How Scared Should Macroeconomists Be of the Future?

J. Bradford DeLong

Professor of Economics, U.C. Berkeley
Research Associate, NBER

January 16, 2010 DRAFT

The Great Moderation

Olivier Coibion and Yuriy Gorodnichenko, drawing on Coibion and Gorodnichenko (2009) (NBER Working Paper 14621, forthcoming *American Economic Review*), have a nice piece in VoxEU, "Does the Great Recession really mean the end of the Great Moderation?", making the case that the "Great Moderation" that began around 1985 is not, in fact, over—but instead that:

> the current recession, while clearly severe by historical standards, does not imply a return to the levels of volatility observed in the 1970s. Most likely, the current episode will be remembered as a violent storm in otherwise temperate times...

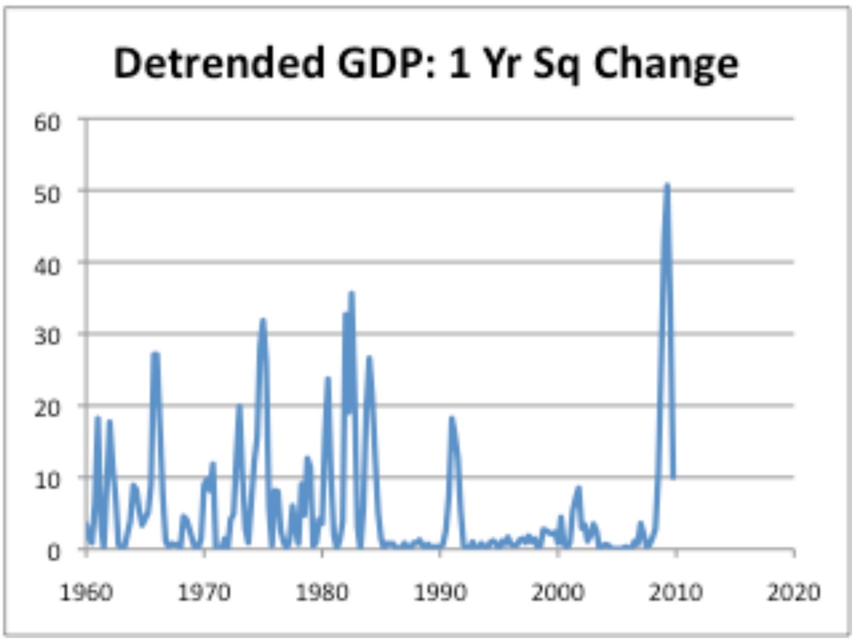
I think that the right answer to this question is not "no" but "maybe"—or, rather, that the right answer to that question depends on whether you think that it is volatility in real GDP growth or volatility in employment changes that ought to be primary in our thinking about the business cycle.

If GDP is our focus, Coibion and Gorodnichenko look to be correct.

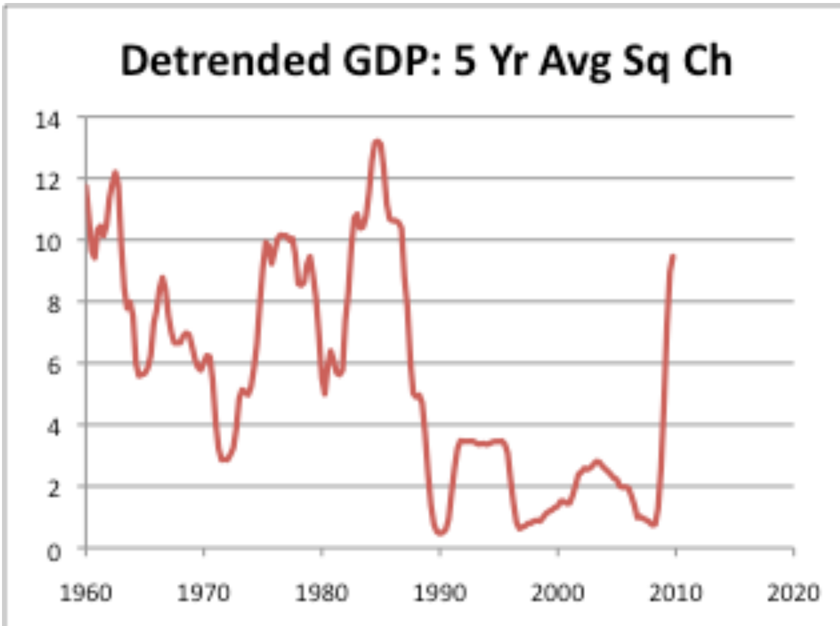
If employment is our focus, they may not be.

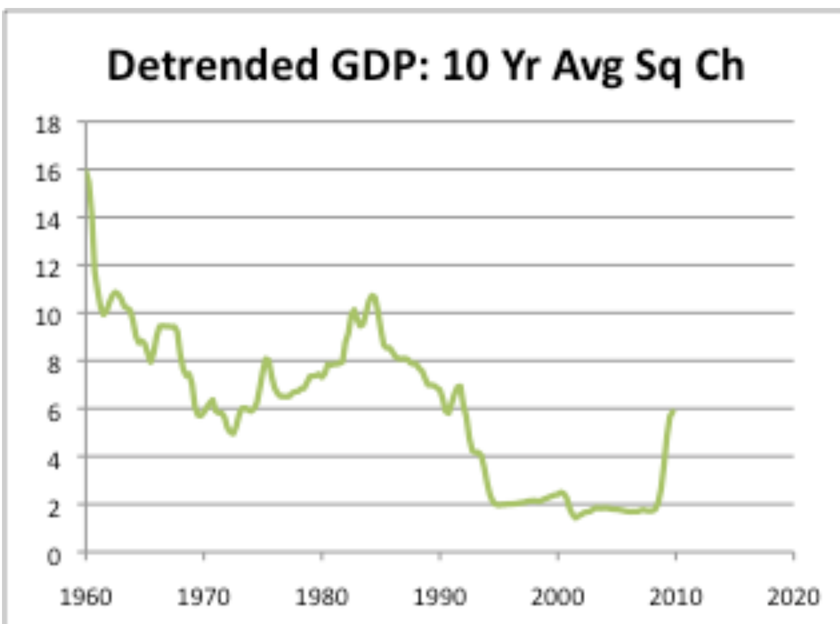
Real GDP Growth Volatility

The way I like to look at it starts by taking four-quarter changes in real GDP, detrended by average growth, and squaring them to get:



After 1985, the variance of four-quarter detrended real GDP changes is dominated by the current episode—with the early 1990s and the early 2000s recessions playing distinctly secondary roles, and no noticeable variability outside. Before 1985 the big recessions and recoverie—1974-6 and 1979-84—contribute the most variance, but there are lots of other peaks almost as large, and almost all the time there are noticeable jitters in real GDP growth. And the current spike in GDP volatility is the tallest since the Korean War. When we smooth this graph out—taking five or ten year moving-averages of the variance—we get the standard "Great Moderation" graphs.

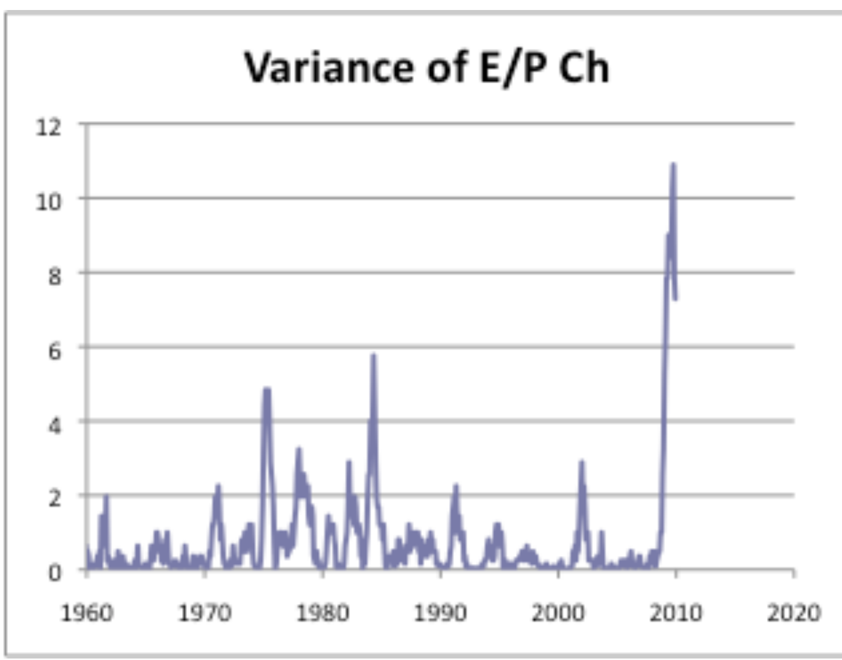

Detrended GDP: 5 Yr Avg Sq Ch
14
12
10
8
6
4
2
0
1960
1970
1980
1990
2000
2010
2020


Detrended GDP: 10 Yr Avg Sq Ch
18
16
14
12
10
8
6
4
2
0
1960
1970
1980
1990
2000
2010
2020

The “Great Moderation” is indeed the most obvious and significant feature of the graph, with the second most obvious being the recent rise in volatility. But it is a fact that the spike of last year is now receding. The fact that the spike of last year is now receding, the expectation that we will return to what has been normal over the past twenty years at least most of the time, and the hope that we won't see similar such spikes again are the three things that drive Coibion and Gorodnichenko's relative confidence, or perhaps hope, that the “Great Moderation” is still alive (albeit not terribly well).

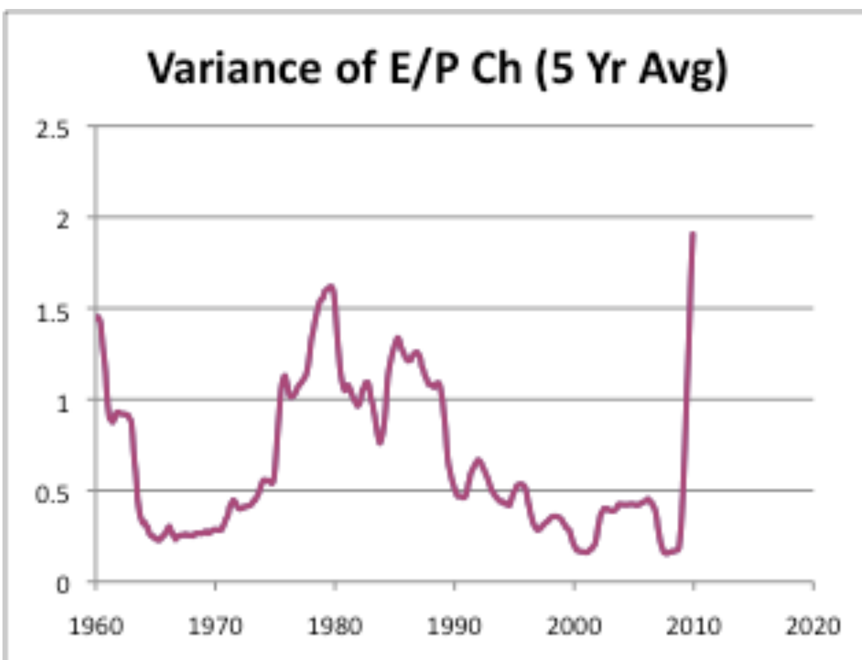
Employment-to-Population Ratio Change Volatility

However, things look different if we move from output space to employment space, and take a look at squared twelve-month changes in the employment to population ratio:

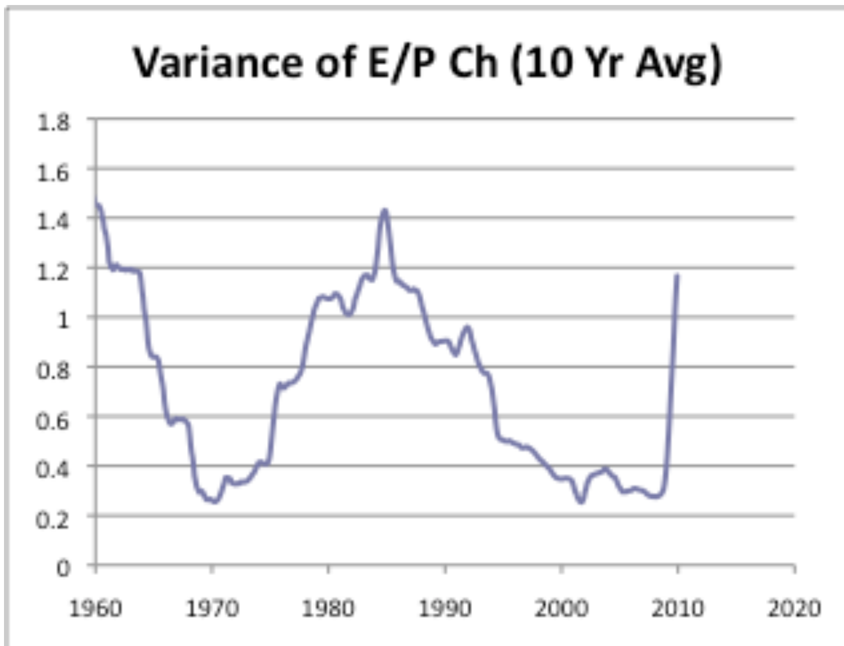


The NBER recessions-plus-v-shaped-recoveries stand out on the employment-to-population ratio graph in a way that they do not on the real GDP graph—which is at least one piece of evidence that our worries about *volatility* are more closely tied to employment and unemployment than to production (at least if you think that the NBER Business Cycle Dating Committee knows what it is doing at some level), how strong a piece of evidence I do not know.

The current spike in employment-to-population ratio volatility is well outside what we would otherwise have expected since the Korean War. It dwarfs the other post-1960 volatility spikes in a way that the GDP volatility spike does not.



The analogues of the "Great Moderation" graphs for the employment-to-population ratio show a recent return to more than pre-moderation levels of volatility (in the case of five year averages) and to pre-moderation levels (in the case of ten year averages)—and even in the absence of additional macroeconomic shocks the moving average volatility is going to stay at its elevated level for five or ten years, respectively.



The size of the recent spike creates another worry. Plotting five- or ten-year moving averages of volatility and taking changes in that level as some sort of indicator of structural change was unexceptionable up until 2007. It seemed to capture a real difference in the wiggliness of the time series, and to be a good way to present the reason that we economists spoke of a "Great Moderation."

But if episodes like 2008-2009 are in the post-1985 stochastic process—as they surely are, since we are in the middle of one—there is now little warrant for taking a five-year or a ten-year moving average and thinking that it tells us much about the structure of volatility. And our time-series statistical methods are likely to be outmatched when they are confronted with a series that, post-1985, has little more than one huge honking spike to it.

So I am more fearful of the future (and of the present) than are Coibion and Gorodnichenko...

References

Rich Clarida, Jordi Galí, and Mark Gertler (2000), “Monetary Policy Rules and Macroeconomic Stability: Evidence and Some Theory.” *Quarterly Journal of Economics*, 115(1): 147-180.

Thomas Lubik and Frank Schorfheide (2004), “Testing for Indeterminacy: An Application to U.S. Monetary Policy.” *American Economic Review*, 94(1): 190-217.

Jean Boivin and Marc Giannoni (2006), “Has Monetary Policy Become More Effective?” *Review of Economics and Statistics*, 88(3): 445-462.

Olivier Coibion and Yuriy Gorodnichenko (2009), "Does the Great Recession Really Mean the End of the Great Moderation?" *VoxEU* (Jan 16) <http://www.voxeu.org/index.php?q=node/4496>.

Olivier Coibion and Yuriy Gorodnichenko (2009), “Monetary Policy, Trend Inflation and the Great Moderation: An Alternative Interpretation,” *American Economic Review* <http://www.nber.org/papers/w14621>.

Data

< http://delong.typepad.com/20100116-great-moderation-ep.xls>
<http://delong.typepad.com/20100116-great-moderation-gdp.xls>
< http://delong.typepad.com/sdj/2010/01/how-scared-of-the-future-should-macroeconomists-be.html>

January 16, 2010: 935 words