

# Is Slower Growth the New Normal in Advanced Economies?

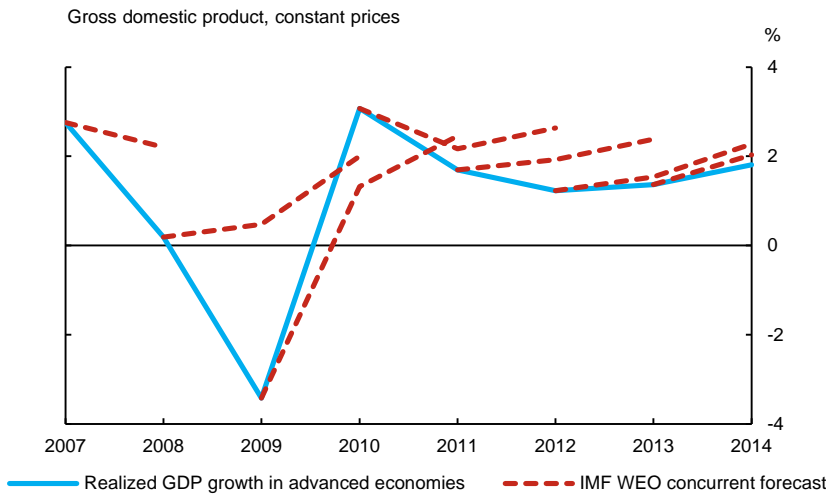
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- There are a number of potential explanations for continued slow growth in advanced economies after the 2007–09 global financial crisis. In this article, we critically review and examine some of the main alternative explanations.
- Some observers view the current muted recovery as a prolonged cycle in the face of multiple headwinds and emphasize the role of private and public deleveraging in the aftermath of a financial crisis. Others suggest that slow growth is due to a structural inadequacy of demand leading to a long-lasting liquidity trap, while others view it largely as supply side in nature, reflecting demographic and technological factors.
- We think that a structural inadequacy of demand leading to a long-lasting liquidity trap or persistently subdued growth in potential output resulting from reduced innovation and technology adoption are extreme and, therefore, less likely characterizations of the slowdown that is occurring. Demographic trends do, however, suggest slower potential output growth in the future.
- These factors are unlikely to act as constraints to the conduct of conventional monetary policy in advanced economies in the future.

Seven years after the 2007–09 global financial crisis, growth in many advanced economies continues to disappoint. Annual growth in advanced economies averaged around 3.6 per cent between 1985 and 2007 and fell to 1.4 per cent during the recovery years, from 2010 to 2014. Typically growth rates during recovery years are often stronger than long-run averages as economies strive to catch up on lost activity. This time, however, growth has continuously disappointed, and forecasters have regularly adjusted their forecasts downward (**Chart 1**).

This has led some commentators to wonder whether slower growth has become the “new normal.” Central to this debate is the question of whether the slowdown in growth is a cyclical phenomenon, the result of some long-term factors or some combination thereof. Has slower growth been in the making for a long time primarily because of a slowdown in the growth of productive capacity (Gordon 2014)? Does it reflect structural inadequacy of demand leading to a long-lasting liquidity trap (Summers 2014; Krugman 2014)? Or is it cyclical even though the recent downturn was unprecedented in its magnitude and length? If it is cyclical, can growth be expected to pick up, albeit to a lower level than the pre-crisis average, as soon as the persistent factors restraining global economic growth dissipate?

**Chart 1: Growth has been disappointing in advanced economies**



Note: Advanced economies include Australia, Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, New Zealand, Norway, Portugal, San Marino, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, the United Kingdom and the United States.

Source: International Monetary Fund *World Economic Outlook* (2009–15)

Last observation: 2014

The Bank of Canada recently discussed the relationship between slow growth and the conduct of monetary policy (Wilkins 2014; Mendes 2014). This article complements those discussions by critically reviewing and reconciling the main debates over the drivers of a slowdown in growth that are being put forth in the current literature and economic commentary.

It is important for inflation-targeting central banks to make the distinction between cyclical and long-term structural factors in choosing the appropriate stance of monetary policy (Wilkins 2014). In the absence of cyclical shocks from the demand side, an economy’s output is expected to be at its potential level, which is defined as the amount an economy can naturally produce without generating inflationary pressures. Potential output depends on the actual level of capital, trend labour inputs and the state of technology. When cyclical disturbances threaten a fall in output below its potential level and consequently cause inflation to move away from the target, inflation-targeting central banks tend to reduce interest rates to maintain or move toward the target.

Long-term factors, in contrast, influence the conduct of monetary policy because of how they affect the medium-to-long-run real neutral rate of interest—the interest rate that should prevail once all shocks have dissipated and the economy has reached its potential. In a closed economy, this is the rate of interest that equates long-term desired savings with desired investment. For a small, open economy, this rate is given by the global equilibrium between desired savings and desired investment. A slow growth of potential output or a structural inadequacy of demand that continues to create an excess of desired savings over desired investment leads to a low medium-to-long-run neutral rate of interest.<sup>1</sup> In an extreme case, if this rate is sufficiently negative, conventional monetary policy may be constrained to maintaining a neutral stance over the medium to long term if the nominal neutral rate is bounded by zero. If inflation expectations are

<sup>1</sup> As discussed in Mendes (2014), output is expected to be at the potential level in the long run. The interest rate is therefore the only mechanism through which desired savings can match the desired investment. In contrast, output will adjust to maintain this equality in the short run.

anchored at the target inflation rate of 2 per cent over the medium term, a zero nominal interest rate will imply a real policy rate of -2 per cent. If the real medium-term neutral rate is below -2 per cent, there will be excess savings over investment even with a zero nominal interest rate.<sup>2</sup>

A low medium-term neutral rate can also pose a challenge for short-term stabilization policies, which relate more to the idea of a contemporaneous neutral rate that makes the economy reach its potential period by period, given the shocks (Wilkins 2014; Mendes 2014; Woodford 2003). If the medium-term neutral rate is very low to begin with, the contemporaneous neutral rate needed to close the output gap today can be even lower for large negative shocks.<sup>3</sup>

This article first discusses the cyclical impediments to growth in the aftermath of the financial crisis and then explores the effects of long-term factors in advanced economies from both supply and demand perspectives. It then provides an analysis of the long-term effects of persistence in some of the cyclical factors. Finally, it briefly discusses the implication of slower growth for the conduct of monetary policy in advanced economies.

## Cyclical Impediments Remain Persistent

The key issue is how cyclical factors could continue to persist even seven years after the crisis. Some commentators view the effect of deleveraging after the financial crisis as the key factor prolonging the downturn and suggest that such a muted recovery is actually not that uncommon historically. Reinhart and Rogoff (2009) point out that the aftermath of severe financial crises is accompanied by deep and prolonged declines in asset prices and in output and employment. Looking at 63 systemic banking crises in advanced economies, Reinhart and Rogoff (2014) find that, on average, per capita gross domestic product (GDP) falls by 9.6 per cent from peak to trough, and it takes 7.3 years for a country's per capita GDP to return to its pre-crisis peak.

**Chart 2** puts the current U.S. and euro-area recoveries in historical perspective. For the United States, the current decline is more severe, and the recovery more prolonged, compared with its collective experience of post-war business cycles (shaded area). However, the path of the current recovery (red line) is more comparable with the average of the “big five” modern financial crises (blue line) identified by Reinhart and Rogoff (2009). In contrast, the euro-area recovery has been much slower and real output per capita has not yet reached its pre-crisis level.<sup>4</sup>

Historically, recoveries following financial crises are over when deleveraging completes its natural course. The debt-to-GDP ratio, a key indicator of leverage, can be reduced through growing output or through active debt repayment or restructuring by different agents in the economy: households, firms or governments. In the run-up to the 2007–09 crisis, demand in the United States and the euro area was supported by a marked increase in private sector leverage. Although the household

◀ *Some commentators suggest that a muted recovery following a financial crisis is not that uncommon historically*

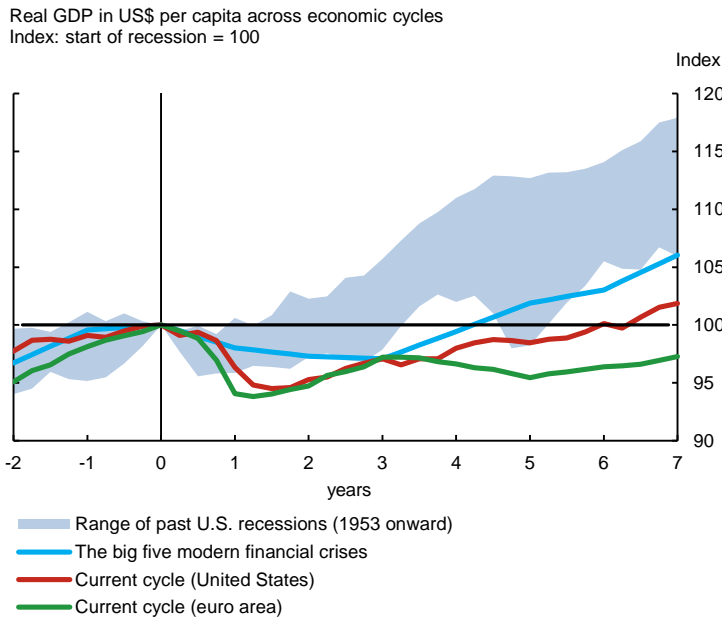
2 Such a low level of the medium-to-long-run neutral real rate is extremely unlikely, but some commentators have argued that this possibility exists (Summers 2014).

3 Monetary authorities will still have access to unconventional monetary policies, such as quantitative easing, forward guidance and negative nominal interest rates, which are briefly discussed at the end of this article. See Wilkins (2014) and Mendes (2014) for more detailed discussions of how slow growth affects monetary policy.

4 Growth in the euro area has been particularly hampered by a series of factors, such as prolonged and continual resurfacing of banking and sovereign debt crises in periphery countries, the erosion of business confidence and resulting low investment. The initial absence and subsequent slow development of architecture across the euro area to manage the crises in peripheral countries also severely impeded financial repair and the economic recovery.

debt-to-income ratios in some hard-hit countries (the United States, the United Kingdom, Ireland and Spain) have decreased significantly from their highest levels, further debt repayment or write-down may still be under way in other economies, especially in the euro area (Dobbs et al. 2015).

**Chart 2: The current recovery is weak from a historical perspective**



Note: The big five modern financial crises, as described in Reinhart and Rogoff (2009), are Spain (1977), Norway (1987), Finland (1991), Sweden (1991) and Japan (1992). Business cycle peaks are indexed at zero. The U.S. peak occurs in 2007Q4 and the euro area peak occurs on 2008Q1.

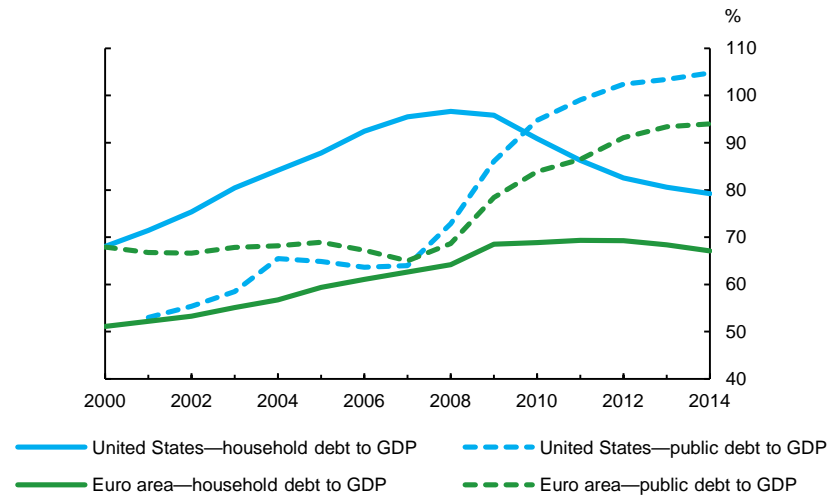
Sources: Bureau of Labor Statistics, Census Bureau, Bureau of Economic Analysis, Organisation for Economic Development and Co-operation, United Nations and Bank of Canada calculations

Last observation: 2015Q1

In a best-case scenario, the negative pressure on aggregate demand arising from active debt repayment in one sector (say, the household) in the economy can be mitigated by support from another sector (say, the government). At the height of the financial crisis, many countries sought to provide fiscal stimulus to support demand. As a consequence, public debt rose sharply (**Chart 3**). The subsequent fiscal consolidation has been a barrier to a robust recovery for many advanced economies.

Other cyclical factors, such as repairs to the financial sector and reduced access to credit, fragmentation in financial markets (especially in Europe) and policy uncertainties, also acted as a barrier to robust recoveries. Despite their persistence, however, these impediments can be expected to lessen in the medium term.

**Chart 3: Household deleveraging is under way, but public debt remains elevated**



Sources: Federal Reserve Board, Eurostat, and International Monetary Fund

Last observation: 2014

## Long-Term Factors Can Impede Recovery and Growth

Some commentators argue that behind the current slow growth is a reduction in the economy’s capacity to supply goods because of certain long-term factors, such as a decline in total factor productivity growth or demographic trends. Others argue that the world may be in a state of “secular stagnation,” whereby a host of structural factors—some of which are similar to the factors mentioned above—have been generating a chronic and structural deficiency in aggregate demand since well before the onset of the crisis that has manifested itself through a persistent output gap. These views are discussed below.

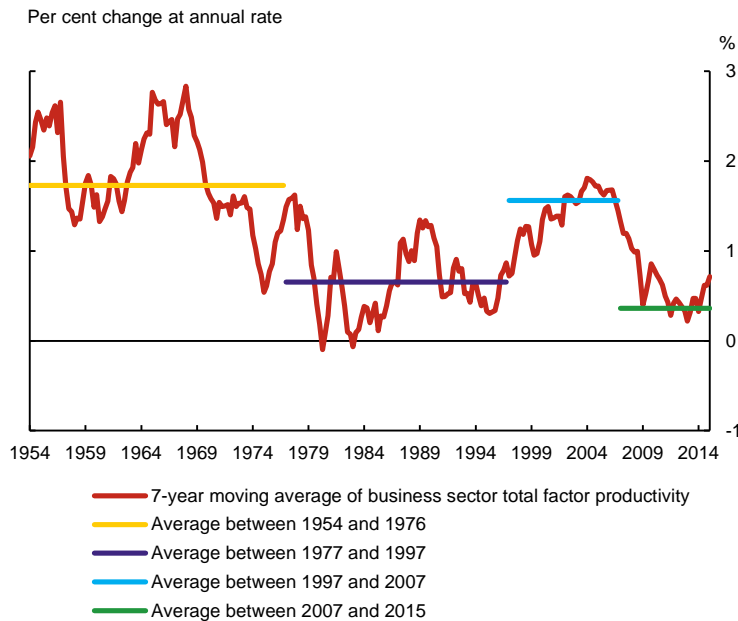
### Speed limits from the supply side

Gordon (2014) and Fernald (2014) interpret the post-crisis slowdown in total factor productivity growth as a permanent shift back to its historical norm. In this view, high levels of productivity growth in the United States during the five decades preceding the 1970s as well as from the mid-1990s to the early 2000s were exceptional (**Chart 4**). From the early 19th century until the 1970s, historically high productivity growth had been spurred by a series of significant inventions (e.g., the combustion engine, the telegraph, indoor plumbing and electricity). It is often argued that productivity boosts from the latest cycle—in Internet communication technology, robotics, etc.—are unlikely to be as transformative as those from the earlier cycle.<sup>5</sup>

◀ *Some view the post-crisis slowdown in total factor productivity growth as a permanent shift back to its historical norm*

5 According to this view, the benefits from the information technology revolution have already been reaped. Potential future innovations, such as driverless cars, are unlikely to change business practices much. For example, delivery to retail stores will still require someone to take the products to store shelves. Similarly, Gordon (2014) argues that innovations such as robotics or three-dimensional printing are “evolutionary,” rather than “revolutionary,” and are unlikely to be used for mass production.

**Chart 4: U.S. Long-term average productivity growth is back to its historical norm**



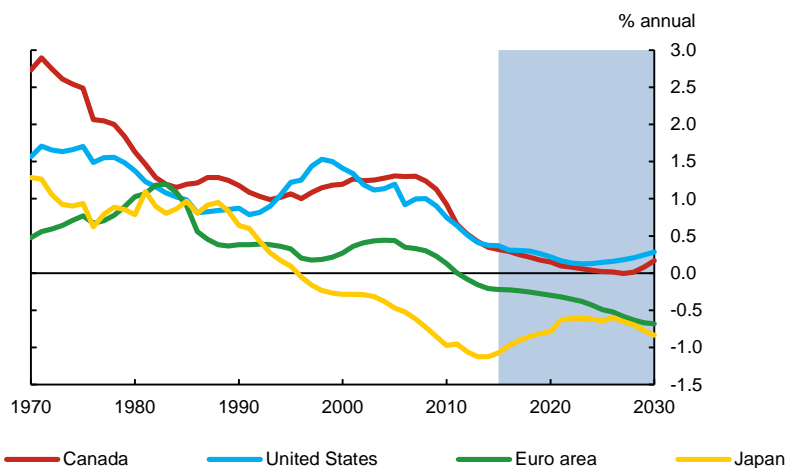
Source: Federal Reserve Bank of San Francisco

Last observation: 2015Q1

Long-term demographic trends, in contrast, may have a more discernably negative effect on growth than slowdowns in technology adoption. **Chart 5** shows that the growth rate of the working-age population is negative in Japan and the euro area and is declining in the United States and Canada. Although a portion of the decline in the growth rate of the working-age population has historically been offset by an increase in the participation rate of women in the labour force as well as an increase in the average age for retirement, there is likely less scope now for these trends to continue.<sup>6</sup> Gordon (2014), Rachel and Smith (2015) and several others have also mentioned the possibility of advanced economies gradually reaching an education plateau as the number of years of schooling per worker cannot continue to increase forever. Unless these demographic forces are offset by rising productivity or higher immigration, they will result in slower potential growth for any given rate of labour productivity.

6 The labour force participation rate in the United States has been declining for some time, but the participation rate in other advanced economies has stagnated.

**Chart 5: Working-age population growth is slowing in advanced economies**



Note: Shaded area represents forecast  
Source: United Nations

Last projection: 2030

### Long-term decline in demand: secular stagnation

Summers (2014) and Krugman (2014) propose a demand-side mechanism, referred to as secular stagnation, as the source for the slowdown in economic growth.<sup>7</sup> According to this view, chronic demand deficiencies influenced by a number of long-term factors, such as demographics, rising inequality or changing technology, can result in desired savings exceeding desired investment and thereby cause the medium-to-long-term neutral rate to be negative. This may lead to a long-lasting liquidity trap where conventional monetary policy cannot, usually, set the nominal interest rate below zero. Assuming inflation expectations are anchored at the target inflation rate of 2 per cent, a zero nominal interest rate will imply a real policy rate of -2 per cent. If the real medium-term neutral rate is below -2 per cent, there will be excess savings over investment even with a zero nominal interest rate. The economy may thus become stuck in a persistent output gap for a long time.<sup>8</sup> In addition, even if full employment is achieved at a very low medium-to-long-term neutral rate, any significant negative shock would challenge conventional monetary policy in the short-run since the necessary contemporaneous market-clearing rate may turn deeply negative.<sup>9</sup>

A number of factors can lead to excess savings over investment demand. First, demographic trends can strongly influence total household consumption and savings rates. The proportion of the population aged 50 to 64 will reach a peak in the next few years in the euro area and the United States. As individuals save for retirement, total household savings for these economies can rise and put downward pressure on the neutral rate. A shrinking working-age population may also reduce investment demand as fewer capital goods will be needed to equip new

◀ *Others view that there is a chronic demand deficiency influenced by a number of long-term factors*

7 Although it may be tempting to use this term, first proposed by Alvin Hansen in the 1930s, to mean slow growth in general, we follow the recent literature and use it to refer solely to the Summers (2014) and Krugman (2014) argument of slow growth resulting from a chronic deficiency in demand.

8 Summers (2014) and Krugman (2014) argue that the advanced economies had been in such a trap even before the crisis and that the U.S. and euro-area economies avoided weak growth before the crisis only by permitting the buildup of unsustainable financial imbalances (e.g., the technology bubbles of the late 1990s and the housing bubble of the 2000s in the United States; bubble-like financial flows to the periphery in Europe).

9 Other policies, such as unconventional monetary policies as well as fiscal policy, can still be effective in stimulating the economy.

workers. Second, rising inequality in advanced economies may also lead to increased savings. Because wealthier people are more inclined to save, the more that income gets shifted toward the wealthy, the greater the upward pressure on national savings and downward pressure on the interest rate (Summers 2014).

Third, a secular decline in the relative price of investment goods implies that a dollar of savings can now purchase more capital than ever before, causing excess savings over investment (Summers 2014). In addition, firms focusing on technological products increasingly need to invest less in physical capital to be successful.<sup>10</sup> Finally, a structural shift to a more service-oriented economy may also result in less demand for physical investment.

Note that some of these demand-side factors can be closely linked to the supply-side factors mentioned in the preceding section. For example, a slowdown in growth due to demographics and low productivity would lead to a lower trend in desired investment. This will then lead to less future capital stock and, consequently, lower potential output. Conversely, chronically weak demand may also lead to limited productivity growth and low labour force participation.

### How likely is a scenario of perpetually stagnant growth driven by long-term factors?

Long-term factors may indeed be contributing, in varying degrees, to slow growth in the advanced economies. We, however, find the above-mentioned characterization of their effects by both the supply- and demand-side analysts to be somewhat extreme, and the likelihood of these scenarios actually playing out to be small.

First, predictions about technological trends are difficult to make. Mokyr (2014) and Glaeser (2014) argue that we may be on the verge of several other technological revolutions (e.g., biotechnology, three-dimensional printing) that could have a significant positive impact on productivity. Brynjolfsson and McAfee (2011), meanwhile, believe that even if the current slow growth in productivity is attributed to a lower scale and scope of technology adoption, it is not a sufficient reason to predict that this is going to persist in the future. Mankiw (2015) argues that there are still large untapped returns from education, especially in the United States. Second, the effect of demographics on the neutral rate is far from certain. As baby boomers start depleting their savings in their retirement years, total savings may fall, putting upward pressure on the neutral rate in the future, contradicting the liquidity trap mechanism highlighted by proponents of secular stagnation. Third, the effect of inequality on the savings rate is also unclear because the savings rate in the United States was falling over the past decade, while, simultaneously, inequality was on the rise.<sup>11</sup> Fourth, the secular decline in the relative price of investment has stabilized since the mid-2000s and no longer implies a continuous decline in investment demand going forward. Finally, any decline in physical investment demand resulting from a growing share of investment in the service sector may be offset by more investment in intellectual property products, such as software and other research and development.

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10 Summers (2014) emphasizes this point by noting that the market capitalization of WhatsApp is comparable with that of Sony, while its requirement for physical investment is negligible in comparison.

11 Some argue that the decline in savings was largely driven by an unsustainable pre-crisis credit boom, when low-income households were encouraged to consume beyond their means (e.g., sub-prime lending) (Rajan 2011; Summers 2014). Now that the credit cycle has turned, household savings have reverted to normal, more sustainable levels.

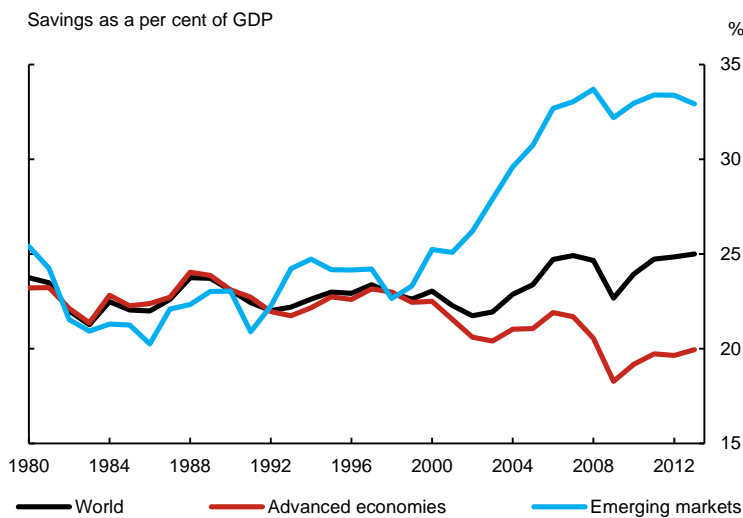


Overall, these long-term factors may lead to a low medium-term real neutral interest rate in advanced economies, but they are unlikely to make it negative. Hamilton et al. (2015), for example, find the medium-term real neutral rate in the United States to be between 0 and 2 per cent. Moreover, from a global perspective, these demand-side factors are less relevant for other parts of the world than they are for many advanced economies. If there are profitable investment opportunities elsewhere, it is not clear why the desired investment in the advanced economies should be limited by domestic investment opportunities. Theoretically, both the U.S. economy and other advanced economies should be able to run current account surpluses against the rest of the world and thereby exhaust the excess domestic savings over investment, if any.

Bernanke (2005, 2015) provides an alternative explanation of the higher global savings and why such a global rebalancing of demand is not taking place. He emphasizes that the “global savings glut” has been coming mainly from emerging-market economies and oil-exporting countries (Chart 6). Many policy-induced distortions in emerging-market economies, such as excessive reserve accumulation, have been contributing to this rise in savings and flow toward the advanced economies (Dodge 2006). Oil prices have, however, fallen recently and current account surpluses from oil-exporting countries are likely to remain low. But further structural reforms as well as a full commitment to a flexible exchange rate regime in the emerging economies, especially China, are necessary for higher consumption and a lower savings rate. Unless there is a sustained rebalancing of global demand toward the emerging-market economies, the savings glut will continue to be a drag on growth in advanced economies.

◀ Many policy-induced distortions in emerging-market economies, such as excessive reserve accumulation, have been contributing to a rise in savings and its flow toward the advanced economies

**Chart 6: Savings in emerging-market economies have outpaced the global rate**



Source: International Monetary Fund *World Economic Outlook*, April 2014

Last observation: 2013

## Prolonged Cyclical Downturns Can Pull Down Potential Growth

Another explanation for the slow growth is that a prolonged cyclical downturn can, itself, pull down potential growth (Congressional Budget Office 2014; Reifschneider, Wascher and Wilcox 2013; Hall 2014; IMF 2015). Potential output depends on the actual level of capital and trends in labour inputs as well as the state of technology. A prolonged reduction in any of these components can have a negative effect on potential growth in the medium term.

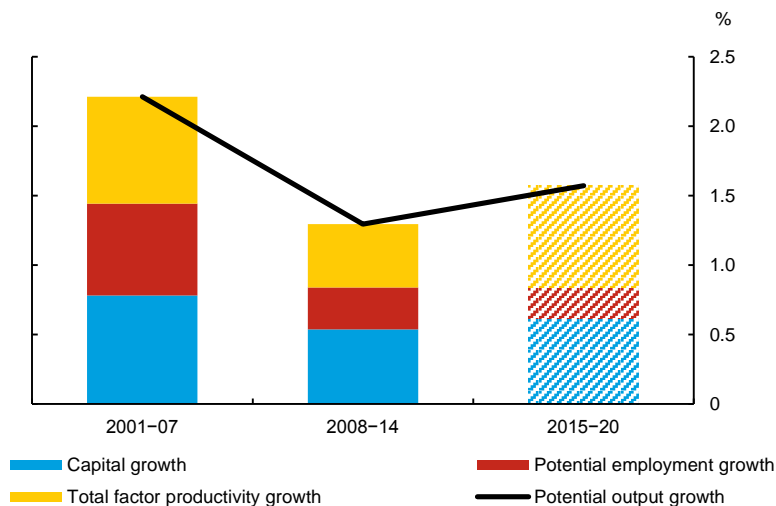
The investment-to-output ratio in advanced economies fell to 19.5 per cent in 2009 from an average of around 24 per cent between 1980 and 2007 and has not yet returned to its pre-crisis levels. Decreased investment has reduced the amount of capital available for production, and when a reduction is persistent enough, it may pull down potential output. The effect of this decrease in capital stock can be magnified when firms have limited access to credit or when firms are less inclined to invest as a result of heightened uncertainty about expected returns on investment.

A prolonged cyclical downturn can also temporarily reduce potential labour input. The recent great recession and the subsequent slow recovery have hit labour markets around the world particularly hard, with a disproportionate increase in long-term and youth unemployment. This reduces future opportunities to find jobs and erodes work skills. It also dampens potential labour force participation as some people decide to retire early, while others become discouraged and drop out of the labour force entirely.

Finally, prolonged recessions may reduce both actual and trend total factor productivity by cutting business spending on improvements in production methods and slowing the rate at which workers upgrade their skills to keep up with evolving technological needs. Limited access to credit hinders the creation of new firms and, thereby, also hinders innovation and efficient allocation of capital and labour resources.

Factors such as capital deepening and potential labour input can be expected to rebound, albeit quite slowly. It is less likely, however, that the reductions in productivity growth and the decline in participation rates related to demographics will rebound. Accordingly, the International Monetary Fund (2015) suggests that, although potential output growth in the advanced economies is expected to be higher than the post-crisis experience so far, it might remain lower than the pre-crisis average (**Chart 7**). While actual numbers vary widely, this seems to be the general conclusion in several other studies. Some commentators have also suggested that the estimates for potential output were too high before the crisis. Growth was fuelled by an unsustainable credit boom, so there is no reason to expect that it will return to the pre-crisis level. However, near-target inflation during the pre-crisis period casts doubt on this view.

**Chart 7: Potential output is expected to grow at a slower pace than before the crisis in advanced economies**



Source: International Monetary Fund

### Implications for Monetary Policy

As mentioned earlier, slow growth in the medium to long run affects the conduct of conventional monetary policy by reducing the neutral rate of interest (Mendes 2014). Estimates for the medium-to-long-run neutral rates in the advanced economies suggest the possibility that the rate has declined compared with those of a decade earlier. In the United States, such estimates put the long-run real neutral rate at between 0 and 2 per cent (Hamilton et al. 2015). Yellen (2015) suggests that the rate may be at 1.75 per cent. Recent research by the Bank of Canada (Mendes 2014) suggests that, in Canada, the current real neutral rate is more likely in the range of 1 to 2 per cent compared with our previous estimate for the mid-2000s of a range of 2.5 to 3.5 per cent.<sup>12</sup>

Even if the situation is not as extreme as suggested by the proponents of the secular stagnation hypothesis, a reduction of the neutral rate can potentially increase the likelihood of zero-lower-bound episodes and act as a constraint on conventional monetary policy. But as Côté (2014) emphasizes, there are factors working in the opposite direction as well. First, regulatory reforms of the financial sector globally should reduce the likelihood of a large financial crisis and, therefore, the need for negative contemporaneous real interest rates. Second, recent experience has shown that central banks can still provide monetary stimulus through unconventional policies, such as forward guidance or quantitative easing. Lastly, many advanced economies have recently shown that the effective lower bound for nominal rates can be below zero. The Bank of Canada will carefully analyze these issues for the 2016 renewal of the inflation target.

<sup>12</sup> Given the headwinds faced by the Canadian economy, the contemporaneous neutral rate in Canada would be well below this range (Wilkins 2014).

## Conclusion

Overall, there is increasing evidence that growth in advanced economies may remain slow in the immediate future compared with its pre-crisis average, as a result of a combination of cyclical and structural factors. While persistent cyclical factors, such as private and public sector deleveraging, will eventually disappear, longer-term supply factors, such as demographic trends, may continue to exert downward pressure on potential growth.

We do not, however, find the arguments made by the proponents of secular stagnation to be fully convincing. Even though a decline in potential growth may reduce the neutral rate in many economies, monetary policy-makers still have ample room to manoeuvre. Current estimates of medium-term real neutral rates are lower than before but are far from being a constraint on monetary policy over the medium term. In addition, other public policy initiatives, such as structural reforms and fiscal stimulus, wherever feasible, should be able to support both potential growth and aggregate demand. G20 leaders have already recognized the need and pledged to undertake measures to revive both demand and potential growth rates.<sup>13</sup>

◀ *Current estimates of medium-term real neutral rates are lower than before but are far from being a constraint on monetary policy over the medium term*

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<sup>13</sup> See G20 Leaders' Communiqué, November 2014, where they have pledged to undertake measures to raise G20 GDP by an additional 2 per cent by 2018.

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