



THE
GROWTH
DIALOGUE

Restarting the Global Economy

Harnessing the Forces of Economic Growth

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James Manyika Ravi Kanbur

A Growth Dialogue White Paper

MAY 5–7, 2015

Bellagio, Italy

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About the Growth Dialogue

The Growth Dialogue aims to promote sustainable and shared growth as a vital aspect of economic development. Its comparative advantage is in convening groups of academics, experts, and policy makers to address new challenges related to national development strategies, urbanization and management of cities, new technologies and green growth, innovation policies, and issues of jobs and inequality. The Growth Dialogue attempts to bridge the divide between academics and policy makers, thereby encouraging policies that can help generate sustainable economic growth, raise productivity and incomes, and promote stability and security.

The Growth Dialogue and its extension, the Growth Dialogue Institute, were established with the vision that economic growth strategies need continuous recalibration and that lessons of experience require broad promulgation. As Professor Robert Solow said at the first meeting of the Commission on Growth and Development, “we know what the essential ingredients are for growth, but we are unsure as to the exact recipe.” Our goal is to assist policy makers in the trenches, those dealing with development challenges in emerging markets and developing economies. We hope to equip them with independent, unfil-

tered advice from other regions, the latest thinking on policy solutions, and applied academic findings that will help them carry out the task of growing their economies.

Policy networks are only as useful as their content, their accessibility, and their relevance. The Dialogue aspires to be the place where new ideas are incubated, where experiential learning takes place, and where policy makers can meet to discuss their common challenges, free of ideology and institutional influence. In this vein, it is the successor to the Commission on Growth and Development, which was led by Nobel laureate Michael Spence and composed of distinguished economic policy makers and accomplished leaders. The Dialogue continues in the same tradition of hosting regional and global events that bring together academic and policy experts. We seek to be a leading forum for growth conversations, a font of policy advice to governments, and a source of new ideas in a world of changing economic landscapes.

I. Introduction

The world is living in an impaired economic environment in which some aspects of current thinking on growth have to be questioned. This impairment stems from the confluence of inadequate aggregate demand; the emergence of new, disruptive technologies that can be transformative for future productivity but can also displace labor; significant changes in the distribution of income and concentration of wealth; and a dearth of economic instruments to deal with these multiple challenges. Global growth prospects are generally weak and policies to restore confidence and spending have eluded the G-20 and others. Even if a new paradigm could be devised, the ability of governments, in advanced as well as emerging market economies, to implement the needed actions is in doubt. Our conversation in Bellagio this year leads us to question some existing assumptions about the workings of the global economic system and to raise some unpleasant truths about the challenges that we collectively face.

We note that the resilience of households in advanced economies has been weakened and median incomes in many have fallen, exacerbated by underemployment, especially among the young and less skilled. This phenomenon is mirrored in emerging markets and developing economies where chronic underemployment persists, and where reduced trade prospects and

lower commodity prices have suppressed growth. Although there are some solutions on the horizon, they will take significant leadership to undertake and successfully implement. In addition, the longer the delay in dealing with these challenges, the greater the long-term costs, including chronically underemployed workers, wasted public resources, and stifled opportunities for productivity gains. While some measures of global welfare show gains, such as improved life expectancies, health gains, and poverty reduction in Asia, other broader measures of well-being cast greater doubt on the pace of progress (BCG 2015).

True measures of global welfare require us to include a host of broader economic, social, and political factors, ranging from environmental conditions to governance aspects and the distribution of gains within and across societies. There are numerous exercises attempting to create such measures. Our goal is more limited: we want to take stock of where the global economy stands today; compare it to our conclusions in 2012 (Growth Dialogue 2012); and, most importantly, identify emerging trends and challenges for public policy. The group that met in Bellagio in April 2015 brought together insightful minds from the world of academia, the private sector, government, think-tanks, and global institutions. They provide an independent assessment of global economic conditions and identify areas in which the Growth Dialogue can hope to stimulate further thinking and help identify practical policy solutions.

II. The Current Global Outlook

The Demand Side

Aggregate demand is weak in many economies due to deflated balance sheets of households, deleveraging in the financial sector, widening stress in public balance sheets, and constrained fiscal options. In a number of ways, these conditions have contributed to low growth prospects that have limited private investment, despite historically low interest rates. Government policy, the usual countercyclical tool, has been limited by concerns surrounding public debt, which has doubled since 2000 in the advanced economies. Hence, except for competitive devaluations to stimulate exports (which have negative consequences for others in the global trading system), there are few levers on the demand side that have been successfully deployed. Indeed, the argument can be made that there has been an over-reliance on monetary policy. The resulting very low bond yields have affected asset allocations, pension funds, and others, while not having the desired effect of stimulating investment. Large pools of cash on corporate balance sheets have been deployed at abnormally high rates for dividends and stock buy-backs. At the same time, despite low borrowing costs, there has been clear underinvestment by the public sector, which also affects returns on private sector investment.

When looking at output gaps, as the IMF has done, the picture is a persistence of aggregate underperformance of the global economy in the range of 1.5–2.0 percent more than five years after the Great Recession. Indeed, growth in emerging market economies has now slowed. Some, namely those economies with fiscal space, have resorted to bolstering domestic demand, often favoring consumption over investment. Others without this possibility face the choice of either low growth or larger deficits that affects their debt sustainability, especially if interest rates rise from their unnaturally low levels. This quandary, even in advanced economies, has put countercyclical macroeconomic policy in question, although many see alternatives (see Fernholz 2015 for the Summers-Bernanke debate on so-called secular stagnation) when taking a broader view of dynamic fiscal sustainability. It can also be argued that demand management policies are impaired by the decline in median incomes and household balance sheets that have yet to recover from the financial crisis. We maintain that a low equilibrium serves no stakeholder’s interest and that concerted efforts would help reenergize global demand to promote long-term economic growth.

The Supply Side

Persistent output gaps in advanced countries and emerging market and developing economies (EMDEs) have produced lower potential growth rates. Future growth is impaired by inadequate investment in the capital stock and a dip in labor productivity in many economies (Zhu 2015b). Global labor productivity growth as reported by the U.S. Conference Board is still half of what it was pre-crisis (Conference Board 2015b) and the dynamic of low investment in the capital stock appears unlikely to reverse this soon. The missing piece, total factor productivity,

is again reported to be barely above its zero contribution last year in current estimates (Conference Board 2015a). Indeed, a negative cycle can be seen emerging, where low growth reduces investments and technological gains, impairing future growth (see Gordon 2014). There are, however, reasons to think that the normal measures of productivity based on GDP accounting may be capturing a declining share of total value creation as many services that people value are either free or available at very low prices. While there is ample scope for innovation and new technologies, financing and adopting them requires a healthier economic environment.

Demographic shifts of major proportion are also taking place, albeit differently among countries and unevenly across regions. In some major economies, such as Japan and the Republic of Korea, the work force is declining as a result of demographic and labor market factors. In others, like the United States, underemployment (as seen in broader labor force participation statistics) is a drag on recovery, though some of the decline in labor force participation can be traced to the aging of the population. In Europe, labor market inflexibility results in high youth unemployment, despite demographic trends that should favor greater employability for the young. And in developing economies, lack of job prospects, especially for young potential workers, produces excess labor that remains idle and is encouraging migration. What is producing this undesirable outcome of spare capacity, unused labor, and low returns to capital?

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Are Markets Failing Us?

Clearly, it can be argued that a number of markets are out of sync. The labor market is suffering from the lag between what labor demand is and what labor supply can provide. A particu-

larly important factor is rapid technological change, which appears to have eliminated some jobs often described as “routine,” both blue and white collar. Technology also has shifted labor demand toward a different mix of skills. Since human capital takes time to adjust, labor markets can be out of equilibrium in this sense for quite a while.

Some argue that wages in economies like the United States have been driven down, and the aftershock of the recession has resulted in untold numbers of workers who are either discouraged or have outdated skills. Labor market adjustment will require time. Contemporaneously, advanced country governments will be hard-pressed to provide the income support needed to both sustain demand and enable this adjustment, due to their fiscal positions and the overall increase in spending for aging populations. In many EMDEs, the fiscal tradeoff is between needed investments in infrastructure and other expenditures. In these economies, short-term fiscal considerations may inhibit the long-term search for more growth. Capital markets, despite being “flush with liquidity,” appear not able to meet these needs for necessary infrastructure financing. Hence, both labor and capital markets seem to be underperforming.

At the same time, the ability of the financial sector to generate rents seems unimpeded, although it may be argued that the financial sector cannot continue to earn high returns when the real economy is faltering. Indeed, there is an aggressive search for higher yields, which is driving up stock market valuations in excess of expected profitability that is dependent on a return to a healthier global level of economic activity. We see very slow investment in the capital stock, despite low borrowing rates in both the private and public sectors. Ample pools of capital exist in pension funds and sovereign wealth funds; yet, their rechanneling is impeded by many market and nonmarket factors. Government failures in areas of regulation and risk-

mitigation undoubtedly play their part; however, international mechanisms and institutions designed to deal both with governance and risk-sharing seem presently inadequate to break the log jam.

A fairly nonideological argument can be advanced that the current system of incentives facing private actors is skewed toward excessive risk-taking and that the externalities of disrupted financial markets have been excessively costly for societies. Public monies that need to be devoted to dealing with time inconsistencies in labor markets, infrastructure needed for burgeoning and/or decaying cities, investments in climate change mitigation, and other forward-looking investments are being squeezed out. A strong case prevails as well pointing to a dearth of available public policy interventions to deal with emerging challenges across a range of issues. Our debates highlighted many of these issues and we intend to put them forward as areas for further research and intensified action.

Dynamic Pathways

Low-level equilibria are the result of a series of negative dynamics, many of which are currently present in the world economy. Indeed, the actions of individual economies to cope with poor prospects may also add to the negative spiral of bad phenomena. The so-called “Bad Ideas List” of the original Growth Commission report (CGD 2008) may need to be augmented, especially in the aftermath of massive quantitative easing in the United States, Japan, and the Eurozone, and the avoidance of necessary structural transformation policies to help manage demand more effectively. Recent evidence shows that the multiplier from additional fiscal stimulus would be significant for the global economy, especially if coordinated in the way the

G-20 coordinated stimulus packages that were undertaken in 2008–09 (see IMF 2014). However, there has been little appetite for use of this demand lever. In part, this lack of action reflects political stalemates (the case of the United States), while in other parts of the advanced world, it reflects unprecedented high debt levels. However, if the global economy were a firm with excessive debt levels but brighter prospects, and given very low interest rates, we would expect to see debt restructuring programs to lower debt levels and revitalize growth.

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A second crucial pathway is that between economic growth and inequality. While we come to some preliminary normative views later, it is important to note that the underlying interacting forces of technological change and global markets are set to increase income inequality and wealth concentration. Income inequality has indeed become more uneven in many countries and wealth concentrations have also increased. Countries that have bucked these global trends—mainly in Latin America—have done so with deliberate policies targeted toward equalizing the distribution of human capital. Some economists argue that we don't really know how the increase in income and wealth concentration seen in many economies will play out, while others may argue that neither is good for the maintenance of robust rates of economic growth. While the empirical evidence is mixed, there are good arguments on both the demand and the supply side about the detrimental effects of rising inequality. On the demand side, simple consumption theory leads to the presumption that such concentrations may be a drag on aggregate demand. On the supply side, rising inequality inhibits investment in human capital, impairs social cohesion, and perpetuates itself through well-understood mechanisms of transmission across generations (Krueger 2015). Offsetting public policies—such as improved quality of and access to education and early childhood education—require concerted resources

and take time to implement and show results. We therefore favor the facilitation of more robust economic growth with the potential for a broad sharing of benefits from growth as the most efficient path to generalized welfare gains.

III. Governments and Markets

Confidence Issues

“The world economy is muddling through with a B-minus average” (OECD 2015).

It can be argued that we find ourselves in a world of diminishing returns to globalization, at least as conventionally measured. This may in part be due to objective factors such as slower trade growth, less cross-border lending, and some corporate sector retrenchment. However, there is a strong sense that the global economy is in the doldrums and that governments seem powerless to improve the situation. In other words, global confidence has seemingly not been sufficiently restored and multilateral efforts have been anemic to improve global sentiment. This matters since the future outlook for economic activity appears weak, whether measured by new additions to the capital stock, new attainment of labor skills, or gains in productivity. Under these circumstances, it is worrying to see the current low grade given to governments by the OECD in the June 2015 Economic Outlook (OECD 2015) and its prognosis for continued slow growth of investment. As the OECD recognizes, low investment has been hindered by weakness in aggregate demand. The net result has been stifled employment and income growth, which has fed back into poor prospects through lower consumption. This negative cycle can be broken, however, with resolute government action.

Whether one is more of a Keynesian, seeing a low equilibrium that can only be broken via increases in government spending, or whether one is more Ricardian in one's views, wanting to see changes in the composition of government spending and removal of obstacles to structural change, the issue of confidence and its rebounding effect on the global outlook cannot be ignored. The question is how governments can renew confidence. We see ample scope for fundamental renewal of global confidence spurred by collective action that benefits a wide range of economies. To accomplish this will require a reinvestment in some key global institutions and reforms in their governance.

Poorly performing governments are often characterized by spending that is dominated by public sector employment and debt service, and by a failure to invest in their country's infrastructure. Such governments limit current growth performance as firms have to invest in costly energy alternatives and have to bear high transport costs. More dangerously, such governments sacrifice future economic growth (CGD 2008). If Mexico or Texas can issue a 100-year bond, then surely the rates of return on sound investment projects in developing countries and their cities can be financed. Hindering these investments are risk perceptions, often very real, and the dysfunction of governments. Rather than inspiring confidence, governments in many parts of the world diminish confidence with poor spending choices, weak implementation, and policy detours.

In our view, there seems to be an excessive focus on certain macroeconomic indicators, such as the debt-to-GDP ratio, which is especially misleading when the denominator is poorly performing. IMF research clearly showed that the weaknesses in fiscal accounts emerging after the financial crisis of 2009–10 were more a result of declining tax revenue than of countercyclical spending sprees (Arbatli et al. 2014). Individual countries must, of course, look at their respective tax systems, including tax

take and tax avoidance, as well as the balance between government consumption and government investment. Recent “multiplier evidence” from the IMF (2014) points to the extremely positive effect of infrastructure spending in advanced economies to spur growth, especially when output gaps are large and there is excess capacity in many economies, as is the case today.

Overcoming Fiscal Woes

The fact that many economies are constrained by high debt-to-GDP ratios reveals certain fallacies about this construct. First, a failure to deal with economic growth will continually impair debt dynamics and reinforce fiscal traps. Second, the debt data needs to be decomposed into those fiscal expenditures that add more forcefully to future growth (such as investments in productive capacity) and those that simply provide a short-term demand boost. Third, countries that have successfully dealt with fiscal balances have imposed fiscal limits or fiscal rules and stuck by them across electoral cycles in a bipartisan way. Chile and Colombia come to mind as successes, whereas the European Union has demonstrated the opposite.

Public policy, especially spending decisions, tends to favor current generations and entitlements that support consumption; but it is investment that is being neglected in many countries. This intergenerational favoritism is fed by politics and apathy among the young in advanced countries. In developing countries the social compact does not usually favor higher savings today to foster greater consumption tomorrow because politics are too unstable in many countries and public transparency is weak. The net result is seen in underinvestment in most countries, important exceptions such as China and the Republic of Korea notwithstanding. These latter cases,

however, also reveal a worrying global trend that despite some deleveraging in the banking sector, overall indebtedness has increased in many countries. This is driven in the case of China by corporate borrowing, in the case of the Republic of Korea by household debt, and by the government sector in others (see McKinsey Global Institute 2015a and Leipziger et al. 2016).

Politics, demographics, and economic progress have led to greater short-termism in public policy choices. The private sector is also dominated by short-termism and the recent spate of equity buybacks and decision making led by equity prices is limiting investment in future capacity. Poor corporate governance encourages or allows this behavior to persist to the detriment of long-term economic growth. Postcrisis monetary policy and excess reliance on quantitative easing may have contributed to this short-termism. Taken together, public and private shifts favor the here and now.

Managing Risk

The ironic situation of the contemporaneous existence of excessively large pools of capital with huge unmet infrastructure needs in most emerging market and developing economies (and some advanced as well) clearly points to a market failure. Surplus capital is found in the holdings of pension funds, sovereign wealth funds, and asset management funds—estimated by some to exceed US\$60 trillion or almost as much as global GDP. Some see the issue as a question of risk mitigation, in which case we need to look at the role of governments and multilateral mechanisms to foster recycling of surplus capital. Beyond project risks, which are the easiest to calculate, lie the regulatory and institutional risks that limit investments in Africa, for example, where the World Bank estimates the invest-

ments gaps at close to US\$100 billion. With yields low since 2009 and yield curves that are relatively flat, long-term finance should be readily available, were risks more manageable.

Market participants point to the excess demand for debt issues that carry risk mitigation features, such as bonds that involve the World Bank and other multilaterals. The Juncker Plan has expanded the role of the European Investment Bank into the market for investment lending. The Chinese-inspired Asian Infrastructure Investment Bank seeks to remedy the market failure of inadequate investment in cases of seemingly high potential returns. Since there are an important number of bankable projects, one has to question whether the international community has done enough to mobilize funds for investment, especially in EMDEs, and whether multilateral institutions are using their balance sheets aggressively enough, or whether their balance sheets are large enough. In this vein, we note with dismay that the Global Infrastructure Facility proposed for the World Bank Group is too small. Governments, many of which were active in the arena of debt relief in the past, have seemed paralyzed when it comes to creating new and creative risk mitigating facilities at a time when greater investment is sorely needed.

The evidence is persuasive that public and private investment in infrastructure are complements, not substitutes (Calderon and Serven 2004), and that effective crowding-in of investment can be sustained with strong public investment programs. Yet neither the IMF nor the World Bank has produced a credible plan to stimulate global economic activity and boost potential growth despite ample evidence that this would be desirable, and indeed feasible. Quite to the contrary, IMF data show slow movements in potential growth and other evidence points to lagging productivity performance (Zhu 2015a, 2015b). Indeed, breaking with tradition, the IMF (2015) has

advised countries in a reasonable debt position to spend more on infrastructure. But an even larger gain would come from leveraging the balance sheets of multilateral development banks and using their ability to objectively undertake project analysis that would identify bankable projects for private investors. Combined with some limited risk mitigation features, this would be an effective impetus to economic growth. We have identified this as an area that requires further work and a look at new mechanisms to foster effective recycling of capital.

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IV. Harnessing the Drivers of Growth

Demographic Trends

The two main drivers of the historically enormous expansion of the world economy over the past 50 years have been demographics and productivity. Between 1962 and 2012, the world's population more than doubled and average per capita income almost tripled in purchasing power parity (PPP) terms. Massive productivity gains accompanied this population bulge—the average worker produces 2.4 times as much today as in 1964—although the gap between advanced and developing economies (with the exception of China) has persisted. Contributors to economic growth clearly vary by country, but no economy has progressed without increases in the workforce and gains in productivity. The main question facing us today is whether this past pattern of expanding labor forces and higher productivity will continue. The first-order answer appears to be that it will not.

While population increases will persist in many parts of the world, the trend is toward older populations, declines in the formal labor force in the advanced economies, and a tapering off of employment in emerging market economies. Employment growth is declining both due to demographic factors and due to the replacement of many jobs by technological and informational advances. Whether seen in 3D printing, Airbnb™

bookings, or the use of handheld devices for myriad activities, the demand for employed labor in routine (meaning codifiable) jobs is declining, and declining rapidly. A recent study of the U.S. labor force argues that almost half of all existing jobs face a high likelihood of replacement by new technologies by the year 2050. At the micro level, this speed of job destruction is unprecedented and the implications of inadequate skills clear (see Autor 2014; Autor, Katz, and Kearney 2008). Studies pointing to the need for better and more intensive education (Goldin and Katz 2008) and to the plight of the median worker (Brynjolfson and McAfee 2015) notwithstanding, the public policy challenge of increased underemployment is very real.

At the macro level, the declines in employment imply that to maintain growth rates anywhere near past levels, one must either see huge increases in capital investment or major increases in productivity, and clearly the two factors are related. The McKinsey Global Institute estimates that productivity gains would have to be 80 percent above their already fast pace of the last 50 years in order to compensate for employment growth declines in order to maintain past growth performance. This will not happen. The implication is that we may expect significantly lower global growth rates going forward. Even maintaining the past pace of productivity increases, combined with projected demographic and employment trends, will still entail a reduction in average per capita growth from 3.6 percent (1964–2014) to 2.1 percent (2014–2064) for the G-19 plus Nigeria (McKinsey Global Institute 2015c).

Clearly this slowdown in growth will have implications for all groups of countries. In the poor emerging market economies, weaker growth implies a slowdown in the pace of poverty and near poverty reduction and a continuation of the slow pace of job creation that is the vital engine for income gains. In middle-income countries, the slower pace of economic growth

means that aspirations will go unmet. As those who point to middle-income traps have argued (see Eichengreen, Park, and Shin 2013; Kharas and Kohli 2011), we can expect stagnation in countries that have been successful in breaking out of low-income poverty traps. Finally, in many advanced economies, slower growth implies that the gains of the postwar generation will be eroded as wage incomes stagnate and returns to capital continue to climb (see Piketty 2014 and Stiglitz 2012, among others), reinforcing the hollowing-out trend of median incomes. This dire outlook leads us to what many consider a potential savior, namely, technological advances.

Technology and Productivity

Advances in how we do things—technological gains—are at the core of modern economic growth. Among drivers of growth, one can single out productivity gains that have enabled societies to shift from agrarian subsistence to industrial and postindustrial economies with vastly increased levels of consumption. Clearly, the information revolution has further propelled economies forward by providing low-cost connectivity around the globe. Barely 20 years ago, less than 3 percent of the world’s population had a mobile phone and less than one in a hundred was connected via the Internet. Today, two-thirds of the globe’s population has access to a mobile phone and one-third can communicate via the Internet. The pace of technological diffusion is breathtaking and there is more to come.

More technological advance is certainly possible, but there are questions about the effects. Will these developments be sufficient to move economies forward in the face of other obstacles? Will technologies be as readily available as the Internet to help “democratize” economic opportunity? Will disruptive tech-

nologies as they are known end up displacing so many workers that their benefits will be highly skewed and entail high societal costs? Another overarching question is how to accurately measure the benefits from technologies like the Internet; these can augment real welfare in ways that currently are not measured in national accounts of other indicators of well-being (Stiglitz et al. 2010). This aspect goes beyond our inquiry but is worth noting, in particular with respect to how we measure economic welfare and its distribution.

The outlook for transformative technologies is very bright according to those who monitor these developments closely (see McKinsey Global Institute 2015c). Some technologies will transform the basic building blocks of things via changes in materials to make them cheaper, lighter, better, or smarter. Others will deal with the fundamental problem of how to produce energy in newer, more efficient, and cleaner ways. And other technological advances will continue the process of providing much of the planet with more information, sensing, connecting, remembering, and optimizing on a massive scale and following the path of rapid diffusion. These technologies can improve lives and economize on the earth's resources. Moreover, many technologies can be extended at zero marginal cost to less fortunate parts of the planet to produce very real welfare gains for many who are currently disadvantaged.

The most intriguing aspect of technological change, however, may well be in the world of industrial and service automation because it is in this realm that jobs are most likely to be displaced. For example, Airbnb™ now dominates global daily bookings with just 600 employees. Of course, the inexorable process of discovery will continue to yield innovations such as 3D printing, driverless cars, and wireless applications. Furthermore, unlike the concerns voiced in the 1960s about automation, the current pace at which technologies can replace indi-

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viduals is indeed alarming. A recent study estimated that 47 percent of all current jobs in the United States were potentially automatable or faced a probability of computerization above 0.7, although the time frame is uncertain (Frey and Osborne 2013). The pace at which jobs are being destroyed is presently exceeding the rate of new job creation. This trend, noted by some in the aftermath of the financial crisis (Boeri and Garibaldi 2012; Boeri, Garibaldi, and Moen 2012), seems to be persistent in the advanced economies, leading to fiscal strains and social discontent. These trends may not last indefinitely. The challenge is how best to manage and navigate the transition, which can be quite long.

It would be a mistake, however, to only lament imperfections of labor markets that lead to inefficiency, underutilization and frustration without noting as well that there are changes in those markets that may also assist the matching of supply and demand. One such approach, so-called “digitization of labor markets,” holds the promise of increasing labor force participation and part-time work, and improving productivity via better matching talent online and other digital platforms (see McKinsey Global Institute 2015b). Another corollary of the “sharing economy” in which services are traded informally is more efficient use of capital, often individually owned.

Technology needs to be looked at from the consumption side as well, however. Simpler, cheaper technologies—such as for eye glasses, artificial limbs, and diagnostic tests—have the potential of benefiting poor populations around the world if governments are enlightened, work cooperatively with the private sector, and use their fiscal resources well. Pro-poor innovations exist in many areas and they are currently underutilized by the majority of governments, due to public inefficiency, corruption, vested interests, or simple neglect. Massive welfare gains are thus possible in this technological space.

More generally, governments need to be better equipped to deal with the outcome and impact side of technology policy (see Brynolfson et al. 2015). At the moment, there is a deep commitment to the input side as many countries plot their R&D to GDP expenditures and others look at the output side as seen in the number of patents, for example. Fewer governments look to benefit fully from technological advances that could improve public service delivery or ways to effectively capture some of the gains in the private sector from basic research. Fewer still anticipate the link between technology changes and the labor market. Whereas U.S. jobs in health care and education have been growing, they tend to be lower-wage jobs; on the other hand, jobs in retail, offices, and service have not only been declining, but also are at greater risk of computerization. Retraining schemes have a poor track record and fiscal pressures prevent long-time transfers; hence new solutions to underemployment need to be found, and some are evolving in the direct trade of services (for example, Uber) or online services. New labor market policies are required to deal with the implications of disruptive technologies.

The Role of Cities

The evidence on the rates of urbanization and the growth of cities is readily available, strikingly convincing, and at some level frightening. The rapid urbanization previously seen in Latin America and Asia is now being experienced in Africa, although with somewhat different characteristics. The emergence of more megacities that are unable to manage their own growth and the rapid influx of rural populations adds to the development challenge. In particular, the lack of formal job creation in Sub-Saharan Africa adds the specter of replacing rural poverty with newer forms of urban poverty.

That said, it is well known that there is a strong, immutable, positive correlation between rates of urbanization and rates of economic growth and development. The direction of causation has never been clearly established, and as a working proposition, we can see urbanization leading to better economic performance, and more vibrant economies leading to greater concentration in cities (see Duranton [2014] among others). What we do know, and what is encouraging, is that cities are potentially more efficient, more productive, and that they provide new sources of economic activity, job creation, and growth. As conveniently summarized by Overman and Venables (2010), cities provide essential ingredients that spur economic activity, including scale economies, access to labor, connectivity, and greater creativity. Agglomeration economies convey huge benefits and help drive economic growth.

Of course, the negative side of concentrating people and production is that it produces congestion, pollution, and higher costs as well as being a migration magnet. If new populations can be employed and public services are increased to manage them, the agglomeration benefits dominate; in cases where they do not, we witness slums, urban unemployment, and poverty, with consequences for criminality and social peace. Economic growth that does not consider urbanization as intrinsic to the development process and to national policy is more likely to lead to the negative consequences. If the efficiency gains can be harnessed, however, cities are growth engines as seen in most of East Asia, Latin America, and pockets of Africa.

What we know is that high and rapid urbanization will shape the policy landscape in EMDEs for coming decades. More than 90 percent of the increases in population worldwide will be in urban spaces between now and 2050 and the 6.3 billion urban dwellers will dominate economic outcomes for future decades. Urban agglomerations thus provide the op-

portunity for productivity growth, job creation, and poverty reduction, but also present enormous challenges and risks of growing inequality, congestion, pollution, and unmanageability. What is needed is a two-pronged strategy of managing the growth of mega- and very large cities, while at the same time significantly improving the capacity of medium-sized cities to absorb populations, generate economic activity, and benefit from urbanization, thus releasing pressure on the largest cities.

National government policy is too often removed from the policies and politics of managing cities (see Ahluwalia, Kanbur, and Mohanty 2014). There are major disincentives to well-managed urbanization and the development of smart cities. These emanate from poorly functioning land markets, short-sighted zoning regulations, weak management capacity, and inadequate fiscal means to provide necessary public services. Retrofitting cities is very expensive. Dealing with crime and urban poverty always becomes a national rather than city priority; yet, governments tend to ignore the economic planning and urban management aspects in favor of larger countrywide policies. Such actions neglect the fiscal needs of where people reside and where future populations will live. The lessons of effective service delivery, forward-looking land management, and efficient connectivity are readily available and can provide one of the building blocks for sustained future growth in all parts of the world.

One urgent arena for action is to invest in and better plan for the emergence of intermediate-sized cities. It has been noted that two-thirds of global economic activity will by 2025 be driven by 660 cities, the vast majority of which will be in emerging economies (McKinsey Global Institute 2012). Moreover, most additions to global growth will come from “middle-weight” cities that are often overlooked by national governments or overshadowed by megacities.

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Urbanization will favor the intermediate-sized cities, yet public financing does not. This trend will have negative economic and social consequences unless it is managed with strong public policies. For example, countries such as the Republic of Korea have dealt with the inevitable emergence of new growth centers and new urban agglomerations (Henderson, Lee, and Lee 2001). We see this as an urgent priority for EMDE governments and those providing financing to them.

V. Issues Affecting Emerging Market Economies

The Question of Rebalancing

Most successful developing countries have relied on export-led growth. Yet, over time, they have had to adjust their output mix to favor more domestic consumption at the expense of further export expansion. This is due to many factors, including rising wages and loss of competitiveness in some export sectors, the need to offshore some production (such as automobile manufacturing), increasing demand for domestic consumption by middle-class populations, and rapid changes in the value chains of production. Rebalancing can be thought of as a domestic phenomenon associated with higher income levels or as a consequence of external trade and cost pressures. Under current circumstances of low global growth, it can also be seen as a defensive measure to bolster aggregate demand. Under this latter scenario, however, EMDEs need to be mindful of the difference between short-term consumption surges to demand management and long-term investments on the supply side.

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Global demographics are making it much more likely that many countries will experience declines in labor force growth going forward. These declines combined with lower

labor productivity measures imply that the trend away from wage income gains and toward capital income gains noted by Piketty (2014) may become more serious concerns for many economies, not only the advanced economies. For this reason, rebalancing should also include new ways to successfully employ higher-skilled labor in areas where technology is providing breakthroughs. The implication is that education and skill absorption also require rebalancing if the race between technology and employment (see Goldin and Katz 2008; Brynjolfsson and McAfee 2015) is not to result in median income declines in EMDEs in the future.

Discussions of the “middle-income trap” may in the future be less concerned with the loss of competitiveness in traded goods and per capita income thresholds and more with the loss of overall productivity in economies across the board. Since most governments spend the bulk of their revenue on health and education, improvements in the efficiency and efficacy of those expenditures may be as telling for the middle-income EMDEs as are international trade concerns. Rebalancing away from transfers and low-value public expenditures into skills development and more efficient infrastructure may yield higher returns for future growth in EMDEs. This may help them avoid what Eichengreen, Park, and Shin (2013) have seen as an inevitable and permanent slowdown in economic activity just as countries are reaching an economic comfort zone around US\$15,000 in per capita income.

Infrastructure Needs

Infrastructure gaps in many advanced and developing countries are staggering. Less expected is data on the state of infrastructure in the United States, for example, which yields alarming results. The fact that with historically low interest rates and

flat yield curves, government investment has been ignored (see Summers 2014b) is clearly short-sighted when long-term growth and productivity concerns are examined. In this context, the languishing of the National Infrastructure Bank in the U.S. Congress is hard to explain. In the case of Europe, which is better placed on global infrastructure mappings, the Juncker Plan seeks to prod new investments. Its effectiveness will of course depend on complementary fiscal and structural reforms, many of which may or may not materialize. Since much infrastructure investment, at least of the current generation, is labor-intensive, the Juncker Plan seems a good opportunity to deal with three pressing issues at once: inadequate growth, low rates of job creation, and deteriorating national infrastructure.

Looking at developing countries, the infrastructure gaps are even more glaring. The fact that East African countries have average electrification rates of less than 20 percent, for example, is fairly damning for any industrialization strategy and equally concerning for its poverty reduction strategy. Data on logistics costs in Africa are worrying when contrasted with alternative production locations. Much is rightly made of innovations in information and communication technology (ICT) in Africa. There have been massive expansions of cellphone coverage and advances in communications and banking. However, productivity per worker is still extremely low based on weak educational attainment, poor connectivity, and inefficiencies caused by infrastructure gaps, especially in energy (World Bank 2010). Sustaining higher growth rates in many parts of the world requires further investment in the capital stock and significant gains in productivity.

In both advanced countries and EMDEs, the balance between capital and recurrent expenditures is alarming. In the advanced countries, entitlements broadly defined and health care costs are consuming large parts of the budget to the ex-

clusion of investments (Cottarelli and Keen 2012). Looked at intergenerationally, advanced economies that do not set caps on health care spending will see the next generation paying the price for such generosity. In EMDEs, similarly, current spending is squeezing out needed capital spending. The case is seen vividly in Brazil, where public spending on infrastructure is less than 2 percent of GDP, while spending on education is constitutionally mandated and debt service and pension payments are growing. The intertemporal choices made to favor current consumption over future investment are lowering potential growth rates in Brazil and in many other parts of the world.

Finally, we must note the missed opportunities to invest in cleaner, more efficient infrastructure that would support sustainable growth objectives, while at the same time providing better returns to investors, improved access to services, and greater economic efficiency. (Bhattacharya, Oppenheim, and Stern 2015). If institutional investors who command control of a large chunk of global assets can be given greater risk-mitigation assurances through multilateral channels, then the amounts available to fill infrastructure gaps could be narrowed. If the current level of pro-carbon incentives, estimated to be US\$5 trillion annually, could be redirected to low-carbon investments, then strong progress on the climate front could be fostered (Gupta and Keen 2015). Neither approach adds to public deficits, yet both lead to higher levels of investment, and stronger and more sustainable growth.

New Growth Strategies?

Some are beginning to question the wisdom of overreliance on export-led growth in an environment of weak trade growth and value-chain effects that hinder the value added of exports in many EMDEs. Others believe that for poor and lower-middle-

income countries, the recommendations of the Growth Commission (CGD 2008) are still valid, and that even in countries attempting to avoid middle-income traps, the standards and contestability of global markets remain indispensable, especially as the service sector grows and competition policies may not be sufficient to drive inefficient firms out of the market. Since productivity gains from moving resources between sectors decline at higher income levels, the necessity of intrasector productivity improvements derived from weeding out poor performers is necessary to allow for innovation's benefits to be effectively harnessed.

There is an argument to be made that global informatics and dramatically increased connectivity conveys new dimensions of globalization. At the same time, there is a case to be made that the "WTO cycle" has passed and that production mobility is so pronounced that the gains from globalization may now be smaller than in the past. More broadly, the organizing logic of the global economy for most of the postwar period could be seen as finding valuable pools of labor and integrating them into global value chains. The logic is that labor is the least mobile of factors among labor, capital, information, and knowledge. This will remain true to some extent in noncodifiable labor services, but digital, capital-intensive technologies will shift the paradigm and cause movement not toward labor but toward markets themselves.

Certainly comovements of economic activity are high in the world today. For example, it is now estimated that the correlation between Latin America and the Pacific economies has more than doubled to 82 percent since the year 2000. We are also in a world in which negative shocks rather than positive ones are being transmitted. One defensive action is to rely less on global demand. On balance, we don't think this is the correct response, although risk mitigation measures are certainly

advisable, particularly where high volatility is in play, such as with short-term capital flows. Whereas we favor the use of aggressive macro-prudential regulation over crude capital controls, even the IMF has of late been much more understanding of government efforts to limit exposure to highly variable flows of capital.

Jobs and Informality

There are at least two predictions about the development process that generally prevail. The first is that as per capita incomes rise, the share of the population working in urban areas increases. The second is that as per capita incomes increase, the share of the population working in informal economic activity declines. These predictions are robustly supported by evidence and also by the experience of advanced economies that have undergone their own industrial transitions. In the last three decades, however, these two trends have diverged in developing countries. Urbanization has proceeded apace, while formalization of the labor force through industrialization has stalled (Ghani and Kanbur 2013).

In labor-surplus economies, where productivity in nonagricultural activities has traditionally been large enough to prod massive labor shifts, we are witnessing the curious phenomenon of premature graduation from manufacturing to services (Rodrik 2014, 2015) and the rise of informality, especially in Africa and South Asia. Informality is generally associated with lower productivity activities and hence with greater poverty. Put differently, the mechanism for reducing poverty works best where there is economic growth and a strongly shared benefit going to labor. Informality tends to be associated with low returns and lower economic growth. The contrasting evidence of East Asia with South Asia is instructive in this regard.

Informality is defined as economic activity outside the ambit of state regulation and law. It is a fact of life in developing countries, and the rapid decline predicted for it does not seem to be happening. Indeed, this led the OECD to ask the question in the title of one of its publications, “Is Informal Normal?” (Jütting and de Laiglesia 2009). The answer was in the affirmative. Informality is associated with low productivity, low incomes, and high poverty. It is tempting therefore to formulate the policy problem as being one of “reducing informality.” But this is inappropriate and could lead to policy errors, given technological trends favoring smaller-scale production units.

The better approach is surely to directly target policies that enhance productivity throughout but especially in small-scale enterprises in developing countries, which are the mainstay of employment for large numbers of poor people. Some size-dependent regulations discourage the formation of medium-size enterprises as well as provide disincentives for small firms to become larger (and more efficient) in India and Latin America. Comparisons between U.S. and Mexican firms, for example, show that small firm size in Mexico (where most workers are employed) is associated with a massively lower average level of productivity and an even larger dispersion of firm-level productivities compared to advanced economies like the United States (IDB 2010: 76). Becoming larger weeds out the inefficient firms first, so that productivity gains accrue to firms that reach economic scale. This eludes economies that are dominated by informality.

V. Growth and Inequality

Concerns

The debates about income distribution and increasing signs of inequality need first to be framed by a discussion of measurement issues. There is no doubt that advances in technologies, particularly in ICT, have made it more difficult to measure real labor productivity, for example. What is less difficult to measure is what has happened to real wages over the past three decades. The picture is not a pretty one in many advanced economies for the median citizen.

Undoubtedly, there is room for discussion about the link between real incomes and other more robust welfare measures, not to mention more behavioral concepts like happiness (see Graham 2005, 2009). Researchers are looking with greater clarity at measures of relative economic standing broadly defined. However, current evidence points inexorably to the fact that income and wealth concentrations are increasing and that even those countries with excellent tax and transfer systems will find it more difficult to manage. In countries with neither high incomes nor efficient systems of redistribution, such as middle-income EMDEs, the task will be rather daunting. In

South Africa, for example, 9 percent of GDP is redistributed in transfers, broadly defined, and yet unemployment rates are huge and infrastructure needs pressing. In Brazil, the significant income gains for low-income groups since the late 1990s that reduced income inequality emanated in large measure from better employment opportunities, decreasing wage differentials by education level, and increases in the minimum wage (Lustig, Lopez-Calva, and Ortiz 2011). No doubt the Bolsa Família transfer program played a useful role in reducing inequality, but according to most commentators, it was labor market phenomena that mattered most (Frischtak 2012). It is well established that economic growth is a necessary prerequisite but insufficient to insure welfare gains (see Bourguignon 2015).

Linkages and Evidence

The links between growth and inequality have been heavily studied, especially in the case of developing countries. Indeed one member of this 2015 conversation was last in Bellagio to discuss the then-preoccupying issue of inequality and growth at a World Bank–sponsored event in 1973. What makes the topic of renewed and urgent interest is that despite some convergence of individual per capita incomes globally, largely as a consequence of rapid poverty reduction in China (Spence 2011; Milanovic 2014), the distribution of income in many countries has become more uneven. There is a range of normative views about this. Setting those aside for the moment, there is also concern that greater income inequality can adversely affect consumption demand and global growth. If this is true, then the Walmarts and Amazons of this world should be worried. Thus the linkage that matters here runs from inequality to economic activity (see Leipziger 2014).

Of course, given the unprecedented slowdowns of 2008–10 and the slow recoveries, including recession in Europe and the continued underperformance of Japan, we are living through unusual times. These consequences include deteriorated household balance sheets that cannot but affect consumption behavior. We also are seeing greater concentrations of wealth (Bagchi and Svejnar 2013) with the presumption that the wealthy spend less. Summers (2014a) reported that the wealthy in the United States spent a mere 5 percent of their wealth gains in 2014. This greater concentration of wealth is also self-perpetuating. Some recent studies have shown lower income mobility intergenerationally in the United States (see OECD 2015; Krueger 2015). Other studies argue that although the United States ranks lower than other countries in income mobility, it hasn't declined over time (Chetty et al. 2014). The prevailing perception, however, is that economic opportunities are not only highly skewed, but also unlikely to encourage reversals. Greater returns to capital, as reported by Piketty (2014), would appear to reinforce this trend, namely self-perpetuating cycles of inequality.

One may indeed ask what's the sense of economic growth if median incomes don't rise.

Political Implications

It is perhaps stretching our remit to delve too deeply into the political consequences of high concentrations of income in particular. However, in most democracies the social consensus needed to enact effective economic policies requires a sense of benefit-sharing. This seems to be at risk in some economies, the United States paramount among them. One may indeed ask what's the sense of economic growth if median incomes don't rise.

There is good news in some parts of the world concerning poverty reduction (especially in East Asia), some resurgence of growth in others (such as Sub-Saharan Africa and South Asia),

and some reversals of poor distributions of income (in Latin America). However, we see these gains as fragile in the sense that slower growth, rapid technological change, increased joblessness, and other phenomena threaten these welfare gains. A necessary but not sufficient condition for better outcomes is a revival of economic growth and a growth dynamic that becomes more inclusive as well as more environmentally sustainable. The tradeoffs involved become all the more difficult to manage in a world of slow growth and greater inequality (see Kanbur and Stiglitz 2015).

VI. Vexing Conundrums and Possible Solutions

The State of Play

Despite occasional good economic news, the global economy faces a bumpy ride due to several interlinked challenges. Currently—and we do not know for how long—aggregate demand is deficient. This is despite, indeed because of, balance sheet adjustments and risk aversion at the level of households, firms, and even governments. The deficiency of demand implies lower than desired levels of investment, which is the channel for the embodiment of technical progress into productive capacity. At the same time, we are witnessing the irony of exorbitantly large pools of liquidity, much earning suboptimal returns, and the dire need for investment in many economies; this serves to highlight the urgent need for the rechanneling of funds from existing low-yielding uses to higher-return activities. We note that the existing set of global institutions is not functioning adequately, a consequence of which is the emergence of new development banks. This is a welcome but only partial solution. Global cooperation needs a “shot in the arm” and a broader and firmer foundation for collaboration.

Our assessment of the medium term is also cautionary, in part because the supply side is also not terribly buoyant. The current dizzying pace of technological advance, while holding tremendous promise, also seems to be labor displacing, at least in some dimensions. Unlike the automation scare of the 1960s, this phenomenon carries with it many real dangers. Clearly, the benefits for consumers are manifold and these gains cannot be overlooked, even if they are hard to measure accurately. On the production side, however, the combination of employment problems and rising income inequality, especially between skilled and unskilled but also affecting the middle class in many advanced and emerging market economies, is serious (Estache and Leipziger 2009). While it can be debated whether significantly rising income inequality is objectionable or not, there is a strong argument that current trends will be detrimental to both the demand and supply sides of economic growth, indeed a drag on future growth.

In many countries this implies that “new deals” in political economy terms need to be discussed. The race between skills and machines is a very real one. Returns to wage earners are falling in many advanced economies, and joblessness persists in many developing countries. Combined with political instability, we see the effects of joblessness on illegal migration worldwide. We also are witnessing an unhealthy pace of urbanization, especially in Africa, where manufacturing jobs are declining instead of gaining and where formal service sector jobs are proving elusive. We are also seeing the effects of climate change, which will have an impact on the lives of millions and economies of many. The bottom line is that the way in which global actors deal with current challenges will have a profound effect on the magnitude of their future challenges. It is with this perspective in mind that we offer some final observations.

Areas for Action

We see the necessity for action in the following areas:

Governments need to deal with the **fiscal challenge**. Steps are needed to manage fiscal space better in the immediate time horizon, to rebalance in many cases between consumption support and infrastructure investment, to means test and target more effectively, to manage national resources better and more transparently, and to deal with intergenerational tradeoffs in expenditures. The goal should be more sustainable and more broadly shared long-term economic growth.

Urbanization requires forward-looking planning, investment, financing, and management. Public policy needs to act on the inevitability of more urbanized populations and the need for infrastructure and service delivery. The goals should include a sharper focus on intermediate-sized cities and the interface of policies between cities and national governments.

The **technological progress** juggernaut that offers great gains to consumers but also major labor market adjustments requires concerted public policy attention. As noted by others (see Brynjolfsson et al. 2015), the speed of change is dizzying and the potential benefits huge. At the same time, the adjustments required, especially in labor markets, are enormous. Resources exist, if tax systems are properly used, to deal with the stresses and increased income disparities in an incentive-compatible way, focusing on education, infrastructure, and fair entrepreneurship.

There is far too much attention globally on acronyms and groupings of countries as well as projections of when China's economy will surpass that of the United States. At the same time there is too little attention to reforming, reinventing, and strengthening the **global economic architecture**. The phenomenal gains of the period after World War II would not have

been possible without global institutions and understandings. Both are frayed. The need for new modes and mechanisms of economic cooperation is strikingly obvious, yet action is slow and uncreative.

Our capacity to manage current and future challenges rests with a shared belief in the global economic system and shared understandings that go beyond ideology and politics. Nations that turn inward hurt themselves as well as others. Sharing of benefits between nations as well as within societies is most likely when the “pie is growing.” There are a host of areas where policy improvements are possible if our **toolkit of public actions** is improved and our focus on shared and sustainable economic growth is renewed.

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About the Authors

Ravi Kanbur is T. H. Lee Professor of World Affairs, International Professor of Applied Economics and Management, and Professor of Economics at Cornell University. He has taught at the Universities of Oxford, Cambridge, Essex, Warwick, Princeton, and Columbia. He is President-Elect of the Human Development and Capabilities Association, Past President of the Society for the Study of Economic Inequality, and serves on a number of other expert groups for socioeconomic development. Professor Kanbur has served on the senior staff of the World Bank, including as Resident Representative in Ghana, Chief Economist of the African Region, and Principal Adviser to the Chief Economist of the World Bank. He has also served as Director of the World Bank's *World Development Report*. Professor Kanbur's main areas of interest are public economics, development economics, and economic theory, with a particular interest in bridging the worlds of rigorous analysis and practical policy making. He has over 250 publications, covering topics such as risk taking, inequality, poverty, structural adjustment, labor, urbanization, and agriculture. He has published in the leading economics journals such as *American Economic Review*, *Journal of Political Economy*, *Review of Economic Studies*, *Journal of Economic Theory*, and *Economic Journal*. His latest book is on development ideas.

Danny Leipziger is Professor of International Business and International Affairs at George Washington University, and is the founding Managing Director of the Growth Dialogue. He is former Vice President of the Poverty Reduction and Economic Management Network (2004–09) at the World Bank. Over the course of his 28-year career at the World Bank, he held management positions in the East Asia Region and the Latin America and Caribbean Region as well as in the World Bank Institute. He was the Bank’s first Head of the Independent Sanctions Board, the originator of the Bank’s Gender Action Plan, and the founder of the Commission on Growth and Development (2006–09), of which was Vice Chair. Prior to joining the Bank, Professor Leipziger held senior positions in the U.S. Agency for International Development and in the U.S. Department of State, including on the Secretary’s Policy Planning Staff. He holds a PhD in economics from Brown University. He has published widely in the area of development economics and development finance. His *Lessons of East Asia* (University of Michigan Press, 1997) is still in print and he has published more than 50 scholarly articles, including on Korea’s industrial policy, Argentina’s currency board, urbanization in Africa, currency crises, and global economic growth. Professor Leipziger’s recent books include *Globalization and Growth* (with Michael Spence), *Stuck in the Middle* (with Antonio Estache), and *Ascent after Decline: Regrowing Economies after the Great Recession* (with Otaviano Canuto).

James Manyika is a Director (Senior Partner) at McKinsey and Director of the McKinsey Global Institute, McKinsey & Company’s business and economics research arm, and one of its three global co-leaders. Based in Silicon Valley, Professor Manyika is a frequent speaker at economic, business, and technology CEO and policy-maker forums. He has consulted

at heads of state summits, the G20/B20, the UN General Assembly, and the Pontifical Council for Peace and Justice at the Vatican. He has published a book on AI and robotics as well as numerous academic and business papers and reports. Recently he co-authored of *No Ordinary Disruption: The Four Global Forces Breaking All the Trends*. In 2012, Professor Manyika was appointed by President Obama to serve as the Vice Chair of the U.S. President's Global Development Council at the White House. He is on the boards of the Council on Foreign Relations, the Aspen Institute, and other research institutes. He is a non-resident Senior Fellow of the Brookings Institution and a member of the Bretton Woods Committee. Professor Manyika was on the engineering faculty at Oxford University, and a member of the Robotics Research Lab, and a Fellow of Balliol College, Oxford University; a visiting scientist at NASA Jet Propulsion Laboratory, and a faculty exchange fellow at MIT. A Rhodes Scholar, he holds DPhil, MSc, and MA degrees from Oxford in Robotics and Engineering, Mathematics, and Computer Science.

A. Michael Spence is Professor of Economics at New York University's Leonard N. Stern School of Business (since September 2010). He is a senior fellow at the Hoover Institution and the Philip H. Knight Professor Emeritus of Management in the Graduate School of Business at Stanford University. His scholarship focuses on economic policy in emerging markets, the economics of information, and the impact of leadership on economic growth. Professor Spence was chairman of the independent Commission on Growth and Development (2006–10). He also serves as a consultant and board member for a number of public and private companies. A Rhodes Scholar and the recipient of many honors and awards, Professor Spence was awarded the Nobel Memorial Prize in Economic Sciences

in 2001 and the John Bates Clark Medal from the American Economics Association in 1981. He is the author of three books and 50 articles, and is a member of the American Economic Association, a fellow of the American Academy of Arts and Sciences, and a fellow of the Econometric Society. Professor Spence served as Philip H. Knight Professor and dean of the Stanford Business School from 1990 to 1999. Before that, he was a professor of Economics and Business Administration at Harvard University, chairman of its Economics Department, and dean of its Faculty of Arts and Sciences.

List of Participants

Bellagio Symposium on Sustainable
and Shared Economic Growth
May 5–7, 2015
Bellagio, Italy

Name	Title/Affiliation	Country
Ahluwalia, Montek Singh	Visiting Professor, New York University, and former Deputy Chairman of Planning Commission, Government of India	India
Brandolini, Andrea	Principal Director of Structural Economic Analysis Directorate, DG Economics, Statistics and Research, Bank of Italy	Italy
Cassim, Faud	Advisor to the Minister of Finance, South Africa	South Africa
Kanbur, Ravi	T.H. Lee Professor of World Affairs, International Professor of Applied Economics, and Professor of Economics, Cornell University	United States
Leipziger, Danny	Professor of International Business at the George Washington University, and Managing Director, The Growth Dialogue	United States
Manevskaya, Diana	Communications Director at the Growth Dialogue, School of Business, George Washington University	United States
Manyika, James	Director of the McKinsey Global Institute	United States
Moghadam, Reza	Vice Chairman for Global Capital Markets, Morgan Stanley	United Kingdom
Mokhtar, Azman	Managing Director, Khazanah Nasional Berhad	Malaysia

Name	Title/Affiliation	Country
Monga, Célestin	Managing Director, United Nations Industrial Development Organization (UNIDO)	
Paiva, Paulo	Professor Fundação Dom Cabral, and former President of the Development Bank of Minas Gerais (Brazil)	Brazil
Spence, Michael	William R. Berkley Professor in Economics and Business, New York University	United States
Švejnar, Jan	Professor of International and Public Affairs Columbia University, and Director, Center for Global Economic Governance	United States
Trajtenberg, Manuel	Chairman, Planning and Budgeting Committee at the Council for Higher Education of Israel, and Professor at Tel Aviv University	Israel
Venables, Tony	BP Professor of Economics, Oxford University	United Kingdom
Vinhas de Souza, Lucio Mauro	Economic Advisor, European Commission	
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