

The Role of Policy in the Great Recession and the Weak Recovery[†]

By JOHN B. TAYLOR*

It's been nearly five years since the recession of 2007–2009 ended. By all accounts, this very severe recession was followed by an extremely disappointing recovery. Economic growth during the recovery has been far too slow to raise the employment-to-population ratio from the low levels to which it fell during the recession, or to close materially the gap between real GDP and potential GDP, in marked contrast to the rapid recovery from the previous severe recession in the early 1980s or from earlier severe recessions in US history. When you include both the periods of the recession and the slow recovery, economic instability has more than tripled according to a common measure of performance used by macroeconomists: the standard deviation of the percentage gap between real GDP and potential GDP rose from 1½ percent during 1984–2006 to 5½ percent during 2007–2012 (Taylor 2013). In this paper I consider the role of economic policy in this poor economic performance.

I. The Shift in Policy

In evaluating the role of policy it is important to consider actions taken before, during, and after the financial panic in the fall of 2008. A careful look at the full decade from five years before to five years after the panic reveals that there was a significant shift in policy away from what worked reasonably well in the decades before. Broadly speaking, monetary policy, regulatory policy, and fiscal policy each became more discretionary, more interventionist, and less predictable in the years leading up to the

crisis, and for this reason policy should at least be on the list of possible causes of the crisis and severity of the recession. Ironically, the legacy of the crisis and the recession has been to continue and even double down on such policies by giving a rationale to “throw out the rule book” and do unusual things. Thus the shift in policy, which began about ten years ago, largely continued, and it has now also become a likely cause of the slow recovery.

A. Monetary Policy

According to empirical research I conducted before the panic, a significant shift in monetary policy started during the years from 2003 to 2005 when the Federal Reserve held interest rates unusually low compared to the policy of the previous two decades. There are many ways to see this deviation. The federal funds rate was well below the recommendations of the Taylor rule, which described monetary policy well in the 1980s and 1990s. Interest rates were also very low according to vector auto-regression equations estimated with data from the 1980s and 1990s, as shown by Jarocinski and Smets (2008). Or you can simply compare the interest rate decisions at different points in time. For example, the federal funds rate was 1 percent in 2003 when the inflation rate was about 2 percent, and the economy was operating pretty close to normal. Compare that policy action with the type of monetary policy the Fed used in the 1990s, which it had been following consistently since the early 1980s. In 1997, for example, the federal funds rate was 5.5 percent when the inflation rate was 2 percent, with the economy again near normal operating levels. Clearly the 2003 policy represented a shift to a much different policy compared with the 1980s and 1990s. The Fed's federal funds rate was below the inflation rate, completely unlike the policy in the previous two decades.

* Department of Economics, Stanford University, Landau Economics Building, 579 Serra Mall, Stanford, CA 94305-6072 (e-mail: JohnBTaylor@Stanford.edu). I thank Martin Baily, Nick Boom, and Ian Wright for useful comments.

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So there was an explicit discretionary deviation from the Fed's monetary policy reaction function, which the Fed rationalized in part by its deflationary concerns. However, based on economic theories from time inconsistency to the Lucas critique, as well as on historical experiences from the 1970s to the 1990s, such a deviation from rules-based policy would be expected to have adverse consequences.

In fact, empirical research shows it exacerbated the housing boom, encouraged risk taking, and eventually led to the housing bust, defaults and the rise in toxic assets on the balance sheets of many financial institutions. The demand for housing depends in part on rates on long-term fixed rate mortgages which can be held down by low short term interest rates and their expectation. But even if the effect on long rates is small, short rates have direct effects on the demand for housing in part because low interest rates make low teaser rates on adjustable rate mortgages (ARM) possible; it was not a coincidence that ARM originations more than doubled during this period. As demand for homes skyrocketed, housing price inflation jumped from around 7 percent per year from 2002–2003 to nearly 14 percent per year in 2004–2005 before plummeting in 2006–2007.

Bordo and Landon-Lane (2013) found effects of such policies on housing over a longer span of US history, and similar effects have been found in other countries: Ahrend (2010) showed that the European Central Bank chose an interest rate which was too low for Greece, Ireland, and Spain, causing the excesses in the housing markets in those countries. While housing price inflation was most severe, overall US inflation was also rising during these years with the inflation rate for the GDP price index doubling from 1.7 percent to 3.4 percent per year. The low interest rate policy also led to excessive risk taking, as empirical research by Bekaert, Hoerova, and Lo Duca (2013) has shown.

US monetary policy continued in a highly discretionary mode after the panic of 2008. This is best demonstrated by examining reserve balances held by commercial banks at Federal Reserve Banks, which is a measure of liquidity provided by the Fed. Reserve balances expanded sharply during the panic of the fall of 2008; it was a classic lender-of-last-resort policy, including the swaps with foreign central banks and loans to US financial institutions. A similar

though smaller increase in reserves occurred following the 9/11 attacks of 2001 when the Fed provided liquidity to the financial markets and then removed it quickly when markets calmed down as classic lender of resort policy would recommend. Similarly, when the panic subsided in late 2008 the liquidity facilities also began to wind down. It is for these actions that the Fed is rightly given good marks.

However, the liquidity increases didn't stop there. Rather the Fed began an unprecedented expansion of liquidity to finance its quantitative easing programs (QE1, QE2, and QE3) of large-scale purchases of mortgage-backed securities and long-term Treasury bonds. The magnitudes have been completely unprecedented: reserve balances increased from around \$10 billion before the crisis to over \$2,400 billion today. With these large magnitudes, along with frequent changes in the Fed's approach to quantitative easing and little consensus on the impact of the purchases, there is no way that such a policy could be characterized as predictable or rules-based. And while the Fed's intentions were to stimulate the economy, there is little evidence that quantitative easing has helped either economic growth or job growth. Growth has been less with quantitative easing than the Fed originally forecast, and in the year since QE3 gained full steam at the end of 2012, interest rates on long term Treasuries and mortgage backed securities have risen rather than fallen. After good lender of last resort policies during the panic of 2008, the Fed has doubled down since 2009 on its interventionist policies.

B. Regulatory Policy and the Bailouts

There were also shifts in regulatory policy in the years preceding the crisis. While there were hundreds of regulators and supervisors from the New York Fed on the premises of the large financial institutions, they evidently allowed these institutions to deviate from existing safety and soundness rules and thereby take on excessive risks. The main problem was not insufficient regulations, but a failure to enforce existing regulations.

The regulators of Fannie Mae and Freddie Mac clearly allowed these institutions to go well beyond prudent risk and capital levels, as documented by Morgenson and Rosner (2011), who attribute the problem to regulatory capture.

Moreover, federal regulatory policy forced private sector lenders to make risky investments through affordable-housing requirements as described by Wallison (2011). The decision of the Securities and Exchange Commission in April 2004 to relax the capital ratio rules for the very large broker-investment banks, including Bear Stearns and Lehman, likely raised overall risks by allowing those institutions to do their own risk weighting, though there is debate about the impact and more research is needed.

When interest rate spreads in the money market eventually began to widen, likely reflecting the resulting impairment of bank balance sheets, the Fed at first misdiagnosed the widening as a pure liquidity problem. It treated the problem by pouring liquidity into the interbank market through the Term Auction Facility established in 2007. When risk spreads did not respond and financial institutions began to falter, the bailouts began.

The largely ad hoc bailout policy, which trampled over existing bankruptcy laws, added yet another deviation from predictable rules-based policy, creating more uncertainty. When the Fed bailed out Bear Stearns' creditors in March 2008, investors assumed Lehman's creditors would also be bailed. With no framework other than an implicit support for a rescue of creditors, it was a big surprise when they were not bailed out.

The policy uncertainty continued as the TARP was rolled out and then radically altered after it was passed into law. From the time that the TARP was announced on September 19, 2008 until a new TARP was put in place on October 13, equity prices plummeted in the United States and other countries. The S&P 500 was higher on September 19—following a week of trading after the Lehman Brothers bankruptcy—than it was on September 12, the Friday before the bankruptcy, an indication that policy actions taken after September 19 worsened the problem. Indeed, the stock market crash started at the time TARP was being rolled out, perhaps reflecting the inadequacy of a three-page request for legislation, its initial rejection, and the flawed nature of the original plan to buy toxic assets.

In the years since the crisis and the recession, there have been many changes on the regulatory front, including passage of the Dodd-Frank Act. While this act did some good things, including merging the Office of Thrift Supervision into the

Office of the Comptroller of the Currency, it has created hundreds of new rules many of which have not been written into the regulations yet. Even with the Orderly Liquidation Authority in Title II of Dodd-Frank, the bailout problem remains. Creditors are likely to benefit more under Title II than they would under bankruptcy, so some reform of the bankruptcy code is still needed. Without higher levels of capital or subordinated debt, the incentive to bail out large, complex financial institutions remains. The danger with such a bailout mentality is not only the moral hazard, but also the uncertainty that the policy continues to cause.

The Dodd-Frank Act is not the only example of increased regulatory interventions in recent years. The number of federal workers involved in regulatory activities has increased. Even excluding the large increase in Transportation Security Administration workers, federal regulatory workers rose by 30 percent from 2006 to 2012 compared with a 15 percent decline from 1979 to 1985 when the economy recovered rapidly from the early 1980s recession. The Affordable Care Act is also increasing regulations which may already have impacted the pace of the recovery.

C. The Return of Discretionary Fiscal Policy

Fiscal policy also moved in a more discretionary direction during this period as I have researched and written about elsewhere (Taylor 2009, 2011). In the stimulus package passed in early 2008, for example, temporary payments were sent to individuals which increased aggregate personal disposable income, but did little to jump-start aggregate consumption, much as would be expected from the permanent income or life cycle models.

Many more discretionary fiscal policy actions were taken following the crisis. There was the large stimulus package in 2009 which also did little to stimulate aggregate consumption or government purchases, and thereby real GDP regardless of the size of the multiplier, as shown by Cogan et al. (2010) and Cogan and Taylor (2012). Some argue that a larger or better designed stimulus package would have worked better, but experience from stimulus packages in the 1970s raises doubts about the feasibility in practice. Another example is the Cash for Clunkers program of 2009. It was supposed to

jump-start the economy and help increase and sustain economic growth. There was a small temporary effect on consumption, but it diminished quickly and was offset by declines a few months later as shown by Mian and Sufi (2012). It's hard to see how such a policy could work to get the economy to recover at a faster pace.

While the Cash for Clunkers was small compared to the other fiscal stimulus packages in the past few years, it exemplifies a common problem with all temporary fiscal actions. At best they provide a short term boost to the economy without promoting a faster-growing sustainable recovery. And when they end, they leave the economy with more debt and with the recovery growing at least as slowly as it was before they were enacted. Without some offsetting fiscal consolidation the growing debt itself becomes a drag on the economy. To the extent that the two year payroll tax holiday of 2011 and 2012 boosted the economy, it too had this same transitory effect. Such short term policies also take policymakers' eyes off the enactment of ever important long run growth policies, such as tax and entitlement reform.

II. Alternative Views

While there is considerable evidence that our economic troubles in recent years have been associated with, and indeed caused by, a shift in economic policy, there are alternative explanations for the poor economic performance.

A. *Secular Decline in the Equilibrium Real Interest Rate*

One explanation—recently outlined by Summers (2013) and sometimes dubbed the secular stagnation hypothesis—holds that the equilibrium real interest rate has declined below zero, perhaps to negative 2 percent or negative 3 percent. The decline is supposed to have occurred around ten years ago due to an increase in desired saving and a lack of investment opportunities. The low equilibrium rate remains today and is likely to remain into the future.

The low equilibrium rate means that firms require a very low actual real interest rate, perhaps below negative 2 or 3 percent, in order to have the incentive to invest. However, short term interest rates are already at the zero lower bound and with expected inflation also low, real interest

rates cannot be reduced enough to stimulate investment. As a result the economy stagnates. The Fed's only possible policy responses are such actions as quantitative easing and forward guidance, or promises to hold short term interest rates at zero long into the future. These unconventional monetary policies create distortions and harmful side effects, much as in the discussion of monetary policy above, but the ultimate cause is the secular decline in the equilibrium interest rate rather than policy itself.

One problem with this explanation is that there should have been a lack of demand and high unemployment in the years from 2003–2005 even with the very low interest rates and lax regulatory policy. But instead the economy boomed. The unemployment rate got to 4.4 percent, residential investment demand skyrocketed, housing price inflation jumped, and overall inflation was rising as described above.

Another problem with the secular stagnation view is that the assumption of an excess of desired saving appears to be inconsistent with the facts. In my 2008 paper on the crisis, I reported evidence that global saving rates were low, not high. According to the IMF, saving rates had fallen going into the crisis and the United States was running a current account deficit which means national saving was below investment.

B. *The Weak-Recoveries-Follow-Deep-Recessions Hypothesis*

Another widely discussed view is that the recovery has been weak because the recession and the financial crisis were severe. This alternative view is based in part on the book by Reinhart and Rogoff (2009) which examined financial crises in many countries over many years.

But there are also a number of problems with this view, at least if one defines recovery in the conventional sense as the period following the trough of a recession. Bordo and Haubrich (2012) and Papell and Prodan (2012) found that the hypothesis does not hold when you look at American history. There were eight recoveries in US recorded business cycle history that followed recessions associated with financial crises. These were recoveries from the recessions that started in 1882, 1893, 1907, 1913, 1929, 1973, 1981, and 1990. The average growth rate in the 8 quarters starting with the trough of the

previous recession averaged about 6 percent per year in these recoveries. The growth rate over a comparable period in the current recovery is about 2 percent per year. So the weak recovery from the deep recession of 2007–2009 is a clear exception from US experience.

Part of the difference between the findings of Reinhart and Rogoff (2009) and Bordo and Haubrich (2012) can be traced to differences in how one defines recovery. When you define recovery in the classic way as starting from the trough, the current recovery is clearly relatively weak compared to recoveries from past deep recessions with financial crises. But if you include the downturn in the definition, say by measuring from the previous peak as Reinhart and Rogoff (2009) do, you get a different answer because recession and recovery are mixed together.

III. Concluding Remarks

The explanation for the great recession and the delayed recovery laid out here fits the facts well. There is a clear empirical association between the poor economic performance in the past ten years and the shift in economic policy toward more discretion, more intervention, and away from predictable rule-like decision making. Macroeconomic theory that stresses the importance of time consistency, the Lucas critique, the predictability of policy, and the benefits of certain simple rules predicts that such a shift in policy would result in poorer performance. So does historical experience from the 1970s to the 1990s in the United States and other countries. So does empirical research showing that in a number of cases specific policy actions, such as holding rates too low for too long, had adverse consequences. Moreover, the “policy is the problem” view stands up well compared to views that there is a secular stagnation due to a new negative equilibrium real interest rate or that weak recoveries normally follow deep recessions.

But the very existence of alternative economic views implies that more empirical and theoretical research is needed. The stakes are high. If the “policy is the problem” view proves to be correct, then restoring strong sustainable growth requires changing policy to what has been shown to work in the past: a more predictable rules-based monetary policy, a less interventionist

regulatory policy, a long-term reform-oriented fiscal policy, and a strong aversion to bailouts.

REFERENCES

AQ 1

- Ahrend, Rudiger.** 2010. “Monetary Ease: A Factor behind Financial Crises? Some Evidence from OECD Countries.” *Economics: The Open Access, Open Assessment E-Journal* 4: 1–30. <http://dx.doi.org/10.5018/economics-ejournal.ja.2010-12>.
- Bekaert, Geert, Marie Hoerova, and Marco Lo Duca.** 2013. “Risk, Uncertainty and Monetary Policy.” European Central Bank Working Paper 1565.
- Bordo, Michael D., and Joseph G. Haubrich.** 2012. “Deep Recessions, Fast Recoveries, and Financial Crises: Evidence from the American Record.” National Bureau of Economic Research Working Paper 18194.
- Bordo, Michael D., and John Landon-Lane.** 2013. “Does Expansionary Monetary Policy Cause Asset Price Booms: Some Historical and Empirical Evidence.” National Bureau of Economic Research Working Paper 19585.
- Cogan, John F., and John B. Taylor.** 2012. “What the Government Purchases Multiplier Actually Multiplied in the 2009 Stimulus Package.” In *Government Policies and the Delayed Economic Recovery*, edited by Lee E. Ohanian, John B. Taylor, and Ian J. Wright, 85–114. Stanford, CA: Hoover Institution Press.
- Cogan, John F., Tobias Cwik, John B. Taylor, and Volker Wieland.** 2010. “New Keynesian versus Old Keynesian Government Spending Multipliers.” *Journal of Economic Dynamics and Control* 34 (3): 281–95.
- Jarocinski, Marek, and Frank R. Smets.** 2008. “House Prices and the Stance of Monetary Policy.” *Federal Reserve Bank of St. Louis Review* 90 (4): 339–65.
- Kahn, George A.** 2010. “Taylor Rule Deviations and Financial Imbalances.” *Federal Reserve Bank of Kansas City Economic Review* 95 (2): 63–99.
- Mian, Atif, and Amir Sufi.** 2012. “The Effects of Fiscal Stimulus: Evidence from the 2009 Cash for Clunkers Program.” *Quarterly Journal of Economics* 127 (3): 1107–42.
- Morgenson, Gretchen, and Joshua Rosner.** 2011. *Reckless Endangerment: How Outsized*

- Ambition, Greed, and Corruption Led to Economic Armageddon*. New York: Times Books.
- Papell, David H., and Ruxandra Prodan.** 2012. "The Statistical Behavior of GDP after Financial Crises and Severe Recessions." *B.E. Journal of Macroeconomics* 12 (3): 1–31.
- Reinhart, Carmen M., and Kenneth S. Rogoff.** 2009. *This Time is Different: Eight Centuries of Financial Folly*. Princeton, NJ: Princeton University Press.
- Summers, Lawrence.** 2013. "Causes and Effects of the Financial Crisis." *Presentation at a Joint Conference of the Brookings Institution and the Hoover Institution*. Washington, DC, October 1, 2013.
- Taylor, John B.** 2007. "Housing and Monetary Policy." In *Housing, Housing Finance, and Monetary Policy: A Symposium Sponsored by the Federal Reserve Bank of Kansas City*, 463–76. Federal Reserve Bank of Kansas City: Jackson Hole, Wyoming.
- Taylor, John B.** 2008. "The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong." In *A Festschrift in Honour of David Dodge's Contributions to Canadian Public Policy: 2008 Conference*. Proceedings of a conference held by the Bank of Canada, November 2008.
- Taylor, John B.** 2009. "The Lack of an Empirical Rationale for a Revival of Discretionary Fiscal Policy." *American Economic Review* 99 (2): 550–55.
- Taylor, John B.** 2011. "An Empirical Analysis of the Revival of Fiscal Activism in the 2000s." *Journal of Economic Literature* 49 (3): 686–702.
- Taylor, John B.** 2013. "The Effectiveness of Central Bank Independence vs. Policy Rules." *Business Economics* 48 (3): 155–62.
- Wallison, Peter J.** 2011. "Three Narratives About the Financial Crisis." *Cato Journal* 31 (3): 535–49.

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