

PRINCETON STUDIES IN INTERNATIONAL FINANCE NO. 13

# The Management of the Dollar in International Finance

Robert Z. Aliber

INTERNATIONAL FINANCE SECTION  
DEPARTMENT OF ECONOMICS  
PRINCETON UNIVERSITY • 1964

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FRITZ MACHLUP  
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# THE MANAGEMENT OF THE DOLLAR IN INTERNATIONAL FINANCE

## I. INTRODUCTION

The need to reduce the large persistent deficit in U.S. international payments since 1958 has limited the choice of measures to secure both domestic and foreign economic objectives. If U.S. international reserves, primarily gold, had not been extremely large in 1958, the United States would have had to take much more rigorous measures to reduce the payments deficit, and the conflict between these various policy objectives and the need to secure a satisfactory payments balance would have been more intense.

This study is concerned primarily with measures and institutional innovations which could permit the United States to finance its international payments deficits with smaller gold losses. Such measures and innovations are not addressed primarily to the problem of selecting the most appropriate policies for *reducing* the U.S. payments deficit. Rather they are intended to increase the ability of the United States to *finance* its payments deficits, both by reducing the foreign official demand for gold from the U.S. Treasury and by increasing the amount of gold available to foreign official institutions from other sources. More time would then be available for the United States to achieve a satisfactory international payments balance, and the policy conflict would be less severe.

Numerous proposals have been advanced to strengthen or restructure international financial institutions, so that the supply of international reserves and international credit would grow more rapidly.<sup>1</sup> The pressures on particular countries to eliminate payments deficits might then be less intense because reserves would be larger, and they would have more time to achieve a satisfactory payments balance. Restructuring international financial institutions requires extensive negotiations and involves constitution-writing for new institutions.

I have received many helpful comments on previous drafts of this study, and feel especially indebted to Charles A. Cooper, Peter Fousek, Charles P. Kindleberger, Loughlin F. McHugh, Eli Shapiro, and Herbert Stein.

<sup>1</sup> These plans are discussed in Fritz Machlup, *Plans for Reform of the International Monetary System* (Princeton: International Finance Section, Princeton University, revised edition 1964).

This paper, in contrast, focuses on measures which the United States can adopt on its own, on a bilateral basis, or on an informal, multi-lateral basis to protect its international reserve position. This approach also involves international cooperation, but the scope of cooperation generally is less extensive and less permanent than under the first group of proposals.

Section II considers the roles of the dollar and gold in international settlements and international reserves, and the special role of the U.S. Treasury as the residual international buyer and seller of gold. Section III considers measures which can protect U.S. gold reserves by reducing the private demand for gold. Section IV discusses measures which can enable the U.S. authorities to manage shifts of short-term funds in response to either interest-rate differentials or currency speculation so that these shifts are less disruptive to the U.S. reserve position. Section V considers measures which can reduce the demand of foreign official institutions for gold by providing alternative assets which might better meet their reserve needs than the dollar assets already available. (Some of these measures have been adopted in the recent years; their impact is also discussed.)

Active management of the dollar in international finance can extend the ability of U.S. reserves to *finance* the U.S. payments deficit, thus providing a partial substitute for larger international reserves, and reducing the constraint on the choice of domestic and foreign economic policies resulting from the need to *reduce* the U.S. payments deficit. Even if the U.S. balance-of-payments position is fundamentally strong, the United States may be subject to large, disruptive reserve losses from an adverse turn of the leads and lags and from outflows of funds in covered and uncovered interest arbitrage. More dramatically, a loss of reserves due to these short-term factors may occur together with reserve drains attributable to other factors and thus greatly reduce the freedom of the U.S. authorities to adopt measures appropriate for objectives other than protecting U.S. international reserves.

Measures to reduce the shifts of interest-sensitive private funds, to reduce gold and currency speculation, and to reduce the foreign official demand for gold will not correct fundamental international payments imbalances; nor is this their purpose. Their role is to increase the time available for the correction of these imbalances and thereby widen the range of choice of domestic and of foreign economic policies. Such measures will be useful, and perhaps necessary, even if international financial institutions are restructured to provide for more rapid growth in the supply of international reserves and international credit.



## II. THE DOLLAR AND GOLD IN INTERNATIONAL FINANCE

The United States, both by legal obligation and customary practice, is committed to exchange-rate stability and unrestricted payments freedom. To maintain these commitments, U.S. authorities must be prepared to buy excess dollars held by foreigners and to finance these purchases with assets that foreigners are willing to accept. The U.S. authorities must manage the flow of dollars into foreign ownership within the limits set by the willingness of foreigners to hold more dollar assets, and the ability of the U.S. authorities to repurchase their excess dollar holdings.

Current international financial arrangements are based upon the fixed U.S. gold parity of \$35.00 per fine troy ounce, and the willingness of the U.S. Treasury to sell gold and to buy gold in transactions with foreign official institutions at this price.<sup>2</sup> These arrangements permit only very limited changes in the price of gold and of foreign currencies in terms of the dollar. Consequently changes in the dollar price of these assets in response to changes in demand afford relatively little protection to the U.S. reserve position, and so the U.S. authorities must use other measures to limit the excess flow of dollars to foreigners.

Acceptance of membership in the International Monetary Fund provides the legal basis for exchange-rate stability. The Fund's Articles of Agreement require that member countries take the appropriate measures so that spot transactions within their own territories which involve the exchange of their currencies against that of other members will be made at rates not more than one percent away from their parities. Thus, as long as the exchange parities have remained unchanged, and other members have adhered to their Fund commitment, the price of foreign currencies in terms of the dollar has remained within a narrow range.<sup>3</sup>

<sup>2</sup> The U.S. gold price of \$35.00 per fine ounce initially was fixed by Presidential Proclamation on January 31, 1934. Under 1933 legislation, the President was empowered to reduce the gold content of the dollar by 50 percent from the \$20.67 parity. The adoption of the \$35.00 parity represented a reduction in the gold content of the dollar to 59.06 percent of its former parity; the President retained the power to reduce the gold content by 9.06 percent. However, the Bretton Woods Agreements Act of July 31, 1944, in addition to authorizing the President to accept U.S. membership in the International Monetary Fund, also provided that only Congress could change the gold parity of the dollar.

<sup>3</sup> The Fund Agreement permits a member country to change the par value

When the U.S. gold price of \$35.00 an ounce was first established, the Secretary of the Treasury announced that he would sell gold at \$35.0875 and buy gold at \$34.9125, that is, at margins 0.25 percent either side of the U.S. gold parity.<sup>4</sup> The spread between the U.S. gold points influences the range of movement of the price of gold in markets abroad, the private demand for gold, and the pattern of international gold shipments and the distribution of the new gold supply.<sup>5</sup> Partly because of this spread between the U.S. gold points, other countries maintain a spread between the rates at which they buy and sell their currencies in the exchange market against the dollar.

The commitment of Fund members to prevent their currencies from deviating from their official parities by more than 1 percent requires that they sell gold or foreign exchange if their currencies begin to fall more than 1 percent below parity, and that they buy gold or foreign exchange if their currencies begin to climb more than 1 percent above parity. Most foreign countries, especially those in Western Europe, have supported their currencies at 0.75 percent either side of parity, chiefly through purchases or sales of U.S. dollars.<sup>6</sup>

As long as the outflow of gold from the United States was not a problem, it was not necessary for the U.S. authorities to engage in foreign-exchange operations to support the dollar. Until 1961 the U.S. Treasury relied exclusively on gold transactions to maintain the price of the dollar in terms of other currencies. If foreign monetary authori-

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of its currency only to correct a fundamental disequilibrium in its international payments. If a proposed change in a parity, together with all previous changes, is less than 10 percent of the initial parity, the Fund cannot object to this change. The Fund may object to a larger change in a country's parity only if it believes that this change is not necessary to correct a fundamental disequilibrium in this country's international payments. If the parity is changed despite this objection, the country is ineligible to use the resources of the Fund—unless the Fund determines otherwise—and the country can be forced to withdraw from the Fund.

<sup>4</sup> The Gold Reserve Act of 1934 authorized the Secretary of the Treasury to buy or sell gold at such prices and under such terms and conditions as he deemed most advantageous to the public interest. Although domestic legislation keeps the authority to change the gold parity of the dollar in the hands of Congress, the Secretary of the Treasury can decide not to buy or not to sell gold at this price.

<sup>5</sup> Initially the Fund prohibited members from buying gold more than 0.25 percent above their parities and selling gold more than 0.25 percent below their parities. In October 1954 these limits were increased to 1 percent from parity.

<sup>6</sup> Most member countries of the European Monetary Agreement have declared support limits of about 0.75 percent either side of parity. There are several exceptions—Switzerland has support limits about 1.7 percent either side of parity, and Portugal, 1.2 percent.

ties felt that their dollar holdings were becoming too large, perhaps because of a U.S. payments deficit, the U.S. Treasury was ready to sell gold to them at \$35.0875. If foreign monetary authorities wished to acquire dollars to purchase U.S. financial assets or to pay debts, the U.S. Treasury was ready to buy gold from them at \$34.9125. The Treasury was ready to buy or sell gold, apparently in unlimited amounts, in transactions for legitimate monetary purposes with foreign official institutions.

Whether the U.S. Treasury was a buyer or a seller of gold at any time largely depended on two factors: changes in the official reserves of the relatively few foreign countries which have held large amounts of gold in their international reserves, and changes in the private demand for gold.

The supply of new gold available to meet official and private demands in the West has been about \$1.5 billion in recent years; although it was unusually large in 1963. The supply from production in Western countries has been steadily increasing, from \$800 million in 1948 to \$1.3 billion in 1963. Soviet gold sales in the West, which had averaged about \$200 million before 1963, with yearly variations from \$70 million to \$250 million, increased to \$500 in 1963.

Seven countries—Great Britain, Germany, France, Switzerland, Italy, Belgium, and the Netherlands—hold about 65 percent of the official gold stocks of the free world outside the United States. Their share of total monetary gold holdings is large both because they hold about 50 percent of the international reserves of the free world outside of the United States and because they hold a high percentage of their international reserves in gold.<sup>7</sup>

These countries generally support their currencies in the exchange market through purchases and sales of U.S. dollars. If their reserves are increasing, a large proportion of their dollar accruals are used to finance the purchase of gold; if their reserves are declining, they may sell gold to obtain dollars to support their currencies in the foreign exchange market. Whether these countries are buying or selling gold depends on whether they have international payments surpluses or deficits, and the extent to which these surpluses and deficits are

<sup>7</sup> Even among these countries, there are sizeable differences in gold preferences. The Netherlands, for example, holds 85 to 90 percent of its international reserves in gold, while Germany holds 55 percent. Moreover, the gold-reserve ratios of these countries change over time; for the most part they have increased as their total reserves have increased.

settled by changes in official reserves, and in non-official foreign exchange holdings.<sup>8</sup>

The private demand for gold is of two types. There is a rather steady demand for jewelry, industrial, and dental and similar purposes, estimated in the range of \$200-\$300 million annually; and there is a volatile speculative demand, based on the expectation of a possible increase in the price of gold in terms of some or all currencies. "The line of distinction between industrial and artistic consumption on the one hand and hoarding on the other is one which is not very clearly defined since increased demand for gold jewelry can, varying from one country to another, be either a disguised form of hoarding or a normal concomitant of inflation or just a result of a rising standard of living."<sup>9</sup> In some years the private demand has been estimated at about \$300 million; in several recent years it has exceeded \$1.3 billion. Consequently, the annual increase in total reported official gold holdings has ranged from a high of \$750 million in 1959 to a low of \$300 million in 1960.

Whenever the new gold supply has exceeded net demands of foreign official institutions and private parties, the U.S. Treasury has bought gold at its standing bid of \$34.9125 per ounce; the U.S. Treasury provides the residual international demand for gold. Whenever net demands have exceeded the new gold supply, the Treasury has sold gold at its standing offer of \$35.0875; the Treasury provides the residual supply of gold. The gold producers are at one end of the pattern of international gold distribution and the U.S. Treasury is at the other end; foreign official institutions and private parties are between the two.

The London gold market, reopened in March 1954 after having been closed at the outset of World War II, plays a central role in the distribution of the new gold supply.<sup>10</sup> Sterling-area countries produce

<sup>8</sup> The United States may acquire gold even if it has a payments deficit, if the large gold-holding countries in Western Europe are in payments deficit while the countries in surplus hold most of their reserves in dollars. The United States might also acquire gold if countries in Western Europe have small payments surpluses, so that their gold acquisitions are smaller than the amount of gold currently becoming available for additions to official monetary stocks. U.S. gold holdings increased in 1951, 1952, and 1956, although the United States had a payments deficit in each of these years.

<sup>9</sup> *Quarterly Bulletin*, Bank of England, Vol. IV, March 1964, p. 18.

<sup>10</sup> There are three major types of gold markets. In one, gold transactions are legal and gold imports are permitted, as in London; the price differentials

two-thirds of the free-world output of gold and sell most of it in London, using the Bank of England as their agent.<sup>11</sup> And a large part of Soviet gold has been sold in London.

The London gold market, despite its location, is primarily a dollar market. The gold buyers pay in dollars, or in external sterling which is convertible into dollars. Although the price of gold is frequently stated in terms of sterling, the sterling price is computed from the dollar price at the current sterling-dollar exchange rate. If sterling were devalued by 10 percent relative to the dollar, the sterling price of gold would increase by 10 percent.

The London gold market provides foreign monetary authorities with the opportunity to buy and sell gold at prices which may at times be more favorable than the fixed buying and selling prices of the U.S. Treasury. If the price of gold in London exceeds \$34.9125, it is more worthwhile to sell gold in London than in New York, provided sellers hold gold under earmark in London.<sup>12</sup> If the London price is below \$35.0875, it is more attractive to buy gold in London, provided the buyers are willing to hold gold in London or in nearby centers. As long as the gold price in London remains within the U.S. gold points, the U.S. Treasury's gold transactions are likely to be small.<sup>13</sup>

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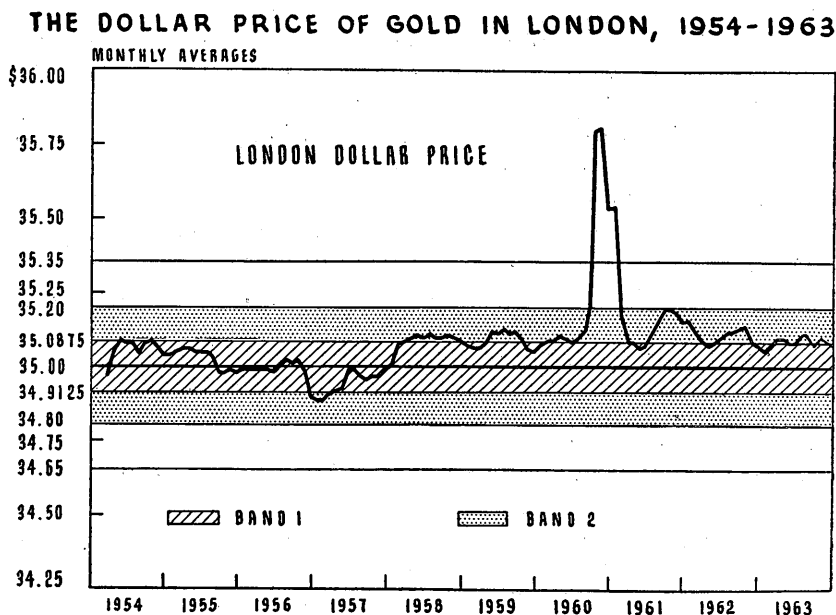
among the various international financial centers in this group primarily reflect the costs of arbitraging. In the second, gold is legally traded against the local currency but gold imports are prohibited. Gold may not be imported legally into France by private parties—but the French can buy gold legally in Paris. One result of the import prohibition is that the gold price in Paris is less closely tied to the London gold price than is the gold price in Zurich, Beirut, and other centers where gold can be legally imported. In the third type of gold market, private gold transactions are illegal.

<sup>11</sup> The Bank of England also buys and sells gold in London for its own account to settle the payments surpluses and deficits of the sterling area with the rest of the world, and to influence the sterling-dollar exchange rate; it also operates for the South African Reserve Bank, other central banks, and for the recently formed international gold pool.

<sup>12</sup> The point at which it becomes cheaper for a foreign official institution to buy or to sell gold in New York rather than in London depends on where it wishes to effect a change in its gold holdings. It may be completely indifferent about holding gold under earmark in New York or in London, or in its own vaults. If it is not—if it wishes to build up its London holdings—it will pay more for gold in London than in New York.

<sup>13</sup> Foreign monetary authorities buy and sell gold in New York with each other at prices inside the range of the fixed selling and buying prices of the U.S. Treasury, generally at the U.S. parity of \$35.00 an ounce. These transactions have been arranged directly by the buying and selling parties or through the Bank for International Settlements or the International Monetary Fund. From time to time in the last several years, there have been rumors, but not official

The U.S. buying and selling prices form boundaries for the London gold price—at least for the gold transactions of foreign official institutions. If these institutions are indifferent about the relative size of their gold holdings in New York and elsewhere, which can be construed as the condition for costless arbitrage, the price of gold in London will not move beyond the U.S. Treasury's gold points. The U.S. Treasury's gold points form Band 1 in Chart 1.<sup>14</sup> A price within Band 1 suggests



that it is not profitable for a foreign official institution to sell gold in London and build up its gold holdings in New York, while a price above the upper edge of Band 1 suggests that it is profitable for a foreign official institution to sell gold in London and buy gold in New York.

The cost of shipping gold between New York and London is estimated at \$.08-.10 cents per ounce. When the demand for gold is weak

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announcements, indicating that the U.S. authorities have bought and sold gold to selected foreign official institutions at prices within the U.S. gold points.

<sup>14</sup> If the gold price is measured in terms of sterling rather than in terms of the dollar, the height of the Band 1 shifts as the sterling-dollar exchange rate shifts.

in London, the price of gold in London can fall to nearly \$34.80 before it becomes profitable to ship gold from London to New York. When the demand is strong in London the price of gold in London can rise to nearly \$35.20 before it becomes profitable to ship gold from New York to London. These shipment costs form the segments on both sides of Band 1, labelled Band 2. A foreign official institution might pay more than \$35.20 for gold in London but only if it wished to avoid buying gold in New York.

One reason why foreign official institutions may pay more than \$35.0875 for gold in London is that they may wish to diversify their holdings geographically. Another reason is that they may believe that the London price is apt to exceed \$34.9125 when they are likely to sell the gold. If this expectation proves wrong—if the gold price in London is more than \$.175 per ounce below the purchase price at a time when it is necessary to sell gold to finance a payments deficit, the foreign official institution can sell gold from its stocks held in New York.<sup>15</sup>

There are in effect two gold markets in London, even though there is only one price for gold in London at any time. Foreign official institutions which have the alternative of buying gold from the United States comprise one market; private parties, who cannot buy gold from the U.S. Treasury, comprise the second.

Foreign official institutions prefer to buy gold in the center with the lower price. Normally, an increase in the private demand for gold in London will induce foreign official institutions to shift more of their gold purchases to the U.S. Treasury and will increase U.S. gold sales. The smaller the amount of gold that foreign official institutions buy in London the larger the amount they will buy in New York. In this sense, foreign official institutions provide the residual demand for gold in London; they purchase that part of the available supply not bought by private parties. At prices of \$35.20 and higher, nearly all of the gold sold in London is likely to be purchased by private parties; the foreign official demand for gold will either be diverted to New

<sup>15</sup> In most postwar years foreign-owned gold held under earmark in the United States increased more rapidly than the U.S. Treasury's sales of gold to foreign official institutions. The United States then was a net importer of gold. In 1961 U.S. gold exports exceeded U.S. gold sales. This change may reflect partly increasing attention to geographic diversification of gold holdings by foreign official institutions, and partly larger U.S. sales to meet the private demand abroad.

York,<sup>16</sup> or foreign official institutions will delay their intended purchases until the London price declines.

Generally, foreign official institutions will take a loss on their purchase and sale of one ounce of gold, since the price at which they buy gold is likely to be higher than the price at which they sell gold. However, the losses on their gold transactions are apt to be offset by a profit on the purchase and sale of their own currency. Foreign official institutions generally sell their own currencies at a price above parity, perhaps at or near the upper support limits, and buy their own currency at a price below parity, perhaps at or near the lower support limits (the difference between the prices at which foreign official institutions sell and buy their own currency is the exchange agio).

The combination of a purchase and sale of gold in New York, and a sale and purchase of their own currency at the support limits, is likely to result in a small profit for foreign official institutions; the loss on the gold transactions will be more than offset by the profit on the currency transactions. For example, if the British authorities sell sterling for dollars at \$2.82 and then buy sterling with dollars at \$2.78, they will earn an exchange agio of \$.04 on the purchase and sale of £1; the exchange agio on the purchase and sale of \$1.00 is \$.0143. With \$1.00 the British authorities can buy 1/35 of an ounce of gold. The loss on the purchase and sale of 1/35 of an ounce of gold with the U.S. Treasury is \$.005, or slightly more than 1/70 of the exchange agio.

Foreign official institutions do not tailor their exchange-market transactions—the prices at which they intervene in the exchange markets as buyers and sellers of their own currency—to achieve profits. Many intervene within their support limits; a few only at the support limits. Nevertheless the ability to secure a profit, or avoid a loss, from the combination of a gold transaction and an exchange transaction is a basic feature of current international financial arrangements. The U.S. Treasury earns a slight profit on its gold transactions, and foreign official institutions earn a slight profit on their exchange transactions, which is apt to exceed the possible loss in buying and then selling gold.

The U.S. Treasury's gold points play an important role in current international financial arrangements. They impose a cost, much like

<sup>16</sup> Several foreign central banks formerly bought gold in London at prices above \$35.20, in the belief that purchases in London rather than New York would ease the pressure on the U.S. Treasury.



a transactions tax, on gold sales and purchases with the U.S. Treasury; they induce foreign official institutions, particularly those which hold large proportions of reserves in gold, to allow their currencies to fluctuate in terms of the dollar lest they incur losses on the combination of their gold and exchange transactions; and they permit a range of price movement to occur in free gold markets so that most gold purchasers face the risk of having to sell gold at a price below that at which they have bought it.

### III. REDUCING THE PRIVATE DEMAND FOR GOLD

Under current international financial arrangements, the monetary authorities may be required to supply gold on demand to private parties to prevent the price of gold in private transactions from rising substantially above the official gold parities. Since the United States is the residual gold supplier, much or all of the gold made available to private parties for this purpose may come from the U.S. gold reserves. Even if the demand of private parties is not large enough to exhaust the new gold supply fully, the diversion of some of the new gold supply into private hoards reduces the amount of gold available for official stocks, and results in larger U.S. gold sales to foreign official institutions.

The strength of the private demand for gold is based on the one-way option open to speculators. They are reasonably certain the price of gold in terms of the dollar or other currencies will not decline, and it is possible that the price may be increased. If the monetary authorities ceased to buy gold at \$35 an ounce, its price in private transactions almost certainly would fall, and probably substantially. The willingness of the monetary authorities to buy gold from private parties at \$35 an ounce limits speculative losses if the gold price is not increased, and thus contributes to the strength of the private demand for gold.

The private demand for gold presents the authorities with two distinct, related problems about the management of private gold markets. The first is that the combination of an extremely unstable private demand for gold and a very inelastic supply of gold may result in erratic and disruptive movements in the gold price. Increases in the gold price in free markets frequently feed on themselves, inducing further increases in demand. Rapid increases in the gold price can trigger currency speculation. One problem is to keep the gold price in free markets under control with a minimal drain of gold from new production and official stocks into private hoards.

The second problem is that the protection of U.S. gold reserves requires that a large proportion of new gold output accrue to official institutions. The stronger the private demand for gold, the smaller the increment in official gold holdings will be and the greater the likelihood that the foreign official demand for gold will have to be met by

the U.S. Treasury. In a very real sense, much of the gold which goes into private hoards, even if it is supplied from new production, comes out of U.S. reserves.<sup>17</sup>

### *Recent Changes in U.S. Gold Policy*

The question of whether to maintain an apparent single gold price for both central banks and private parties by supplying gold from monetary stocks to meet the strong private demand, or whether to allow a two-price system to develop—one price for official institutions and another for private parties—first became acute in October 1960. In previous years the London gold price frequently reached a yearly peak about the time of the autumn meetings of the International Monetary Fund; never before, however, had it exceeded \$35.15. In 1960, the uncertainties associated with both the U.S. payments deficit and the forthcoming U.S. presidential election led to a continuation of the gold price increase after the IMF annual meeting. And some foreign official institutions continued to buy gold in London at prices above \$35.20, even though it would have been cheaper to buy gold in New York and ship it to London.

In the context of continuing uncertainty about the dollar, the U.S. authorities had to decide whether it was less risky to supply gold to private parties at the cost of a more rapid decline in the U.S. gold stock, or to withhold gold from private parties at the cost of a further increase in the gold price. A rapid decline in U.S. gold stock might have led to further increases in the private demand for gold and perhaps even in the official demand for gold. But an unwillingness to supply the private demand would have resulted in an increase in price of gold substantially above the U.S. parity. This might have led to further increases in the private demand for gold, and perhaps to increased currency speculation against the dollar and other weak currencies.

As the gold price continued to increase above \$35.20, it became increasingly evident that the policy affecting the supply of gold to the

<sup>17</sup> The extent to which purchases of gold by private parties leads to an indirect decline in the U.S. Treasury's gold stock depends on the assets the private parties would have held if they had not bought gold. If instead of buying gold they would have held dollar securities, then their gold purchases would lead to a nearly equivalent decline in U.S. gold stock. In contrast, if they would have held sterling securities, then their gold purchases would lead to a less-than-equivalent decline in U.S. gold stock, since the international reserves and the gold holdings of the Bank of England would increase less rapidly.

private market had been changed; the Bank of England no longer appeared willing to arbitrage gold from New York to London as it had done previously. The Bank of England apparently had come to believe that the U.S. Treasury no longer considered sales of gold to meet the private demand in London a "legitimate monetary purpose," for which the Bank of England could replenish its gold reserves in New York. The Bank of England remained willing to supply the market with newly produced gold from South Africa and elsewhere. But it was not willing to reduce its own gold holdings and its gold-reserve ratio to meet the private demand.

When it became apparent that both the U.S. and the British authorities were unwilling to supply gold to private parties, the gold price increased rapidly, to \$35.33 on October 18th, to \$35.60 on October 19th, and to a peak of \$40.60 on October 20th.<sup>18</sup> The U.S. authorities strongly reaffirmed that the U.S. gold price would remain unchanged, and that the United States would continue the "policy of buying gold from and selling gold to foreign governments, central banks, and, under certain conditions, international institutions, for the settlement of international balances or for other legitimate monetary purposes at the established rate of \$35 per fine troy ounce, exclusive of handling charges." The gold price fell to about \$36.50 on the 21st, then gyrated for several days until the gold arbitrage bridge between New York and London was restored. Gold from official stocks was fed into the market to meet the private demand for the next several months, at prices one to two percent above the official U.S. parity. By the end of February 1961 the gold price had declined to \$35.10.

To reduce the likelihood of another gold flurry, several innovations have been made in U.S. gold policy. The U.S. authorities have altered the technique of reporting gold sales, in order to minimize the adverse impact of these reports. The press focuses on changes in the U.S. gold position reported every Thursday afternoon with the statement on the reserve position of Federal Reserve member banks. Changes in the gold-

<sup>18</sup> It is possible that the U.S. authorities did not foresee the consequences of refusing to supply gold to the London market—that they believed that the less risky approach was to let any speculative bubble break of its own weight. It seems more likely, however, that the London gold flurry resulted from a breakdown in communications between the U.S. and British officials. By design or accident, it appears that comments made to British officials by U.S. officials, perhaps at the time of the IMF meetings in Washington in September 1960, were interpreted to mean that the U.S. authorities would no longer sell gold to foreign central banks to replace the gold they had sold to private parties.

stock account, however, do not reflect U.S. gold sales to foreign official institutions. When foreign official institutions buy gold from the U.S. Treasury, the gold is sold by the Treasury's Exchange Stabilization Fund; this change in the U.S. gold position is reported only after a delay of several months. To recoup its gold holdings, the ESF uses the dollars acquired from the sale of gold to acquire gold from the Treasury; in this round, the gold held by the Treasury in its operating balance (formerly called the "free gold" account) declines. To recoup its unobligated gold, the Treasury redeems gold certificates held by Federal Reserve Banks. Only at this stage is there a decline in the reported gold stock.

Until the summer of 1961, the redemption of gold certificates at the Federal Reserve Banks was closely linked with sales of gold to foreign official institutions by the Exchange Stabilization Fund. To break up the continuity in reporting frequent small gold sales, ESF's purchases of gold from the Treasury were no longer tied to its gold sales to foreign official institutions and the redemption of gold certificates was no longer tied to sales of Treasury gold to the ESF. It was deemed preferable to report large gold sales infrequently rather than small gold sales frequently.

The second innovation was a reduction in the range of movement of the London gold price. In the summer or fall of 1961 an apparently firm ceiling of about \$35.20 was placed on the price of gold in London. Foreign official institutions, moreover, apparently agreed to refrain from buying gold in London at prices above \$35.07-08. As a result, the likely range for fluctuation in the gold price in London is about \$.10, at least as long as foreign official institutions are purchasing gold in London.

The third innovation occurred in late 1961, when the United States and seven other countries formed a gold pool to manage transactions in the London market; the pool consists of both a gold-selling arrangement and a gold-buying arrangement. Foreign official institutions participating in the pool have joined with the U.S. Treasury in supplying gold to meet the private demand, so that the burden on the United States as the residual gold supplier is reduced somewhat. The commitments of other countries in the pool to supply gold apparently are limited to a set amount, and may prove temporary.<sup>19</sup> Quotas are re-

<sup>19</sup> The gold pool members obtain dollars as a result of providing gold to the London market. If they immediately use these dollars to buy gold in New York, there is no net gain to the U.S. Treasury. It might be expected that these

viewed periodically, and may be revised. The pool primarily serves as a buffer arrangement, like the Exchange Stabilization Fund, so that a surge in the private demand for gold will not be reflected in an immediate decline in the U.S. gold position.

. . . Each participating country was given a quota for the amount of gold it was willing to provide against dollars. The total commitment was \$270 million, with quotas for individual countries as follows: The United States, \$135 million; the Federal Republic of Germany, \$30 million; the United Kingdom, France, and Italy, \$25 million each; and Switzerland, Belgium, and the Netherlands, \$10 million each.

At the end of each month the net balance between the month's sales and purchases is communicated to members, and the deficit or surplus is divided among them according to their quotas. At the end of March 1962 the pool had a deficit of \$13 million; by the end of June . . . a stock of \$46 million. The speculation against the dollar in July quickly involved a drain of some \$100 million, and at this stage the United States made a special contribution of \$35 million of gold, in line with the general agreement that the pool should not bear the whole strain of a general wave of speculation against the dollar.<sup>20</sup>

Early in 1962, the members of the pool agreed to coordinate their purchases of gold in London. In effect purchases by the Bank of England as manager of the pool have replaced purchases of central banks participating in the pool; purchases by the pool are either used to recoup previous sales or are distributed to the members of the pool.

One by-product of the gold buying arrangement is that it enables the United States to acquire gold sold in London. As long as the gold-buying arrangement exists, however, foreign official institutions are more likely to sell gold in London than in New York. And the significance of the U.S. Treasury's gold points for the range of movement in the price of gold in terms of the dollar, and the price of foreign currencies in terms of the dollar, is likely to diminish.

Transactions by the pool tend to dampen the range of movement in the London gold price. In 1962 the pool was a net buyer, and the

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countries would want to cover themselves through a forward purchase of gold from the U.S. Treasury, but no information has been made public on this point.

<sup>20</sup> *International Financial News Survey*, November 30, 1962, based on the *Economist*, London, November 17 and 24, 1962.

price ranged from \$35.07 to \$35.19. In 1963 the pool acted solely as a buyer and purchased over \$600 million of gold; the gold price ranged from \$35.05 to \$35.12. If the gold price is below \$35.10, the pool is likely to be buying gold, either to recoup its own holdings or to deliver to its members. If the price is above \$35.15, the pool is likely to be selling gold. These managed price swings between an apparent floor of \$35.05 and an apparent ceiling of \$35.20, a range of less than .5 percent, are intended to penalize the private speculators without triggering surges in the speculative demand.

The limited magnitude of movements in the gold price may reduce the significance attached to changes in the gold price movements, and in this way may dampen the private demand for gold. But the very small range for gold price movements reduces the cost of the one-way option open to speculators; in this way it may lead to an increase in the private demand. In 1960 total reported official gold holdings increased by about \$300 million, or about one-fifth of the new supply from current production and Soviet sales. In 1963 official holdings increased by about \$600 million, while the new supply was nearly \$1.8 billion. In both years, much the largest part of the new gold supply was diverted to private uses. Consequently the U.S. Treasury had to supply a large amount of gold to the foreign official institutions which might otherwise have been supplied from new production and Soviet sales.

#### *Alternative U.S. Gold Policies*

The current U.S. policy toward private gold markets combines legal and economic measures to reduce the private demand for gold and might be called a freeze-in policy. U.S. citizens are prohibited from owning gold at home and abroad. Movements in the London gold price are managed to avoid triggering the speculative demand. Private parties are still able to buy gold easily, and they appear not to be deterred by the small costs. That a large portion of the new gold supply ends up in private hands suggests the need to make it more difficult or more costly for private parties to buy gold or to sell gold.

One approach would increase the number of countries in which private gold-holding is prohibited legally, or permitted only on a licensed basis. In January 1961, the U.S. Secretary of the Treasury, acting under the Gold Reserve Act of 1934, declared that it would be illegal for U.S. citizens to hold or deal in gold abroad after June 1,

1961.<sup>21</sup> The gold regulations of the United Kingdom also prohibit private ownership of gold at home or abroad. Belgian residents, however, are free to buy and sell gold at home and overseas. West German residents are also free to buy and hold gold anywhere; internal purchases are subject to a 4 percent tax. Other countries might be encouraged to adopt measures prohibiting their nationals from buying or holding gold at home and overseas. The private gold markets in London and other centers might be closed.

Many foreign governments are reluctant to make it illegal for their citizens to hold gold. Closing the London market probably would induce the gold-producing countries to sell more of their gold output in other free markets like Zurich and Beirut.

The economic approach seeks to reduce the private demand for gold by reducing the expected profitability of private gold speculation and increasing its cost and risk. A transactions tax might be placed on the purchase of gold, similar to the special silver-transfer tax of 50 percent levied by the U.S. government in 1934 on the transfer of an interest in silver bullion. Or a capital-gains tax might be placed on profits from gold transactions. Attempting to reduce the private demand for gold through taxation would require that other countries also levy and enforce the appropriate taxes.

Another economic approach is to demonetize gold completely so that it would no longer be used in international settlements. Gold would become another commodity like tin and copper. The U.S. Treasury and foreign official institutions might then take large capital losses on their gold holdings, since the price of gold probably would fall. The United States would no longer be concerned with the protection of its gold reserves. But other means would have to be found to support the dollar in the exchange market, and other assets would have to be found to replace the role of gold in international reserves.

There are a number of other economic approaches to reduce the private demand for gold. One group includes those which would maintain a single price for gold for both private parties and official institutions; a second group includes those which would further develop or permit separate prices for private parties and for official institutions.

One approach under the single-price system is to reduce the official gold parities of all countries at the same time by a slight amount; at the same time, several further slight reductions might be scheduled

<sup>21</sup> U.S. citizens have been prohibited from buying and holding gold in the United States since August 1933.



and announced.<sup>22</sup> Private parties could still buy and sell gold in London and other free markets, in transactions with other private parties and with official institutions. Private parties (and foreign official institutions) would be on notice that the official support price for gold might be reduced further. The private demand for gold probably would decline, and perhaps a substantial amount of privately held gold might be unloaded and become available to official institutions.

Another approach under the single-price system, which would penalize private parties without changing the gold parities, would increase the range of movement of the gold price by widening the gold points.<sup>23</sup> In this way the official support floor would be lowered, and the cost of speculation could be increased substantially. The possibility of a larger capital loss, and the increased uncertainty about future gold prices, might deter the private demand.<sup>24</sup> If the U.S. Treasury's gold points were increased to 1 percent either side of parity, \$34.65 and \$35.35, the upper limit of the range for the gold price in London would be about \$35.45; the lower limit, about \$34.55. The range of movement would then be nearly seven times as large as it now is. Within this wider range, the authorities could still intervene on a day-to-day basis to prevent sudden, volatile movements in the gold price.

Some foreign official institutions might object to wider U.S. gold points. The U.S. authorities could arrange for a much wider range of price movement in the London market; at the same time they might continue to buy gold from and sell gold to foreign official institutions at the current gold points.

This would represent a move to a two-price system. The U.S. Treasury might indicate that it would buy gold from private parties at no more than \$25 an ounce, or \$15 an ounce, or \$5 an ounce; this can be considered a gold freeze-out policy.<sup>25</sup> The intent of this policy

<sup>22</sup> Fritz Machlup, "Comments on the Balance of Payments and a Proposal to Reduce the Price of Gold," *Journal of Finance*, Vol. XVI, May 1961, pp. 186-193.

<sup>23</sup> The U.S. Secretary of the Treasury has the authority to widen the U.S. gold points. If these points were to be widened beyond 1 percent, however, the IMF Articles of Agreement would have to be modified.

<sup>24</sup> Large-scale gold speculators make extensive use of forward purchases of gold, which enable them to buy a large amount of gold with a relatively small down payment. It is easy to obtain credit because the downside risk is so small. In other cases, gold speculators purchase gold in the spot market on relatively small margins. With a wider range for price movement, gold speculators would have to make much larger down payments both on their forward gold purchases and on their margin purchases. This would greatly reduce the private demand.

<sup>25</sup> There are a number of variations of the gold freeze-out policy. Some authors argue that the United States should not buy gold from official institutions; this

is to reduce the private demand for gold by drastically lowering the official support floor under the private gold market. If this policy is to succeed in reducing the private demand for gold, foreign official institutions must agree not to pay more than the United States pays for gold from private parties. To facilitate obtaining such an agreement, the U.S. authorities might express their readiness to buy gold at \$34.9125 an ounce only from those foreign official institutions which undertake to pay the same low price as the United States for gold from private parties. The U.S. Treasury would have two gold-buying prices—a fixed one at \$34.9125 for foreign official institutions which accept the U.S. policy and a much lower price for private parties and for those foreign official institutions which do not accept the U.S. policy.<sup>26</sup> Private gold transactions would take place over a very much wider range of prices. Contracts might be arranged with gold producers to have them sell their entire output directly to monetary authorities, with a provision enabling them to divert \$200 or \$400 million of new production to free markets to meet the needs of industry and the hard-core hoarding demand. The private market would no longer be supported, although an official agent might operate in the market to ensure that price movements remain orderly.

Maintaining an orderly market, however, is different from maintaining a pegged market. The standing offer of the U.S. Treasury to buy gold at a fixed price offers private speculators a minimal downside loss if they are wrong; by withdrawing this offer, or by lowering the support floor, private parties would be subject to the possibility of a much greater loss, and to increased uncertainty about future movements in the price of gold. Both factors should reduce the private demand for gold.

Almost all of these varied innovations require the cooperation of official institutions in other major industrial countries. Many of these proposals would contribute to reducing the private demand for gold if they were adopted; the problem is to get one adopted. The strength

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position is developed by Howard Piquet, "Some Consequences of Dollar Speculation in Gold," in *Factors Affecting the U.S. Balance of Payments*, (Washington: Government Printing Office, 1962). Isidore Ostrer, in *The Conquest of Gold* (London: Jonathan Cape, 1932), presented a similar proposal to that suggested here for a gold freeze-out policy for private parties only.

<sup>26</sup> This proposal is a potent weapon of economic warfare against the Soviet Bloc. The Russians have sold gold to finance their payments deficit with the West. If the price at which they can sell gold falls to \$25 an ounce, then the ability of the Russians to finance their payments deficits with the West would be reduced.

of the U.S. bargaining position varies with the proposal under consideration. The U.S. bargaining position for a gold freeze-out policy is especially strong, since the value of foreign gold holdings depends largely on the willingness of the U.S. authorities to buy gold.

The United States has the primary responsibility for management of gold in international finance. The weakness of U.S. gold policy has been that it has been largely passive in response to a strong private demand for gold. In part, this may reflect inadequate attention to the full implications of the U.S. role as the residual gold supplier in the world, and especially the close link between the large private demand abroad and U.S. gold sales to foreign official institutions. The measures taken to reduce private demands—the use of buffers, the managed swings in the London market, the gold pool—have been helpful. The private demand, however, has remained large, and accentuated the drain on the U.S. gold stock associated with financing the U.S. payments deficit.

#### IV. REDUCING THE OUTFLOW OF PRIVATE SHORT-TERM FUNDS

The fixity of the exchange-rate structure permits large amounts of short-term funds to be shifted from low-interest-rate centers to high-interest-rate centers, making it more difficult for both groups of countries to pursue independent interest-rate policies. The countries losing funds may find it necessary to increase short-term interest rates to more nearly match those abroad, while countries with higher interest rates may feel obliged to lower them. In both groups of countries the use of monetary policy to achieve domestic objectives will be constrained.

More adequate international credit arrangements may permit the short-term flows to be financed and reduce the external constraints on monetary policy. Or more flexible fiscal policies may permit monetary policy to focus on achieving a more satisfactory external balance. In the absence of such reserve arrangements or such fiscal policies, however, measures are needed to dampen short-term capital flows so that the external constraint on monetary policy will not prove too severe.

The U.S. international reserve position has been substantially weakened in recent years by the flow of both U.S.-owned and foreign-owned short-term funds from the United States. The outflow of U.S.-owned short-term funds was \$1.5 billion in both 1960 and 1961, and \$500 million in both 1962 and 1963. And part of the entry for Errors and Omissions, which was in deficit by \$700 million in 1960, \$900 million in 1961, \$1.0 billion in 1962, and \$500 million in 1963, represents unrecorded shifts of short-term funds, both U.S.-owned and foreign-owned. Since the foreign official institutions in many of the countries receiving these funds have high gold-reserve ratios, the resulting drain on U.S. gold holdings has been substantial.

Private funds have been shifted abroad for several reasons—interest rates in many foreign financial centers have been higher than in the United States; bank credit has been more easily available in the United States than abroad; and U.S. firms have extended credit to their foreign subsidiaries and to their foreign customers. Expectations that the dollar might be devalued or that other currencies might be revalued upward also led to an outflow of short-term funds.

The U.S. authorities have raised short-term interest rates to reduce the outflow of short-term funds. This approach, however, has con-

strained the use of monetary policy and of debt-management policy to achieve full employment in a period of resource underutilization. Moreover, it has increased the cost of financing the U.S. Treasury's outstanding short-term debt substantially.

A widening of the range for exchange-rate flexibility, and official intervention in the forward-exchange market are possible substitutes for higher short-term interest rates to dampen short-term capital flows. The first protects the reserves by subjecting those who shift funds abroad to an increased exchange risk, while the second reduces the opportunity to shift funds internationally on a profitable, risk-free basis.

### *Widening the Range for Exchange-Rate Flexibility*

In normal or non-speculative situations, short-term capital flows respond both to the pull of higher interest rates and to the prospect of an exchange profit from selling a foreign currency at a higher price than that at which it was purchased. The shift of short-term funds toward countries where interest rates are higher and whose currencies are at their lower support limit is considered stabilizing; conversely, the shift of funds is considered destabilizing if the funds flow toward countries where interest rates are lower and whose currencies are at their upper support limit. There is an intermediate case, when the interest-rate differential suggests that the short-term funds should flow in one direction, while the relation of the spot rate to its support limits suggests that the funds should flow in the opposite direction.

The outflow of short-term funds from the United States in recent years falls into the intermediate case—while interest rates abroad generally were higher than in the United States, the relation of spot exchange rates to the support limits suggests that funds should have flowed toward the United States. Thus, the flow of short-term funds from the United States has been dampened by the possibility that funds shifted abroad might be subject to an exchange loss from an adverse movement of the spot rate within the support limits.

Nevertheless, the United States has been subject to large outflows of short-term funds, partly because the range for exchange-rate flexibility under current arrangements provides only a small deterrent to international shifts of short-term funds, and partly because some foreign countries have bought their own currencies below their upper support limits, thus reducing the deterrent effect of the current support limits.

Most other major currencies may vary within a range of 1.5 percent in terms of the dollar. Thus if an individual shifting funds abroad buys a foreign currency at its upper support limit and sells it at its lower support limit, he will take an exchange loss of 1.5 percent on his investment; this is the maximum exchange loss unless the parity is changed. The loss of 1.5 percent on the amount invested is the equivalent of an international interest-rate differential of 6 percent on an investment of 3 months, and of 3 percent on an investment of 6 months. The further the foreign currency is below its upper support limit at the time funds are shifted abroad, the smaller the deterrent effect of the possible exchange loss; also, the longer the expected time of the investment abroad, the smaller the deterrent effect.<sup>27</sup>

Even if the foreign currency is at its upper support limit, a possible adverse shift in the exchange rate will have small restraining influence if investors are confident that the price of foreign currency at the end of their investment period will not be much below the current price. They are likely to have such confidence if it appears that the country receiving the funds will continue to be in payments surplus at the end of their investment period.

Shifts of liquid funds from the New York money market to the money markets in other countries appear to account for less of the short-term capital outflow from the United States than do shifts by borrowers in the source of trade financing from foreign centers to New York, with its relatively lower interest rates and greater credit availability. One reason is that the number of foreign centers which provide investors with adequate alternative short-term investment opportunities to New York is small—principally London, Montreal, Zurich, Amsterdam, and Frankfurt. Importers in these centers and many additional centers as well as these may shift their import financing, and even their export financing, to New York.

Importers abroad also are concerned that the price of the dollar in terms of their own currency may increase between the time they receive the dollar credit and the time it must be repaid. If they expect to refinance their dollar credits continually as they come due, however, then the series of short-term credits will become more nearly like a long-term credit and the possible exchange risk will be dominated by the saving in interest costs.

<sup>27</sup> The British authorities generally have held sterling within the \$2.79-\$2.81 range, a spread of less than 1 percent. Other foreign monetary authorities appear more reluctant than the British to intervene continually within the support limits.

A widening of the limits for exchange-rate movement may deter some shifts of short-term funds by investors seeking higher money-market yields. It will also deter shifts by borrowers toward less expensive centers of trade financing. In both instances the risk of an adverse change in the price of foreign currency will be greater, and the possible exchange loss will be greater. In both instances uncertainty about future exchange rates will be greater and this will discourage shifts between centers for money-market investments and for trade financing.

To eliminate this risk and uncertainty, some traders and investors may hedge their exchange transactions against the exchange risk. Perhaps the easiest way to hedge a short-term investment abroad is through a purchase of domestic currency in the forward market; an investor who shifts funds from New York to London purchases a contract to buy dollars in three months, at a rate determined today, at the same time that he purchases sterling in the spot market.<sup>28</sup> Similarly, importers in London who have borrowed dollars may cover their dollar obligations against exchange risk through purchases of forward dollars.

The exchange rate for forward transactions is a free rate like the spot rate, with the difference that IMF member countries are not committed to keep the forward rate for their currencies within fixed support limits. Normally the forward rate for a currency is at a level such that the spread between the spot rate and the forward rate, when converted to an annual interest-rate equivalent, will tend to equal the difference in money-market interest rates at home and abroad.<sup>29</sup> For example, if three-month Treasury bills yield 4 percent in London and 3 percent in New York, and spot sterling is \$2.81, then forward sterling has an interest parity of \$2.803. The actions of interest arbitrageurs cause the forward-spot spread to equal the money-market interest differential. In the process of shifting funds to London to take advantage of higher interest rates there, arbitrageurs bid up the price of sterling in the spot market and bid up the price of dollars in the forward market. In the absence of some institutional limitation on the

<sup>28</sup> Individuals also may make dollar deposits in banks in London to take advantage of higher interest rates available there. These shifts of dollar deposits from New York to London have an impact on U.S. reserves similar to shifts of funds in covered or uncovered arbitrage. Widening the range for exchange-rate flexibility would increase the exchange risk attached to the creation of Euro-dollars, and reduce the transfer of dollars.

<sup>29</sup> In many markets there are a number of short-term financial instruments, with different yields, and so there are a number of interest parities.

volume of short-term funds which can be shifted abroad, these transactions will continue until the cost of forward cover offsets the money-market interest-rate differential, eliminating any further incentive to shift funds abroad.

If interest arbitragers are able to buy forward dollars, someone must be willing to sell forward dollars. Some exchange speculators might sell forward dollars today, in the anticipation that they will be able to buy spot dollars at a lower price before their forward contracts mature. More importantly, some U.S. importers and British exporters who were planning to buy spot sterling by some future date might decide instead to buy forward sterling today. By speeding up their purchases of sterling, these traders make it possible for covered interest arbitragers to find partners for their forward transactions; in this way these traders contribute to the drain on U.S. reserves.

The greater the expectation of these traders that spot sterling in three months will be more expensive than forward sterling today, the more likely they are to buy forward sterling today. The nearer the price of forward sterling to the lower support limit for spot sterling, the larger are the purchases of forward sterling by those who have the option of buying forward sterling today, or spot sterling in the future. The larger their purchases of forward sterling as it declines toward its interest parity, the larger is the volume of arbitrage funds that can be shifted abroad before the forward rate falls to its interest parity and chokes the flow of additional interest arbitrage funds.

Because the range of movement of the spot rate within the current support limits is small, the price of forward sterling might have to fall near or below its lower support limit before the cost of forward cover could fully offset the interest differential. For example, if spot sterling is \$2.81, and interest rates in London are 4 percent above those in New York, then forward sterling would have to be \$2.782 on contracts of three months to fully offset the interest differential. Traders would have to be extremely bearish on sterling to let forward sterling fall to this level. Indeed, unless there were doubt that the parity would be maintained, it appears unlikely that the forward rate could fall sufficiently below the spot rate to offset money-market interest differentials of much more than 2 percent on investments of three months. The likelihood that the forward rate might fall to offset the interest-rate differential declines the longer the investment period.

Thus, widening the range for exchange-rate flexibility, perhaps to 4 percent, would reduce the drain on U.S. reserves from shifts of short-



term funds abroad and the extension of short-term credits to foreign importers in several ways. The risk that the net interest advantage would be offset by an adverse change in the exchange rate would be greater, so that the volume of funds shifted abroad on an uncovered basis would decline. And the forward rate then would receive less support from commercial traders who have the choice between buying forward sterling today or spot sterling at some future date; in this way the money-market interest differential would be more quickly offset by changes in the forward-spot spread, so that the shifts of funds in covered interest arbitrage also would decline.

The IMF Articles of Agreement would have to be modified to permit the range for exchange-rate flexibility to be widened beyond 2 percent.<sup>30</sup> Some of the advantages of wider exchange-rate limits are attainable with the current range of 2 percent if the monetary authorities are willing to reduce their purchases and sales of their own currencies within their current support limits; and more of these advantages will be available if they are willing to widen these limits to the maximum range permitted by the IMF.

#### *Active Intervention in the Exchange Market*

Official intervention in the forward market offers much greater potential to protect the U.S. reserves than does official intervention in the spot market. If the U.S. authorities were to intervene in the spot market to protect the U.S. reserves, they would have to sell dollars at or near the upper support limits for foreign currencies so that the deterrent effect of possible movements in the exchange rate would be a maximum.<sup>31</sup> If foreign monetary authorities are supporting their currencies at their upper support limit, there is no point to U.S. intervention. And if foreign monetary authorities sell their currencies below their upper limit, intervention in the spot market by the U.S. authorities is useless (even if U.S. authorities hold large amounts of convertible foreign currencies), for the U.S. authorities

<sup>30</sup> It is sometimes argued that this range should be narrowed or eliminated. Those who make this argument also stress the need for larger international credit arrangements. If these arrangements are developed, it may be possible to accommodate large flows of interest-sensitive funds and maintain greater independence in the use of monetary policy to achieve domestic objectives. Until these arrangements are developed, it is desirable to find means to dampen the short-term flows with the least possible infringement on the use of monetary policy for domestic objectives.

<sup>31</sup> The U.S. authorities might want to sell foreign currencies within the support limits to dampen abrupt movements in the exchange rate.

cannot sell sterling at or near its upper support limit if the British authorities want to sell sterling at a lower price.<sup>32</sup> By intervening in the forward-exchange market, the U.S. authorities can dampen shifts of funds in covered interest arbitrage more quickly than if reliance is placed on market forces to increase the forward-spot spread so that it offsets the money-market interest differential.

Active intervention in the forward-exchange market would enable the U.S. authorities to protect the U.S. reserves in two different types of situations—the first is when interest rates abroad pull funds from the United States in covered interest arbitrage or prevent them from coming to the United States. The second is when the dollar is under speculative attack in the foreign-exchange market, or when there is an expectation that a foreign currency may be revalued upward. Higher short-term interest rates can also protect the U.S. gold reserves in each situation. Forward-market intervention, however, is more flexible, more selective, less expensive, and it does not create a conflict with domestic economic objectives. Forward-market intervention reduces the need to rely on higher short-term interest rates, although it may not provide a complete substitute for higher short-term interest rates.

To protect the U.S. reserves in both situations, the U.S. authorities would buy dollars in the forward market. Purchases of forward dollars would increase their price. To stop an outflow of funds in covered interest arbitrage, the U.S. authorities would buy forward dollars until the price went to the level suggested by the money-market interest-rate differential. Interest arbitragers then would find that the cost of forward cover is too expensive to justify a shift of funds on a covered basis.

To attract funds to the United States, the U.S. authorities would buy forward dollars until the price went above that suggested by the money-market interest-rate differential. Although interest arbitragers might earn no more interest on their investments in New York than abroad, they also could earn an additional 1 or 2 percent from selling forward dollars at a price higher than the price they paid for spot dollars. The larger the premium on the forward dollar brought about by official purchases, the greater the inflow of funds from

<sup>32</sup> U.S. intervention in the spot market cannot reduce the outward shifts of short-term funds. However, if the U.S. authorities hold foreign currencies, selling these currencies to finance a U.S. payments deficit may prove less disruptive than selling gold to foreign official institutions.

abroad and the greater the improvement in reported U.S. international reserves would be.

Purchases of forward dollars commit the U.S. authorities to deliver foreign currencies when the forward contracts mature. If the interest rates abroad have not declined relative to U.S. interest rates by the time the forward contracts mature, the U.S. authorities may decide to roll over rather than liquidate their forward position. They would buy forward dollars again to set up the new forward contracts, and deliver foreign currencies acquired from the sale of dollars in the spot market to liquidate their maturing forward contracts. Unless foreign currencies are part of U.S. international reserves, the U.S. authorities would have a short position in foreign currencies until the forward contracts finally were liquidated. But if the U.S. authorities had not intervened in the forward market, U.S. reserves would have declined as a result of the outflow of funds in covered arbitrage, or they would not have increased in reflection of an inflow of funds in covered arbitrage.

In some circumstances the size of the official forward commitment might exceed the loss in reported U.S. reserves (or the increase, if the authorities are attempting to attract funds from abroad) that would have occurred in the absence of official intervention. This comparison is much more relevant if the dollar is subject to speculative pressure and there is some prospect that the dollar might be devalued or that a foreign currency might be revalued upward while official forward commitments are outstanding, largely because of the impact on U.S. revaluation profits or losses. In situations where it is unlikely that exchange parities will change, the official forward purchases of dollars should have much the same impact on the forward exchange rate as the purchase of the same amount of forward dollars by interest arbitragers. If the U.S. authorities buy a certain amount of forward dollars at a particular exchange rate, they reduce the amount that those engaging in covered interest arbitrage can buy at this rate on a one-for-one basis. Hence in non-speculative situations the size of the official forward position should correspond with the loss in reserves that otherwise would have occurred.

Forward-market intervention also can resist speculative pressure against the dollar, when expectations develop either that the dollar will be devalued or that some foreign currency will be revalued upward. Speculators are likely to engage in forward contracts whenever they seek to profit from an expected change in the exchange rate, be-

cause forward transactions require a smaller margin or down payment than spot transactions do and thus permit speculators to take on a much larger short position in a currency than is possible by shifting their own funds in the spot market.<sup>33</sup>

Large speculative sales of dollars in the forward market depress the price of forward dollars below that suggested by the money-market interest-rate differential.<sup>34</sup> This decline in the price of forward dollars is necessary to induce some individuals to buy forward dollars—to take the other side of the forward contracts offered by speculators. As the discount on the forward dollar increases, it becomes increasingly attractive for interest arbitragers to shift short-term funds from New York to foreign financial centers on a covered basis, completely free of any exchange risk.

One source of the drain on U.S. reserves when the dollar comes under speculative pressure in the forward market is from the outflow of funds in covered interest arbitrage in response to the speculatively-induced discount on the forward dollar. In addition, the speculatively-induced discount on the forward dollar will cause some speculators to develop their short positions against the dollar in the spot market, rather than in the forward market. Their transactions lead to an immediate drain on U.S. reserves.

By supporting the forward dollar against speculative pressure the U.S. authorities can reduce or eliminate the incentive to shift funds in covered interest arbitrage and the drain on U.S. reserves from this source. Moreover, the amount of speculative pressure transmitted to the spot market will be smaller and hence the drain on U.S. reserves from this source will be smaller.

The U.S. authorities must be prepared to deliver foreign currencies when the forward contracts mature; if these currencies are not held, they must be acquired. Until then, the U.S. authorities will have a short position in the foreign currencies.

One concern about forward intervention to protect U.S. reserves from exchange speculation is that the size of the official forward commitment might exceed the loss in U.S. reserves that would have

<sup>33</sup> A widening of the range of movement for exchange rates subjects forward speculators to a greater loss if their expectations prove wrong. They are likely to be required to increase their down payments on forward contracts. This would tend to reduce speculative pressure in the forward market.

<sup>34</sup> Since the rate on a weak currency in the forward market will be below the rate in the spot market, speculators pay a price for the greater leverage obtainable on forward transactions. This price is the difference between the two exchange rates.

occurred in the absence of official intervention.<sup>35</sup> This is more likely to be true, the more inelastic the supply of interest-arbitrage funds is in response to a speculatively-induced discount on the forward dollar, or the less likely speculators are to shift their transactions from the forward market to the spot market as the cost of speculation in the forward market increases. In contrast, the greater the elasticity of the supply of arbitrage funds in response to the speculatively-induced discount on the forward dollar, or the more likely that speculators will shift from the forward market to the spot market as the cost of speculating in the forward market increases, the more likely it is that the size of the official forward commitment will be smaller than the loss in the reserves that otherwise would occur.

Some casual evidence suggests that interest arbitragers are much more sensitive to the changes in the forward-spot spread than speculators are; this evidence buttresses the position that the size of the official forward commitment will be smaller than the loss in reserves that otherwise would occur. It is always possible, however, that speculators may become increasingly disconcerted by official intervention and, as a consequence, that they might buy more foreign currency than they would have bought in the absence of official intervention. The relevant comparison, however, is whether speculators are more disconcerted by official intervention and their awareness about the development of official forward commitments of an unrevealed amount, or by the reported decline in the currency quotations in the spot and forward markets and the increase in reported reserve losses that would have taken place in the absence of official intervention. Even this comparison ignores that exchange speculation may have a snowballing tendency, and may feed on itself if unchecked. By supporting the forward rate on a timely basis, the authorities may check the tendency of speculative expectations to accelerate in a self-justifying manner. There is some risk in such unstable situations; the risk that the official forward commitment may exceed the loss

<sup>35</sup> This issue is unimportant if there is complete assurance that exchange parities will not be changed. If this is the case, the authorities need not worry about the size of their forward position, since there is no risk of a capital loss on their outstanding forward contracts of the type that would occur if their currency were devalued relative to the currency they have sold forward. In the absence of this assurance, the authorities must be concerned with whether their forward commitments will increase or reduce their revaluation profits if the exchange parity is changed. When the official forward commitment exceeds the loss in reserves that otherwise would have occurred, then the revaluation profits will be smaller if there is a change in exchange parities.

in reserves must be compared with the risk that speculative momentum might become more intense if totally unchecked, and either completely exhaust the reserves or force resort to more drastic measures to check speculative pressure.

Official forward intervention may result in either exchange profits or exchange losses. If the authorities intervene to resist speculative pressure against the dollar, they are almost certain to earn an exchange profit, since they will be buying foreign currencies at a relatively cheap rate in the spot market and selling such currencies at a relatively dear rate in the forward market—this profit is the penalty exacted from speculators. In contrast, if the authorities intervene to dampen an outflow of funds or to attract funds in covered interest arbitrage, official intervention is likely to result in an exchange loss.

Even if official forward intervention results in exchange losses, this cost must be compared with costs of alternative policies which protect the U.S. reserves equally well. The traditional policy, a more restrictive credit policy, also has a direct financial cost, since the interest burden of servicing the outstanding short-term government debt increases. Since marketable U.S. Treasury issues in the hands of the public with maturities of less than 1 year have been in the range of \$40 to \$50 billion, a 1 percent increase in short-term interest rates has increased the annual cost of managing the Treasury's debt by \$400 to \$500 million.

In terms of direct financial cost to the U.S. authorities, an active forward-exchange policy provides a much less expensive way to protect U.S. reserves than does interest-rate policy. In effect, a forward-rate policy is a price-discrimination policy, since it permits the authorities to make a special interest premium available to the relatively few short-term investors who may shift their funds internationally in response to interest differentials, and not to others who are unlikely to shift their funds abroad. Moreover, there is the more significant advantage that an active forward-rate policy increases the freedom of the U.S. authorities to use interest-rate policy to meet domestic economic needs.

Despite these advantages, a forward-rate policy may not provide a complete substitute for interest-rate policy. Higher interest rates may reduce the outflow of interest-sensitive funds not covered against exchange risk through use of forward contracts. Forward-rate policy will not substitute for the measures necessary to obtain long-run payments equilibrium, nor will it always prove sufficient to protect the reserves

against disruptive short-term disturbances. But the need for other policies, such as an increase in domestic interest rates or various types of exchange controls, will be reduced by forward intervention.

### *U.S. Intervention in the Exchange Market*

In March 1961, for the first time since the 1930's, the U.S. authorities began to intervene actively in the foreign-exchange market for their own account.<sup>36</sup> They have sold the German mark, the Swiss franc, the Dutch guilder, the Italian lira, and the Canadian dollar against the dollar in the forward market. Forward sales of the mark were undertaken to counter speculative pressure against the dollar; forward sales of the Swiss franc, the guilder, the lira, and the Canadian dollar generally were undertaken to induce investors in these countries, especially commercial banks, to hold funds in the United States on a covered basis when they would otherwise have found forward covering too expensive. In the spot market, the U.S. authorities have sold and purchased the mark, the Swiss franc, the lira, the guilder, the Belgian franc, sterling, and the Canadian dollar both to limit increases in the dollar balances of foreign official institutions and to prevent disorderly movements in exchange rates. The sales of foreign currencies by U.S. authorities in both the spot market and the forward market have exceeded their purchases greatly; the excess disbursements have been financed largely with foreign currencies obtained from foreign official institutions under various types of credit arrangements.<sup>37</sup>

The U.S. authorities first intervened in the foreign-exchange market to counter the speculative pressure on the dollar, which resulted from the belief that the German mark and the Dutch guilder might be

<sup>36</sup> These transactions were undertaken by the Federal Reserve Bank of New York, both for the account of the Federal Reserve System and for the account of the U.S. Treasury, including the Treasury's Exchange Stabilization Fund. The Federal Reserve System has engaged in exchange-market transactions for its own account because much of the ESF's capital of about \$350 million has been tied up in exchange-stabilization credits to Latin American countries and in gold transactions, so that relatively little has been available for intervention in the spot market. Nearly all of the forward transactions of the U.S. authorities have been undertaken for the ESF's account; these transactions do not tie up capital. The spot transactions have been undertaken for the account of both the Federal Reserve Banks and the U.S. Treasury.

The information on U.S. exchange-market intervention is based on the interim reports by Charles A. Coombs, "Treasury and Federal Reserve Foreign Exchange Operations," *Federal Reserve Bank of New York Monthly Review*, September 1962, March 1963, October 1963, and March 1964.

<sup>37</sup> These credit arrangements are discussed in Section V.

revalued upward again following the revaluations of 5 percent in early March 1961. Speculative activity depressed both sterling and the dollar. The shift from sterling into continental currencies exceeded \$1 billion. The British authorities, who normally hold between \$200 million and \$300 million of liquid dollar assets for exchange-market intervention, sold dollars to support sterling. The dollar was not in demand, and speculators sold dollars to buy continental currencies, which further weakened the dollar in the exchange market.

The expectation of a second upward revaluation of the mark and the guilder would have weakened the dollar even without a run on sterling. To forestall capital losses from another revaluation, German investors reduced their long position in dollars; to make capital gains from another revaluation, German investors increased their short position in dollars by increasing their borrowing in New York. U.S. exporters and German importers delayed conversion of marks into dollars, while U.S. importers and German exporters converted their dollars into marks more rapidly.

Speculation against the dollar in the spot market, however, appeared less important than speculation in the forward market. Increased purchases of forward marks and reduced purchases of forward dollars caused the forward dollar to go to a discount of 4 percent. As a result, the opportunity for covered interest arbitrage from New York to Frankfurt was extremely profitable.<sup>38</sup> A continued outflow of arbitrage funds, together with further delays in the repatriation of receipts from U.S. exports to Germany into dollars, and the hastening of U.S. payments for imports from Germany would have worsened the apparent U.S. payments position. Speculation against the dollar might have become more pronounced.

To stem the shift of arbitrage funds from New York and to draw off some of the speculative pressure, the U.S. authorities, in cooperation with the German authorities, undertook large purchases of forward dollars. By the end of March 1961 the discount on the forward dollar

<sup>38</sup> German commercial banks were then precluded from paying interest on new short-term deposits of foreigners, and so this arbitrage opportunity was more attractive for German banks and business firms than for foreign banks and business firms. Nevertheless the situation still was attractive for foreigners, for the sale of spot dollars together with purchase of forward dollars yielded a net return of 4 percent free of any exchange risk, which was nearly 1.5 percent more than the yield on U.S. Treasury bills. And since short-term interest rates in Germany were in the 3-4 percent range, investors who could place funds at interest in Germany could earn about 5 percent more than in New York.



had declined to 1.5 percent; the forward commitments of the U.S. authorities then exceeded \$100 million. Official support for the forward dollar continued through the summer of 1961, and the cumulative U.S. commitment exceeded \$400 million before this round of official intervention came to an end.

Forward intervention had several important related results. Shifts of interest-arbitrage funds from New York to Frankfurt diminished, and the tendency toward snowballing speculation was checked without an increase in U.S. interest rates. The U.S. authorities were able to support the dollar with a much smaller drain on the U.S. reserve position than if they had intervened in the spot market.

Purchases of forward dollars left the U.S. authorities with a short position in marks and a commitment to deliver marks when the forward contracts matured. Some of these forward contracts were renewed as they began to mature in June 1961. An even larger amount was not renewed. To liquidate part of its forward commitment, the Treasury used the equivalent of about \$50 million of marks from its holdings obtained in April 1961 from the advance repayment of the German debt. Most of the marks required to meet maturing forward commitments were obtained directly from the Bundesbank.<sup>39</sup>

In early summer 1962, the U.S. authorities sold "a sizeable amount" of marks in the spot market "to moderate the increase in the mark rate"; in December 1962, the U.S. authorities again sold spot marks, this time on a "small scale," for the same purpose. In both instances, after the dollar price of the mark declined, the U.S. authorities entered the market as buyers of marks at rates only slightly below the mark's parity.

In the spring and summer of 1963, the U.S. authorities again sold marks in the spot market to resist pressure on the mark-dollar exchange rate from a large shift of investment funds to Germany. The mark, which had been at parity in March, climbed steadily toward its upper support limit. The U.S. authorities sold "nearly \$200 million of marks at rates well below the ceiling on the mark"; they preferred to take the pressure on reserves rather than on the exchange rate. And the U.S. authorities also sold spot marks in the last several months of 1963

<sup>39</sup> The Bundesbank agreed to furnish U.S. authorities with marks at the same rate at which the U.S. authorities had sold forward marks, and so the U.S. authorities were guaranteed against an exchange loss on their transaction. In this way the German authorities assured the U.S. authorities that if the mark were revalued upward again, the U.S. authorities would not take a capital loss as a result of their short position in marks.

as German banks began repatriating funds for the end of the year. In February 1964, when a large current-account surplus and a large increase in the foreign demand for German securities had pushed the mark to its upper support limit, the U.S. authorities intervened in the New York market as sellers of both spot and forward marks.

The U.S. authorities first sold the Swiss franc forward in the summer of 1961 to offset a flow of hot money to Switzerland; other sales increased substantially after the Berlin crisis in August. The U.S. authorities wanted to induce an outflow of private funds from Switzerland to reduce the build-up in the dollar holdings of the Swiss National Bank and its demand for gold. The sales reduced the premium on the forward Swiss franc from 2 percent to 0.5 percent, and made it possible for Swiss commercial banks and other investors to shift funds to New York on a covered basis. U.S. forward commitments reached a peak exceeding \$150 million. Many of these forward contracts were renewed as they matured, and then liquidated when the Swiss balance of payments moved into a deficit. The foreign demand for Swiss francs again increased substantially at the time of the Cuban crisis in October 1962; the U.S. authorities again sold Swiss francs, this time in the spot market as well as in the forward market. In July 1963, an increase in the demand for Swiss francs led the U.S. authorities to sell Swiss francs forward and the Swiss National Bank to purchase dollars in the spot market, so that the exchange rate on the spot franc would not increase too rapidly. In the latter part of 1963, the U.S. authorities sold Swiss francs to counter flows of speculative funds to Switzerland.

In January 1962, the U.S. authorities began to sell forward Italian lire to Italian commercial banks to reduce the demand for gold by the Bank of Italy. Italy had a large balance-of-payments surplus, and the dollar holdings of the Italian commercial banks were increasing rapidly. The Italian authorities wanted their commercial banks to hold liquid dollar assets. But the Italian commercial banks were concerned about the exchange risk of holding dollar assets on an uncovered basis. Covering the exchange risk in the market quickly would have proved too costly, for the market for the forward lira was quite thin. To meet this situation, the Bank of Italy began to buy dollars forward from the Italian banks in 1960. By 1962, the forward commitments of the Italian authorities had become quite large, and the U.S. authorities took over a substantial block of forward lira contracts from the Italian authorities. At the same time the U.S. authorities sold \$150 million of lire

in the spot market to limit the build-up in the dollar holdings of the Bank of Italy. The U.S. authorities continued to sell forward lire in the first part of 1963; but these lira commitments were liquidated when the Italian balance of payments began to show a large deficit.

Intervention in the market for the guilder has been relatively modest. In the first several months of 1962, the U.S. authorities sold \$20 million of forward guilders to induce an outflow of short-term funds from the Netherlands. In the summer of 1962, the U.S. authorities again sold the guilder forward to reduce the reserve gains of the Netherlands Bank; in this instance their forward sales reached \$36 million. In the spring of 1963, a tightening of money-market conditions in the Netherlands led Dutch commercial banks to repatriate funds from abroad, and the U.S. authorities sold \$44 million of guilders to prevent the spot rate from moving to its upper support limit and to absorb the dollars that otherwise would have flowed to the Netherlands Bank.

In the latter part of 1963, the U.S. authorities again intervened in the market for the guilder—in September and October they sold guilders in both the spot market and the forward market to counter speculation about a possible revaluation of the guilder; and for the next several months, with the exception of small, brief sales immediately following the assassination of President Kennedy, they repurchased guilders as funds were shifted away from the Netherlands.

U.S. intervention in the markets for the Belgian franc, sterling, the French franc, and the Canadian dollar has been quite small. Beginning in June 1962, the U.S. authorities, in cooperation with the Belgian authorities, intervened to counter swings in Belgium's international payments, buying francs when Belgium's international payments exceeded its international receipts and selling francs when its receipts exceeded its payments. Between June 1962 and February 1964, U.S. official transactions in Belgian francs totalled \$70 million, exclusively in the spot market. In early 1963, after British negotiations for membership in the Common Market had failed, speculative pressure developed against sterling, and the U.S. authorities bought a small amount of sterling. In May 1963 as sterling began to fall slightly below its parity to \$2.7980, the U.S. authorities again bought small amounts of sterling. In November 1963, the U.S. authorities sold the \$8 million of sterling (together with smaller amounts of other foreign currencies) to stabilize the exchange markets after the assassination of President Kennedy; these funds were recouped in December. U.S. intervention in the market for the French franc first occurred in July 1963, when

the franc was at its upper support limit; a small amount of French francs was sold in an attempt to determine the strength of the demand for the franc. After the franc moved below its ceiling in late 1963, the Bank of France disbursed a small amount of francs for the account of the U.S. authorities. The U.S. authorities have intervened in the market for Canadian dollars to limit outflow of arbitrage funds in response to premium on the Canadian forward dollar associated with financing of Soviet purchases of Canadian wheat.

Between March 1961 and February 1964, the U.S. authorities bought and sold about \$2.5 billion of foreign currencies in the exchange market.<sup>40</sup> Sales of foreign currencies appear to have been about \$2 billion, \$1.2 billion in the forward market and \$800 million in the spot market. Purchases of foreign currencies totalled nearly \$500 million, almost entirely in the spot market. Foreign currencies obtained directly from foreign official institutions, mainly through various types of credit arrangements but also in the repayment of debts, made it possible for U.S. sales of foreign currencies to exceed U.S. purchases. In a number of instances the U.S. authorities sold foreign currencies obtained under these credit arrangements to reduce the flow of dollars to foreign official institutions and their demand for gold. Since many of these sales took place at the upper support limit for these currencies, the U.S. officials could as easily have purchased the dollars directly from the foreign official institutions.

The pattern of intervention by the U.S. authorities indicates several major tendencies. Their intervention in the spot market to counter the pressure on the exchange rate, buying and selling foreign currencies well within the support limits, may have facilitated an outflow of interest-sensitive short-term funds by limiting the range of fluctuation of foreign currencies in terms of the dollar. The U.S. authorities sold the mark and the guilder when Germany and the Netherlands were experiencing an inflow of short-term funds, which may have dampened the deterrent effect of a change in the exchange rate within the support limits. And when the U.S. authorities have entered the markets as buyers to offset their short position in these currencies, it has been at rates not very far below their upper support limits; this, too, has limited the scope of exchange-rate flexibility. Moreover the U.S.

<sup>40</sup> These estimates are necessarily rough; in some instances the U.S. authorities have indicated the exact amount of their transactions, while in others, only that their sales were "sizeable" or "substantial." Moreover they occasionally have indicated their forward commitments outstanding on a particular date without indicating total forward sales of the foreign currency.

authorities have bought spot sterling as it moved slightly below its parity, a move which may encourage the view that they intend to narrow the effective support limits, and thus lead to larger shifts of interest-sensitive funds between New York and London in the future.

U.S. forward sales of lire, Swiss francs, guilders, and Canadian dollars were intended to reduce the dollar gains of foreign official institutions and their demand for gold, primarily by making it much less costly for foreign investors to hedge short-term dollar investments against the exchange risk. The U.S. authorities rolled over maturing forward contracts if it appeared that the payments imbalance were going to be reversed in the near future. In some cases the U.S. authorities made a special forward rate available to selected groups of foreign investors, and effectively sidestepped the market; in other cases they have been willing to deal with any participant in the market. In the first group of cases, the U.S. authorities in effect offered foreign investors a guarantee against the exchange risk on their holdings of dollar assets.<sup>41</sup>

Finally, the U.S. authorities have supported the dollar when it has been under speculative pressure in the forward market. They have not completely eliminated the discount on the forward dollar, but they have reduced it sufficiently so that it would not aggravate speculative pressures. And the maintenance of a discount on the forward dollar has meant that speculators have taken an exchange loss on their sales of forward dollars.

Even though the U.S. authorities have intervened extensively in several foreign currencies, the use of exchange-market intervention to protect U.S. reserves has been far less important than the use of interest-rate policy. The Federal Reserve Board's discount rate was maintained at 3 percent from August 1960 to July 1963, and then increased to 3½ percent. The Treasury-bill rate has been maintained at a relatively high level through extraordinarily large issues of Treasury bills. In January 1962 the Federal Reserve Board altered Regulation Q and increased the maximum interest rate that U.S. commercial banks could pay on time deposits to 4 percent; and the interest-rate ceilings on time deposits longer than 90 days and shorter than 1 year were raised again in July 1963.

The U.S. authorities have not used forward-rate policy as a general substitute for higher interest rates. Rather, they have set U.S. short-

<sup>41</sup> The role of exchange guarantees in reducing the foreign demand for gold is discussed in Section V.

term domestic interest rates at a level comparable to interest-rate levels in the more important financial markets abroad. Forward intervention has been limited either to special situations in which it was deemed desirable to pull in funds from one particular country that was experiencing a reserve build-up believed to be temporary, or to offsetting speculative pressures.

One factor which may partly explain the reluctance of the U.S. authorities to intervene more actively in the forward market, especially to permit a somewhat lower level of domestic interest rates, is that the volume of funds shifted abroad in covered interest arbitrage has been small relative to the total outflow of U.S. short-term funds; this is consistent with the continuing expectation that the dollar would remain weak in the exchange market. Thus there was limited scope for forward intervention to prevent an outflow of funds in covered interest arbitrage. Nevertheless more active support of the forward dollar could have induced an inflow of short-term funds from abroad on a covered basis, especially from those countries which had extremely large reserves, and thus partially offset the funds shifted from New York on an uncovered basis.<sup>42</sup> This technique, used to hold funds in New York or pull them there from Switzerland, Italy, and the Netherlands, could have been used more extensively in the currencies of these countries and extended to the currencies of other countries.

Another factor which may explain the reluctance of the U.S. authorities to substitute forward-rate policy for interest-rate policy is that the U.S. authorities do not appear to want to be continually rolling over maturing forward contracts. They have rolled over some forward contracts as they have matured, but this has been on the expectation that the reserve gains of the foreign country would prove temporary. When it has not proved possible to liquidate their forward commitment in the market because of reversal in the direction of the net currency movement, they have liquidated their forward commitment with foreign currencies obtained from foreign official institutions under various types of credit arrangements; in this way they have in effect transferred their short forward position from participants in the exchange market to the foreign monetary authorities.

<sup>42</sup> The U.S. authorities have also wanted to reduce the U.S. payments deficit as well as protect the U.S. international reserves. The U.S. balance-of-payments accounting system treats an outflow of short-term U.S. funds and an inflow of foreign short-term funds asymmetrically. The first is presumed to increase the U.S. deficit, the second not to reduce it.

Official institutions in many foreign countries have cooperated extensively with the U.S. authorities, both in exchange-market intervention and in supplying the U.S. authorities with their currencies. Many officials abroad have felt that U.S. short-term rates should correspond more nearly to the interest rates in their own countries.

If international cooperation limits the use of forward-market intervention to secure greater independence for U.S. monetary policy, then an alternative way to dampen these short-term flows is to provide for a wider range of movement for exchange rates. The U.S. authorities, however, have moved in the opposite direction, buying and selling foreign currencies near their parities. This practice may encourage short-term capital flows and make it more difficult for the United States to maintain an independent monetary policy in the future.

## V. REDUCING THE FOREIGN OFFICIAL DEMAND FOR GOLD

The United States has only a limited amount of gold which it can supply to foreign official institutions; gold is the ultimate scarce asset for financing the U.S. payments deficit. Measures to reduce the demand of foreign official institutions for gold increase the size of the payments deficit which the United States can finance, and allow the United States more time to achieve a satisfactory payments balance. If a U.S. payments deficit is not to be financed by a transfer of gold, then it must be financed by the transfer of a debt instrument. This transfer can take several forms—an increase in U.S. liabilities to foreign official institutions, or a reduction in their liabilities to the United States, either on a direct bilateral basis or indirectly through the intermediation of an international financial institution.

At any time the amount of foreign liabilities held by the U.S. authorities which can be easily transferred abroad to finance a U.S. payments deficit is quite small.<sup>43</sup> In contrast, there is no set limit on the amount of U.S. financial liabilities which can be supplied to foreign official institutions. Instead, this amount depends on the ability and the willingness of the U.S. authorities to make existing U.S. financial liabilities more attractive to foreign official institutions, and to devise new financial instruments which better satisfy their reserve-asset needs.

U.S. gold losses as a proportion of the U.S. payments deficit settled with foreign official institutions declined from 75 percent in 1958 to 45 percent in 1962, and to less than 25 percent in 1963. Part of the decline was due to measures adopted to make existing dollar assets more attractive to foreign official institutions, and part to the issue of new U.S. liabilities to foreign official institutions denominated in their own currencies.<sup>44</sup> In October 1962, Regulation Q of the Federal Reserve Act, the interest rate ceiling on the deposits of commercial banks was amended so that they were exempted, for three years, from maximum

<sup>43</sup> Between 1961 and 1963, the United States received advance repayments on postwar loans exceeding \$1.6 billion from several European countries. These debt prepayments reduced the build-up in the official reserves of these European countries and in their demand for gold. Similarly, some advance payments for procurement of U.S. military goods by various European governments reduced their payments surpluses, their reserve gains, and their demand for gold.

<sup>44</sup> This decline also reflects changes in the size of the U.S. payments deficit, the 1963 surge in Russian sales of gold, and the decline in the private demand for gold.



rates of interest they might pay foreign official institutions on time deposits. U.S. tax legislation has been altered so that the interest income on Treasury bills held by privately-owned foreign central banks is no longer subject to U.S. income tax. In 1961 the U.S. Treasury began to issue special non-marketable dollar securities (the foreign series) to foreign monetary authorities, with interest rates slightly above those on marketable Treasury securities with comparable maturities.<sup>45</sup>

Perhaps the boldest innovation to reduce the demand of foreign official institutions for gold was to supply them with U.S. liabilities, both those of the U.S. Treasury and those of the Federal Reserve Banks, denominated in their own currencies. The Treasury has issued securities denominated in foreign currencies, and the Fed has borrowed foreign currencies through currency swaps from foreign official institutions. These transactions initially were undertaken to secure foreign currencies for exchange-market intervention, both to support the dollar in the spot market and to deliver against maturing forward contracts. Subsequently, however, the foreign currencies obtained through these transactions have been used primarily to purchase dollars acquired by foreign official institutions as a means of reducing their demand for gold.

The advantage to foreign official institutions of holding U.S. liabilities denominated in their own currencies is that it ensures them against a capital loss on these U.S. liabilities if the U.S. dollar is devalued relative to their own currencies. If the dollar were devalued relative to the mark, the Bundesbank would take a capital loss in terms of marks on its dollar assets, and its dollar holdings would buy a smaller amount of the currencies of third countries which had not devalued. It would not take a capital loss on its gold holdings or on its holdings of U.S. Treasury securities denominated in marks.

The extension of exchange guarantees, through the issue of securities denominated in foreign currencies and through the currency-swap arrangement, may seem puzzling in view of the strong adverse U.S. official reaction to exchange guarantees.<sup>46</sup> The foreign-currency issues

<sup>45</sup> At the end of December 1963, outstanding issues of non-marketable, foreign series securities totalled \$163 million; issues outstanding had reached a peak of \$208 million in July 1963. Canada, Italy, and Sweden are the only countries which have bought these securities. If these non-marketable securities have an original maturity longer than 1 year, and are not convertible into cash before maturity, they are entered "above the line" in the U.S. balance of payments statistics and reduce the U.S. payments deficit accordingly.

<sup>46</sup> "The end result would be either disciplines or constraints upon our own

provide a way to extend exchange guarantees on a selective basis—the guarantees can be extended to some countries and not to others; they can be extended on a temporary basis; they can be extended on the increase or only on part of the increase in foreign official holdings of U.S. liquid liabilities and not on their existing holdings. This approach offers a way to reduce the foreign demand for gold at a minimum cost in terms of the amount of guarantees extended. Moreover this method of extending guarantees can be handled on an administrative basis, whereas the extension of guarantees to foreign official institutions on their holdings of dollar assets would require new legislation.

### *U.S. Treasury Foreign-Currency-Series Securities*

The U.S. Treasury first issued a security denominated in a foreign currency in October 1961, when \$46 million of certificates of indebtedness denominated in Swiss francs was sold to the Swiss National Bank; the Treasury received payment in Swiss francs. (See Table 1.) In January and March 1962, \$75 million of certificates denominated in lire was sold to the Bank of Italy. Since then the Treasury also has issued securities denominated in the German mark, the Belgian franc, and the Austrian schilling to the central banks in these countries. At the end of 1962, Treasury issues denominated in foreign currencies outstanding totalled \$299 million; at the end of December 1963, they totalled \$760 million. (See Table 2.) These issues are non-marketable; most have maturities ranging from 15 to 24 months. None of the bonds issued in 1962 could be converted into cash before maturity; in contrast, nearly all of the issues in 1963 could be cashed or converted into shorter-term issues before maturity.

These foreign-currency-series securities provide foreign official institutions with an asset which may meet their reserve needs better than the dollar assets already available, for these securities provide a way to avoid the exchange risk and the possible capital loss if the dollar should be devalued relative to their own currencies.<sup>47</sup> These

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economic policy, which at the very best could be no different from those already apparent, and which might at the worst become a complicated strait jacket of additional obligations, or the guarantee would be found unacceptable, and all its supposed advantages would be lost." Robert V. Roosa, *Assuring the Free World's Liquidity*, Business Review Supplement, Federal Reserve Bank of Philadelphia, September 1962, p. 6.

<sup>47</sup> If the foreign currency should be devalued by the same amount as the U.S. dollar, there would be no capital loss. If foreign currencies should be revalued

TABLE 1  
 Sale of U.S. Treasury Securities  
 Denominated in Foreign Currencies  
 (as of December 31, 1963)

<i>Foreign Purchaser</i>	<i>Amount (dollar equivalent in millions)</i>	<i>Date of Sale</i>	<i>Term (in months)</i>	<i>Date Retired</i>
Swiss National Bank	46	Oct 1961	3	Jan 1962
	23	Jan 1962	3	Mar 1962
	22	Oct 1962	5	Apr 1963
	26	Oct 1962	8	Jul 1963
	22	Apr 1963	15	—
	25	Jul 1963	18	—
Swiss Confederation	23	Oct 1962	15	—
	28	Nov 1962	16	—
	30	Jan 1963	16	—
	23	Apr 1963	17	—
	23	May 1963	18	—
	30	Oct 1963	12	—
Bank of Italy	25	Jan 1962	3	Apr 1962
	50	Mar 1962	3	Jun 1962
	25	Apr 1962	3	Aug 1962
	50	Jun 1962	3	Sep 1962
	25	Jul 1962	3	Oct 1962
	75	Aug 1962	3	Nov 1962
	50	Sep 1962	3	Dec 1962
	25	Oct 1962	15	Mar 1963
	75	Nov 1962	15	Jun 1963
	50	Nov 1962	15	Sep 1963
	50	Dec 1962	15	—
	25	Mar 1963	24	—
	75	Jun 1963	24	—
	50	Sep 1963	24	—
German Federal Bank	50	Jan 1963	15	—
	50	Jan 1963	18	—
	50	Feb 1963	21	—
	50	Feb 1963	12	—
	25	Jul 1963	24	—
	50	Aug 1963	24	—
Austrian National Bank	25	Apr 1963	18	—
	25	Dec 1963	18	—
National Bank of Belgium	30	May 1963	24	—

Source: *U.S. Treasury Bulletin*

securities have an implicit maintenance-of-value exchange guarantee—the U.S. obligation does not change if the price of gold is increased proportionately in terms of both the dollar and the foreign currency.

The success of foreign-currency-security issues in reducing U.S. Treasury gold sales cannot be measured exactly, since there is no way of telling how else the foreign official institutions would have invested their reserves. Although Italy has not bought gold from the U.S. Treasury since 1958, and Germany has not bought gold from the U.S. Treasury since 1961, the gold holdings of both countries have increased as their international reserves have increased, largely through gold purchases in London. Sales of U.S. Treasury securities denominated in the currencies of these countries probably have reduced the amount of gold they have purchased in London. Consequently, more gold may have been available in London to meet the demands of other countries. It is noteworthy that the countries which have bought gold from the U.S. Treasury have not bought these foreign-currency securities, while the countries which have bought these securities have not, thereafter, bought gold from the U.S. Treasury.

TABLE 2  
U.S. Treasury Securities  
Denominated in Foreign Currencies Outstanding  
(dollars equivalent in millions)

	Total	Austria	Belgium	Germany	Italy	Switzerland
Dec. 31, 1961	46	—	—	—	—	46
June 30, 1962	75	—	—	—	75	—
Dec. 31, 1962	299	—	—	—	200	99
June 30, 1963	630	25	30	200	200	176
Dec. 31, 1963	760	50	30	275	200	205

Source: *U.S. Treasury Bulletin*

Note: Includes Bonds, Notes, and Certificates of Indebtedness

There is no explicit limit to the amount of foreign-currency-series securities which the U.S. Treasury might offer foreign official institutions. In 1962 the Treasury sold \$250 million of the securities denominated in foreign currencies; in 1963, \$460 million more. As the amount of these securities outstanding increases, however, some

upward, then the dollar equivalent of the U.S. liability would be larger and the U.S. authorities might take a capital loss.

foreign official institutions may ask that the various features of the security, such as the interest rate, the unconditionality of the exchange guarantee, and the ease of redemption before maturity, be made more attractive. And some countries might ask that the maintenance-of-value guarantee be converted into a gold guarantee.<sup>48</sup>

### *Federal Reserve Reciprocal Currency Agreements*

Until March 1962, the Federal Reserve foreign-exchange operations for its own account were restricted by its very small holdings of convertible foreign currencies. Since then the Fed has arranged to obtain foreign currencies through reciprocal currency agreements with eleven foreign central banks and with the Bank for International Settlements. (See Table 3.) Agreements outstanding at the end of 1963 totalled \$2,050 million.<sup>49</sup> These agreements are reciprocal automatic lines-of-credit; generally they remain on a stand-by basis. They can be activated on demand; when they are activated, the Federal Reserve Banks and foreign official institutions exchange currencies. For example, in May 1962, the Fed swapped \$50 million for its equivalent in sterling with the Bank of England for three months. The U.S. authorities invested the sterling funds in a British time deposit; the British invested their dollar funds in non-marketable Treasury certificates.<sup>50</sup> At the end of three months, the currency exchange was reversed, and the arrangement was placed on a stand-by basis.

If the U.S. authorities use sterling obtained under the reciprocal currency arrangement to support the dollar, the Fed would have a net debtor position in sterling. Before the currency swap can be reversed and the stand-by can be restored, the U.S. authorities must build up their sterling deposit to its original amount. If the dollar were devalued relative to sterling while U.S. authorities had a net debtor position in sterling, the dollar cost of the U.S. liability in sterling would increase.<sup>51</sup>

<sup>48</sup> With a gold guarantee, the dollar value of their holdings of these securities would increase in proportion to an increase in the price of gold.

<sup>49</sup> The U.S. Treasury also has engaged in currency swaps with foreign official institutions. Whether the Treasury also has stand-by arrangements or whether these swaps were arranged on an *ad hoc* basis is not clear.

<sup>50</sup> A currency swap of \$50 million increases U.S. holdings of convertible foreign currencies by \$50 million and foreign official holdings of liquid dollar assets by \$50 million; reported international reserves increase by \$100 million. Most of these arrangements are on a stand-by basis, and the credit lines are not included in reported international reserves.

<sup>51</sup> Part or all of this cost might be financed from U.S. gold-revaluation profits,

TABLE 3  
Federal Reserve Reciprocal Currency Agreements  
(as of December 31, 1963)

<i>Other Party to Agreement</i>	<i>Amount (millions of dollars)</i>	<i>Date of Original Agreement</i>	<i>Term of Original Agreement (in months)</i>	<i>Term of Current Agreement (in months)</i>
Bank of France	50	Mar 1962	3	-
Increased to	100	Mar 1963	-	3
Bank of England	50	May 1962	3	-
Increased to	500	May 1963	-	12
Netherlands Bank	50	Jun 1962	3	-
Increased to	100	Oct 1963	-	3
National Bank of Belgium	50	Jun 1962	6	6
Bank of Canada	250	Jun 1962	3	3
Bank for International Settlements	100	Jul 1962	3	-
Increased to	150	Nov 1963	-	3
Swiss National Bank	100	Jul 1962	3	-
Increased to	150	Nov 1963	-	3
German Federal Bank	50	Aug 1962	3	-
Increased to	150	Jan 1963	-	-
Increased to	250	Oct 1963	-	3
Bank of Italy	50	Oct 1962	3	-
Increased to	150	Dec 1962	-	-
Increased to	250	Oct 1963	-	6
Austrian National Bank	50	Oct 1962	3	3
Bank of Sweden	50	Jan 1963	3	3
Bank of Japan	150	Oct 1963	3	-

Source: *Federal Reserve Bulletin*

Currencies have been swapped under ten of the agreements; and in many cases the currencies have been used, by the U.S. authorities, the foreign authorities, or both. In a few cases the currencies were swapped to test the technical aspects of the agreements, and were not used otherwise. The swap agreement with the Bank of Belgium has remained fully drawn to facilitate exchange-market intervention. In June 1962 an agreement for \$250 million was estab-

which probably will be larger than they otherwise would have been because of the reduced pace of U.S. gold sales. The dollar cost of the U.S. liability also would increase if a foreign currency is revalued upward while the U.S. authorities have a net debtor position in that currency; in this case there would be no offsetting revaluation profits. The foreign authorities might give the U.S. authorities sufficient advance notice to enable them to offset their debtor position in the foreign currency to avoid the exchange loss.

lished with the Bank of Canada. The Bank of Canada immediately drew the full amount as part of the package of over \$1 billion of external credits extended to enable Canada to withstand the speculative attack on its currency. As of the end of February 1964, drawings by the Federal Reserve and foreign central banks under the reciprocal currency agreements totalled \$1,608 million, and repayments of \$1,263 million had been made. The net debtor position of the Federal Reserve under all agreements then was \$145 million; some foreign currencies had been drawn and not used, while some foreign central banks had drawn dollars. The maximum net debtor position of the Federal Reserve under the swap arrangements was about \$350 million.

Most of the reciprocal currency agreements initially were for \$50 million and set up with a three-month term. As the agreements have matured, they have been renewed, and frequently the amounts have been increased and in some instances the maturities have been lengthened. In May 1963, the agreement with the Bank of England was increased to \$500 million and extended to 12 months; in October 1962, the agreements with the Bank of Italy and with the Bundesbank were increased to \$250 million.

There is no explicit limit on the amount of reciprocal currency agreements the U.S. authorities might negotiate. The Federal Reserve's Open Market Committee first set a limit of \$500 million on foreign currencies the system might hold; subsequently this limit was increased to \$750 million, and then to \$1 billion.<sup>52</sup> Although the amounts obtainable of particular currencies are fixed, the U.S. authorities may be able to draw one currency and use it to purchase the currency of some other country which is the recipient of a large outflow of dollars.

### *The U.S. International Reserve Position and The International Monetary Fund*

Several different types of transactions between the United States and the International Monetary Fund have improved the reported U.S. reserve position by over \$2 billion since 1957, and reduced by \$1 billion the amount of the U.S. payments deficit that had to be financed with foreign official institutions. Thus the Fund sold \$1.2 billion of gold to the United States; the Fund in effect repaid more than \$1

<sup>52</sup> These limits are expressed in terms of the foreign currencies held rather than in terms of the net debtor position of the Federal Reserve system. This suggests that total drawings might exceed \$1 billion if the foreign currencies drawn are used to repurchase dollars.

billion of credits from the United States initially used to finance credits to other countries, which had the same effect on U.S. reserves as the debt prepayments by Germany and other European countries; and the United States drew \$250 million (in German marks, French francs, and Italian lire) from the Fund.

In 1957, the Fund sold \$600 million of gold to the United States to replenish its holdings of dollars, which had been depleted because of large drawings of dollars by Britain, France, and other countries. Between 1957 and 1960, the Fund sold \$800 million more of gold to the United States, to obtain dollars to invest in income-earning assets. The U.S. authorities agreed to provide the Fund with the same weight of gold when the Fund liquidated its \$800 million investment in these dollar assets; the U.S. authorities engaged in a forward sale of gold to the Fund so that the Fund in effect had a gold guarantee on its dollar investment. In 1961, when the Fund's holdings of convertible currencies were depleted, the Fund sold \$500 million of gold to nine member countries, including \$150 million to the United States.<sup>53</sup> Part of these U.S. purchases of gold from the Fund was offset by the increase of \$344 million in the U.S. gold subscription to the Fund's capital in 1959. The net increase in U.S. gold reserves in the last decade as a result of transactions with the Fund has been nearly \$1.3 billion.<sup>54</sup>

During much of the postwar period until 1961, most member-country drawings from the Fund were of U.S. dollars; drawings of dollars outstanding reached a peak of \$1.4 billion in 1958.<sup>55</sup> To provide dollars, the Fund cashed part of its non-interest-bearing demand note obtained from the U.S. subscription in dollars to the Fund's capital. In effect, the United States extended credits to countries drawing on the IMF; the IMF was an international credit intermediary. Since 1959, member countries have repaid dollars to the Fund. From the U.S. point of view,

<sup>53</sup> The United States has never actually lent dollars to the Fund; the dollars made available by the Fund to its members were obtained from the U.S. subscription to the Fund's capital.

<sup>54</sup> The initial U.S. gold subscription to the Fund in 1947 was \$687.5 million. Thus direct U.S. gold transactions with the Fund have led to an overall improvement of \$400 million in the U.S. gold position. However, many foreign countries purchased gold from the U.S. Treasury to finance their gold subscription in the Fund, and so the overall improvement in the U.S. gold position is smaller than \$1.3 billion.

<sup>55</sup> These drawings increased the U.S. gold tranche position in the Fund. This position includes the U.S. gold subscription and the Fund's net drawings of dollars. This amount is "essentially automatically" available to the United States, but it is not included in reported U.S. international reserves.



U.S. credits extended to the Fund were being repaid, which helped finance the U.S. payments deficit. If the countries in surplus had not repaid their drawings on the Fund, their reserves would have been larger, and they might have bought more gold. And in the last several years the Fund has extended the currencies of member countries in payments surplus to finance the drawings of other members. This has reduced the increase in the reported international reserves of countries in Western Europe, and their demand for gold.

Several different types of IMF transaction can help protect the U.S. gold position in the future. The Fund can make additional investments in the United States and finance them through a gold sale, thus increasing the U.S. supply of gold; or it can make similar investments in Germany or France, which would increase the gold holdings of the official institutions in these countries and thus satisfy part of their demand for gold. More simply, the Fund could declare another gold dividend, as in 1961, from its gold holdings of \$2.2 billion. The Fund can continue to disburse the currencies of countries in payments surplus, and in this way reduce the build-up in their reported reserves. And the United States might draw sizeable amounts of foreign currencies from the Fund, and use them to purchase dollars in the exchange market and from foreign official institutions.

In July 1963, the United States took one step toward a drawing on the Fund; it received a stand-by—an assurance of the right to draw on the Fund—of \$500 million. The immediate context of the request for a U.S. stand-by was that the Fund's holdings of dollars were rapidly approaching 75 percent of the U.S. quota in the Fund, as countries repaid drawings on the Fund. The Fund Agreement provides that members may not repay drawings in a particular currency if the Fund's holdings of that currency exceed 75 percent of the country's quota. Since many of the members with drawings outstanding held a large part of their reserves in dollars, they would have found it necessary to sell dollars to buy marks or francs or other currencies acceptable to the Fund before repaying their drawings. This would depress the dollar in the exchange markets and increase German or French holdings of dollars. The U.S. stand-by arrangement was a preliminary to a possible U.S. drawing; in February 1964 the U.S. authorities drew \$125 million in several foreign currencies from the Fund, and used these currencies to buy dollars from countries that needed to repay the Fund and held their reserves in dollars. In May 1964 the U.S. authorities drew an additional \$125 million from the Fund. The United

States has large drawing rights on the Fund; under current Fund policies the United States might draw \$1.1 billion of foreign currencies, an amount equal to the U.S. gold subscription, virtually automatically. The United States could further draw an amount equal to its Fund quota, \$4.1 billion, if the Fund believes that the United States might overcome its payments problems within a short period.

Within the last few years the Fund's resources have been expanded by \$11 billion to enable it to finance larger member-country drawings. In 1959, member-country quotas, and the Fund's capital, were increased by 50 percent, from \$10 billion to \$15 billion. In October 1962, Fund resources were increased by \$6 billion more, when the General Arrangements to Borrow—a formal commitment of 10 members to lend their currencies to the Fund—came into effect. The United States committed \$2 billion; Britain and Germany, \$1 billion each; Italy and France, \$550 million each; Japan, \$250 million; Canada and the Netherlands, \$200 million each; Belgium, \$150 million; and Sweden, \$100 million.<sup>56</sup> This financial arrangement gives the Fund a conditional drawing right on the currency of each country, up to its specified commitment, which the Fund may exercise to supplement its own funds.

The Fund has a substantial amount of currencies which it owns or can borrow to finance a U.S. drawing. There is no explicit limit on the amount the United States might draw from the Fund, for the Fund could waive the customary limit on net drawing rights based on the member's quota. The U.S. legislation implicitly provides that the United States can extend an exchange guarantee on any U.S. drawing up to the limit of the U.S. Fund quota and the U.S. commitment under the General Arrangements, which together exceed \$6.1 billion.

#### *The Mix of Credit Arrangements to Finance U.S. Settlements with Foreign Official Institutions*

The currency swaps of the Federal Reserve and of the U.S. Treasury, the Treasury's sale of securities denominated in foreign currencies, and the Treasury's forward sale of gold to the Fund to facilitate its investment in U.S. Treasury bills have enabled foreign official institu-

<sup>56</sup> If a party to the new agreement indicates that it does not believe that it can lend its currency to the Fund on the basis of its present and prospective balance-of-payments position, it need not. Nevertheless, the arrangements represent a considerable improvement over the vague right to borrow in the Articles of Agreement, for it suggests the relative size of the credit from each country and the terms of the borrowing.

tions to transfer credit to the United States with assurance that they will not take a capital loss on their holdings of certain U.S. liabilities if the dollar is devalued. In the first several cases the United States took the exchange risk implicitly by assuming a liability denominated in a foreign currency.

The availability of foreign currencies under the reciprocal currency agreements provides a new intermediate buffer between the net reserve gains of other countries and sales of U.S. gold. The first-line buffer is the willingness of foreign official institutions to add to their holdings of dollar assets—such as bank deposits, Treasury bills and certificates, bankers' acceptances, and foreign-series securities. If they are unwilling to invest all of their reserve gains in dollar assets, the U.S. authorities may repurchase some of these dollars using foreign currencies previously acquired in the foreign-exchange market or available under the Fed and Treasury swap agreements. These swap arrangements provide a flexible approach toward meeting a U.S. need for foreign currencies, especially in cases where the reserve gains of foreign official institutions appear temporary.

If, however, it appears that the reserve gains of foreign official institutions will not be reversed in the near future, then the Treasury may obtain the foreign currencies necessary to fund these short-term obligations by selling securities denominated in foreign currencies; this is the third-line buffer. If an individual foreign country does not want to buy securities in the foreign-currency series, then the U.S. authorities may sell these securities to other countries that are willing to buy them, and use the foreign-currency receipts to purchase other foreign currencies in the exchange market. And the United States also can draw on the IMF to obtain foreign currencies.

The currency-swap buffer provides the potential for larger net credits; the reciprocal credit agreements can be increased further, as has already been done with many of the agreements. Similarly the sale of securities denominated in foreign currencies also provides the potential for larger net credits to the United States. The amount of these securities which can be sold depends both on the willingness of foreign official institutions to buy them and the willingness of the U.S. authorities to tailor such securities to meet the needs of foreign official institutions. Foreign official institutions may hesitate to buy these securities, either because they are doubtful about their convertibility, or because they dislike the impact within their own countries of continued U.S. payments deficits. The Treasury might overcome this reluctance by

altering the terms of the guarantee and the yield on securities. And it might also offer longer-term issues to fund more of the U.S. payments deficit; the maturities of the credits available from the sale of securities denominated in foreign currencies are not much longer than the maturities of the credits available under the currency swaps.

The extension of exchange guarantees by the U.S. authorities, even implicitly in the form of drawings under currency swaps and the sale of foreign-currency securities, involves both risks and costs. As the volume of U.S. liabilities subject to exchange guarantees increases, the foreign official demand for U.S. dollar liabilities may decline further. There is the risk that it may become increasingly necessary to sell more securities denominated in foreign currencies to secure the same reduction in the foreign official demand for gold. The foreign holders of U.S. liabilities who now benefit from guarantees will continue to ask for them, and countries which are not now offered guaranteed U.S. liabilities may begin to demand them as an alternative to buying gold.

The financial cost of the guaranteed U.S. liabilities becomes relevant if the dollar is devalued, for then the amount of dollars required to repay U.S. liabilities denominated in foreign currencies will be larger. Most or all of this increase in cost might be financed from the U.S. gold-revaluation profits; if the extension of guarantee has reduced the foreign demand for gold, U.S. gold-revaluation profits will be larger than they otherwise would have been.

At some point the benefit from extending guarantees on additional U.S. liabilities may no longer be deemed justified by the additional risks and costs. As the arrangements for financing the U.S. payments deficit become more costly, it may begin to appear necessary to adopt additional measures to reduce the U.S. deficit more quickly.

The *ad hoc* arrangements adopted by the U.S. authorities in the last several years have provided a relatively effective way to extend exchange guarantees. And these informal arrangements have proved a useful adjunct to the more formal, international financial arrangements like the IMF. Negotiating the *ad hoc* arrangements has been easier than negotiating changes in the Fund; the reluctance of any major country to participate has a smaller adverse effect than in a large multilateral negotiation.

That the United States has obtained foreign currencies under these bilateral credit arrangements, rather than draw foreign currencies from the Fund, reflects a concern with the possible adverse psychologi-

cal reaction to a large U.S. drawing on the Fund. The Fund's credit facilities remain available to the United States. It might prove more difficult for the U.S. authorities to sell securities denominated in foreign currencies, and to negotiate new and larger reciprocal credit agreements with foreign official institutions after a sizeable U.S. drawing on the Fund than before. More importantly, it seems unlikely that the availability of foreign currencies under the bilateral arrangements has reduced the volume of foreign currencies available to the United States through the Fund by the same amount. Thus most of the international credit obtained under the bilateral arrangements probably is additive to credit available under the Fund.

The net credits obtained by the United States on the basis of these ad hoc arrangements total \$1 billion, about 20 percent of the cumulative U.S. payments deficit for these two years, or roughly equivalent to the U.S. gold tranche at the IMF. Nearly \$2 billion more is immediately available under the reciprocal currency arrangements.

Eventually, however, the problem of financing the U.S. payments deficit may cease to be whether the U.S. authorities are willing to offer the appropriate types of financial assets to foreign official institutions. The nature of the problem shifts to whether the United States should be able to finance a deficit over an extended period using credits obtained directly or indirectly from foreign official institutions. It ceases to be a technical problem; increasingly it becomes a political problem involving a conflict between the unwillingness of the United States to take measures to reduce its deficit, and the unwillingness of other countries to take measures to reduce their payments surpluses or to extend credit to the United States.

The United States can use its political power to induce other countries to help finance the U.S. deficit. But they in turn may demand political or other concessions in exchange for extending more credit to the United States.

## VI. SUMMARY AND CONCLUSION

Active management of the dollar in international finance can help protect U.S. gold reserves, and increase the range of choice of measures to help achieve both domestic and foreign economic objectives. Measures to reduce or deflect flows of short-term funds, and to reduce both the foreign official demand and the private demand for gold, are not substitutes for measures to achieve a satisfactory U.S. balance of payments. Instead, they extend the time available for the payments-balancing measures to become effective; in this sense they are substitutes for larger U.S. holdings of international reserves. Even if new international credit institutions are developed, the willingness and ability of these institutions to extend credit to the United States and to other countries will be limited, and the available amount of international credit may be less than is deemed necessary or desirable. An active management policy, by substituting for larger reserves, can extend the range of choice of domestic and foreign economic policies under new international reserve arrangements, just as it does under the existing international financial arrangements.

Gold is the ultimate scarce asset for financing the U.S. payments deficit—when foreign official institutions are unwilling to acquire dollar assets or to extend credit to the United States in other ways, then the U.S. authorities are obliged to maintain the exchange parity of the dollar through sales of gold. In part, the U.S. Treasury's gold sales to foreign official institutions depend on how much of the new gold supply is used to meet the private demand, for the U.S. Treasury is the residual international gold supplier. Even though the private demand for gold may be satisfied fully from the new supply, the gold that is sold to private parties reduces the amount of new gold available for foreign official institutions and diverts their demand to the U.S. Treasury.

U.S. gold policy has been successful in preventing gold speculation from becoming cumulative. But it has not succeeded in attracting much of the gold supply into official holdings. The private demand for gold has remained strong and has absorbed most of the new gold supply, thus significantly increasing the U.S. Treasury's gold sales to foreign official institutions.

Existing international arrangements for private gold transactions make it easy for private parties to buy gold. The Bank of England,

as agent for the gold pool, manages the movement of the gold price within a very narrow range so that it is not disruptive of confidence in the stability of currency parities. The small range of price movement, combined with the permanence of the official floor under the gold price, gives speculators a relatively riskless one-way option, for the price of gold may be increased while it is exceedingly unlikely that it will decline. The United States, Great Britain, and several other countries have tried to protect their own gold reserves by legislation limiting the private ownership of gold. Legal prohibitions on private gold ownership, however, appear inadequate to reduce the private demand greatly. A more promising approach is to increase the range of price movement in free markets. This might be furthered by widening the U.S. Treasury's gold points, or by international agreement among official institutions to move more clearly to a two-price system and a gold freeze-out policy, maintaining the current price for transactions among official institutions, and greatly reducing their buying price in private gold markets.

The range for movements in the price of gold in private transactions would then be much greater, and the increased uncertainty and the increased risk about the gold price in the future would reduce the private demand. Private parties could still buy gold as an inflation hedge, but its major advantage over other commodities as an inflation hedge—the stability in its price, especially against price declines, because it is also used as an international reserve asset—would be much smaller.

To reduce the demand of foreign official institutions for gold, the U.S. authorities have taken measures to make U.S. dollar liabilities more attractive. More importantly the U.S. authorities have issued new U.S. financial liabilities denominated in foreign currencies to meet the reserve needs of foreign official institutions better than dollar liabilities can; these new liabilities carry an implicit maintenance-of-value guarantee. These measures—borrowing foreign currencies under both the currency-swap arrangements of the Fed and of the Treasury and selling Treasury securities denominated in foreign currencies—have induced foreign official institutions to increase the amount of credit they extend to the United States.

Obtaining credit on a bilateral basis from foreign official institutions by extending exchange guarantees on U.S. financial liabilities has reduced their demand for gold; this approach is an alternative to obtaining credit from the International Monetary Fund. These bilateral

credit arrangements have increased the total amount of international credit potentially available to the United States. The U.S. authorities have been reluctant to draw on the Fund, raising the question of how extreme the U.S. payments deficit might have to be for the United States to draw a sizeable amount of foreign currencies from the Fund.

The United States now appears to have a substantial amount of international credit available both through the Fund and the currency-swap arrangements; these two sources, if utilized fully, might provide over \$6 billion. While it is impossible to determine how much credit might be available to meet the demands of a crisis, it is noteworthy that the U.S. authorities met the speculative pressure following the assassination of President Kennedy by selling less than \$25 million of foreign currencies. Hence the question arises whether the proportion of credits available on a stand-by basis for use in some crisis may not be too large relative to the amount of credit which can be used as a substitute for gold to finance the U.S. deficit arising from non-speculative causes.

The need to reduce the U.S. payments deficit appears to have overriden the concern with the ability to get the U.S. deficit financed; paradoxically, the success in reducing the deficit may have made it somewhat easier to get the deficit financed. The ease with which private funds can be shifted from one international financial center to another under a system of fixed exchange rates with a small narrow range for movements in the exchange rates has complicated the problem of reducing the deficit and made it necessary to devise new means to get the deficit financed. Even within the limits set by the need to reduce the deficit, more effective measures to neutralize shifts of short-term funds would have reduced the international constraint on a domestic monetary policy. If the range for exchange-rate flexibility within support limits were widened, the greater uncertainty about future rates and the increased exchange risk would dampen shifts of short-term funds. Alternatively, by intervening in the forward market the authorities can alter the direction and the magnitude of funds shifted in covered interest arbitrage at a smaller cost than by using interest-rate policy.

In the last several years the U.S. authorities have intervened in the exchange market, selling foreign currencies in both the forward and the spot market. The U.S. authorities first intervened in the forward market to counter speculative pressure on the dollar; their large-scale purchases of forward dollars reduced the incentive to shift funds



from New York to Frankfurt on a covered basis; and checked the possible self-accelerating tendency of speculation. The U.S. authorities have intervened in the forward markets for the Swiss franc, the guilder, and the Canadian dollar and they have sold the lira forward to the Italian commercial banks; their sales of these foreign currencies in the forward market were undertaken to induce investors, especially foreign commercial banks, to hold funds in New York on a covered basis. Otherwise the cost of covering forward would have been too expensive, and the dollars would have flowed to foreign official institutions, increasing their reserves so that they might have increased their gold purchases.

U.S. forward intervention has been sporadic rather than continuous, and it has been used to minimize reserve losses and avoid the need to raise interest rates rather than to enable the U.S. authorities to pursue interest-rate levels substantially lower than interest-rate levels abroad. A forward-rate policy has the potential to provide more elbow room for a somewhat lower level of short-term interest rates, if the U.S. authorities are willing to carry a short position in foreign currencies for an extended period with the exchange-market participants or with commercial banks abroad. The U.S. authorities instead have preferred to carry a short position in foreign currencies for an extended period with foreign official institutions.

The U.S. authorities also have purchased and sold foreign currencies in the spot market, generally at rates well within the support limits. At times such intervention within the limits has been necessary to avoid disorderly movements in exchange rates, especially in moments of stress or crisis like that following the assassination of President Kennedy. At other times, however, U.S. intervention in the spot market at rates within the support limits has not been related to the need to maintain orderly movements in the exchange rates. Continued U.S. intervention within a range much smaller than that provided by the support limits increases rather than reduces the potential for disruptive shifts of short-term funds, and further constrains a more independent monetary policy.

If exchange rates were free to move within somewhat wider support limits, shifts of short-term funds in response to expectations of a change in exchange parities or to international interest-rate differentials would be smaller. The range of movement within current support limits, generally about 1.5 percent, is not large enough to penalize currency speculators adequately, nor is it large enough to dampen inter-

national shifts of funds by investors and shifts in the center of international borrowing. A widening of the range of movement of exchange rates would dampen international shifts of investment funds, shifts in the center of trade financing, and currency speculation; in this way it would afford greater independence for domestic monetary policy.

The United States, unilaterally, cannot determine the range of movement of the dollar in terms of foreign currencies; this is determined by the currency-support limits of foreign countries. But an increase in the U.S. Treasury's gold points to 1 percent either side of parity—the maximum spread possible under the IMF Agreement—would provide an incentive for other countries to widen their currency-support limits. And agreement might be reached to permit a wider spread between the U.S. gold points, and a wider spread between the currency-support limits.

Active management of the dollar in international finance can prove effective, in reducing short-term capital outflows, in reducing the amount of new gold that is absorbed by private parties, and in reducing the demand for gold of foreign official institutions by offering them U.S. liabilities which are better substitutes for gold reserves than the dollar liabilities now available. The measures taken by the U.S. authorities have been directed to these goals, but their potential is greater than the result hitherto achieved.

Almost all of these measures—a widening of the U.S. Treasury's gold points, a gold freeze-out policy, or other measures to reduce the private demand for gold; a widening of the currency support limits and active forward intervention; and the extension of exchange guarantees, implicitly or explicitly, on U.S. liabilities transferred to foreign official institutions—require the cooperation of foreign official institutions. The amount and extent of foreign cooperation needed differ with the particular measures; it is easier for the U.S. authorities to secure their cooperation on some measures than on others.

The ability of the U.S. authorities to obtain cooperation depends on the strength of the U.S. bargaining position, the view that foreign official institutions have about their own national interests, and the willingness and ability of U.S. authorities to extend concessions. The importance of the United States in international trade and finance gives it a strong bargaining position, even when in payments deficit. And the U.S. authorities have a variety of means to gain foreign cooperation—they can raise domestic interest rates and extend

exchange guarantees on U.S. liabilities held by foreign official institutions. There are also non-financial considerations which the United States can extend to other countries to secure their cooperation.

Foreign countries, however, may demand political concessions from the United States as the price of cooperation. Rather than meet these demands, the broad view of U.S. interests and objectives then may be better served by moving to reduce the U.S. payments deficit more quickly.

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INTERNATIONAL FINANCE SECTION

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