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# Recent Developments in Monetary Macroeconomics and U.S. Dollar Policy



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**Recent Developments in Monetary Macroeconomics and U.S. Dollar Policy**

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Abstract

This paper summarizes recent developments in the theory and practice of monetary policy in a closed economy and explains what these developments mean for United States dollar policy. There is no conflict between what is appropriate U.S. monetary policy at home or abroad because the dollar is the world's key currency. Both at home and abroad, the main problem for U.S. policymakers is to provide an anchor for the dollar. Recent experience in other countries suggests that a solution is evolving in the use of inflation targets.

**KEYWORDS**: Monetary Policy, Dollar Policy, Inflation Targeting

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**Introduction: Why Should Americans Care about the Dollar?**

People in the United States do not pay much attention to the foreign sector—at least relative to the amount of attention paid in other countries. Typically, textbooks suggest that this is because we are not as open as other countries—defining openness as the size of imports and exports relative to gross domestic product (GDP). That may be right, but a better explanation is that monetary policy made in the United States matters for other nations much more than their policy matters for the United States. Being the largest economy and the key currency country, the U.S. dollar is the de facto *numéraire* for most transactions involving trade with the United States and a significant share of trade between other countries.

The only times U.S. policymakers seem to care about the foreign exchange value of the dollar is when the dollar moves in extreme fashion: when it falls as it did in the 1960s and 1970s (*see* Mayer 1980) or, for example, when the high value of the dollar led Federal Reserve Chairman Paul Volcker to disregard the flawed signal that he was receiving from the M1 target in early 1985.

The same attitude is evident in the Fed's resistance to inflation targeting. There is an evolving consensus that central banks ought to anchor monetary policy with ongoing inflation targets. Explicit inflation targets have been most useful in countries that already have achieved some degree of price stability. Whether intended or accidental, the advantage of explicit inflation targeting seems to be that the public comes to believe that the target is a long-run objective.[1] Inflation targeting helps to increase credibility about

[1] These arguments are developed more completely in Gavin (2004).

long-run objectives. Outside the United States, threats to credibility are reflected most sharply in the foreign exchange markets.

**The Link between Domestic Monetary Policy and Foreign Exchange Policy**

Because the United States is the world's key currency country, uncertainty about the long-run value of the dollar becomes evident to us only when it becomes extreme. The bond market has been an important restraint on Fed policy, but the foreign exchange market has not. Gürkaynak, Sack, and Swanson (2003) use interest rates on indexed and comparable non-indexed bonds to show that macroeconomic news affects the expected inflation premium in long-term U.S. interest rates. This is evidence that markets continually must update their expectations about what the Fed's goal of price stability means in terms of the consumer price index (CPI) 10 years from now. This effect of macroeconomic news on long-term inflation expectations disappeared in the United Kingdom in the period after 1997—after the Bank of England had enjoyed some success with inflation targeting and also was given the authority (previously held by the U.K. Treasury) to make short-run decisions about the money market interest rate.

In Gavin (2004), I report that the individual forecasts of one- to two-years-ahead CPI are more dispersed in the United States and Japan than they are in the inflation-targeting countries. I also note that in the United States there is more disagreement among Fed policymakers in their forecasts of 18-months-ahead inflation than there is in their forecasts of real GDP.

The appropriate U.S. foreign exchange policy also is appropriate U.S. domestic monetary policy. That is, the Fed (with the consensus of Congress and the administration

in power) should adopt an explicit numerical objective for the long-run trend in the CPI. Personally, I recommend zero inflation as the target. If the dollar is going to anchor the international monetary system, then, at least in principle, it should be convertible into a fixed-quantity basket of goods available in the United States.

**Inflation Targeting and the International Monetary System**

The past 25 years have seen a major advance in our understanding of how to manage paper currency. Almost all of my research and experience is with closed economy models and issues involving domestic effects of policy. However, what we have learned in that time carries with it implications about how to organize an international monetary system.

Things we have learned include:

- The main channel for monetary transmission is the expectations channel.
- Operating with an interest rate instrument is a form of inflation targeting.
- Monetary policy can be defined as having two instruments—the long-term price objective and the short-term liquidity position.
- The class of optimal policies is characterized by credible long-run price stability, which eliminates a source of asset pricing bubbles and self-fulfilling deflations and creates flexibility for short-run policies.
- Inflation targeting works because the public perceives inflation targets as long-run objectives.
- Inflation targeting has been adopted in countries where governments reject using seigniorage to close the government budget gap and where the Phillips curve is no longer seen as a useful framework for making monetary policy.[2]

**The Expectations Channel**

[2] The Phillips curve relationship may be useful in monitoring inflation pressures even if it is not a structural framework for policymaking. Evidence on forecasting role is mixed (see Stock and Watson, 2005).

Inflation targeting works because the expectations channel is the main mechanism through which central banks affect the price level and the economy. That inflation targeting has been so widely adopted and apparently worked so well has been a bit of a surprise to the monetarists who struggled first to sell monetary targeting and then to explain why it did not work. The usual explanation was simply that the central banks could not get control of monetary aggregates right.

The alternative explanation is that monetary targeting was based on a mechanical idea and a minor channel for monetary transmission. In this framework, the Fed would control the monetary base, restraining aggregate spending and ultimately controlling inflation. Lags were involved between implementation of policy and observation of its effects at each stage, and communication of the price objective never was an important part of the monetarist plan being sold in the United States. The point was for the Fed to get control of money. The Monetary Control Act of 1980 revised reserve requirements in order to create a more direct link between the monetary base and M1.[3] Contemporaneous reserve requirements were adopted in early 1984 in order to release market forces that were meant to improve the Fed's control over M1.

[3] *Monetary base* consists of bank reserves held at the Federal Reserve Banks plus currency in circulation outside the Federal Reserve Banks. These are the monetary components that the Federal Reserve completely controls. The Federal Reserve defines *M1* as a monetary aggregate consisting of currency in circulation outside the Treasury, Federal Reserve, and member banks, *plus* travelers checks issued by non-banks, *plus* non-federal government and non-bank demand deposits at commercial banks, *plus* "other checkable deposits" (of which the most common are negotiable order of withdrawal [NOW] accounts and automatic transfer service [ATS] or "sweep" accounts) at depository institutions, credit union share drafts, and demand deposits at thrift institutions.

On the other hand, inflation targeting has worked because central banks do not try to control inflation directly. Instead, they enlist cooperating expectations. As a Fed economist in the early 1980s, I was inundated with requests for inflation forecasts by friends, family, and neighbors. Inflation targeting helps to reduce the guesswork surrounding the future inflation trend. With inflation targeting, the central bank chooses the inflation trend in an open and purposeful way. By adopting an inflation target, the central bank helps the public to forecast inflation accurately and to behave in a way that leads to that desired inflation rate. The official debate and decision making associated with inflation targeting is largely absent in non-inflation targeting countries such as Japan and the United States.

Germany has had the best inflation performance among the leading industrial nations. Modern Germany never had an inflation target, but the Bundesbank revealed its inflation objective in its announcements about the assumptions underlying the construction of the monetary targets. From 1974 to 1984, the inflation objective was based on the notion that price stability could only be achieved in stages and was expressed as an "unavoidable" rate of inflation. Beginning in December 1984, and in every year after, the Bundesbank simply announced that the primary monetary policy objective was to keep the value of money stable, which was defined as a "medium-term price assumption of 2 percent."[4] In a mathematical model, if one takes the December 1984 level of the German CPI and lets it grow 2 percent every year until 1998 (when Germany adopted the euro), one sees that the actual CPI appears to be co-integrated with the CPI series implied by a 2 percent growth path.

[4] For a detailed discussion of German monetary policy, *see* Bernanke et al. (1999), chapter 4.

**Interest Rate Targeting Is Inflation Targeting**[5]

Inflation targeting works because central banks operate with interest rate targets. I doubt that inflation targeting would be successful if central banks used quantity targets to implement monetary policy. This point might not seem important because no central bank currently operates with targets for the quantity of money. Still, an unfortunate aspect of this situation is that most of our understanding of dynamic macroeconomics comes from thinking about models where the central bank runs policy by controlling the quantity of money directly.

The use of interest rates as operating targets stabilizes inflation over short time horizons. Monetary quantity targeting, on the other hand, destabilizes inflation in the short run. The difference between an interest rate and a monetary aggregate policy instrument can be seen in the analysis of money demand. That analysis essentially holds that money demand depends on scale variables like income levels and opportunity costs like nominal interest rates. Increased nominal interest rates (responding to expectations of higher inflation) cause a short-term decrease in the demand for real money balances. If the central bank is fixing the amount of money growth independently (exogenously), the price level rises to accommodate the decline of real monetary balances held by the public. Shocks to the public's long-term inflation expectations cause the observed inflation rate to be highly variable relative to the rate of money growth. But it is not just variable inflation expectations that cause the problem: All shocks to income and interest rate are transmitted into higher price volatility if the central bank fixes the money supply.

[5] This section draws heavily from Gavin, Keen, and Pakko (2005).

In contrast, if the central bank uses an interest rate target in a credible inflation targeting regime, then the money supply will be free to adjust to economic shocks. The official adoption of an inflation target communicates information about policymaker's inflation objective, and the interest rate rule transmits all money demand shocks (from any source) into the money supply. An important distinction is that money supply, not the price level, shifts to clear the money market. As long as inflation is determined independently (as with the central bank's selection of an inflation target), then a central bank following a nominal interest rate target for monetary policy generates a highly variable money growth rate in comparison with the inflation rate.

Gavin, Keen, and Pakko (2005) show that interest rate stabilization policies are more important than allegedly "sticky prices" for explaining the persistence of inflation. Many people do not realize that when the Fed switched temporarily from pure interest rate targeting to the non-borrowed reserve operating procedure in October 1979, observed variances in monthly CPI figures after the switch tended to mirror the variances of nominal interest rates (*see* Cogley and Sargent 2005).

**The Instruments of Monetary Policy**

To understand why inflation targeting works so well, it is useful to think about monetary policy as having two uncorrelated, but not independent, instruments. One is the long-term price objective, and the other is the short-term liquidity position. The two are not independent because, in the long run, the accumulation of reserves growth from setting short-run liquidity positions (from open market operations) must be consistent with the long-term price objective. But the two can be uncorrelated in the short run, just

as tax receipts and government spending appear to be uncorrelated over short time horizons.

The most important of these instruments is the long-term price objective, but it should almost never change. If policy is appropriate, people will hardly be aware of it as a policy. The focus will be on the short-run liquidity decisions (short-run changes in the federal funds target) because setting the federal funds rate target depends on incoming data and knowledge about the shocks hitting the economy. In Gavin, Keen, and Pakko (2005), we show how the analysis of monetary policy depends on whether one views monetary policy as having a transitory effect on liquidity or as having a long-lasting effect on the inflation trend. Faust, Swanson, and Wright (2004) show that unexpected shocks to the federal funds target have been highly persistent. Such persistence most likely is caused by minor, but nearly permanent, shifts in perceptions about the Fed's long-run inflation objective.

**The Optimal Monetary Policy Objective Is Price Stability**

To understand the role of monetary policy objectives, we leave the Arrow-Debreu world of complete markets and perfect information. The role of policy objectives always is to eliminate the distortions caused by departures from the assumptions of a perfect world underlying monetary policy analysis. In the case of costly price adjustments, the best thing that the central bank can do is to eliminate unnecessary changes in the price level. In the consensus New Keynesian model of Woodford (2003), the optimal policy objective is a stable price level.

A credible price stability objective affects the environment in which short-run policy is made. It changes the environment in two important ways. First, it eliminates an important source of indeterminacy in economic models. Whether it does so in the actual economy is a debatable issue, but there is no doubt that, in models, leaving the long-run price objective uncertain increases the likelihood of asset pricing bubbles and self-fulfilling prophesies of deflation.

Second, a credible long-run policy objective creates flexibility for pursuing alternative short-run goals. One of the results clearly established in the literature since 1994 is that the short-run volatility of both output and inflation can be reduced if the central bank is committed to a path for the price level (or, equivalently, a long-run inflation objective). The only exception to this result is in models where most agents are backward-looking (that is, they ignore information about expected changes in policy). Even there, the aggregate welfare losses associated with backward-looking behavior are an important policy problem. The best thing the central bank can do in this case is to encourage forward-looking behavior by being clear about the inflation objective and following systematic procedures to achieve it.

Optimal monetary policy in an open economy is still very much a frontier issue for economic research. In practice, I suspect that following inflation targeting strategies already has led central banks to coordinate in ways that approximate good, if not optimal, policies. Inflation targeting has led countries to adopt converging targets for inflation that are quite low. To the extent that they eliminate inflation in their traded goods sectors, they make nominal exchange rate fluctuations reflect real values.

**Inflation Targeting Works**

I was somewhat surprised to learn that the general adoption of inflation targeting among the industrial economy central banks has given the general public the impression that the targeted inflation rates are long-run objectives. One reason for this public assumption is the central banks' practice of choosing the same inflation target rate year in and year out. For whatever reason, inflation forecasts for all time horizons tend to become centered on the central bank's target. King (1999) argued that the Bank of England should be judged by looking at the average inflation rate over long periods; he suggested 10 years. In practice, this would be a target for the path of the price level where bygones would not be bygones. Central banks should be explaining monetary policy in terms of price-level paths, not inflation rates.

Inflation targeting should not be seen as a rule for short-run behavior. The focus of the literature on rules versus discretion is misguided. There always will be discretion in monetary policymaking; the question is whether there are constraints on the use of discretion. If the inflation target acts as a long-term objective that influences expectations, then it actually will increase short-run flexibility. The objections in Washington, DC, to inflation targeting are based on the idea that inflation targeting is a rule for short-run behavior—a rule that would require the central bank to react in a mechanistic way to incoming news about inflation. If this were true, I also would be opposed to the idea. Inflation targeting works not because of but despite the pressure that it puts on central banks to react to news about inflation.

Inflation targeting was adopted by New Zealand, Canada, and several European countries because they accepted the need to make monetary policy independent of fiscal

policy and because they rejected the Phillips curve framework. Fiscal reform was an integral part of the monetary reform in New Zealand. I also note that Governor John Crow of the Bank of Canada was having a terrible time bringing increases of Canadian CPI below 5 percent until the Ministry of Finance joined with the Bank of Canada to announce a series of gradually declining inflation targets. The Canadian series of targets culminated in an inflation goal defined as a CPI range of 1 to 4 percent. Inflation fell almost immediately to 1 percent. The important point here is that the inflation target should represent a consensus policy of all the relevant government bodies.

Inflation targeting as a long-run rule for price stability is at odds with old-fashioned adaptive expectation models. The decisions by New Zealand to adopt an inflation target and by the European countries to join the European Central Bank (and thus implicitly to adopt a common inflation target) were opposed largely by two groups. One was macroeconomists who continue, even today, to imagine that the Phillips curve is a legitimate framework for conducting monetary policy. The other was a surprisingly resilient group of economists who continue to believe that a policy of long-run price stability necessarily leads to permanently high unemployment.

**Conclusion**

The principal modern problem in foreign exchange policy is how to create a price stability anchor for a paper currency. I suggest that a solution is evolving in the use of inflation targets. In its pure mathematical form, as a short-run rule for guiding daily open market operations with period-by-period targets, inflation targeting is a bad idea and performs poorly as a nominal anchor. If, instead, inflation targeting were seen as a long-

run objective for the average inflation rate, it would become a predetermined path for the price level. In theory, this is a great idea and is similar to the plan for a compensated dollar recommended by Irving Fisher nearly a century ago.

References

Bernanke, Ben S., Thomas Laubach, Frederic S. Mishkin, and Adam S. Posen. *Inflation Targeting: Lessons from the International Experience.* Princeton, New Jersey: Princeton University Press, 1999.

Cogley, Timothy, and Thomas J. Sargent. "Drifts and Volatilities: Monetary Policies and Outcomes in the Post World War II U.S.," *Review of Economic Dynamics*, vol. 8 (April 2005). An earlier version is Federal Reserve Bank of Atlanta, *Working Paper* no. 2003-25 (2003).

Faust, Jon, Eric T. Swanson, and Jonathan H. Wright. "Identifying VARS Based on High Frequency Futures Data," *Journal of Monetary Economics*, vol. 51 (2004), pp. 1107-1131.

Gavin, William T. "Inflation Targeting: Why It Works and How to Make It Work Better," *Business Economics*, vol. 39 (April 2004), pp. 30-37.

Gavin, William T., Benjamin D. Keen, and Michael R. Pakko. "The Monetary Instrument Matters," *Review*, vol. 87 (September/October 2005), pp. 633-658. Federal Reserve Bank of St. Louis.

Gürkaynak, Refet S., Brian Sack, and Eric Swanson. "The Excess Sensitivity of Long-Term Interest Rates: Evidence and Implications for Macroeconomic Models." Unpublished manuscript. Board of Governors of the Federal Reserve System, February 2003.

King, Mervyn. "Challenges for Monetary Policy: New and Old," in *Challenges for Monetary Policy*, pp. 11-57. Symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming (August 1999).

Mayer, Martin. *The Fate of the Dollar*. New York, NY: Truman Tally Books, 1980.

Stock, James H., and Mark W. Watson. "Has Inflation Become Harder to Forecast?" prepared for the conference, "Quantitative Evidence on Price Determination," Board of Governors of the Federal Reserve Board, September 29-30, 2005, Washington D.C.

Woodford, Michael. *Interest and Prices*. Princeton, NJ: Princeton University Press, 2003.