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Why does the velocity of money move pro-cyclically?

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Abstract

The velocity of money usually rises in expansions and falls in recessions This paper explains this pro-cyclical movement of velocity using two ideas: (i) during business cycles the movement of investment and consumption of durable goods has a larger amplitude than consumption of non-durable goods and services; (ii) the velocity associated with expenditure on investment and durable goods is much higher than the velocity associated with consumption of non-durable goods and services, because the former expenditures are synchronized with the attainment of money by economic agents whereas the latter are not. In this setting, the rise in the weight of expenditure in durable goods relative to the weight of non-durable goods and services, which occurs during expansions, generates an increase in the average velocity of circulation. The opposite happens during recessions and thus velocity moves pro-cyclically.

Keywords:

Velocity of money money demand business cycle monetary policy endogenous money

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Notes

The overwhelming evidence that durable consumption and investment have greater cyclic amplitudes than NDGS has been clearly emphasized by R. J. Barro: ‘most of the movement of output in the business cycle is in a component we call investment or, more broadly, durables—I would want to include consumer durables and inventories. If you look at consumer non-durables and services, they move very little’ (see Snowdon et al., 1994, p. 274). These facts may in turn be (at least partly) explained by the accelerator principle.

In this way we avoid the omission of any important regressor and thereby comply with the encompassing principle (i.e. we show the significance of our explanatory variable in a regression where we also give a chance to the other variables to show the proportion of the variability of M1 velocity that is attributable to their own behaviour). For surveys of econometric studies of velocity and money demand functions, see Laidler (1993) and Ericsson (1998).

> Friedman arrives at this conclusion by developing an ‘analysis of the demand for money … formally identical with that of the demand for any consumption service’ (Friedman, 1969, p. 52): given tastes, the individual maximizes utility subject to his budget constraint (permanent income) and the relative return on assets that are alternative to money (bonds, equities and goods). With some simplifying assumptions (see Friedman, 1969, pp. 53–58), and considering short-term as well

as long-term bonds, this optimization problem leads to the following demand function for money:

which can be also written in the form of a velocity function:

where M is money (however defined), p is the price level, w is the ratio between human wealth and all other forms of wealth (a ratio that is fixed) and V is the velocity of money.

Keynesian economists tend to take a different view on this issue. First, instead of considering many assets as alternative to money and including their returns separately in the money demand and velocity functions, Keynesian economists tend to lump financial assets into one big category (bonds) because they regard their returns as generally moving together. Second, Keynesian economists do not to view money and goods as substitutes, and therefore do not include the return on goods relative to money (inflation) as a term in the money demand and velocity functions (on these two—and other—differences between Keynesian and monetarist theories of the demand for money, see Mishkin (2004, pp. 530–531)).

Why? Non-GDP real estate transactions (e.g. existing-home transactions) require the transfer of funds through checkable accounts, and thus lead to an increase in the demand for M1 but not for M3 assets. On the other hand, ‘even after recognizing that very little financial market trading requires the transfer of funds through transaction accounts … the increase in such trading can be so substantial that it nevertheless must yield a significant … increase in the demand for M1 [relative to M3 assets]’ (Pollin & Schaberg, 1998, p. 139; for evidence, pp. 149–151). We can therefore conclude that an increase in non-GDP transactions may lead to an increase in M1/M3; and, conversely, that a decrease in non-GDP transactions may cause a decrease in M1/M3—that is an increase in M3/M1. On the other hand, the fact that a decrease in non-GDP transactions reduces the demand for M1 leads in turn to an increase in the income-velocity of M1.

The theoretical underpinning for this procedure is the Engle Representation Theorem, which says that if a set of variables is cointegrated then there exists a valid error correction representation of the data.

Two points should be noted. First, the contemporaneous short-term interest rate was not statistically significant. On the other hand, the two-period lagged short-term interest rate should have a positive instead of a negative effect on M1 velocity. We have not found an explanation for this statistical result; it may however be somehow offset by the positive sign of the opportunity cost variable in the long-run equation.

This seems to be the view taken both in the USA and in the UK. For example, Arestis and Sawyer (2002, p. 539) argue that in the day-to-day setting of monetary policy in the UK ‘the money supply is not mentioned, and the demand for money [and velocity] is viewed as either unstable (Treasury) or is treated residually (Bank of England)’.