

## ***W. Lee Hoskins***

*W. Lee Hoskins is president and chief executive officer of The Huntington National Bank in Columbus, Ohio. This paper is given in honor of Ted Balbach and his service to the Federal Reserve Bank of St. Louis. His resolute pursuit of sound economics as the bedrock of monetary policymaking and his indomitable spirit, even when the policy process ran amok, has served us all well. I thank John Davis, Sandra Pianalto and members of the Research Department of the Federal Reserve Bank of Cleveland for helping to shape and advance my views on monetary policy during my four years with them.*

# **Views on Monetary Policy**

**T**HE IDEAL MONETARY POLICY requires a credible and predictable commitment to maintain the long-term purchasing power of a currency. The performance of central banks, which have traditionally been entrusted with monetary policymaking, is far from this ideal simply because a clear mandate for price-level stability—zero inflation—is absent. In practice, central banks serve as instruments that governments use to pursue multiple objectives that they believe serve their interests. Therefore central banks pursue monetary policies that at best have only a fragile commitment to price stability. Governments are currently pursuing policy coordination or monetary union strategies that are little more than attempts to implement a regime of monetary protectionism in the global economy. The future of monetary policy rests on the continuing struggle between politicians seeking policies that serve their short-term agendas and global financial markets that limit the actions of an individual central bank.

In my remarks I discuss why central banks have been established, their bias toward inflation and the importance of independence and accountability to their effectiveness. I also argue that zero inflation should be the dominant objective of a central bank and that current

efforts to coordinate monetary policies are likely to conflict with that objective.

## **WHY CENTRAL BANKS?**

What is the justification for a central bank? Can some configuration of private institutions in a so-called free-banking environment perform the functions of a government-sponsored monetary authority? Are central banks necessary?

In his 1959 Millar Lectures at Fordham University, Milton Friedman provided a classic statement of the economic rationale for central banks.<sup>1</sup> Friedman's argument appealed fundamentally to the costs inherent in a pure commodity-standard system, for example, a gold-standard system. These costs arise both from pure resource costs and perhaps more significantly from substantial short-run price variability resulting from inertia in the adjustment of commodity-money supply to changes in demand. The inefficiencies these costs represent are a significant disadvantage of commodity-money exchange systems.

As a consequence there is a natural tendency, borne out by history, for pure commodity standards to be superseded by fiat money. But particular aspects of fiat money systems—such as fraudulent

<sup>1</sup>These lectures were subsequently published as *A Program for Monetary Stability*.

banking practices, natural monopoly characteristics and tendencies for localized banking failures to spread to the financial system as a whole—resulted in the active participation of government. We have come to know this active participation as central banking.

Rationales for establishing central banks have not gone unchallenged, not even by Friedman.<sup>2</sup> Disruptions in payments can be costly, but so are the instabilities and inefficiencies caused by the lack of an effective anchor for the price level in fiat money systems. Moreover, theoretical discoveries in finance and monetary economics, closer attention to the lessons of historical banking arrangements and advances in information and financial technologies have contributed to a healthy skepticism about the superiority of central banks and government regulation to alternative market arrangements. For example, some of the financial-backstop functions performed by central banks and banking regulators may have weakened private market incentives to control and protect against risk.<sup>3</sup>

Still, those who argue for alternative monetary structures must at least recognize that their case rests on untested propositions. Yes, it would be wrong to accept unthinkingly our current central banking system as the best alternative for performing the monetary functions of advanced economies, but it would also be wrong to claim that the current central banking system does not reflect society's choice of an institutional arrangement to perform those functions.

It is not sufficient to argue that market-oriented alternatives to our current central banking systems functioned better in other times and places, for example, in 18th-century Scotland.<sup>4</sup> This begs the question of why such a system did not prove to be sustainable. Nor is it sufficient to argue that this system would have prevailed if not for government intervention and interference. This line of debate fails to consider whether a political equilibrium that would support a market-oriented system in an advanced economy exists anywhere.

It is premature to claim that some hypothetical monetary system can or should dominate institutional arrangements that have already evolved from extended political and economic experience. I believe that the prudent first course is to con-

sider the advantages of improving the performance of central banks. The benefits of a properly managed fiat currency are considerable, and the issue is or should be how to provide the central bank with a proper charter to ensure policy action that generates price-level stability in the long term. If such efforts fail, market alternatives should be sought.

Because I am most familiar with the Federal Reserve, let me use it as an example. Before the creation of the Federal Reserve in 1913, the country prospered without a central bank. Broadly speaking, the impetus for creating the Federal Reserve was a series of banking panics that led to contractions in money and credit that in turn caused serious disruptions in economic activity. The nation sought to improve its banking system by establishing a means for providing an elastic money in the context of a monetary standard based on full convertibility to gold. The gold link was severely weakened by the Gold Reserve Act of 1934.

The Federal Reserve was the result of a compromise between those who would have kept the banking system entirely private and those who wanted government to assume a prominent role in a rapidly growing economy. Other nations have grappled with the same problems and created similar institutions. Today many republics of the former Soviet Union and several eastern European nations are facing these same issues. We now have a world monetary system in which governments, through central banks, monopolize the supply and management of inconvertible fiat monies.

The displacement of the commodity standard that prevailed at the time the Federal Reserve was founded has exposed problems not otherwise envisioned in 1913. For example, the price level has no anchor except for that provided by the resolve of Federal Reserve policymakers. The quadrupling of prices since 1950 dramatically demonstrates the failure of Federal Reserve policymakers to provide such an anchor for the monetary exchange system. Fed policymakers' commitment to price stability is neither as explicit nor as strong as necessary for the successful management of a fiat currency. The gradual demise of our convertible monetary standard has brought us to a point that requires a basic

<sup>2</sup>See Friedman and Schwartz (1986)

<sup>3</sup>See Goodhart (1988).

<sup>4</sup>For a discussion of the free banking era in Great Britain, see White (1984).

change to the framework within which the Federal Reserve functions if the benefits of a fiat currency are to be achieved without large offsetting costs.

The evolution of the global monetary system reflects a common, though unstated, acknowledgment that the benefits of a fiat monetary standard are substantial. Wise administration of that standard requires a central bank in some capacity. In this context, the essential issue is this: How can nations achieve the benefits of a fiat money standard and simultaneously constrain the exercise of that power to the service of the public good? Put another way: How can a nation prevent its central bank from debasing the monetary standard it is charged to protect?

### **INFLATIONARY BIAS OF CENTRAL BANKS**

The answer to these questions seems to elude us. Witness the universal debasement of currencies by central banks since the loss of a commodity standard as a price-level anchor. To find the answer, we must review central bank charters and the incentives provided to those who control monetary printing presses. Public-choice economists have focused on this issue and developed a rich literature; however, I feel they fail to provide a satisfactory explanation of the secular bias toward inflation among central banks (with different charters and varying degrees of independence from political influence). Moreover, this approach fails to explain why in earlier periods governments did not consistently exploit the opportunities to inflate by realigning their currencies against gold or dropping their convertibility.

Another explanation for persistent inflation that has some appeal is policy mistakes, or inappropriate targets or operating procedures of central banks. This explanation also leaves some unanswered questions. Why aren't policy mistakes symmetrical? That is, why don't they cause deflations as well as inflations, leaving the average price level unchanged over time? Perhaps policy mistakes are biased toward inflation because of the operating procedures employed, such as interest rate targeting. Yet the Bundesbank, which uses monetary aggregate targets, produces a rising price level. The Bank of Japan uses interest rate targets and has generated a similar increase in its price level during the past two decades. If a central bank is dedicated to price-level stability

over time, the choice of targets or operating procedures probably only influences the variability of inflation rates around a zero mean. In short, a central bank that truly wants to achieve price-level stability can do it with any number of operating techniques, as long as they control money growth over time.

Perhaps a simple, and less elegant, explanation for persistent inflation is that central bankers are suffering from a Keynesian hangover. Central bankers, politicians and the public are merely reflecting the prevailing economic dogma that government has the responsibility and ability to manage aggregate output and employment, as well as inflation. I have argued and continue to believe that a major source of price-level instability comes from multiple objectives assigned to central banks—economic growth, employment, price stability and exchange rates. It is true that politicians pressure central banks to achieve different objectives at different times. Such political pressure can produce inappropriate policy actions; however, the responsibility for assigning multiple objectives to central banks rests as much with the economics professions as it does with politicians. For the last 50 years, many economists have supported various theories of business-cycle management, which required that central banks shift from one objective to another. Today businessmen, politicians and most economists continue to believe that if the economy is weak, the central bank should respond regardless of the cause of the weakness. And so it does.

Some of the current discussions about monetary policy and the Federal Reserve suggest that the lessons of the 1970s may be fading from our memories. Calls for lower interest rates or more rapid money growth are not at all unusual. More often than not, those suggestions seem impelled by desires for growth or desires to offset the problems of particular sectors of the economy. They seem based on the notion that there is a trade-off between inflation and output or between inflation and employment that can be exploited by the central bank. Some of us learned from the experience of the 1970s that such a trade-off does not occur over time. Instead, higher inflation only added to uncertainty, distorted resource allocation and reduced economic performance below the maximum sustainable level with price stability.

Members of a central bank policy committee such as the Federal Open Market Committee (FOMC) reflect what is believed by the mainstream.

In January 1990 the National Association of Business Economists surveyed its members and asked the following question: "Is reducing the inflation rate to zero over the next five years the appropriate objective of monetary policy?"<sup>5</sup> More than 80 percent of the respondents answered no. Their responses indicate that they believe the FOMC should trade off inflation for some other objective, presumably economic growth. At about the same time, the House Subcommittee on Domestic Monetary Policy surveyed 500 members of the American Economics Association who list monetary economics as either their first or second specialty. The unpublished survey shows that only a slight majority of those who responded favored zero inflation over the next five years.

I believe that much of the inflationary bias of central banks over the past 50 years reflects the prevailing view that output and employment fluctuations can be smoothed with monetary policy. Currently, before each FOMC meeting, members of the Committee are presented with the policy views of several prominent economists. Either explicitly or implicitly, these views invariably present the policy choice in terms of a Phillips curve trade-off. Staff projections at the FOMC meeting also imply such a trade-off, as do the statements by some FOMC members. Moreover, policy actions, such as a reduction in the federal funds rate, often follow the release of employment or output statistics, further reinforcing the notion that the Federal Reserve can manage real variables. To the extent that this explanation of central bank behavior is valid, inflationary bias will not be eliminated until there is agreement within the profession on price-level stability as the dominant objective for central banks.

## INDEPENDENCE AND ACCOUNTABILITY

The problems that emanate from multiple, and often incompatible, objectives are well known. To contribute to maximum economic growth over time, central banks must achieve price-level stability. Achieving this goal requires that central banks be free from political expediencies—that is, that they have independence within government. Substantial evidence indicates a link between central-bank independ-

ence and the ability to achieve price stability. Recent studies show that countries that grant their central banks the greatest degree of independence have had the lowest rates of inflation.<sup>6</sup> Even taking into account other sociopolitical factors that might cause inflationary pressures, the degree of central-bank independence appears to have an important effect on a country's inflation rate.

However, with independence must come accountability. Even the clearest objectives will prove elusive without accountability; independence without direct accountability is a dangerous brew for those who drink it. Great harm has come from well-intentioned, independent central bankers with little or no accountability—witness the United States in the 1930s. Many mechanisms exist today to bring accountability to central banking; for example, the employment contract of the governor of the central bank of New Zealand contains a price-stability requirement.

The objectives, degree of independence, and accountability of the central bank are substantially determined by its legal structure. For example, a clear legislative directive to achieve price-stability goals above all others and the freedom to pursue price-stability initiatives would all but eliminate potential conflict with other objectives. The vexing question of what extent, if any, a central bank should compromise the price-stability objective to pursue auxiliary goals, such as smoothing real output fluctuations or stabilizing exchange rates, should be resolved and dictated in the legislative charter. True independence and strict accountability can be attained only legislatively.

Compared with the central banks of other countries, the Federal Reserve System has a better structure to execute monetary policy effectively; however, the Fed is not as well positioned as other central banks. The Federal Reserve is charged with multiple objectives that are often incompatible but that at least include price stability. It is functionally independent within government, but it faces intermittent challenges to its autonomy. Its independence comes from both its charter and its practice. Independence is essentially a delineation between the responsibilities of Congress and the executive branch on one side and the monetary

<sup>5</sup>See NABE Policy Survey (1990).

<sup>6</sup>See Alessina (1988) and Banaian (1983).

authority on the other to limit the motive and means to debase the value of the nation's money.

The source of tension between monetary and fiscal authorities is the central bank's ability to create money. Because the creation of fiat money imposes an implicit tax on money balances, the monetary authority is one source of government revenues. For the most part, the long-run viability of the government's fiscal operations requires that its real current debt burden plus the present value of its expenditures equal the present value of revenues. Thus if the path of debt plus expenditures diverges from the path of explicit tax revenues, fiscal viability requires that the discrepancy be satisfied by seigniorage from monetary growth. This scenario is typically referred to as fiscal dominance over the monetary authority.

The original Federal Reserve charter left many doors open for the executive branch to influence monetary policy. These were partially closed when the Banking Act of 1935 removed the Secretary of the Treasury and the Comptroller of Currency from the Board of Governors of the Federal Reserve System. In addition, the law established the FOMC, with the seven governors and five of the Federal Reserve Bank presidents as voting members, ensuring that power within the Federal Reserve would be shared between political appointees and regional bank presidents. Thus the fire wall that made the Federal Reserve, and not the executive branch, responsible for monetary policy objectives was reinforced. It was strengthened further by the Treasury-Federal Reserve Accord of 1951, which served as a clear statement that the Fed would not be coerced into solving the federal government's debt-management problems. The institutional structure was designed to ensure enough Federal Reserve independence within the government to carry out this mandate without interference.

This independence in principle has held up in practice. The dramatic increases in federal deficits in the early- and mid-1980s prompted fiscal dominance believers to predict that it would be impossible to achieve and maintain inflation rates below the disastrous levels of the decade's start. So far, this prediction has not come to pass. In 1983 the federal budget deficit was 3.8 percent of GNP, a level far above the post-World War II average and nearly equal to the postwar peak realized in 1975. In the same

year, inflation measured by the consumer price index fell to 3.2 percent—a 16-year low. As the decade proceeded, the deficit relative to GNP rose, fell, and rose again to its present level above 5 percent. The inflation rate was impervious to these patterns.

Astute observers might question the relevance of the early- and mid-1980s to the fiscal dominance proposition, because deficits as they are conventionally measured do not necessarily reflect the government's long-run fiscal operations. To name just a few of the problems, the value of long-run government net liabilities is inherently ambiguous, the path of future revenues is uncertain and the appropriate method of discounting future tax and expenditure flows is problematic. Although sympathetic to this view, I am still left with the strong suspicion that if any period in recent history was ripe for the emergence of fiscal dominance, it was the last 10 years.

Indeed, as the decade progressed and the predictions of the fiscal-dominance theory failed to materialize, more sophisticated variants of the relationship between fiscal and monetary policy began to find their way into economic research. The fiscal authority's reign over the subservient monetary authority was replaced by a more subtle and complicated institutional structure, a world in which fiscal and monetary authorities played a game of chicken, the outcome of which left both parties less than fully satisfied.<sup>7</sup> Although deficits may be detrimental to economic performance, the ability of the Federal Reserve to resist monetizing debt has protected the economy from even worse consequences. The Federal Reserve's decision to resist monetizing the federal debt resulted in lower inflation and contributed to fiscal reforms that started with the Gramm-Rudman-Hollings legislation.

In my view the Federal Reserve has sufficient independence to achieve price stability. The core-problem, however, is that the Federal Reserve is not accountable for that objective. Without accountability, the policy process will be neither credible nor predictable. The more credible the commitment to the policy goal, the fewer wrong decisions will be made by the markets. The more predictable the policy reaction to unforeseen economic events, the more limited will be the market reaction to those events. Credibility and predictability can substantially lower the costs

<sup>7</sup>See Sargent (1985).

of achieving and maintaining a stable price level. Yet with the disintegration of the monetary aggregates as intermediate policy guides, discretionary monetary policy actions may seem especially hard to predict because policy objectives and accountability for them are unclear. The existing policy process, with its focus on short-term economic or financial developments does not provide credibility.

How can we change the process to reinforce the credibility of a consistent goal? I think the most secure way would be to give the FOMC a legislative mandate to meet a consistent, attainable and unchanging economic goal. Passage of House Joint Resolution 409, introduced by Representative Stephen Neal, would provide that crucial reinforcement. The Neal resolution simply directs the Federal Reserve to make price stability the primary goal of monetary policy and to achieve that goal within five years. History gives us little basis for expecting price stability or even a stable rate of inflation because the FOMC has had no mandate to produce that result. Giving the FOMC that mandate and knowing that the FOMC intended to stabilize the inflation rate at zero, would provide one gigantic piece of policy information to any rational decision-maker in any dollar-denominated market. The Federal Reserve would remain independent, and it would retain complete discretion about how to carry out policy. The only change would be that Congress would provide more direction about the basic policy objective, and the Federal Reserve would be accountable for achieving it. True accountability would also require an incentive or enforcement mechanism for achieving the objective.

The FOMC can deliver lower inflation without a legislative mandate. Of that you should have no doubt! Inflation is a monetary phenomenon, and the FOMC is the sole custodian of the quantity of money in the United States. If a zero-inflation mandate were in effect, short-term deviations from zero inflation might occur, but one way or another the FOMC could provide a stable price environment. As many scholars have urged, the FOMC might impose accountability on itself by tying policy actions to some intermediate target variable by an agreed-on formula that would ensure price stability. These days, the most popular candidates for an intermediate policy target seem to be nominal GDP and M2, either of which is thought capable of producing reasonable price stability. Another

approach would be for the Committee to specify achieving the ultimate policy goal as the rule, while using discretion in choosing actions to achieve the goal.

Of course having today's FOMC impose accountability on itself (by adopting an explicit rule tying an instrument to a goal) is not a foolproof way to achieve an official policy goal. Credibility would have to be earned through predictable actions consistent with the goal. To adopt an explicit rule, at least a majority of today's FOMC members must not only agree on an overriding macroeconomic goal, but also renounce some discretion to pursue other goals. Moreover, tomorrow's FOMC could decide to change the goal and hence the rule. In the current policy regime, today's policy choice can in no way bind tomorrow's. Unless directed by society through specific mandate, tomorrow's FOMC always has the discretion to change the goal. And with shifting goals there is no accountability. I believe that the lack of accountability for a dominant policy goal of price stability is the major cause of the inflationary bias in the U.S. economy since World War II.

Although the specifics of the Federal Reserve charter differ from those of other central banks, the problems of conflicting objectives and the lack of secure independence and explicit accountability are common to all central banks in varying degrees. Experience around the world and through time repeatedly demonstrates that central banks require independence from day-to-day political life to perform their price-stability role. If we could create legal and cultural conditions that truly fix a central bank with accountability for anchoring the price level, the structure of the central bank itself would become less important. Those circumstances would be a joy to behold, but I am afraid they will be some time in coming.

## **WHY A ZERO-INFLATION OBJECTIVE?**

I strongly believe for three reasons that the dominant objective of monetary policymakers should be price stability. First, in the long run, a central bank can control the price level of goods and services denominated in its own currency, but it cannot control the growth of output (potential or actual). Second, a credible commitment to a price-stability objective enables a central bank to promote economic efficiency

and growth (potential and actual). Third, price-level stability, popularly called zero inflation, is superior to inflation-rate stability.

Among economists, support for the first reason is nearly universal. There is also widespread agreement on the second point. A central bank that pursues price stability promotes economic efficiency and growth. I would venture further to say that experience shows that central banks that have sought to enhance economic growth directly have failed miserably at providing stable price levels and ironically have undercut economic growth in the process. The last reason—that no inflation is preferable to stable, non-zero inflation—is most contentious, particularly when people attempt to compare the transitional costs of achieving price stability with the costs of stabilizing the inflation rate at the status quo.

The argument that the cost of pursuing a zero-inflation target would outweigh the benefit of reaching that target has two dimensions. The first is that the benefit of achieving zero inflation would be small. The second deals with the costs of moving from a 4 percent trend rate of inflation to zero inflation. This is the transition-cost argument, which essentially says that even if zero is the place to be, getting there is not worth the ride. I believe that the benefits of zero inflation are great and that the transition costs can be reduced if the Federal Reserve commits to an explicit plan for achieving zero inflation.

The interaction between inflation and our current tax system, especially as it applies to income generated by capital, represents one of the more significant channels through which non-zero inflation can exact economic costs.<sup>8</sup> This channel of distortion is often not taken seriously because people think that its effects are minimal or that it would be easy to index the tax system. Correcting the tax code is a good idea of course, but until that happens, what possible excuse is there for not letting the monetary authorities do what is necessary to improve social welfare?

It is clear that the horrendous U.S. inflationary experiences of the 1970s and early 1980s created the impetus for the limited inflation indexation of the current tax system; however, the job is far from complete. Capital gains, corporate depreciation and interest expenses, and personal interest income remain untouched by

efforts to index the tax system for inflation. Even the bracket indexation implemented by recent tax reform does not fully protect taxpayers from bracket creep, or nonlegislated increases in marginal tax rates created by inflation. Complete indexation of the tax code, however desirable it may be, will be extremely difficult to achieve. Will another inflationary experience like that of the 1970s be required to induce further progress on tax indexation? I fail to understand why some feel that these inflation-tax interactions are a significant drag on the economy, yet argue that only Congress should be concerned with the problem. The problem exists because of the interactions between inflation and a tax system based in current dollars. Therefore it seems that the responsibility for minimizing these costs lies as much with the monetary authorities as with Congress. Doesn't it make more sense for monetary authorities to try to correct the inflation part of the problem rather than simply hoping that Congress will implement changes that it may be unable or unwilling to pursue? We speak about the costs of achieving zero inflation, but what about the costs of fully indexing the tax system? Surely they would be significant.

Another area of concern is the role of uncertainty as a source of inflation costs. How important are the distortions that arise from price-level uncertainty? There is a class of models—the market-clearing, imperfect-information paradigm associated with Robert Lucas and others—in which inflation uncertainty harms the economy by distorting the period-to-period relative price signals that facilitate the efficient allocation of scarce resources.<sup>9</sup> Despite the pervasive intellectual influence exerted by the Lucas framework to this day, the empirical evidence accumulated since the development of the paradigm in the early 1970s has not been entirely supportive. This point is not lost on critics, who think that the lack of evidence on short-term distortions should persuade us that inflation uncertainty is simply not that important to social welfare. Surely the relative-price/aggregate-price confusion stressed by the Lucas-type models is a special type of uncertainty. The failure to find significant effects from uncertainty that is resolved within a few quarters tells us next to nothing about the type of long-run uncertainty with which the zero-inflation position has always been fundamentally concerned.

<sup>8</sup>See Altig and Carlstrom (1990).

<sup>9</sup>See Lucas (1972).

Indeed, it seems likely that the uncertainty occurring over *extended* time horizons is precisely what is most affected by the average inflation rate.<sup>10</sup> This is one reason why I favor a price-level target. An inflation-rate target enables the price level to drift without bound, and with no enforcement mechanism to ensure that inflation mistakes will be corrected, the long-run variance of the price level is infinite. When people have reason to believe that this standard will erode over time, they invest numerous resources to protect themselves. Those who have nominal debt outstanding will drag their feet in paying it back, whereas creditors will invest in ways to accelerate the collection of funds. The private gains to self-protection are clear, as are the social costs.

Recent experience is the best testimony to the real resource cost of inflation. During the 1970s, people could see that inflation accelerated each year. They guessed, reasonably at the time, that financial assets had limited value in protecting their wealth from inflation. Consequently, farmland, commercial and residential property, and precious metals became much more expensive as people sought to shelter their wealth. Not only was time spent seeking these investments, which was socially wasteful, but also the resource misallocation itself resulted in a great waste of land, labor and capital that society is still paying for today.

It is difficult to comprehend how efficient planning within the public and private sectors could not be inhibited by this type of long-run uncertainty. Furthermore, the intuition that long-run inflation uncertainty is costly has empirical support. In cross-country comparisons, economic growth is negatively related to the variability of inflation.<sup>11</sup> One finds that the case for reducing price level uncertainty is far more compelling than a cursory analysis might indicate.

In evaluating the costs of attaining zero inflation, economists almost always use models in which markets do not clear or do not clear without cost. Gone is the market-clearing, flexible-price, rational-expectations model. In its place is a model with price contracts that make the transition to zero inflation extremely costly. The source of the friction is usually not entirely explicit, but the implication is that we must

assume some frictions. These frictions, coupled with the inability of markets to clear, make ending inflation appear as costly as it does.

Isn't it sensible to assume that the implicit sources of frictions that make lowering the inflation rate costly would also contribute to making inflation costly in and of itself? For instance, a variety of explicit and implicit nominal contracts already exist, and a transition to zero inflation could alter the real values of payments from those that were originally intended. But surely the entire institutional apparatus that generates these contracts must involve resource costs that are positively related to the average rate of inflation.

One should not compare the costs of achieving zero inflation in non-market-clearing models, where such costs are high, to the benefits of being at zero inflation in frictionless, continuously clearing models, where the benefits are low. If we use a model with frictions to measure the cost of getting to zero inflation, then we should also use such a model to examine the benefits of being there. This is one reason I am skeptical of so many cost/benefit estimates of reducing inflation.

I am also skeptical about transition-cost estimates that do not account for the possibility that a price-stability objective will be regarded as credible by the public. Economic theory and reasonable model simulations persuade me to believe that with credible precommitment, a central bank can greatly minimize private-sector planning errors during the transition period. I think that much of the disagreement among economists on the size of transition costs centers on the ability of a central bank to commit itself credibly to achieving its objective. Until I see some hard evidence to dissuade me, I plan to continue my advocacy of price stability as the overriding objective of central banks.

It still puzzles me that volumes of research have been published on central bank operating procedures and management of monetary aggregates, yet relatively little research has been published on the value of a credible precommitment to a price-stability objective. My intuition tells me that the latter is far more important than the former in terms of economic welfare. Of course, credibility depends on policy information avail-

<sup>10</sup>See Ball and Cecchetti (1990).

<sup>11</sup>See Grier and Tullock (1989) and Lebow, Roberts and Stockton (1990).

able to market participants so that they can monitor progress toward the objective.

One major benefit of imposing an explicit intention on monetary policy is that policy actions in the money market would become far less momentous than they are now. Currently, detecting a change in the federal funds rate target from the pattern of open market operations is crucial because it provides markets with one of the few clues as to what monetary policy the Federal Reserve is pursuing. Canvassing the positions of individual FOMC members is a way of predicting future policy. If policy intent were explicit and credible, however, finding the clues in open market operations would have less significance.

I see the greatest payoff in more information about policy intentions. An explicit FOMC commitment to price stability would allow markets to shift resources from watching the Federal Reserve to watching the economy for productive investment opportunities. Focusing on the intent of policy contrasts markedly with conventional concerns for more certainty about the current degree of reserve restraint. There are many ways to reduce uncertainty about the immediate funds-rate implications of policy, just as there are many time schedules by which the FOMC directive might be released. More certainty about the immediate policy implications of the federal funds rate might make Fed-watching a bit easier, but it would not do much to help identify policy intentions beyond short horizons. Releasing Fed directives early might provide a slightly brighter glimmer of policy intentions, but only for a slightly longer policy horizon. We do not need better information about the latest directive; we need better information about the process through which all future directives will be crafted—that is, policy intentions. Nothing would provide more insight than a clearly stated goal

## **MONETARY POLICY AND MONETARY PROTECTIONISM**

Let me turn now to the effects of international policy coordination on the pursuit of zero inflation.<sup>12</sup> Exchange-rate regimes and attempts at monetary union are currently undermining the price-stability objective. Many actions taken

by central banks are not aimed at price stability, but rather are attempts to establish monetary protectionism. By monetary protectionism, I refer to attempts to alter *real* exchange rates through manipulation of monetary policies and with the hope of ultimately promoting a balance-of-payments objective. In the case of a deficit country, monetary protectionists call for an expansion of money growth (or lower nominal interest rates). A monetary expansion, other things being equal, will produce a *nominal* depreciation. If individuals are unable to adjust prices immediately, or if they are slow in perceiving the inflationary aspects of this policy, a real depreciation will accompany the nominal depreciation. As most economists realize, however, the inflation rate will eventually respond to the monetary expansion, offsetting the nominal depreciation and returning the real exchange rate to its initial position. Nevertheless, the tenuous, short-lived relationship between money and the real exchange rate is seductive enough to convince politicians and other fine-tuners that monetary policy can serve mercantilist designs.

My focus on this issue stems from a firm belief that central banks can do no better than guarantee long-run price stability and that any efforts to limit this guarantee are not likely to raise world welfare. Central banks can juggle a real exchange rate and inflation target no better than they can slide back and forth along a stable Phillips curve. A central bank that attempts to maintain price stability and a nominal exchange rate target has more policy targets than policy instruments. At times, these two objectives might be compatible. For example, in the late 1970s, limiting rapid dollar depreciation through intervention could have been compatible with a contractionary monetary policy to eliminate inflation. As often as not, however, these two policy objectives will be incompatible, and the central bank must trade one objective for the other.

Under such conditions, markets will view neither price stability nor exchange-rate stability as a credible policy. The knowledge that central banks will deviate from a policy of price stability to pursue an exchange rate objective will raise uncertainty about real returns and will distort the allocation of resources across sectors and through time. The resources devoted to protecting wealth from possible inflation could

<sup>12</sup>This section summarizes ideas presented in Hoskings and Humpage (1990).

be applied to more productive uses under a policy of price stability. Moreover, attempts to maintain nominal exchange rates will not eliminate exchange rate uncertainty because countries will inevitably resort to periodic exchange-rate realignments. Hedging exchange risk will remain an important aspect of international commerce.

Although monetary protectionism seems most prevalent under the present system of floating exchange rates, it does not follow that floating exchange rates promote its use. Monetary protectionism can result any time a government accepts nonmarket criteria for exchange rates. In principle, a gold standard or a fixed exchange rate regime can limit the scope of monetary protectionism because, if all countries play by the rules of the game, they link money supplies closely to the flow of international reserves. In practice, however, such regimes do not destroy the political motives for monetary protectionism, and examples of monetary protectionism under fixed exchange rates abound. By allowing some discretion in the choice of exchange rate adjustments, fixed exchange rate regimes often produce a mechanism that weakens the allocative efficiency of exchange markets and promotes mercantilist objectives.

In contrast to the interventionist literature, which presupposes an all-wise government acting in the public's best interest, a rich, growing literature on political economy characterizes elected officials as seeking to enhance their own power, prestige and wealth by maximizing their ability to gain votes. Politicians and bureaucrats attempt to extend the scope of their influence by responding to the demands of the most politically active constituencies.<sup>13</sup> A political justification for exchange rate manipulation is that it defers criticism and postpones more fundamental actions. For instance, in 1985 dollar exchange rates were at their zenith, the U.S. current account was deteriorating rapidly and evidence suggested that the United States was becoming a debtor country for the first time since World War I. U.S. manufacturers, facing increasingly stiff competition worldwide, besieged Congress for trade legislation. Most important, analysts increasingly linked the deterioration in the external accounts with the fiscal policies of the Reagan

Administration and Congress. The opportunity cost of government inaction, measured in terms of votes lost, seemed to rise sharply in the early 1980s.

The U.S. current account deficit reflected imbalances between savings and investment in the United States, West Germany and Japan. Politicians, however, cannot easily redress such structural relationships through fiscal policies because of strong vested interests in maintaining various tax and expenditure patterns. Unable to address these structural problems directly and quickly, policymakers might resort to exchange-market intervention. When coordinated through the Group of Seven, such intervention offers a highly visible signal that governments are responding to the desires of their constituencies.<sup>14</sup>

Exchange rate policies can also offer temporary benefits to specific constituencies. When goods prices are slow to adjust, a nominal currency depreciation is equivalent to a temporary, across-the-board tax on imports and a subsidy to exports. With the terms of trade temporarily altered, certain groups in the traded-goods sectors can realize benefits from monetary protectionism similar to those afforded by more traditional forms of protectionism. Ultimately, any benefits from monetary protectionism dissipate with a high inflation rate and with reduced credibility of monetary policy. The inflation costs of monetary protectionism, however, are dispersed across a wider spectrum of individuals and over a longer time horizon than the benefits. A constituency that receives net benefits from monetary protectionism (export- and import-competing firms) can exist. Such a constituency is likely to be more politically cohesive than any constituency for price stability. Consequently, a policy that seems myopic from an economic perspective can be politically attractive.

Another seemingly attractive aspect of monetary protectionism is that Congress and the administration can justify it in terms of broader macroeconomic considerations, such as exchange rate misalignment or current account imbalance, instead of industry-specific considerations, such as automobile and steel employment. Consequently, the rent-seeking aspects of monetary protectionism are less obvious than those of standard protectionist policies.

<sup>13</sup>See Quibria (1989).

<sup>14</sup>The Group of Seven countries are Canada, France, Italy, Japan, the United Kingdom, the United States, and West Germany.

Countries interested in establishing exchange rate targets have a strong incentive to collude in their efforts with foreign governments.<sup>15</sup> In the case where countries attempt to alter nominal exchange rates, such collusion provides tacit foreign approval of these policies and limits the chances that a foreign government will take steps to neutralize the exchange policies of another government. Sometimes such collusion involves having cartel members delay policy negotiations, or exchange rate adjustments, when individual cartel members face critical elections. Bretton Woods and the European Monetary System (EMS) are examples of collusion that were fairly successful for a period. The competitive currency devaluations of the 1930s show what can happen when governments attempt to fix a price but their cartel breaks down. Coordinated efforts to fix exchange rates can allow individual countries to influence the policies of others and to defer some of the adjustment burdens of maintaining the peg. Such mechanisms are found in the EMS and figure in some proposals for target zones and for fixed exchange rates. Many support the proposal for a European Central Bank for just this reason. The alternative is to sacrifice monetary sovereignty to maintain a fixed exchange rate and to follow the monetary policy of a major trading partner.

Under floating exchange rates, a rapid depreciation in the nominal exchange rate in response to such inflationary policies signals the market's displeasure and constrains governments. Through collusion to fix the exchange rate, however, governments can temporarily blunt the exchange rate reaction to their policies and reduce the political costs of pursuing inflationary policies. Coordination to limit exchange rate fluctuations is politically attractive because it eliminates an important, immediate barometer of the market's opinion of government policies.

For their part, central banks often are willing participants, viewing exchange rate management as a legitimate aim of monetary policy. Exchange rate movements can impart useful information for policymaking, and as already noted, exchange rate targets can sometimes be consistent with a monetary policy of price stability. As often as not, however, exchange rate policies conflict with price stability. For example, U.S. purchases of foreign currencies in 1990 seemed inconsis-

tent with a goal of price stability. When these objectives conflict, the Federal Reserve System is torn between its independence and its accountability to the broad national policy goals set by Congress and the Administration. The Federal Reserve does not wish to appear to the public as unresponsive to the objectives of Congress and the administration. Participation also enables a central bank to influence policy formulations that it is powerless to prevent. Such reasoning is a certain sign of a central bank unsure of its objective and insecure about its independence.

In countries with independent central banks, intervention policies might enable fiscal agents to extend their influence beyond the foreign exchange market to domestic monetary policy. Elected officials often seek more stimulative monetary policies than do central banks, hoping to lower nominal interest rates and to stimulate real growth and employment. In choosing a nominal exchange-rate target, intervening and encouraging the central bank not to sterilize the intervention, fiscal agents have a mechanism for such influence that would usually not be open. At times, however, such as when the central bank policy committee is not in unanimous agreement, such an influence, marginal though it may be, could prove decisive in charting future monetary policy actions.

## **INTEGRATED MARKETS AND POLICY CONSTRAINTS**

I have attempted to instill a healthy skepticism for exchange market manipulation, arguing that it is a form of monetary protectionism that harms economic welfare. Monetary protectionism stems as a near-term palliative from the political interactions between policymakers and constituencies with vested interests in particular market outcomes. Any international monetary order willing to accept nonmarket criteria for exchange rates and failing to bind governments with a price-stability objective is ripe for monetary protectionism. To counter the political incentives toward monetary protectionism, nations should adopt monetary mandates, such as the Neal Resolution in the United States, that focus monetary policy on achieving and maintaining long-term price stability.<sup>16</sup> This would do more to eliminate exchange market uncertainty and foster the efficient worldwide use of real

<sup>15</sup>See Vaubel (1986).

<sup>16</sup>See Hoskins (1990).

resources than any program to manipulate nominal exchange rates.

My comments are not meant as a blanket condemnation of international policy cooperation. I strongly support cooperation that makes price stability the dominant objective and recognizes market-determined exchange rates. Only cooperation based on these conditions seems both feasible and credible because it recognizes that nations want monetary sovereignty and will pursue different economic policy objectives.

Contrary to what some might infer, this approach does not preclude European monetary unification in the future, but it suggests a different approach than currently seems to be favored. European governments are not likely to relinquish national monetary sovereignty on adoption of a single market. Consequently, greater exchange rate flexibility than the EMS currently provides seems necessary to ensure that exchange rates do not interfere with the efficient flow of goods, labor and capital following the removal of restrictions. The free flow of resources, if it occurs, will foster a convergence of policy preferences within Europe as governments compete for these resources by providing stable economic and political environments. Governments that fail to provide such an environment will lose resources as markets vote on policies. The resulting convergence of monetary and fiscal policies will lead to greater exchange rate stability. If in time, governmental competition for resources attains a convergence of macroeconomic policy, issues of national policy sovereignty will be muted. Only then will monetary union augment the efficiency gains of a single market. As seems obvious from recent developments in Europe, efforts to rush monetary union are efforts that put the cart before the horse and may well interfere with the progress toward a single market.

To fix exchange rates before a convergence of policy preferences within the European Economic Community seems to ensure that interest rates and prices will bear more of the adjustment burden. Moreover, judging from the experience of Bretton Woods, fixed exchange rates would seem to guarantee speculators periodic exchange rate adjustments and to encourage governments to impede the flow of goods and capital through the reintroduction of restraints. The dynamics of achieving monetary union are as important

as the goal, and price stability is a more important goal than either.

Scores of new nations are busy constructing central banks to implement monetary policy. Using history as a guide, these new central banks will try to pursue objectives other than price stability, especially since they are being counseled by central bankers with weak records on price stability. Short-term political agendas will likely dominate their policy actions and push them away from the pursuit of price stability. Yet it seems that there are powerful market forces that will crimp the efforts of central banks to mismanage their currencies.

The integration of world markets, particularly financial markets, is limiting the degree to which policymakers are willing to drift away from price stability, at least for the major economies. Twenty years ago the Federal Reserve paid scant attention to the effect of foreign markets on the price of U.S. government securities and interest rates in the United States. Yet when I participated in FOMC deliberations, we almost always discussed the effect of a policy action on long-term Treasury rates, currency values or the shape of the yield curve. The FOMC now looks at how world financial markets assess the credibility of its policy actions with respect to inflation expectations. This process, in effect, limits the degree to which the FOMC is willing to risk inflationary policy actions.

In Europe, smaller countries often peg their currencies to the German mark, allowing the Bundesbank to determine their monetary policies. The German central bank is also limited by world markets in terms of the inflation path it chooses to pursue. I am not so bold as to argue that markets will cause central banks to wither away to agencies that simply pump out monetary growth rates that provide price stability. It does seem to me, however, that market forces are strengthening the hand of central banks in fighting political pressures for short-term "quick fixes" to economic problems. Perhaps even politicians will learn the limits of governments in solving economic problems.

If this view proves incorrect, central banks will face the prospect of market participants developing private money to a much greater degree than exists today. When government management of particular institutions results in failure, private-sector alternatives appear—witness the privatization trend in U.S. schools

and courts. Perhaps those who yearn to revisit the Scottish system of free banking may live to see a version of it replace central banking. If so, we are likely to pay a heavy price along the way.

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# Commentary

**L**EE HOSKINS HAS WRITTEN a fine paper on monetary policy. I share most of his views on the role and duties of central banks. Hoskins discusses why the conduct of monetary policy has been entrusted to central banks. He also examines the conditions that must be satisfied for central banks to play an effective policy role.

Hoskins' principal thesis is that central banks are needed to manage a standard based on fiat money. But a fiat standard imposes few constraints on central banks. If central banks are permitted to issue fiat money, there is always the risk that they will abuse their powers. Consequently, under a fiat standard it is necessary to ensure that central banks act in the public interest.

Why do central banks frequently harm the public interest by debasing the currency? Hoskins discusses several possible reasons. He dismisses the answers offered by public-choice economists and also rejects the notion that unsatisfactory performance of central banks is due to the pursuit of inappropriate targets or operating procedures. Instead, he maintains that "central bankers are suffering from a Keynesian hangover." Frequently they do not direct monetary policy solely at price stability but attempt to pursue

multiple objectives that often conflict. Many central bankers attempt to achieve at least two goals—to keep prices stable and to smooth cyclical fluctuations in output and employment. Too often, Hoskins maintains, central bankers also try to manipulate the exchange rate with a view to strengthening the competitive position of domestic industry. Of course they do not pursue multiple objectives because of a character defect. They merely reflect prevailing opinions held by politicians, bankers, economists and other members of the general public.

In Hoskins' view, the performance of central banks could be much improved if they were granted independence from governments and given a single objective—price stability. The central banks—though independent—would not be allowed to choose policy objectives but would be given a clear legislative mandate to achieve and maintain price stability. Moreover, they would be accountable to the public for their policy actions.

I am largely sympathetic to Hoskins' suggestions. An independent central bank with a clear mandate to pursue price stability is likely to perform better than an institution attempting to

respond to diverse and conflicting political pressures. I also agree with Hoskins that the social value of a credible price-stability objective is often underestimated, whereas the costs of eradicating inflation are overstated.

Thus I support Hoskins' call for committing central banks to a price-stability objective. In my view, however, the story does not end here. A clear price-stability mandate by itself is not enough to improve the performance of central banks. Even if we agree that the objective of monetary policy should be price stability, we still have to address a second question: *How* should central banks achieve and maintain a stable price level?

Hoskins plays down the problems of designing operational policy rules consistent with the price-stability mandate. Yet as practitioners of monetary policy know, the translation of such a mandate into specific policy rules is far from trivial. Switzerland offers a good case in point. I argue that the Swiss National Bank (SNB) possesses a clear mandate to achieve and maintain price stability even though Swiss law does not precisely define the objectives of monetary policy. This mandate, albeit informal, rests on a remarkable consensus among the Swiss public about the objectives of monetary policy.

The SNB's informal mandate explains why the inflation rate in Switzerland has tended to be low by international standards. Since the beginning of 1975—when Switzerland shifted to money stock targeting—inflation in Switzerland has averaged 3.5%. This average, however, still far exceeds the SNB's stated inflation target of 0 percent to 1 percent. Consequently, the SNB has failed to achieve price stability despite the informal mandate. The SNB's failure to meet its stated target results largely from two short episodes of accelerating inflation. From 1979 to 1981 and from 1989 to 1991, Swiss inflation temporarily rose to more than 7 percent and 6 percent, respectively.

### **NEED FOR OPERATIONAL RULES**

The SNB's failure to achieve price stability did not reflect a Keynesian hangover. Rather, the SNB encountered various problems when it attempted to translate its price-stability mandate into suitable operational policy rules. The need for operational rules arises because monetary policy affects the inflation rate with a long and

frequently variable lag. In Switzerland the time lag may be as much as three years. Therefore monetary policy decisions do not affect the inflation rate until long after they are implemented. Because of the lag, such decisions invariably entail a great deal of uncertainty. Central banks may err even if they try to adhere closely to their mandate. Once they recognize their mistakes, it is usually too late to take corrective action.

To lower the danger of policy blunders, central banks require reliable early warning signals or leading indicators of inflation. Operational rules centered on these leading indicators give central banks a good chance of accomplishing a goal of achieving and maintaining price stability.

Do central banks possess reliable leading indicators of inflation? This question cannot be answered straightforwardly. Monetarists tend to emphasize the close relationship between money growth and the inflation rate. They maintain that the money stock serves as a good leading indicator of price movements. Therefore central banks are likely to meet the price-stability objective if they adopt an operational rule providing for steady growth in the money supply.

Most central banks today share the monetarist view that inflation is due largely to excessive money growth. Nonetheless, they hesitate to opt for strategies of steady money growth. The SNB is no exception. In Switzerland the growth in both the monetary base and the money stock M1 tend to lead inflation. Therefore the SNB focuses attention on these two aggregates and sets an intermediate target for the Swiss monetary base. It strives to increase the monetary base at a rate of 1 percent per year. The SNB views this target as consistent with price stability in the medium and long runs.

Although the SNB follows a money-growth rule, it need not augment the monetary base by 1 percent year after year. Depending on the circumstances, it may temporarily undershoot or overshoot the 1 percent target. For this reason, the SNB frames its money-growth rule in terms of a medium-range target, to be met on the average of a five-year period. Temporary deviations from the 1 percent growth path may be required if serious unexpected shocks hit the Swiss economy. Two kinds of shocks may prompt the SNB to deviate: unexpected shifts in money demand and other unexpected shocks such as excessive movements in the exchange rate.

## SHIFTS IN MONEY DEMAND

A strategy of steady money growth is effective only if money demand is stable. In contrast to many other countries, Switzerland has been blessed with reasonably stable money-demand patterns. But this does not imply that instabilities have not occurred. Serious instabilities arose in the late 1980s as a result of two financial innovations. A new electronic interbank payments system and a major overhaul of liquidity requirements, or minimum reserve requirements, imposed on banks caused a huge permanent drop in the demand for base money. Much of that decline occurred in the first half of 1988, but stability was not restored until about 1990 or 1991.

It is clear that central banks must adjust the money supply to permanent demand shifts or long-lasting temporary demand shifts if they are to keep the price level stable. It is not always advisable to react quickly to demand shifts, however. Money demand is subject to frequent transitory movements that do not call for a central-bank response. Moreover, demand shifts are hard to detect. They often become fully apparent only after considerable time has elapsed. For these reasons, Meltzer (1987) and McCallum (1989, Ch. 16) recommend a slow reaction pattern. They propose mechanical rules that would prompt central banks to adjust the money supply gradually to demand shifts. I support Meltzer and McCallum's call for a gradual response, but I doubt that central banks should be committed to a mechanical reaction pattern. The speed of the response is likely to depend on the nature of these shifts. For example, if central banks know in advance that a major shift will occur, they should adjust the money supply quickly.

Confronted with the demand shift of the late 1980s, the SNB opted for caution. SNB officials knew that a shift would occur but did not know how big the shift would be or how fast base-money demand would fall. As a result of the SNB's cautious response, short-term domestic interest rates fell sharply at the beginning of 1988 but rose again as the SNB gradually lowered the supply of base money. By summer 1988, short-term domestic interest rates returned to their pre-shift levels. Long-term rates, however, did not budge. Thus market participants correctly regarded the fall in short-term interest rates as transitory.

With hindsight, various students of Swiss monetary policy attribute the most recent surge in the Swiss inflation rate to the SNB's cautious reaction to the demand shift. The SNB, they assert, should have acted more aggressively. The SNB's cautious response no doubt was equivalent to a temporary easing of monetary policy. Nonetheless, it cannot be regarded as the main cause of the rise in inflation. I am not aware of any economic theory able to explain how six months of easy money, which the market correctly regarded as transitory, could have generated three years of high inflation. For this reason, I still maintain that central banks should react cautiously to shifts in money demand.

## OTHER UNEXPECTED SHOCKS

Similar problems arise from other unexpected shocks that may impinge on the central banks' anti-inflationary monetary policies. In small countries like Switzerland, central banks are frequently compelled to take the real exchange rate into account when setting monetary policy. Real exchange rate movements often fail to reflect economic fundamentals. As I pointed out before, Swiss inflation picked up temporarily in the early 1980s and early 1990s. Although the SNB attempted to keep the monetary base on a growth path consistent with medium-run price stability, the Swiss franc weakened sharply in real terms during both periods of high inflation; that is, the depreciation was much larger than would have been expected on the basis of inflation differentials between Switzerland and other countries. Therefore the exchange-rate depreciation reinforced the inflationary pressures in Switzerland. The SNB reacted to this situation by tightening monetary policy. As a result, the monetary base fell below the medium-run growth path. The tightening of the monetary reins eventually caused the Swiss franc to appreciate again. In this way, the SNB counteracted the inflationary pressures emanating from the exchange rate.

Lee Hoskins takes a dim view of central-bank attempts to manipulate the exchange rate. However, he considers only central-bank efforts to stimulate domestic employment by means of an exchange-rate depreciation. Such policies, I agree, may be inconsistent with the mandate to achieve and maintain price stability. But we should not overlook the situations in which exchange-rate movements undermine central banks' anti-inflationary policy stances.

Nevertheless, Hoskins' objections to exchange-rate policy are often valid. Exchange-rate policy may or may not be consistent with price stability. Swiss experience offers examples of both types of exchange-rate policy. The SNB did more than try to counteract excessive real depreciations of the Swiss franc. In 1978 and 1987 it reacted to an excessive real appreciation by relaxing monetary policy.

Although the real appreciation supported the fight against inflation, the SNB tried to halt or even reverse the upward movement in the exchange rate. The SNB thought that its efforts to curb the appreciation of the Swiss franc were consistent with its mandate to stabilize the price level. In 1978 and 1987 inflation was low and declining. In principle it followed an operational strategy of gradually lowering the inflation rate. In its view a gradual approach would minimize the real costs of achieving and maintaining price stability. Considering its preference for gradualism, the SNB did not welcome the real appreciation of the Swiss franc because it affected the domestic economy in the same way an unnecessary tightening of monetary policy would. Therefore the SNB allowed money growth to rise temporarily above the level consistent with medium-run price stability.

Unfortunately, the SNB's strategy of adjusting money growth to the real appreciation of the Swiss franc turned out to conflict with the price-stability objective. In both periods inflation rose again in due course. The two short episodes of rising inflation are largely explained by the SNB's efforts to counteract an excessive real appreciation of the Swiss franc.

Thus Swiss experience lends at least partial support to Hoskins' objections to exchange-rate policy. However, strict compliance with a price-stability mandate need not imply that central banks should abstain totally from manipulating the exchange rate. Even if the SNB tried to rule out any risks of erring on the side of inflation, it could not afford to ignore real exchange rate movements entirely. Instead it had to react asymmetrically. With an excessive real appreciation of the Swiss franc, the SNB would keep the monetary base on the medium-run growth path.

Faced with an excessive real depreciation, on the other hand, it would push the monetary base below that path. The resulting policy might be closer to shock therapy than to gradualism. The real costs of the shock therapy would constitute the price the SNB would have to pay for playing it safe.

In practice, I doubt that central banks are able to disregard entirely the real costs of eliminating inflation. The SNB has repeatedly emphasized that it cannot stabilize the price level without accepting a temporary increase in unemployment. But the Swiss public also expects the SNB to keep the real costs of its anti-inflationary monetary policy as low as possible. Therefore the SNB, in principle, must follow a gradualist approach. We could probably improve our performance if in the future we display greater reluctance to react to excessive real appreciations of the Swiss franc than we have in the past.

## CONCLUSIONS

Let me conclude by emphasizing again that I agree with the thrust of Hoskins' reasoning. Monetary policy should be entrusted to independent central banks with a clear legislative mandate to achieve and maintain price stability. But in my view, independence and a clear mandate are not sufficient to guarantee a good monetary policy performance. It is also important that central banks adopt operational policy rules consistent with their mandate. Although central banks should be free to choose appropriate operational rules, they should be committed to spell out explicitly *how* they intend to fulfill their mandates. In particular, they should state how they intend to respond to shifts in money demand and other unexpected disturbances.

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