Monetary Policy and the New Normal

Is the economy in for a prolonged spell of slow growth, as some believe, or a burst of innovation and productivity? In either event, policymakers must pay close attention to productivity trends.

BY MICHAEL DOTSEY

There is growing debate regarding whether the U.S. economy has entered a period of long-run, or secular, stagnation. The Great Recession has certainly increased interest in that discussion. While the onset of the stagnation is said to predate the Great Recession by 35 years, labor productivity has slowed further since 2010. History shows that recessions, even the Great Depression, have not generally had any effect on long-run economic growth. However, one still wonders whether this latest recession's legacy will exacerbate any fundamental decline in U.S. economic growth, perhaps through a lingering deterioration in job skills arising from historically high long-term unemployment or through inefficiencies from overregulation in response to the financial crisis. Whether we will see stagnation or a rebirth of productivity obviously has serious implications for Americans' standard of living. But as I will show, it also has important implications for how monetary policy may need to adjust.

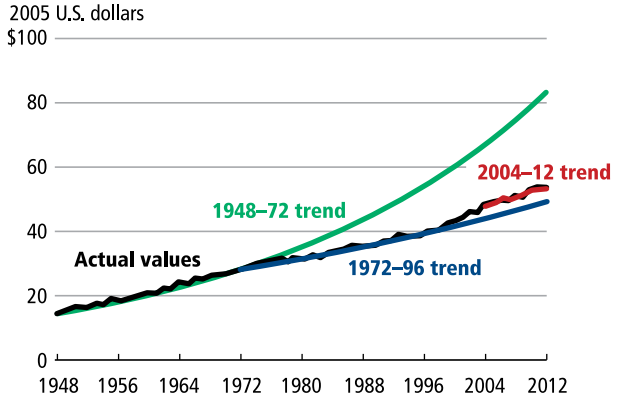
What historically matters for the economy in the long run are changes in the trend growth rate of labor productivity, which measures how much the economy produces per hour worked. Indeed, as Paul Krugman famously said, even though productivity isn't everything, in the long run it is almost everything. The reason is that productivity growth leads directly to greater efficiency in production and hence to greater output per hour. The greater productivity of labor in turn results in higher wages, income, and consumption.[1]

The difference that the productivity rate makes over time can be seen in Figure 1, which depicts what average hourly productivity would have been in 2012 (in 2005 dollars) if the 1948–1972 trend had continued uninterrupted as opposed to its following the 1972–1996 trend. The difference is substantial.

FIGURE 1

What Might Have Been?

Growth trends in output per hour over selected intervals.



Sources: Adapted from Gordon (2012); Bureau of Labor Statistics.

INDUSTRIAL VS. DIGITAL REVOLUTIONS

Robert Gordon of Northwestern University has been one of the leading voices asserting that a secular stagnation is well underway. He points out that, apart from a spurt of productivity between 1996 and 2004, the U.S. economy has roughly returned to its less robust growth rate of 1972–1996. Moreover, he believes that productivity is

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likely to remain on this slower track. As evidence, he points first to history.

Three inventions, all introduced in 1879, sparked the second industrial revolution: the electric light bulb, the internal combustion engine, and radio communication.[2] These inventions led to many spinoffs that resulted in the electrification of America, the age of the automobile, and mass communication, leading not only to a new way of life but also to increasingly more efficient means of production and distribution.

But Gordon does not expect today's advances in information technology and communications to have as many spinoffs as resulted from those earlier breakthroughs. In Gordon's view, growth has slowed because all the low-hanging fruit on the tree of innovation has been picked. Thus, he believes that, combined with demographic and educational trends, the U.S. may experience only 0.9 percent per capita growth going forward. Such an eventuality would represent more than a halving of the per capita growth rate of 2.33 percent over the period 1891–1972.

Adding to the dire picture Gordon paints, educational attainment has plateaued, which he attributes partly to a dysfunctional U.S. educational system, which impedes the growth of human capital. Further, population growth is slowing, causing the overall population to age. And an older population implies a lower worker-to-population ratio, which reduces output growth per capita as the employed share of the population shrinks and the nonworking share grows. An aging population also strains resource redistribution, as a greater share of the population depends on support funded by payroll taxes such as Medicare and Social Security, leading to higher taxes and a corresponding reduction in entrepreneurial incentives, which can stifle innovation. Gordon also cites as headwinds inequality, globalization, energy and environmental restrictions, and debt-burdened consumers and government. Although he doesn't mention it, growth is arguably also saddled by regulatory burdens that have been growing over time. Some of the increase in regulation has been motivated by the financial crisis and some represents a continuing increase in administrative interference in the economy.

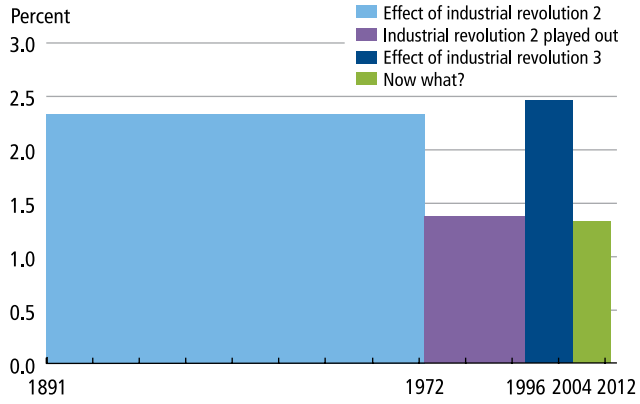
The combined effects of these headwinds can be seen in the slowing rates in labor productivity compared with 1891–1972 (Figure 2).[3] Again, the effects of this decline are quite meaningful.

That is indeed a dire prediction, but let's not confine ourselves to this interpretation. Perhaps the right question to ask is: Will history repeat itself? Research by Chad Syverson

FIGURE 2

Despite Tech Spurt, Trend Is Clearly Lower

Average U.S. labor productivity growth rates over selected intervals.



Sources: Adapted from Gordon (2012); Bureau of Labor Statistics.

has compared the productivity profile of the second industrial revolution with that of the potential third revolution brought on by the digital age. He dates the start of that revolution, if it indeed is underway, as 1970. In Figure 3, the blue line plots productivity growth from the second industrial revolution. Initially, growth was not very robust. Then there is a short interval after 1915 in which growth picks up, but then it slows again. It is not until the early 1930s that the exceptional growth associated with electrification actually picks up.[4] Thus, if Gordon had been writing in the late 1920s, he might have come to a similarly premature conclusion.

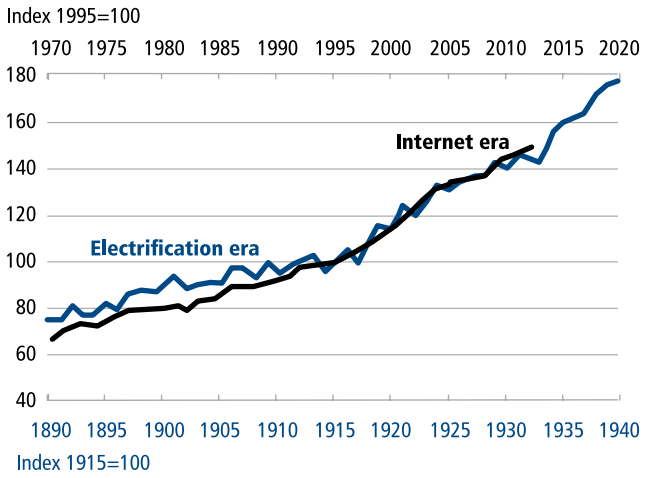
Now compare our growth experience during the Internet era (the black line). It, too, started out rather unexceptionally, prompting Nobel laureate economist Robert Solow to famously observe in 1987 that "computers are found everywhere but in the productivity data."[5]

Productivity growth did pick up briefly in the late 1990s but has since tapered off. Whether we will we see an inflection point in the near future is hard to say, but some economists are much more optimistic than Gordon. Joel Mokyr of Northwestern University notes that it is not just that scientific discoveries lead to improved technology but that improved technology leads to scientific discoveries. For instance, microscopes led to the development of the germ theory of disease, which in turn led to antibiotics. Current advances in our ability to process data or to work with materials at a submolecular level could easily result in scientific advances that are difficult to anticipate. The low-hanging fruit may have been picked, but we now have ladders.

FIGURE 3

Will History Repeat Itself?

U.S. labor productivity growth during the electrification and Internet eras.



Sources: Adapted from Gordon (2012); Bureau of Labor Statistics.

Erik Brynjolfsson and Andrew McAfee are unguardedly optimistic.[6] They point to the tremendous gains in computational speed and power as well as the development of software that they believe will serve as launch pads for an upcoming inflection point in productivity. Many revolutionary advances, such as polymerase chain reaction that allows for replicating DNA sequences, did not involve revolutionary ideas but occurred via the creative stringing together of already-worked-out scientific procedures. They point out that faster computational speeds and algorithmic development are making computers capable of stringing together ideas that could prove productive. And it is clear from their analysis that there are a lot of ideas out there. Man combined with machines is a powerful tool. It's true that IBM's Deep Blue computer famously beat world chess champion Garry Kasparov in 1997. But by 2005, the even more advanced Hydra computer was no match for two amateur players aided by three ordinary laptops.[7]

PRODUCTIVITY AND MONETARY POLICY

It is clear that there is great uncertainty surrounding our future prospects for growth. But although the headwinds Gordon refers to represent serious challenges to growth, many of these headwinds are manmade and can be unmade. Also, it is not as if the 20th century lacked headwinds. Two world wars and a Great Depression caused major societal disruptions. Further, the second industrial revolution witnessed a steep decline in the workweek, from around 60 hours a week to less than 40. Yet, per capita output growth remained strong.

However things play out, monetary policymakers must be attentive to trend changes in productivity. Gauging an ongoing change in trend is a particularly difficult statistical challenge, because it generally requires many decades of data to arrive at any definitive conclusion. Yet, any such change will need to be incorporated into the design of monetary policy. The reason is that growth and interest rates are joined at the hip.

Basically, when productivity growth is high, it pays to sacrifice a bit of consumption and instead save and invest. That's because putting resources to work while productivity is increasing rapidly yields greater income and future consumption than it does when productivity growth is slow.[8] That greater future productivity is reflected in higher *current* interest rates that are needed to induce individuals to provide the necessary capital in order for firms to make the necessary investments. For their part, firms are willing to pay higher interest rates because their investments are more profitable when productivity growth is high. In this way, the real interest rate helps efficiently allocate the resources that provide growth consistent with the underlying rate of technological progress.

Put another way, policymakers seek to calibrate monetary policy with the neutral federal funds rate, which is the natural real rate plus whatever inflation rate they consider optimal for keeping price increases stable and output growing at its potential. Thus, the neutral level of the funds rate will vary positively with the economy's long-run growth potential. So whether one thinks monetary policy is accommodative or restrictive will in part depend on one's views of underlying longer-run economic growth.[9]

Note that, just as with secular changes in productivity, cyclical changes in productivity also influence what the federal funds rate target should be. When productivity is temporarily growing fast, augmenting the capital stock by encouraging saving is desirable, and that augmentation is accomplished by allowing interest rates to rise. The rise in interest rates that accompanies a fast-growing economy should not be viewed as an attempt to cool the economy down, but merely as the appropriate reaction to a higher return to capital. It is also the correct response in terms of preserving price stability, because overheated economies typically give rise to inflationary pressures. Other cyclical factors such as changes in fiscal policy also influence where

the federal funds rate is set at any particular moment, and indeed these cyclical factors dominate federal funds rate movements. But where the federal funds rate is eventually headed is determined by its long-run neutral level. That anchoring affects the likely path that the federal funds rate will take, and it is the entire path of the funds rate and its resulting effect on longer-term interest rates that affect the economy, not its setting at any particular point in time.

If the members of the Federal Reserve's monetary policy-setting arm, the Federal Open Market Committee, incorrectly believe that the neutral federal funds rate is lower than it actually turns out to be, they will, at least over the medium term, set the actual funds rate lower than is consistent with the inflation target, and monetary policy will have an inflationary bias. The large runup in inflation that occurred in the 1970s represented an episode in which the FOMC kept interest rates persistently below their neutral level. The opposite is true if the neutral funds rate is perceived to be higher than it really is, and policy will have a disinflationary bias. Therefore, in order to avoid persistent mistakes, productivity measures will remain in the forefront of policy decisions. ■

NOTES

[1] Labor productivity is discussed with a minimum of technical detail in the Bureau of Labor Statistics' *Beyond the Numbers* feature.

[2] Gordon also emphasizes the impact of running water and indoor plumbing. He marks the first industrial revolution as the introduction of steam engines, railroads, and advances in cotton spinning between 1750 and 1830.

[3] Productivity slowed further in 2013 and 2014. Adding those two years to the most recent interval, using revised BLS labor productivity data, would result in a 2004–2014 growth rate of about 1.16 percent.

[4] After large declines in employment, output, and labor productivity at the start of the Depression, all three series grow rather robustly beginning in 1934. The only exception is 1938, when the economy experiences another recession.

[5] For more on "Solow's paradox," see the interview by the Minneapolis Fed in 2002.

[6] See their book, *The Second Machine Age*.

[7] See Clive Thompson's book, *Smarter Than You Think*.

[8] The relationship between economic growth and the real interest rate is spelled out quite nicely in the economics textbook coauthored by Olivier Blanchard and Stanley Fischer.

[9] President Williams of the San Francisco Fed and Jeffery D'Amato discuss the role of the natural rate in monetary policy and the challenge of estimating it.

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