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EDITORIAL COMMENTARY

Opaque rather than transparent: Why the public cannot monitor monetary policy

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Abstract Federal Reserve officials and many observers of monetary policy claim that the implementation of monetary policy has become more "transparent" over the last decade. This paper argues that monetary policy is anything but transparent because multiple and conflicting goals for monetary policy still exist, precise targets for these goals never are defined, the Fed's economic model is unknown to the public and, by confusing its apparent intermediate target variable with its true policy instrument, actions taken to be stimulative can be contractionary and vice versa.

Keywords Monetary policy · Federal Reserve · Transparency

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"Transparency," as it applies to the conduct of monetary policy in the United States, appears to be like pornography in the sense that it defies objective definition. In general, however, a transparent framework would include at least these elements: A well-defined statement of monetary policy's goals, the enunciation of an economic model by which the central bank's ultimate goal variable(s) is determined and the announcement of which policy levers (instruments) the Federal Reserve has chosen to manipulate in its pursuit of a policy objective(s). With an understanding of these three components of monetary policy, it can be argued, the public would have a clear idea of what the Fed is trying to accomplish and how it intends to achieve the goal(s) it has identified. In the absence of information about any of these of three components of monetary policy, however, the Fed becomes less a policy institution that serves the public and more like a Wizard of Oz figure who operates behind a curtain of secrecy and asks the public to trust it with blind optimism.

This paper argues that, on each count, the Federal Reserve fails, albeit for different reasons. In some cases, transparency is limited by technical expertise and, in others, reasonable defenses of some secrecy can be put forward. Troubling, however, are those instances in

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which the Fed unnecessarily obfuscates its actions and their consequences. Each of these topics is developed more fully in what follows.

1 Policy goals

A representative statement of the Federal Reserve's goals was made by Ben Bernanke (2005) at his nomination hearing to be appointed as Chairman of the Federal Reserve System:

> I view the explicit statement of a long-run inflation objective as fully consistent with the Federal Reserve's current policy approach, including its appropriate emphasis on the role of judgment and flexibility in policymaking. Most important, this step would in no way reduce the importance of maximum employment as a policy goal. Indeed, a key justification for this action is its potential to contribute to stronger and more stable employment growth by further stabilizing inflation and inflation expectations. In any case, I assure this Committee that, if I am confirmed, I will take no precipitate steps in the direction of quantifying the definition of long-run price stability. This matter requires further study at the Federal Reserve as well as extensive discussion and consultation. I would propose further action only if a consensus can be developed that taking such a step would further enhance the ability of the FOMC to satisfy its dual mandate of achieving both stable prices and maximum sustainable employment.[1]

Thus, as disclosed by Chairman Bernanke, the Fed should continue to pursue a goal of price stability but not attempt to define that goal in terms of any readily observable market data. As a shown in a table of central bank goal variables recently discussed by Kahn (2007, p. 36), however, failing to provide a specific numerical target or range of values for the inflation rate makes the Federal Reserve unique among central banks in the world's developed economies. Moreover, this statement makes clear that, in Bernanke's view, the Fed also should attempt to achieve a second objective for maximum employment; in the professional literature, this latter goal sometimes is couched in terms of its corollary, the growth rate of real output (GDP). Nonetheless, at his nomination hearing, Bernanke announced his agreement with congressional mandates to pursue, at minimum, two goals in the conduct of monetary policy. At the same time, neither goal was defined objectively.

To be fair, it is true that measuring the price level or its rate of change always has been difficult and has become more so in recent years with the more rapid introduction of new goods and quality changes in existing goods. Moreover, even if measured with small error, the two primary concepts of the price level—the Consumer Price Index and the GDP Deflator—are constructed on different bases that permit them to diverge, or to reflect changes in the inflation rate with different lags. As such, existing concepts of the aggregate price of goods are measured with errors that affect both the average level of prices and its evolution over

[1] Similar statements had been made by Bernanke's predecessor, Alan Greenspan (2002), in testimony to Congress. The following is one representative example:

> However, it is also inherent in our economy that in the long run, the central bank has influence over only nominal magnitudes. As a result, the Federal Reserve can be quite explicit about its ultimate objectives—price stability and the maximum sustainable growth in output that is fostered when prices are stable. *By price stability, however, I do not refer to a single number as measured by a particular price index. In fact, it has been increasingly difficult to pin down the notion of what constitutes a stable general price level.* (p. 6; emphasis added)

time. These considerations offer some justification for the imprecision in a statement, like Bernanke's, of the Fed's objectives.

That said, these issues do nothing to preclude the Fed from making an intelligible statement of price stability as the primary goal of monetary policy. For example, recognizing that the CPI tends to overstate inflation, and the GDP Deflator tends to understate it, leads to a notion of setting a target based on some average of the two.[2] Moreover, with reasonable disagreements about measurement and in recognition that random shocks will have temporary influences on aggregate price indexes, the Fed still could inform the public about its goal by setting a range of values for the inflation rate that would be consistent with its goals. Other developed economies, for example, have chosen a range between zero and two percent for the rate of change in an observable measure of aggregate prices. Publication of such a range and the current value of the chosen inflation measure within it would give the public clear and understandable information on what monetary policy actions have achieved relative to the Fed's stated goals.

More thorny issues abound for what might be meant by "maximum employment" but we need not discuss them here to move to the crux of the argument about why the Fed's position on goals for monetary policy undermines its pursuit of transparency for a public that would like to monitor and understand what the Fed is doing. Rather than being based on technical issues, the motivation might be found in political incentives.

Reasons for not adopting precise goals for the actual conduct of monetary policy can be found in the literature on the strategic behavior of central banks. Assuming that a central bank is charged with achieving a goal for price stability, the argument against setting a precise objective is this: If goals are set too precisely, central bank credibility will be lost if the public observes that stated goals were not achieved. And the central bank's ability to achieve future policy goals will be compromised to the extent that credibility is lost. Hence, "too much" transparency is bad for the efficient functioning of a central bank.[3]

This view, however, seems to disregard the central bank's ability to explain to the public what events caused the actual inflation path to diverge from the target range and what actions the central bank has taken or will take to bring inflation back within the ranges that have been set as being desirable for general economic performance; The Bank of England and other central banks committed to an inflation target do precisely this and, to date, there is no evidence that communications of this type with the public have eroded the credibility of the institutions involved. Moreover, lack of a specific policy objective for, say, the inflation rate, not only fails to make the central bank's policies transparent but also fails to make the central bank *accountable* for its actions. While much was made in the literature of the 1980s about the benefits of making central banks *independent*, a great deal of that literature also failed to recognize that, on a continuum of characterizations, "independent" was at the opposite end from "accountable."[4] Thus, while academic arguments exist for not being too

[2]Ideally, this would be the geometric rather than arithmetic mean. This raises at least one issue not discussed further: The ability of the central bank to educate the public about such things as upward and downward biases and the concept of an average. Also not discussed in the current paper are more complicated technical issues such as the difference between targeting the price level versus the inflation rate and the idea of whether "drift" should or should not be allowed to enter the Fed's decisions. "Drift" in this context occurs when an isolated event, such as a one-time change in energy prices, temporarily raises the measured inflation rate as the price level adjusts from one level to another before resuming its pre-shock rate of change.

[3]See, for example, the literature reviews in Cukierman (2002), Carpenter (2004) and the discussion in (Blinder 2003).

[4]A central bank, it can be argued, should be given independence in how it decides to accomplish its stated goal(s), e.g., accomplish the goal of achieving price stability, but should not be independent in choosing

specific in setting a specific goal for monetary policy, following that course fails to make monetary policy transparent or accountable.

While failing to be specific about an objective for the inflation rate, statements about US monetary policy also still retain a commitment to maximum employment (real growth) even though it is well known that money's effects on real variables are short-lived but will have permanent effects on nominal magnitudes. Without rehashing those standard arguments, the Fed's more fundamental error in making policy commitments to both price stability and output is that it violates a basic mathematical constraint on goals and policy levers. This constraint is that the number of independent goals pursued by a policy body has to be less than or equal to the number of independent policy levers at its disposal. Because the Fed has only one policy lever (instrument)—the quantity of reserves it creates—it can pursue, at most, one independent policy objective. That objective can be prices, output, an interest rate, the exchange rate or a variety of other aggregate variables but it cannot be more than one of them simultaneously unless, by coincidence, the variables happen to share a common co-movement with a change in reserves. In essence, by keeping at least two different objectives—the inflation rate and maximum employment—before the public, the Fed muddies the waters of what objective it might be pursuing at any point in time. The Fed's general failure to adopt price stability as its goal, specify an explicit numerical target for that goal and renounce short-run smoothing of fluctuations in output all contribute to greater opacity in monetary policy.

2 Economic model

If we ignore the other practical shortcomings of monetary policy in the United States as it has been implemented—the existence of multiple goals and the absence of any specific definition for "price stability"—any notion of transparency still would be compromised by the absence of a clear economic model by which the public could monitor the Fed's performance. To understand this idea, consider the Fed's operations when, after its famous emergency weekend meeting on October 6, 1979, it announced that it would adopt a strategy of monetary targeting to reduce the high and rising inflation rate in the US. Based on a growing realization that "the usual suspects" of farm prices, oil prices, union wages and other alleged causes of inflation instead only had one-time effects on the aggregate price level, research showing a link between the rate of money growth and the inflation rate got a serious second look. The economics behind this empirical association was the Quantity Theory relationship:

$$\Delta \ln P = \Delta \ln M + \Delta \ln V - \Delta \ln Q, \tag{1}$$

where M is the nominal quantity of money, P is the aggregate price level, Q is real output and V is the velocity of money's circulation.

which goal to pursue nor in deciding whether it has performed satisfactorily in achieving the stated goal. Determination of the goal should be set, in the US, by Congress and the Fed should be held accountable to the Congress for it achievement of the stated goal variable(s). When laws governing the operation of central banks in other developed countries were re-written to focus attention on the objective of price stability—often setting boundaries for the inflation rate—some of those laws also incorporated specific penalties on the central bank if inflation deviated from those boundaries and was not brought back within the stated target range within a mandated period of time *or* central bank officials could not provide satisfactory explanation for why measured inflation was deviating from the target range. It is in this sense that governments in other countries have made their central banks accountable for their actions in the conduct of monetary policy.

Under the assumption that the growth rates of output and velocity evolve with similar long run trends, money and prices should move one-to-one over time. This testable null, examined over a variety of sample periods and countries, had found robust support. Thus, circa 1979, there was ample reason for the Fed (and central banks around the world) to adopt it as a guide to monetary policy, both as an explanation for how inflation had risen to double-digit rates and as a tool (using money growth as an intermediate target) for reducing inflation back to low rates established by new laws on how central banks should operate—in most developed countries *except* the United States. For purposes of current discussion, however, the key point is that monetary policy at this time had a clear model that could be understood and monitored by the public: If you had a value for the trend growth rate of the money supply and the near-term deviation from that trend, you could make a reasonable prediction about the long-term inflation rate and whether that rate was likely to be accelerating or decelerating from the Fed's most recent monetary actions. The model was abandoned officially by the Fed in October 1982, although it dabbled with a variety of other money-based approaches to policy for another decade.[5]

In contrast to this transparent model, the public now has nothing observable to monitor. As a matter of practice, the Fed sets a target value for the federal funds rate every six weeks and, while it is true that the public can monitor the funds rate and even the federal funds futures market against the established target value, it is not immediately clear how that interest rate is connected to a goal of price stability (***if***, in fact, price stability is the Fed's goal and ***if*** the Fed is above, at, or below the still unknown specific target value for price stability it has not disclosed to the public). True, the economics literature has models that link interest rates *generally* to prices through an output gap but the Fed has not revealed any specific model that guides its policy actions.

If we are looking for a model that links the federal funds rate to the inflation rate, the Fed might be using the model developed by Taylor (1993) and depicted in Fig. 1. The relationship shown indicates a setting for the federal funds rate that is supposed to be consistent with a given target for the inflation rate. To emphasize, it is not known whether this model plays any role in the Fed's policy decisions but it illustrates the properties of the best-known model that links the federal funds rate to inflation. In that case, what seems to be most interesting is the three-year period of 2003–2005 where, taken literally, the Fed appears to have had an objective for the inflation rate of six percent or higher. Moreover, assuming that this was not the Fed's goal, the three-year period of sustained "model failure" was much longer than the leash given to the so-called "failed" monetarist experiment. In any case, the public does not know whether the Taylor model or one like it guides the Fed's policy thinking. At present,

[5]The demise of monetary targeting can be linked to the flawed monetary statistics reported by the Fed and other central banks. As the statistical agency responsible for creating and reporting monetary data, the Fed should be incorporating "best-practice" methodology such that any monetary statistics (or other data) it reported would allow both the public to monitor its actions and the research community to investigate the consequences of monetary policy actions. Were the Fed executing this function responsibly it would be reporting superlative indexes of the money supply as it is now, for example, reporting a Fisher-Ideal index of Industrial Production. Instead, however, the Fed continues to produce and report arithmetic sum indexes of the money supply, data that have no basis in economic or index number theory and data series that are widely known to be deeply and irredeemably flawed. Use of these data in the 1980s, often by Fed staff in research reports, indicated that the previously stable links between money and prices were breaking down and no longer useful as guides to monetary policy. Quite the opposite was true then, and continues to be true now, if the Fed's official money supply data are replaced by properly constructed superlative indexes of the money supply. See, for example, the papers in Belongia and Binner (2000), especially that by Dorsey (2000). Also see the papers in Barnett and Serletis (2000). Failing to produce best-practice monetary data can be considered as another example by which the Fed has not been held accountable for its actions.

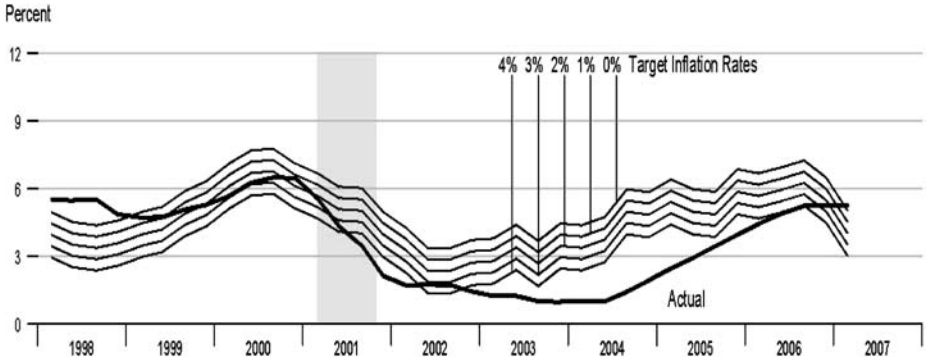

Fig. 1 Actual and implied settings of the federal funds rate derived from Taylor's rule. Notes: The *heavy line* in the figure shows the actual path of the federal funds rate and the five other lines show alternative paths for the funds rate that would have been consistent with the five inflation targets shown above them. The implied values for the funds rate are derived from the expression: $f_t^* = 2.5 + \Pi_{t-1} + (\Pi_{t-1} - \Pi^*)/2 + 100 \times (y_{t-1} - y_{t-1}^p)/2$, where Π_{t-1} is the previous period's inflation rate, as measured by the deflator for expenditures on personal consumption (PCE), Π^* is 0, 1, 2, 3, or 4 percent, y_{t-1} is the log of the previous period's real GDP, and y_{t-1}^p is the log of the previous period's estimate of potential output. Thus, in setting a value for the funds rate using a Taylor rule strategy, the Fed would evaluate the gap between recent actual inflation and its target inflation rate as well as the gap between actual and potential output. Source: Federal Reserve Bank of St. Louis *Monetary Trends*

whatever model links a single short-term interest rate to price stability (however defined and if that is the Fed's goal) remains a mystery. And in the absence of a model that is known to the public, the public cannot monitor the Fed's actions for their likely consequences on inflation or any other variables for that matter.

3 Policy instruments

Of the three components of monetary policy to be communicated to the public, the statement of the central bank's instrument by which policy actions will be implemented would seem to be the most straightforward. As it turns out, however, imprecise, if not sloppy, use of terminology by the economics profession over the last fifteen years has confused how the Fed implements monetary policy and, in so doing, has lost track of an important explanation for how Fed actions might be influencing economic activity. The relevant issue, for purposes of this discussion, is that improper use of terminology, whether initiated or adopted by the Fed, has added another layer of opacity to monetary policy in the United States.

A policy *instrument* is an exogenous variable completely under the control of the policy authority. In the case of the Fed, reserves supplied to the banking system satisfy this definition. In the recent economics literature, however, it is common to see the federal funds rate referred to as the Fed's policy instrument, a characterization that is improper for an endogenously determined market price. It is true that, by controlling the supply of reserves, the Fed can, over short periods of time, peg the funds rate. But because the Fed's presumed goal variables (the inflation rate and/or maximum employment) evolve over quarters of the calendar year, the relevant path for the funds rate is a longer horizon that will be influenced by shifts in the demand for reserves; a shift in the demand for reserves will reflect a shift in the public's demand for loans. Thus, the funds rate over a longer horizon can change in the absence of any action by the Fed if the demand for reserves changes. In this context, the Fed

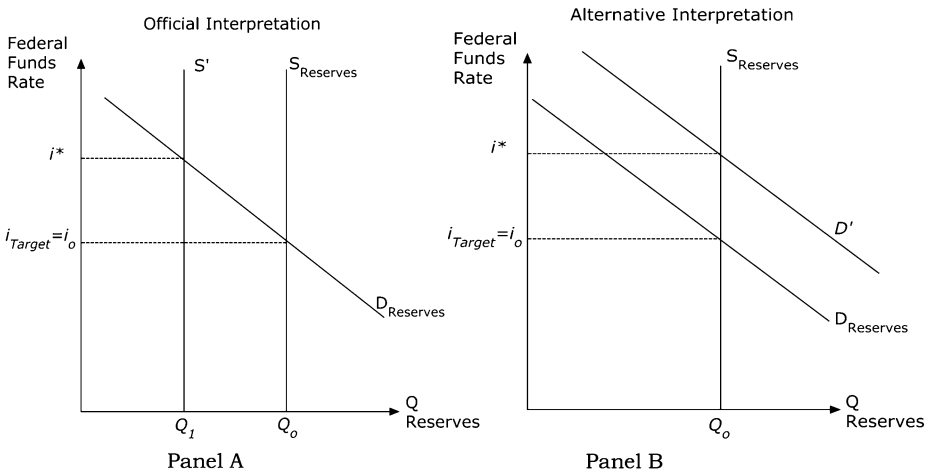

Fig. 2 Standard and alternative interpretations of changes in the federal funds rate

still can use the federal funds rate to implement monetary policy but it then is viewed more correctly as an *intermediate target variable* rather than as a policy instrument. It also should be noted at this point that the federal funds rate, as an intermediate target, now becomes vulnerable to all of the same criticisms once leveled at the money supply as a potential intermediate target variable, such as whether it can be controlled within reasonable bounds and whether, indeed, its endogeneity to the system impedes its viability as a tool of monetary policy.

To understand the importance of this distinction, consider the two market diagrams shown in Fig. 2. For sake of simplicity, the diagram on the left is labeled as the "official" interpretation and the diagram on the right is labeled as the "alternative" interpretation. Both show the federal funds market at an initial equilibrium with the actual funds rate equal to the target value established by the Federal Open Market Committee (FOMC) at its most recent meeting. The interest rate, i^*, shows that, at some time after the FOMC meeting, the funds rate has increased to a value above the targeted rate. In the official interpretation, the only possible "cause" of this increase—because the Fed is "controlling" the funds rate—is some unintended error in its implementation of policy at the Open Market Desk; in its view, the supply of reserves must have shifted leftward to S'. Thus, to restore the target value of the funds rate (assuming the FOMC has no reason to change its targeted value), the Fed will "correct" its "error" by increasing the supply of reserves back to its original position at S and, presumably, the targeted value of the funds rate, i_0, will be restored.

The alternative story told in the right-hand diagram also shows the funds rate rising to i^* but, in this case, the cause of the change is a rightward shift in the demand for reserves, a shift driven by an increase in the demand for loans during a business cycle expansion and independent of any action by the Fed. Now consider the implications of a Fed response—based on its interpretation of the "official" story in Panel A—applied to this diagram. Thinking that the funds rate has risen because it has been accidentally too restrictive, the Fed will add reserves to the banking system. But, in the case of Panel B, the real cause of the increase is not a Fed action but an increase in the demand for reserves driven by an increase by the public's demand for borrowing. By adding reserves at this point in the cycle, the Fed will be adding monetary stimulus at exactly the point when the economy is already expanding. This will make any business cycle peak higher than it otherwise would have been and, other

things the same, will tend to be inflationary as well. Working this example in reverse, it is possible to show that the Fed also will introduce monetary restraint precisely when the economy contracting! This pattern of procyclical money growth by the Fed was one that led many notable authors (e.g., Friedman and Schwartz 1963; Meltzer 1991, 22–24, for a discussion of this mechanism) to conclude that the Fed was the cause, rather than the cure of business cycles in the United States. Now, however, by calling the federal funds rate—incorrectly—the Fed's policy instrument rather than an intermediate target, this story has been all but lost to the profession.[6] This is especially sad because the last two recessions in the United States can be explained by reference to this story, this policy error, by the Fed.[7]

4 Summary

Much has been made by Fed chairmen, the presidents of the twelve Federal Reserve Banks and academics about the greater transparency of monetary policy in the United States in recent years. This commentary argues that monetary policy still is largely opaque and will continue to be so until the Fed specifies a precise and observable goal for policy, announces a model that guides its thinking and produces "best practice" monetary data that the public can use to monitor Fed actions. At the present time, none of these elements is in place. At least two different goals are being pursued and the public never knows which has higher priority. Moreover, neither goal variable is defined quantitatively and the two most recent Fed chairmen have declared their reluctance to a define monetary goal variable precisely, a failure which makes monetary policy in the United States unique among developed economies. The Fed does announce values for the funds rate, best construed as an intermediate target of monetary policy, rather than an ultimate goal, but the public does not know which economic model guides the Fed in setting or changing its targets nor does it know how the Fed implements policy. Finally, for those economists who would like to monitor Fed actions in terms of a prior economic model that did track and predict inflation well, the Fed produces money supply statistics that have no basis in economic, statistical or index number theory.

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[6] For a much more elegant overview of "memory loss" in modern monetary economics, especially as it applies to a Taylor Rule in determining the optimal setting of the federal funds rate, the role of an output gap in determining the rate of inflation, and the absence of money or The Quantity Theory in modern models, see Laidler (2004).

[7] It is worth a reminder that the 1990–91 recession began in July of 1990, a month prior to Iraq's invasion of Kuwait. That the Gulf War and the increase in oil prices associated with the conflict remain as explanations for the recession is curious given that the starting date of the downturn precedes both events.

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