

Can Monetary Policy Affect GDP Growth?

The Fed has taken unconventional measures over the past 18 months to contain the financial crisis and limit ramifications for the broader economy. These measures have resulted in an extraordinary increase in reserve balances at commercial banks—which is a key component, along with currency, of the monetary base. Economist John Taylor of Stanford University estimates the current programs proposed by the Fed should increase reserves by about \$2.285 trillion—nearly a 300-fold increase compared with the \$8 billion level in early September 2008.¹

Many analysts have raised concerns that the increased reserves will ultimately increase inflation and the price level. One might also expect such an enormous increase in reserves to stimulate aggregate output, thereby mitigating the adverse effects of the financial crisis on the economy. But can such an impact be estimated quantitatively?

Historically, we can look at postwar U.S. data and see how much gross domestic product (GDP) growth can be associated with or forecasted by the growth rate of the monetary base. Note that such a statistical association is not “causal.” We merely want to see whether, historically, fast growth of the monetary base has been associated with faster growth of real output. One approach is to use an analysis that captures the impact of current and past increases of the monetary base on current GDP growth, taking into consideration the influence of the history of GDP on its own future growth. This estimation can be done at different horizons using statistical tools.

The chart shows the association of monetary base growth with GDP growth at different horizons, where the horizontal axis is the number of quarters and the vertical axis indicates the estimated impact of money base growth on output growth. The solid line is the estimation and the dashed lines are one-standard-error bands, which quantify the uncertainty of the estimation. The chart indicates that in the very short run (say at

the 2-quarter horizon), money base growth is slightly negatively associated with GDP growth. However, around the typical business cycle horizon (say within the horizon of 8 to 16 quarters or 2 to 4 years), money base growth has a significant positive relation with GDP growth. In particular, at the 12-quarter horizon, for every 1 percent increase in money base growth, there is about 0.4 percent corresponding increase in GDP growth. Such a positive relation disappears again in the very long run beyond the typical business cycle, perhaps because in the long run money growth is inflationary, which leads to higher prices and lower output.

Therefore, historical data tell us that if there is any positive association between money growth and GDP growth, the impact comes about 3 years after an initial acceleration of base growth. Such a long lag suggests that an observed and expected increase in the monetary base may not have a very large effect on output growth. Of course, the big caveat is that there has never been such an extraordinary increase in base growth. Therefore, the evidence based on historical data is not conclusive, but only a rough guide.

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¹ Taylor, John B. “Monetary Policy and the Recent Extraordinary Measures Taken by the Federal Reserve.” Testimony before the Committee on Financial Services, U.S. House of Representatives, February 26, 2009; www.stanford.edu/~johntayl/House%20FSC%20testimony%20Feb%2026.pdf.

Impact of Monetary Base on GDP Growth

