

## **Cyclical Misconceptions Driving Policy Mistakes: Keys to the Productivity Puzzle**

ANIRVAN BANERJI and LAKSHMAN ACHUTHAN

*The authors see little reason for a rebound in productivity growth, which has downshifted in part due to policies rooted in overly optimistic assumptions about trend growth, and mistaken notions about business cycle dynamics. If they are right, slow trend growth will prevail for the foreseeable future.*

Financial markets took fright in early 2016 as recession fears focused a spotlight on the elephant in the room, as depicted by the cover of the *Economist*—concerns that central banks were “out of ammo” to fight recession (*Economist* 2016). While the elephant may have shuffled offstage for now, the question remains. How did the global economy get into such a predicament?

As students of the business cycle, we at the Economic Cycle Research Institute (ECRI) have a distinctive cyclical perspective. Equally important, our focus on cycles lets us discern what is cyclical and, by elimination, what is not.

That is why, in the summer of 2008 prior to the Lehman collapse, we were able to first identify the long-term pattern of weaker and weaker growth during successive expansions, stretching back to the 1970s (ECRI 2008). Our finding was reported in the *New York Times* (Norris 2008) but otherwise went largely unnoticed.

As we continued investigating this troubling long-term trajectory, looking at other developed economies in the process, we wrote about the implications of this “ominous pattern ... of falling growth in GDP and jobs during successive expansions” (Banerji and Achuthan 2012). More than a year later, that reality began to gain traction with some policy makers when a former U.S. Treasury Secretary promoted the notion of “secular stagnation” (Summers 2013). By the time the ensuing debate began to take hold, central banks—oblivious to the longstanding pattern of falling trend growth—had moved far down the road of unconventional countercyclical efforts,

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including a zero interest rate policy (ZIRP), along with quantitative easing (QE). In Europe and Japan, those approaches were then followed by a negative interest rate policy (NIRP).

Today, several years after the launch of those grand experiments with monetary policy, the growing realization that central banks may be out of ammunition suggests that their plans to spur growth were based on seriously flawed assumptions. We will discuss those assumptions, examine the evidence for their validity or lack thereof, and show why policy makers went down the wrong path in the twenty-first century.

Only then can we begin to address policy makers' growing concern, as articulated by Atlanta Fed president Dennis Lockhart (Hoover Institution 2016): "All major central banks are grappling with the question of where is this going—where exactly is this headed?"

### A LONGSTANDING MISUNDERSTANDING

In the depths of the Great Recession, the talk at the April 2009 London G20 conference was all about depression. That same month, we predicted that the U.S. recession would end by the summer of 2009 (ECRI 2009a). And so it did.

Indeed, by early 2010, the reality of the new expansion had engendered great expectations of a V-shaped recovery, given the depth of the recession. As an article in a popular periodical explained, "The Administration's optimistic scenario relies explicitly on the 'Zarnowitz rule' ... assum[ing] that the current recovery, which comes after a very deep recession, will look more like the recoveries of the nineteen-thirties, sixties, and eighties than the tepid recoveries of the nineties and aughts." The logic was that "deep recessions create a lot of slack in the economy, in the form of mass unemployment and underutilization of capital. Once a recovery begins, these resources can be put back to work, creating a temporary surge in economic growth" (Cassidy 2010). After all, the initial months of the revival appeared to be validating Michael Mussa's recollection of this "rule," namely, that "Deep recessions are almost always followed by steep recoveries" (Mussa 2009).

As business-cycle researchers who had worked with Victor Zarnowitz, alongside Geoffrey H. Moore, the doyen of business-cycle research who first hired Zarnowitz at the National Bureau of Economic Research in the early 1950s, we were keenly aware that such a "rule" was not valid, because it omitted a key qualifier, namely, that the deeper the recession, the stronger the *initial stage* of the revival. Perhaps the simplified version (omitting the reference to the "initial stage") gained so much traction because it fit well with Milton Friedman's (1964) plucking model, envisioning output as a string attached to an upwardly sloping ceiling, being occasionally plucked down by recessionary shocks, following which the string snapped back to the upwardly sloping ceiling. This view certainly seems to be consistent with

the simplified version of the Zarnowitz rule cited, for example, by the Atlanta Federal Reserve's Dwyer and Lothian (2011), seeking to explain why the recovery had been so disappointing.

Yet, as we discussed in a recent paper (Banerji and Achuthan 2015), the first year of recovery from the Great Recession had been in line with the historical experience, while, as for the rest of the expansion, the business cycle owed us nothing more. This finding confirmed the conclusion we had originally reached seven years ago (ECRI 2009b), that is to say, the strength of the *first year of revival* depends on the depth of the recession, but also that the strength of the first year of revivals has been declining over the decades.

Specifically, the two independent variables—the time elapsed since World War II (a proxy for structural change) and the percent change from the recessionary peak to the recessionary trough in ECRI's U.S. Coincident Index (USCI), a broad measure of U.S. economic activity subsuming the aggregate measures of output, employment, income, and sales—explained over three-quarters of the variance in the strength of the first year of recovery. We use the analogy of a rubber ball that gradually loses its elasticity over the decades. Like that rubber ball, the economy still bounces back stronger in the initial period following deeper recessions, but with its elasticity gradually declining, the strength of the first-year rebound is diminishing over time.

For example, this relationship suggests that if a recession as severe as the Great Recession had occurred in the late 1940s, the USCI would have rebounded around 14 percent, instead of the 3 percent or so that we saw in the year following the end of the recession in 2009. By the same token, if the Great Recession had been only half as deep, the expected rebound would have been less than 1 percent in the first year, in terms of USCI growth.

In other words, the size of the V-shaped recovery in the first year of revival is linked to both the depth of the recession and the passage of time, a proxy for structural change, which we will discuss in a moment. Following the first year of recovery, however, it is a different picture.

Using the same independent variables—the passage of time and the depth of recession—but with the dependent variable being the average pace of growth during the expansion *following the first year of recovery*, there is no statistically significant relationship among the variables. If anything, to the extent that there is any loose relationship, deeper recessions may actually be associated with more sluggish economic growth following the first year of revival. With deeper recessions sometimes followed by weaker growth after the first year of expansion, this concept is contrary to how many believe the economy “should” perform. Basically, after the first year of recovery, the pace of growth has little to do with the depth of the earlier recession.

To be clear, we are not suggesting that this is a sufficiently accurate model to serve as the basis for any policy. The point is that the historical

evidence raises considerable doubt that, beyond the first year of revival, V-shaped recoveries repair the damage done by deep recessions. Indeed, the real issue remains the long-term decline in trend growth, which even extraordinary monetary policy stimulus cannot change.

### SIMPLE MATH

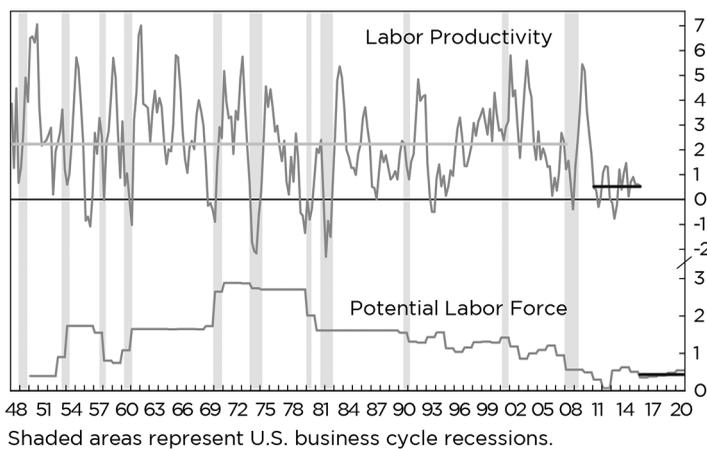
So far we have reviewed earlier research suggesting that, beyond the first year of revival from recession, economic growth tends to converge toward long-term trend growth, which, as discussed, has been declining for decades. To assess whether this pattern is likely to persist, we examine what potential GDP growth is likely to be in the years ahead.

Of course, in essence, labor productivity growth and potential labor-force growth add up to potential GDP growth. Therefore, a closer look at these two measures is in order.

The U.S. Congressional Budget Office (CBO) pegs potential labor force growth (Figure 1, lower panel) at 0.4 percent a year for the 2016–2020 time-frame (horizontal black line). This is an uncontroversial estimate, given that the demographics are pretty much set in stone. While this may seem quite weak, it is better than those for the major eurozone economies or Japan.

Separately, U.S. productivity growth, which has been falling for years (ECRI 2014) has averaged about 0.5 percent a year for the last five years, as shown by the horizontal black line in the upper panel of Figure 1. In the words of Fed Vice Chairman Stanley Fischer, it “is way, way down” (Fischer 2014).

As to where productivity growth is headed from here, some policy makers, like Cleveland Fed president Loretta Mester (2015), think it will



**FIGURE 1** Growth in Labor Productivity and Potential Labor Force (%).  
Sources: Bureau of Labor Statistics, CBO, ECRI.

revert to its post–World War II average of around  $2\frac{1}{4}$  percent per year (horizontal gray line, upper panel), enabling the economy to grow at about  $2\frac{3}{4}$  percent per year. Others, such as the CBO and John G. Fernald of the San Francisco Fed, think productivity growth for the next decade will triple from its  $\frac{1}{2}$  percent-a-year average of the last five years to its post-1970 average of  $1\frac{1}{2}$  percent per year, suggesting that the economy can sustain 2 percent trend growth (Porter 2016).

However, as Fischer (2015) has noted, “Productivity is extremely difficult to predict.” Accordingly, it is critical to avoid model forecasts based on heroic assumptions. Thus, even if productivity growth does exhibit reversion to the mean, it is not clear why the relevant mean should be the one for the post–World War II period, or the post-1970 period, considering that the next few years are unlikely to resemble those earlier periods.

Rather, we would suggest that the default assumption be the simplest one, namely, that productivity growth over the next five years will average what it did for the last five years, that is,  $\frac{1}{2}$  percent per year. In that case, meaning that if things stay around where they are, simple math (ECRI 2015a) suggests that potential real GDP growth will amount to 0.5 percent productivity growth plus 0.4 percent potential labor force growth, that is, 0.9 percent through the beginning of the next decade.

We do not insist on this specific forecast but do not see any persuasive reason to believe that productivity growth will improve materially in the next few years. Indeed, our simple math suggests that, in broad terms, not quite  $\frac{1}{2}$  percent per year potential labor force growth plus  $\frac{1}{2}$  percent per year labor productivity growth should add up to 1 percent potential GDP growth, at best, for the next five years.

One major objection to the notion of an ongoing productivity slowdown is that “the official statistics understate the growth of...productivity” (Feldstein 2015), mostly by underrecording the contribution of the digital economy. However, subsequent comprehensive research has found that, after making “several adjustments to IT-related hardware, software, and services [that] make recent growth in GDP and investment look modestly better than recorded...the slowdown in labor productivity is even larger.... The reason is that mismeasurement was substantial in the 1995–2004 period” (Byrne, Reinsdorf, and Fernald 2016).

Moreover, as Syverson (2016) points out,

The productivity slowdown has occurred in dozens of countries, and its size is unrelated to measures of the countries’ consumption or production intensities of information and communication technologies.... Second, estimates... of the surplus created by... digital technologies fall far short of the \$2.7 trillion or more of “missing output” resulting from the productivity growth slowdown.... Third, if measurement problems were to [blame,] the properly measured... productivity growth... would have to

have been multiples of their measured growth in the data. Fourth, [regarding the concern that] workers are being paid to make products that are given away for free...this trend actually began before the productivity slowdown.

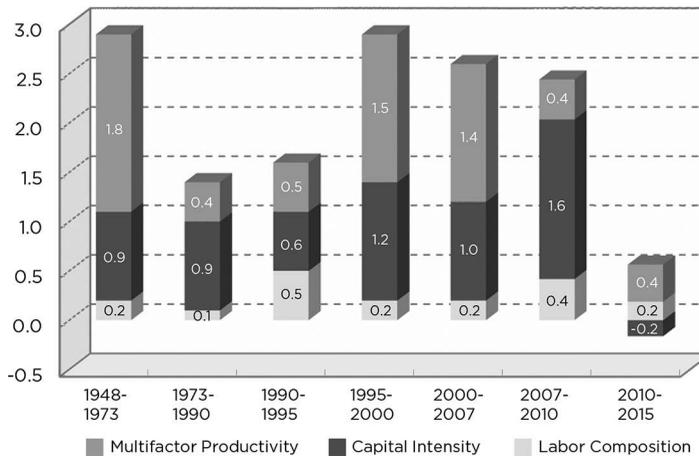
So, while IT-related advances may have increased consumer welfare in recent years, they have not made people much more productive. Indeed, the fact that Americans check their mobile phone forty-six times a day, on average—most starting within five minutes of waking up (Deloitte 2015)—is not necessarily productivity-enhancing or conducive to focus at work.

The productivity slowdown is real, and it may have far-reaching consequences. The question is, why has it happened?

### THE COLLAPSE IN CAPITAL INTENSITY

Whether or not productivity growth will soon revive depends on why it has been so low in recent years. Accordingly, we examine the main contributors to productivity growth since 1948: growth in multifactor productivity (MFP), labor composition, and capital intensity.

As Figure 2 shows, the post-World War II history of productivity growth has unfolded over several phases. It is helpful to break up the period judgmentally, starting with the initial 1948–1973 period of relatively strong productivity growth, followed by the 1973–1990 slump; the first half of the 1990s (1990–1995); the second half of that decade (1995–2000), which included the Internet boom; the period stretching from the technology bust to the eve of the Great Recession (2000–2007); the Great Recession and its



**FIGURE 2** Contributions to Productivity Growth (Percentage Pts.).

Sources: Bureau of Labor Statistics, ECRI.

immediate aftermath (2007–2010); and the rest of the economic expansion (2010–2015), which has so disappointed the consensus.

For these periods, it is instructive to break out the contributions to labor productivity growth from growth in labor composition (the quality of labor); capital intensity (the ratio of capital to hours worked); and MFP, a measure of the combined influences of technological change, higher efficiency, returns to scale, reallocation of resources, and other factors affecting economic growth, over and above the individual effects of capital and labor.

As the graphic shows, from 1948 to 1973, a period that saw labor productivity growth average almost 3 percent per year (first bar), MFP was the overwhelming driver of labor productivity growth, followed by capital intensity. The contribution of MFP then collapsed, causing labor productivity growth to fall by about half to  $1\frac{1}{2}$  percent per year between 1973 and 1995 (second and third bars), but then rebound between 1995 and 2007 (fourth and fifth bars), basically remaining robust until the eve of the Great Recession. The period spanning the Great Recession and the initial period of recovery from it (2007–2010) saw a sharp drop in the contribution of MFP, which remained just as weak in the latest period following the initial recovery from the Great Recession (rightmost bar). However, what is remarkable about this latest period (2010–2015) is that the contribution of capital intensity has turned negative, after being in the ballpark of 1 percent, more or less, in the entire post–World War II period (ECRI 2015b).

All in all, while MFP and labor composition have been making modestly positive contributions in recent years—although the contribution of MFP is not as strong as it was in the 1948–1973 and 1995–2007 periods—that of capital intensity has turned negative despite historically low interest rates and the average age of private nonresidential fixed assets being near a half-century high (ECRI 2016).

Please recall that the ratio of capital to hours worked defines capital intensity. Evidently, economic growth during the current economic recovery has been skewed toward growth in the number of hours worked, while capital investment has taken a substantial hit. Thus, without a revival in capital investment, it appears improbable that there will be much of a recovery in labor productivity growth.

Given the global overcapacity and rampant deflation that we will discuss later, business investment growth has been worsening and is unlikely to pick up in the next few years. Under the circumstances, it is questionable to assume that productivity growth will improve much anytime soon.

A more realistic scenario, based on prudent projections, suggests that potential GDP growth is likely to slow further, below consensus assumptions, which have kept getting marked down during this expansion. Notably, the CBO's five-year-ahead potential GDP growth forecasts have been cut by over half a percentage point in the last three years to 2 percent a year (Congressional Budget Office 2016), and, if our analysis is correct, the downgrades are not over.

## CONFLATING STRUCTURAL AND CYCLICAL

We mentioned earlier how, eight years ago, we were able to first identify the long-term pattern of weaker and weaker growth during successive expansions, stretching back to the 1970s. As students of the business cycle, we could more easily distinguish between cyclical and structural changes. Because that was not the first time this has happened, it is worth reaching back to the turn of the century.

The 2001 recession was a mild one, according to most historical data. It did not even see two successive quarterly declines in real GDP. However, after it ended in November 2001, the economy's travails continued to be reflected in both the job market and the stock market, likely contributing to concern among policy makers about the sustainability of the recovery.

By October 2002, the S&P 500 stock price index had lost about half its value in just over two and a half years, mauled by the biggest bear market since the 1930s. In March 2003, about three years after that bear market began, and on the eve of the Iraq War, it fell back almost to those 2002 lows. It is probable that policy makers interpreted the renewed swoon in equity prices as a recession warning. Yet, in reality, the protracted bear market in equities, which laid bare "the old illusion of a permanently higher trend rate of growth," should not have been all that surprising. Just after the end of the 2001 recession, we had noted that the "overvaluation still suggested... a further drop in stock prices" (Banerji 2002). Thus, the renewed stock price plunge was a symptom of residual overvaluation, not the economy's *cyclical* vulnerability to a "double-dip recession."

At the same time, the economy kept hemorrhaging nonfarm payroll jobs through August 2003—that is, twenty-one months after the end of the 2001 recession. This was highly unusual, further stoking double-dip recession fears. But our clear understanding that a cyclical recovery was under way led us to explore other explanations for the weak jobs data. In the process, it became clear to us that the problem was structural, not cyclical. Consistent with that diagnosis and conforming to standard cyclical patterns, service-sector employment had troughed in February 2002, three months after the recession ended.

Yet, manufacturing kept losing millions of jobs, before that sector finally added a modest 66,000 jobs between February and August 2004. Given that the broad measures of output, income, and sales had all turned up by late 2001, this was highly anomalous behavior that bore the marks of a major structural shift. At the time, ECRI characterized it as "the globalization tsunami" (ECRI 2004).

It was against this backdrop that, in the spring of 2003, with core Consumer Product Index (CPI) growth falling below  $1\frac{1}{2}$  percent, Fed chairman Alan Greenspan, supported by Fed governor Ben Bernanke, raised the alarm about

the risk of deflation if core CPI inflation were to continue in a downward trajectory. In his May 2003 congressional testimony, Greenspan observed, “We believe that because, in the current environment, the cost of taking out insurance against deflation is so low, that we can aggressively attack some of the underlying forces, which are essentially weak demand” (Greenspan 2003).

But as we explained at the time, with rent and owners’ equivalent rent making up almost half of core CPI, the main reason for the decline in core inflation was the plunge in rental inflation, spurred by the housing boom (ECRI 2003). Thus, a further rate cut to a record-low 1 percent fed funds rate would needlessly feed the vicious cycle by bolstering the housing boom. Our analysis was subsequently echoed by an Atlanta Federal Reserve study acknowledging that “the concern and discussion regarding overall price deflation were perhaps overstated” (Bauer, Haltom, and Peterman 2004).

Again, the main problem was the confusion between cyclical and structural weakness. As a Fed official confided privately at the time (Banerji 2003), the real fear was that a double-dip recession would usher in deflation that would be difficult to tackle; hence the decision to take out “deflation insurance” by cutting rates to a record low, effectively aiding and abetting a housing boom that would end badly a few years later.

## COUNTERPRODUCTIVE CRUSADES

The received wisdom about the Fed’s actions during the Global Financial Crisis (GFC) often glorifies the heroic actions of the Fed and Chairman Bernanke when the economy was in peril. While they did take timely and critical steps in 2008–2009 to backstop the financial system, absent from most accounts is the story of the Fed’s culpability in the lead-up to the crisis, as well as the Fed’s actions after disaster was averted. This groupthink ends up missing the bigger picture, with lamentable current consequences.

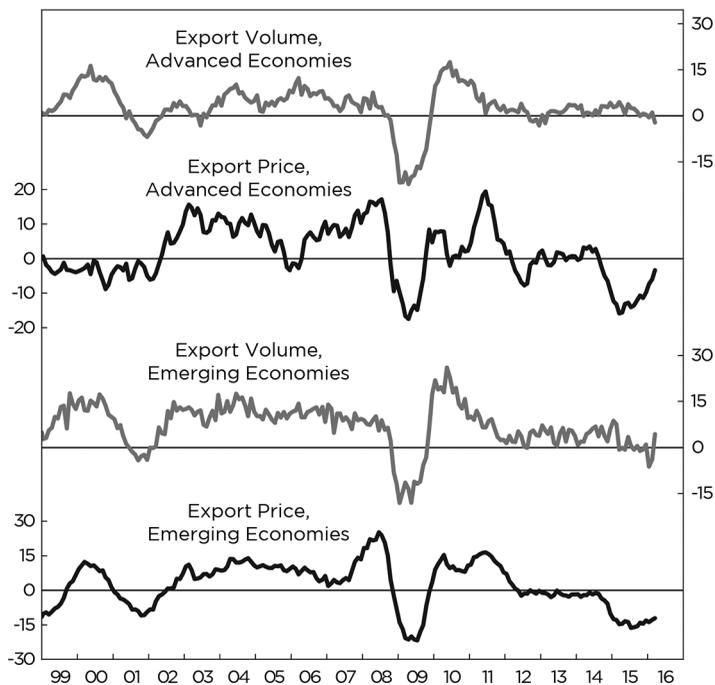
Just as confusion about the structural shifts that played out in the wake of the 2001 recession prompted the Fed to cut rates to record lows to guard against the nonexistent threat of deflation, the failure to appreciate a momentous structural shift in the aftermath of the Great Recession—the long-term decline in trend growth—led to QE and extended ZIRP, which policy makers are finding difficult to leave behind. Their default diagnosis of cyclical weakness, in spite of contrary evidence, has led to these repeated policy missteps.

The twin misconceptions were that the economy was supposed to snap back quickly to its pre-recession level, given the deep recession, according to their flawed understanding of the “Zarnowitz rule”; and the assumption—oblivious to the structural shift—that “trend growth” was what it used to be. Thus, they kept trying to boost the economy in an effort to blast it like a rocket ship to “escape velocity”—yet another mythical concept favored by many economists.

Their actions are now being revealed as counterproductive. By effectively making it cheap to finance inventories and slashing their carrying costs, super-easy money has resulted in bloated inventories, driving a surge in the inventory/sales ratio to levels seen only in past recessions. The inventory overhang inhibits production and investment, in turn depressing productivity growth, which is a key driver of the long-term decline in trend growth.

Separately, following the GFC, which resulted in “20 to 45 million migrant workers [returning] to their home villages” (Meng 2012) in 2008 alone, China not only unleashed significant monetary stimulus, but also launched an enormous fiscal stimulus package involving, among other things, the pouring of one and a half times as much concrete in a three-year period (2011–2013) as the United States had poured in the entire twentieth century (Swanson 2015). The ensuing overcapacity, which the Chinese authorities are loath to close down, is keeping moribund enterprises going with the aid of trillions of dollars in credit. In turn, this sustains a massive global glut in a number of industries, resulting in rampant export price deflation for advanced and emerging economies alike.

This overcapacity is likely to be part of the explanation for today’s remarkable degree of global export price deflation, comparable only to the GFC (Figure 3). In fact, year-over-year (*yoY*) growth in advanced economy export volumes (top line) has dropped into negative territory. This is in spite



**FIGURE 3** Export Volume and Price, Advanced and Emerging Economies, Growth Rates (%).  
Sources: CPB Netherlands Bureau for Economic Policy Analysis, ECRI.

of *yoy* export price growth for advanced economies—which are hardly dominated by energy or commodities—falling deep into negative territory last spring, exhibiting the worst export price deflation in six years, i.e., since the GFC, before staging a partial revival while still staying well below zero (second line).

For emerging economies, the picture is arguably more dire, with export volume growth hovering around zero after dropping to a six-year low (third line), while export price growth continues to display deep deflation as it remains near a six-year low (bottom line). Plainly, there is rampant export price deflation for advanced and emerging economies alike, but even this steep fall in prices has been unable to boost export volumes.

The fact that such weakness in global trade has arrived in the years following the most massive stimulus ever unleashed by the world's major economies, including China, is strong evidence that something is badly amiss. It is clear that, however much productive infrastructure it may have constructed in recent years, China also created major overcapacity. To begin with, following the GFC, China launched “the greatest monetary stimulus program the world has ever seen. . . . But in fact, the stimulus program made the problem of economic imbalance substantially worse” (Lynch 2016). Today,

To protect jobs and plants, the government and its state-owned banks sometimes keep money-losing businesses on life support by rolling over or restructuring loans, providing fresh credit or offering other aid. . . . Similar strategies have been tried before, with little success. In Japan, such businesses, known as “zombie companies,” are blamed for contributing to that country's two decades of economic stagnation. (Schuman 2015)

So we have seen this movie before. As then-under secretary of the Treasury John Taylor (2002) described the Japanese situation during its prolonged 2000–2003 recession, “Borrowers who are not servicing non-performing loans are frequently the owners of assets—property, buildings, capital equipment—that are not being used productively or profitably. Unresolved loans freeze these assets in place and prevent them from moving to more profitable activities. In industries where there is excess capacity, failure to deal with non-performing loans locks in the excess capacity, worsening deflationary pressures.”

Indeed, in the major developed economies, years of unconventional monetary policy, involving ZIRP, QE, and even NIRP, were aimed essentially at pulling future demand to the present, effectively depleting future demand. Such policies may also have contributed to the commodity price plunge. Since the early twentieth century,

The period of extraordinarily low interest rates helped fuel a housing boom and bust, but also a boom and bust in oil production. So many exploration

and production companies were able to obtain credit to drill as many wells as possible over the past decade, with generous financing made possible by an accommodating Fed. ... Without low interest rates, the U.S. oil boom may not have been as huge as it has been, meaning that the bust from too much supply may not have happened either.” (Cunningham 2015)

Years of depleting future demand, while fostering and sustaining overcapacity and overproduction, have resulted in a world now plagued by lowflation and deflation. Thus, in effect, these policy initiatives have likely inhibited production, undermined profits, and discouraged investment. By perpetuating such stimulus, the world’s two largest economies have created a situation where the Fed is compelled to try to stave off the next recession at virtually all costs, with an eye on the potential negative-wealth effect of the associated stock price correction. Their compulsion may be related to the fact that the two largest post–World War II bear markets have occurred around the two twenty-first-century recessions.

### THE LITMUS TEST

Carl Sagan used to say that “extraordinary claims require extraordinary evidence.” In the same spirit, policy makers embarking on Grand Experiments in monetary policy, with potentially far-reaching consequences, had a responsibility to make sure that their assumptions were rock-solid. Yet, as we have shown, there should have been serious doubts about key assumptions underlying this new chapter in central bank policy.

It is remarkable indeed that, more than seven years after the GFC and years of extraordinary policy stimulus, the Fed and other major central banks may be out of ammunition. Again, this is not to question the Fed’s actions *during* the GFC but the repeated attempts to provide unconventional stimulus *after* the economy had been stabilized by 2009 and the U.S. recession had ended. That was the Grand Experiment.

As we have shown, the strength of the revival in U.S. economic activity in the first year following the Great Recession—the year ending June 2010—was basically in line with past patterns. It was when economic growth began to slacken thereafter that the Fed announced the second round of QE in the fall of 2010. This was followed by further rounds of QE in subsequent years when economic growth kept repeatedly disappointing the Fed’s expectations. Yet, as Fed chairman Ben Bernanke acknowledged in one of his last speeches before leaving office, “we have been disappointed in the pace of growth, and we don’t fully understand why” (Bernanke 2013).

What Bernanke does not seem to have understood is that, following the initial year’s recovery, which tends to be stronger after deeper recessions, the business cycle owed us nothing more (Banerji and Achuthan 2015). This is because, after the initial rebound, economic growth tends to converge

toward its long-term trend, and monetary policy can do no more than temporarily borrow demand from the future. Neither the simplified version of the “Zarnowitz rule” nor Friedman’s plucking model, which would make similar predictions about the strength of the rebound, actually applies beyond the first year of the recovery, as ECRI’s research had shown seven years ago (ECRI 2009b). In other words, this was a basic misunderstanding of business cycle dynamics that could have been rectified by a careful scrutiny of the available data before undertaking the Grand Experiment.

Furthermore, the Fed did not recognize the long-term decline in trend growth at the time it launched its Grand Experiment and therefore repeatedly mistook a secular decline in trend growth for cyclical weakness that monetary policy could address. While it has later repeatedly revised down its long-term trend GDP growth estimate—which now stands at 1.9%, after a three-quarter-percentage-point downgrade in less than five years (Federal Open Market Committee 2016)—in the summer of 2008 ECRI was able to isolate this secular pattern from the cyclical ones.

In recent years—as in 2003, when the Fed cut rates to a record low, thereby helping to further inflate the housing bubble—the Fed had trouble distinguishing between the structural and the cyclical. Consequently, it kept using monetary policy to remedy structural issues—an exercise in futility.

Sadly, it is less than a year ago that the Fed seems to have asked the right question about potential output and recessions—“Are we fooling ourselves?”—and answered in the affirmative. As the Federal Reserve’s Martin, Munyon, and Wilson (2015) recently concluded, “We find little support for the view that output rises faster than trend immediately following recessions to close the output gap. . . . Instead, we find that output gaps close importantly through downward revisions to potential output rather than through rapid post-recession growth. The revisions are made slowly (over years).”

Fed Chair Janet Yellen (2016) has now admitted—seven years after the end of the Great Recession—that the “headwinds” impeding economic growth—including “subdued household formation, and meager productivity growth—could persist for some time.” This is a very belated acknowledgment—using the same simple math of labor productivity growth and potential labor force growth adding up to potential GDP growth—of ECRI’s long-held view that trend growth is unlikely to turn up in the foreseeable future.

St. Louis Fed President James Bullard then went even further, citing “a new narrative” to replace the “older narrative [used] since the financial crisis ended [that] has now likely outlived its usefulness.” This new framework contends that the economy is currently in a persistent low-productivity growth regime, but that regime changes cannot be predicted, so “the best that we can do today is to forecast that the current regime will persist” (Bullard 2016). It is regrettable that it has taken policymakers—even those in the vanguard of this change in thinking—so many years to abandon their optimistic assumption that productivity growth will triple from here (Porter 2016) or even quadruple (Mester 2015).

Despairing of the lack of efficacy of monetary policy, policy makers are building the case for massive fiscal stimulus instead. Please recall that, at the 2005 Jackson Hole conference, Summers dismissed the warning from the then-chief economist of the International Monetary Fund (IMF), Raghuram Rajan, about financial development having made the world riskier, as slightly “Luddite” (Lahart 2009). Rajan was proven tragically prescient when the GFC arrived. Now the outgoing governor of the Reserve Bank of India, he recently cautioned governments not to rely too much on fiscal stimulus through cutting taxes or increasing public spending, counseling them to recognize that slower growth was probably a part of aging economies and perhaps the result of low interest rates, which protected inefficient companies from going out of business (Giles 2016).

Yet, a recent IMF report has called for coordinated global fiscal stimulus, warning that, because the “weakening of the global recovery and concerns about the ability of policymakers to provide an adequate and swift policy response have clouded economic prospects... risks to the global economy... have substantially increased” (IMF 2016). Meanwhile, in a private meeting that included economist Paul Krugman, Japanese prime minister Shinzo Abe, Finance Minister Taro Aso, and Bank of Japan governor Haruhiko Kuroda, Aso recalled how World War II had catapulted the U.S. economy out of the Great Depression, and he said they were looking for a similar trigger to make entrepreneurs abandon their “deflationary mindset” and “start making capital investments.” In response, Paul Krugman declared that they were looking for the “fiscal equivalent of war,” given that “we are now in the world of pervasive economic weakness. In many ways, we are all Japan.” Thus, “monetary policy needs help from fiscal and possibly other policies.” In the United States, he noted, major fiscal stimulus was not yet politically feasible, but at least, “we can blunt the push for fiscal consolidation.” Lately, he said, “conventional wisdom [within] the policy community” had been shifting in favor of stimulus, “and it might be possible to move that along,” noting that by year-end it was “significantly possible” that the United States would have a “significantly less obstructionist” legislature (Krugman 2016).

Evidently, looking back to World War II, policy makers are building the case for a “shock and awe” type of fiscal stimulus, in the event of a recessionary threat that finds central banks effectively impotent. Yet, unless such a fiscal shock results in improved demographics or an actual step-up in productivity growth—as the surge of innovation during World War II probably did—overall long-term trend growth cannot improve.

It is worth recalling, in this context, that World War II was about much more than rapid fiscal expansion. It was also an existential threat to nations on both sides of the conflict, creating an environment of urgent necessity that turned out to truly be the mother of invention. The innovations and breakthroughs that occurred due to the war resulted in a decades-long boost to

productivity growth, as well as altered demographics in the form of the post-war baby boom.

In other words, World War II was such a game changer for long-term trend growth not only because of the amount of spending, but also because the state of emergency fostered innovation on the double, as no peacetime circumstances could have. Looking ahead, if fiscal stimulus is only about spending, regardless of its impact on productivity, it can at best borrow growth from the future, following which economic growth is likely to come back down to earth.

In this context, it is worth asking whether there is any example of massive peacetime fiscal spending that has actually worked to create sustainable growth. The episode that comes to mind is China's post-GFC investment boom, during which trillions of dollars were expended over a relatively short time span to counter the ravages of the GFC. For a developing economy like China, the infrastructure that was created as a result was surely productivity-enhancing. Yet, the "If you build it, they will come" philosophy also resulted in such massive overcapacity that, as discussed, it was followed by a global deflationary bust, whose symptoms still reverberate.

In sum, it is evident that, confused by their inability to distinguish between structural and cyclical forces, policy makers launched Grand Experiments in the wake of the GFC that could do nothing to address a structural problem, and this has left them out of ammunition. Because "we are all Japan" now, they may be preparing—in anticipation of a fresh recessionary shock—to launch massive fiscal stimulus. In light of our investigations, the lesson to be learned from failed policy experiments is that, no matter the proposed policy, it should be subject to a litmus test. Ultimately, only policies that genuinely address the challenges of demographics and productivity have a chance to succeed.

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