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Comment on "Open Market Operations—Their Role and Specification Today" by Ulrich Bindseil and Flemming Würtz

by William T. Gavin[1]

Bindseil and Würtz provide a useful classification and description of the alternative procedures that central banks use to implement monetary policy decisions. The authors take as given the decision about the monetary policy stance made at regular policy meetings and discuss how that decision is implemented between meetings. They go on to describe of continuum of strategies for open market operations, ranging from an extreme interest rate peg to a rule based on Friedman (1982) that increases the monetary base at a rather constant and smooth rate.

The discussion is framed in two broader macroeconomic issues. The first is a discussion of the reserve position doctrine (RPD) that was more fully developed in Bindseil (2004). The second is the proposition that operating targets for reserve quantities are a bad idea and that monetary policy should be implemented using interest rate guides. This comment offers an alternative interpretation of the RPD in U.S. monetary history and describes institutional reforms that were aimed at making the reserve supply function nearly horizontal at high frequencies but nearly vertical in the long run. It was devised to make the

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open market operations procedures like the one recommended by Friedman (1982) operational. The final section provides further support for interest rate smoothing at high frequencies.

Monetarism and the Reserve Position Doctrine

The authors in this paper and Bindseil (2004) unfairly lump the free reserve and borrowed reserve operating procedures together with operating rules based on unborrowed reserves or the monetary base. Meigs (1962) coined the term the “reserve position doctrine” (RPD) to describe the Federal Reserves practice of using borrowed reserves and free reserves to implement policy decisions. The Fed argued that they could not control total reserves, but that some components that they could not control in the short run (such as borrowed reserves and free reserves) displayed regular behavior vis-à-vis market interest rates. Therefore, they argued that they could operate using these procedures without maintaining tight control over interest rates. Meigs used this logic to argue that the central bank could control unborrowed reserves, thereby retaining control over the path of total reserves in the long run.

The key to the monetarist advocacy of a reserve quantity was not a desire to cause interest rate volatility in the short run, but to provide a nominal anchor in the long run. Karl Brunner (1973) extended Poole (1970) to include more detailed analysis of credit markets and more types of shocks. He agreed that the volatility of money demand shocks was relatively high in at monthly and higher frequencies, and, by Poole (1970), one should probably operate with an interest rate target. The problem was that other unobservable shocks emanating from credit markets called for the central bank to maintain control over the money supply. He advocated control over quantities in the short run as a way of instituting a nominal anchor for the monetary system.

The ideal policy would allow the central bank to have a target for total reserves, but would make the reserve supply curve nearly horizontal at high frequencies. There were several proposals aimed at achieving this result. Two alternatives from the early 1980s were based on staggered reserve accounting and extended carry-over provisions.

Staggered Reserve Accounting. Under this regime, as originally proposed by Cox and Leach (1964), the banks are separated into four groups, each with monthly reserve maintenance periods, but with different settlement days. Under their plan, a quarter of the banks would settle on each of the first four Wednesdays of the month. The banks that were settling could borrow or lend reserves with each other or with the non-settling banks. The idea was to make the reserve supply curve highly elastic in the near term when money demand volatility was known to be dominant, but to keep the reserve supply function more inelastic over longer horizons. This proposal would simplify open market operations and allow the Fed to maintain total reserves on a path consistent with a long-run price objective. In 1981 when interest rates were highly volatile, the staff at the Board of Governors used their money market model to do a dynamic analysis of staggered reserve accounting. They found that when using a total reserve operating target with staggered reserve accounting, interest rate volatility that was no greater than would be expected under a successful interest-rate targeting regime.[2]

Extended Carryover. Poole (1975) recommended a simple reform that would also eliminate excess volatility in the market for bank reserves while allowing the central bank to target total reserves. Under his scheme, the central bank would never need to lend adjustment

[2] See Tinsley, Spindt, and Fries (1981). This paper is an internal Fed memorandum.

credit through the discount window. All lending could be limited to whatever emergency loans are appropriate to a lender of last resort operation. Poole proposed that the carryover provision be modified so that any excess or deficiency in a required reserve balance that does not exceed 50 percent of an institution's required reserves may be carried forward to the next maintenance period. In each maintenance period, required reserves would be increased by 110 percent of any reserve deficiency, or decreased by a credit for 90 percent of any reserve excess, in the previous maintenance period. The limit on the percentage of carryover and the penalties could be modified to accommodate the central bank’s desire to contain the trading range for the interest rate on bank reserves.

Both of these institutional features for reserve requirements would permit a central bank to follow Friedman’s advice and use a path for total reserves as the guide for open market operations.

There is also plenty of evidence that monetarists did not group operating targets for borrowed reserves and free reserves into the same category as rules based on unborrowed or total reserves. There is a very large literature criticizing borrowed reserve and free reserve procedures as being disguised methods for targeting the interest rate. Some examples from Fed economists and Fed critics include

- Wheelock (1990) who argues that the borrowed reserve targeting procedure adopted after WWI was actually an interest rate operating procedure;
- Brunner and Meltzer (1964) who argue that targeting free reserves was a form of interest rate targeting;
- Poole (1968) who uses a model of a bank minimizing costs over the reserve maintenance period to show that a free reserve target was approximately equivalent to an interest rate target;

- Gavin and Karamouzis (1986) who show that the Volker Fed's borrowed reserves target was effectively an operating target for the federal funds rate, and
- Thornton (1988) who provides further evidence that, as implemented, the borrowed reserves target often looked more like a target for the interest rate than a target for borrowed reserves.

But this is only a quibble about their interpretation of Federal Reserve and monetarist history. I think that their main point, that central banks should find a way to smooth interest rates in the short run is correct.

The Fed's Experiment with Nonborrowed Reserves

Until the adoption of the nonborrowed reserve procedure in October 1979, the Fed had never operated using a procedure in which daily open market operations were guided by a path for a monetary aggregate. As the author notes, this period was not a pure experiment. But there was a weekly path for nonborrowed reserves that guided daily open market operations. The open market desk adjusted these paths mechanically with the arrival of information about transaction deposits and the multiplier.[3]

Cogley and Sargent (2005) estimate that the standard deviation of the innovations to inflation and the 3-month Treasury bill rate rose sharply during this 3-year period. The volatility of both the interest rate and the inflation volatility moved sharply up in October 1979 and fell back to lower level levels after October 1982. It is well recognized that interest rate volatility rose with change in operating procedures. It is less well understood that this procedure also produced an increase in the variability of inflation.

[3] Stevens (1981) describes the details of this operating procedure. Avery and Quast (1993) use daily data to measure the dynamic response of interest rates and transaction deposits to shocks to nonborrowed reserves (deviations from target path).

The Fed abandoned the nonborrowed reserves procedure in October 1982 and began using a borrowing target, which was intended to achieve a smooth path for the interest rate on federal funds around a desired trading rate. Throughout the rest of the 1980s, actual policy decisions were meant to achieve a desired trading level for the federal funds rate, but the FOMC did not have an explicit target.

Why an Interest Rate Operating Target?

Interest rate smoothing is a form of inflation smoothing. Intuition for this can be seen in the money demand analysis of Friedman (1969). The demand for real money balances is a function of a scale variable, such as income, and an opportunity cost variable, such as the nominal interest rate, such that $M_t^D / P_t = H(\overset{+}{Y}_t, \overset{-}{R}_t)$. Panel (a) in the accompanying figure is based on Figure 3 from Friedman (1969), an illustration of the response of money demand and the price level following a surprise decision to permanently raise the money growth trend (inflation) from zero to a positive number—2 percent in panel (a). The nominal rate rises by the size of the increase in the inflation rate and the demand for money drops immediately. Since the central bank has exogenously fixed the money growth rate, the price level must rise to accommodate the fall in real balances. In an economy where the long run expected inflation trend is subject to shocks, the inflation rate is highly variable relative to the money growth rate.

Panel (b) illustrates what happens if the central bank uses the interest rate as the monetary policy instrument. In that case, the credible announcement of 2% inflation requires raising the nominal interest rate target by 2%. The increase also leads to an immediate drop in the demand for real money balances. With a nominal interest rate rule, however, the money supply is endogenous and inflation is fixed by the policy rule. It is the money stock, rather than the price level, that responds by shifting downward to clear the money market. Hence, in an economy with stochastic inflation and an interest-rate rule for monetary policy, the money growth rate is much more variable than the inflation rate. That result is consistent with our observations from modern economies where central banks generally use the nominal interest rate to implement policy.

Poole (1970) concluded that the choice between an interest rate and a money supply operating target depended on model parameters and the relative variances of different types of economic shocks in a static IS/LM macro model. Woodford (2003) synthesizes 35 years of advances in macroeconomic theory and applies it to understanding optimal monetary policy. Using this framework, Gavin, Pakko and Keen (2005) revisit the issue of whether the central bank should use the interest rate or a monetary aggregate as the instrument or operating target for monetary policy. Our analysis generally supports the Bindseil and Würtz assertion that central banks should use interest rate targets.

But the lessons from this new framework go beyond this simple question about which instrument to use. In these models the money demand relationship is stationary, but it will not appear so to the econometrician. If the central bank is using an interest rate operating target, the money supply will "jump" in response to shocks to interest rates or income. The result is that the money supply will appear to be relatively unconnected to other economic variables.

Another thing that we have learned from Woodford's framework is that using the interest rate to target inflation can be treacherous for a central bank that is not committed to price stability. In these models a passive reaction to inflation surprises can cause real indeterminacies which are associated with problems such as asset pricing bubbles and self-fulfilling prophesies of deflation. In general, the fragility of equilibrium solutions goes away as the central bank's lengthens its inflation-targeting horizon. Committing to a multiyear target for inflation actually increases the central banks ability to conduct stabilization policy.

Do Open Market Operations Matter?

Bindseil and Würtz did not address issues involving payment system risk and mechanisms for imposing market discipline on bank managers. A standing facility should not be freely available to banks that have taken on excessive risk. Forcing banks to use the interbank lending market may lower supervision and regulatory enforcement costs.

The details of the operating procedures and reserve requirement regulations will be different in every country and the choice about where to operate on the continuum between a pure standing facility and a modified quantity target will depend on such details. The problem will be easier for a central bank that is committed to price stability. In general, the combination of operating procedures and reserve regulations should result in a reserve supply function that is highly elastic between policy meetings.

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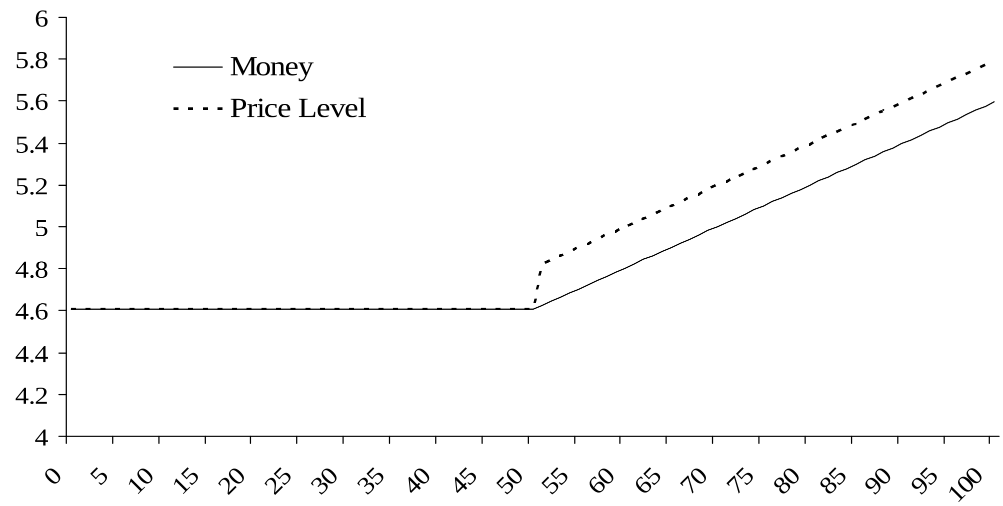
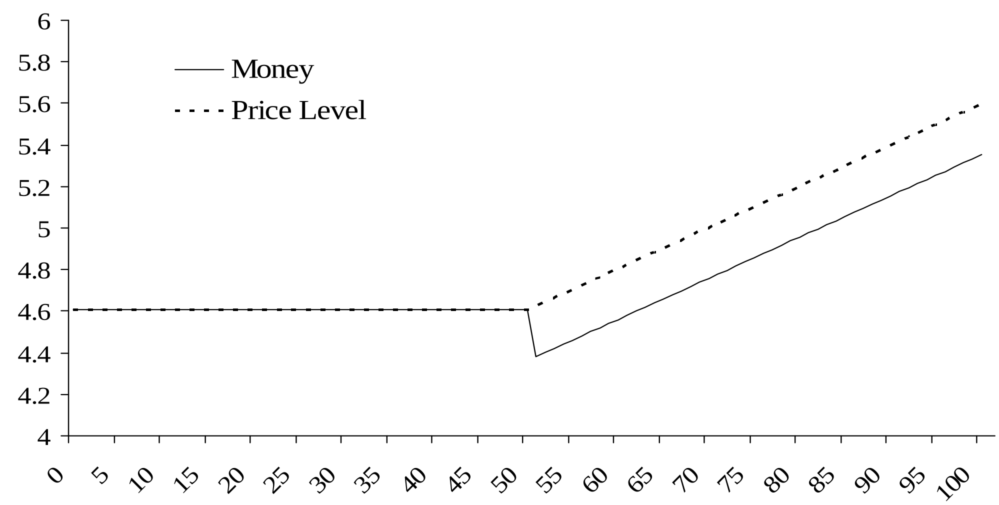
Figure 1. Monetary Policy Rules and a Change in the Inflation Trend

Panel (a) Money Growth Rule*



Panel (b) Interest Rate Rule*



* There is a shift from 0 to 2 percent in the inflation objective in period 50.