

CENTRAL BANK ACCOUNTABILITY
IN FORMULATING MONETARY POLICY

Remarks by

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It is a pleasure to be invited by the Legal Department and the Institute of the International Monetary Fund to address such a distinguished group of central bank officials representing so many different countries. As Director of Research at the Federal Reserve Bank of New York, I am often asked to comment on issues pertaining to monetary policy. One of the issues that fascinates me the most is how a central bank can simultaneously function as an independent institution yet still be accountable to the public as any central bank must be in a representative democracy.

It is clear to me that various frameworks work well in different countries, a result, of course, of each country's history, traditions, financial market structures, and legal frameworks. Nonetheless, I do believe that there are broad-based issues all central banks must address. In my remarks to you this morning, I would like to focus on one such issue that bears on central bank independence, accountability and transparency in the formulation of monetary policy. This issue has to do with central bank objectives and policy rules.

Before turning to this discussion, however, I would like to set in a somewhat broader context for you a bit of the history of the Federal Reserve, its monetary policy structure, and some of the ways different countries implement monetary policy. My concluding remarks will address how the Federal Reserve currently functions as an independent institution yet remains accountable to the public in its conduct of monetary policy.

In the broadest sense, the history of the Federal Reserve reflects the dynamic tension set forth in the Constitution of the United States with its checks and balances to ensure that the powers of government do not alienate the rights of people. The responsibilities of government versus the rights of individuals, the centralization of power in the federal government versus its dispersal to the states, the mistrust of government versus faith in individuals are notions that are as alive in the Federal Reserve System today as they were when this country was being shaped more than two centuries ago.

Compared with a number of other countries, whose experience with central banking goes back centuries, the Federal Reserve, at some 85-years old, is a relative youth.

The Federal Reserve Act was not passed by Congress until 1913. Its original purposes were to provide the country with an elastic currency, establish facilities for discounting commercial credits, and improve the supervision of the banking system. More broadly, in establishing the Federal Reserve System, Congress sought to create an institution that would combine the benefits of public and private outlooks while insulating its functions from day-to-day political pressures.

The central banking system Congress put in place reflects this country's historic concerns about a centralized government monopoly of the creation of money and the desire to parcel out that control through a system incorporating regional diversity and private sector involvement. The Federal Reserve today is thus a regionally dispersed institution with both government and private interests represented in its ownership and control--a testament to the longstanding belief that formal involvement by the private sector is essential to the credibility and management of this country's central bank.

When the Federal Reserve was established in 1913, the government had a direct role. It was represented on the

seven-member Board of Governors by the Secretary of the Treasury and the Comptroller of the Currency. In 1935, however, Congress removed these two officials from the Board of Governors in an effort to strengthen the independence of the Federal Reserve from political pressures within the government. The seven governors who today comprise the Board of Governors are appointed by the President with the approval of the Senate. Each governor must come from a different geographic region, or district. Originally, governors were appointed for ten-year terms so as to insulate them from short-term political pressures; the terms were increased to fourteen years in 1935.

To balance central oversight in Washington with regional and private sector input, Congress created twelve Federal Reserve district banks, each serving a geographic region. The creation of the district banks as separate corporate entities with local boards of directors and member banks as stockholders was a key aspect of the Federal Reserve Act. The directors of the Reserve Banks, then as now, are one of the primary means by which the Federal Reserve Banks interact with the private sector on an ongoing basis. Six of the nine directors of each district bank are elected by the member

banks; three are appointed by the Board of Governors. Of the nine directors, three represent banks and six represent the public, with particular consideration to the interests of agriculture, commerce, industry, services, labor, and consumers. The Reserve Bank presidents are appointed by the directors, subject to approval by the Board of Governors in Washington.

In the early decades of the Federal Reserve, responsibility for formulating and implementing monetary policy was not centralized in the Federal Open Market Committee, or FOMC, as it is today. Instead, the twelve district banks undertook open market operations and set the discount rate for banks in their areas, which required the approval of the Board of Governors. In 1922, the district banks created their own committee to coordinate their open market activities. Since 1935, the FOMC has existed in its current form.

The FOMC, as you know, is responsible for overseeing the transactions the Federal Reserve conducts in the open market. These transactions either provide reserves to or absorb reserves from depository institutions. In addition to operations in the domestic securities market, the FOMC

directs operations undertaken by the Federal Reserve in foreign exchange markets.

The debate surrounding the creation of the FOMC pitted some members of Congress who wanted only the Presidentially-appointed governors in Washington to set monetary policy against others who wanted the regional Reserve Banks to continue control of the Committee. The compromise reached allows all seven governors and the president of the Federal Reserve Bank of New York a permanent vote on the Committee but only four of the remaining eleven district bank presidents a vote at any time. This compromise reflects that delicate tension of checks and balances on centralized authority which, as I have noted, lies at the core of the Federal Reserve System today.

Central banks may differ in how they carry out their functions, the importance they attach to specific instruments or tools to achieve their goals, and the degree of independence they have within their governments. Nevertheless, all central banks share a time-honored duty to formulate and implement monetary policy--with its twin goals of promoting domestic price stability while stimulating real growth. These goals remain at the core of any central bank's policy in a representative democracy.

It is important to stress, however, that integral to achieving price stability is the need for all central banks to avoid the direct financing of government budget deficits. Central banks simply cannot be involved in the direct financing of their country's budget deficits and simultaneously hold inflation in check. Such financing runs the clear risk of generating inflation and, as history has shown, can account for all hyperinflations that we have observed to date.

The way that central banks implement monetary policy is to influence the growth of money and credit in the economy in response to deflationary or inflationary pressures as they arise. Central banks alter monetary policy through the use

of a set of instruments, or tools. In the United States, these tools are grouped into three broad categories:

1) setting reserve requirements for banks, 2) setting the lending rate and making loans to commercial banks, and 3) buying and selling government securities or other government-guaranteed instruments. While we in the United States state our policy in terms of an interest rate target, as an operational matter, we execute policy, as I have noted, through the purchase and sale of securities. As lenders of last resort, central banks also stand ready to use the available policy instruments to forestall national liquidity crises and financial panics.

While these may be said to be the broad goals of central bank policy, there are considerable differences among central banks in how they implement monetary policy. A great deal of research has been undertaken in recent years focusing on how central banks can best balance their need to be both independent and accountable to the public while at the same time pursuing a monetary policy strategy that keeps inflation in check and growth on a sustainable path.

Economists today, I believe, would broadly agree that regardless of the tools central banks use to implement

policy, they must adopt a long-term time horizon in their conduct of monetary policy, primarily because monetary policy works only with long time lags. In my view, a period of roughly three years is the time horizon over which monetary policy moves today will have their effect on output and prices and households and businesses will do most of their planning. This is the time horizon that Chairman Greenspan has articulated as relevant for the definition of price stability, namely, that price stability exists when inflation is not a consideration in household and business decisions.

Some economists have further argued that it is desirable for central banks to provide a transparent standard for the assessment of policy if a country is to achieve price stability. Some of my colleagues in the Research Department at the Federal Reserve Bank of New York, for example, have published some work on this topic. In the Bank's July 1997 Economic Policy Review, they suggest that an announced target for monetary policy--such as a numerical inflation goal--is one way of credibly conveying to the public a central bank's commitment to price stability and thereby locking in inflation expectations.

A number of central banks have, in fact, adopted an

announced target for monetary policy. Some have chosen, for example, a publicly-announced numerical goal for inflation--Canada, New Zealand, and the United Kingdom are among these countries. Other central banks, by contrast, have chosen exchange rates as a target for their monetary policy, while still others have chosen to announce a target for a monetary aggregate.

All of these possible targets for monetary policy have advantages and drawbacks--all have been used successfully in some countries while meeting with failure in others, depending on the economic context in which they have been implemented. Before turning to my own research on policy rules for central banks, I would like to review briefly with you how some of these specific monetary policy targets work.

Monetary policy targets come into play once a central bank makes a commitment to price stability as the goal of monetary policy and chooses to implement that goal by announcing a specific target. In so doing, a central bank basically has a choice of three different frameworks or targets--exchange rates, monetary aggregates, and inflation.

When a central bank opts to target the exchange rate as a means to pursue price stability, it typically selects a

currency of a low-inflation country to which it fixes the value of its own currency. A major advantage of an exchange-rate target is that it is clearly stated, transparent, and easily understood by the public. Practically speaking, such a target obliges the central bank to limit the creation of its currency to levels comparable to those prevailing in the country to which its currency is pegged. If the exchange rate target is credibly maintained, inflation expectations can be lowered to the level of that in the anchor country.

There are a number of drawbacks, however, to a central bank's decision to link its currency directly to that of another country. For one, a country that fixes its exchange rate relinquishes control of its domestic monetary policy. This means that the country's central bank cannot respond to domestic shocks not experienced by the anchor country. Nor can the central bank avoid shocks transmitted by the anchor country. Furthermore, as the recent exchange rate crises in a number of Asian countries have underscored, in a world of global capital markets, countries with fixed exchange rate regimes are subject to sudden speculative attacks when markets perceive a divergence in domestic needs and exchange rate commitments. There can be no doubt that speculative

attacks can be very disruptive to any country's economy.

In my view, a fixed exchange rate approach to ensuring price stability may work best when the country adopting a peg has an economy that is already closely tied to the country or countries to which it is pegging its currency. In this case, all the countries involved are likely to be subject to similar shocks. A fixed exchange rate approach may also work well when a country's central bank, for whatever reason, is unable to make a credible commitment to price stability on a domestic basis alone. In either situation, a central bank that decides to fix its currency to that of another country's must choose a larger, low-inflation country as the anchor.

Another approach central banks have used to pursue price stability is to announce a target for a monetary aggregate. This approach has been successfully applied by a few prominent countries. Like an exchange rate target, an announced monetary aggregate target is transparent and easily understood by the public. Some economists in fact argue that a monetary aggregate target conveys more information than an exchange rate target because it shows where monetary policy is and where inflation is likely to be going.

Nevertheless, the success a monetary aggregate has in

achieving the goal of price stability depends critically on a dependable relationship between the targeted aggregate and the goal of price stability. More specifically, this approach can only be successful in countries where a movement in the monetary aggregate predicts a movement in prices. If fluctuations in the velocity of money, that is, the speed with which money turns over in an economy--due perhaps to financial innovation--weaken the predictability of the relationship between the money target and the inflation goal, this approach will not bring price stability. In the United States, for example, these relationships are not sufficiently stable for a monetary aggregate target to work.

A third approach to price stability is to target inflation. A number of countries, as I have noted, have adopted this approach over the past several years. Like the other two approaches, an inflation target is also transparent to the public. The central bank makes a commitment to price stability clear in policy terms, and the public can easily view deviations from the target over the longer term. An inflation target, like a monetary aggregate target, also allows monetary policy to respond flexibly to economic needs in the short term. Unlike a monetary aggregate target,

however, an inflation target avoids the problem of shocks caused by changes in velocity because it does not depend for its success on a predictable relationship between the stock of money and the inflation goal.

An obvious drawback to an inflation target is that inflation itself is neither directly nor easily controlled by the central bank. Moreover, policy moves in pursuing an inflation target take effect only with a lag. As a result, success in hitting the target is not readily apparent. This is a drawback that exchange rate targeting does not face.

The implication of these drawbacks is that it may not be possible to meet the inflation target at times, which could lead to a rise in inflation expectations. Nonetheless, an inflation target could still offer a transparent commitment to price stability over the longer term for countries that are unable or unwilling to link their exchange rate to that of another country or that cannot rely on stable relationships between monetary aggregates and inflation goals.

My own research in recent years has led me to consider some of the potential consequences for countries whose central banks have opted for a pure inflation target as a

means to pursue price stability. In the absence of attention to other fundamental developments in the structure of the economy, I basically find that the pure inflation target runs the risk of leading to considerable variability in output growth, that is, to potentially wide swings in the growth of output or GDP. These wide swings can entail significant losses in welfare for any country's citizens.

Because of some of the weaknesses I perceive in the adoption of a pure inflation target, I have tried to consider the issue of central bank policy in a somewhat broader context. More specifically, I ask whether there may be a set of rules central banks might adopt that would recognize the potential risks to higher volatility in output growth inherent in a pure inflation target--and their attendant welfare losses--but still allow central banks to be transparent in their policy goals and accountable for their policy performance.

In my view, central bank policy can be thought of as a solution to an analytical problem. Any central bank wants to achieve the highest possible welfare for its citizens by pursuing a policy that encourages stable economic growth at low levels of inflation. These are the so-called twin goals

of monetary policy. At the central bank's disposal, as I have noted, is the use of the interest rate. This is the main tool available to the central bank to influence changes in output and prices. What the central bank wants to do is to minimize or limit deviations in output and prices from their agreed upon target paths. In many countries--but not the United States--the desired paths for output and prices are set by the executive or legislative branch of government, that is, by the people's elected representatives.

Regardless of how the desired paths for output and inflation are set, the central bank must choose a rule that will govern the path of the interest rate so as to limit deviations in output and prices from their targeted paths. In short, the formulation of central bank policy is essentially intended to choose a path for interest rates that will achieve the highest possible welfare for the country's citizens by limiting the losses that inevitably stem from the variability of output and inflation. This path for interest rates is the policy rule.

All of this is easier said than done. Central banks must consider a number of issues in selecting the appropriate path for interest rates.

One of the most important practical issues facing central banks in formulating a policy rule--or the appropriate path for interest rates--is how to assess the tradeoff between the variability in output growth and inflation. For any central bank, there are always tradeoffs between how much variability it is willing to accept in output growth relative to that it is willing to accept in inflation. Measuring this tradeoff with precision, however, is very difficult and the results of efforts to do so to date are poor, in part because the responses of output and prices to interest rate movements can change over time. The most important point I would note here is that policy changes have a far greater and faster impact on output changes than they do on price changes. Price changes, it appears, are affected only very slowly by policy innovations and by much more modest amounts than output changes.

Another practical issue central banks face in setting policy concerns the issue of uncertainty. More specifically, how does uncertainty influence central bank policy decisions? In my research, I look at two forms of uncertainty: the first has to do with uncertainty about the impact of policy changes on output and prices given the central bank's model of the

economy. The second form of uncertainty has to do with the nature of the model itself.

Broadly, I conclude that uncertainty increases the variability in the tradeoff between output and inflation. Moreover, any policy rule a central bank might follow has to be able to work well for a wide range of model choices. The need for a wide range of model choices stems from the fact, as research has shown, that past history may not be a reliable guide to the impact of future policy actions as a result of underlying changes in economic relationships.

Another practical issue central banks must deal with in formulating policy has to do with the inflation level they choose to target. I consider two aspects to an inflation target: first, the optimal level of inflation and how to measure it; and, second, whether I believe central bank policy should allow the average realized level of inflation to deviate from this level.

In my view, an optimal level of inflation has to deal with social welfare considerations. Among economists, however, there is no agreement on what this optimal level should be. Some have argued that a modest level of inflation above zero has benefits for the labor market. Others, by

contrast, have suggested that tax distortions created by inflation mean that the optimal level of inflation may even be negative. As to whether I believe central bank policy should allow the average realized level of inflation to deviate from its optimal level, I would support the view that the average level of inflation may need to be above zero in order to allow central banks to respond to a large shock.

A final practical issue in central bank policy concerns the desirability of smoothing changes in interest rates over time. By smoothing I mean to ask whether it is desirable for a central bank, in response to a shock, to allow interest rates to move in one direction immediately--either up or down--and then allow them to return smoothly to the steady-state level following the initial change. Here I would conclude that a limited amount of smoothing is desirable. I argue that a central bank's optimal response to a shock is to change interest rates immediately, continue in this direction gradually, and then reverse direction slowly.

A related issue has to do with whether a central bank that intends to change interest rates by an agreed amount should make the change all at once or should do so in increments. This issue is more difficult. Here I would

suggest that if everyone knew the interest rate would ultimately rise by 100 basis points--that is, if the change in the interest rate were perfectly anticipated because policy was so transparent--it is difficult to see why a series of smaller changes would be preferred over a single change. Because central banks often will start to change interest rates without really knowing what the final results will be, however, I am in favor of more gradual moves in interest rates that will allow central banks the opportunity to assess the impact of their policy changes. This strategy, I would suggest, may help to improve the precision of policymaking.

Having raised these practical issues concerning central bank policy, I think it is useful to consider more broadly why I believe it is advantageous for central banks to construct a set of systematic responses to external events, that is, to adopt a policy rule. In my view, there are two important reasons to support the adoption of rules by central banks. The first reason has to do with what economists refer to as the dynamic consistency problem, the second with the importance of policy transparency. Let me elaborate.

One of the most important reasons why I support the

notion of central bank rules is because research has shown that when policymaking is based on pure discretion rather than rules, the dynamic consistency problem leads to high steady inflation. The dynamic consistency problem relates to a situation in which a central bank cannot credibly commit to a zero inflation policy. In such circumstances, even if the central bank announces that inflation will be zero--and even if all private sector decisions are based on the assumption that inflation will be zero--it is in the central bank's interest to renege on its commitment and induce inflation of some positive amount. Why is this so? The reason is that at zero inflation, the value of the increase in output obtained from fooling private agents and creating a transitory increase in output more than offsets the cost of the higher inflation. As a result, the central bank's claim of a zero inflation policy, in economists' terms, is not dynamically consistent.

Because the dynamic consistency problem has been found by researchers to be most severe when potentially short-sighted legislatures are able to influence central bank policy directly, the most widespread solution to this problem has been to create independent central banks. It is commonly

thought, and the data confirm, that when central banks are more independent, they are better able to make more credible commitments to a low-inflation policy than those that are less independent. This notion helps explain the widespread movement in recent years to greater independence for so many countries' central banks.

However, as I--and others--have noted, there is a potential conflict between central bank independence and representative democracy. Since one of the crucial elements of a democratic society is that powerful policymakers--including central banks--must be accountable to the people, how can we reconcile these two apparently disparate goals of accountability and independence?

The answer to this question brings me to my second reason for supporting the adoption of rules by central banks. I conclude, as others have also, that the way to reconcile the goals of accountability and independence is for central bank policy to be transparent. When central banks announce targets for monetary policy or are asked to explain their policy before an elected body, such as the Congress, there is both transparency in policy and accountability to the public.

Let me put this notion another way. Transparency and

accountability are enhanced when elected officials announce a target path for prices and/or output and when central banks in turn have to demonstrate how they are meeting these goals. Transparency and accountability are also enhanced when central banks must account to an elected legislature for the policies they are pursuing. It is arguments such as these that have essentially led to the implementation of some of the explicit targeting regimes we have already observed in a number of countries.

My analysis of the desirability of policy rules for central banks leads me to draw a number of lessons with respect to how central banks formulate monetary policy. First, and most important, central banks need to focus on inflation over a medium-term horizon of roughly three years together with other fundamental changes in the structure of the economy in formulating policy. A focus on inflation alone is likely to result in a high level of variation in real output. This finding, I would suggest, provides very strong support for the flexible way in which the targeting of monetary policy is currently carried out in a number of countries.

For example, many countries that have already adopted an

explicit target for monetary policy appear to be taking short- to medium-run real fluctuations into account when deciding on their policies. Further, a number of these countries have announced targets that average a specified level of inflation over a period of several years. By these means, central banks that have opted for an inflation target have been able to retain the flexibility to stabilize their countries' economies in the face of short-run real shocks.

In addition, no country to date has adopted a zero inflation target, or even a target range for inflation that is centered at zero. This suggests to me that countries continue to be both wary of the possibility of driving inflation too low and sensitive to the dangers inherent in bumping against a zero nominal interest rate floor.

My conclusion is that much work remains to be done before we can convincingly articulate a detailed and operational rule for central bank policy. To have such a rule would require agreement on a set of stable numerical estimates of the impact of policy actions on output and prices. Such a rule would also require the ability to estimate the impact of external shocks on the goals of policy.

While this is a course for future research, I would like to conclude my remarks to you this morning with a brief look at how we in the United States deal with these issues of reconciling the independence of the Federal Reserve with our accountability to the public.

There are a number of ways to assess independence. One way is to determine the extent to which the central bank enjoys freedom from the government in formulating and implementing its policies, particularly monetary policy. A key component of this measure of independence is the degree of freedom the central bank has to change official interest rates and select the mix of policy instruments and techniques it uses to undertake open market operations. In these respects, I believe that Congress has provided the Federal Reserve with considerable scope for independently exercising its best judgment as to what monetary policy should be.

Another way to assess independence is to look at the procedures in place for central bank leaders to be nominated and dismissed. In the case of the Federal Reserve, staggered fourteen-year terms for governors clearly insulate the leadership from short-term political pressures and fears of falling out of grace politically. Moreover, once appointed,

governors can be removed only for cause.

Still another way to measure independence has to do with the way the central bank finances itself. In the United States, the Federal Reserve System is self-financing. Its earnings stem principally from interest income on the portfolio of government securities it holds to conduct open market operations. Financing itself internally means that the Federal Reserve is not dependent on Congress for annual appropriations and is therefore insulated from pressures that might otherwise flow from the "power of the purse."

Whatever their degree of independence, central banks typically are nonetheless created by and accountable to elected legislatures. In the United States, the Federal Reserve is accountable to Congress which has delegated to it specific powers Congress is granted by the Constitution. Congress thus retains the authority to oversee and instruct the Federal Reserve as it sees fit.

The Federal Reserve accounts to Congress in numerous formal and informal ways. There are continuous contacts between officials in the Federal Reserve and the government. Twice a year, the Federal Reserve reports to Congress on its monetary policy targets and its senior officials routinely

appear before Congressional committees and sub-committees.

Over the years, Congress and the Administration have periodically sought to alter certain elements of the Federal Reserve. These efforts have contributed to changes in the Federal Reserve's procedures and authority, in many cases allowing the Federal Reserve to evolve and keep pace with the needs of changing times. At the same time, it is important to recognize that at no time has the fundamental independence of the Federal Reserve been in jeopardy. The Federal

Reserve's basic independence today is a widely shared value, which no one questions.

In reviewing the experience of central banking in the United States, I cannot help but conclude that ultimately the only way central banks can achieve their goals is if their integrity is without question and the public has confidence in the policies they pursue. At the end of the day, it is public confidence that is a central bank's most precious commodity in a representative democracy.

Thank you.