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Monetary policy before the crisis

Stefan Gerlach Laura Moretti

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Many observers argue that excessively expansionary monetary policy led to the recent global financial crisis. On the day of Ben Bernanke's speech in Jackson Hole, this column agrees with the Fed chair that monetary policy was not the main cause. It argues that non-monetary forces drove down real interest rates and lowering nominal rates was the correct response. But central bankers and other regulators vastly underestimated the risks accompanying low short-term interest rates.

Many observers argue that excessively expansionary monetary policy led to the recent global financial crisis. Taylor (2007) claims, for example, that the Fed set the interest rates far below the correct rate (as suggested by the so-called Taylor rule).¹ Excessively low interest rates reduced borrowing costs, inducing financial institutions to over leverage their balance sheets in pursuit of returns. This involved holding riskier assets, including the famous "toxic assets" (structured financial products), which offered high returns with solid credit ratings.

This hypothesis has been contested, however, most notably by the man who will deliver a very widely watched speech today – Ben Bernanke. He argues that the Fed funds rate was not unusually low (Bernanke 2010). He argues instead that savings-investment imbalances led long-term real interest rates to decline globally, depressing nominal interest rates (Bernanke 2005).

Several others have focused on this and closely related mechanisms.

- Caballero et al. (2008) emphasise that the emerging market economies' inability to supply safe assets may have played a role in this process by forcing them to accumulate US dollar assets.
- Obstfeld and Rogoff (2009) associate the initial decline in long-term real interest rates with the end of the productivity boom of the 1990s but argue that the increase in world saving after 2003 explains why long real interest rates remained low despite the monetary tightening after 2004.

Overall, low policy rates may simply have reflected this decline in real interest rates.

Focus on long rates

Here, we focus on the large and sustained fall of long-term real interest rates – as measured by the yields on 10-year Treasury Inflation-Protected Securities (TIPS) – in the years before the financial crisis. This fall is important because it will have depressed nominal interest rates along the yield curve, *ceteris paribus*. Furthermore, standard macroeconomic models hold that monetary policy has, at most, temporary effects on real variables, and thus they have a difficult time explaining this decline. Hence, a reduction in the federal funds rate – a nominal overnight rate – cannot have depressed 10-year real interest rates over a decade. In turn, this suggests that monetary policy played at most a limited role in setting the stage for the crisis.

Short and nominal vs. long and real interest rates

Next we look at the federal funds rate and the yield on 10-year TIPS. We start in January 1999, when the TIPS data began, and end in July 2007, the month before the crisis erupted. Figure 1 shows that the Federal Reserve cut the federal funds rate aggressively after the "dot-com" crash in 2000 and kept them low until 2004 when interest rates were gradually increased. Furthermore, the yield on 10-year TIPS collapsed from about 4% in 2000 to around 2% in 2005, before rising somewhat before the crisis erupted. It is easy to see that the fall by half in the long real interest rate, which impacts directly on the discount factors used to price a variety of financial assets, could have led to a generalised boom in asset prices.

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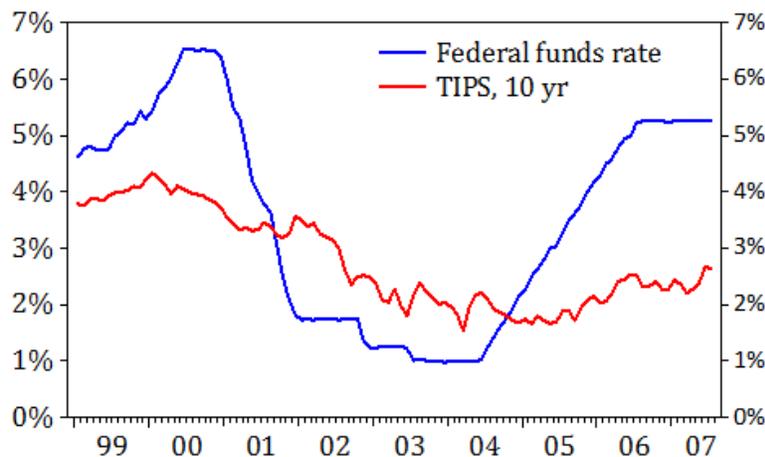
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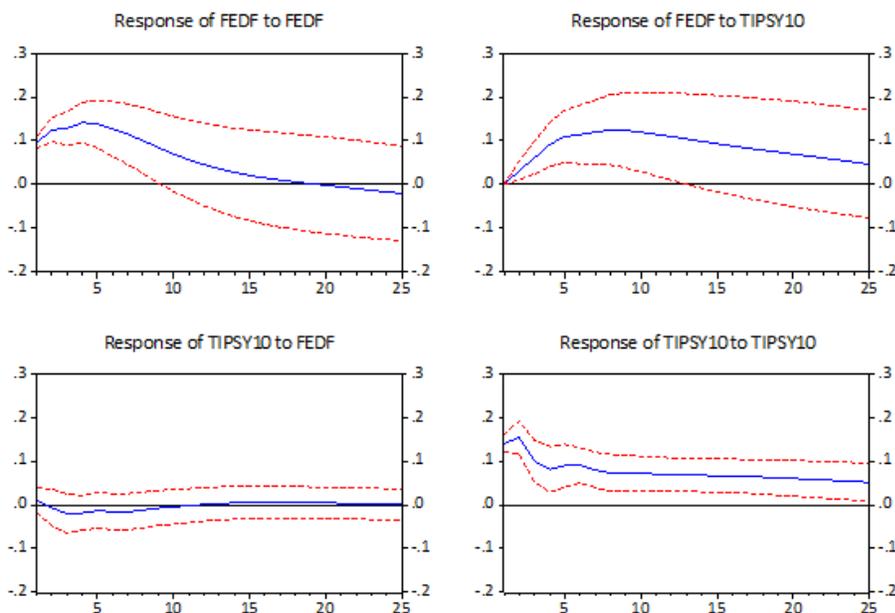
Figure 1



To get a handle on the question of what caused this fall in long real yields, we estimate a VAR model comprising a Coincident Economic Activity Index, the core personal consumption deflator, the federal funds rate, and the yield on 10-year TIPS, achieving identification by ordering the shocks in the same way. We thus assume that the federal funds rate does not impact on economic activity or inflation instantaneously and that monetary policy does not respond immediately to innovations in the real yield. This assumption maximises the explanatory power of monetary policy for long real yields. The model is estimated on monthly data from May 1999 to July 2007.

Figure 2 shows impulse responses of the federal funds rate and the yield on 10-year TIPS to monetary policy shocks and shocks to the long-term real interest rate. In the lower left-hand side we see that yields on 10-year TIPS do not respond at all to the tightening of monetary policy, as suggested by the hypothesis that monetary policy has, at most, temporary effects on real variables. The upper-right panel of the figure indicates, furthermore, that after a shock to the yield on TIPS, the federal funds rates rises gradually and reaches about 10 basis points after 10 months. Subsequently, it falls slowly and reaches a level about 5 basis points above the initial level.

Figure 2. Response to cholesky one-standard-deviation innovations (± 2 standard errors)



Overall, these results suggest that monetary policy shocks have no effect on long real interest rates, but that movements in long real interest rates induce one-to-one responses of the federal funds rate.

Some theory

In Gerlach and Moretti (2011), we analyse these findings using the canonical New Keynesian model, but the point can be made intuitively. To stabilise the inflation rate at the

objective, the central bank must set the short-term interest rate, i , so that the expected short-term real interest rate, $i - E\pi$, equals the Wicksellian, or neutral, short-term real interest rate, r^* .

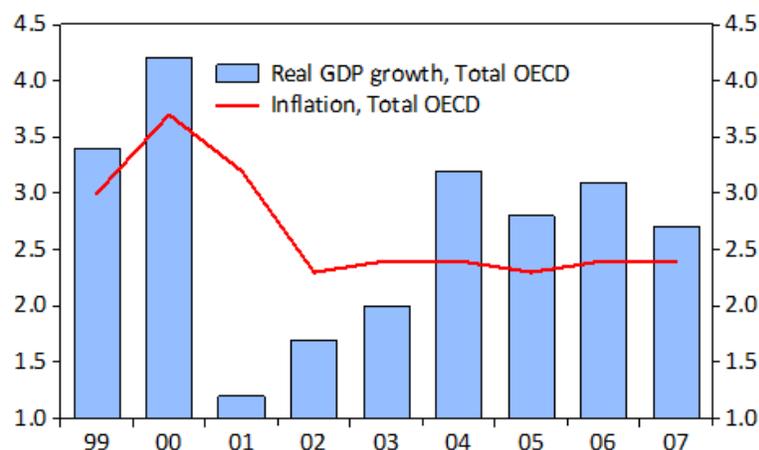
In these models, the Wicksellian interest rate is independent of monetary policy but may change in response to real economic disturbances, such as to changes in economic growth. Since deviations of the real interest rate from the Wicksellian interest rate are temporary, long-term real interest rates, represented by the yields on TIPS in the empirical analysis above, are largely driven by expectations of the Wicksellian rate.

Suppose next that policy is too expansionary, that is, $i - E\pi < r^*$. If so, aggregate demand will expand, raising output above the flexible-price level, and cause inflation to rise. If the central bank stabilises inflation, it will soon be compelled to tighten monetary policy again. In brief, too expansionary policy should lead to temporarily rising inflation and to a tightening of monetary policy. The fact that inflation was generally weak in the early 2000s seems incompatible with this view.

Suppose instead that the Wicksellian interest rate falls and that the central bank does not immediately realise that this has occurred. If so, the expected real interest rate is above the Wicksellian real interest rate, $i - E\pi > r^*$. The output gap thus turns negative and inflation falls. The central bank sees the economy as being unexpectedly weak and cuts interest rates to return inflation to the objective.

Figure 3 shows real GDP growth and inflation for the total OECD area between 1997 and 2007. While the combination of low growth, low inflation, and low interest rates in the early 2000s after the burst of the dot-com bubble is compatible with our analysis, it seems harder to reconcile with the hypothesis that monetary policy was too expansionary before the crisis, since that hypothesis suggests that inflation and output should both have been unexpectedly strong.

Figure 3



Inflation is measured using the consumption deflator. Source: OECD data.

Conclusions

Many argue that overly expansionary monetary policy set the stage for the global crisis and the Great Recession. This hypothesis suggests that inflation and output should have been unexpectedly strong in the period before the crisis erupted. Here we argue that this view is wrong. The alternative view, compatible with the argument of Bernanke (2005, 2010) is right. Real interest rates fell for reasons unrelated to monetary policy, but led central banks to cut interest rates in order to stabilise the macro economy.

Of course, low interest rates certainly did play an important role in the crisis by providing an unexpectedly strong boost to financial markets activity (Rajan 2005) – they just weren't the fault of monetary policy.

The fault lay with central banks and other regulators who appear to have vastly underestimated the risks to financial stability arising from short low rates, even if they were warranted by macroeconomic considerations.

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¹ A large number of other Vox contributions also deal with various aspect of the nexus of low US interest rates, global imbalances and the financial crisis, eg., Boeri and Guiso (2007), Mees (2011), Sá et al. (2011), Suominen (2010).

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