

Growth, Convergence and Income Distribution: An Introduction

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With world leaders gathering for the G-20 summit in Brisbane, three big debates will impact their ability to plot the right course to achieving inclusive, sustainable growth.

Introduction

In 2014 the finance ministers of the G-20 set themselves an objective of increasing world GDP by 2 percentage points—or about \$1.5 trillion—over the next five years, over and above the current “business as usual” trend. The Brisbane leaders summit is to endorse that objective and perhaps elaborate on it. This has inspired the authors contributing to this collection to comment on the ongoing debates about growth, convergence and income distribution.

There are new dimensions in the debate on growth. Some eminent economists are arguing that an era of “secular stagnation” may lie ahead unless vigorous policy actions are implemented, while others, a minority among economists, argue that ongoing and pending technological change is likely to lead to an acceleration of growth. This “secular stagnation” debate is sometimes conducted purely in the context of the U.S. economy, sometimes in the context of advanced economies as a whole, and sometimes in terms of the world economy. Some authors shift back and forth between these three contexts.¹

There is a second debate on “convergence” between average incomes in the lower- and middle-income emerging economies, and average income in the rich, advanced economies. Until the post-World War II period, there is no doubt that the industrial revolution and colonialism led to a “divergence, big time.”² As put recently by Ricardo Hausmann, “when Adam Smith wrote *The Wealth of Nations*

in 1776, per capita income in the world’s richest country—probably the Netherlands—was about four times that of the poorest countries. Two centuries later, the Netherlands was 40 times richer than China, 24 times richer than India and 10 times richer than Thailand.”³

In the *aggregate*, this divergence slowed markedly in the 1950s, with average incomes in all rich economies growing in per capita terms and no longer widening the divergence significantly, as the average income in all the EMDEVs (emerging and developing economies) picked up pace, of course with a lot of variation by country, region and specific time period. Then, starting in the late 1980s, for the first time in two centuries, a process of convergence seems to have taken hold, with average income in the EMDEVs taken as a whole growing faster, in fact much faster, than income in the rich countries, for about two and a half decades now (1989-2014). Coming back to Hausmann’s example, today the Netherlands is only five times richer than China and Thailand and 11 times richer than India (although he refers to individual countries, not aggregates). Is this convergence going to last, or was rapid aggregate convergence a temporary phenomenon? This question is at the center of a “second growth debate,” which also includes observations beyond the averages, looking at particular countries and regions.

Finally, there is the increasingly intense debate about income distribution, with the latest bestseller by Thomas Piketty⁴ having added more data, more passion and more controversy to a topic that was already at the forefront of policy debates in many countries. Is growth relevant if increases in income largely accrue to the top 10 or even 1 percent of

the population, as seems to have been the case recently at least in the United States and the United Kingdom? Is there, as Piketty argues, an “inherent” long-run tendency towards greater inequality in a market economy? Is there a link between possible secular stagnation and income distribution? How does inequality in the world relate to inequality in particular countries?

Overview of the Three Interlinked Debates

The “secular stagnation” debate about slow growth in advanced countries can be confusing, because the perceived slowdown may refer to slower *potential* output growth or slower growth of *actual* output. Potential output growth may be slowing down because of trends in technological change, educational advancement, aging, and debt-induced underinvestment in public goods and infrastructure. But a slowdown in observed output growth can also be due to *gaps between actual and potential output*. Secular stagnation as defined by Larry Summers building on Alvin Hansen,⁴ may threaten the U.S. economy, or advanced economies as a whole, because desired aggregate savings has increased compared to desired aggregate investment, to the extent that the real interest rate needed to restore macroeconomic equilibrium may be negative. This may not be a feasible target for policymakers because of the zero lower bound on nominal interest rates imposed by the possibility of holding currency and prevailing low inflation. For example, if there can only be sufficient investment to absorb desired savings at a real interest rate of minus 2 percent, and if inflation is 1 percent, the zero nominal lower bound means the *real* interest rate can only decline to minus 1 percent, not low enough for full employment.

What is often less clear in the presentation of secular stagnation is whether it also applies to the world economy as a whole. Has global investment demand and the global supply of savings shifted so that there is a “global savings glut” and so that the required “global” real interest rate is negative

in an environment where global inflation is very low? It is desirable, therefore, to link the “secular stagnation” debate to the “convergence” debate, which focuses much more strongly on developing countries’ growth prospects. If secular stagnation affects all countries, then convergence may disappear. But if it is more a phenomenon threatening the rich countries, then convergence could continue. In this case, it may also be that growth in the emerging world might actually provide the demand impulse needed for laggard advanced economies.

The income distribution debate is itself linked to both the growth and the convergence debate. If we take the population of the world as a whole (as Surjit Bhalla did in his book *Imagine There’s No Country*⁶) and focus on an inequality indicator for that population, increasing inequality within countries (broadly speaking, the Piketty story) will lead to *increases* in the global inequality index. But convergence—catch up by the developing country—will lead to a *decrease* in the world inequality index. This has an important bearing on global demand. While we see the stress on the struggling middle class in advanced countries resulting from wage stagnation and growing within-country inequalities, we also see the emergence of a global middle class in the rest of the world, particularly in Asia. So one has to be careful and define what one refers to precisely.

Whether inequality is good or bad for growth has long been debated. There is a strong strand in classical economics that has argued that as savings are needed to finance investment, inequality is good for growth because it increases savings which are then invested. Those theories focus on changes in potential output as the real determinant of growth. Recent empirical work has on the whole supported the opposite view. Jonathan Ostry, Andrew Berg and Charalambos Tsangarides of the International Monetary Fund have shown that there have been more episodes of sustained rapid growth in societies that are relatively more equal and hence more stable, socially, politically and financially.⁷ These factors seem to outweigh the classical link to savings.

Finally there is the direct “Keynesian” link between income distribution and growth which is diametrically opposed to the classical link. One reason for secular stagnation of actual output (rather than potential output) may be that income keeps shifting to the very rich who save more. If because of excess savings the equilibrium real interest rate is negative, we are in a liquidity trap. Here the constraint on growth is demand for investment, not the supply of savings, and rising inequality makes the problem worse.

Secular Stagnation in the Advanced Economies?

The argument for the possibility of secular stagnation in the advanced economies thus has several potentially mutually reinforcing parts.

The argument can relate to the supply side as such and to a slowdown in the growth of “potential GDP” with, as mentioned above, major drivers of such a slowdown thought to be (i) a declining labor force growth rate, (ii) the exhaustion of the education dividend as the share of the uneducated has shrunk, (iii) a slowdown in the pace of total factor productivity growth (TFP) and (iv) a prolonged period of underinvestment.

The first of these factors may seem uncontroversial given slower demographic growth and the already high level of participation reached by women, but it is subject to moderation through immigration or the lengthening of healthy working lives. The second factor could be offset through a higher quality of, or more appropriate, education. The third factor relates to the pace of technological change and its translation into factor productivity growth. The bottom line here is that there is huge disagreement about the prospects for growth-enhancing technological change. Nobody can be sure about the impact of current innovations, because this is something full of uncertainty that will take place in the future. The historical pattern is that it takes decades before the diffusion of new technologies happens across the economy and before their impact can be

assessed. The last factor, a prolonged period of underinvestment, can be due to financial sector problems and debt, and/or, itself linked to the third factor of slowing down technological change, reducing profitable investment opportunities.

Note that Larry Summers defines the possible “secular stagnation” phenomenon not in terms of *potential* GDP itself, but in terms of a *decline in the equilibrium real interest rate into negative territory* constraining *actual output*. If the real interest rate is “blocked” by a zero nominal bound and low inflation, equilibrium cannot be reestablished and there will be chronic, or “secular” stagnation of actual output. One of the key reasons, however, for declining investment demand, could be declines in potential output triggered by the factors enumerated above, reducing the profitability of investment. There is a strong link, therefore, between Gordon’s “secular stagnation of potential income” and Summers’ “frustrated general equilibrium” version of secular stagnation.

In the description of the latter, there can also be a purely supply of savings-related argument. Even with no shift in investment demand, an increase in desired saving lowers the equilibrium interest rate and could lead to secular stagnation all by itself. Savings might be rising because of changes in income distribution favoring higher-saving millionaires. Increased post-financial crisis risk aversion and increased regulatory burdens imposed by policymakers may add to the problem by adding to the demand for the *safest assets*, while reducing the supply through tougher accounting standards. Increased demand for safe assets can become another driver of lower real equilibrium interest rates, perhaps to below their lower bound.⁸

We are not really convinced that some of these factors are strong enough to create an almost inevitable long run danger of secular stagnation in the advanced economies. We do not believe that all the gains from education have been fully exhausted or can be exhausted any time soon, although there can be policy failures in improving educational quality. The negative trend in labor force participation may

have to do more with policy than with an inevitable trend; gradually changing retirement of a healthier population and immigration could help. But a possible slowdown in TFP, reflecting inherent obstacles in social organization and bureaucratic institutions that may cause long delays for exploiting the potential that new technologies could deliver might be a real problem. It is also clear that the technology issue is deeply linked to income distribution and the stagnation of real wages. Perhaps one should worry equally about the possibility of the equilibrium real wage moving into socially and politically impossible territory (at least for some types of labor) because of massively labor-saving technical change, rather than concentrate all the worry on the equilibrium interest rate being too low to be practically feasible.

If low aggregate demand or low profitability of investment is contributing to slow growth or secular stagnation in the advanced countries, a possible solution would be for them to run a larger current account surplus by exporting more to emerging and developing countries. But this strategy could only work if developing countries themselves were growing rapidly, thereby converging with income levels in advanced countries. This is where the secular stagnation debate should link up with the global convergence debate.

Convergence of Emerging and Developing Countries?

The issue in the convergence debate is the speed at which poorer countries have been and can be expected to continue to reduce the relative per capita income gap between themselves and the advanced rich economies. Until a few decades ago, there was quite clear divergence: The relative gap was getting bigger and bigger (divergence, big time, as Lant Pritchett put it). But since the 1950s, and particularly since around 1990, the story is much more complex. Just like the discussion on whether TFP has slowed or not, the convergence debate depends in part on the choice of the reference time frame. Dani Rodrik shows that for long time frames (over

50 years), there has been no tendency for unconditional convergence, when we take just the number of countries, unweighted by their population or GDP.⁹ Over the very long term, growth rates have been independent of initial levels of labor productivity. The probability of a country growing fast or slowly seems unrelated to whether it started rich or poor (although even in the individual country data catch-up has increased using the most recent past).

There are a number of explanations as to why convergence of developing countries has not happened, despite the strong prediction of neoclassical theory that it should, and despite the post-war experience of “club convergence” among advanced economies. Some argue that growth depends on overcoming a number of prior conditions, some of which have long historical (or geographical) antecedents, like slavery, colonial traditions of law or lack of access to a seaport. Others suggest that success builds on success. Countries with firms that are more diverse and sophisticated can combine these experiences in new ways to drive additional growth.¹⁰

The story about convergence is a very different one if one weights countries by their population or their GDP, particularly over the last three decades.¹¹ A much larger number of people have lived in “converging countries,” taking the last 25 or 30 years, than in non-converging countries, with China of course dominant in this story, but also many other large countries such as India, Indonesia, Thailand, Turkey, Peru, Vietnam and, more recently, the Philippines. It is of course this “weighted convergence” that has led to a substantial increase in the share of world GDP produced by emerging and developing countries as well as their even more rapidly growing shares in world trade and world investment, and it is this weighted convergence that is of most interest if we are concerned with global aggregate demand. This produces the now well-known observation that EMDEV countries may still be a minority share of global GDP (about 40 percent in current market prices), but already account for more than 60 percent of global growth.

This “weighted convergence” is apparent when observing the trend component of real GDP growth over the last three decades. Increased trade and financial linkages seem to have strengthened the correlation between the *cyclical* components of GDP growth in advanced and emerging countries. But the *trend* component for EMDEVs has been significantly higher than the trend in advanced economies, reflecting aggregate convergence.¹² As the growth differential persists over time, the contribution of global growth by emerging and developing countries has therefore also grown.

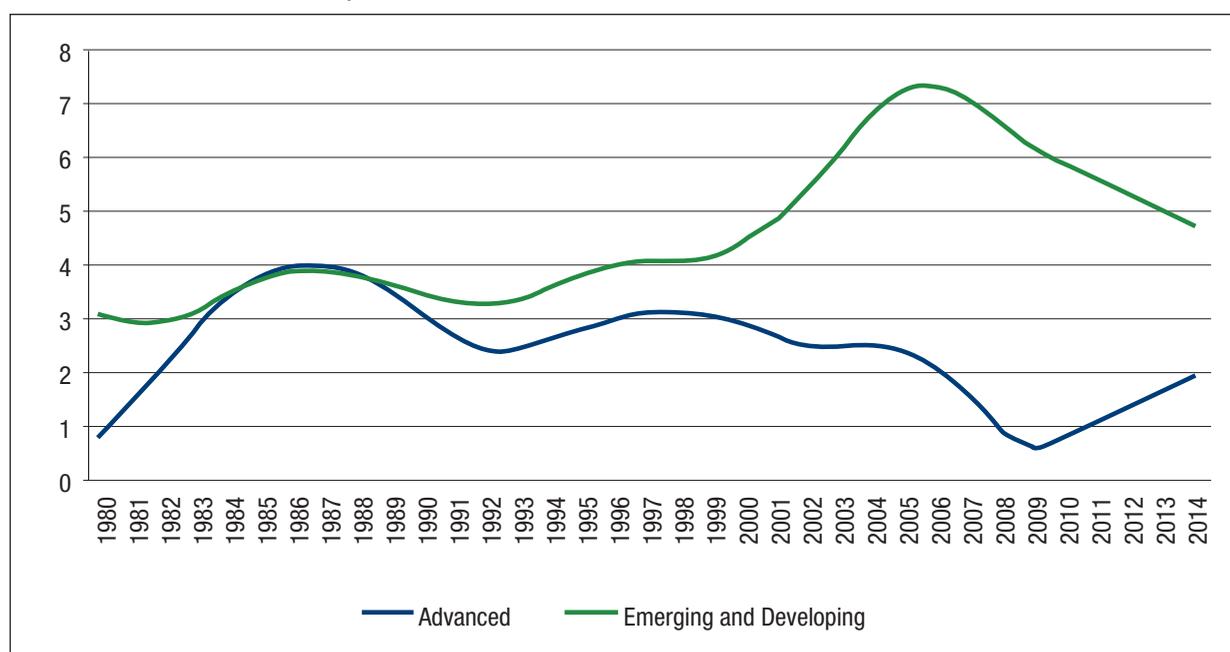
Why would one think that continued aggregate convergence is now more probable than not? As a starting point, the list of countries that have managed to achieve high growth has steadily lengthened in quite a dramatic fashion. When the Growth Commission looked at episodes of very rapid growth after 1950 (7 percent or more for 25 years or longer¹³), it only found 13 cases. Certainly some were large countries, like Brazil and China, but the commission concluded that rapid growth was the exception rather than the norm.

Redoing those calculations just five years later (and assuming that IMF projections through 2019 come to pass) would add another 16 cases to the list. If the criterion was softened to include episodes of over 6 percent growth for 25 years, 14 more cases would be added, including Ghana, India, Nigeria, Panama and Tanzania. In other words, exceptional high growth by global standards has become far more common today than before.¹⁴ The last 25 years has seen the most rapid, and most broad-based, growth in developing countries, ever.

There are other ways of looking at the data. For those who believe the secret of long-term growth is in avoiding recessions and crises, it is heartening to see that 14 countries in Africa have had positive growth for the last 20 years consecutively. So, recent data suggest that the rapid growth story is extending beyond Asia to include several countries in Africa. Is this the new normal?

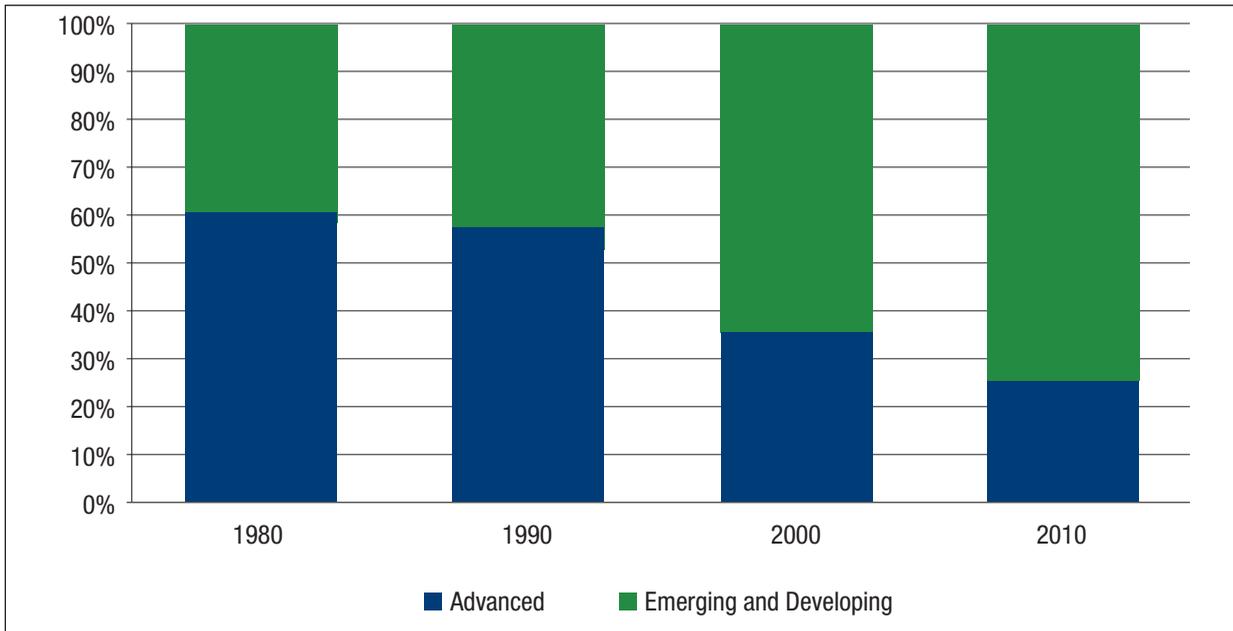
Viewed from a supply-side perspective, the drivers of potential output growth in developing countries seem sound. Investment rates are at an all-time

FIGURE 1. TREND GROWTH, GDP GROWTH RATE (PERCENT)



Source: Author’s calculations based on International Monetary Fund World Economic Outlook, April 2014.

FIGURE 2. CONTRIBUTIONS TO GLOBAL GDP GROWTH



Note: Each period represents the area's contribution to growth over the following decade. 2010 incorporates contributions to growth for 2010-2014.

Source: Author's calculations based on International Monetary Fund World Economic Outlook, April 2014.

high, averaging about 33 percent in developing countries, compared to 25 percent in 1990 (and far higher than the 20 percent investment rate in advanced economies). Reducing large inefficiencies in land, labor and capital allocation in developing countries also provide scope for fast productivity growth. For example, Chang-Tai Hsieh and Peter Klenow estimate that better factor allocation added 2 percent per year to China's productivity growth, while worse use of resources subtracted an equivalent amount from India's growth. They suggest that China and India still have scope to raise productivity in manufacturing by 50 percent just from reallocating capital and labor to achieve the same degree of variance in marginal products across firms as observed in the United States.¹⁵

The idea that TFP growth in developing countries has more to do with the within-country efficiency of resource use than with the import of technology into a country from abroad is consistent with empirical patterns found by Diego Comin. He distinguishes between two components of TFP growth: cross-country diffusion of technology and the intensity of the use of the technology within a country.

High productivity growth in developing countries results when technology is quickly imported and spreads rapidly throughout the economy. He finds that modern technologies are being more quickly imported throughout the world but that the intensity of use of new technologies in developing countries is catching up to advanced countries at the same slow pace as in the 19th century.¹⁶

Another driver of rapid productivity change is the continued movement of people from rural to urban areas (urban populations are still growing at over 2 percent per year) where they are far more productive. In fact, rural populations are expected to peak soon after 2020 and then start to decline in absolute terms. Some analysts are concerned that structural shifts in labor from low to higher productivity jobs are becoming harder due to technological job losses and a premature peaking of manufacturing employment, but others see substantial scope in high value added services.¹⁷

Other factors that have been found important in conditional convergence, such as improved macroeconomic policies, higher levels of initial education (and

continued growth in education), sharply lower infant and child mortality and disease prevalence, more openness to trade and capital flows, and improving governance also suggest better prospects in more places.

Through quite dramatic scale effects, the demand side of growth in developing countries also suggests improved prospects. Households in developing countries now account for 40 percent of total global consumption. The middle class in developing countries, defined as households whose consumption lies between \$10 to \$100 per person per day (2005 PPP), is expanding by 150 million people per year, generating a market for many products which face stagnant demand in the rich countries.¹⁸

All this means that potential growth in emerging and developing countries should continue to be rapid, particularly if a steady stream of efficiency-improving structural reforms can be pursued. With regard to potential obstacles to actual output due to zero bound real interest problems, on average, developing countries' inflation is averaging 5.5 percent so they have more leeway than advanced economies to avoid being trapped by the threat of a zero lower bound on interest rates. In fact, the papers in this volume show more concern for the bubbles and distortions likely to come from excessively low real interest rates than for the difficulties in lowering real rates to equilibrium levels.

Investments and technological catch-up remain strong drivers of demand in developing countries. Even though investments are at historical highs, they could probably rise further in most countries and still produce decent economic returns, except in China where there is general agreement that aggregate investment has overshot the optimal investment rate. Back-of-the-envelope calculations suggest that returns to investment in energy, particularly cleaner energy, in other infrastructure, in modernizing agriculture, in public transport, education and health could account for trillions of dollars in incremental profitable investment spending per year.¹⁹ These investments may have high financial as well as social rates of return, but they

are hampered in one way or another by a global economic, political and financial system that fails to achieve the required term transformation from short-term savings into longer-term investments, that fails to pool or exaggerates risk, and that, at times, suffers from policy inconsistencies in the advanced countries themselves. There are also obvious deficiencies due to the absence of adequate sovereign debt restructuring frameworks.

History teaches us to be careful of “this time it is different” arguments, and certainly the track record of convergence of a large number of developing countries is uneven. We do not know whether success will blunt the edge of reform efforts and undermine the single-minded determination to grow that has been behind many of the Asian miracle stories. Looking at fundamentals, there are reasons to be optimistic that conditions remain good today for development and convergence, perhaps not at the aggregate speed of the last two decades, but nonetheless at a pace likely to lead to growth in the emerging countries exceeding that in the advanced countries by several percentage points.

Global Secular Stagnation?

While we cannot tell what the future will bring for any individual country, it seems, therefore, that the arguments for secular stagnation become weaker when thinking about the global economy as a whole. This has implications for policy.

Secular stagnation poses problems for monetary policy. It implies that very low nominal rates should be held for a long period of time, but that risks a build-up of financial bubbles and future crises. So another instrument is needed. Janet Yellen, in her inaugural Camdessus Lecture, called for greater use of macroprudential regulations to safeguard financial stability, thereby creating policy space for extended loose monetary policy as a counter to secular stagnation.²⁰

But in an open economy, there is another possibility. If long-term capital would flow more strongly

from advanced to developing countries where returns remain high, then the real exchange rate in advanced countries would depreciate, net exports would rise, and the equilibrium real interest rate would rise, helping escape the zero lower bound problem.

For their part, many developing countries (although not China) would welcome such capital flows because they are starved for capital and cannot exploit all the investment opportunities that are available, many of which are in infrastructure.

Investments in developing countries would be all the more profitable if technology was more accessible and more widely used. Policies to accelerate the within-country diffusion of technology, and greater competition to force the pace of reallocation of capital, land and labor to more efficient firms would help. So would better science and technology institutions in developing countries that could accelerate the pace of technology diffusion within the economy.

Investments are also more profitable when there is sufficient aggregate demand to pay for goods and services. The developing world today has a sufficiently large middle class to drive the global economy. By 2020, there could be 2.4 billion middle class people living in developing countries consuming \$21 trillion per year. Unleashing that spending power will depend on local financial deepening—universal access to financial services, and access to insurance, risk pooling and consumer finance products.

Income Distribution

Finally, some words in this context on income distribution. The first point worth stressing is that citizens, whether in advanced or emerging countries, care about the pace at which *their* income grows, not about the pace at which *average* income grows. In a recent piece, Roy van der Weide and Branko Milanovic explain that the traditional focus on growth and average income seems paradoxical. Measures of inequality are used to summarize the

distribution of income across a population. This should drive an interest in how individuals in *different* parts of the income distribution would fare in societies with different levels of inequality rather than how it affects average incomes. They conclude that high inequality hurts income growth of the poor while having a positive effect on growth which is exclusively reserved for the top of the income distribution. Overall, growth that inequality stimulates is the type that further advances inequality.²¹ There is no doubt that there has been good news over the last three decades for worldwide income distribution: The stronger “aggregate” convergence described above, has not only helped lift hundreds of millions of people out of poverty, but the gap between the “average” citizen living in an emerging country and her counterpart in the advanced countries has diminished, for the first time in centuries. This has been a momentous historical shift and we believe that it will continue, although the speed of this likely convergence is subject to very legitimate debate.

Nonetheless, income distribution is perceived as becoming more unequal, because most *national* distributions are indeed becoming more unequal and, in particular, income concentration at the top is increasing markedly. Moreover, an increasing part of the income at the top is a return to inherited wealth as argued by Piketty. Given that the world is still one of nation states and national communities, it is natural that citizens of the United States, India, China, or South Africa, for example, perceive and develop political opinions on the income distribution in their countries and communities, rather than on the “world income Gini coefficient” or the distance of their income to the average income in Japan or Bolivia. The debates on national growth policies, therefore, have to take into account ever more strongly, not only the performance of average per capita income, but also of median per capita income and the shares of the top and bottom income groups. Moreover, as repeatedly mentioned in the secular stagnation debate, changes in the distribution of income can have macroeconomic effects on the pace of aggregate growth.

Conclusion

The essays contributed in this volume, in various ways tackle three fundamental interrelated debates, with different emphases on the “secular stagnation-excess saving” theme, the “convergence-divergence” theme and the “income distribution and growth” theme. The authors approach the issues in specific ways from their country, regional or even global perspective, but it is possible to place their thoughts into the broader context outlined above. Each country and regional context has economic, historical, geographical and political specificities. We hope that bringing them together at a difficult time for international cooperation will be helpful in promoting better understanding of key constraints and a better design for growth-promoting policies.

References

- Blanchard, Olivier, Furceri, Davide and Andrea Pescatori. 2014. “A prolonger period of low real interest rates?” In *Secular Stagnation: Facts Causes and Cures* edited by Coen Teulings and Richard Baldwin, 101-110. CEPR Press. <http://www.voxeu.org/content/secular-stagnation-facts-causes-and-cures>
- Bhalla, Surjit. 2002. “Imagine There’s NO Country: Poverty Inequality and Growth in the Era of Globalization.” Institute for International Economics. http://siteresources.worldbank.org/INTPGI/Resources/342674-1206111890151/12978_Surjit_Bhalla_Two_Policy_Briefs.pdf
- Brynjolfsson, Erik and Andrew McAfee. 2014. *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*. W.W. Norton & Company Ltd. London.
- Caballero, Ricardo and Emmanuel Farhi. 2014. “On the Role of Safe Asset Shortages in Secular Stagnation.” In *Secular Stagnation: Facts Causes and Cures* edited by Coen Teulings and Richard Baldwin, 111-122. CEPR Press. <http://www.voxeu.org/content/secular-stagnation-facts-causes-and-cures>
- Comin, Diego. 2014. “The Evolution of Technology Diffusion and the Great Divergence.” Brookings. http://www.brookings.edu/~media/Programs/global/bbr2014/Session%203%20Leapfrogging%20Comin_FINAL.pdf
- Commission on Growth and Development. 2008. “The Growth Report: Strategies for Sustained Growth and Inclusive Development.” http://siteresources.worldbank.org/EXTPREMNET/Resources/489960-1338997241035/Growth_Commission_Final_Report.pdf
- Derviş, Kemal. 2012a. “A World of Convergence.” Project Syndicate. <http://www.project-syndicate.org/commentary/a-world-of-convergence>
- Derviş, Kemal. 2012b. “Convergence, Interdependence, and Divergence.” *Finance & Development*, Vol. 49, No. 3. IMF. <https://www.imf.org/external/pubs/ft/fandd/2012/09/dervis.htm>
- Eichengreen, Barry. 2014. “Secular stagnation: A review of the issues” In *Secular Stagnation: Facts Causes and Cures* edited by Coen Teulings and Richard Baldwin, 41-46. CEPR Press. <http://www.voxeu.org/content/secular-stagnation-facts-causes-and-cures>
- Derviş, Kemal. 2013a. “Catching Up at Different Speeds.” Project Syndicate. <http://www.project-syndicate.org/commentary/kemal-dervi--debunks-the-view-that-income-convergence-between-emerging-and-advanced-economies-is-coming-to-an-end>
- Derviş, Kemal. 2013b. “The End of Convergence?” Project Syndicate. <http://www.project-syndicate.org/commentary/kemal-dervi-why-emerging-economies-will-continue-to-grow-faster-than-developed-economies>
- Feldstein, Martin. 2014. “America’s Move to Faster Growth.” Project Syndicate. <http://www.project-syndicate.org/commentary/martin-feldstein-traces-the-sources-of-the-us-economy-s-upturn-and-points-out-the-risks-that-lie-ahead>
- Kharas, Homi and Geoffrey Gertz. 2010. “The New Global Middle Class: A Cross-Over from West to East.” In *China’s Emerging Market Class: Beyond Economic Transformation* edited by Cheng Li. Brookings Institution: Washington D.C.
- Ghani, Ejaz. 2014. “Growth Escalators and Growth Convergence.” Vox EU. <http://www.voxeu.org/article/growth-escalators-and-growth-convergence>
- Gordon, Robert. 2012. “Is U.S. Economic Growth Over? Faltering Innovation Confronts the Six Headwinds.” National Bureau of Economic Research: Cambridge. <http://www.nber.org/papers/w18315.pdf>
- Hansen, Alvin. 1939. “Economic Progress and Declining Population Growth.” *American Economic Review*. 29 (1): 1-15
- Hausmann, Richard. 2014. “In Search of Convergence.” Project Syndicate. <http://www.project-syndicate.org/commentary/ricardo-hausmann-asks-why-growth-rates-are-converging-among-some-countries-and-diverging-among-others>
- Hsieh, Chang-Tai and Peter Klenow. 2009. “Misallocation and Manufacturing TFP in China and India.” *The Quarterly Journal of Economics*. <http://qje.oxfordjournals.org/content/124/4/1403.full.pdf>

- Ostry, Jonathan, Berg, Andrew and Charalambos Tsangarides. 2014. IMF Staff Discussion Note. SDN/14/02. International Monetary Fund. <http://www.imf.org/external/pubs/ft/sdn/2014/sdn1402.pdf>
- Piketty, Thomas. 2014. *Capital in the Twenty First Century*. The Belknap Press of Harvard University Press. Cambridge.
- Pritchett, Lant. 1997. "Divergence, Big Time." *Journal of Economic Perspectives*. 11 (3): 3-17.
- Rodrik, Dani. 2011. "Unconditional Convergence." Working Paper 17546. National Bureau of Economic Research: Cambridge. <http://www.nber.org/papers/w17546>
- Rodrik, Dani. 2013. "The Perils of Premature Deindustrialization." Project Syndicate. <https://www.projectsyndicate.org/commentary/dani-rodrikdeveloping-economies--missing-manufacturing>
- Summers, Lawrence. 2013. "Why Stagnation Might Prove to be the New Normal." *Financial Times*. <http://www.ft.com/intl/cms/s/2/87cb15ea-5d1a-11e3-a558-00144feabdc0.html>
- Summers, Laurence. 2014. "Reflections on the 'New Secular Stagnation Hypothesis'" In *Secular Stagnation: Facts Causes and Cures* edited by Coen Teulings and Richard Baldwin, 27-40. CEPR Press. <http://www.voxeu.org/content/secular-stagnation-facts-causes-and-cures>
- United Nations. 2014. Report of the Intergovernmental Committee of Experts on Sustainable Development Financing. <http://sustainabledevelopment.un.org/content/documents/4588FINAL%20REPORT%20ICESDF.pdf>
- Van der Weide, Roy, and Branko Milanovic. 2014. "Inequality Is Bad for Growth of the Poor (But Note for That of the Rich)." Working Paper. World Bank.
- Yellen, Janet. 2014. "Monetary Policy and Financial Stability." 2014 Michel Camdessus Central Banking Lecture. International Monetary Fund: Washington D.C.
7. Ostry, Berg and Tsangarides (2014)
 8. Caballero and Farhi (2014), Blanchard, Furceri and Pescatori (2014)
 9. Rodrik (2011), Table 4.2
 10. Hausmann (2014)
 11. Derviş (2012a), Derviş (2013a), Derviş (2013b), Milanovic (2014)
 12. Derviş (2012b) further discusses the increased global interdependence that has resulted in stronger cyclical movements in GDP growth between emerging and developing economies and advanced economies and uses the Hodrick-Prescott filter to separate cyclical variation from trends.
 13. Commission on Growth and Development (2008)
 14. The new cases are: Angola, Azerbaijan, Bhutan, Cambodia, Equatorial Guinea, Ethiopia, Lao PDR, Liberia, Macao, Mozambique, Maldives, Mongolia, Qatar, Rwanda, Sudan, Turkmenistan. Data from IMF WEO, April 2014. Includes IMF projections until 2019.
 15. Hsieh and Klenow (2009)
 16. Comin (2014)
 17. Rodrik (2013) and Ghani (2014)
 18. Kharas (2010)
 19. United Nations (2014)
 20. Yellen (2014)
 21. Van der Weide and Milanovic (2014)

Endnotes

1. Brynjolfsson and McAfee (2014), Derviş (2013b), Eichengreen (2014), Feldstein (2014), Gordon (2012), Summers (2014), Summers (2013)
2. Pritchett (1997)
3. Hausmann (2014)
4. Piketty (2014)
5. Hansen (1939)
6. Bhalla (2002)