

## The “Subpar” Recovery: A Long-standing Misunderstanding

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*Is the slow growth recovery and expansion a break from past patterns? These two economists argue that it is consistent with a long-term trend toward slower growth that started in the 1970s. It is not likely that rapid economic growth will return anytime soon.*

It is a truth universally acknowledged—or nearly so—that the United States has experienced a subpar recovery from the Great Recession. As Federal Reserve Chairman Ben Bernanke (2013) put it at his farewell press conference, “We have been disappointed in the pace of growth, and we don’t fully understand why.”

Regardless, partisans—including economists—have jumped into the fray with ready explanations, finger-pointing, and quick fixes, ranging from lower taxes or regulations to greater monetary or fiscal stimulus. Meanwhile, frustrated policymakers, misunderstanding what a “normal” recovery looks like, have kept acting on the premise that the economy can achieve “escape velocity,” given the right policies. Considering the stakes, it is worth examining whether the historical evidence is consistent with that assumption.

Doing so reveals that the widely-derided pace of U.S. growth since the Great Recession actually lines up fairly well with historical recovery patterns. In other words, given past evidence, nothing more by way of growth is owed to us today by the business cycle.

How can this be? As we discussed in an earlier paper (Banerji and Achuthan 2012), the Economic Cycle Research Institute (ECRI) in the summer of 2008—prior to the Lehman collapse—“uncovered a long-term pattern of falling growth in GDP and jobs during successive expansions,” going back at least to the 1970s. It is this secular pattern of falling trend growth—rooted in demographics and productivity growth—that helps

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explain why the revival from the Great Recession has undershot popular expectations that the economy should have regained its prerecession heights in short order.

### THE HISTORICAL EVIDENCE: BOUNCING LOWER EACH TIME

Students of the business cycle have long known that “the strength of a recovery depends on the depth of the preceding recession,” as we recalled in the immediate aftermath of the 2001 recession (ECRI 2002). In particular, we showed that

the percent change in the first year of an expansion in ECRI’s U.S. Coincident Index (USCI), designed to move in step with the U.S. economy, is linked to the lowest reading in the USCI growth rate during the prior recession . . . . Thus a sharp downturn in the USCI is typically followed by a strong recovery in the first year of the subsequent expansion. (ECRI 2002, 2)

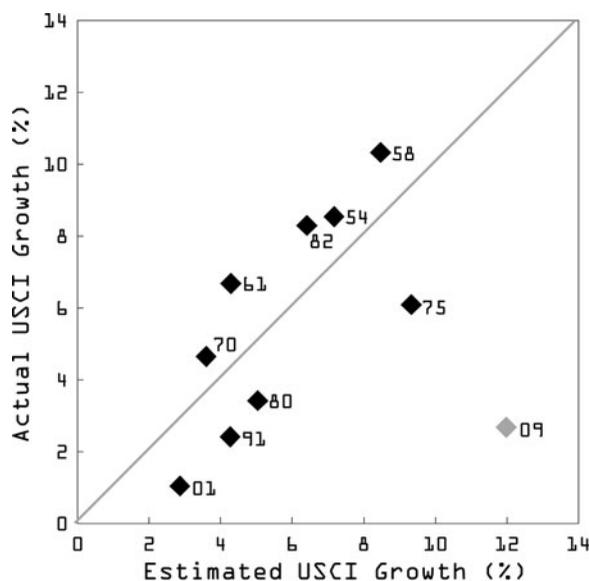
Given the mildness of the 2001 contraction, we correctly predicted at the time that the rebound from the 2001 recession was “likely to be relatively modest.”

We use the USCI, rather than GDP, as the measure of the depth of a downturn and the strength of the ensuing recovery. This is because the USCI is a more comprehensive measure of economic activity, subsuming the key indicators of output (including GDP), employment, income, and sales that are used to determine official U.S. recession dates.

Seven years later, we revisited that analysis, following the end-of-recession forecast announced by ECRI in April 2009. Extending our earlier research, we concluded that “the recession is set to end by summer, but the revival may not be as rapid as the depth of this downturn would otherwise suggest” (ECRI 2009, 3). As we explained

The depth of the recession explains a little under half of the variance in the strength of the recovery. After all, the further a rubber ball drops before hitting the floor, the higher it tends to bounce. Yet, we also see that for any given depth of recession, the rebounds in the first year of the subsequent recoveries have become progressively weaker since World War II. It is almost as if, with the passage of years, the rubber ball has been gradually losing its elasticity. (ECRI 2009, 3)

How did we justify this conclusion? First, a straightforward Ordinary Least Squares (OLS) regression using the recession depth as the only predictor of the strength of the first year of recovery explains almost half the variance in the latter. Figure 1 shows the percent increase in the USCI in the first year of the recovery, estimated on the basis of this regression, on the horizontal axis. The actual outcome is shown on the vertical axis. Therefore, all perfect forecasts should fall on the 45-degree line in the figure.



Source: ECRI

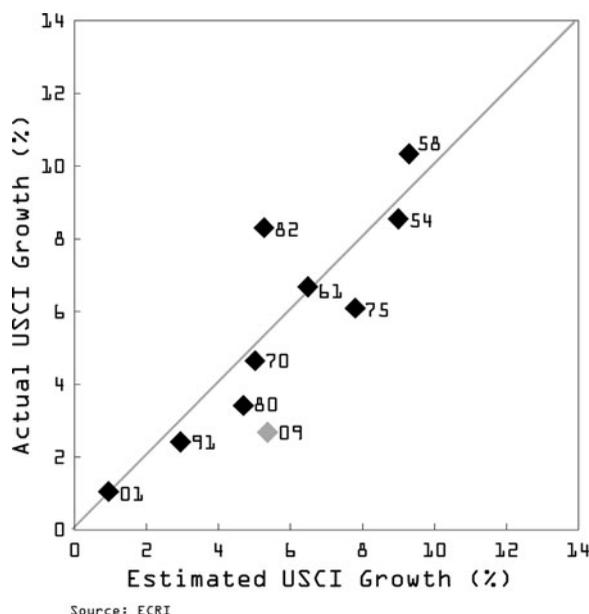
**Figure 1** First Year of Recovery, One Independent Variable.

The regression is based on the nine U.S. recessions in the half-century from the early 1950s to the early 2000s. The years in which each recession ended are marked next to the relevant data point. We excluded the 1948–49 recession from this analysis because of the extraordinary magnitude of the rebound in economic activity following the first recession after World War II, making it a clear outlier. While the sample size is admittedly small, this is otherwise a statistically significant relationship, with an adjusted R-square of 0.47.

Accordingly, we see from Figure 1 that most of the data points used to estimate the regression lie reasonably close to the 45-degree line. But the strength of the revival following the Great Recession (marked “09”) did fall far short of what this simple relationship would have predicted. This large downward deviation encapsulates the popular disenchantment with the strength of the recovery.

However, based on our research at the time, we expected a more restrained rebound, as noted above, but even that forecast pertained only to the first year of recovery, through mid-2010. In contrast, by early 2010, most had begun expecting a strong V-shaped recovery from the Great Recession, given the growing popularity of the view that severe recessions were naturally followed by strong revivals. Indeed, in June 2010 the Obama administration announced the “recovery summer” (The White House 2010).

But ECRI’s less upbeat forecast was based in part on a regression that included an additional explanatory variable: the number of years elapsed since World War II, acting as a proxy for long-term structural changes—the “less bouncy ball” alluded to in the forecast. This regression explained almost three-quarters of the variance in the strength of recovery (adjusted R-square



**Figure 2** First Year of Recovery, Two Independent Variables.

of 0.73), reflecting a much tighter fit, as shown in Figure 2. In fact, the actual rebound (data point marked “09”) was a bit softer than predicted by this relationship, but not radically so.

Of course, when the “recovery summer” was announced, growth had already peaked and started slowing, creating a sense of letdown. Indeed, the disappointment with the recovery has extended far beyond its first year, with many observers—year after year—expecting to see a sizable payback for the recessionary downturn. Were such expectations warranted?

To address this question, we performed an OLS regression using only the depth of recession as the explanatory variable, with the dependent variable being the annualized rate of growth of the USCI during the remainder of the economic expansion *following* the first year of recovery. In other words, in the aftermath of deeper recessions, has the pace of growth been stronger during the expansion period following the initial year of recovery?

In this case, we used the same data points as in the two earlier regressions, except for the recovery following the 1980 recession, which lasted exactly one year. Thus, there was no remaining period of expansion following that first year. As such, the analysis was based on only eight data points.

This proved not to be a statistically significant relationship, consistent with an adjusted R-square of  $-0.07$ . The near-zero correlation is evident from Figure 3, showing the “actual vs. estimate” data points scattered relatively far away from the 45-degree line, for the most part.

The fourth and final OLS regression, which includes the number of years elapsed since World War II as an additional explanatory variable, improved

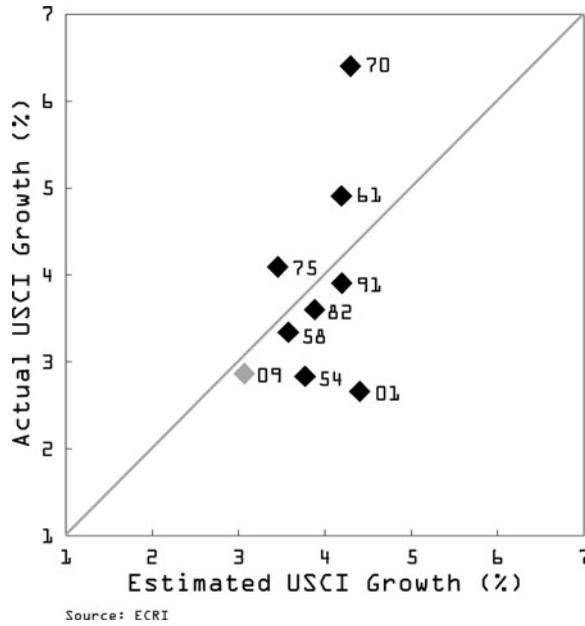


Figure 3 Remainder of Expansion, One Independent Variable.

the fit slightly. However, this still did not yield a statistically significant relationship, and the adjusted R-square was  $-0.06$ . This is consistent with Figure 4, where many of the data points are somewhat distant from the

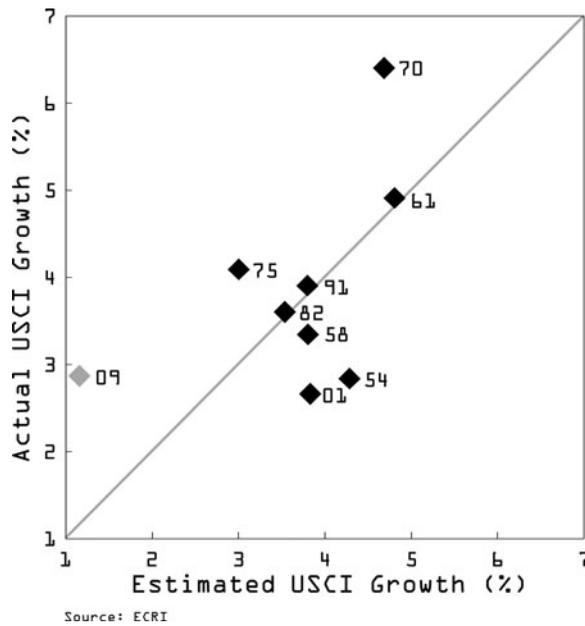


Figure 4 Remainder of Expansion, Two Independent Variables.

45-degree line, meaning that the actual values were quite different from the estimated values.

But a closer scrutiny of Figures 3 and 4 suggests something that is counterintuitive in the context of the ongoing popular discourse. While the relationships are not statistically significant, the estimated pace of growth for the remainder of the expansion following the first year (shown along the horizontal axes) is the weakest for the recovery following the *deepest* recession of all, the Great Recession (marked “09”).

The implication is that there is really no reliable relationship between the depth of a recession and the subsequent pace of growth after the first year of recovery. Given that the depth of recession, as an explanatory variable, has the “wrong” sign, if anything, the deeper the recession, the weaker the recovery after the first year. Such a tendency fits with the weak recovery from the Great Recession. Indeed, according to Figure 4, the recovery since mid-2010 has outperformed the estimate based on the historical pattern.

### THE TELEPHONE GAME

In sum, we find that the depth of a recession correlates to the initial strength of the rebound *only in the first year of recovery*, as students of the business cycle have long understood. In addition, our research shows that the pace of revival during the rest of the expansion has no significant relationship with the depth of the prior recession. Finally, the tendency to bounce back in the first year has itself diminished over the decades.

With regard to the recession severity’s correlation with the initial strength of the subsequent revival—a relationship dubbed the “Zarnowitz rule” by economist Michael Mussa (2009) in honor of the professor who had first mentioned it to him—the key phrase is “initial strength.” But that critical distinction was quickly dropped, and any nuanced understanding of business cycle patterns was rapidly lost. As in the children’s game of “telephone,” the “rule” morphed in short order to a simplistic proposition, soon considered a truism: “Big recessions are followed by robust recoveries” (Lazear 2012).

Perhaps because mainstream economists think in terms of recessionary shocks driving GDP below potential, followed by a recovery back to that potential, they expected a relatively rapid catch-up to that potential following the Great Recession. Yet, as we have shown, such an understanding is clearly not supported by the historical evidence.

That evidence shows that the vigor of the initial year of recovery is indeed correlated to the depth of the recession, but those snapbacks have been weakening over time, analogous to a bouncing rubber ball: the bigger its drop before hitting the floor, the higher it tends to bounce, but with the passage of years, the ball has been gradually losing its elasticity. This pattern—along with a suggestion in the data of a weakening in the

economy’s *subsequent* pace of growth—is in line with the decline in secular trend growth that is key to our forecast of the major developed economies’ entering “the yo-yo years” (Banerji and Achuthan 2012).

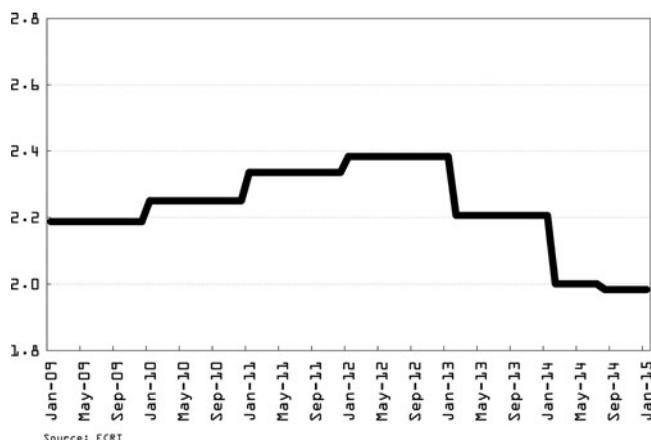
### REALITY CHECK

As discussed in that paper, trend growth has been stair-stepping down in successive economic expansions for decades. The key reasons include demographics and productivity growth. These drive potential GDP growth, which depends on the number of hours worked and output per hour of work, that is, labor productivity.

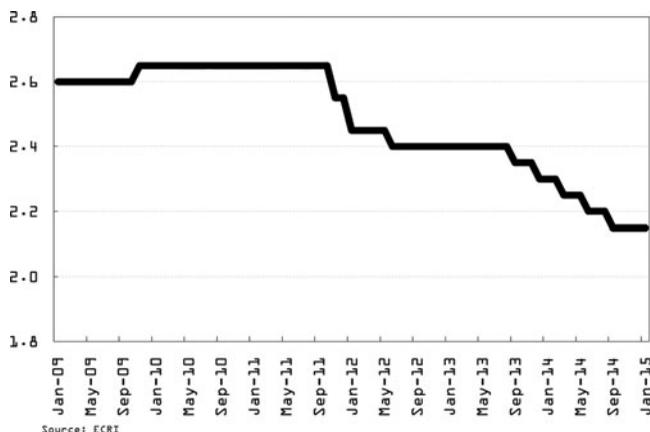
Focusing on hours worked, Fernald (2014) cites the Congressional Budget Office (CBO 2014): “The CBO projects that potential non-farm business hours by 2024 will slow to 0.64 percent per year, from 1.4 percent per year from 1949 through 2007. Labor quality exacerbates this demographic slowdown, since new labor-market cohorts are no more educated than retiring cohorts.”

It is notable that the CBO’s forecast of long-term (ten-year-ahead) GDP growth has been dropping lately, being cut again in 2014 to just under 2 percent per year (Figure 5). Meanwhile, the Federal Open Market Committee (FOMC) members’ longer-run (five to six years ahead) projections of GDP growth have been cut several times since late 2011 (FOMC 2014). The median of the central tendency of these FOMC projections, which stood at 2.65 percent in the fall of 2011, had been reduced to 2.15 percent by the fall of 2014 (Figure 6). We suspect that neither the CBO nor the FOMC is finished with the progressive reductions to their long-run growth forecasts.

As Blinder (2014) reminds us, U.S. labor productivity growth plummeted to 1.4 percent in 1973–95—“the worst in recent history.” But after popping up to 2.6 percent in 1995–2010, “so far in this decade [since 2010], productivity has grown at only half its rate during the productivity slowdown period—our



**Figure 5** CBO Estimates of Long-Term Potential Real GDP Growth (%).



**Figure 6** FOMC Estimates of Long-Term Real GDP Growth (%).

previous standard of poor performance.” He notes that “if productivity crawls along at just 0.7% a year ... potential GDP will grow less than 1% a year.”

Please recall that, during its “lost decades” starting in the early 1990s, Japanese real GDP growth has averaged 1 percent per year. When trend growth falls so close to zero, economic growth can more easily slip below zero during cyclical slowdowns, making recessions more frequent. This is the essence of ECRI’s “yo-yo years” thesis (Banerji and Achuthan 2012), suggesting that growth in the major developed economies is increasingly likely to yo-yo above and below zero, causing them to fall into recessions more often. Not surprisingly, Japan has experienced seven recessions since the early 1990s, four of them since 2008.

Over the past year or so, the reality of slackening U.S. trend growth and its potential consequences has begun to draw in some prominent economists. Last fall, Paul Krugman (2014) wrote: “Can we stop writing articles wondering whether Europe or the United States might have a Japanese-type lost decade? At this point the question should be whether there is any realistic possibility that we won’t.” Less than a year earlier, Lawrence Summers (2013) had raised the notion that the economy may have entered a period of “secular stagnation.”

In the summer of 2014, Fed Chairman Janet Yellen, in a question-and-answer session with International Monetary Fund managing director Christine Lagarde, acknowledged that

whether it’s because of slower productivity growth or headwinds from the financial crisis or demographic trends ... equilibrium real interest rates may be at a lower level than we’ve seen historically. And that’s one of the factors that ... will be important in determining how frequently a negative shock could push economies against the zero lower bound ... I think we will have to worry about these episodes more often.

Subsequently, the September 2014 Fed minutes noted that “the recent Survey of Primary Dealers placed considerable odds on the federal funds rate

returning to the zero lower bound during the two years following the initial increase in that rate” (Board of Governors 2014). These are effectively restatements of our longstanding “yo-yo years” thesis.

Thanks to demographics that are essentially set in stone for many years to come, the sharply slower growth in the potential number of hours worked, as projected by the CBO, is pretty much a given. Meanwhile, as Fed Vice Chairman Stanley Fischer (2014) said recently, labor productivity growth is “way, way down,” and the United States needs to “face the problem.” Yet, the prevailing attitude among economists is to assume that productivity growth will revert to its decades-old historical pace—essentially tripling or quadrupling its growth rate since the beginning of this decade. Only if that assumption is correct would the United States see sustained GDP growth near 3 percent in the years ahead.

The findings in this paper should act as a cautionary note when formulating policy prescriptions. Our key conclusion is that the pace of recovery from the Great Recession is not “subpar,” as routinely alleged, but basically consistent with the long-term slowing in trend growth we first noted prior to the Lehman crisis. In light of that understanding, policy choices based on expectations that the attainment of “escape velocity” was contingent merely on the adoption of the “right” policies should be checked against the objective historical benchmarks underscored by our work.

This is relevant to major developed economies’ central bank policy, including Fed policy, which for years has aimed to pull demand forward from the future by lowering borrowing costs. The question is, to the extent that such policies succeed, how much demand would be left for the future when long-term potential growth has declined so much? If, given the decline in long-term trend growth, the rates of growth aimed for by policymakers cannot be long sustained, it is worth weighing the likely efficacy of those efforts against any unintended consequences.

Of course, the reality of declining trend growth in developed economies around the world has far broader policy ramifications. These range from budget deficit projections to the need to build safety nets for the most vulnerable when growth is slow and unequal.

This is no counsel of despair, based on an implicit assumption that productivity growth can never pick up again, even in the face of long-term technological advances that most of us can only dimly apprehend. However, it is simply prudent to clearly recognize that, for the foreseeable future, developed countries’ economic growth rates, as well as revivals from recessions, are likely to be more subdued than generally expected.

#### FOR FURTHER READING

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