of people" (2012, xiv). Although the contributors are relatively optimistic about the long-term future of the world, they acknowledge that enormous challenges lie ahead, ranging from managing climate change and conflicts over scarce resources to feeding another 2 billion people and dealing with growing security threats from extremists and failed states.

At the core of *Megachange* lie two important assumptions. First, the slowing of global population growth takes the form of a baby-boomer bulge that moves from west to east (except in Eastern Asian countries that already have rapidly aging populations, such as Japan and China) and from north to south. As a result, although growth will slow over the next 40 years in the West, it will likely accelerate in much of Asia and Africa. Second, the pace of economic growth experienced over the past decade is likely to continue, implying greater convergence between today's advanced economies and developing countries and a more equitable distribution of income across countries. On economic matters, the authors of *Megachange* argue that the increase in inequality in today's advanced economies may turn around in coming decades and that fiscal and financial reforms will reverse the rising public debt trends, resulting in smarter and fitter states. China's spectacular growth in recent decades is projected to slow sharply, to about 2.5 percent a year by 2050. Nevertheless, a shift in economic fortunes and political and military power toward the East is likely to take place over the next three to four decades, as Asia will account for more than half the world economy.

Global Trends, by Adrian Done (2011), identifies and analyzes a dozen major long-term global trends he thinks will mold the 21st century world. He argues that each of these trends has the potential to have major adverse effects on businesses and people's lives if not dealt with in an effective and timely manner.

According to Done, the repercussions of the economic crisis are not going to disappear in the short term. Geopolitical power will continue shifting away from Europe and the United States toward emerging economic powerhouses such as China, India, Russia, Brazil, and other developing countries. Technology will continue to develop, bringing new sources of "creative destruction." The world will continue to get warmer, and the climate will change. The worsening problem of water scarcity will continue to affect food production for the foreseeable decades, especially as nonrenewable groundwater is used up or polluted. Done's main message is that the world needs to face up to these daunting challenges ("as human being have always done").

Another approach that has gained traction among policy makers around the world is the one taken by the United States National Intelligence Council (NIC). One of the NIC's key products is a global trends report produced for the incoming U.S. president that assesses critical drivers and scenarios for global trends over a 15-years horizon. The NIC's most recent report, *Global Trends 2030: Alternative Worlds,* was released in 2012. It provides insightful long-term predictions based on some ongoing megatrends:

- Individual empowerment will accelerate, as a result of poverty reduction, the growth of the global middle class, greater educational attainment, the widespread use of new communications and manufacturing technologies, and advances in health care.
- Power will be diffused. There will be no hegemonic power, as power shifts to networks and coalitions in a multipolar world.
- The demographic arc of instability (the large proportions of young people in some regions and high levels of unemployment) will narrow. Migration will increase.
- Demand for food, water, and energy will grow substantially, thanks to the increase in the global population. Climate change will worsen the outlook for the availability of these critical resources, such as water and access to it, which could lead to conflict.
- Asia will surpass the combined economic and military might of Europe and the United States.

Studies about long-term futures serve an important purpose when they build on current megatrends and draw logical implications based on the continuation of those trends or possible reversals or significant changes in the pace of change. The policy implications and their feasibility serve as an important and valuable public good and a necessary input for policy debate at both the national and international level. Each of the studies prepared for the Toward a Better Global Economy Project provides rich discussion of possible future trends, their implications for the welfare of average citizens, and policy options to be considered in preventing undesirable outcomes.

3. The Towards a Better Global Economy Project: Summary of Research Papers and Comments

The Past, Present, and Future of Economic Growth

The decade of 2000–10 was an extraordinarily good one for most developing countries and their lower-income citizens. In his paper, **Dani Rodrik** (2013) asks whether this recent performance can be sustained into the future, decisively reversing the “great divergence” that split the world into rich and poor countries since the 19th century. In answering this question, Rodrik argues that optimists would point to improvements in governance and macroeconomic policy in developing countries and to the still not fully exploited potential of economic globalization to foster new industries in the poor regions of the world through outsourcing and technology transfer. Pessimists would fret about the drag rich countries exert on the world economy, the threats to globalization, and the obstacles that late industrializers have to surmount given competition from China and other established export champions.

After reviewing recent trends, Rodrik observes that two dynamics drive growth. The first is the development of fundamental capabilities in the form of human capital and institutions. Long-term growth ultimately depends on the accumulation of these capabilities—everything from education and health to improved regulatory frameworks and better governance. But fundamental capabilities are multidimensional, have high set-up costs, and exhibit complementarities. Therefore, investments in them tend to yield paltry growth payoffs until a sufficiently broad range of capabilities has already been accumulated (that is, until relatively late in the development process).

The second dynamic is structural transformation—the birth and expansion of new (higher-productivity) industries and the transfer of labor from traditional or lower-productivity activities to modern ones. With the exception of natural resource bonanzas, extraordinarily high growth rates are almost always the result of rapid structural transformation, industrialization in particular. Growth miracles are enabled by the fact that industrialization can take place in the presence of a low level of fundamental capabilities: poor economies can experience structural transformation even when skills are low and institutions weak. Rodrik argues that this process helps explains the rapid take-off of East Asian economies in the postwar period, from Taiwan in the late 1950s to China in the late 1970s.

The policies needed to accumulate fundamental capabilities and those required to foster structural change naturally overlap, but they are distinct. The first set of policies entails a much broader range of investments in skills, education, administrative capacity, and governance; the second can take the form of narrower, targeted remedies. Without some level of macroeconomic stability and property rights protection, new industries cannot emerge. Furthermore, Rodrik explains, fostering new industries often requires second-best, unconventional policies that are in tension with fundamentals. When successful, heterodox policies work precisely because they compensate for weakness in those fundamentals.

In principle, Rodrik argues, this broad recipe can continue to serve developing countries well in the future. In particular, it can allow the world's poorest countries in Africa to embark on Asian-style structural transformation and rapid growth. But, he explains, a number of considerations suggest that developing countries will face stronger headwinds in the decades ahead.

First, the global economy is likely to be significantly less buoyant than in recent decades. The world's richest economies are hobbled by high levels of public debt, which typically results in low growth and defensive economic policies. The euro area is facing an existential crisis; even if Europe manages to stay together, its problems will continue to rein in the region's dynamism. Policy makers in these countries will remain preoccupied with domestic challenges, preventing them from exhibiting much global leadership.

Second, technological changes are rendering manufacturing more capital and skill intensive, reducing the employment elasticity of industrialization and the capacity of manufacturing to absorb large volumes of unskilled labor from the countryside and the informal sector. Global supply chains may facilitate entry into manufacturing for low-cost countries that are able to attract foreign investment, but they also reduce linkages with the rest of the economy and the potential for the development of local upstream suppliers. Other factors will also work against manufacturing industries. New entrants into standardized manufacturing activities face much greater global competition today than the Republic of Korea or Taiwan faced in the 1960s and 1970s or China faced in the 1990s. Most African manufacturers today face an onslaught of cheap imports from China and other Asian exporters, which make it difficult for them to survive on their home turf, let alone cross-subsidize their international activities. The burdens placed on government policy to incubate and develop domestic manufacturing firms are correspondingly heavier.

Rodrik concludes that ultimately, growth depends primarily on what happens at home. Even if the world economy provides more headwinds than tailwinds, desirable policies will continue to share features that have served successful countries well in the past. These features include a stable macroeconomic framework; incentives for economic restructuring and diversification (both market led and government provided); social policies to address inequality and exclusion; continued investments in human capital and skills; and a strengthening of regulatory, legal, and political institutions over time. Countries that do their homework along these dimensions will do better than those that do not. The upgrading of the home market will in turn necessitate greater emphasis on income distribution and the health of the middle class as part and parcel of a growth strategy. Social policy and growth strategy will become complements to a much greater extent. According to Rodrik, international institutions will do better to accommodate the inevitable reduction of the pace of globalization. The challenge is to design an architecture that respects the domestic priorities of individual countries while ensuring that major cross-border spillovers and global public goods are addressed.

In his comments, **Kemal Derviş** expresses strong agreement with the way in which the paper presents the broad history of economic growth and also with its policy conclusions. There are two aspects of the paper on which Derviş's basic message would be somewhat different, however. The first has to do with the decomposition of global inequality into between-country and within-country inequality. Rodrik writes that "it is *increasingly* (emphasis added) the country in which one is born that determines one's economic fortune," basing his statement on evidence he cites of a continuing increase in the percentage of between-country inequality between 1820 and 2005. This powerful stylized fact was correct for the long period from the beginning of the 19th century to the 1990s. But, as shown in Rodrik's own paper, the share of within-country inequality increased between 1988 and 2005, from 19.4 percent to 26.5 percent for the log mean deviation and from 22.0 percent to 26.5 percent for the Theil index. Derviş argues that this is a new trend, which emerged around 1990.

What has happened since 2005? Over the last eight years, the difference in the per capita economic growth rates between the aggregate group of developing and emerging economies on the one hand and the rich advanced countries on the other widened, as a result of both continuing strong growth in the former and the 2008–09 crisis–induced recession in the latter. At the same time, the trend of increasing within-country inequality is continuing in many economies, including most of the largest countries. So we can already say with some confidence, that, unlike the 1820–1990 period, the 1990–2020 period will be one in which the share of within-country inequality in overall global inequality grew very substantially.

The second point Derviş raises is his more qualified view regarding the prognosis for the future. Rodrik states that "the growth rate of economies is basically uncorrelated with their initial level of productivity or distance from the technological frontier." Derviş argues that the dividing line between manufacturing and what are broadly called "services" is becoming increasingly blurred. He concludes his comments by indicating that in terms of the basic overall message about convergence or divergence, size matters. The fact that very large economies such as China, India, Brazil, and Indonesia may continue to "converge" will lead to a different world economy than the one that would exist if the converging countries were small economies.

In his comments on the Rodrik paper, **Chang-Tai Hsieh** indicates that he is very sympathetic to the argument about the potential of "heterodox" versus "orthodox" reforms. There is overwhelming evidence that the kind of policies that successful countries have undertaken generally do not look like the typical "Washington Consensus" type of policies. However, at this level of generality, it is hard to say more than this. Without looking at specific policies, it is difficult to know whether heterodox policies were responsible for the rapid growth or whether some of those policies made things worse and it was orthodox policies that were responsible. Hsieh agrees that the type of reforms with the largest payoffs for most developing countries are much more nuanced than indicated by the standard Washington Consensus recipe book. The difficult question is what exactly these nuanced policy reforms are.

Hsieh questions the usefulness of thinking about forces that drive structural change (in all incarnations) as divorced from the process of institutional reform. Even if the key reforms are unorthodox in nature, it is still just as difficult to figure out which reforms might work and just as difficult to implement them. Very few countries have implemented the kind of unorthodox reforms that China has implemented, and it remains to be seen whether China's experience can be replicated successfully elsewhere.

Hsieh thinks the barriers formal manufacturing face may have increased in many developing countries. This view is consistent with Rodrik's argument about barriers to structural transformation, though it would still leave policy makers with the hard task of figuring out what these barriers are and how to best tackle them.

Population Quantity, Quality, and Mobility

Jere Behrman and Hans Kohler (2013) argue that recent decades have seen unprecedented changes in the quantity, quality, and mobility of the population. The world population doubled from 3.5 billion in about 1970 to more than 7 billion in 2010—a rate of increase never experienced for a sustained period before and not likely ever to be experienced again. Almost everywhere, life expectancy is now longer and fertility lower than in middle of the 20th century. The extent of these trends varies significantly across countries, regions, and sometimes subpopulations. But almost universally, the last decades brought about changes that resulted in significant increases in life expectancy, a reduction in the variance in the age at death and thus reduced uncertainly about survival at young and adult ages, and a reduction in the fraction of the life course that is closely intertwined with child-bearing and child-rearing.

Over the same period, population quality (as measured by schooling and other forms of education and by health, nutrition, and life expectancy) improved markedly, and cross-country inequalities in some important aspects of population quality (such as schooling attainment, preschool programs, life expectancies, and some related health measures) narrowed. Population mobility also increased, with substantial urbanization in most regions of the world as well as substantial international mobility.

Because of heterogeneity in stages of economic development across countries and regions as well as the timing and duration of the demographic transition, these changes have had differential effects on different regions. Despite decreases in global mortality and fertility levels—and the resulting recent declines in the rate of global population growth—the demographic transition remains an unfinished success story. High fertility and rapid population growth remain important concerns in many least developed countries, which may be most vulnerable to the consequences of population growth. The repercussions of these and other differences will be felt throughout the 21st century.

Looking forward, much of the more developed world (including middle-income countries) will experience relatively stable—or, in some cases, declining—population sizes, with rapidly aging populations and increasing aging dependency ratios. Many middle-income (and later current low-income) countries will experience declining dependency ratios and the challenges of accommodating "youth bulges." These countries will have opportunities to exploit a potential "demographic dividend" of having a relatively large share of the population of working age rather than young or elderly. Countries that currently have relatively low income and high fertility rates will be the main contributors to world population growth during the 21st century. As a result, both the absolute and relative size of the population of Africa is projected to increase substantially throughout the rest of the century. Asia and Africa are likely to substantially increase their shares of their populations living in urban areas, their shares of the global labor market and global human capital, and their shares of the world's total urban population.

Behrman and Kohler argue that the four policy areas are particularly important and promising:

1. Enhancing the freedom to move, internally and internationally. Increasing internal and international mobility could yield enormous potential gains, particularly for poorer citizens, with possibly few offsetting losses for more affluent citizens. Barriers to migration within countries should be reduced, but mechanisms should be introduced so that the incentives for migration more closely reflect social rates of return. Measures could include changes in transportation systems, quality of life measures, and the mandating of green spaces. These strategies have the potential to yield "win-win" outcomes, particularly given the relatively high prevalence of poverty in rural areas in most countries. Moreover, millions of people could move from developing countries to developed ones without reducing wages in developed countries, particularly if the pace of movement is slow enough to allow investment to adjust.
2. Strengthening the foundation for life. The private and social gains from establishing a stronger foundation during the early years of life—through stimulation, nutrition, and health in the first five years—are substantial, particularly for children from poorer families. Programs to increase parental knowledge about the importance of and means of stimulating their children, particularly in the early years of life, are likely to yield high private and social rates of return and benefit particularly children from poorer families. Preschool programs for children three- to five-years-old and nutritional investments are likely to have high social rates of return, with beneficiaries concentrated among poorer families.
3. Supporting aging with dignity and equity. As populations age, the potential private and social returns and equity gains from increasing the labor force participation and productivities of aging adults—and providing social support based on expected remaining life years rather than accumulated life years (age)—appear significant.
4. Improving incentives for social service delivery. Improving both markets for and policies regulating the delivery of services that provide essential inputs for achieving socially desired levels of human reproduction and child-rearing; mortality; schooling, preschooling, and other forms of education; health and nutrition; and internal and

international mobility has substantial potential for enhancing productivities and well-being, with gains often largest for poorer citizens.

Improvements in these four policy areas have enormous potential to enhance future economic growth, improve the welfare of global citizens broadly, and in many cases ensure that poorer citizens share more extensively in such growth. Moreover, many of these policies have “win-win” characteristics and disproportionately benefit the poor, justifying them both economically and morally.

Other important policies suggested by Behrman and Kohler include the following:

- In high total fertility rate contexts, increased investments in programs providing family planning information, subsidies for contraceptives, and a broader range of reproductive health services are likely to yield high payoffs.
- More than 100 million girls, most of them in low- and middle-income countries, have never been enrolled in school. Increased incentives for enrollment of girls at all levels of schooling in contexts in which significant numbers of girls are not enrolled are likely to yield high social rates of return and benefit members of poorer families. Once enrolled, however, girls on average progress more rapidly and attain if anything higher schooling levels than boys, raising questions about whether changes to improve boys’ schooling performance may have high payoffs.
- Public transportation systems should be subsidized to reflect large positive externalities, and tolls should be used for private vehicles to reflect the negative externalities they generate.
- Megacities should be decentralized into independent districts with their own political leadership, but infrastructure planning should be centralized in order to increase efficiency.
- Legislation on and enforcement of quality of life issues (air and water quality, noise reduction, sewage treatment, waste recycling, energy efficiency) should be strengthened.
- Prevention of common chronic diseases should be promoted through behavioral changes (for example, stopping smoking); regulatory changes (for example, requiring that nutritional information be provided and restricting the use of certain ingredients, such as salt and transfats); and structural changes (such as creating walkable neighborhoods).

Ronald Lee's comments indicate that he strongly supports the authors' framework, which describes many of the ways that changing demography will pose challenges for policy, income distribution, and economic development. Many important aspects of the topic are highlighted, including some that he reports were new to him. Population quality receives the attention it deserves, and the paper provides many fresh ideas and insights and novel ways of looking at the data. Lee finds the "demographic transition" a useful organizing framework for the paper and thinks the authors rightly emphasize that countries are distributed across different stages of the transition and that their positions in the transition fundamentally affect their economies.

Although he agrees with much of what the authors say about these matters, he disagrees with the discussion of aging in Asia and the classification of East Asia as being "posttransition" with an "older population age structure." He also believes that average age is not the best metric for aging, because it can rise as fertility falls with no increase in the ratio of the elderly to the working-age population. Moreover, except for Japan, Lee does not think the East Asian countries are old: they have come to the end of their first demographic dividend phase and are now poised at their peak support ratios, just about to start population aging. In an important sense, Lee argues, the full force of population aging is still decades away in every country, even the richest ones, and has yet to be experienced anywhere.

However, Lee does not agree with the authors' policy suggestions about pensions, arguing that further delinking them from earnings history would distort both labor supply decisions, including retirement age, and saving and asset accumulation decisions; it would also imperil the sustainability of public pensions as populations age. He argues that as population ages, the proportion of asset-holding elderly people rises, leading to capital deepening. Developing countries should encourage private saving, including through mandatory saving programs for workers, starting decades before population aging is projected to begin. Prefunded public pension programs are also possible, although in practice they run great risk of being drained by governments.

Lee shows that fertility decline has been accompanied by greatly increased educational investment over the past few decades. Policy can support this natural tendency by maintaining or increasing aggregate public spending on education relative to GDP even as fertility and the population shares of children fall. Human capital deepening generates positive externalities. The increase in labor productivity helps offset the decline in the number of workers relative to the elderly as populations age.

The Hyperglobalization of Trade and Its Future

Arvind Subramanian and Martin Kessler (2013) argue that the period of hyperglobalization that began in the late 1990s has been associated with the most dramatic turnaround ever in the economic fortunes of developing countries. This period is characterized by a number of major features, including hyperglobalization, reflected in rapid rise in trade integration, which has occurred more rapidly than the growth in world output; the dematerialization of globalization, reflected in the growing importance of services trade; democratic globalization, whereby openness has been embraced widely; the rise of a mega-trader (China); and the proliferation of regional trade agreements and the imminence of mega-regional ones.

Regardless of the view one takes of the relationship between hyperglobalization and growth, it is safe to say that a broadly open system has been good for the world, good for individual countries, and good for average citizens in these countries. Going forward, even if the pace of hyperglobalization slows, the aim of policy at the national and collective level must be to sustain steady and rising globalization and avoid sharp reversals.

Three issues illustrate the proximate challenges for the open trading system: “currency wars” (the tendency to use exchange rates as a mercantilist tool); the harnessing of trade policies to facilitate climate change; and trade restrictions, which can exacerbate food and natural resource scarcity, with especially adverse impacts on the poorest around the world.

But these proximate challenges can be addressed cooperatively only if the trading system can contend with more fundamental issues. Subramanian and Kessler identify three challenges. The first is for rich countries to sustain the social consensus in favor of open markets and globalization at a time of considerable economic uncertainty and weakness: weak growth, high levels of debt, looming entitlement burdens, stagnating median incomes, and rising inequality. Especially in the United States, public support for and intellectual consensus in favor of free trade are wobbly.

The second is what might be called the China challenge. As China becomes the world’s largest economy and trader, its markets become more important for other countries, especially low-income ones. Its openness, and that of other middle-income countries, will therefore be critical for the development progress of poorer countries. Relatedly, as a rising power, China will be called upon to shoulder more of the responsibilities of maintaining an open system.

If China continues to be open, trade tensions will remain contained. If China's opening slows, trading partners may be increasingly tempted to play the unfairness card, based on the disparate levels of policy openness (why should our markets be more open than that of a rival and equal?). In this scenario, especially if economic conditions are weak in advanced economies, the scope for trade conflict and tension could increase considerably, jeopardizing the openness of the global system.

The third challenge will be to prevent the rise of mega-regionalism from leading to discrimination and a source of trade conflicts. How these challenges will be resolved, the authors argue, will be determined in large part at the national level. For the United States and Europe, actions are needed to revive growth and address fiscal challenges, especially the challenges stemming from growing entitlements that are related closely to aging populations. For the United States, there is the additional challenge of addressing the problems of stagnating wages, rising inequality, and declining mobility. Success on these fronts will help ensure that globalization proceeds apace.

For its part, China should have a stake in preserving the open system for the simple reason that its rapid economic transformation over the last three decades was predicated crucially on openness. That transformation is still far from complete: China's standard of living is still only 20–25 percent that of high-income countries. Completing that transformation is critical for the political legitimacy of China's government and policy makers. In these circumstances, disrupting the open system would amount to biting the hand that has fed China and its rulers. Indeed, going forward, the Chinese agenda for reforms should be basically consistent with an open system: China's domestic needs are broadly outsiders' wants.

International/collective responses are needed to address the mobility of capital and its ability to escape taxation. Two new developments have exacerbated this problem: capital has become more mobile (reflected in growing financial globalization and increased flows of foreign direct investment), and the distribution of income in most OECD countries has moved substantially in favor of capital (and in favor of high-skilled people), increasing the size of the tax base that can elude taxation.

If countries and companies exploit the mobility of capital, the global ability to provide social insurance will decline, creating problems for globalization. Hence, there needs to be much greater cooperation between rich and emerging market countries (and, of course, tax havens) on how to tax capital and share the taxes from capital. This cooperation can take the form of greater harmonization (which would be difficult and entail a degree of regulatory convergence that countries will find difficult). Or it can take the form of countries doing their best to allow other countries to better enforce their own tax rules.

At the risk of overgeneralizing, Subramanian and Kessler argue that the challenge in the trade arena can be summarized as follows: China is happy with the status quo and the United States is not. China—and the other larger emerging market countries, such as Brazil, India, and Russia—is reasonably content to have Bretton Woods rules apply to it and hyperglobalization rules apply to its large partners. China will liberalize and open up its markets in line with domestic rather than external imperatives.

The larger partners of the United States and China need to deploy a strategy that takes account of the possibility that China might occasionally be tempted into a less than benign economic hegemony while reinforcing its incentives to act to preserve an open economic system. The "hyper-regionalization" of trade can be read in this context: both the Trans-Pacific Partnership and the Transatlantic Trade and Investment Partnership could have exclusionary effects on nonparticipants, especially China. But regionalism may undermine the rule-based global system.

Multilateralism could work as a defense against China in several ways: in shaping rules, in promoting adherence to them, and more broadly in defining legitimate behavior. With China's growing size, the balance of negotiating power will be with China rather than its partners. Multilateralism also ensures that China's trading partners will have enough heft to negotiate in a more balanced manner. For example, China might be willing to open its markets in return for the United States, European Union, India, and Brazil opening theirs. Its willingness to open up in a similar manner in negotiations with just the United States or European Union or with some less powerful combination is far from clear.

The open, rules-based trading system has delivered immense benefits for all, according to Subramanian and Kessler, especially today's emerging market economies. Preserving this system will ensure that low-income countries can also make successful growth transitions. It is often overlooked that the international trading system has witnessed more successful cooperation, especially between the systemically important countries, than the international financial and monetary system. Cooperation to preserve globalization, even if not in its current incarnation, is therefore critical.

Bernard Hoekman finds that the paper provides an interesting overview of several important dimensions of the most recent wave of globalization, which started in the early 1990s, including the increasing share of global output and trade by developing countries, especially China; the growing role of services; and the proliferation of preferential trade agreements (PTAs). He argues that the basic driver of the developments Subramanian and Kessler describe has been the steep decline in trade costs, as a result of technological change and the adoption of outward- (export-) oriented policies. Technological changes have been both hard and soft. They include advances in information and communication technology (ICT), which led to a sharp drop in the costs of international telecommunications, and the adoption of containerization and other improvements in logistics, which led to the plummeting of unit transport costs. Average tariffs were in the 20–30 percent range in 1950, complemented by a plethora of nontariff barriers (including quantitative restrictions and exchange controls) that were often more binding. This increase in internationalization as a result of the drop in trade costs reflects ever greater "vertical specialization," with firms (plants) in different countries concentrating on (specializing in) different parts of the value chain for a final product. As a result, the share of manufactures in total exports of developing countries increased from just 30 percent in 1980 to more than 70 percent today, with a substantial proportion of this increase made up of intraindustry trade—the exchange of similar, differentiated products. Since the 1990s, intraindustry trade ratios for high-growth developing countries and transition economies have risen to 50 percent or higher. Much of this trade is intraregional—for example, about half of all East Asian exports of manufactures go to other East Asian economies, often as part of a supply chain. Many countries in Africa, South Asia, much of the Middle East, and the members of Mercosur in Latin America have not seen the shift toward intraindustry trade and participation in international supply networks that has been a driver of trade growth in East Asia, Mexico, Turkey, and Central and Eastern Europe and the emergence of what economist Richard Baldwin has called Factory Europe, Factory Asia, and Factory North America. Hoekman argues that fostering greater diversification and participation by African, Latin American, and Middle Eastern economies in international supply networks is one of the great challenges confronting governments of the countries concerned as well as the trading system.

Technological changes have supported the long boom in trade; just-in-time multicountry lean manufacturing would be impossible without the process innovations and ICT that permit supply chain management spanning hundreds of suppliers located in different countries. Technological advances are increasingly permitting greater "dematerialization" of trade. Outsourcing and offshoring are increasingly going to be a feature of the organization of production and trade and a determinant of the productivity of firms. The trend toward the digitization of products to allow them to be created in one location and transmitted to another for processing or consumption could have major effects on the pattern and composition of trade.

Although manufactures and services account for the lion's share of global trade, agriculture remains of great significance in many low-income countries. Many rich countries subsidize and otherwise support the sector, creating negative spillovers for many of the poorest economies in the world. Hoekman argues that facilitating a continued process of broad-based beneficial economic growth in the poorer countries of the world requires that the global trading system remain open and preferably that countries further liberalize trade.

Preferential trade agreements (PTAs) are an alternative mechanism. They have been a feature of national trade strategies of many countries for decades. What is significant is not so much the increase in the number of PTAs in recent years—many of which are not "deep," in contrast to what is sometimes claimed, including by the authors, as they often do not go much beyond the WTO in key areas such as services trade policy—but the fact that the United States decided to join the European Union and pursue PTAs with not only developing countries but also other high-income countries.

Given the deadlock in the Doha Round, a positive implication of the many PTAs in force and under negotiation is that governments remain willing to make binding trade policy–related commitments in treaty-based instruments. However, Hoekman argues, it is not obvious that killing off the Doha Round and launching a new "China Round" will make a difference in this dynamic.

According to Hoekman, strong forces are likely to sustain the process of international specialization and fragmentation of production that has been a driver of trade growth in recent decades. One of these forces is the fact that international production networks require low trade costs in order to operate. One reason why there was no major increase in trade barriers after the 2008 global financial crisis was that firms in countries that are most involved in supply chain trade did not ask for them, as trade protection would not have helped them. Trade is likely to continue to be an engine of growth and global poverty reduction over the next decade or two if more low-income countries become part of the international supply chains that produce manufactures.

Does Finance Accelerate or Retard Growth? Theory and Evidence

Finance can be beneficial for growth, argue **Franklin Allen, Elena Carletti, Jun Qian, and Patricio Valenzuela** (2013), but it can also contribute to financial crises, which are often very damaging for growth. Their extensive review of the literature suggests that financial development has a positive impact on economic growth at adequate levels of financial depth but that the effect vanishes, or even becomes negative, when finance becomes excessive. Excessive finance can incubate economic booms and asset prices bubbles that end in financial crises, with low rates of economic growth for sustained periods. Too little finance is not desirable—but too much is not desirable either.

They summarize what is known about finance as growth as follows:

- Long-run economic growth is positively correlated with bank credit to the private sector as a percentage of GDP. In high-income economies, however, this effect is relatively small, and it vanishes in some periods, possibly because these economies may have reached the point at which financial development no longer affects the efficiency of investment.
- Economies with small and medium-size financial systems relative to their GDP tend to do better as they put more of their resources into finance, but this effect reverses once the financial sector becomes too large relative to the productive sectors of the economy.
- The global financial crises of 2007–09 and the current debt crisis in Europe highlight the fact that excessive finance may have undesirable effects on economic growth. A growing body of literature finds not only a vanishing effect on the positive impact of financial development on economic growth but also a negative effect of excessive finance (excessive borrowing and lending, excessive risk taking, poor risk management) on growth.

- Although the literature traditionally focuses on financial depth, financial structure is also important. Recent contributions focus on the optimal financial structure, which depends on a country’s stage of development and endowments. Early on, for example, small banks may be appropriate for providing finance to small firms.
- Although theory predicts a number of benefits from financial openness—access to cheaper capital, portfolio diversification, consumption smoothing, emulation of foreign banks and institutions, and macro policy discipline among others—results from empirical studies report evidence in favor of and against capital account liberalization.

The authors argue that these conclusions are based on the experiences of a wide range of countries. From the perspective of the average global citizen, it might be better to base policy advice on success stories. In China, alternative finance and institutions rather than traditional strong institutions and rule of law have facilitated growth. One of the most important policy conclusions is that alternative finance and the enforcement mechanisms associated with it should be encouraged rather than hindered. The conventional wisdom characterizes the economic performance in China as “successful despite the lack of Western-style institutions.” Allen and his coauthors argue that China has done well because of this lack of Western-style institutions: conducting business outside the legal system in fast-growing economies can be superior to using the law as the basis for finance and commerce. Research on political economy factors suggests that rent-seeking behavior by interest groups can turn the legal system, a monopolist institution, into a barrier to change. This view argues that by not using the legal system, alternative finance can minimize the costs associated with legal institutions. In a dynamic environment, characterized by frequent fundamental changes in the economy, alternative institutions can adapt and change much more quickly than formal institutions.

There is also a dark side to finance, excessive levels of which can lead to asset price bubbles and financial crises. Other systemic risks that can lead to financial crises include panics (banking crises as a result of multiple equilibria), banking crises as a result of asset price falls, contagion, and foreign exchange mismatches in the banking system. Macroprudential policies are designed to counter these systemic risks. These policies include deposit insurance and government debt guarantees, which can prevent banking panics. On some occasions, it may also be possible to use interest rates to burst real estate bubbles. In large diverse economies such as China, the euro area, or the United States, doing so will not usually be possible, however, because bubbles tend to be regional and higher interest rates may cause slowdowns in regions without bubbles. If limits to arbitrage and other market failures lead to a serious malfunctioning of markets, it may be necessary to suspend mark-to-market accounting (the accounting practice of recording the price or value of a security, portfolio, or account to reflect its current market value rather than its book value) for financial institutions.

One of the most significant systemic risks is the raising of interest rates by central banks and markets as normalcy returns. Contagion is one of the most serious and least understood forms of systemic risk. Implementing permanent swap facilities for foreign exchange between central banks is an important policy to prevent currency mismatches in the banking system and reduce the need for large foreign exchange reserves.

According to the authors, the global imbalance in foreign exchange reserves was a significant contributor to the financial crisis, because these funds helped fuel the real estate bubbles that triggered the crisis. Going forward, it is important to reform the governance structure of the IMF and the other international financial institutions so that emerging economies are properly represented. This reform would help ensure that they receive equal treatment when they need financial help. It would also reduce their need to accumulate reserves to self-insure, a very wasteful mechanism from an economic point of view.

A more likely medium-term scenario is that the Chinese yuan will become fully convertible and join the dollar and the euro as the third major reserve currency. Three reserve currencies would provide more scope for diversification of risks by central banks holding reserves, and China itself would have little need of reserves.

With regard to financial inclusion, there have been several promising developments in low-income countries. Innovations in Kenya, for example, have expanded access to finance to isolated areas and minority groups. Equity Bank is a pioneering commercial bank that devised a banking service strategy targeting low-income clients and traditionally underserved territories. Its branch expansion targeted clients speaking minority languages. A key part of its strategy involved the use of low-cost services that were possible because of the use of computers.

In his comments on the paper, **Stijn Claessens** argues that a financial sector that serves all citizens in better ways requires better governance and engagement with a broader group of stakeholders in designing financial reforms. The recent financial crisis showed that the market-driven approach, while still the starting point for designing financial reforms, needs to acknowledge more explicitly two aspects: the many market failures that can arise in the financial sector and the large (implicit) role of the state in the financial sector, which, although necessary in many ways, has not always been productive. According to Claessens, the often poor provision of financial services and the repeated occurrence of financial crises show that regulators are still not able to design frameworks or implement them consistently in a way that creates financial systems that are efficient, serve the needs of all, and are reasonably “fail and fool proof.” More therefore needs to be done regarding the “optimal” design and sequencing of financial reforms. Too little attention has been given to how to coordinate and phase various types of financial reforms. Reducing systemic risks is closely related to the need for better implementation of basic regulations, such as higher capital adequacy requirements, good supervision, clear resolution frameworks for weak financial institutions, better cross-border coordination, and incentive structures that are less prone to incentivize excessive risk taking.

Rapid financial liberalization, including capital account liberalization, can increase the risks of crises. Some types of capital flows, such as bank flows, seem to raise countries’ vulnerability to a balance of payments crisis; others, such as foreign direct investment, are less closely associated with crises. These findings suggest that in addition to basic reforms, certain types of financial systems or configurations of financial exposures or flows can make countries less prone to crises. A general lesson from recent crises is that there is a greater need for policies aimed specifically at reducing market failures and externalities. Unfortunately, crises have recurred partly because knowledge of their causes remains imperfect. With crises likely to continue to occur, the question of how to best manage their aftermath remains very relevant. The latest crisis—which has been drawn out and included large cross-country spillovers within the euro zone—is a case in point. The fiscal costs incurred may fall disproportionally on lower-income households, and small and medium-size enterprises (SMEs), which may have less access to finance than large firms. Small savers may be worse off, whereas richer households may escape the high inflation or financial repression that often follows a crisis. From an inequality perspective, there is thus a critical need to manage crises better. The main lesson is the need to absorb any losses resulting from the crisis—in the financial, corporate, or household sectors or at the level of the sovereign debt restructuring—as quickly as possible.

This area is complex and raises many fundamental questions. Financial systems typically serve a relatively small set of the population and the corporate sector; low-income households and SMEs, especially in developing countries, have little access to financial services at reasonable costs. Limited access also arises because finance has become more rules oriented, with a multitude of new rules following the global financial crisis.

Claessens points out that capture is a big problem in the financial sector, with adverse effects on access to financial services and financial stability. Capture occurs in many ways. Some are subtle: insiders—both people within the financial services industries and important users of financial services—set the rules, standards, and institutional designs, mostly to benefit themselves. As rents arise, the costs of financial services increase and access declines for some groups. In some cases, capture occurs in very blatant ways, such as corruption, which includes not only stealing but also the misallocation of resources. Capture often occurs ex post—through, for example, bailouts induced by the moral hazard of too-big-to-fail financial institutions or more relaxed monetary policy and fiscal policies to help avoid the risks of a systemic financial crisis. Overall, one should be skeptical about the scope for rapid progress in international formal governance arrangements, if only because of the multitude of actors involved.

In the end, changing the financial sector paradigm and the way in which the benefits and risks are allocated has to be about changing governance. Improving governance requires greater representation of some groups. How can the power of nongovernmental organizations (NGOs), 99 percent–type movements, and other groups be harnessed? It is also important to understand existing stakeholders' objectives and views better and to come up with a better model. . Claessens concludes by ndicating that these "answers," one can try to assess what a better model might be. He thinks perhaps political economy experts could help design better ways to influence financial sector reforms for the benefit of global citizens.

Resource Depletion, Climate Change, and Economic Growth

Andrew Steer (2013) asks whether the recent pace and pattern of economic growth will continue throughout the current century or whether environmental and resource constraints will limit growth to lower levels. Is a greener path possible at modest cost that will enable growth and poverty reduction to continue at current rates? What is the likelihood that governments, businesses, and households will adopt such a path? Will our grandchildren inherit a healthier planet than we did?

As population has quadrupled over the past century, economic production has risen 20-fold, placing unprecedented stress on natural ecosystems. More than a quarter of the world's land surface has been degraded. The current rate of species extinction is 100–1,000 times higher than in prehuman days (apart from the "Great Dying," which occurred about 250 million years ago, during which up to 90 percent of all species are estimated to have gone extinct). All 13 of the planet's hottest years on record have occurred since 1998. Water withdrawals have tripled in the past 50 years. Environmental damage imposes a deadweight loss to the economy of about 10 percent a year in countries like China, even before taking account of impacts from climate change or biodiversity loss.

For the first time in history, the human footprint has the capacity to influence major planetary systems. We are on the threshold of a new era: the "Anthropocene." In the coming years, the human ecological footprint will likely grow even more rapidly. The number of citizens in the "global middle class," which grew from 1 billion in 1990 to 2 billion in 2010, is expected to rise to 5 billion by 2030. This transition—in which the majority of the world will be able to afford a private motor vehicle, modern appliances, and a diet that includes meat daily—represents an important threshold (a point marking a change of a process to something else). When coupled with a changing climate, the implications are likely to be large and highly uncertain.

The challenge to agriculture is just one among many. Feeding 9.3 billion citizens by 2050 will require 70 percent more food, which in turn will require vast amounts of water at a time when existing irrigated areas in Asia will be threatened by much more variable rainfall and rising temperatures will reduce yields in tropical areas. Today, 1.5 billion people live in water-stressed areas; by 2025, the number will be 5.5 billion.

In sum, the evidence strongly suggests that current patterns of energy and resource use, agricultural practices, and urbanization will lead to increased costs and decreased productivity to the extent that growth, conventionally measured, will be undermined, with sharp unpredictable threshold effects likely and the impact felt differentially across countries. The bottom half of the income distribution—both across and within countries—will suffer most.

Climate change is the most important risk the world faces. Although global negotiators have set a target of limiting rising temperatures to 2°C, warming in the 3°C–6°C range is more likely. Estimates of economic impact from climate change vary greatly, from 2 percent to 10 percent of

GDP for a 3°C increase and up to 20 percent for a 5°C increase. Research suggests that about three-quarters of the impact would fall on developing countries. Discontinuities triggered by ice melt, tropical forest die-back, ocean acidification, and other factors would multiply these impacts substantially.

Additional annual investments of about 2–3 percent of GDP would be required to limit greenhouse gas concentrations in the atmosphere to 450 parts per million, which is required to give a 50 percent chance of limiting the global temperature rise to 2°C. Reductions in growth have been estimated to be on the order of 0.2 percent per year, with global GDP in 2050 projected to be 5–6 percent lower than it would be in a world without climate change.

Although the costs of action are much smaller than the costs of inaction, they must be borne now, whereas the costs of inaction are some decades away—and conventional discounting makes the decision to act a close call. The economics profession is sharply divided over both components of the discount rate (the pure rate of time preference and the rate at which the utility of income falls as future income rises). Mainstream economists argue that empirical evidence from consumer behavior and interest rates argue for a discount rate of perhaps 6 percent. Others, led by Lord Nicholas Stern, argue that for several reasons, including ethics and common sense, the discount rate should be closer to 1 percent. The difference is enormous: $100 a century from now is worth 25 cents today under a 6 percent discount rate and $25 under the 1.3 percent discount rate proposed by Lord Stern.

Lack of consensus on the appropriate discount rate is just one reason why conventional cost-benefit analysis is of little help in guiding decisions on climate change. In addition, many of the "existence" and "amenity" losses embodied in an extreme climate change world cannot be captured in monetary terms. Furthermore, economists are increasingly recognizing that where truly catastrophic loss is a possibility, but with unknown probability, conventional analysis is of little value.

Fortunately, evidence is growing that there may be more win-win opportunities than earlier thought. But these opportunities will not happen automatically. The new "green growth" theory is predicated on two insights. First, gains that would improve both efficiency and the environment are being left unexploited because of a range of barriers, rigidities, and market imperfections. Rising concerns about resource depletion can help unlock these constraints.

Roughly half of needed investments through 2030 would be economically justified even in the absence of any environmental concerns.

Second, smart market-based environmental policies can trigger innovation and investment that can create new markets, jobs, and economic growth. For this reason, more than 50 developing countries are now imposing costs on their own citizens—through mechanisms such as feed-in tariffs and renewable energy standards—that at first sight seem not to be in their country's narrow interest.[1] Why did China introduce cap-and-trade policies for carbon emissions on a pilot basis in 2013, with a nationwide program planned for 2015? A broad research agenda lies ahead in this field, with the issue of "green jobs" acting as a strong political impetus in many countries.

Short-termism on the part of most governments and businesses, coupled with the challenge of highly complex collective action at the global level, make the task ahead very difficult. Exploring policies with near-term economic and political gains, such as the following, will be essential:

1. Remove harmful subsidies. Subsidies on fossil fuels cost about half a trillion dollars a year. Subsidies encouraging overuse of water, overfishing, and excessively intensive agriculture amount to another half a trillion dollars. Smart governments are showing that the poor can be compensated for loses they would suffer from the removal of these subsidies.
2. Price environmental externalities. A carbon price of $25 a ton would reduce fossil fuel consumption by 13 percent and encourage new technology development. Enlightened countries are moving in this direction, but serious prospects for a global price are some years away at best.
3. Give citizens a voice in the marketplace. New technologies (such as remote sensing, crowd sourcing, and GPS tracking) and protocols for measuring emissions are enabling green companies and products to distinguish themselves. Certification schemes, commodity roundtables, environmental auditing, voluntary disclosure schemes, and integrated financial-environmental accounts are springing up in support. These mechanisms are slowly transforming supply chains among leading companies.

[1] A feed-in tariff or renewable energy payments is a policy mechanism designed to accelerate investment in renewable energy technologies.

4. Value natural resources in national and corporate accounts. At the Rio+20 summit in 2012, 50 countries and 39 financial institutions signed a Natural Capital declaration, committing them to develop methodologies to value and account for natural value and to integrate it into their financial decisions.
5. Reform global governance. Today's global governance structures are ill-equipped to deliver the urgent actions required. Solutions are much more likely with smaller numbers of powerful players, including private companies. An explosion in such arrangements should be expected—and encouraged—to address not only climate change but also the much broader issue of resource risks in the coming decades.

The case for action needs to be framed fundamentally in terms of opportunities, investments, and risk management rather than in terms of burdens, costs, and uncertainties. It also needs to frame the debate in terms of a broader definition of economic and social progress beyond GDP.

Jeremy Oppenheim expresses doubt that the right combination of technology, markets, and policy can accelerate the transition to a low-carbon economy with no or little impact on aggregate growth. According to him, this proposition requires considerable institutional sophistication to work in practice, given the risk of gaming, asymmetric information, and poorly designed policies, some captured by special interests. He thinks China provides a particularly challenging case in point. Its hugely successful transition from a low-income to a middle-income economy was based largely on a resource-intensive, carbon-intensive economic model, fueled substantially by cheap coal—a very different direction from that implied by the Kuznets environmental curve (that is, an inverted *U*-curve). He believes that the developed economies have not shifted their economic models in any significant way, other than offshoring a large share of their emissions to developing countries, such as China. Oppenheim's main point is that the theory of green growth appears to be significantly ahead of the reality. To facilitate the shift to low-carbon economy, further research is needed in a variety of areas, including the challenge presented by cheap hydrocarbons, especially natural gas; the technology/industrial policy challenge; the distributional impact of the shift to a low-carbon model; and the case for a greater focus on local environmental goods.

Global Markets, Global Citizens, and Global Governance in the 21st Century

Nancy Birdsall, Christian Meyer, and Alexis Sowa (2013) present a framework for analyzing market-based growth and globalization, which have yielded many benefits. Millions of people in the developing world have escaped poverty, and, for the first time in 100 years, the yawning gap between the rich countries and the developing world has narrowed, as China, Brazil, India, and other developing countries have grown and continue to grow faster than the United States, Europe, and Japan.

For the average citizen in the developing world, however, life remains harsh: half the world's people still live on less than $3 a day. The global market system is associated not only with growth but with ever greater concentrations of wealth within countries, destabilizing capital flows that hurt the average working person, new risks of job loss for middle-class people in advanced economies, and food and fuel price hikes that have had devastating effects on many poor households in low-income countries (though, of course, poor rural households whose income depends on food prices tend to benefit when those prices are higher). Even equally shared future growth in India, China, and Brazil can leave behind a large and frustrated income-insecure group. And in the absence of a dramatic technological breakthrough in the production and distribution of carbon-free energy, market-led growth is also potentially destructive because of its effect on climate change.

The enormous differences in income between the richest and poorest countries and people and the risks of unabated climate change, especially to the world's most vulnerable people, represent troubling moral challenges in an increasingly interconnected and interdependent global system. Worldwide surveys show that citizens everywhere are aware of these challenges. Millions of people in more than 50 countries, particularly among the young and better educated, see themselves as "global citizens," not in opposition to but alongside national citizenship. Substantial majorities are "strongly concerned" about climate change, and large majorities of the educated in eight high-income countries are willing to help finance the costs of meeting the Millennium Development Goals as long as other countries pull their weight.

Citizen activism in support of a better world has risen dramatically in the last decade. There is nothing new about activism, but the Internet revolution is giving citizens greater opportunities to make demands on powerful authorities beyond their borders. A good example is the citizen-based movement that in 2003 embarrassed the United States and the pharmaceutical industry into accepting a less stringent WTO approach to global intellectual property rights that was limiting access to anti–AIDS medications and other patented drugs in low-income countries.

Citizen-based "demand" for fairer and more farsighted system exists. But the official supply of good global governance is wanting. The supply—the G20, the IMF, the World Bank, the World Trade Organization (WTO), the United Nations, the World Health Organization and other UN agencies, the newly created Green Climate Fund, and many other formal institutions at the regional and global level—is flawed in two ways. It is weak, and because it is inherently undemocratic, it lacks legitimacy, exacerbating its weakness.

It is not the global institutions but the largest economies—including the United States and China—that are the locus of most decisions and policies that have implications beyond any one country's borders and that have the tax, regulatory, and enforcement powers to back up coordinated policies in and through the international clubs and institutions. The global institutions do provide a vehicle for countries, including the most powerful, to lock themselves as well as others into sensible rules and policies that are in their own self-interest but might be difficult to sustain domestically (for example, the open trading system) or that can be implemented at lower cost or greater effectiveness collectively (for example, World Bank lending and IMF surveillance). To the extent that these institutions bind their powerful members to sensible rules and policies, the ordinary citizen is probably better off with than without them.

Still, the resulting global polity is a faint shadow of the sovereign state in forging and managing a domestic social contract that corrects for initial inequalities at birth and deals with such market externalities as pollution. The problem of global governance is less an intrusive "world government" than a global polity that is too weak to eliminate tax havens and restrain "race-to-the-bottom" tax competition among countries desperate to attract capital, to extend and enforce agreed safety standards to protect industrial workers at the bottom of complex multinational supply chains, to rationalize rich country immigration policies that deprive citizens in developing countries of the right to move even as they impede growth in already rich countries, or to generate agreement to price emissions of heat-trapping gasses.

A second problem is built into the nature of the system itself. The official institutions are made up of sovereign member states, themselves at best imperfect democracies; in terms of political accountability, they are at least two steps removed from the people whose lives they affect. In what they do (and what they neglect to do), they tend to reflect better the interests and ideologies of the larger and more powerful countries, the corporate and global elite, and the well-intentioned but sometimes misguided (or purely driven by their interest) NGOs of the North than ordinary citizens everywhere. Sometimes these institutions act for the benefit of ordinary citizens, as when the World Bank finances pro-poor cash transfers in Central America or the WTO restrains excessive patent protection in southern Africa. But because these institutions' practices often reinforce rather than compensate for the asymmetries of power within and among countries, and because their own governance structures reflect those asymmetries, they lack democratic legitimacy, which ultimately further weakens their effectiveness.

Birdsall and her co-authors (2013) explain that compounding the problems of weakness and illegitimacy is the new reality of a G-Zero multipolar world, in which the decline in the overwhelming dominance of the United States is undermining its willingness and ability to fulfill the global leadership role it held in the second half of the 20th century. They argue that the United States was a sort of "benign bully," because as the most competitive and productive economy, it had an interest in open and fair global rules and practices that coincided with the interests of much of the rest of the world. With the rise in the market power of China and other emerging markets, the United States is less the economic hegemon it was.

What can be done? One step is for empowered and enlightened citizens to find ways to amplify their influence, through the media, crowd-sourcing, and the equivalent of "voting" in worldwide surveys. The world's rich—including the top 10 percent of people in the advanced economies and millions of rich people in developing countries—can support civil society and independent research and policy groups that generate information, monitor the performance of governments and intergovernmental institutions, inform the media, insist on the transparency of government and intergovernmental spending and practices, and generally contribute to deliberative discourse within and across countries.

In the world's largest economies, influential people can lobby to put their own houses in order, with a focus on changing domestic policies and practices that impose negative spillovers on the world's poor and vulnerable. The same can be said for the small but powerful corporate and political elite in developing countries.

Wherever they live, the world's rich and secure middle class have a second responsibility: to support the idea of multilateral cooperation and to contribute to a narrative in their own countries in support of the multilateral institutions. In the United States, influential citizens would do well to recognize the risks to them and to the world if the longstanding bipartisan support for the IMF, the World Bank, the WTO, and the United Nations wavers. In Europe, citizens should support increased votes and influence for China and other emerging markets at those institutions, without which the rising powers will disengage.

The enormous differences in income between the richest and poorest countries—and within countries between the elite and the marginalized—constitute a moral challenge in an interconnected world. That challenge commands global collaboration to help bind all countries to trade, migration, aid, tax, and anticorruption and other policies and programs to help ensure that growth benefits the bottom half of the world's population. The number of globally minded citizens aware of that challenge seems likely to rise in this century. Birdsall and coauthors ask whether the resultant increase in demand for better global policies will increase their supply in key countries, in the form of stronger and more democratic global institutions. In the G-Zero, market-led world of asymmetric power and influence, can citizen movements, which lack the tax and enforcement powers of governments, make a real difference? Can evolving norms change global politics and bend the curve of market-led growth toward greater equity and sustainability? They conclude that the jury is still out.

In his comments on the paper, **Pratap Mehta** notes that there is widespread agreement that there is a "global governance" deficit and that the architecture of global governance does not serve the interests of the poor. This architecture is increasingly producing a series of deadlocks on the major global challenges, including climate change, trade, inequality, and cyber security. It does not adequately recognize the world's deep interdependence: the political processes at the global level do not adequately take into account issues that create spillovers and affect citizens in other countries.

The authors' moderately hopeful assessment of the prospects for global governance stems from their belief that there is a greater global consciousness among newly emerging middle classes, who increasingly think of their identity in global terms, and that truly global communication is now possible. They claim that civil society movements are now so organized that their voices are heard at the global level and that the balance of power is such that no single country or small group of countries can dominate the global system without challenge. These changes may give more incentives to countries to cooperate and create a consensus on important issues, because powerful countries can no longer assume that they can simply command and others will follow. There is an implicit normative claim that the desirability of cooperation is generally agreed upon.

Mehta thinks that most of what the paper says is correct and characteristically well argued. However, he asks, if we are already moving in the right direction, as the authors claim, why has cooperation among nations not kept up with the demands from global citizens for fairer and more farsighted global political order? Is it because of an undersupply of global governance, or does the problem lie in the ways in which domestic politics function? Can the seemingly propitious trends the authors describe overcome those constraints? Rather than assume that better global governance is the solution to global problems, should we not focus on how domestic governance generates these problems in the first place? The global order does not represent the poor—but neither do domestic political orders.

Mehta argues that the shift in the geopolitical balance of power creates both possibilities and pitfalls. It produces pressures for new structures of global cooperation, but it also makes collective action more difficult. Although for a while it looked as if necessity would force governments to cooperate globally on energy governance, recent developments in the United States, including the discovery of shale gas, have dimmed the prospects of such global governance of energy markets emerging. Nevertheless, there might still be a desirable outcome for global energy, not because of more global governance but because incentives for individual countries have changed.

In other areas, such as climate change, this shift in the balance of power is making a solution difficult. The same could be argued for trade, where domestic politics rule and trump global governance, causing deadlock. In other important areas, such as the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), a good global outcome was achieved not because of more global governance but because domestic politics moved in a certain direction.

Mehta argues that the nature of global governance will be shaped not by the middle class, NGOs, or shifts in the balance of power but by the nature of global capitalism. According to him, the real issue is not global governance but how different states conceptualize the relationship between state and market. The global economic order, crafted under American leadership, proved fairly resilient, because countries like China and India decided that it was in their interests to join that order. Doing so lifted millions of people out of poverty.

Different global issues pose different types of challenges and need different types of political responses, according to Mehta. More than institutions, they require a distinct kind of politics. He is supportive of the fact that the paper is somewhat open ended in its conclusions, that it does not offer the false illusion of institutional design. Instead, it reminds us that we need to do the political hard work at every level.

4. Policy Options for the 21st Century and Their Implications for Global Citizens

The purpose of this Project is not to make macroeconomic forecasts or develop long-term scenarios. It is nevertheless necessary to understand the major forces underpinning the pace of global economic growth—demographic transitions, climate change, technological innovations, structural reforms, trade and financial developments—and how they may affect global patterns of growth, the distribution of income and wealth, and ultimately the welfare of average citizens. Long-term economic prospects are therefore summarized, in order to provide a better understanding of the global economic context, the timing and sequencing of the policies suggested below, and the possible trade-offs and tensions among them.

Will mostly positive trends prevail, or are is the world entering a new, substantially less positive era? Whatever the future holds, policy makers should hope for the best but prepare for the worst—or at least for less positive changes than witnessed in recent decades, when hundreds of millions of people emerged from poverty despite unprecedented population growth. This Project has identified some long-term policy changes (at the national and international levels) that if implemented could make it more probable that the more optimistic scenarios prevail and the low-case scenarios are avoided.

Among Project team members, there are some differences in perceptions concerning four key questions that condition and are affected by policy decisions:

1. Will globalization and convergence continue or be reversed?
2. Is ongoing population growth likely to be accompanied by continued improvements in population quality and income, or will even the much slower population growth in the 21st century be incompatible with a rapidly growing middle class in today's emerging economies, because of environmental and natural resource effects?
3. To what degree and for what types of issues should the focus be on making markets work better rather than on using interventions to attempt to unblock critical bottlenecks to growth, poverty reduction, an improved environment, and other goals?

4. Are key policies likely to be made at the level of the nation-state, or is collective action across national borders more likely to dominate?

To a certain degree, differences in perceptions regarding these questions shape the analysis of policy options in the working papers, as well as the comments on them, which are summarized below.

Sustaining Long-Term Economic Growth

A phase of the world economy is beginning in which East Asian–style high economic growth rates will become more difficult to sustain for the East Asian countries themselves and perhaps hard to attain for the next generation of potential emulators. Some important internal factors may shift economic growth from East Asia to other parts of the developing world. Most notably, the "demographic bonus" of low dependency ratios that East Asia experienced in recent decades has passed in that region, but it is creating new opportunities in Latin America and South Asia, with a similar pattern projected for Africa in a few decades. Nevertheless, the future of growth, at least over the next decade, may not look like the recent past. The rate of convergence between poor and rich countries may decline from the high levels seen during the last two decades. Developing countries will probably still grow faster than advanced economies, but they may do so in part because of the slowdown in growth in the advanced economies.

Ultimately, as indicated earlier, growth depends primarily on what happens at home . Whether the world economy provides more headwinds or tailwinds, desirable policies will continue to share features that have served successful countries well in the past. These features include a stable macroeconomic framework; incentives for economic restructuring and diversification (both market led and government provided); social policies to address poverty and exclusion; continued investments in human capital and skills; and a strengthening of regulatory, legal, and political institutions over time. Countries that do their homework along these dimensions are likely to perform better than those that do not.

Beyond these generalities lie seven main policy implications:

1. Future growth strategies may need to differ from the strategies of the past in their emphasis. In particular, reliance on domestic (or in certain cases regional) markets and

resources probably will need to receive more attention, although trade will remain a key determinant of growth for poorer countries and commodity exporters.

2. The greater importance of the domestic market will necessitate more emphasis on income distribution and the economic health of the lower and middle classes as part of a growth strategy. In other words, social policy and growth strategy will become complements to a much greater extent.
3. Globally, extensive harmonization and coordination of policies in finance and trade may not be sustainable, in view of the heterogeneity of needs and preferences of citizens around the world. International institutions will need to help better manage globalization to accommodate the possible slowdown in the pace of global economic growth (and globalization).
4. Regions of the world with an increasing "youth bulge"—Latin America, South Asia, and, with a lag, Africa—will need to ensure sufficient human capital investments and labor market flexibility if they are to employ young people in productive activities and enjoy the more robust growth that this demographic bonus makes possible rather than have growing youth unemployment.
5. Higher-income countries (mainly today's advanced economies) will need to carve out some policy space to rework social bargains, just as developing countries need policy space to restructure their economies. A new settlement will need to be forged between advanced countries and large emerging economies in which the latter no longer behave as free-riders on the policies of the former.
6. Some of the shortfall between the demand and supply of global governance can be addressed by reforms and new forms of representations: by individual citizens and countries acting in ways that are more conscious of the global consequences of their decisions, by activists and regulators expanding their transnational networks, and by multilateral economic institutions improving their own governance. These changes are likely to take place in an environment with strong centrifugal forces, characterized by a growing number of actors and greater diversity of interests. If policy makers fail to take them into account, they are more likely to undermine support for than to strengthen an open global economy.
7. Ultimately, a healthy world economy needs to rest on healthy national economies and societies. Global rules that restrict domestic policy space too much are counterproductive

insofar as they narrow the scope for growth- and poverty-reducing policies. They thus undermine the support for and legitimacy of an open global economy. The challenge is to design an architecture that respects the domestic priorities of individual countries while ensuring that major cross-border spillovers and global public goods are addressed effectively.

Enhancing the Quality of the Population

The quality of the population—defined here as including education and health—is the essence of development, if development is defined as increasing human capabilities. This emphasis seems intrinsically related to the Global Citizen Foundation's general concern with global citizens as well as the concerns of its Towards a Better Global Economy Project. Widely improving the quality of the human population—and reducing distributional inequalities in population qualities, particularly by improving population qualities at the lower ends of the distribution—is very much consonant with this Project's basic aims.

Because of heterogeneity across countries and regions in both their stages of economic development and the timing and duration of the demographic transition, however, these transitions have had different effects in different places in the past half century, with repercussions that will be felt throughout the 21st century. Differences in the stage of development and the timing and duration of the transition mean that prospects and desired policies differ across regions and countries. Much of the more developed world—including, as time goes on, more middle-income countries—will experience stable or even declining populations, rapid population aging, and rising age-dependency ratios. Many middle-income and (later) low-income countries will experience declining dependency ratios and the associated challenges of accommodating and benefitting from "youth bulges." These countries will have opportunities to exploit the demographic dividend to enhance growth—a dividend that East Asia has reaped in recent decades but will not enjoy in the future. Low-income countries with relatively high fertility rates will contribute most to world population growth during the 21st century (Africa's population in particular is projected to grow throughout the rest of the century, in both absolute and relative terms). In these countries, creating incentives and providing information to permit more rapid declines in fertility rates are likely to be high priorities with social in addition to private gains. In Asia and Africa, the population will become more urban, and these regions' share of the global labor market, human capital, and urban population will rise.

The policy implications in four areas are particularly important and promising:

- Enhancing the freedom to move, internally and internationally. Increasing internal and international mobility could yield enormous potential gains, particularly for poorer citizens, with possibly few offsetting losses or even gains for more affluent citizens. Increased urbanization has substantial potential for increasing productivity, but it raises questions about policies and incentives for limiting negative externalities associated with urbanization. Gains from increased international migration could significantly exceed the gains from increased international trade. But under any plausible assumptions, the magnitude of internal migration associated primarily with urbanization is likely to dwarf the magnitudes of international migration.
- Strengthening the foundation for life. The private and social gains from establishing a stronger foundation during the early years of life—through stimulation, nutrition, and health in the first five years—are substantial, particularly for children from poorer families.
- Supporting aging with dignity and equity. As populations age, the potential private and social returns and equity gains from increasing the labor force participation and productivities of aging adults—and providing social support based on expected remaining life years rather than accumulated life years (age)—appear significant.
- Improving incentives for social service delivery. Improving both the markets for and the policies regulating the delivery of services that provide essential inputs for achieving socially desired levels of human reproduction and child-rearing; mortality; schooling, preschooling, and other forms of education; and internal and international mobility has substantial potential for enhancing productivities and well-being, with larger gains often accruing to poorer citizens.

Improvements in these four policy areas have enormous potential to enhance future economic growth, improve the welfare of global citizens broadly, and in many cases ensure that poorer citizens share more extensively in such growth. The "win-win" characteristics of many of these policies—the fact that they both enhance economic growth and disproportionately benefit the poor—justify them both morally and economically.

Spurring Hyperglobalization, International Trade, and Growth

Although trade has been rising rapidly, considerable potential remains for further trade expansion. On a value-added basis, the world trade-to-GDP ratio is about 25 percent. It could continue to rise over time if economic growth does not falter and the major trading countries or blocs of countries do not adopt protectionist policies. At least three forces will continue to drive globalization toward and sustain it at higher levels: economic convergence; technology; and interests, ideas, and institutions. Nevertheless, headwinds are likely to limit the pace of convergence and structural change. As more countries continue to grow and some grow more rapidly, trade will increase. The pace of globalization will be affected by the pace of convergence. If the more sober assessment of future convergence held by some members of this Project prevails, the pace of globalization may slow, but it is not likely that it will be reversed.

Predicting the pace of technological progress is difficult. Revolutions in transportation, and then ICT, have driven trade globalization. Even if the pace of new discoveries slows, there is scope for the spread of existing technologies, both directly and as embodied in foreign direct investment. Mobile telephony, Internet usage, and connectivity are still far from universal. However, both supply and demand factors could accelerate technological developments. The very fact of hyperglobalization deepens the enmeshing of interests across countries, people, and companies. Most of the actions that will allow positive influences to prevail over globalization-reversing ones will be at the national level— namely, actions to address economic decline in the West and sustain growth in the Rest. But international actions will also be necessary:

- Collective action should help strengthen the institutional underpinnings of globalization. Actions include ensuring that domestic social insurance mechanisms are not undermined by globalization and bolstering multilateral institutions to prevent or mediate conflict between the major trading partners.
- Greater cooperation on taxes may become necessary to preserve funding for these mechanisms.
- The world may have to declare the Doha Round dead in order to move to more meaningful multilateral negotiations to address emerging challenges, including any possible threats from new mega-regional agreements. The rising economic powers, especially China and other BRICs, will have a key role to play to resuscitate multilateralism.

- The open, rules-based trading system has delivered immense benefits, especially in today's emerging market economies. Preserving this system will ensure that low-income countries can also make successful growth transitions. It is often overlooked that the international trading system has witnessed more successful cooperation, especially between the systemically important countries, than the international financial and monetary system. Cooperation to preserve globalization is critical.
- Barriers to international technological adoptions and transfers, such as those related to modern agricultural developments, should be reduced. If high-income consumers have preferences for consuming organic food and food that is not genetically modified, for example, they should be able to make and pay for those choices by being provided with that information. Governments should not restrict trade in foods using such technologies, however, which would have negative impacts on poor citizens in rural areas of the developing world.

Supporting Economic Growth through Finance

The global financial crises of 2007–09 and the current debt crisis in Europe highlight the fact that excessive finance may have undesirable effects on economic growth. Financial development is likely to have positive impact on economic growth to the benefits of many citizens. But excessive finance can have a negative impact on growth and on many citizens.

The experience of Taiwan, the Republic of Korea, and China suggests that countries can grow quickly for many years. The challenge is to understand how these countries achieved these spectacular growth paths and to implement their policies in other countries. In China, alternative finance and institutions rather than strong traditional institutions and the rule of law have allowed this growth. One of the most important policy conclusions is that alternative finance and associated enforcement mechanisms should be encouraged rather than hindered.

Macroprudential policies—that is, macroeconomic policies aimed at building resilience to external financial shocks, especially vulnerability to capital flow reversals in the banking sector and the associated disruptions to domestic financial conditions—are designed to counter these systemic risks. Policy makers should take note of several lessons learned about such policies:

- Deposit insurance and governmental debt guarantees can prevent banking panics. However, they create moral hazard and can be extremely costly if the systemic risk is not from a panic but from the collapse of an asset price bubble or some other source.
- In some situations, it may be possible to use interest rates to burst real estate bubbles. However, in large diverse economies such as China, the euro area, or the United States, doing so will not usually be possible, because bubbles tend to be regional and higher interest rates may cause slowdowns in regions without bubbles. When interest rates cannot be used, policy makers can limit loan-to-value ratios, which could be lowered as property prices increase at a faster pace; impose property transfer taxes that rise with the rate of property price increases; or restrict real estate lending in certain regions.
- If limits to arbitrage and other market failures lead to a serious malfunctioning of markets, it may be necessary to suspend mark-to-market accounting for financial institutions.
- One of the most significant systemic risks is the raising of interest rates by central banks and markets as normalcy returns. These increases will cause asset values to fall and pose a significant risk to the stability of the banking system. The return to normalcy needs to be carefully planned and carried out over time to minimize systemic risk.
- Contagion is one of the most serious and least understood forms of systemic risk. Several macroprudential policies and regulations may be needed to address the different channels and types of contagion. Perhaps the most important is capital regulation.
- Implementing permanent swap facilities for foreign exchange between central banks can help prevent currency mismatches in the banking system and reduce the need for large foreign exchange reserves.
- The global imbalance in foreign exchange reserves was a significant contributor to the financial crisis, because these funds helped fuel the real estate bubbles that triggered the crisis. Going forward, it is important to reform the governance structure of the IMF and the other international economic organizations so that developing countries are properly represented. Such reform would help ensure that these countries receive equal treatment when they need financial help. It would also reduce

their need to accumulate reserves as a self-insurance mechanism. Self-insurance is very wasteful from an economic point of view.

- In the medium term, the yuan could become fully convertible and join the dollar and the euro as the third major reserve currency. Having three reserve currencies might provide more scope for diversification of risks by central banks holding reserves and it would largely obviate the need for China itself to hold reserves.
- With regard to financial inclusion, financial innovations in various developing countries show promise for emulation and replications. A key part of its strategy involved the use of low-cost services that were possible because of the use of computers. There is no need for public subsidies. However, it is necessary that regulators permit the use of such strategies.

Addressing the Challenges of Resource Depletion and Climate Change

In the coming years, the human ecological footprint will likely grow even more rapidly than in recent decades. Although world population growth will slow substantially, rising per capita incomes mean that demand will increase. The number of citizens in the “global middle class” is expected to rise from 2 billion in 2010 to 5 billion by 2030. This transition could represent an important threshold in terms of resource demands. When coupled with a changing climate, the implications are likely to be large and highly uncertain.

The challenge to agriculture is just one among many. Feeding 9.6 billion citizens by 2050 will require 70 percent more food, which in turn will require vast amounts of water at a time when existing irrigated areas in Asia will be threatened by much more variable rainfall and rising temperatures will reduce yields in some temperate and tropical areas. By 2025, the number of people who be living in water-stressed areas is expected to reach 5.5 billion, from 1.5 billion people today.

The evidence strongly suggests that current patterns of energy and resource use, agricultural practices, and urbanization will lead to increased costs and decreased productivity. The bottom half of the income distribution—both across and within countries—will probably suffer most (although some rural poor may gain from increased demand for their labor if food and other agricultural product prices increase).

The economics profession is sharply divided over both components of the discount rate (the pure rate of time preference and the rate at which the utility of income falls as future income rises). The implications of the difference are enormous. Lack of consensus on the appropriate discount rate is just one reason why conventional cost-benefit analysis is of little help in guiding decisions on climate change. In addition, many of the "existence" and "amenity" losses embodied in an extreme climate change world are very challenging to capture in monetary terms.

Evidence is growing that there may be more win-win opportunities than earlier thought. But because of externalities and information issues, these opportunities will not be exploited automatically or through market mechanisms alone.

"Green growth" is predicated on two insights. First, gains that would improve both efficiency and the environment are being left unexploited because of a range of barriers, rigidities, and market imperfections. Rising concerns about resource depletion can help unlock these constraints. Roughly half of needed investments through 2030 would be economically justified even in the absence of any environmental concerns.

Second, smart market-based environmental policies can trigger innovation and investment that can create new markets, jobs, and economic growth. For this reason, more than 50 developing countries are now imposing costs on their own citizens—through mechanisms such as feed-in tariffs and renewable energy standards—that at first sight seem to be too costly (an example is China's introduction of cap-and-trade policies for carbon emissions on a pilot basis in 2013, with a nationwide program planned for 2015). Excessive focus on short-term at the expense of long-term interests on the part of most governments and businesses, coupled with the challenge of highly complex collective action at the global level, make the task ahead very difficult. Exploring policies with near-term economic and political gains, such as the following, will be essential:

- Removing fossil fuels and other harmful subsidies. A starting point should be the elimination of harmful subsidies, particularly those on fossil fuel production and consumption which amount to nearly half a trillion dollars a year. Subsidies encouraging the overuse of water, overfishing, and excessively intensive agriculture amount to another half a trillion dollars. Smart governments are showing that the poor can be compensated for the elimination of these subsidies.

- Pricing carbon and other environmental externalities. Market-based mechanisms can be significantly more cost-effective than regulatory regimes, as demonstrated by permit trading for sulfur dioxide in the United States in the 1990s. A carbon price of $25 a ton would reduce fossil fuel consumption by 13 percent and encourage new technology development. Enlightened countries are moving in this direction, and the long-term prospects for carbon markets remain strong. As a result of the sheer need to act soon to prevent a catastrophe, a number of countries and regions are introducing trading schemes in that anticipation.
- Climbing the marginal abatement curve: addressing other market failures. Information asymmetry, coordination failures (the need for networks), imperfections in capital markets and R&D, and the existence of substantial co-benefits in the form of other environmental benefits are all market failures that are discouraging action on climate change. They must be addressed through a portfolio of policies such as emissions standards. "Nudge" policies, such as labeling, certification schemes, and power use monitors, are also proving effective.
- Increasing international cooperation. Today's global governance structures are ill equipped to deliver the urgent actions required. Solutions are much more likely with a smaller numbers of powerful players, including private companies. An explosion in such arrangements should be expected—and encouraged—to address not only climate change but also the much broader issue of resource risks in the coming decades. Rewards and penalties to be instituted.
- Facilitating citizen voice through the marketplace. New technologies (such as remote sensing, crowd sourcing, and GPS tracking) and protocols for measuring emissions, certification schemes, commodity roundtables, environmental auditing, voluntary disclosure schemes, and integrated financial-environmental accounts are enabling green companies and products to distinguish themselves and are slowly transforming supply chains among leading companies.

If such policies (as indicated below) are to be successful, the case for action needs to be reframed from a focus on uncertainties, costs, and burdens, to a focus on risk management, investments, and opportunities.

Creating New Global Governance to Enhance Citizens' Welfare

The global market, built largely on the capitalist system and on democratic and accountable government as the political guardian of that system, is not entirely secure. Official governance of this market is inadequate in representing and protecting the bottom half of the world's population and in dealing with climate change. There is also a global political problem: in the advanced economies and some upper-middle income countries, where the middle class is no longer benefiting from growth or is increasingly vulnerable to poor economic performance, there is growing suspicion of the costs of "globalization" and lack of confidence that the global "system" overall is fair.

Worldwide surveys show that citizens everywhere are becoming more aware and more active in seeking changes in the global norms and rules that could make the global system and the global economy fairer—in processes if not outcomes—and less environmentally harmful. Across the world, more people, especially the more educated and the young, see themselves as "global citizens," aware that what happens inside their own country matters for others outside and that what happens outside matters for them and for their children and grandchildren. Opportunities exist to close the gap between the demands of global citizens for a better world and the supply of better global governance. Mechanisms can be exploited that amplify the voices of global citizens, strengthen the ties among them, and link their good intentions to effective national and international policies, giving global society better channels by which to influence the global polity. Individual and official supporters of reducing global inequality and managing climate change can support not only polls and informal voting but civil society groups and think tanks, including in the developing world, that generate information, monitor performance of governments and intergovernmental organizations against their commitments, inform the media, and in general contribute to deliberative discourse. They can insist on transparency of their own governments and of intergovernmental institutions as a critical input to citizen monitoring and activism. In addition, global citizens across the world could support the following trends or actions:

- The highly empowered global citizens in the world's largest economies—the United States, China, Europe, Japan—have a particular responsibility. It is their governments' actions and lack of actions on financial, trade, immigration, investment, anticorruption, tax, and climate policy that matter most for people everywhere. It is these countries' domestic policies that often impose negative spillovers on others. For citizens in advanced economies, a priority should be to lobby that their own houses be put in order (by, for example, supporting a carbon tax in the United States or fiscal expansion in Germany).

- The small but powerful corporate and political elite within developing countries should lobby that would address distortions and inequities in their own societies (for example backing forest conservation in Indonesia, protection of indigenous people in Brazil, reform of patronage-based school systems in India).
- The first-best solution to many global problems would be a more "activist" global polity—if not a world government then something more legitimate, more democratic, and more effective than the current set of intergovernmental institutions. It is within sovereign nations that citizens of the world have the possibility and the responsibility to make their governments accountable for policies and practices that have impacts beyond their borders.
- The world's rich and the secure middle class wherever they live have a second responsibility: to support the idea of multilateral cooperation and to contribute to a narrative in their own countries in support of the multilateral institutions. In the United States in particular, the most influential citizens would do well to recognize their personal interest in a more effective and legitimate set of international institutions and the risk to them and to the world if the longstanding bipartisan support for the IMF, the World Bank, and the United Nations continues to waver.
- Global citizens in the United States and Europe should endorse governance reforms at the IMF and the World Bank that would give China and the other large emerging economies larger stakes; they should recognize that without these reforms, increasingly powerful countries will disengage, further weakening the institutions and undoing the potential benefits of global cooperation.

The time has come to seriously think about how improvements in official global governance, coupled with and reenforced by rising activism of "global citizens," can lead to welfare-enhancing and equitable results for global citizens. Cooperation among nations is either necessary (because of free-riding, as with climate change) or sensible (to ensure effectiveness at the lowest possible cost).

A healthy global "system" is an outcome of, not an input to, better domestic policies. In an increasingly interdependent global market economy, countries can help one another in support of healthy domestic politics and policies.

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