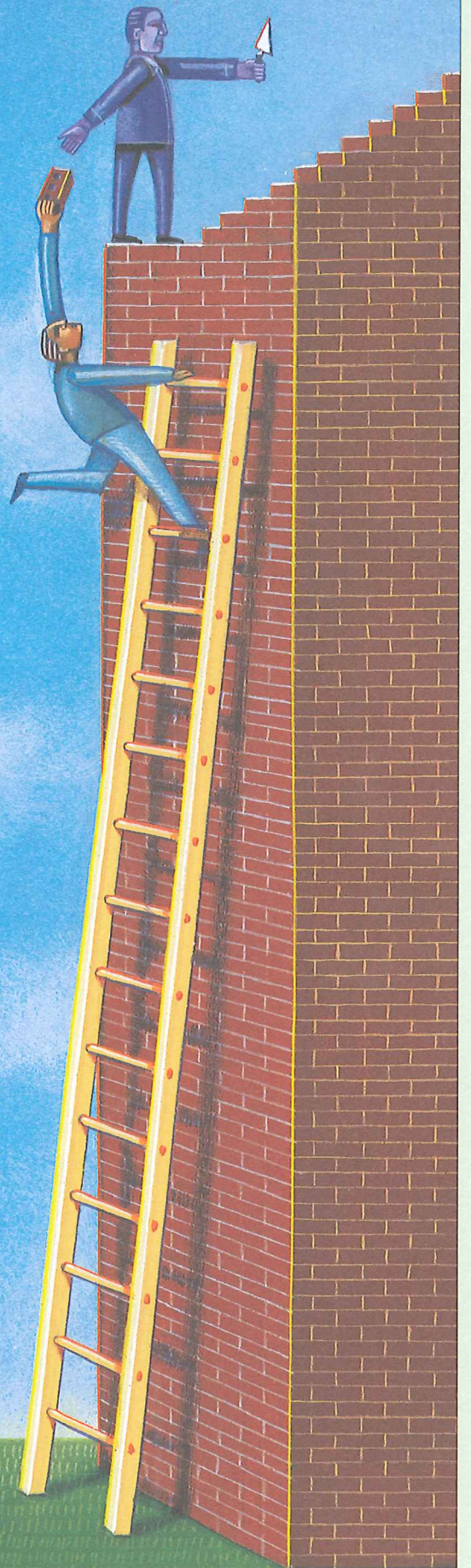


By assisting the
Treasury in
undertaking
foreign exchange
operations,
the Fed risks
compromising
both its
independence
and the
effectiveness of
monetary policy.



FOREIGN EXCHANGE OPERATIONS

AND

THE FEDERAL RESERVE



J. ALFRED BROADDUS, JR.

AND

MARVIN GOODFRIEND

The operations of U.S. government agencies in foreign exchange markets are probably regarded as arcane by most Americans. These operations are, however, an important element of U.S. international economic policy. And from time to time they are highly visible to the public: for example, when the United States and other major industrial countries intervene jointly in the markets to influence exchange rates, or when they provide assistance to particular countries such as the substantial aid extended to Mexico in 1995.

The Gold Reserve Act of 1934 gives the Treasury primary responsibility for United States foreign exchange operations through its Exchange Stabilization Fund (ESF). Although the Federal Reserve (Fed) had been active in foreign exchange markets in the 1920s and early 1930s, its involvement ceased after 1934.¹ There was relatively little need for official U.S. foreign exchange operations in the early post-World War II period. Under the Bretton Woods arrangements of 1944, foreign governments assumed responsibility for fixing the value of their currencies against the dollar. For its part, the United States managed its monetary policy in accordance with the Gold Reserve Act so as to maintain the dollar's convertibility into gold at \$35 an ounce.

U.S. authorities, however, were reluctant to pursue sufficiently tight monetary policy to protect the country's gold reserves following the resumption of full convertibility among the major currencies in the late 1950s. And the Fed resumed foreign exchange operations in 1962, after a nearly 30-year hiatus, to supplement and substitute for monetary tightening

The authors are respectively president, and senior vice president and director of research. The paper benefited greatly from stimulating discussions with Robert Hetzel and from presentations at the Macro Lunch Group of the Wharton School, University of Pennsylvania; the Masters of International Business Lecture Series, College of Business, University of South Carolina; and the Norwegian School of Management. Comments from Michael Dotsey, Thomas Humphrey, Robert King, Bennett McCallum, and Alan Stockman are greatly appreciated. The views expressed are the authors' and not necessarily those of the Federal Reserve System.

in defense of the dollar. Although the Fed has consistently held that it has independent authority to undertake foreign exchange operations, in practice the Fed works closely with the Treasury in conducting them. Indeed, the Federal Open Market Committee's (FOMC's) foreign currency directive requires that these operations be conducted "in close and continuous consultation and cooperation with the United States Treasury."² So it seems fair to say that the Fed recognizes the Treasury's preeminence in foreign exchange policy.

The Treasury welcomed the Fed's renewed participation in large part because the Fed brought with it resources to supplement those of the ESF. In 1962 the Fed established reciprocal currency agreements — commonly called "swaps" — with nine central banks and the Bank for International Settlements. Further, in 1963, the Fed agreed to "warehouse" foreign currencies held by the ESF. The primary objective of these initiatives was to provide U.S. authorities with a supply of foreign currencies to buy back dollars in order to help protect U.S. gold reserves.³

FOMC discussions at the time made it clear that some Fed officials recognized how following the Treasury's lead in foreign exchange operations could compromise the Fed's independence in conducting monetary policy.⁴ This risk did not present serious operational problems at the time, however, because with the United States committed to the Bretton Woods arrangements, monetary policy was committed to defending the dollar.⁵ Thus, the Fed and the Treasury were working toward the same general objectives, and the Fed's independence was not a pressing issue in practice.

We argue below that subsequent developments have undermined the favorable conditions that enabled the Fed to participate in foreign exchange operations without compromising either its independence or its monetary policy goals. We make our case by developing several preliminary points. In Section I we explain how theoretical advances and practical experience in recent years teach that the Fed's longer-term low-inflation objective must be *credible* if the Fed is to pursue this objective efficiently via monetary policy. Moreover, the Fed's independence is the cornerstone of this credibility. In Section II we explain why Fed credibility based on independence is inherently fragile, and we emphasize the crucial importance of the Fed's off-budget status in supporting its independence.

We take up the role of the Fed in foreign exchange operations in Section III, where we distinguish two broad types of official foreign exchange transactions: unsterilized and sterilized. As explained there, *unsterilized* transactions are essentially monetary policy actions and therefore are carried out independently by the Federal Reserve. Since *sterilized* transactions are *not* monetary policy actions, the Fed can acknowledge the Treasury's leadership regarding them without directly compromising its independence.

Evidence accumulated over the past two decades suggests, however, that sterilized intervention in exchange markets has at best only temporary effects on exchange rates and must be supported by monetary policy actions to have lasting effects. Consequently, the Fed's participation with the Treasury in sterilized operations creates confusion as to whether monetary policy is dedicated to the support of exchange rate or domestic objectives. Such confusion weakens the public's perception of the Fed's independence and undermines the credibility of the Fed's low-inflation goal.

In Section IV we lay out in more detail the inherent contradictions for monetary policy that arise when the Fed follows the Treasury's lead on exchange rate policy. And we argue in Section V that the Fed's financing of even sterilized foreign exchange operations constitutes a misuse of the Fed's off-budget independence that risks undermining the public's acceptance of the independence of the Fed. We believe that the best way to resolve the conflict between foreign exchange operations and monetary policy is for the Fed to disengage from foreign exchange operations completely. The concluding section summarizes our argument.

I

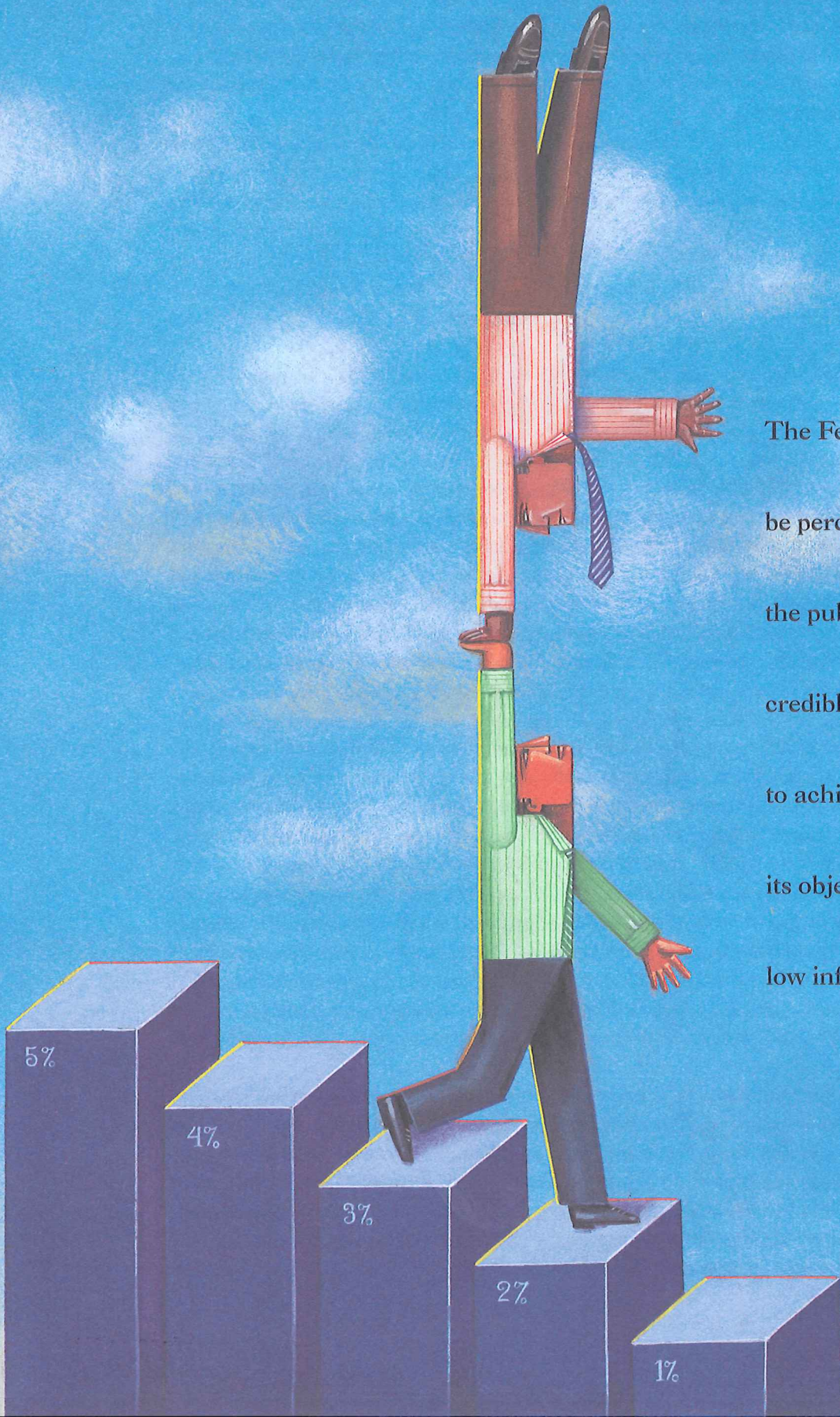
CREDIBILITY AND THE EFFECTIVENESS OF MONETARY POLICY



Numerous disinflations since the early 1980s have taught central bankers around the world that credibility — having a reputation for pursuing price level stability consistently and persistently — is the key to an effective anti-inflationary monetary policy.⁶ We would even go so far as to say that the primary policy problem facing the Fed during this period has been the acquisition and maintenance of credibility for its commitment to low inflation — so much so that credibility concerns remain a motivating or restraining influence on monetary policy actions today, even though the Federal Reserve's low-inflation objective has nearly been achieved.

As it happens, the growing practical appreciation of the importance of credibility is supported by an improved scientific understanding associated with game theory and the rational expectations approach to monetary theory. In many ways, theory simply articulates what central bankers have learned from practical experience. Briefly, the theory recognizes that monetary policy involves continuous interaction between a central bank and the public that introduces a link, in the public's mind, between current policy and future policy actions. In the absence of credibility, expansionary current monetary policy tends to generate expectations of expansionary policy — and possibly excessively expansionary policy — in the future. Such expectations trigger aggressive wage and price increases that, in turn, neutralize the beneficial effects of the expansionary current policy. The result is higher inflation with little, if any, sustained increase in employment and output.

Theory supports the idea that the potential for future inflation, which can be thought of as a punishment imposed collectively by wage- and price-setters on a central bank, can discipline a central bank. In a reputational equilibrium, wage- and price-setters keep their part of an implicit bargain by not inflating as long as the central bank demonstrates its commitment to low inflation by eschewing excessively easy policy. A central bank may be said to have credibility when an implicit mutual understanding between the public and the central bank sustains a low-inflation equilibrium.⁷



The Fed must
be perceived by
the public as
credible in order
to achieve
its objective of
low inflation.

The key point is that a low-inflation equilibrium sustained by central bank credibility is *fragile*. In such an equilibrium the public is very sensitive to any central bank departure from the behavior it has come to anticipate; this expected continued behavior, indeed, is the essence of the central bank's credibility. The public is particularly nervous about such departures when the central bank has acquired credibility only recently. But there is evidence that low-inflation equilibria sustained by credibility continue to be fragile even when a central bank's actions have repeatedly demonstrated its commitment to low inflation over a period of years.

The fragility of the Fed's credibility is evident in the behavior of long-term bond rates.⁸ The real yield on the 30-year U.S. government bond probably moves within a range of 2 percentage points or so around 3 percent per year. The remainder of the nominal long-term yield reflects inflation expectations. In the early 1960s, for example, when inflation averaged between 1 and 2 percent per year, the 30-year bond yielded roughly 4 percent.⁹ In 1981, when the public's confidence in the Fed's commitment to controlling inflation was at its low point, the long-term bond yield reached nearly 15 percent. The rate stood at around 6 percent in late 1995, which indicated that the public expected about 3 percent inflation on average over the long term.

Doubts about a central bank's credibility often surface as "inflation scares" in the long-term bond market. Following a period of rising inflation in the late 1970s, for example, the 30-year rate jumped 2 percentage points in the first quarter of 1980, which signaled the most serious and sudden collapse of confidence in the Fed on record. The fragility of the Fed's credibility was apparent again in 1984 when the bond rate, after falling to about 10 percent in late 1982, registered another inflation scare by rising to around 13.5 percent, even though the Fed had by then brought actual inflation down from over 10 percent to around 4 percent.

The swings in the bond rate over the past two years have been less dramatic than in the early 1980s, but nonetheless substantial. Rising from a low of about 5.8 percent in October 1993, the bond rate peaked at around 8.2 percent in November 1994. We interpret that wide swing as evidence that the Fed's anti-inflationary credibility remains exceedingly brittle despite years of sustained progress in bringing the actual inflation rate down.

The fragile nature of the Fed's credibility imposes a number of costs on the economy. First, there is the direct cost of higher long-term interest rates with their negative effects on economic performance. Second, with inflation expectations higher than they should be, the Fed is left with the difficult choice of either accommodating these expectations and accepting higher rates of inflation or failing to accommodate them and risking negative short-term effects on real economic activity. Moreover, even hesitating to react can be costly because, by suggesting indifference, the Fed may encourage workers and firms to ask for wage and price increases to protect themselves from higher expected costs.

Finally — a related point — weak credibility makes it difficult for the Fed to respond when employment considerations call for an easing of policy, as they did in the 1990-91 recession and again in mid-1995. In such circumstances, the Fed must balance the desirable short-term effects of lower short-term rates against the risk of higher long-term rates.

FEDERAL RESERVE INDEPENDENCE



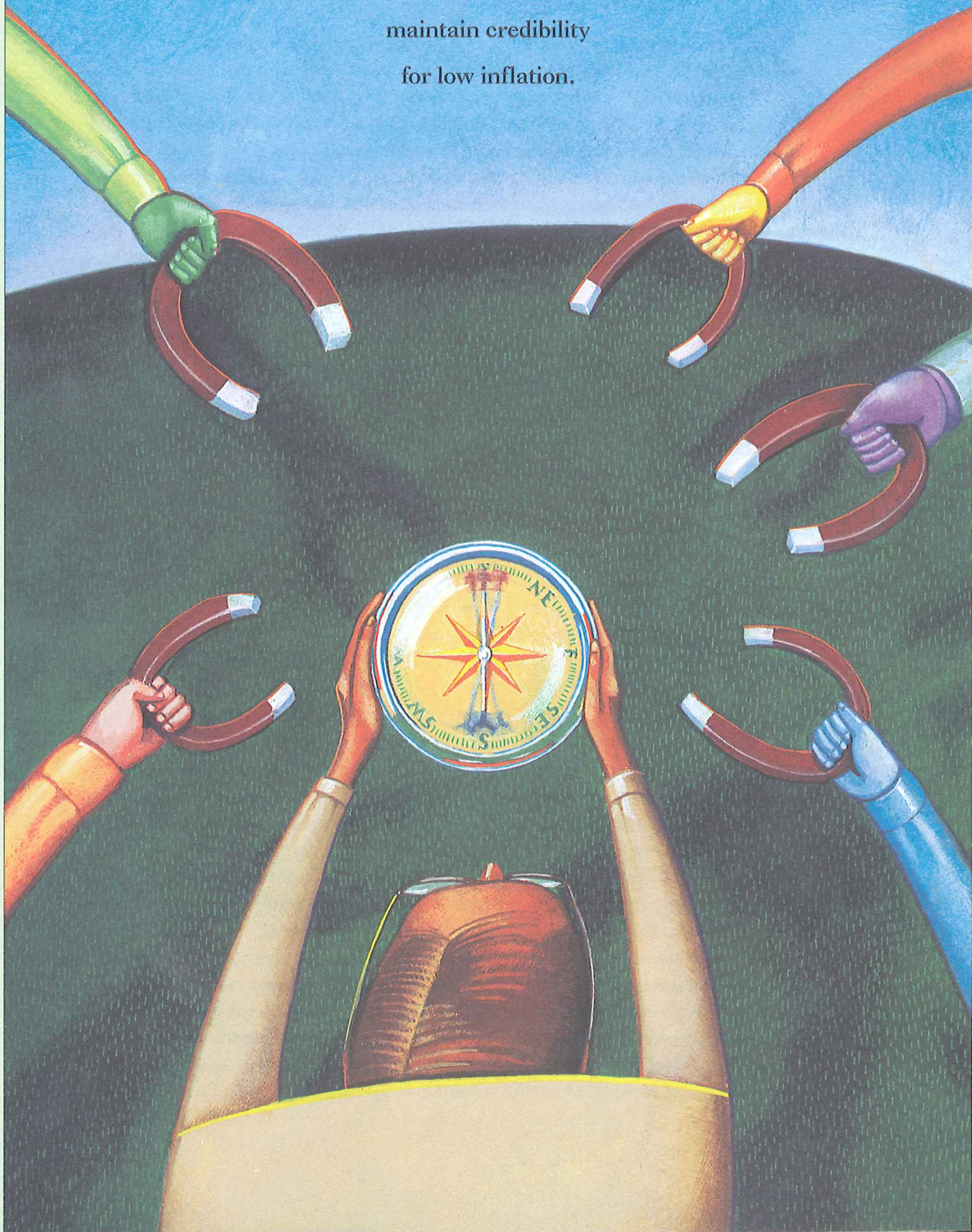
A number of prominent institutional mechanisms have been used to assist central banks in maintaining credibility for low-inflation objectives. Historically, a national commitment to a gold or silver standard — that is, a commitment to maintain a fixed currency price of gold or silver — was the most important. A second mechanism, more prominent in recent years, is for a country to commit to fix its exchange rate against the currency of a trading partner that credibly maintains the purchasing power of *its* currency. An important motivation for the establishment of the European Monetary System (EMS), for example, was the desire of some countries to import credibility for low inflation by pegging their currencies to the deutsche mark (D-mark). Difficulties with fixing exchange rates, including the near collapse of the EMS in the early 1990s, have led some countries to experiment recently with a third commitment device: inflation targets.¹⁰ Finally, countries have relied on central bank independence to supplement one of the other mechanisms or to substitute for them.

Broadly speaking, central bank independence implies a separation of bank decisions from the regular decisions of the political system.¹¹ At a minimum, it means that a central bank is free to conduct monetary policy without interference from the Treasury. The degree of actual operational freedom enjoyed by an independent central bank, however, has varied widely depending on the circumstances. For instance, in the nineteenth century, when wide support for central bank independence first developed, independent central banks were narrowly constrained by national commitments to various commodity standards. Similarly, the Federal Reserve was established in 1913 as an independent central bank mandated by the Federal Reserve Act to stabilize financial markets while keeping the United States on the gold standard.

A central bank may be said to lack “goal independence” when its objective is given by legislative mandate; however, one can still speak of a central bank as having “instrument independence” — the freedom to use a short-term interest rate or other monetary policy instrument to achieve its mandated goals.¹² The Fed has had full instrument independence, except for the World War II years and the period from the end of the war to the 1951 Fed-Treasury Accord. During that time the Fed was obliged to maintain low interest rates on government securities to facilitate the Treasury’s finances. The Accord reasserted the principle that monetary policy should be used for macroeconomic stabilization, the fiscal concerns of the Treasury notwithstanding. In terms of the above definitions, the Accord fully restored the Fed’s instrument independence.¹³

The Accord did not give the Fed *goal* independence because monetary policy was still committed under the Bretton Woods arrangements to support the fixed dollar price of gold. When the Bretton Woods System collapsed in 1973, however, the national consensus

The Fed is exposed
to influences that
make it difficult to
maintain credibility
for low inflation.



on the proper goal for monetary policy collapsed with it, and the Fed has been operating without an explicit congressional mandate since then.¹⁴ Thus, during this period the Fed has had goal independence by default, as it were, and this independence is now arguably the sole institutional mechanism supporting low inflation in the United States.

INDEPENDENCE AND CREDIBILITY

A goal-independent Fed unrestrained by a legislative mandate is a particularly deficient mechanism for maintaining low inflation. The reason is that in this situation a low-inflation equilibrium must be supported entirely by credibility that the Fed creates for itself — credibility that is inherently fragile as discussed above. The unbridled discretion conferred on the Fed in this case only makes the acquisition and maintenance of credibility for low inflation more difficult. The Fed's goal independence gives other government entities strong incentives to attempt to influence its policies via such channels as congressional oversight hearings, appointments of Federal Reserve governors, proposed changes in the Fed's regulatory role, and so forth. Moreover, such attempts at influence can be of a conflicting nature, adding to the confusion. Knowing this, the public is rightly suspicious of any potential conflict between the Fed, the Treasury, and Congress. In this environment, any contact that Fed officials have with the rest of the government risks creating credibility problems for monetary policy.

At the same time — and paradoxically — central bank goal independence actually creates incentives for Fed officials to interact with the rest of the government.¹⁵ The lack of clarity in the Fed's mandate necessitates deeper involvement in the legislative process by Fed officials who must see to it that proposed legislation does not compromise its monetary policy mission. Finally, the Fed's independence confers upon it a nonpartisan aura which leads others in government to seek its advice, certification, or arbitration in controversial policy disputes.

FINANCIAL INDEPENDENCE

In principle, a healthy democracy requires full public discussion of expenditures of public monies. The congressional appropriations process enables Congress to evaluate competing budgetary programs and to establish priorities for the allocation of public resources.

Congress has long recognized, however, that the pressure of budgetary politics could tempt future Congresses to press the Fed at least implicitly to help finance federal expenditures through inflationary monetary policy. Consequently, the Fed has been made financially independent — its operations are funded from the interest payments on its portfolio of securities, and the Fed has wide discretion over the assets it holds. In short, the Fed is exempt from the congressional appropriations process in order to keep the political system from exploiting inflationary money creation. It is critically important that the Fed not misuse this exceptional “off budget” status so as not to undermine public understanding of and support for its financial independence. This, in turn, requires the Fed to understand clearly what activities are and are not essential to its central banking mission.

THE ROLE OF THE FED IN FOREIGN EXCHANGE OPERATIONS



The points about credibility and independence developed above will serve as the basis for our assessment of the Fed's role in foreign exchange operations in what follows. Here we review the basic mechanics of foreign exchange operations. We begin by making the important distinction between unsterilized and sterilized transactions. Then we briefly discuss the means by which the Fed finances foreign exchange operations for its own account and warehouses foreign exchange for the ESF.¹⁶ Our analysis identifies in a preliminary way the fundamental sources of conflict for monetary policy arising from the Fed's participation in foreign exchange operations.

UNSTERILIZED AND STERILIZED OPERATIONS

The distinction between unsterilized and sterilized operations is straightforward: unsterilized transactions involve changes in the monetary base, and sterilized transactions do not. For example, the Fed could acquire foreign exchange in an *unsterilized* purchase using newly created base money: that is, bank reserves or currency. Such a transaction would be an expansionary monetary policy action because it would increase the monetary base.

A foreign exchange purchase would be *sterilized*, in contrast, if the Fed offset its effect on the base by selling an equivalent amount of dollar-denominated securities. Because the Fed controls the monetary base, it is in a position to determine whether a foreign exchange operation is sterilized or not. In practice, the Fed routinely sterilizes foreign exchange operations that it undertakes for its own account and for the ESF. In sterilized operations the current federal funds rate target (the key policy instrument indicating the current stance of monetary policy) is maintained. This point is important because it implies that — at least as a mechanical matter — the Fed can follow the Treasury's lead in sterilized foreign exchange operations without relinquishing control of monetary policy.

Nevertheless, sterilized foreign exchange operations, or “intervention,” pose significant problems for the Fed. For the most part, economists agree that sterilized intervention by central banks in foreign exchange markets has no lasting effect on exchange rates.¹⁷ In the absence of supporting monetary policy actions, sterilized interventions can influence exchange rates temporarily, especially when the interventions are unexpected. But obviously the ability of authorities to surprise markets is very limited. Sterilized intervention can be most effective when it signals a government's resolve to follow up with monetary or fiscal policy actions that will powerfully influence the exchange rate in the future.¹⁸ Consequently, Fed participation in sterilized foreign exchange operations under

the Treasury's leadership creates confusion as to whether monetary policy will support short-term exchange rate objectives or longer-term anti-inflationary objectives. Only coincidentally will the monetary policy actions required to pursue these two sets of objectives coincide.

This confusion is compounded by a lack of consistency in U.S. exchange rate policy in the post-1973 floating exchange rate regime. Officially, the objective of foreign exchange operations is to counter "disorderly market conditions," but that phrase has never been defined operationally. It was interpreted most narrowly in the first Reagan administration, when U.S. operations were minimal. It was interpreted broadly between 1977 and 1979 when the dollar was viewed as unacceptably low and again in 1985 when the dollar was unacceptably high. Intervention was undertaken in these periods to help push the dollar into an acceptable range. Extensive interventions were carried out in the years following the Louvre Accord of 1987 to help stabilize the exchange rate.¹⁹

Moreover, much U.S. intervention in recent years has been coordinated with foreign governments. The Group of Seven finance ministers and central bank governors meet regularly to discuss exchange rate objectives. The enormous publicity surrounding these discussions, designed to underscore international harmony on exchange rate policy, heightens uncertainty regarding whether the Fed will support sterilized operations with monetary policy actions. The widespread coverage of internationally "coordinated" foreign exchange operations is almost certainly harmful to the public's perception of the Fed's independence and thereby weakens the credibility of the Fed's low-inflation strategy.

FINANCING MECHANISMS

Federal Reserve acquisitions of foreign exchange are generally financed in one of three ways. If the FOMC approves, the Fed can acquire foreign exchange for its own account by creating additional bank reserves or currency — that is, via an unsterilized transaction. Sterilized acquisitions, on the other hand, are financed by selling Treasury securities from the Fed's portfolio. Finally, the Fed has the option of borrowing currencies from foreign central banks using reciprocal currency agreements — the so-called "swap" network. Swap facilities are, in effect, short-term lines of credit giving central banks access to one another's currencies. The facilities provide for the swap (simultaneous spot purchase and forward sale) of each other's currency by the Fed and the foreign central bank. Swaps typically are not accompanied by any change in monetary policy — in other words they are sterilized transactions.²⁰ The Fed holds foreign exchange in the form of short-term securities or interest-bearing deposits at foreign central banks, so that sterilized transactions amount to substituting foreign-currency-denominated interest-earning assets for dollar-denominated securities in the Fed's portfolio.

The Fed bears the exchange rate revaluation risk — as well as the credit risk — for any foreign-currency-denominated assets it holds for its own account. Since the Fed marks its foreign currency assets to market monthly, a depreciation of the foreign exchange value of the dollar, for instance, raises the dollar value of the Fed's foreign holdings. Any such gains or losses eventually show up as larger or smaller Fed payments to the Treasury after expenses.²¹ Whenever the Fed disperses foreign exchange acquired through a swap, it bears the exchange risk involved in covering its forward commitment to reverse the swap.

Foreign exchange operations
financed by the Federal Reserve,
whether or not they
are arranged by the Treasury,
bypass the congressional
appropriations process.



The Exchange Stabilization Fund

As mentioned above, the Treasury conducts foreign exchange operations through its Exchange Stabilization Fund. When it was established by the Gold Reserve Act, the ESF was capitalized with \$2 billion derived from the proceeds of the 1934 revaluation of the U.S. gold stock from \$20.67 to \$35 per ounce. Later, \$1.8 billion was transferred from the ESF as partial payment on the U.S. subscription to the International Monetary Fund (IMF), which left \$200 million as the remaining capital of the ESF. ESF capital has grown since then as a result of retained interest earnings, revaluations of gold, and profits on foreign exchange acquisitions.²²

Since use of its funds is not subject to the appropriations process, the ESF provides the Treasury with a degree of flexibility and discretion in its foreign exchange operations. The ESF serves two broad purposes. First, it is used to intervene in foreign exchange markets to influence dollar exchange rates with major currencies such as the D-mark and the Japanese Yen. Second, the ESF makes loans to foreign governments — frequently to heavily indebted governments and often in association with IMF or other official assistance programs. Typically such loans are made to deal with a serious balance of payments problem or to assist a country managing its external debt. Often the currencies of recipient countries are not fully convertible or are of secondary importance.²³ The recent loans to Mexico are a prominent example of this type of assistance.

The ESF's capacity for purchasing foreign currencies is limited, however, as it has not received an appropriation from Congress since 1934. Apart from the retained earnings on its investments mentioned above, the ESF has been able to augment the resources at its disposal in three significant ways. First, Congress has authorized advancing to the ESF foreign currencies borrowed from the IMF. Second, the ESF receives the Special Drawing Rights (SDRs) allocated to the United States by the IMF.²⁴ Third, the Fed has provided the ESF with additional resources, either by helping to finance operations on its own account or by warehousing foreign exchange for the ESF. It was because the ESF's resources were limited that the Treasury encouraged the Fed in the early 1960s to participate for its own account in foreign currency operations and to warehouse foreign currencies. In 1990, the dollar value of U.S. net foreign currency balances (the sum of acquisitions on the Fed's and the ESF's accounts) exceeded \$40 billion.²⁵ The FOMC authorized warehousing of ESF foreign currencies up to a limit of \$15 billion in 1990.

Warehousing allows the ESF to finance purchases of foreign exchange in much the same way that securities dealers use repurchase agreements with banks to finance their portfolios. That is, warehousing allows the ESF to enlarge its portfolio of foreign-currency-denominated assets with funds borrowed from the Fed. Suppose, for example, that the ESF wishes to sell dollars for foreign exchange to depreciate the dollar, but has inadequate resources to do so. The Fed can execute the transaction — warehouse the foreign exchange — by selling a Treasury security from its portfolio in the open market and using the proceeds to acquire the foreign-currency-denominated securities on behalf of the ESF. Because the Fed executes the purchase of foreign exchange on behalf of the ESF, the latter remains exposed to the revaluation gains or losses on the foreign exchange ware-

housed. Interest earnings on the foreign currencies warehoused accrue to the Fed. Note that the warehousing operation amounts to a sterilized acquisition of foreign exchange.

Whether or not the Fed finances sterilized foreign exchange purchases for its own account, or warehouses foreign currencies for the ESF, a sale of Treasury securities to the public is the ultimate source of the funds. True, the securities involved are not newly issued; they are sold from the Fed's portfolio. The results, however, are equivalent in many ways to those of a new issue since the Fed simply returns to the Treasury all of the interest it receives on the Treasury securities that it holds, minus a small fraction that covers the Fed's operating expenses. The main difference between Fed financing and financing by the Treasury itself is that the former is arranged between Treasury and Fed officials without an explicit appropriation from Congress. A second difference is that Fed financing does not show up as a measured increase in the federal deficit, since it does not involve newly issued debt.

Although the Fed is the junior partner with the Treasury on foreign exchange policy, it is certainly an equal partner in terms of the resources provided. It is able to make these resources readily available without a congressional appropriation because its financial independence puts its open market operations in Treasury securities off-budget. The exchange operations arranged by the Treasury, however, not infrequently involve broader foreign relationships in ways that may be politically charged. Hence, the Fed's involvement, especially because it is outside the formal budget process, puts public support for its financial independence at risk, and with it, the credibility of its low-inflation policy.

IV

THE CONFLICT BETWEEN EXCHANGE RATE POLICY AND MONETARY POLICY



The national commitment to the Bretton Woods arrangements minimized the risk of policy conflict between the Fed and the Treasury when the Fed resumed its participation in foreign exchange operations in the early 1960s. But the nation's unwillingness to support that commitment with sufficiently restrictive monetary policy led to the collapse of the fixed exchange rate system in 1973. Several years of sharply rising inflation followed. Despite this, Congress was unable to reach consensus on a new monetary policy mandate; consequently, in 1979 the Fed asserted its own commitment to restore low inflation.



To protect the credibility of
its monetary policy objectives,
the Fed should be separated
completely from the Treasury's
foreign exchange operations.

We believe that these developments have undermined the Fed's ability to participate in exchange rate policy without compromising its independence and its monetary policy goals. In particular, with the potential for Fed-Treasury policy conflicts now significantly enlarged, it is no longer possible for the Fed simply to follow the Treasury's lead on exchange rate policy without endangering its monetary policy credibility. This is true *even* in the case of sterilized interventions. Under the current arrangement, the Fed participates in sterilized operations without committing to support the operations with future monetary policy actions. This maintains the Fed's independence by keeping its options open. But such discretion increases the likelihood that particular operations may fail because the Fed is not willing to support them with monetary policy.

Failed foreign exchange operations are costly because they give the impression that the authorities are either unable or unwilling to achieve a prominent objective that they appear to be pursuing. For example, the failure of the June 24, 1994, intervention was reported in a front-page *New York Times* story carrying the headline: "16 Central Banks are Thwarted in Huge Effort to Prop Up Dollar."²⁶ Nor was attention to the event confined to major money centers. On the following day the *Richmond Times-Dispatch* reported the story with the front-page headline: "Effort to Bolster Dollar a Failure." Widely publicized policy failures undermine Fed credibility and thereby jeopardize the effectiveness of overall monetary policy.

We believe that, to best protect the credibility of its low-inflation goal and the independence of monetary policy more generally, the Fed should be separated completely from the Treasury's foreign exchange operations. In principle, the Fed could disengage unilaterally; however, there would be two major practical obstacles to such an action. The most serious obstacle is that the appointment process would make it difficult for the Fed to bind itself not to participate, since appointments to the Federal Reserve Board could be made on condition of cooperation with the Treasury. Congress might be able to block such conditions in the confirmation process in particular cases if it were so disposed, but legislation probably would be required to remove the Fed from exchange market intervention definitively.

The second main obstacle to unilateral disengagement is that it would deny the Treasury the benefit of the Fed's advice on foreign exchange intervention and the certification that goes with it. Here, though, the Fed cannot be indifferent to the use of its name in headlines that either box it in or harm its credibility. Moreover, the act of certification itself creates a perception of partisanship that erodes the value of that certification, even as it undermines the public's perception of the Fed's independence.

In these circumstances, it is natural to look for a middle-of-the-road solution to the problems presented by the Fed's involvement in exchange market operations. One might, for example, try to specify particular circumstances in which the Fed could participate. For instance, if the Fed routinely announced an inflation target, it could agree to help the Treasury intervene if the inflation rate were within a specified range of the target. Defining such conditions clearly, however, would be difficult, and this approach would leave the door open to many of the same problems the Fed faces currently.

THE CONFLICT BETWEEN FOREIGN EXCHANGE OPERATIONS AND THE FED'S FINANCIAL INDEPENDENCE

From the start, a major reason for the resumption of Federal Reserve foreign exchange operations in the 1960s was to make Fed resources available to the ESF. The Fed's financial independence gave it the discretion to allocate resources to foreign exchange operations without an explicit congressional appropriation. Apparently there was then little concern about misuse of the Fed's off-budget status because Fed financing of foreign exchange operations at the time seemed conformable with the nation's commitment to the Bretton Woods system. Such financing has become more problematic with the breakdown of the national consensus on monetary and exchange rate policy in the aftermath of the collapse of Bretton Woods.

Economists understand more clearly today than they did in the 1960s the distinction between Federal Reserve monetary policy and credit policy.²⁷ As pointed out in Section III, sterilized foreign exchange operations are not monetary policy since they leave the monetary base and the federal funds interest rate target unchanged. Such operations do, however, constitute credit policy since they amount to a substitution of loans to foreign authorities for dollar-denominated securities in the Fed's portfolio. In effect, sterilized operations are extensions of Fed credit financed by selling Treasury debt from the Fed's portfolio. Such extensions of credit are clearly fiscal policy, not monetary policy.

The extension of credit by U.S. authorities involves both market and credit risk. Although the default or credit risk of the securities in which major foreign currency balances are held is negligible, the revaluation or market risk is considerable. Credit risk, however, can be substantial when a loan is made to assist, say, a country managing its external debt or one with a serious balance-of-payments problem.

Thus, in their foreign exchange operations the Fed and the ESF assume risk — both market risk and credit risk — on behalf of the U.S. taxpayer. Provisions can be made to take collateral if the borrowing country proves unable to make scheduled payments. But such provisions are not always feasible or entirely effective. When a borrowing country's financial problems prove persistent, the ESF and the Fed can be "taken out" by longer-term funding arranged through international organizations such as the IMF.²⁸ But to the extent that collateralization is incomplete or "take outs" are not arranged in advance or are uncertain, taxpayers are at risk.

The national decision to put funds at risk in foreign exchange operations is clearly an important fiscal policy matter. The presumption is that — as with any fiscal action — Congress should authorize the expenditure and explicitly appropriate the funds. Fed financing of foreign exchange operations through its own account and by warehousing funds for the ESF sidesteps congressional authorization and obscures the funding.

The Fed's financing of foreign exchange operations without explicit direction from Congress exposes it to potentially harsh criticism if an initiative goes badly. Unfavorable outcomes would obviously undermine public support for the Fed's financial independence. But there is a more subtle risk, even if foreign initiatives funded by the Fed go well. Some will ask whether, if Fed financing of credit extensions to foreigners is beneficial, it might also be desirable for the Fed to support worthy domestic objectives. Any attempt to exploit the Fed's financial independence in this manner would almost guarantee that its independence would be withdrawn over time.

Fed off-budget funding attracted substantial attention in the Mexican case in 1995, as indicated by a remarkable headline in *The New York Times*: "Clinton Offers \$20 Billion to Mexico for Peso Rescue — Action Sidesteps Congress."²⁹ Should the Fed take comfort from the relative absence to date of significant negative repercussions from its involvement in this initiative? We think not. The publicity for the Mexican rescue put the Fed's off-budget funding powers on the radar screen, along with the potential risks described above. The Fed appeared to receive the implicit support of the congressional leadership in this instance, but Congress itself probably would not have voted to authorize the funds, and the public at large did not seem to favor such generous support for Mexico. Indeed, many Americans, including some prominent ones, viewed the transaction as a bailout of big investors. If, over time, developments in Mexico turn unfavorable, the result could be an erosion of public and congressional support for the Fed's financial independence.

In brief, Congress deliberately placed the Fed outside the appropriations process in order to safeguard its independence. The Fed should not misuse its off-budget status to finance initiatives that are unrelated to monetary policy because there is very little to be gained and much to lose.

VI

CONCLUSION



We have assessed the consequences of the Fed's participation in foreign exchange operations. Our analysis was based on the idea that central bank credibility for low inflation is the cornerstone of an effective monetary policy, and that public support for Fed independence is the foundation of that credibility.

Distinguishing between sterilized and unsterilized foreign exchange operations, we recognized that as a mechanical matter the Fed can follow the Treasury's lead on sterilized operations without compromising its independence on monetary policy. There is little evidence, however, that sterilized intervention alone can have a sustained effect on the

exchange rate. Thus, the Fed's participation in foreign exchange policy with the Treasury creates doubt about whether monetary policy will support domestic or external objectives, and this doubt undermines the credibility of the Fed's longer-term objective of reducing and ultimately eliminating inflation.

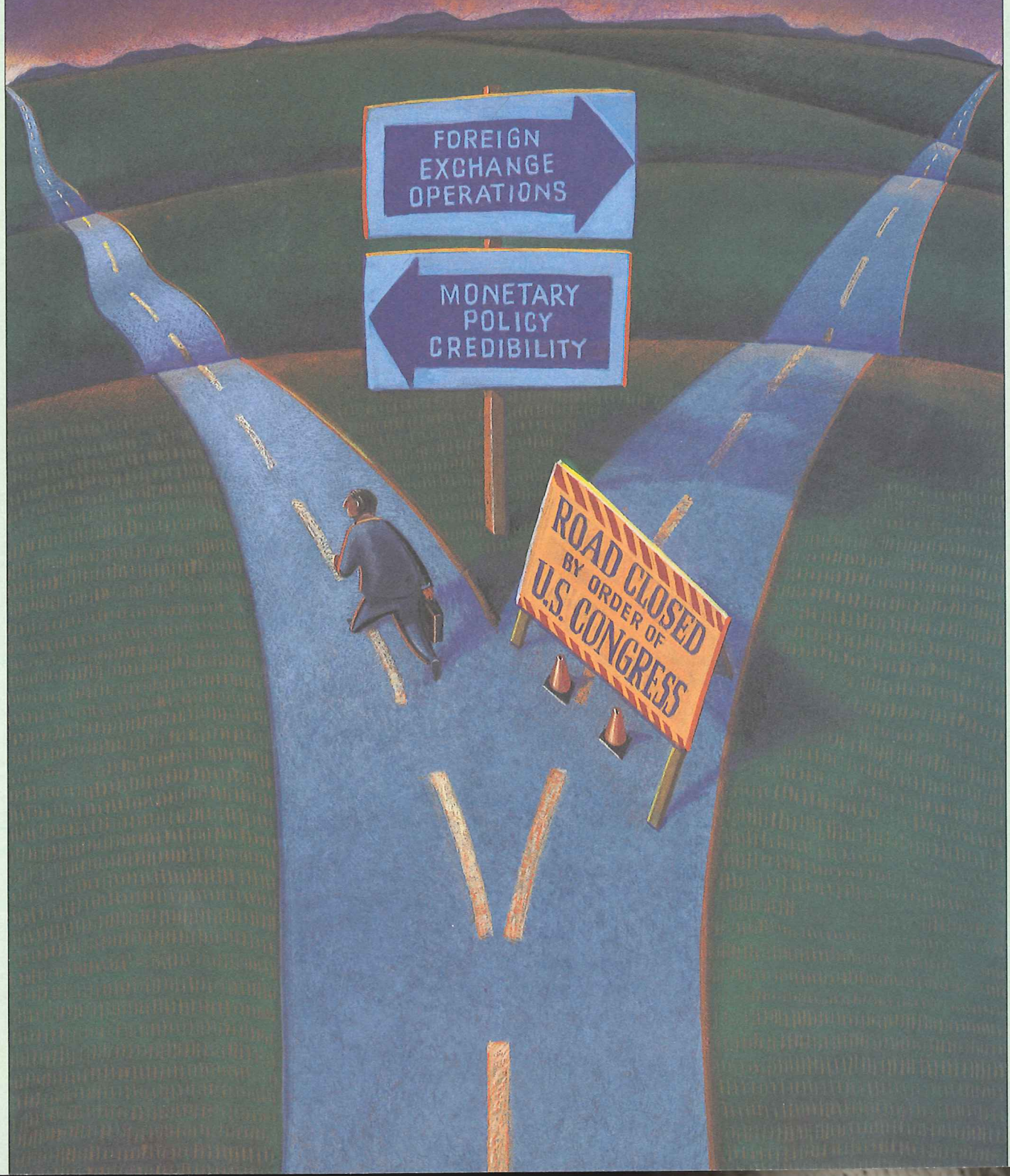
Although the Fed is the junior partner with the Treasury on foreign exchange operations, it has been an equal partner when it comes to providing the resources. The Fed can make these resources available without a congressional appropriation because its financial independence puts its open market operations off-budget. Foreign exchange operations initiated by the Treasury involve foreign relationships in ways that can be politically charged, especially when they involve direct loans to foreign governments. We think that Fed financing of such operations risks undermining public respect for its financial independence and with it the credibility of its longer-term price level stability objective.

We argued that central bank independence alone is an inherently fragile basis for the credibility of monetary policy. In view of that fragility, we recommended that the Fed be separated completely from foreign exchange operations. We did not argue that the nation should forsake official foreign exchange operations — only that the Fed, as an independent central bank, should not participate. The Treasury would be free to carry out sterilized operations. Having made this point, we acknowledged that it would be difficult for the Fed to disengage from foreign exchange operations unilaterally. Consequently, some sort of congressional legislation would probably be required to remove the Fed from foreign exchange operations permanently.

In our view, the problems created by the Fed's involvement in foreign exchange operations underscore the need for Congress to provide the Fed with a mandate for price level stability, recognizing a concern for the stabilization of employment and output. Such a mandate would constitute a long overdue replacement for the commitments made at Bretton Woods.³⁰ Moreover, firm congressional support is needed to strengthen the credibility of the Fed's anti-inflation strategy. By providing an overarching national goal for monetary policy once again, a price stability mandate would greatly reduce the risk of conflicts and credibility problems when the Fed works closely with the Treasury and other parts of the government.



Legislation is required
to take the Fed out of
foreign exchange operations
and to provide it with
a mandate for price stability.



1. See Chandler (1950) and Clarke (1967).
2. See the discussion in Humpage (1994), pp. 3-4.
3. Pauls (1990) details the evolution of U.S. exchange rate policy in the post-World War II period.
4. See Hetzel (1996).
5. That either a fixed exchange rate or a fixed gold price commitment requires monetary policy to be dedicated to that objective is emphasized, for example, by McCallum (1996a), Chapters 4 and 7.
6. See the accounts in Leiderman and Svensson (1995).
7. The introductory chapter in Persson and Tabellini (1994) contains a good survey of research on the role of credibility in monetary and fiscal policy. Barro and Gordon (1983), Cukierman (1992), and Sargent (1986) contain seminal analyses of credibility.
8. Goodfriend (1993) and King (1995), for example, interpret movements in long-term bond rates as indicators of credibility for low inflation.
9. See Salomon Brothers and Hutzler (1968).
10. Leiderman and Svensson (1995) and McCallum (1996b) contain accounts of the experience with inflation targets in a number of countries. For an empirical study of exchange rate credibility in the EMS, see Rose and Svensson (1994).
11. This definition is from Hetzel (1990), p. 165.
12. Fischer (1994), p. 292, distinguishes between goal and instrument independence.
13. The Fed actually abandoned its short-term interest rate peg in 1947; it gave up its long-term rate peg in 1951. Stein (1969) contains a good discussion of developments leading up to the 1951 Fed-Treasury Accord.
14. It is true that the 1978 Humphrey-Hawkins law mandates the Fed to set monetary aggregate targets as guides to short-run policy. But the Humphrey-Hawkins law instructs the Fed to take account of so many potentially conflicting macroeconomic concerns in setting the targets that it has exercised little restraint on the Fed's freedom of action.
15. See Bradsher (1995).
16. A detailed description of the mechanics of foreign exchange operations using T-accounts is found in Humpage (1994).
17. A representative survey of the academic literature on this point would include Bordo and Schwartz (1991), Edison (1993), and Obstfeld (1990), and references contained therein.
18. See Mussa (1981).
19. See Destler and Henning (1989), Funabashi (1989), and Pauls (1990) for historical discussions of U.S. exchange rate policy.
20. The Fed drew on its swap lines in the 1960s to protect the Treasury's gold stock by using the borrowed currencies to buy back dollar reserves from foreign central banks. These transactions effectively allowed the United States to assume other countries' devaluation risk on a portion of their dollar reserves. More recently, the United States has had sufficient foreign currency reserves to avoid drawing on its swap lines.
21. See the discussions in Goodfriend (1994) and Humpage (1994).
22. U.S. Congress (1976), pp. 3-5.
23. See U.S. Department of the Treasury (1991). U.S. Congress (1976) details ESF operations from 1968 to 1975. Todd (1992) presents a general history of the ESF.
24. SDRs are monetized by transferring them to the Fed.
25. See Pauls (1990), pp. 894 and 904, and U.S. Congress (1976), pp. 3-5.
26. See Friedman (1994).
27. This distinction is developed in Goodfriend and King (1990) and used in Goodfriend (1994).
28. To the extent that the funds are provided by the United States in the first place, the possibility of such takeouts amounts to only a partial reduction of U.S. taxpayer risk. On some occasions when U.S. authorities have drawn and dispersed foreign currencies through the swap network, the U.S. Treasury has repaid the swap loans with foreign exchange borrowed on a long-term basis using so-called "Roosa," or "Carter," bonds. Such actions, however, only shift the market risk from short to long term. See U.S. Congress (1976), pp. 4, 5, and 40.
29. See Sanger (1995). Folkerts-Landau and Ito, et al. (1995) contains a thorough account of the Mexican peso crisis.
30. Our conclusion that a central bank should have its goal legislatively mandated is also the recommendation, for example, of Blinder (1995), Lecture II, p. 16, Friedman (1962), pp. 224-43, and Fischer (1994), p. 316; although the suggested mandates differ from ours and from each other in certain respects.

- Barro, Robert, and David Gordon. "Rules, Discretion, and Reputation in a Model of Monetary Policy," *Journal of Monetary Economics*, vol. 12 (July 1983), pp. 101-22.
- Blinder, Alan. "Central Banking in Theory and Practice," The Marshall Lecture, Cambridge University. Federal Reserve Board, processed May 1995.
- Bordo, Michael, and Anna Schwartz. "What Has Foreign Exchange Market Intervention since the Plaza Agreement Accomplished?" *Open Economies Review*, vol. 2 (No. 1, 1991), pp. 39-64.
- Bradsher, Keith. "Lately, A Much More Visible Fed Chief," *The New York Times*, January 17, 1995.
- Chandler, Lester. *Benjamin Strong, Central Banker*. Washington, D.C.: Brookings, 1950.
- Clarke, Stephen. *Central Bank Cooperation: 1924-31*. New York: Federal Reserve Bank of New York, 1967.
- Cukierman, Alex. *Central Bank Strategy, Credibility, and Independence*. Cambridge, Mass.: MIT Press, 1992.
- Destler, I. M., and C. Randall Henning. *Dollar Politics: Exchange Rate Policymaking in the United States*. Washington, D.C.: Institute for International Economics, 1989.
- Edison, Hali J. "The Effectiveness of Central-Bank Intervention: A Survey of the Literature after 1982." Special Papers in International Economics, No. 18. Princeton: Princeton University, Department of Economics, International Finance Section, July 1993.
- "Effort to Bolster Dollar a Failure," *Richmond Times-Dispatch*, June 25, 1994.
- Fischer, Stanley. "Modern Central Banking," in Forrest Capie, Stanley Fischer, Charles Goodhart, and Norbert Schnadt, eds., *The Future of Central Banking: the Tercentenary Symposium of the Bank of England*. Cambridge: Cambridge University Press, 1994.
- Folkerts-Landau, David, and Takatoshi Ito, et al., "Evolution of the Mexican Peso Crisis," in *International Capital Markets: Developments, Prospects, and Policy Issues*. Washington, D.C.: International Monetary Fund, 1995, pp. 53-69.
- Friedman, Milton. "Should There Be an Independent Monetary Authority?" in *In Search of a Monetary Constitution*, Leland Yeager, ed., Cambridge, Mass: Harvard University Press, 1962.
- Friedman, Thomas. "16 Central Banks Are Thwarted in Huge Effort to Prop Up Dollar," *The New York Times*, June 25, 1994.
- Funabashi, Yoichi. *Managing the Dollar: From the Plaza to the Louvre* (second edition). Institute for International Economics. Washington, D.C., 1989.
- Goodfriend, Marvin. "Why We Need an 'Accord' for Federal Reserve Credit Policy," *Journal of Money, Credit, and Banking*, vol. 26 (August 1994), pp. 572-80.
- _____. "Interest Rate Policy and the Inflation Scare Problem," Federal Reserve Bank of Richmond *Economic Quarterly*, vol. 79 (Winter 1993), pp. 1-24.
- _____, and Robert King. "Financial Deregulation, Monetary Policy, and Central Banking," in W. Haraf and R. Kushmeider, eds., *Restructuring Banking and Financial Services in America*. Boston: Kluwer, 1990. Also in Federal Reserve Bank of Richmond *Economic Review*, vol. 74 (May/June 1988), pp. 3-22.
- Hetzl, Robert. "Central Banks' Independence in Historical Perspective," *Journal of Monetary Economics*, vol. 25 (January 1990), pp. 165-76.
- _____. "Sterilized Foreign Exchange Intervention: The Fed Debate in the 1960s." Federal Reserve Bank of Richmond, 1996.
- Humpage, Owen F. "Institutional Aspects of U.S. Intervention," Federal Reserve Bank of Cleveland *Economic Review*, vol. 30 (Quarter 1, 1994), pp. 2-19.
- King, Mervyn. "Credibility and Monetary Policy: Theory and Evidence," Bank of England *Quarterly Bulletin*, vol. 35 (February 1995), pp. 84-91.
- Leiderman, Leonardo, and Lars Svensson, eds. *Inflation Targets*. London: Center for Economic Policy Research, 1995.
- McCallum, Bennett. *International Monetary Economics*. London: Oxford University Press, 1996a.
- _____. "Inflation Targeting in Canada, New Zealand, Sweden, the United Kingdom, and in General," forthcoming in the Bank of Japan Seventh International Conference Volume, 1996b.
- Mussa, Michael. "The Role of Intervention," Occasional Paper, No. 6. New York: Group of Thirty, 1981.
- Obstfeld, Maurice. "The Effectiveness of Foreign-Exchange Intervention: Recent Experience, 1985-1988" in William H. Branson, Jacob A. Frenkel, and Morris Goldstein, eds., *International Policy Coordination and Exchange Rate Fluctuations*. National Bureau of Economic Research Conference Volume. Chicago: University of Chicago Press, 1990.
- Pauls, Dianne. "U.S. Exchange Rate Policy: Bretton Woods to Present," *Federal Reserve Bulletin*, vol. 76 (November 1990), pp. 891-908.
- Persson, Torsten, and Guido Tabellini, eds. *Monetary and Fiscal Policy, Vol. 1: Credibility, and Vol. 2: Politics*. Cambridge, Mass.: MIT Press, 1994.
- Rose, Andrew, and Lars Svensson. "European Exchange Rate Credibility before the Fall," *European Economic Review*, vol. 38 (June 1994), pp. 1185-1216.
- Salomon Brothers and Hutzler. *An Analytical Record of Yields and Yield Spreads: 1950-1968*. New York: Salomon Brothers and Hutzler, 1968.
- Sanger, David. "Clinton Offers \$20 Billion to Mexico for Peso Rescue; Action Sidesteps Congress," *The New York Times*, February 1, 1995.
- Sargent, Thomas J. *Rational Expectations and Inflation*. New York: Harper and Row, 1986.
- Stein, Herbert. "The Liberation of Monetary Policy," in *The Fiscal Revolution in America*. Chicago: University of Chicago Press, 1969.
- Todd, F. Walker. "Disorderly Markets: The Law, History, and Economics of the Exchange Stabilization Fund and U.S. Foreign Exchange Market Intervention," in George G. Kaufman, ed., *Research in Financial Services: Private and Public Policy*, Vol. 4. Greenwich, Conn.: JAI Press, 1992.
- U.S. Congress, House of Representatives, Committee on the Budget. *Exchange Stabilization Fund*. Hearings Before the Task Force on Tax Expenditures and Off-Budget Agencies of the Committee on the Budget. 94 Cong. 2 Sess. Washington: Government Printing Office, 1976.
- U.S. Department of the Treasury. *Exchange Stabilization Fund Annual Report*. Washington: U.S. Department of the Treasury, 1991.