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Analysis of current economic conditions and policy

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September 16, 2009

## Scott Sumner on the Fed's mistakes

The [Cato Institute](#) is hosting a discussion this month of the extent to which monetary policy may have contributed to our current economic problems. In the lead essay that appeared on Monday, [Professor Scott Sumner of Bentley University](#) suggested that the Fed erred in allowing nominal GDP to grow as slowly as it did. [My response](#) appeared this morning. I agree that faster growth of nominal GDP would have been a good thing, but argue that, particularly if you start the clock in the fall of 2008, the Fed lacked the tools to prevent a decline in nominal GDP.

Here I excerpt part of [my discussion](#).

[Professor Sumner](#) appeals to the equation of exchange,

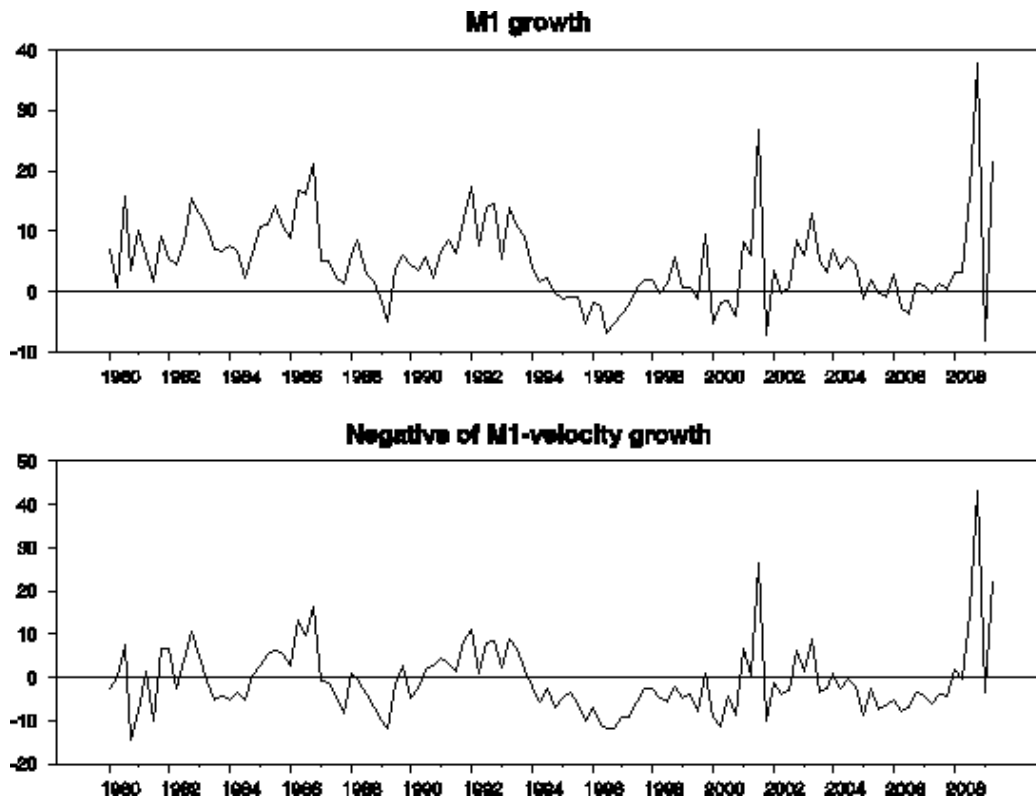
$$MV = PY,$$

where  $M$  is a measure of the money supply,  $V$  its velocity, and nominal GDP is written as the product of the overall price level ( $P$ ) with real GDP ( $Y$ ). Sumner reminds us of Hume's notion that velocity  $V$  in part depends on the extent to which households decide to keep their coins locked in chests. If we thought of  $V$  in the above equation as determined by institutional details of how often people get paid or visit the grocery store, then we're tempted to conclude that by choosing the appropriate value for the money supply  $M$ , the Fed could deliver a desired target for nominal GDP.

But one runs into an immediate practical problem in the bewildering variety of different magnitudes that might be thought to correspond to the money supply  $M$ , such as M1 (checkable deposits plus currency held by the public) or the monetary base (currency plus reserves, the latter being the electronic credits that private banks could use to turn into currency if they wished). Obviously two different  $M$ 's must imply two different  $V$ 's for the above equation, and we can't think of both  $V$ 's as being entirely unaffected by actions taken by the Fed. For that matter, there are different concepts one could use for  $PY$  on the right-hand side of the above equation. Is it the dollar value of sales of all final goods and services (that is, nominal GDP, as my discussion above assumed), the dollar value of all transactions (as the earlier monetary theorists supposed and the notion of a dollar physically changing hands invites), the dollar value of consumption expenditures, or something else? It is clear that there is a long menu of different values we might refer to when we talk about the "velocity of money," and at most one of these can actually determine the level of nominal GDP.

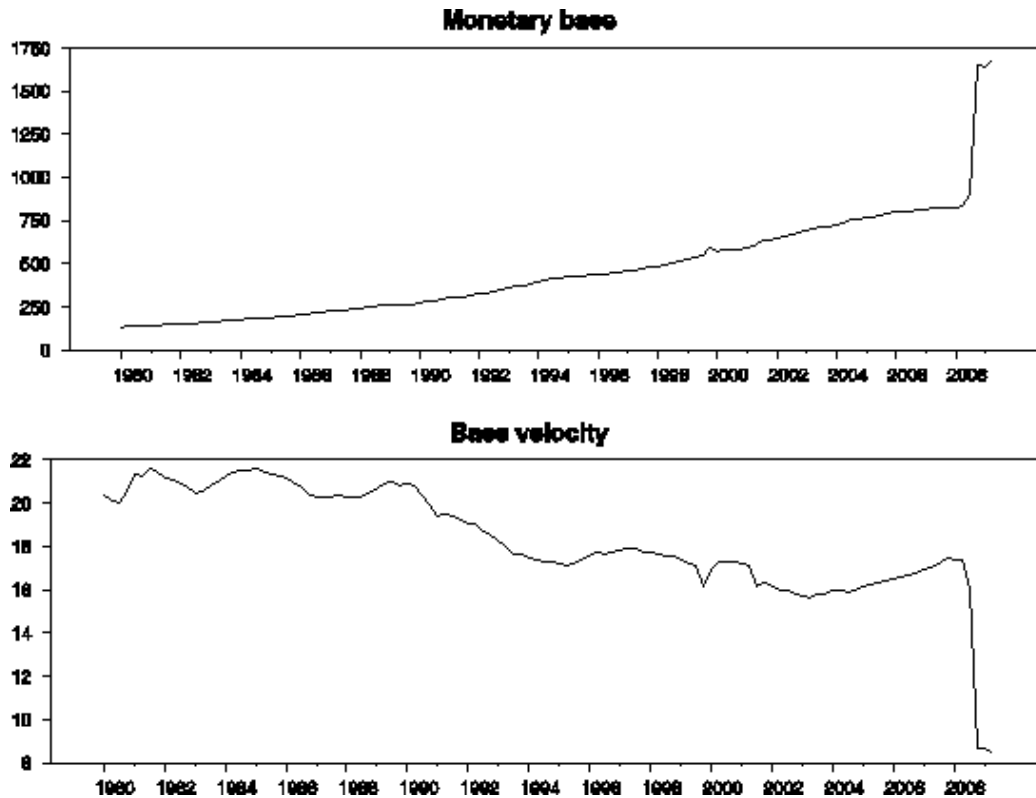
When you dive into such details, you are led to the conclusion that the above equation is not a theory of income determination, but instead is a definition of  $V$ . If we use a different measure of the money supply or a different measure of nominal transactions, then we must be talking about a different number  $V$ . What the equation really does is define a value of  $V$  for which the resulting expression is true by definition.

As Milton Friedman himself was quite clear, it is ultimately an empirical question as to whether a given candidate  $V$  so defined simply changes passively in response to the Fed implementing a change in the favored measure of  $M$ . The diagram below plots the growth rate of M1 along with the negative of the growth rate of the velocity implied when M1 is our measure of the money supply and nominal GDP is the measure of transactions. The strong impression is that in quarters in which M1 grew a lot, the M1-velocity shrank by an offsetting amount, leaving the quarter-to-quarter correlation between M1 growth and nominal GDP growth quite weak.



**Top panel: annual growth rate of M1, 1980:Q1 to 2009:Q2. Bottom panel: annual growth rate of the ratio of M1 to nominal GDP.**

The same conclusion emerges if you prefer to use the monetary base as your measure of the money supply; velocity plunged as base money skyrocketed.



**Top panel: level of monetary base, 1980:Q1 to 2009:Q2. Bottom panel: velocity of base.**

It's necessary to spell out a mechanism other than the equation of exchange by which the Federal Reserve is asserted to have the power to achieve a particular target for nominal GDP. One mechanism that we all agree is relevant in normal times is the Fed's control of the short-term interest rate. Lowering this will usually stimulate demand and eventually lead to faster nominal GDP growth. However, there are two problems with advocating this tool in the fall of 2008. First, most of us are persuaded that the stimulus from such a policy takes some time to affect the economy, so that, if implemented in October 2008, it is not a realistic vehicle for preventing a decline in 2008:Q4 nominal GDP. Second, we quickly reached a point at which the fed funds rate fell to its nominal floor, an essentially zero percent interest rate, from which there is no more down to go.

I have much more to say [at the Cato site](#) about the liquidity trap, role of debt problems in the crisis, and nominal GDP targeting. Cato also plans further discussion including contributions from George Selgin of the University of Georgia and Jeffrey Hummel of San Jose State University later this week and next.

**Posted by James Hamilton at September 16, 2009 08:12 AM**

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