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## **Monetary Policy Transparency: Transparent About What?**

Daniel L. Thornton

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FEDERAL RESERVE BANK OF ST. LOUIS  
Research Division  
411 Locust Street  
St. Louis, MO 63102

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# Monetary Policy Transparency: Transparent about What?

Daniel L. Thornton  
*Federal Reserve Bank of St. Louis*  
[thornton@stls.frb.org](mailto:thornton@stls.frb.org)  
Phone (314) 444-8582  
Fax (314) 444-8731

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## *Abstract*

This paper puts the issue of monetary policy transparency into a broad economic perspective. In so doing, it narrows the focus from that which frequently appears in this literature. I argue that the sole economic argument for transparency is policy effectiveness. Transparency is desirable if it enhances the effectiveness of policy and is not if it does not. In cases where transparency neither enhances nor impairs the effectiveness of policy, the case for transparency must be argued on non-economic grounds. The degree to which policymakers should be transparent depends on the data-generating process for the economy—which determines the feasible objectives that policymakers can pursue—and on the policy goal that policymakers select from the feasible set. If secrecy enhances the effectiveness of policy, policymakers would have an obligation to be secretive. This analysis has implications for other important policy/transparency issues. Important among these is the assumption in this literature that inflation and output must be viewed as substitutes by policymakers. I suggest that policymakers might generate a better inflation/output outcome if they work from the assumption that their inflation and output objectives are complements rather than substitutes.

JEL classification: E43, E59.

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## 1. Introduction

Considerable emphasis has been placed on the importance of monetary policy transparency in the last decade or so. In this literature, transparency is primarily taken to mean public disclosure, and will be taken to mean this here. It is frequently suggested, either implicitly or explicitly, that transparency is essential to credibility and accountability. At times it seems as if transparency has become an “end” rather than a means to an end. It is as if some believe that non-satiety applies to transparency—more transparency is always preferred to less.

I attempt to put the issue of monetary policy transparency into a broader economic perspective; but, in so doing, I will narrow the focus of the discussion from that which frequently appears in this literature. I argue that the only economic issue is whether transparency enhances or impedes the efficacy of policy. If transparency were to reduce the efficacy of policy, there would be no economic rationale for it.

Transparency is neither necessary nor sufficient for credibility or accountability. It is not an inviolable proposition of monetary policy. Properly viewed, transparency is a means to an end. It is not, nor should it ever be, considered an end in itself. Seen from this perspective, it is appropriate that central banks be judicious in choosing the extent to which they will be transparent.

It has been suggested that movements in the short-term policy interest rate will have a larger effect on longer-term rates if policy actions are more predictable. I will argue that what is important from the point of view of the expectations hypothesis is the persistence of changes in the policy rate, not the predictability of rate changes. A corollary to this argument is that policymakers do not necessarily benefit from following

a specific policy rule. I also argue that the loss function, which is frequently used to analyze monetary policymakers' behavior, is inappropriate for practical policy discussions because it misses the essential element of the inflation/output debate. Indeed, I suggest that policymakers might achieve a more favorable inflation/output outcome if they viewed inflation and output as complements rather than substitutes.

## **2. Some Preliminaries**

In the literature on monetary transparency, transparency has many facets and nuances. Hence, it is important to be as specific as possible in order to avoid confusion. For example, a central bank could be transparent or secretive about its operations (how and with whom it does business), about its economic forecasts, or its operating procedure—whether it focuses on interest rates or money. It could also be transparent or secretive about changes in the stance of monetary policy, or about its policy objective.<sup>1</sup> This paper focuses on transparency as related to the central bank's policy objective and changes in the stance of policy. However, the issue of transparency with respect to a central bank's policy objective may affect other aspects of transparency, such as whether it should be transparent about its economic forecasts, its operating procedure, and the like. Whatever the particular issue, it is my belief that the economic argument for transparency should be guided by the principle that greater transparency is economically desirable only if it can be reasonably expected to enhance the efficacy of policy.

A second but related issue is the degree or extent of transparency. In some cases, the degree of transparency can be viewed as a continuum. For example, a central bank could release its economic forecasts to the public, but not be completely transparent about

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<sup>1</sup> Geraats (2000, 2002) and Eijffinger and Geraats (2002) suggest an alternative taxonomy. Specifically, they distinguish five aspects of transparency: political, economic, procedural, policy, and operational.

how the forecasts were made. In other areas, however, transparency is better thought of as discrete. For example, if it is known that a central bank is targeting inflation, it can either state what its target is or not. Now, of course, one might argue that the central bank might try to be fuzzy and only give a range rather than a specific target level. Alternatively, it might simply state that it wants to keep inflation “low,” without ever stating what low means. Policymaking is as much of an art as it is a science. Consequently, a range of acceptable inflation might be more transparent than a specific target level that may never be hit exactly. Moreover, if a group rather than one person makes monetary policy, as is frequently the case, policymakers may not be able to come to an agreement about what “low” means. Like the arithmetic mean, a specific target has the advantage of being precise, but need not represent any policymaker’s desired inflation rate.

## **2. Why Be Transparent?**

The question of why monetary policymakers should be transparent usually elicits two answers: transparency enhances the effectiveness of policy and it is necessitated by the principle of democratic accountability (e.g., Blinder et al., 2001). When policy effectiveness and democratic accountability are both considered, issues that are conceptually separate and distinct become intermingled. I fear that this has led to some confusion. Transparency, *per se*, is simply a means to an end. For monetary policy, the only end that matters is policy effectiveness. If transparency does not enhance the efficacy of policy, there is no economic rationale for it.

There need not be a conflict between the lack of transparency (or even secrecy) and the principle of democratic accountability. When it comes to policy effectiveness

and democratic accountability, economists' preferences are—that is, should be—lexicographic. The principle of democratic accountability enters the decisionmaking process only if actions taken to increase transparency do not impinge on the effectiveness of policy. Of course, there is room for debate. There will always be uncertainty about whether a specific action to increase transparency will be detrimental to the efficacy of policy. It is reasonable to be cautious, however. Procedural changes that seem like good ideas may be far less desirable when exposed to the bright light of hindsight. And, unfortunately, we live in a “putty-clay” world.

To see the logical partition between policy effectiveness and democratic accountability, consider an extreme example. Assume that the true economic environment—i.e., the economy's true data-generating mechanism—is such that the *policy-ineffectiveness proposition* of Sargent and Wallace (1975, 1976) holds. The economic environment is such that, once they are known to the public, monetary policy actions are immediately reflected in prices with no corresponding effect on output. In such a world, no predictable monetary policy, no matter how well designed, can have any effect on real variables. Monetary policy neutrality holds not only in the long-run steady state, but at every horizon.<sup>2</sup>

In such a world, would policy be “effective” only if policymakers surprised economic agents? This question cannot be answered without specifying the policy objective. The desirability of transparency depends not only on the nature of the economic environment but on the policy objective. If policymakers choose to keep the long-run inflation rate at some level, there are reasons to believe that being transparent

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<sup>2</sup> This observation has been made elsewhere by Cukierman (2001) and Jensen (2000).

about that objective and being credibly committed to it will help policymakers achieve their objective.

Suppose, however, that for whatever reason policymakers decide that their sole objective is to stabilize output. Do they have an incentive to be transparent? Not in this world. Indeed, they would not even reveal their estimate of the natural rate of output. If they did, economic agents would anticipate that policymakers would ease policy to stabilize output as soon as it looked like output would move below policymakers' estimate of the natural rate. Prices would rise in anticipation of policymakers' action. When policymakers actually took action there would be no output response—the policy action would already have been completely reflected in the price level. If the objective were to stabilize real output about some long-run trend that is determined by the economic environment, policymakers would have to work behind the scenes and surprise economic agents.

What about democratic accountability? Democratic accountability would not be an issue. Indeed, economists living in such a world would argue that policymakers need to be secretive—not transparent. A conference like this would likely be titled, *The Importance of Secrecy in the Conduct of Monetary Policy*.

Moreover, there would be no need to argue that secrecy is desirable because the gains from better economic performance outweigh the losses associated with violating the principle of democratic accountability because secrecy *per se* does not violate the principle of democratic accountability. Central banks are the creation of governments and, as such, are accountable to the public via elected public officials. This requires openness, but not necessarily public disclosure.

Of course, the end never justifies the means. Consequently, central bankers are accountable not only for achieving the objectives, which they or the elected public officials set, but also for pursuing these objectives in a manner that is consistent with the social mores. For this and other reasons, there is often tension between secrecy and democratic accountability, but they are not incompatible. Indeed, there are a number of U.S. government agencies—the FBI, the CIA, and the Joint Chiefs of Staff—that balance the ideals of a representative democracy with their dependence on an element of secrecy. Moreover, some economists argue that secrecy is important for the efficacy of foreign exchange intervention.<sup>3</sup> Secrecy to enhance the efficacy of government agencies or central banks does not, in fact, violate the principle of democratic accountability. This coexistence is well established.

Some may argue that these government agencies have used secrecy as a way to conceal wrongdoing or ineptitude. Moreover, there is a danger that secrecy will be the objective and policymakers may attempt to cloak secrecy with policy effectiveness (e.g., Goodfriend, 1986). To be sure, oversight is essential to a democracy. But the issues of the efficacy of democratic accountability and monetary policy transparency are best discussed separately.

My first conclusion is that public secrecy and democratic accountability are not incompatible. The first and overriding argument for monetary policy transparency is effectiveness of policy. The principle of democratic accountability comes into play *only*

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<sup>3</sup> Woodford (2001, pp. 300-02) considers this argument in the broader context of the economic benefits of secrecy, but argues that the point is not relevant when one considers the effect on consumption in a model where consumption depends on the proportion of individuals that participate in the market. This counter-argument appears to miss the point if policy actions are transmitted primarily via their ability to move asset prices.

if one can effectively argue that greater transparency will not reduce the effectiveness of policy.

My second conclusion is that the degree of transparency is a function of both the economic environment and the objective or objectives of policy. The economic environment sets limits on the objectives that policymakers may pursue. Attempting to achieve objectives that are outside of the feasible set determined by the economic environment is quixotic. The desirability of transparency, however, depends solely on whether transparency will increase the effectiveness of policymakers in achieving their objective or objectives.

### ***2.1 Transparency and Economic Stabilization Policy***

While neutrality, or perhaps even superneutrality, appears to characterize real world economies, policy ineffectiveness does not. There are a number of reasons to question the policy-ineffectiveness proposition: markets, especially goods markets, do not adjust immediately; expectations may not be rational, at least in the sense of the rational expectations hypothesis; and prices may be slow to adjust because of transactions costs or other considerations. These possibilities, coupled with the realization that policy surprises do not appear to be able to account for the extreme persistence that characterizes real economic variables, have led economists to consider the effects of anticipated monetary policy on the real economy.

The important question that needs to be addressed is, does monetary policy transparency enhance the effectiveness of monetary policy in real world economies? Several analysts (e.g., Blinder et al., 2001, Woodford, 2001, Freedman, 2002, Broaddus, 2002) have suggested that it does. They argue that monetary policy affects short-term

interest rates, but economic activity is determined by long-term interest rates. The link between short-term rates (that are most directly affected by policy actions) and the long-term rates (that are most closely linked to economic activity) is the expectations hypothesis of the term structure of interest rates (EH). The simple EH—that the long-term rate is determined by the markets' expectation for the short-term rate over the holding period of the long-term asset, plus a constant risk premium—is routinely rejected by the data, and especially so when the short-term rate is the overnight federal funds rate (Thornton, 2002, and Sarno and Thornton, 2002). Nevertheless, it is fair to say that most policy analysts believe that long-term rates are largely determined by the market's expectation of the policy rate.

Blinder et al. (2001) argue this point by analyzing the behavior of long-term and short-term rates in Europe and the U.S. over the period from January 1990 to January 2001. They note that

the figure illustrates the gap between what central banks do with the short-term interest rate and what the markets deliver at the longer end of the spectrum. Expectations, which lie in between, do make a difference. The less volatile are these expectations, the more stable and predictable is the link between monetary policy and its effect on the economy. Since market expectations are partly shaped by the future course of actions of the central bank, monetary policy is more effective the more accurately it is anticipated by the markets. (p. 12)

I have two points to make in this regard. First, the effect of monetary policy on long-term interest rates is determined solely by how long the policy rate is expected to stay at its new level, and not whether the policy action *per se* is anticipated. Under the EH, the extent to which long-term rates are affected by changes in the policy rate is determined by the horizon over which market participants expect the policy rate change

to persist. Other things the same, the longer the change is expected to persist, the larger the change in the long-term rates.

Second, the effect on longer-term rates will occur whether or not the policy action is anticipated. If the action is anticipated, long-term rates will move in advance of the action. If the action is unanticipated, long-term rates will move as soon as the market becomes aware that the action was taken. For example, assume that policymakers surprise the market with a 100-basis-point decrease in the policy rate. Under the EH, long-term rates should move by the change in policy rate, but only over the horizon that agents believe that policymakers will not reverse their policy action. The more persistent market participants expect the policy rate change to be, the larger will be the change in longer-term rates for a given adjustment of the policy rate. If policymakers wish to have a large effect on long-term rates, their actions should be both aggressive and persistent.<sup>4</sup>

Is the effectiveness of policy enhanced if policy actions are anticipated? I believe that the answer is ambiguous. To see why, assume that the behavior of the short-term rates in the U.S. and Europe is a consequence of policy actions. Interpreted in this way, the behavior of short-term interest rates suggests that very different monetary policies resulted in rather similar behavior of the long-term rates. To argue that the behavior of the long-term rate in the U.S. prior to 2001 increased the effectiveness of monetary policy, Woodford (2001, p. 310) points to an argument made by Blinder et al. (2001).

Specifically, he notes that

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<sup>4</sup> The EH asserts that long-term rates are determined by the market's expectation for the short-term rate over the term of the long-term rate, plus a constant risk premium. Hence, the magnitude of the changes in the long-term rate associated with a change in the policy rate is determined both by the magnitude of the policy rate change and how long the policy rate is expected to remain at its new level. Consequently, a given change in the long-term rate could be achieved by varying the magnitude and duration of expected policy rate changes. If policymakers want to have a large effect on long-term rates when they know that

Blinder et al. (2001, p. 8 [actually, p. 9]) argue that in the period from early 1996 through the middle of 1999, one could observe the U.S. bond markets moving in response to macroeconomic developments that helped stabilize the economy, despite relatively little change in the level of the federal funds rate, and suggest that this reflected improvement in the bond market's ability to forecast Fed actions before they occur.

Now see what happens when this argument is applied to the behavior of rates in 2001. Despite an overall cut of 475-basis-points in the funds rate target from January to December 2001, U.S. long-term rates barely moved. Before 2001, long-term rates moved a lot with only modest changes in the policy rate. After 2001, however, long-term rates moved very little despite very large and (historically speaking) rapid adjustments of the policy rate. In the former case, expectations of future policy are said to have enhanced the efficacy of policy. In the latter case, however, expectations of future policy appear to have reduced the effectiveness of policy. Consistent with the EH, some argue that long-term rates were little changed because market participants expected that the Fed would have to reverse policy relatively quickly. Consequently, the dramatic policy actions of this period had very little effect on long-term rates.

I believe it ill advised to interpret economic data in terms of a hypothesis that has received little empirical support. Nevertheless, it is interesting to note that when the EH is used to interpret the behavior of long-term and short-term rates, in the one case, expectations of future policy appear to enhance the effectiveness of policy, while in the other case, they impede policy effectiveness. Consequently, whether expectations of policy actions enhance the effectiveness of policy is ambiguous. From the point of view of the EH, what matters most for the effectiveness of policy is the size and persistence of policy actions, not whether policy actions *per se* are anticipated.

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they will have to reverse their policy actions rather quickly, they should be more aggressive in changing the

Before ending this discussion, it is important to note that there is a sense in which predictability is important. Specifically, it is important that market participants be able to predict how long short-term interest rates will remain at a particular level. But this is true whether or not market participants are able to anticipate policy rate changes.

## ***2.2 Transparency and Credibility***

In the above analysis the issue of credibility was ignored. If transparency is not required for successful stabilization policy, perhaps it enhances policy indirectly. For example, it is frequently suggested that transparency is essential for credibility, and greater credibility can enhance policy effectiveness. In the above discussion this could be manifested by a credible commitment to maintain the policy rate at the new level for a period of time (Woodford, 1999, and others call this “policy inertia”).

Most often, however, the issue of credibility arises in discussions of policymakers’ long-run inflation objective. I believe there are two important questions. First, and perhaps foremost, is transparency necessary for credibility? Logically, the answer is no. A central bank that consistently delivers low and stable inflation will have credibility even if it does not publicly acknowledge that this is its goal.

Furthermore, central banks need not be transparent in other areas to achieve inflation credibility. For years the Swiss National Bank and the Bundesbank had credibility for keeping their inflation rates low and stable. This occurred despite the fact that neither central bank was a model of transparency and had no explicit inflation target. A central bank that consistently performs in a particular way will have credibility even if the market has little or no idea of what the objective is or how the central bank achieves it. The saying that “actions speak louder than words” is particularly true when it comes

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policy rate.

to credibility. In the final analysis, credibility is earned—there is simply no other way to get it.

The second question is, does transparency enhance credibility? I believe the answer to this question is, not necessarily. I acknowledge that actions and words likely speak louder than actions alone.<sup>5</sup> Nevertheless, it is not difficult to envision situations where greater transparency would not enhance credibility. For example, assume that all 12 members of the FOMC agree that the long-run inflation objective for monetary policy is 1 percent as measured by the CPI. Now consider two cases: In one, the debate surrounding this decision was secret and the public only knows the objective agreed on by policymakers. In the other, the record of the debate is released and the public knows that the debate was contentious and that the decision to set a 1 percent long-run target for the CPI passed by a very narrow margin. Specifically, it became known that many of the members believed that a 1 percent target was too low and could not be achieved without sacrificing economic stabilization. In which of these two instances would the central bank's long-term inflation goal be most credible? I am inclined to believe it is the former. In this particular case, secrecy would enable the central bank to gain credibility more rapidly.<sup>6</sup>

Having said this, however, I believe that statements concerning the central bank's desire to reduce and stabilize inflation may shorten the time required for achieving credibility, so long as the central bank's words coincide with its actions. It may also be the case that being transparent in other areas, such as economic forecasts, operational procedures, and the like might foster achieving this objective.

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<sup>5</sup> For a discussion of this and related issues, see Cukierman (1992), especially chapter 16.

<sup>6</sup> For a debate on this issue along similar lines see Issing (1999) and Buiter (1999).

### ***2.3 Transparency and the Need for a Policy Rule***

Some economists suggest that, to be predictable, policymakers need to be clear about how they will respond to economic information. For example, Woodford (2001, p. 314) has suggested that transparency requires policymakers to follow a policy rule, noting that “if the bank does not follow a systematic rule, then no amount of effort at transparency will allow the public to understand and anticipate its policy.” There are several problems with implementing policy using a policy rule. One is that economic information tends to come in packets not individual pieces. Each day brings a variety of information from a multitude of sources. Precisely how policymakers will respond to a particular piece of information depends not only on that piece of information but perhaps on other information in that day’s packet. Moreover, the effect of economic information on policy decisions is likely to be cumulative. How policymakers respond to a particular piece of news in each day’s packet will likely depend on the information in previous days’ packets.

It would also appear that the predictability of policy actions depends on how policymakers set the policy rate. For example, assume that policymakers set the policy rate at date  $t$  at the level that they believe will enable them to best achieve their policy objective given all the available information at the time. At date  $t$ , some or perhaps all policymakers may anticipate that new information will likely cause them to change the setting of the policy instrument at a future date. Given the uncertainty at date  $t$ , however, the policy instrument is not adjusted to that level. Indeed, some policymakers may think that the policy rate will have to be increased, while others might believe that it will need to be reduced. In any event, policymakers will adjust the setting of the policy

rate only when the available information suggests that the policy objective cannot be achieved with the present setting of the policy instrument. In order to predict changes in the policy rate, economic agents would have to be able to predict both the new information and how policymakers will respond to it.

Economic forecasts are frequently erroneous—most often in their size and occasionally in their direction. Moreover, the size of the forecast error is typically positively related to the length of the forecast horizon. Hence, even if economic agents knew exactly how policymakers would respond to particular economic events, predicting such events would be difficult. If long-term rates are largely determined by expectations of economic events and expectations of how policymakers will respond to them, I am not surprised that the EH has not fared well empirically.

Woodford's suggestion that policymakers rely on policy rules to implement policy appears to be an attempt to mitigate the effects of "uncertain policymaker response." I have already suggested several practical reasons why anticipating policymakers actions will be difficult. Following a policy rule seems ill advised for a number of other reasons as well. Taylor (1993) discusses several of these. For one thing, policy decisions are far too complex to be represented by an algebraic equation without a statistically significant and economically important error term. Hence, there will always be considerable uncertainty about how policymakers will respond to a given circumstance.

A bigger problem with a policy rule is that policymaking requires discretion, even if policymakers want to follow a simple rule. To see why, assume that policymakers have only one policy objective, say, price stability, and one policy tool, say, open market

operations. A very simple rule would be to buy government securities when the inflation rate moves below the inflation target and sell government securities when the inflation rate moves above the inflation target. Even in this extremely simple environment, it would be difficult to say precisely when and by how much the central bank will conduct open market operations in response to changes in the inflation rate. The reason is that, before they can act, policymakers must know the source of the shock and whether the shock is permanent or transitory. There are price level shocks associated with one-time movements in productivity, oil prices, and the like. Because of market frictions that cause prices to adjust slowly, such shocks are reflected in deviations of the inflation rate from the inflation target. There may also be more permanent shocks to the inflation rate, say, associated with a persistent change in productivity growth. Even with this very simple policy rule, policymakers must evaluate economic circumstances to implement policy.<sup>7</sup> Given our present state of knowledge, a certain amount (I believe a significant amount) of discretion is required to implement monetary policy, even if policymakers want to follow a policy rule. Following a policy rule becomes even more problematic when there are unique shocks such as the September 11 terrorist attacks and the Russian default.

Finally, as I noted earlier, if monetary policy affects output and inflation only by its effect on long-term interest rates, it is far more important that the market participants predict how long policymakers will hold the policy rate when it is changed than they predict when the policymakers will change the policy rate. The rule that makes the

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<sup>7</sup> See Cukierman and Lippi (2002) for a discussion of the problem of signal extraction and the use of a policy rule under uncertainty.

former predictable need not be the same as those that make the latter predictable. Moreover, it need not take the form of the simple Taylor rule.

#### **2.4 Transparency and Policymakers' Loss Function**

If policymakers do not follow a policy rule, at least perhaps they can be more transparent about their policy objectives. Along this vein, Svensson (2001) has argued recently that if central banks do not explicitly state the relative weight on output-gap stabilization relative to inflation stabilization, “the objectives under inflation targeting remain somewhat fuzzy.” He suggests that “inflation targeting central banks should specify explicit loss functions.”<sup>8</sup> The recommended loss function is of the general form

$$L_t = (1 - \delta) E_t \sum_{\tau=0}^{\infty} \delta^\tau .5 [(\pi_{t+\tau} - \pi^*)^2 + \lambda x_{t+\tau}^2], \quad 0 \leq \lambda < 1,$$

where  $\pi_t$  and  $\pi^*$  are the actual and targeted inflation rates,  $x_t$  is the gap between actual and *potential* output, and  $\lambda$  is a policy choice variable that indicates the relative weight that policymakers give to stabilizing inflation and output, respectively.

There are practical problems associated with announcing an explicit loss function. For instance, policymakers would want to distinguish between the variance of inflation and the variance of output that they could reasonably expect to control and that which is outside the feasible region of policy.<sup>9</sup> Policymakers might be happy to take credit for the reduction in the variability of inflation and output in the U.S. over the last couple of decades (McConnell and Perez-Quiros, 2000), even if they are not responsible for it. On the other hand, they would be understandably reluctant to accept responsibility for increases in variability for which they were not responsible. Given that there will be ambient variability in these variables, no matter how well designed and executed the

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<sup>8</sup> Svensson (2001), p. 13.

policy, policymakers would have to explicitly specify the limits of their control in this relationship and what they can and cannot take responsibility for.

A more fundamental problem is that this commonly used loss function may not represent the tradeoff that policymakers confront. This can be seen by noting that as the discount factor  $\delta$  approaches 1, the loss function approaches the weighted sum of the unconditional variance of inflation and the output gap, i.e.,

$$\lim_{\delta \rightarrow 1} L_t = .5[Var(\pi_t) + \lambda Var(x_t)].$$

Like transparency, the choice of  $\lambda$  depends critically on the economic environment. In particular, a non-zero choice of  $\lambda$  is predicated on a negative relationship between the variance of inflation and the variance of the output gap. If the variances of inflation and the output gap were positively related, say,

$$Var(x_t) = h(Var(\pi_t)) = \theta Var(\pi_t), \theta > 0$$

then the above expression could be rewritten as

$$\lim_{\delta \rightarrow 1} L_t = .5[(1 + \theta\lambda)Var(\pi_t)].$$

The choice of  $\lambda$  that minimizes this expression is  $\lambda = 0$ .

This observation is important because the structural relationship between the variance of inflation and the variance of the output gap is not obviously negative. For example, McConnell and Perez-Quiros (2000) have presented evidence that there was a marked reduction in the variance of inflation and output in the U.S. that took place in the early 1980s.

In a simple experiment, I calculated the correlation between squared deviations of CPI inflation from trend, defined by the Hodrick-Prescott filter of monthly and quarterly

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<sup>9</sup> For example, see Taylor (1979).

data from 1959 through 2001, and the squared deviations of output from a Hodrick-Prescott filter of industrial production (monthly) and real GDP (quarterly). The correlation is 0.23 and 0.13 for monthly and quarterly data, respectively.<sup>10</sup> Because of the persistence of deviations in inflation and the output from these measures of trend, the correlation increases if the data are averaged, and the correlation is positively related to the horizon over which the data are averaged.<sup>11</sup>

Of course, what matters for the policy debate is whether actions that policymakers take to reduce the variance of one of these variables necessarily increase the variance of the other. Here, too, there is reason to be skeptical of a negative relationship. Whether reducing the variance of one of these variables increases or decreases the variance of the other depends on the structure of the economy and the nature of the shocks that policymakers attempt to offset.<sup>12</sup> For example, if most shocks are aggregate demand shocks, policymakers can reduce the variance of both inflation and output by attempting to offset the effects of such shocks. The possibility of a tradeoff of the type discussed in this literature arises from shocks to aggregate supply.<sup>13</sup> In the case of aggregate supply shocks, the appropriate policy response depends on the nature of the shock. For example,

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<sup>10</sup> These results are similar to those obtained by Bullard (1998) using a different procedure.

<sup>11</sup> Kahn, McConnell, and Perez-Quiros (2001) suggest that the causation could go from economic stability to price stability. Specifically, they argue that changes in inventory behavior associated with improved information technology reduced the variability of output and that the reduction in output variability enabled policymakers to better stabilize inflation.

<sup>12</sup> For example, assume that there are demand shocks that policymakers anticipate and offset. This would reduce both the variances of output and prices. See Thornton (1982) for a more detailed analysis.

<sup>13</sup> Of course, Taylor (1979) noted some time ago that a vertical Phillips curve did not necessarily eliminate the possibility of a long-run tradeoff between “inflation variability” and “output variability.” This arises in Taylor’s model, however, because of his assumptions that inflation is only determined by the output gap and real balances effect inflation by changing output: real balances have no direct effect on inflation.

a policy tightening in response to a permanent (or very persistent) rise in productivity growth could be harmful.<sup>14</sup>

Much of the monetary policy transparency literature is based on the canonical macroeconomic model where policymakers can affect inflation only by changing the size of the output gap. If the canonical model accurately describes the true economic environment, there must be a negative relationship in the effect of policy actions on inflation and output. Hence, given that most policy discussions are presented in this framework, there is little wonder that policymakers have become conditioned to view the inflation and output objectives as substitutes.<sup>15</sup> While it appears that bringing the long-run inflation rate down from high levels requires actions that result in a temporary reduction in output, evidence that maintaining the inflation rate at a low/stable level requires an output sacrifice is far from compelling. Moreover, there is considerable evidence that high inflation impedes economic performance.<sup>16</sup> On the other hand, there is virtually no evidence that keeping inflation low requires output to be below potential or that low inflation harms economic activity. Indeed, anecdotal evidence suggests that economic performance may be somewhat better when inflation is low and stable.

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<sup>14</sup> Mishkin (2002) congratulates Greenspan for not mechanically responding to the surge in output growth in the 1990s.

<sup>15</sup> Individuals who believe that inflation, especially “moderate inflation,” is good for the economy are also likely to argue that more weight should be given to output stabilization in conducting policy. The real issue here, however, is the size of the inflation target. There are three reasons that economists argue for choosing a non-zero inflation target: measurement error, Howitt’s rule, and the beneficial effects of inflation. Measurement error is the belief that the measured rate of inflation overstates the true inflation rate, i.e., there is some positive rate of measured inflation that is equivalent to zero inflation. Howitt’s rule is the argument that the reduction in inflation should continue as long as the present discounted value of the benefits to society to further small reductions in inflation exceeds the present discounted value of the costs of achieving a lower inflation rate. The beneficial effects of inflation stem from the belief that “moderate” inflation enhances the performance of the economy. For a critical assessment of the five arguments for why moderate inflation is beneficial, see Marty and Thornton (1996). For an assessment of Howitt’s rule, see Thornton (1996).

<sup>16</sup> This is not surprising in that there are a number of ways that inflation can adversely affect both output and output growth. For a discussion of some of these possibilities, see Thornton (2000).

There are a number of potential reasons why low and stable inflation may enhance economic performance. A reduction in inflation volatility could lead to a marked reduction in confusion between absolute and relative price changes. The ability of market participants to better distinguish absolute from relative price changes could lead to greater stability in aggregate output. Lower and less volatile inflation could also reduce the inflation risk premium in long-term rates, reducing both their level and volatility.

### **3. Why the Emphasis on Monetary Policy Transparency?**

The emphasis on monetary policy transparency coincided with the acceptance of the idea that monetary policy cannot affect real variables in the long run. This idea, which was prevalent before the Great Depression, had taken a long hiatus in the wake of the Keynesian Revolution. Over time, a considerable amount of evidence, both theoretical and empirical, pointed to the conclusion that, even if inflation is not always and everywhere a monetary phenomenon, it is the only thing that central banks can control in the long run.

The modern version of monetary policy neutrality is embedded in the natural rate hypothesis, however, not the quantity theory. The natural rate hypothesis asserts that the long-run Phillips curve is vertical. In the “short run,” however, a tradeoff exists between real output or employment and inflation. Policymakers can exploit this trade off; however, inflation can be reduced only by reducing output below its natural rate. As I have already noted, the idea that there is an exploitable short-run tradeoff between output and inflation is central to today’s canonical macroeconomic model.<sup>17</sup>

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<sup>17</sup> See McCallum (2002) for such a model and for one view of the role of money in such models. See Leahy (2002) for a discussion of other possible roles for money in the canonical macroeconomic model.

I believe the real debate about the choice of  $\lambda$  is about the nature of the (expectations-augmented) Phillips curve. Ben Friedman (2002, p. 4) has argued as much recently, noting that

the evidence for the natural rate model has never been as strong as the prevailing consensus within the economics profession (not to mention the case for inflation targeting) has let on. As Robert Solow has argued, the natural rate model seems a good description of the U.S. experience in the post World War II period, but only that—and in particular, not of the European post-war experience, nor of either the U.S. or the European experience before the war. Theoretical work (by Blanchard and Summers (1996), for example) has shown numerous ways in which some part of what the natural rate model takes to be purely temporary departures of output, employment or unemployment from the equilibrium level induce permanent, or at least very long-lasting, changes in the equilibrium itself. Empirical work based on fairly long time periods indicates that the evidence for a negatively sloped Phillips curve (King and Watson (1994), or (2000)), is at least as strong as the evidence for long-run neutrality. But the evidence is hardly conclusive on either side, and for the moment the logic of the natural rate model underlies much of the structure of modern macroeconomics. The logic behind inflation targeting is consistent with that whole.

Simply stated, if one believes that policymakers' ability to affect real economic activity without affecting its ability to control inflation is limited, little weight would be given to output stabilization in conducting monetary policy. On the other hand, if one believes that there is a statistically significant and economically important relationship between inflation and the output gap, some weight would be given to output stabilization. Moreover, the size of the weight will be positively related to one's belief about the slope of the short-run Phillips curve tradeoff and the amount of time that policymakers have to exploit market frictions, i.e., the length of the short run. This is reflected in the fact that, in models where inflation is determined by an expectations-augmented Phillips curve,

policymakers will put some weight on the output gap in their policy rule even when  $\lambda = 0$ .

Friedman (2002) argues that *transparency* and *credibility* are code words for inflation targeting, suggesting that “a ‘transparent’ policy means one that the public understands to be ‘credibly’ committed to low inflation.”<sup>18</sup> To the extent that being transparent and explicit about the inflation objective and being credibly committed to it is a defense against the economic and political forces that might create an inflation bias, I believe that Friedman is correct.

Friedman goes on to argue, however, that being specific about the central bank’s long-run inflation objective “is ‘transparent’ in that it holds a part of what the central bank is doing before the clear glass while obscuring other parts behind a logical partition”; by this he means, “it removes from explicit discussion whatever objectives the central bank may hold for output, employment, or other real outcomes, over less than the long run.”<sup>19</sup>

Here I disagree. Being credibly committed to an inflation objective does not necessarily reduce a central bank’s ability to “stabilize output” or, more precisely stated, the central bank’s ability to keep output close to potential. Indeed, I believe the opposite is likely to be true for the reasons mentioned above and others. Moreover, policymakers’ output objective is likely to be asymmetric.<sup>20</sup> That is, it seems to me that policymakers are likely to care only if output is below their estimate of potential, or if the economy is

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<sup>18</sup> Friedman (2002), p. 16.

<sup>19</sup> Friedman (2002), p.16.

<sup>20</sup> Cukierman (2002) considers the possibility of an asymmetric output objective, noting that if policymakers’ output objective is asymmetric in the standard model, policymakers have an incentive not to be transparent.

in danger of recession. They are not likely to care if output is above potential, as long as this does not impede their ability to achieve their long-run inflation objective.

In addition, I believe that an explicit and credible inflation (or price level) objective gives policymakers more latitude to pursue expansionary policies to offset adverse shocks to aggregate demand. Indeed, based on work with Ken Kuttner, Adam Posen (2002) concludes that there is no evidence to support “the view that increased central bank transparency causes harm by diverting monetary policy from real stabilization...”<sup>21</sup> Specifically, they find that inflation-targeting central banks are better able to respond to adverse shocks than non-inflation-targeting central banks. Poole (2002) has recently made this point by arguing that the slow response of U.S. monetary policy in postwar recessions before the 2001-02 recession was due in large part to concerns about inflation. He further notes that the rapid response in 2001 was facilitated by the fact that inflation was well contained and that the Fed had a credible commitment to keeping it so. This appears also to have been the case for both the Bundesbank and the Swiss National Bank, who were at times able to pursue other objectives because they had a credible commitment to keeping inflation low and stable.

If policymakers’ objective for output is asymmetric and if maintaining a credible inflation objective enhances policymakers’ ability to respond to negative aggregate demand shocks, a better operating assumption for policymakers might be that low inflation enhances economic growth and stability. Consequently, rather than impeding it, a transparent, credible, and explicit inflation objective may enhance policymakers’ ability to keep output near potential.

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<sup>21</sup> Posen (2002), p. 19

What exactly do policymakers need to be transparent about? I believe that the essential thing is their long-run inflation objective. The evidence in the U.S. and elsewhere, however, seems to suggest that monetary policy can achieve low and stable inflation by simply stating that the objective is “price stability” without stating an explicit inflation or price level objective. Nevertheless, I am inclined to believe that policy is better served if the inflation objective is explicitly stated. For one thing, doing so removes ambiguity about the inflation objective and, thereby, reduces the inflation risk premium in long-term rates. Explicitly stating the inflation objective also serves to codify the inflation objective, making it less likely that policymakers will change their long-run inflation objective because to do so will require that they explicitly state the reasons for the change.

Policymakers should also be transparent about the fact that keeping inflation low and stable is the best way that monetary policy can promote economic growth. Policymakers should acknowledge that they would engage in counter-cyclical policy when adverse shocks to aggregate demand threaten a recession. They should explicitly state, however, that they would not pursue a counter-cyclical policy if doing so would threaten achieving their long-run inflation objective.

Finally, I need to point out that the above analysis holds only if the long-run Phillips curve is vertical. If one believes that the long-run Phillips curve is negatively sloped—as Friedman (2002) hints might be the case—policymakers would have to target a long-run inflation-unemployment pair. In this case, however, the discussion would not be how much weight should be given to inflation and output in the conventional loss

function, but rather the specific inflation-output pair that policymakers should target, i.e., the equivalent to the point on the long-run Phillips curve.

#### **4. Conclusion**

This paper views monetary policy transparency from a purely economic perspective. Several important conclusions emerge from this approach. First, the sole reason for monetary policy transparency is policy effectiveness. If policy effectiveness could be enhanced by secrecy, policymakers would have an obligation to be secretive. Secrecy and democratic accountability are not incompatible. The ends never justify the means, however, so secrecy is not a license to violate social mores.

Second, the extent to which policymakers choose to be transparent depends both on the economic environment and the objective of policy. The economic environment determines which objectives are feasible, and policymakers then choose among the policy options in the feasible set. Whether policymakers choose to be transparent depends solely on whether transparency will help or hinder them in their pursuit of the policy objective.

A third conclusion is that the predictability of policy actions does not enhance policymakers' ability to effect long-term interest rates as some have suggested. What matters is the persistence of changes in the policy rate, not whether changes in the policy rate are anticipated. The degree to which policy actions are anticipated only determines *when* longer-term rates will respond to anticipated changes in the policy rate. How long policymakers will hold the rate at the new level will determine the *size* of the effect of a given action on longer-term rates. Predictability is important only to the extent that economic agents can predict how long policymakers will keep the policy rate at a

particular level. I also show that policy effectiveness is not necessarily enhanced when policy actions are predictable.

Much of the focus in the transparency literature has been over how much weight policymakers should give to inflation or output stabilization in conducting policy. Such discussions are a natural consequence of the canonical model within which they are framed. I argue that the recent focus on the tradeoff between the variance of inflation and the variance of output or output growth in modern discussions of monetary policy misguide policymakers. Moreover, I argue that the real debates should be over the nature of the Phillips curve. So long as policymakers believe that inflation can be reduced only by taking actions to reduce output below potential, policymakers will believe that they can only improve on one of their objectives at the expense of the other. There are reasons to believe that low and stable inflation enhances the performance of the real economy. If the objective for the real economy is to keep output close to potential, I believe that policymakers would do better to view their objectives for inflation and output as complements rather than substitutes. By having a credible commitment to keeping inflation low, policymakers put themselves in the best position to keep output near potential. This also puts policymakers in a better position to respond effectively to adverse economic shocks to the real economy.

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