Refocusing the Fed

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Limitations: Real or Imaginary?

With their federal funds rate target up against its lower bound of zero, Federal Reserve officials have been led -- some would say forced -- to experiment with a variety of new approaches to policymaking. Chairman Bernanke (2012) mentioned several of these novel strategies in his comments at Jackson Hole this past August; the minutes from the September meeting of the Federal Open Market Committee (2012) mention them again. They go by the names "maturity extension," "forward guidance," and "large-scale asset purchases."

To be honest, the whole situation seems really, really complicated. But does it have to be? Or might the apparent limitations of more conventional policy measures reflect, not so much the constraints imposed by the zero lower bound on nominal interest rates, but instead the inadequacies of common intellectual framework that places far too much emphasis on the behavior of interest rates to begin with? Might it be more helpful, in these circumstance, to refocus on other variables that have always played key roles, but have been neglected in popular discussions for far to long? To see, let's remember how monetary policy actually works!

Interest Rates and Money in the Measurement of Monetary Policy

Under ordinary circumstances, like those that prevailed in the halcyon days pre-2008, the Federal Reserve eased monetary policy by lowering its target for the federal funds rate and tightened monetary policy by raising its target for the federal funds rate. That is why most economists and financial market participants, even now, associate Federal Reserve policy most closely with changes in interest rates.

But it is important to recall that even during normal times, the Fed does not control market rates of interest like the federal funds rate by fiat. Instead, Federal Reserve officials must act to bring about their desired outcomes, in which the actual federal funds rate moves in line with changes in their target. These monetary policy actions take the form of open market purchases and sales of US Treasury securities that change the dollar volume of reserves supplied to the banking system. That is, first and foremost, what a modern central bank does, as the one and only agent in the economy with the authority to change the supply of bank reserves.
And so it is the dollar quantity of reserves supplied that the Fed really controls. In particular, to lower the funds rate, the Fed conducts open market purchases of US Treasury securities that add reserves to the banking system. And to raise the funds rate, the Fed conducts open market sales of previously-purchased Treasury securities so as to drain reserves from the banking system. These changes in reserves then transmit themselves, through the optimizing behavior of banks and the non-bank public, into movements in the broader monetary aggregates and, from there, in the economy-wide price level and all other nominal magnitudes.

Thus, during normal times, interest rates and money offer two ways of looking at exactly the same thing. One can view a monetary policy easing as either a decline in short-term interest rates or as an expansionary open market operation that increases reserves and the money supply. And one can view a monetary policy tightening as either an increase in short-term interest rates or as a contractionary open market operation that decreases, or at least slows down the growth rates of, reserves and the money supply.

Under more extreme circumstance, however, these tight links between interest rates and money may break down. An economy experiencing chronically high inflation, for instance, will very likely have high nominal interest as well, as these become necessary to compensate investors for the loss in purchasing power they would otherwise experience while holding nominally-denominated bonds. But those high interest rates certainly don't signal that monetary policy is too tight! To the contrary, rapid growth in bank reserves and the broader monetary aggregates will correctly reveal that the inflation itself is being driven by an inappropriately expansionary monetary policy. At the opposite extreme, Milton Friedman and Anna Schwartz (1963) observe that when deflationary expectations take hold, as they did in the United States during the Great Depression, nominal interest rates can be very low. But these low interest rates do not mean that monetary policy is too loose. Instead, declining growth rates or even levels of reserves and, especially, the broader monetary aggregates will correctly indicate that monetary policy is much too tight.

Those who keep these considerations in mind will then feel puzzled that new terms like "quantitative easing" are even needed to describe some of the Federal Reserve's policy actions over the recent period when the funds rate has been stuck at zero. For those observers will be quick to remind us that in both normal and extreme times, all monetary policy easings are "quantitative," in that they are associated with -- and, in fact, originate in -- expansionary open market operations that increase reserves and the money supply.

Instead, for these observers, it is movements in interest rates that sometimes appear counterintuitive, misleading, or hard to interpret. As a specific example of this, consider the 10-year US Treasury bond rate, which now stands at roughly 1.75 percent. What, exactly, does this reading tell us? That the returns to capital available elsewhere in the economy have fallen so low that investors are willing to accept negative returns over the entire course of the next decade if, in fact, the FOMC succeeds in keeping inflation close to its target of 2 percent per year? That, perhaps instead, there is a good chance that inflation will come in significantly below that 2 percent target over the same ten-year horizon? That the demand for safe and highly-liquid assets has expanded so enormously against the backdrop of continuing and extreme global macroeconomic uncertainty that it has outstripped by far even the substantial increase in the supply of those same assets? Or that government intervention has so badly distorted markets for those securities that their prices no longer reveal much of anything about macroeconomic fundamentals? These are tough questions that underscore the need for more research on the links between government policies, macroeconomic uncertainty, and long-term interest rates. But they also serve quite usefully to remind us that today, as in other episodes from other times and other countries, it can very difficult to discern from interest rates alone what effects monetary policy is having on the economy.

Yet there is no need to abandon hope, with nothing to do but fret that the situation is simply beyond our understanding. As a matter of fact, as soon as one recognizes that, whatever interest rates may or may not be doing, all monetary policy actions begin with open market operations that change the supply of reserves, then the broader monetary aggregates, and then the price level and other key nominal variables, each of the three new initiatives mentioned above -- maturity extension, forward guidance, and large-scale asset purchases -- immediately becomes much easier to interpret and evaluate. Let's see how!

Maturity Extension

First on our list of new ideas is "maturity extension," which refers to how the Federal Reserve has recently been buying long-term US Treasury bonds and simultaneously selling short-term Treasury securities, in effect swapping one asset for another on its balance sheet without changing the supply of reserves. That last part -- "without changing the supply of reserves" -- provides the key to our understanding.

Perhaps the Fed's maturity extension program has produced changes in long-term interest rates that are helping the US economy recover. But even if one concedes on that point, there remains a more basic problem: since this program does not involve a change in the supply of reserves, it cannot be logically classified as part of the Federal Reserve's monetary policy strategy. One might ask, at risk of sounding too blunt: if the current mix of short versus long-term Treasury securities in the hands on the public is suboptimal, why can't the US Treasury fix this problem itself, more directly, by altering the maturity structure of its newly-issued debt? And one might also ask, at risk of sounding naive: with interest rates so low, wouldn't it make more sense for the Treasury to float even more long-term debt, so as to lock in for the benefit of all American taxpayers these historically low costs of borrowing?

These questions, too, are important ones that deserve further attention. But they can be sidestepped if one's narrower goal is to understand recent US monetary policy, since asset trades that do not involve open market operations and that therefore require the Fed to act more like a private financial intermediary than a true central bank cannot really be considered part of a well-defined monetary policy strategy in the first place.

Forward Guidance

Much of the motivation for and logic behind the Federal Reserve's attempts to provide "forward guidance" comes from the New Keynesian model of the monetary business cycle. Exposited in influential textbooks like Michael Woodford's (2003) and Jordi Gali's (2008), the New Keynesian model is one that underlies some of the best and most ambitious research analyzing and evaluating monetary policies and their effects that has been conducted both inside and outside the Fed over the last 15 years or so.

As emphasized by Gauti Eggertsson and Michael Woodford (2003), the New Keynesian model is also one in which the thrust of monetary policy gets summarized entirely by the current and expected future path of a single variable: the short-term nominal interest rate. Once that path is pinned down, no other information is needed to determine whether monetary policy is, on balance, expansionary, contractionary, or neutral. This insight justifies quite nicely the FOMC's recent efforts to call special attention to the horizon over which its members expect the funds rate to remain at or near zero, as these announcements almost certainly help shape private expectations for the future path of the funds rate. The logic provided by the theory is, in fact, so strong that it nearly becomes a tautology: if one really believe that the stance of monetary policy is determined entirely by the current and expected future path for the funds rate, then it follows immediately that once the current short-term rate hits its lower bound of zero, the only way to provide further monetary stimulus is to make promises about lower future short-term rates.

Furthermore, while Federal Reserve statements providing forward guidance have mentioned only short-term interest rates, they can be read as having implications for open market operations and the supply of reserves in the future as well. In particular, although these details are typically relegated to the background in most New Keynesian analyses, my own recent work (Ireland 2012) extends the basic model to account for the activities of a private banking system that demands reserves, accepts deposits, and makes loans. This extended model highlights that even under New Keynesian assumptions, movements in the federal funds rate are associated with -- some might even say caused by -- open market operations that add or drain reserves from the banking system, give rise to subsequent movements in the broader monetary aggregates, and lead ultimately to changes in the price level and all other nominal variables. Viewed from this broader perspective, forward guidance regarding the future path of the funds rate also signals the Fed's intentions for future open market operations and the future path for the money supply. Unlike maturity extension, therefore, forward guidance appears as a coherent part of a genuine monetary policy strategy.

But while the logic behind forward guidance certainly seems strong, one might still worry that, when it comes to a policy initiative that relies exclusively on promises for the future, the devil is in the details. Even as it argues, most forcefully and persuasively, in support of stronger and sharper forward guidance, for instance, Michael Woodford's (2012) own paper from the Jackson Hole symposium must concede that central banks around the world have had mixed success in using their words alone to influence expectations of future monetary policy actions. Reflecting on this, one might wonder, as well, if the New Keynesian view that the short-term interest rate is all that matters is excessively narrow. To cite just one alternative: a long traditional of monetarist thought, summarized by Allan Meltzer (1995), asserts that the channels through which monetary policy actions impact on the economy are far too varied and complex to summarize using a single variable like the short-term interest rate. Efforts to encapsulate these monetarist ideas into a modern macroeconomic model that might compete more directly with the New Keynesian framework has thus far yielded mixed results -- here again, therefore, we have an important topic for future research! Yet, consistent with the monetarist view, Eric Leeper and Jennifer Roush (2003) and my own paper with Michael Belongia (Ireland and Belongia 2012c) show that even in the most recent data, strong statistical information about the stance of monetary policy appears in the monetary aggregates that is not in contained in interest rates alone. But, above all, one might ask: why try so hard to finesse things, by making ever more audacious promises about future open market operations, when it remains perfectly feasible, even with short-term interest rates stuck at zero, to conduct those same open market operations today, for all to see as well as to believe?

Large-Scale Asset Purchases

And despite their fancy name, that is all "large-scale asset purchases" ought to represent: open market purchases of US government securities, intended to increase the supply of reserves to the banking system, increase the broader monetary aggregates, and thereby influence the trajectory of the price level and other key nominal variables in the US economy. Of the Fed's three new initiatives, therefore, this one holds the most appeal and promise for those who are inclined to think about monetary policy in terms of open market operations, reserves, the money supply, and nominal aggregates to begin with. There are, nonetheless, two aspects of this program that may raise legitimate concerns.

The first cause for worry involves the assets that are currently being purchased: mortgage-backed securities issued by Fannie Mae and Freddie Mac, as opposed to longer-term US Treasury bonds. To an extent, this might be a distinction without a difference, since absent any concrete plan to release these agencies from conservatorship, there would also appear to be no reason to consider their liabilities as anything separate from those of the US Treasury itself. Nevertheless, simply recognizing that ambiguities regarding the legal status of US government agency debt may have played a role in driving the pernicious dynamics that led to the financial crisis of 2007 and 2008 ought to be enough to suggest that a more prudent implementation of this policy initiative would confine the asset purchases to direct liabilities of the US Treasury alone. Once again, any benefits of reducing the supply of mortgage-backed agency debt relative to the supply of Treasury securities would be more naturally secured through initiatives taken by the Treasury itself, perhaps upon instruction from the US Congress and President and with, of course, the full support and trust of the American people.

A second cause for concern stems from the name itself: "large-scale asset purchases." With fiscal pressures mounting, so have worries that the Federal Reserve might, at some point in the future, have to resort to inflationary finance to relieve those pressures. How would one describe what the Fed would be doing under those unlikely, but unhappy, circumstances? Making "large-scale asset purchases," would pretty much sum it up! But current Federal Reserve policy is certainly not intended to inflate away the public debt. Calling this program what it is -- a program of "open market operations" -- would be just as accurate and would also make clear that Federal Reserve officials hope, expect, and indeed must together with all Americans insist that the difficult decisions required to balance the budget be made by the US Congress, reflecting the wishes of all Americans, and not by our central bank, which must instead concentrate its efforts on stabilizing nominal prices.

Indeed, quite unlike a program of "large-scale asset purchases," a program of "conducting open market operations" naturally involves both open market purchases made when nominal variables are growing too slowly and open market sales when nominal variables overshoot and begin to grow too fast. No special "exit strategy" is required! As emphasized by Belongia and Ireland (2012b), a rule for "conducting open market operations to stabilize nominal aggregates," is a robust and enduring rule, since it can be followed in all circumstances, to prevent inflation and deflation, regardless of what interest rates may be doing and regardless of whatever else may be happening in our economy and society.

Refocusing on Nominal Variables

But what would this policy strategy of "conducting open market operations to stabilize nominal variables" actually entail? It would certainly allow the Fed to communicate its objectives and constraints in a simpler and more articulate way. But what else would have to change?

To answer these last questions, consider figure 1, which displays the recent behavior of nominal GDP in the United States. This graph, like all of the others to be described below, transforms the raw data series by showing year-over-year growth rates; this transformation smooths out very high-frequency noise while still highlighting the short and medium-term fluctuations that will likely be of most concern to FOMC members. In this case, the picture reveals a clear pattern.

Nominal GDP, which averaged about 5 percent growth per year from 1990 through 2007, fell quite sharply during the recession of 2008 and 2009. It has stabilized since then, but with growth at the slower rate of only 4 percent per year. To the extent that FOMC officials feel that a return to the higher, 5 percent growth rate is called for, they should conduct open market operations that work towards accomplishing that goal by expanding the supply of reserves.

At their January 2012 meeting, however, FOMC officials chose to express their long-run objectives in terms of a target for inflation, not for nominal GDP growth. More specifically, they chose a 2 percent target for inflation, as measured by changes in the price index for the personal consumption expenditures component of total GDP. Accordingly, figure 2 plots this measure of inflation, both excluding and including the volatile food and energy components. The top panel shows that, excluding food and energy, this price index has grown, since the end of the recession, at a rate that has fallen consistently below the 2 percent target. The bottom panel reveals that including food and energy makes the measure of inflation higher, on average; nevertheless, for more than a year now, even that measure of inflation has come in below 2 percent. To the extent that we are to take the 2 percent inflation target seriously, therefore, these readings suggest that further easing, appropriately conceived of and implemented through open market purchases of US Treasury securities that expand the supply of reserves, are needed to bring key nominal variables back towards their desired paths.

Of course, one might worry that "long and variable lags" in the effects of monetary policy actions might make further stimulus of this kind unnecessary or imprudent, given the dramatic extent to which the Fed has already increased the dollar volume of reserves supplied to the banking system since the onset of the financial crisis. Citing these lags, Milton Friedman (1968) expresses a strong preference for building a monetary policy strategy that aims to stabilize prices around procedures that attempt, before that, to avoid sharp fluctuations in the growth of the broader monetary aggregates.

Because different monetary aggregates sometimes behave differently, however, figure 3 plots six of them. The graphs in the left-hand column show growth rates for the Federal Reserve Board's official M1 and M2 aggregates as well as for the Federal Reserve Bank of St. Louis' MZM ("money zero maturity") aggregate, which subtracts small CDs while adding institutional money market funds to obtain a measure of all funds that are immediately available for spending. William Barnett (1980, 2012) and Belongia and Ireland (2012a) sharply criticize the logic behind the construction of these "simple-sum" measures of the money supply, since each merely adds together the dollar volume outstanding of their very different components, without making any attempt to weight those components differently, according to the flows of monetary services they provide. Accordingly, the graphs in the right-hand column present the more theoretically-appealing Divisia monetary services indices prepared and described by Richard Anderson and Barry Jones (2011) for the same three levels of aggregation.

Strikingly, all six measures of broad money growth show clear and worrisome signs of slowdown in recent months, echoing similar declines that may have partly choked off the nascent economic recovery in 2009 and 2010. To the extent that one believes that these measures of money contain information about the thrust of monetary policy that cannot be found in interest rates alone, the graphs in this last figure provide further justification for open market purchases that expand the supply of reserves and aim to reserve these recent declines.

All this considered, it seems that the Fed might accomplish so much more by simply trying to accomplish so much less. It could abandon its maturity extension initiative altogether, leaving decisions about the maturity structure of the federal debt to be made by officials from the US Treasury. It could similarly abandon its purchases of mortgage-backed agency securities, on the grounds that swaps of US Treasury bonds for agency debt ought to be undertaken, if at all, by the US Treasury and with the explicit authorization of the US Congress and in careful consultation with the American people.

The Fed could either augment or abandon altogether the forward guidance it has offered regarding the future path of the funds rate by emphasizing, instead, the commitment that the FOMC has already made to its 2 percent inflation target. After all, unlike a path for the funds rate, which will necessarily adjust as changes in macroeconomic conditions warrant, the 2 percent inflation target represents an unconditional promise. As a matter of fact, the Fed can deliver 2 percent inflation over a period of years and decades, stretching out into the foreseeable future, come rain or shine, come hell or high water. How? It is simple: by conducting the appropriate set of open market operations to stabilize the growth of nominal variables.

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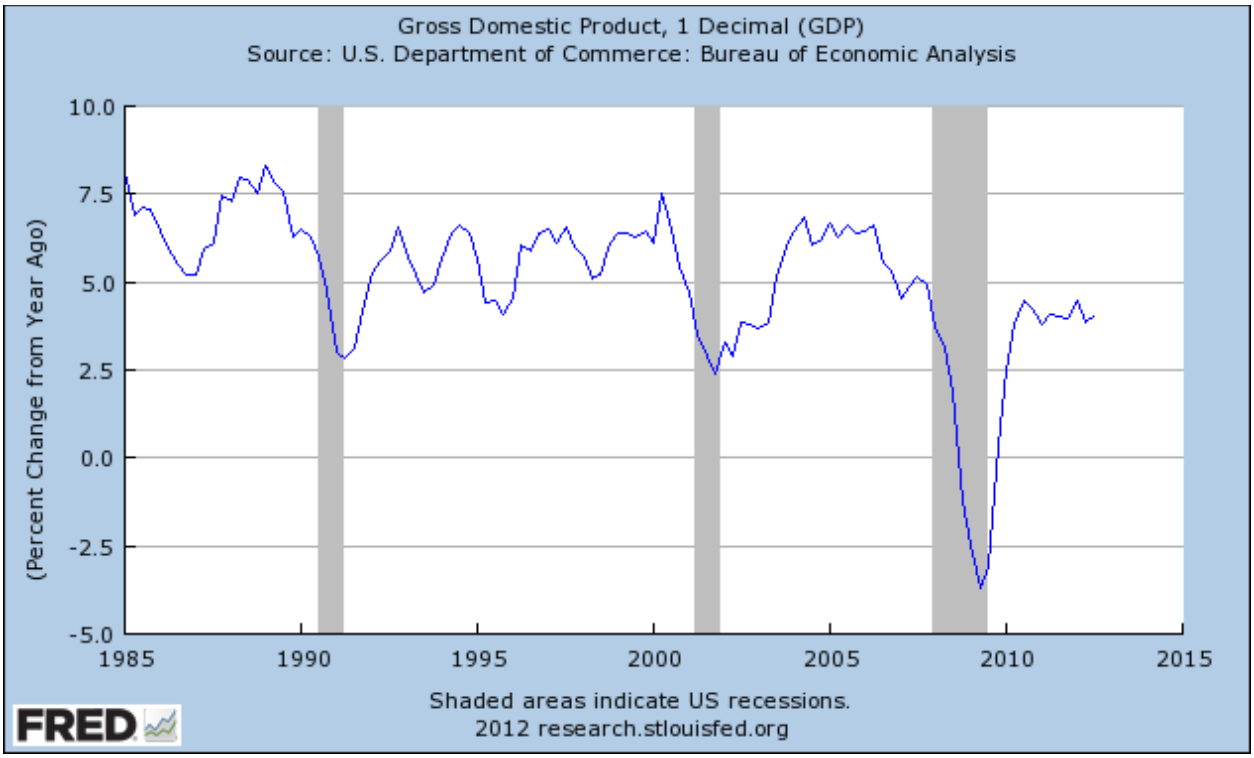
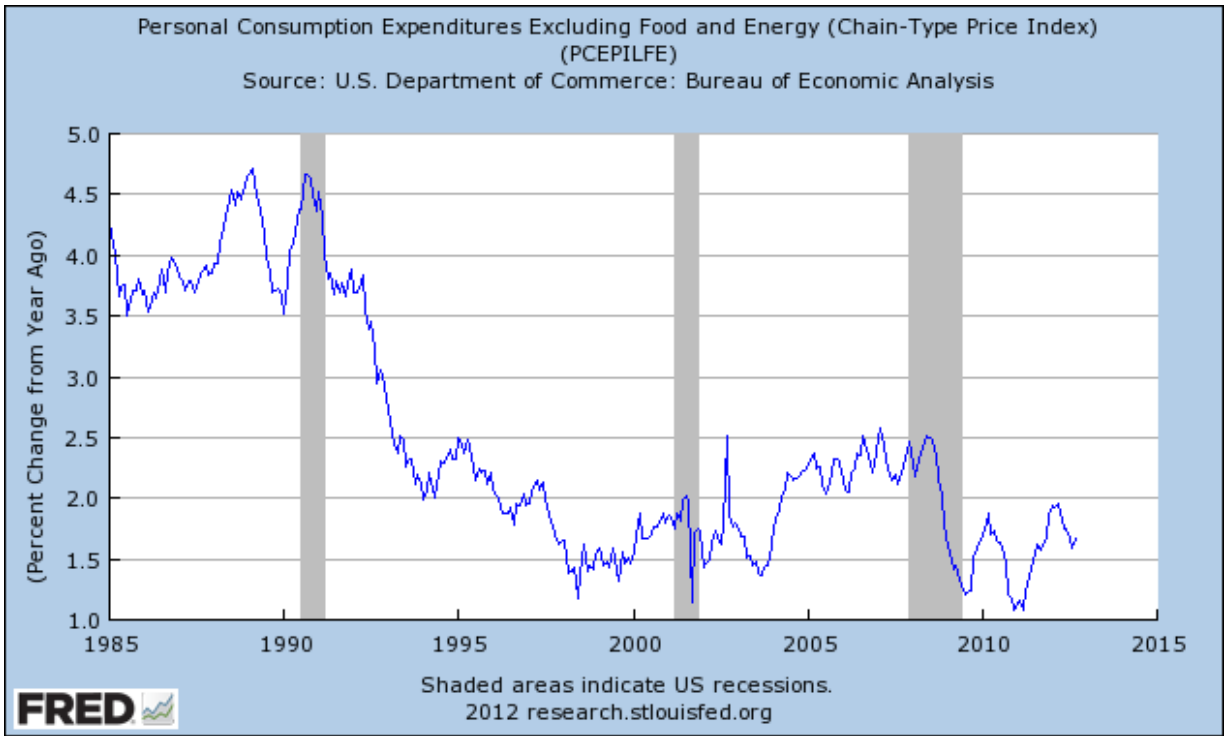


Figure 1. Nominal GDP Growth, Year-Over-Year, 1985-2012.



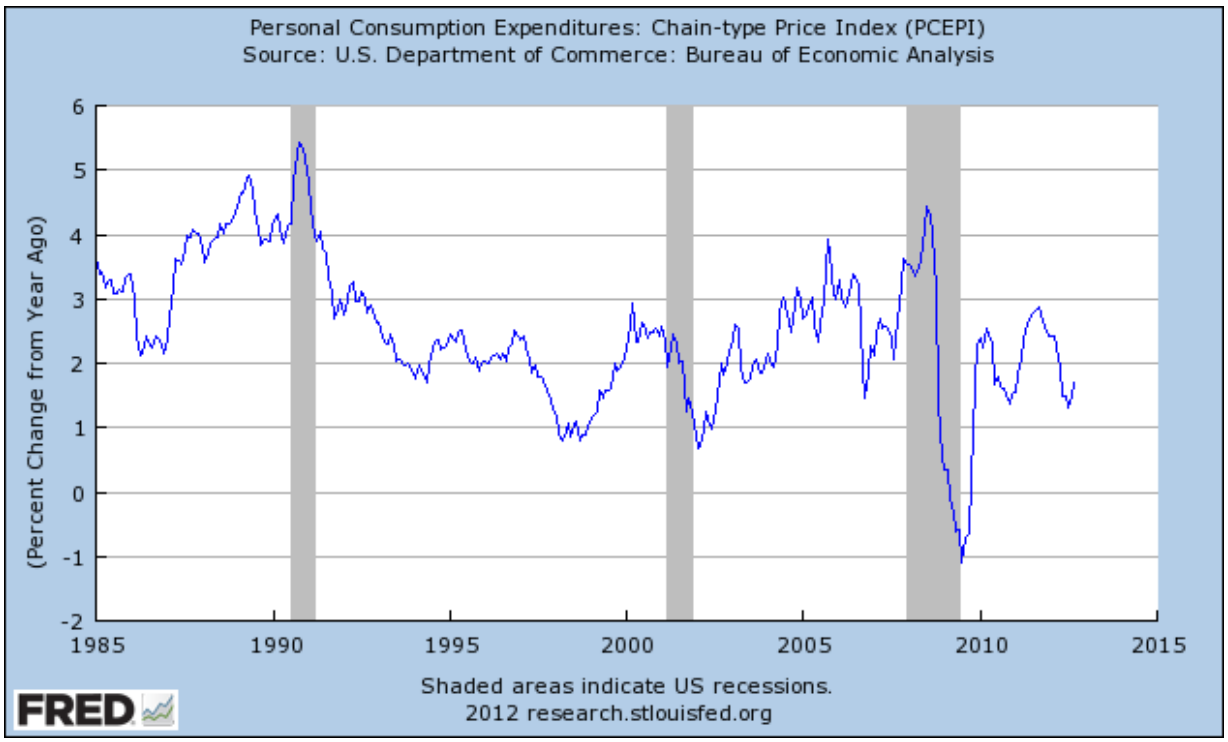


Figure 2. Inflation, 1985-2012. As measured by year-over-year changes in the price index for the personal consumption expenditure component of total GDP, excluding (top panel) and including (bottom panel) food and energy.

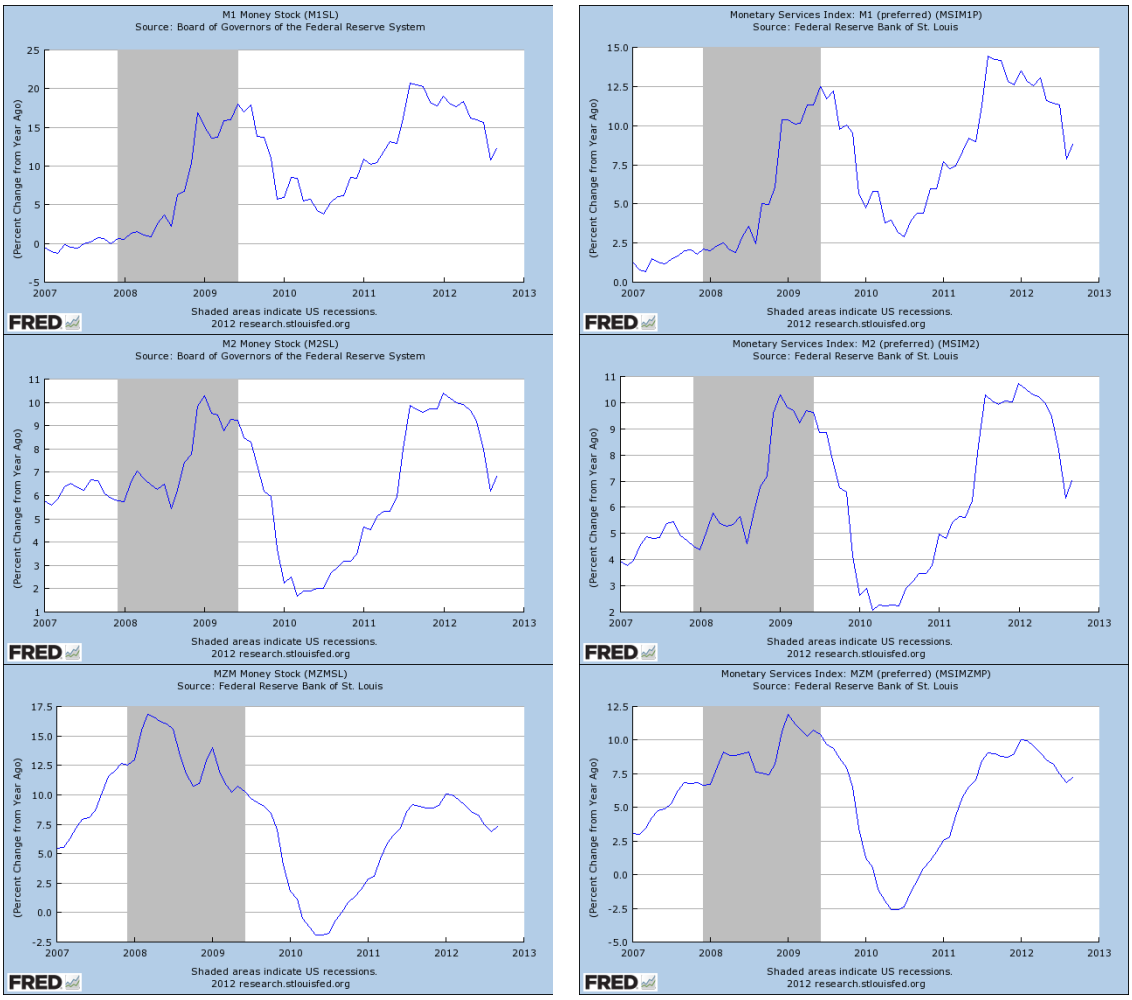


Figure 3. Money Growth, 2007-2012. Graphs in the top row plot year-over-year growth in M1, graphs in the middle row plot year-over-year growth in M2, and graphs in the bottom row plot year-over-year growth in MZM. Graphs in the left column are for simple-sum aggregates; graphs in the right column are for the corresponding Divisia aggregates.