

FEDERAL RESERVE BANK OF ST. LOUIS

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REVIEW



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RPDs and Other Reserve Operating Targets

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SINCE EARLY this year the Federal Reserve has emphasized member bank reserves available for private nonbank deposits (RPDs) as its short-run operating target.¹ RPDs are a reserve aggregate, defined as total member bank reserves less reserves required against U.S. Government demand deposits and net interbank deposits. This article examines a framework in which a reserve aggregate, such as RPDs, functions as an operating target to achieve policy objectives.

U.S. monetary authorities — the Federal Reserve System and the U.S. Treasury — share in the responsibility for achieving the Government's economic stabilization objectives. These objectives, such as reducing inflation and unemployment, and encouraging a sustainable growth of output and income, are sometimes summarized in a growth rate for gross national product (GNP). From the point of view of the monetary authorities, influencing GNP is generally interpreted as being achieved through the intermediate step of influencing market interest rates or growth of the money stock. In this article we assume that policy objectives have been translated into a desired growth rate for the money stock and examine how the use of a reserve aggregate as an operating target can help the Federal Reserve achieve the desired rate of growth of the money stock.

Definition of the Money Stock

The money stock can be measured in several different ways. Most commonly, it is measured as M_1 (demand deposits plus currency in the hands of the public). Other measures include M_2 (M_1 plus time

deposits at commercial banks other than large certificates of deposit) and M_3 (M_2 plus deposits at non-bank-thrift institutions).²

In this article the M_1 measure — demand deposits and currency in the hands of the public — is used, where "public" is any person or institution other than a monetary authority or a commercial bank. This definition of public means that currency held by commercial banks, the U.S. Treasury, or Federal Reserve Banks, and demand deposits owned by the U.S. Treasury (Government deposits) or commercial banks (interbank deposits) are excluded from the money stock.

The demand deposit component of the money stock is sometimes called "private demand deposits." When this terminology is used, "private" deposits must be interpreted as including those owned by state and local governments. The term "demand deposits adjusted" is also used to refer to the demand deposit component of money, computed as demand deposits at all commercial banks other than those due to domestic commercial banks and the U.S. Government, less cash items in process of collection and Federal Reserve float, plus foreign demand balances at Federal Reserve Banks.

Sources of the Money Stock

The Role of Commercial Banks

The public's most immediate sources of money are commercial banks. The ultimate sources of money in our economy, however, are the monetary authorities — the U.S. Treasury and the Federal Reserve System.

¹"Record of Policy Actions" of the Federal Open Market Committee, Federal Reserve *Bulletin* (May 1972), p. 459.

²Time deposits due to domestic commercial banks or the U.S. Government are not included in M_2 or M_3 .

Commercial banks are very important in the money supply process because the public chooses to hold money in the form of demand deposits. When currency supplied by the monetary authorities is exchanged by the public for a demand deposit, the form of money changes. In addition, banks obtain additional reserves. In a fractional reserve banking system, which is what we have in the United States, required reserves equal only a fraction of deposits. The remainder of funds obtained with deposits may be used by banks to make loans or investments. By making loans commercial banks increase their liabilities (demand deposits) and assets (loans), and in a sense "create" money on the basis of the original money (reserves) provided by the monetary authorities. The net monetary liabilities of the monetary authorities are held either as currency in the hands of the public or as commercial bank reserves and can be viewed as the "base" for the nation's money stock.

The Role of Monetary Authorities

The capacity of the commercial banking system to create demand deposits is constrained by the total amount of reserves it has and by the ratio of required reserves to deposits. The Federal Reserve System can directly influence the money stock by both influencing the amount of reserves and changing reserve requirements.

The Board of Governors of the Federal Reserve System establishes the proportions of various types of deposits that member banks must hold either as vault cash or as deposits at Federal Reserve Banks to meet legal reserve requirements. Presently, required reserve ratios are between 12.5 and 17.5 percent on demand deposits and 3 or 5 percent on time deposits.³ The higher the required reserve ratio, the smaller the amount of demand deposits the banking system can create with any given amount of reserves.

The Federal Open Market Committee (FOMC), through decisions on Federal Reserve open market operations, has an important influence on the amount of reserves in the banking system. This Committee, composed of the Board of Governors of the Federal Reserve System and Federal Reserve Bank Presidents,

³Reserve requirements of member banks are listed in the Federal Reserve *Bulletin*. For example, see p. A 10 of the July 1972 issue.

Since reserve requirements for commercial banks currently differ with respect to their classification and amounts of deposits, shifts in deposits from reserve city banks to country banks or vice versa, from member banks to nonmember banks or vice versa, or from smaller to larger banks or vice versa, may change the ratio of required reserves to deposits for the banking system as a whole.

meets about once a month to consider economic conditions and the ways in which its actions can best serve economic goals. The decisions of the FOMC are carried out at the Trading Desk of the Federal Reserve Bank of New York. The Manager of the Trading Desk buys and sells securities on behalf of the twelve Federal Reserve Banks in accordance with the instructions of the "Directive" from the FOMC.

When the Trading Desk buys a security, it pays for it by supplying either bank reserves or currency. On the other hand, when it sells a security, payment to the Federal Reserve results in a reduction of bank reserves or currency in the hands of the public.

Reserve Aggregates as Operating Targets

We have seen that bank reserves influence the money stock and that the total amount of reserves in the banking system is strongly affected by Federal Reserve open market operations. Next we want to identify the factors that determine the relationships between changes in various measures of bank reserves, that is, various reserve aggregates, and changes in the money stock. For a reserve aggregate to function as an operating target, policymakers must be able to predict the relationship between the reserve aggregate and money with some degree of accuracy over the period in which they are attempting to control the reserve aggregate. Information about this relationship is necessary in order to *select* the appropriate path for the reserve aggregate. We must also examine the information which is necessary to *achieve* desired changes in the reserve aggregate, since paths of the reserve aggregates themselves are not under the complete control of the monetary authorities.

There are many reserve aggregates which bear definable relationships to the money stock on one side and to open market operations on the other. We will consider three: the monetary base, member bank reserves, and RPDs (member bank reserves used to support private nonbank deposits).

The Monetary Base

One reserve aggregate concept that is useful for monetary analysis is the monetary base. The base is defined as the net monetary liabilities of the Government (U.S. Treasury and the Federal Reserve System) held by commercial banks and the nonbank public. These monetary liabilities are member bank reserves and currency in the hands of the public.⁴

⁴A use of the base which is excluded from the analysis in this paper is vault cash held by nonmember banks.

The monetary base is derived from a consolidated balance sheet of the Treasury and Federal Reserve "monetary" accounts. The total amount of base outstanding at any time is principally determined by the U.S. gold stock (which has been relatively constant in recent years) and the amount of U.S. Government securities owned by the Federal Reserve System. Whenever the Federal Reserve buys securities on the open market for its own account, the monetary base increases.⁵

The amount of money the base will support is largely determined by the decisions of commercial banks, the public, and the Treasury. Each \$1 of base the public chooses to hold as currency, for example, supports only \$1 of money; whereas \$1 of base held in the banking system as reserves may support more than \$1 of demand deposits and therefore more than \$1 of money. However, if reserves are absorbed as requirements against Government deposits, interbank deposits, or time deposits, then they are not available to support expansion of private demand deposits. The amount of demand deposit money that the banking system can supply to the public with a given amount of reserves is influenced by decisions determining the relative amounts of different types of bank deposits.

A more detailed example can help explain how the behavior of commercial banks, the public, and the Treasury influences the amount of money that the base will support (see illustration). Suppose the base equals \$100 billion, \$60 billion of which is used as currency in the hands of the public and \$40 billion as bank reserves. These reserves may be used as legal reserve requirements against time deposits, private demand deposits, U.S. Government deposits, interbank deposits,⁶ or they could be held by banks as excess reserves. We can assume a certain set of reserve requirement ratios for the different types of deposits and a certain amount of each type of deposit, and compute the money stock which is consistent with the \$100 billion base. Assume banks must hold reserves equal to 5 percent of time deposits and 15 percent of

all other deposits. If the public chooses to hold \$300 billion of time deposits, this uses up or absorbs .05 x \$300 billion or \$15 billion of reserves. Now \$25 billion of reserves are available to support various types of demand deposits. If Government deposits equal \$4 billion and interbank deposits equal \$1 billion, these two types of deposits use up 0.15 x \$5 billion or \$0.75 billion of reserves. The remaining \$24.25 billion of reserves will support a maximum of approximately \$162 billion of private demand deposits.⁷ If banks choose to hold \$1 billion in excess reserves, then given our other assumptions, reserves used to support private demand deposits will equal \$23.25 billion and private demand deposits will amount to \$155 billion. In this example, the base of \$100 billion supports a money stock of \$215 billion, \$60 billion of which is currency and \$155 billion of which is private demand deposits.

A change in the composition of deposits could be expected to change the amount of money resulting from a \$100 billion base. Suppose the public decided to increase its holdings of time deposits by \$50 billion. Initially this would require a \$50 billion reduction in private demand deposits, assuming other factors do not change. Since the ratio of required reserves to time deposits is less than the ratio of required reserves to demand deposits, the shift would lower the average reserve requirement for the banking system. By making loans with reserves released in the shift of deposits, the banking system could again raise the level of demand deposits in the system. In the example, a \$50 billion contraction of demand deposits would release \$7.5 billion of reserves (0.15 x \$50 billion). The increase in time deposits would absorb \$2.5 billion of reserves (.05 x \$50 billion). The remaining \$5 billion of reserves would support \$33.33 billion of demand deposits $\left(\frac{\$5 \text{ billion}}{0.15}\right)$. One might look at it in the following way. A \$50 billion increase in time deposits would require a \$16.67 billion contraction of demand deposits, given other things do not change. Increased preference for time deposits, with no change in the amount of base, results in a decline in private demand deposits, and hence money stock.

An increase in Government deposits at the expense of private demand deposits, with no change in total bank reserves, would also result in a contraction of the money stock. One occasion in which this occurs is when people pay Federal income taxes. With more reserves used to support Government deposits and

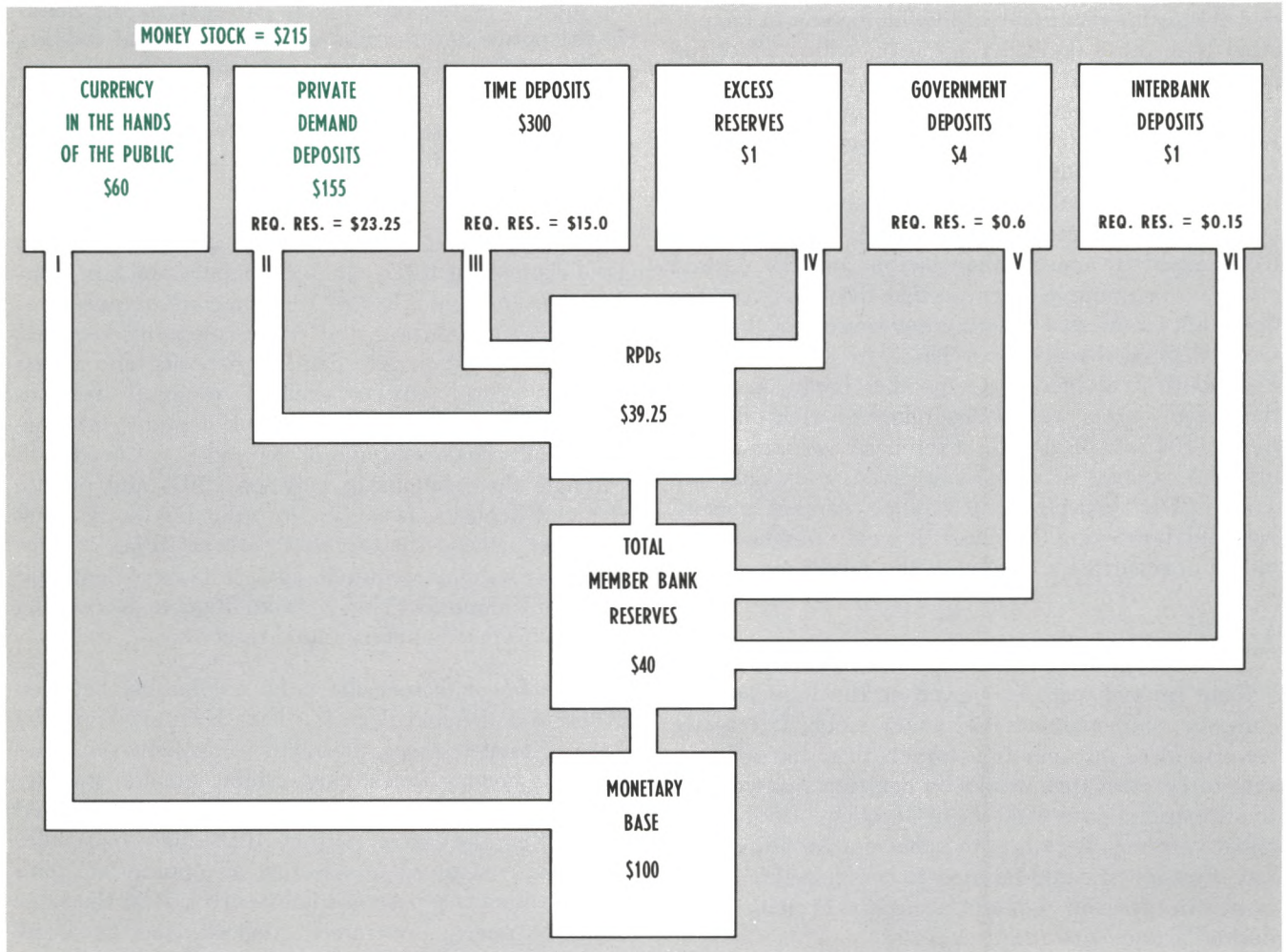
⁵For a more detailed discussion of the monetary base, see Leonall C. Andersen and Jerry L. Jordan, "The Monetary Base - Explanation and Analytical Use," this *Review* (August 1968), pp. 7-11; Jerry L. Jordan, "Elements of Money Stock Determination," this *Review* (October 1969), pp. 10-19; Jane Anderson and Thomas M. Humphrey, "Determinants of Change in the Money Stock: 1960-1970," *Monthly Review*, Federal Reserve Bank of Richmond (March 1972), pp. 2-8; John D. Rea, "Sources of Money Growth in 1970 and 1971," *Monthly Review*, Federal Reserve Bank of Kansas City (July /August 1972), pp. 3-13.

⁶Banks have some nondeposit sources of funds against which they must hold reserves. We ignore these in the analysis in this article.

⁷This is computed by dividing reserves available by the required reserve ratio $\left(\frac{\$24.25 \text{ billion}}{0.15} = \$161.67 \text{ billion}\right)$.

Illustrations of Uses of Reserve Aggregates*

(Billions of Dollars)



A reserve aggregate can serve as an effective operating target when monetary authorities can select the appropriate growth rate of the reserve aggregate and achieve that growth rate with an acceptable degree of accuracy. Selecting a desired growth path for a reserve aggregate involves predicting its relationship to the money stock. Achieving the selected growth rate requires predicting the relationship between monetary actions and the reserve aggregate.

The boxes across the top of the illustration show the "uses" of reserve aggregates. Each of these "uses" influences either the relationship between a reserve aggregate and money, or the relationship between open market operations and the path of the reserve aggregate. Assuming the monetary base can be controlled by the monetary authorities, its use as an operating target and the selection of its magnitude requires predicting its relationship to money, which is affected by I-VI. If total member bank reserves are used as the operating target, the selection of their path requires that the money relationship involving II-VI be estimated. Achieving the target itself implies knowledge of the monetary base and I. The use of RPDs (reserves available to support private nonbank deposits) as the operating target requires predicting a relationship involving II,III, and IV to select the growth of RPDs and information about I,V, and VI to achieve that path.

*The illustration excludes consideration of nondeposit sources of funds and vault cash of nonmember banks. Reserve requirements are assumed to be 15 percent on private demand, Government demand, and interbank deposits, and 5 percent on time deposits.

fewer available to support private deposits, the money stock tends to decline.

If the Federal Reserve were to use the base as its operating target to achieve the desired rate of growth of the money stock, it would have to predict with some degree of accuracy the relationship between the growth rate of the base and the growth rate of the money stock. If all the *uses* of the base were known with certainty, the relationship between growth of the

base and growth of the money stock could be known precisely, and the FOMC could translate any desired growth rate of the money stock into a target rate of growth for the base. Since most of the uses cannot be predicted with complete certainty, the relationship between the base and money is often estimated from historical behavior as a single number, or "multiplier." This multiplier nevertheless incorporates conceptually and quantitatively all of the uses of the base discussed in preceding paragraphs.

A second criterion for using the base as an operating target is that the Trading Desk must be able to achieve the targeted rate of growth of the base. To do this, it must predict what will be happening to factors, other than those under its initiative, which affect the base. These factors include changes in Federal Reserve float and member bank borrowing from Federal Reserve Banks. With information about how outside factors would result in increases or decreases in the base, the Desk could use open market operations to make up the difference between the change in the base caused by uncontrolled factors and the desired change. For example, suppose that the base were the operating target, that the only two sources of the base were Federal Reserve purchases of securities and Federal Reserve lending to member banks, and that these two sources were independent of each other. If the desired rate of growth of the base were translated into a \$1 billion increase in a given week, and the Trading Desk expected a \$0.3 billion increase in member bank borrowing that week, it would purchase \$0.7 billion of securities to make up the difference.

Member Bank Reserves

Bank reserves can be viewed as the base less the currency component of the money stock. If reserves were used as an operating target, then the relationship to be estimated would be between reserves and the demand deposit component of money. Information about currency, necessary to achieve a certain growth rate of reserves, could be used to compute the change in private demand deposits necessary to achieve the desired money growth.

The Trading Desk must predict the public's demand for currency in order to attain the desired growth rate for reserves, since changes in the public's holdings of currency change the amount of the base available for bank reserves. In other words, the Desk must predict the distribution of uses of the base between currency in the hands of the public and bank reserves, as well as uncontrolled influences on the base. If the FOMC has very good evidence about what will be happening to currency in the hands of the public because, say, currency has increased at a historically steady rate, then it may be no more difficult to achieve a given growth rate for reserves than for the base. If at the same time the relationship between reserves and demand deposits is more predictable than that between the base and money, using reserves instead of the base as the operating target might result in a lower error involved in achieving the desired rate of money growth.

RPDs

RPDs are a particular reserve aggregate that can be viewed as the base minus currency in the hands of the public and reserves used to meet legal requirements against U.S. Government demand deposits and net interbank deposits. This is equivalent to total member bank reserves minus required reserves against Government and interbank deposits. In the illustration RPDs amount to \$39.25 billion.

As is the case with any other reserve aggregate, how changes in RPDs affect the money stock is influenced by its uses. Uses of RPDs include required reserves against all time and savings deposits, required reserves against private demand deposits, and excess reserves. Since RPDs exclude required reserves against Government and interbank deposits, information about these two types of deposits is not needed to estimate the relationship between RPDs and private demand deposits. However, in order for the Trading Desk to achieve the targeted path of RPDs, it must estimate reserves required against Government and interbank deposits. This is in addition to forecasting factors needed to achieve total reserves.

Since fewer factors affect the relationship between RPDs and demand deposits than those involving the base or total reserves, the relationship between RPDs and the money stock may exhibit greater stability than either of the others. If this is so, errors involved in *selecting* the correct path of RPDs might be smaller than those involved in selecting an appropriate path for the monetary base or total reserves. If at the same time, currency, Government deposit, and interbank deposit uses of the base can be estimated with considerable accuracy, errors involved in *achieving* the targeted growth rate for RPDs would not be significantly larger than those involved in achieving given growth rates for the base or total reserves. In general, reliable information about some of the uses of a reserve aggregate may tend to make the aggregate which excludes those uses a better operating target.

Interpreting Changes in Reserve Aggregates

As is implied in the foregoing discussion, changes in the growth rate of a reserve aggregate, such as RPDs, should not be viewed as indications of the tightness or ease of monetary actions. For example, any increase in a reserve aggregate which is absorbed as required reserves against time deposits is not available to support expansion in private demand deposits. Consequently, when the public is accelerating the pace of acquiring time deposits, larger growth rates

in the reserve aggregates discussed will be necessary to achieve a given growth rate of money, compared to when time deposit growth is constant or decelerating. In other words, the same rate of growth of a reserve aggregate may result in different rates of growth of money at different times.

In terms of RPDs, one might find that a 6 percent annual rate of growth in money could require a 6 percent rate of growth of RPDs in one month and an 8 percent rate in another. This suggests that one should employ some caution in interpreting changes in the growth rate of RPDs over short periods. A change in the rate of growth of RPDs does not necessarily suggest a change in the influence of monetary actions on economic activity.

It is sometimes assumed, as it is here, that the rate of growth of the money stock over a period of significant duration indicates the impact of monetary developments on the economy. Interpreting the role of reserve aggregates in such a framework requires information about changes in other factors that influence money growth.

Summary

A reserve aggregate is an effective operating target for monetary policy when the Federal Reserve can both select the growth rate of the aggregate required to meet policy goals and achieve that growth rate with some degree of accuracy. If the growth of the money stock is an important intermediate link between monetary actions and the ultimate goal of monetary policy, then the first criterion suggests that the Federal Reserve must be able to forecast the average relation between the reserve aggregate and the money stock over the period in which it attempts to control the reserve aggregate. The second criterion

suggests that the Trading Desk must be able to forecast changes in the reserve aggregate that would result from circumstances other than its own actions.

Errors are bound to exist in both the estimation of the relationship between the growth rates of the reserve aggregate and money and in the forecast of uncontrollable factors influencing the growth of the reserve aggregate. If the errors are small, however, they may be of little consequence to the growth rate of the money stock over the period in which it is significant to GNP.

Thus the choice of a specific reserve aggregate as an operating target depends on whether:

- (1) the information necessary to *select* the appropriate growth path of that reserve aggregate is better than the information necessary to select growth paths of other aggregates;
- (2) the information necessary to *achieve* a selected growth path of that reserve aggregate is better than the information necessary to achieve growth paths of other aggregates; and
- (3) the total information errors (in selecting and achieving) are minimized by using that reserve aggregate as compared to other aggregates.

The FOMC adopted RPDs as its operating target at its February 1972 meeting. RPDs are a reserve aggregate defined as total member bank reserves less reserves required against U.S. Government demand and net interbank deposits.

Since the experiment using RPDs as the operating target has been in existence for only about seven months, there is insufficient evidence to judge the extent to which it is a better target than reserves or the base. The experience thus far indicates, however, that the use of RPDs has been quite successful in producing desired money growth.



An Appropriate International Currency – Gold, Dollars, or SDRs?*

by MICHAEL W. KERAN

IN THE wake of the momentous international economic events of 1971, there is serious talk of the need for major reforms in the international monetary structure. Many economists consider the breakdown of the old system in 1971 as a confirmation of the inherent weakness of a fixed exchange rate system. Their reform proposals call for a general movement to a system of flexible exchange rates. However, policymakers of most countries have demonstrated by word and deed their continued opposition to abandoning the basic structure of a fixed exchange rate system.¹ Operating through the International Monetary Fund (IMF) a new "Group of 20" finance ministers and central bank governors has recently been formed to negotiate a new monetary system.

This article considers the situation in which fixed exchange rates continue to be the basis of any new system (albeit with more frequent rate changes and temporary floats) and focuses on the issue of an appropriate international currency in such a system. Specifically, two questions are investigated. Should the role of the dollar be reduced or eliminated? If so, what could replace it? The discussion will deal almost entirely with international currency in foreign official use. The private use of an international currency is both large and important. However, the

problems considered in this article are primarily related to official, rather than private dollar use.

Central banks have a demand for international reserves somewhat analogous to the demand by commercial banks for domestic reserves.² When international reserves can be held in more than one form, central banks also have a portfolio preference as to the composition of their reserves. There are a number of techniques available to central banks for controlling both the quantity and the composition of their international reserves.

A desirable characteristic of an international currency system is the provision for incentives to central banks to achieve their desired level and composition of reserves in a way which promotes international monetary stability. Such stability can be achieved by prompt changes in exchange rates between national currencies which lead to balance-of-payments equilibrium.

The first section of this article analyzes the international monetary system which existed from the early post-war years to August 1971. It concludes that the multiple unit international currency, such as the dollar-gold system, was defective in the sense that it did not provide sufficient incentives to central banks and governments to achieve equilibrium exchange rates. This led to progressively larger speculative flows of short-term capital, which eventually forced exchange rate changes.

The second section analyzes the single unit international currency system, based on the U.S. dollar, which has evolved since August 1971. It is argued that this system is superior to the old one in the sense that

*The initial idea of this paper evolved from the author's association with Messrs. Peter Clark and John Makin at the U.S. Treasury Department during the academic year 1971-72. This article expresses the views of the author and does not necessarily represent the views of the Federal Reserve System or the Federal Reserve Bank of St. Louis.

¹The fixed exchange rate system is neither completely fixed nor unchanging. The exchange rate is allowed to vary from day to day within a margin. That margin was "temporarily" widened from 1 percent to 2¼ percent around the "par value" as part of the Smithsonian Agreement of December 18, 1971. The exchange rate can be changed within the IMF articles of agreement when there is a "fundamental disequilibrium." This characteristic has led many commentators to call it the adjustable par value rather than a fixed exchange rate system. For a recent defense of the fixed exchange rate concept, see Samuel I. Katz, "The Case for the Par Value System, 1972," *Essays in International Finance* (March 1972).

²See Herbert Grubel, "Demand for International Reserves – A Critical Review of the Literature," in *Review of Economic Literature* (December 1971). Also, see Michael Keran, "Demand for International Money – A Micro Approach," mimeographed (Federal Reserve Bank of St. Louis), available on request.

it provides incentives to move towards equilibrium exchange rates.

The third section considers the possibility of future changes in the international monetary system. On the one hand, fears of future inflation in the United States make many foreign governments reluctant to continue under a straight dollar system. On the other hand, a return to a dollar-gold or other multiunit international currency system would weaken the present incentives for achieving equilibrium exchange rates. Any future monetary reform must simultaneously satisfy the concerns of foreigners with respect to eliminating any undesired dollar balances and the need of the international monetary system to have built-in incentives towards achieving equilibrium exchange rates.

The movement to a system based on a purely international currency unrelated to the national currency of any country (such as an SDR standard) has the potential to deal with both problems. However, there are some important obstacles to an SDR standard which could make it an impractical alternative.

The Dollar-Gold System

In the period from the early 1950s to August 1971, the dollar was not only the national currency of the United States, but also a major component of the international currency of the world. The other major component was monetary gold. The dollar satisfied all the conditions of an international currency: it was a means of payment for settlement of private international transactions (trading currency); it was used by foreign central banks to maintain the value of their national currency in the foreign exchange market (intervention currency); it was a store of value for holding international assets (reserve currency); and it was a unit of account for measuring the value of international transactions. In short, it was the *de facto* international numeraire.³

There is a potential flaw in a multiunit international currency system such as that based on the dollar and gold. It is related to the fact that in this special case a national currency like the dollar has two international ties. One is a standard tie with other national currencies through the system of fixed exchange rates. The other tie is unique to a national currency which is also a component of international reserves. This is the "conversion rate" between the national currency and other elements of international reserves.

³Gold continued to be the *de jure* numeraire in that all official par values established with the International Monetary Fund were defined in terms of gold.

A problem can arise because there are no natural market forces which will make these two links consistent with each other. The system inhibits the United States from changing its exchange rate and does not encourage other countries to change their exchange rates in an equilibrium direction. This has contributed to persistent balance-of-payments surpluses for some countries and deficits for the United States.

In this circumstance the only market force operating to achieve equilibrium exchange rate change is private speculation with associated massive capital flows. This eventually will force appropriate exchange rate changes. However, these adjustments are so long delayed and the associated market disruption so great as to distort trade and financial flows and the efficiency of the international economic system.

The lack of incentives for foreign governments to change exchange rates is related to the fixed conversion rate between the dollar and gold. This is discussed below in the section "The Dollar as International Currency." The restraints on the United States in changing its exchange rate are discussed in the section "The Dollar and Other National Currencies."

The Dollar as International Currency

In general, foreign central banks have maintained the international value of their national currencies by standing ready to buy and sell their currency at fixed rates for the dollar.⁴ Thus, a foreign government's balance-of-payments surplus has been registered, in the first instance, as an increase in dollar reserves, and a deficit as a decrease in dollar reserves. If this led to a dollar share of reserves other than that desired by the foreign central bank, it could adjust its portfolio by exchanging dollars for gold with the U.S. Treasury at a fixed and known price of \$35 per ounce. Since central banks could control the stock of dollars they acquired through this portfolio adjustment process, there was less incentive to control the stock of dollars via a change in the price offered for dollars, that is, through a change in the exchange rate of the national currency for dollars.⁵ In addition, when a central bank could achieve a desired composition in its international

⁴The spread between the buying and selling rates represents the margin around the par value in which the private forces of supply and demand are generally allowed to operate. Until December 1971, the maximum margin was 1 percent above and below the par value. It was "temporarily" increased to 2¼ percent in conjunction with the Smithsonian exchange rate agreement.

⁵This, of course, does not mean that there were no incentives for other countries to change their exchange rate. It only means that there was no incentive associated with achieving a desired level of dollar holdings relative to alternative forms

reserves, it was more likely to accept a higher level of total reserves than if it were unable to control the composition of reserves. Thus, a given increase in the total level of reserves under a gold-dollar standard was less likely to induce the central bank to change the exchange rate.

The portfolio adjustment process by central banks to eliminate undesired dollar balances was not, of course, perfect. Some central bankers were well aware that too large a demand for gold from the U.S. Treasury would lead to a breakdown in the system. However, most central banks maintained remarkably stable ratios of gold to total reserves over the twenty-year period from 1949 to 1969, in spite of the sharp rise in the overall level of reserves. The proportion of gold to dollar reserves for all IMF members (exclusive of the United States) was held in the narrow range between 45 and 55 percent from 1949 to 1969. Only towards the end of 1970 did the gold share fall below this range. The proportion of dollars to total reserves was held in a range between 25 and 30 percent in the period 1953 to 1970. Only in 1971 did the dollar share of reserves rise above 30 percent. Sterling, on the other hand, declined steadily over the whole post-war period as a share of total reserves.

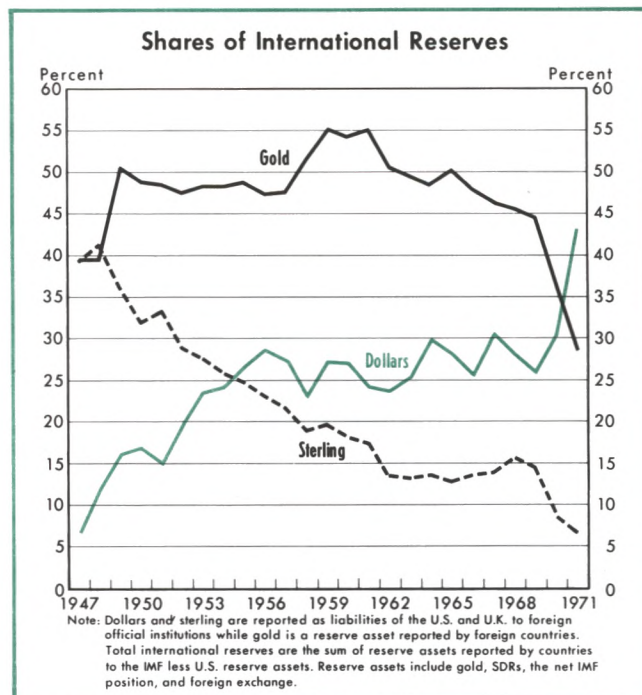
Each of the major industrial countries maintained a relatively stable share of gold to total reserves during this period. Some countries, like Germany and Japan, held relatively small ratios of gold to total reserves, while other countries, like France, Belgium, and the Netherlands, held relatively large ratios. In each country, however, the ratio was remarkably stable.⁶

With the United States maintaining a fixed conversion rate between the dollar and gold at \$35 per ounce, foreign central banks had no incentive to control the dollar share of their reserves through changes in the exchange rate of their national currency for dollars. This represented a significant rigidity in the old international monetary system which permitted many foreign currencies to become undervalued and the U.S. dollar overvalued.

This system was viable only as long as the U.S. international competitive position was strong, and this

of reserve assets. Given the speed by which foreign countries changed their exchange rates after August 1971, this lack of incentive appears to have been substantial.

⁶We cannot, of course, determine from direct observation whether the desired ratio of gold to total reserves was equal to the actual ratio. However, given that these ratios were relatively stable over a period of almost twenty years, it is reasonable to assume that central banks were satisfied with the proportion of their international reserves in gold and in other forms, specifically the dollar.



depended upon the domestic economic performance of the United States and the exchange rate between the dollar and other currencies. To analyze the factors which inhibited the United States from eliminating the overvalued dollar by changing its own exchange rate requires a look at the dollar in relation to other national currencies.

The Dollar and Other National Currencies

The dollar is linked to other national currencies through the system of fixed exchange rates. Conceptually, an internationally overvalued dollar can be eliminated by one of three possible actions: reduction in U.S. prices, increase in foreign prices, or changes in the exchange rate between the dollar and other national currencies. For purposes of the current discussion, we will limit ourselves to considering only the third solution, changing the exchange rate.⁷ The fixed exchange rate system permits correction of an over or undervalued currency by changing the exchange rate between national currencies.

The exchange rate of the dollar, in contrast to the exchange rates of other national currencies, was not under the unilateral control of the United States in the old international monetary system. The rate for the dollar was determined by each foreign govern-

⁷Most empirical studies indicate that it takes a long time and substantial, though temporary, loss of domestic production for monetary and fiscal policy to affect prices. Exchange rate changes, on the other hand, can be taken quickly.

ment fixing the exchange rate for its national currency by intervening in its foreign exchange market with dollars. When all countries maintained their exchange rate by standing ready to buy or sell a unit of their national currency for a fixed number of dollars, the United States, in effect, did not determine its own exchange rate.

This is referred to as the "Nth" currency problem. If there are "N" countries with "N" currencies, there can be no more than "N-1" independently determined exchange rates or prices between these currencies. One of these countries must be passive with respect to the exchange rate of its currency. In the old international monetary system, the dollar, because of its international reserve role, was the "Nth" currency.⁸

The only unilateral action the United States could take was to change or suspend the conversion rate between the dollar and gold. However, either action would have destroyed the dollar-gold international currency system. The United States was inhibited from taking either action because of the disruptive effects it would have on many countries.⁹ Thus an important economic policy tool available to other governments who desire to achieve balance-of-payments equilibrium was not available to the United States within the context of the old international monetary system.

Conflict Between National and International Currency Roles

In principle, there is no reason why there should be a conflict between the national and international currency roles of the dollar. If each foreign country had, by taking appropriate individual exchange rate actions, insured that its currency was not undervalued, the U.S. dollar would have automatically avoided being overvalued. No change in the dollar-gold conversion rate would have been necessary. However, most governments appear to hold the neo-mercantilist view that balance-of-payments surpluses are a sign of national strength, rather than a sign of external imbalance.

⁸If $N = 2$ and France decides that 4 francs is the appropriate exchange rate for \$1, the United States cannot simultaneously decide that it will exchange 3 francs for \$1. These rates are inconsistent with one another.

If $N = 3$ or more, the consistency rule must, of course, also be satisfied between the French exchange rate and any third country, like Germany. However, because the French and Germans use the dollar, and not each other's currency, in establishing and maintaining the exchange rate, the "cross rates" are automatically kept consistent by private arbitragers.

⁹When speculation caused the U.S. balance of payments to experience unprecedented deficits, the United States did take action and the dollar-gold system was destroyed.

When a national currency becomes overvalued and that country experiences balance-of-payments deficits and a weakened international competitive position of export and import-competing industries, it tends to devalue promptly. However, an undervalued national currency leads to balance-of-payments surpluses and increased international competitive strength, both of which may appear to be desirable developments. Thus without other incentives, an undervalued currency has generally not been eliminated quickly.

The IMF articles of agreement prohibit governments from achieving an undervalued currency by explicit exchange rate change. However, if differential rates of inflation or other factors lead to an undervalued currency, a government is not required to appreciate its exchange rate to eliminate the condition. Thus when domestic inflation developed in the United States in the second half of the 1960s, the dollar gradually became overvalued and the international competitive position of the U.S. export and import-competing industries deteriorated. With the exception of Germany, the countries whose currencies were undervalued were not willing to appreciate. It seemed reasonable to them that if domestic inflation in the United States had caused the overvalued dollar and a payments deficit, the United States alone should solve the problem. This view overlooked the fact that the standard policy tool for dealing with an overvalued currency — devaluation — was not available to the United States under the old system.

With other countries unwilling to change their exchange rates, and the United States unable to do so, the only unilateral action the United States could take in the face of an overvalued dollar and massive speculation (short of major trade and capital controls) was to suspend dollar convertibility into gold.¹⁰ This action was taken on August 15, 1971. Although, by itself,

¹⁰The United States could have unilaterally increased the dollar price of gold. However, this action would have eliminated the overvalued dollar only temporarily, if at all. Since the Smithsonian Agreements, we know that foreign governments would allow the United States a devaluation of no more than 9-10 percent. If the United States had raised the price of gold by more, other countries would have followed the U.S. action. Since speculators seem to consider the dollar more than 10 percent overvalued from its May 1971 rates, the demands on the U.S. gold stock would have forced suspension of gold-dollar convertibility. Finally, raising the price of gold would not have eased the balance-of-payments financing burden, as was achieved with suspensions.

The overvalued position of the dollar developed gradually over a number of years. The pressure of events forced things to a head in 1971. These events included: (1) interest rate differentials and the after effects of the partial suspension of Federal Reserve Regulation Q caused large interest sensitive capital flows from the United States; (2)

it did not eliminate the overvalued dollar, this action did put other countries in the position of financing 100 percent of future U.S. balance-of-payments deficits by accepting U.S. dollar denominated liabilities without the option of later converting part of them into gold or other reserve assets of the United States.

The Dollar Standard — Post August 15

Breaking the link between the dollar and gold at least temporarily converted the monetary system into a pure dollar standard. Gold continues to be held as a reserve asset by central banks. However, without the United States actively supporting the price of gold by acting as a residual supplier, other central banks are not likely to be willing to sell or able to buy additional gold at the new official price of \$38 per ounce. Thus gold represents an untradable reserve asset. The other element of total reserves, SDRs, is too small a share of the total to play an important role at this time.

Methods of Controlling Dollar Balances

With the suspension of gold convertibility, foreign central banks are no longer able to make dollar-gold portfolio adjustments to eliminate undesired dollar balances.¹¹ The only methods now available to adjust holdings of dollars are changes in the price at which they are prepared to buy dollars (that is, through changing the exchange rates) or government imposition of capital controls.

Capital Controls — It is unlikely that many countries will choose to control future dollar inflows via stringent new capital controls. Most countries have a much larger stake in world trade than the United States, and a move away from the free flow of trade and capital would be at enormous economic cost. The actions (in contrast to the words) of most governments indicate that they are aware of this.

dock strikes made the U.S. trade balance appear worse than it actually was in the months prior to August 1971; (3) the German Economics Minister implied support of a floating Deutsche mark, causing speculative flows which "forced" the Germans to float the Deutsche mark in May 1971.

¹¹This change can also be stated from the U.S. point of view. Under the old system, the United States would finance part of its balance-of-payments deficit with gold and other reserve assets and part with dollar liabilities. The proportion financed in these ways depended upon the gold-dollar preferences of those countries which were experiencing balance-of-payments surpluses. Under the present international dollar standard, the United States has financed virtually all of its balance-of-payments deficits with dollar liabilities and none with gold. The exceptions to dollar financing are related to the use of the IMF gold tranche and the re-activation, as of July 19, 1972, of the central bank swap network.

There has been an increase in exchange controls since the establishment of the dollar standard. However, up until now (August 1972) they have not been the type which would interfere with "normal" international trade and financial transactions. (See *Wall Street Journal*, July 6, 1972.) These controls are largely ineffective because speculators can "disguise" their actions so they appear to be in normal trade and financial form. The real test of controls will come when governments face the issue of whether to close these "loopholes." If they do, then the progressive expansion of controls will gradually have an adverse effect on normal trade and financial transactions.

Exchange Rate Adjustments — If capital controls are not extensively used, then exchange rate adjustment is left as the dominant method of controlling dollar balances for most industrial countries. In principle, there are four methods by which exchange rate changes could be achieved: (1) a permanent floating exchange rate; (2) a temporary floating exchange rate; (3) a dual exchange rate with a fixed rate for commercial transactions and a floating rate for all other transactions; and (4) more frequent changes in a basically fixed exchange rate system.

The first option, a permanently floating exchange rate, which is widely accepted by economists, has thus far been rejected by the policymakers of almost all industrial countries.¹² Experience with floating exchange rates from August to December 1971 has convinced them that "other governments" will see to it that their export industries enjoy an "unfair" competitive advantage by engaging in a "dirty float." This has meant that central bank intervention in foreign exchange markets has kept the national currency undervalued relative to its equilibrium rate. If such fears lead to competitive devaluations via "dirty float", it represents an unstable condition with respect to achieving equilibrium exchange rates.

The second option (a temporary floating exchange rate) has been used successfully by a number of governments in recent years (most recently the United Kingdom) when there was substantial speculation for or against the national currency. It relieves speculative pressure by allowing a change in the international price of the currency, rather than a change in the country's international reserves, thus avoiding adverse effects on domestic liquidity. This technique can in-

¹²For a discussion of the advantages of flexible rates, see Darryl Francis, "The Flexible Exchange Rate: Gain or Loss to the United States," this *Review* (November 1971), and Harry Johnson, "The Case for Flexible Exchange Rates," this *Review* (June 1969).

crease the flexibility of the international system if used by both surplus and deficit countries.

The third option, a dual exchange rate with a fixed rate for commercial transactions and a floating rate for all other international transactions, is now used by the Belgians and the French. To the extent that the rates are allowed to deviate only temporarily during periods of speculation, it is very similar to the temporary float described above, with a possible advantage that commercial transactions may not be disturbed. However, if the rates are expected to be permanently apart, then there are incentives to incur the cost necessary to arbitrage between the two "markets" for the national currency. Such arbitrage can only be stopped by strict governmental supervision of all transactions. As such, supervision could be as inhibiting as traditional exchange controls and will make many countries reluctant to use this option.

The fourth option involves more frequent changes in a basically fixed exchange rate system. This technique, along with wider bands to discourage interest sensitive capital flows, was used as the basis of the Smithsonian Agreements of December 1971 and currently seems to be the favored method of adjustment.

Preference for Exchange Rate Adjustments

Since the emergence of the dollar standard in August 1971, most central banks have revealed a strong preference to control dollar balances through exchange rate changes rather than controls. In addition, virtually all of the exchange rate changes have been in the direction of eliminating under or overvalued currencies. These actions alone attest to the superiority of the dollar standard over the old system.

Before August 15, only Germany and Canada of the major industrial countries were willing to see their currencies appreciate against the dollar. Only a few weeks after August 15, every major country was willing to appreciate their national currency against the dollar. The exchange rate changes were negotiated in the setting of an international conference because most currencies were undervalued against the dollar, but were not necessarily undervalued with respect to each other. A multilateral agreement could take into account the effects of all the exchange rate changes occurring simultaneously.

The important point about the Smithsonian episode is that the realignment of exchange rates, however justified by underlying economic conditions, would not have occurred when it did if the United States had not suspended gold convertibility. This put the

world on a dollar standard and created incentives for exchange rate changes.

Proposals for Change in the International Monetary System

Judging by the comments of central bankers and others involved in international finance, the recently evolved dollar standard apparently is not considered a suitable, permanent arrangement. The economic rationale against a dollar standard held by foreign central bankers is that inflation in the United States since 1965 has generated expectations of continued inflation.¹³ They appear to be reluctant to hold a dominant portion of their international reserves in a form which they expect to decline in real value in the future.¹⁴

For the United States the present dollar standard may be superior to the old gold-dollar standard. If other countries continue to follow neo-mercantilist policies of maintaining an undervalued national currency to encourage exports and balance-of-payments surpluses, then the U.S. dollar will continue to be overvalued, and the U.S. consumer will enjoy a subsidy on foreign purchased goods. The resulting U.S. payments deficits are financed almost completely with dollar liabilities. This method of financing deficits does not impose the type of balance-of-payments constraint on U.S. policy actions which existed under the old gold-dollar standard.

There is, however, a potential for U.S. dissatisfaction with the dollar standard. If the dollar continues to be overvalued there will continue to be a decline in the relative size of U.S. export and import-competing industries and a displacement of labor from those industries. Some U.S. industries, which would be internationally competitive if the dollar were at its equilibrium exchange rate, are not as competitive with an overvalued dollar. The resulting distortion of international trade implies a less than optimally efficient international division of labor. An improvement in the international division of labor would benefit not only the United States, but all trading nations. In addition, an overvalued dollar has led to increased Congress-

¹³There is another noneconomic argument which also contributes to the reluctance of foreign central banks to continue on a dollar standard. A dollar standard places the United States in a unique category which, with the rise in the relative economic position of Europe and Japan, is no longer justified.

¹⁴It would seem that if the interest rate on dollar denominated reserve assets included an appropriate inflation adjustment, the central bank would feel compensated. However, the evidence suggests such is not the case. See M. Keran, "Demand for International Money - A Micro Approach."

sional pressure for protectionist legislation which could have adverse effects on world trade. Thus the United States and the rest of the world would seem to have an interest in international monetary reform to the extent that it increased the probability of an equilibrium exchange rate for the dollar.

These observations indicate two criteria for a generally acceptable monetary reform:

- (1) the concern of foreign central bankers about possible future decline in the value of the dollar should be satisfied, and
- (2) the probability of equilibrium exchange rates for the dollar should be improved.

Various proposals for monetary reform will be analyzed on the basis of these criteria. The procedure will be to consider the ways in which foreign central bankers can be protected from a possible inflation in the United States, and then whether these procedures contribute to the achievement of equilibrium exchange rates.

There are three ways in which the concerns of central bankers regarding a future decline in the value of the dollar could be dealt with: first, by engendering belief that there will be no future U.S. inflation; second, by guaranteeing the real value of dollar denominated international assets; and third, by reducing or eliminating the dollar component of international reserve assets.

The first solution is not feasible, because the U.S. Government cannot guarantee that inflation will never occur in the future. The second solution is not desirable on the basis of the criteria mentioned above, because it reduces the present incentive for equilibrium exchange rate changes by other governments without increasing the ability of the United States to control unilaterally its exchange rate. If foreign central banks had a guarantee that the real value of their dollar reserves would be maintained irrespective of the degree of U.S. inflation, the incentive on the part of these governments to change their exchange rates in the face of a large dollar inflow would be reduced.¹⁵ The third solution would seem to be the

¹⁵This assumes that the maintenance of value is based on some measure of U.S. price inflation or U.S. initiated exchange rate change. If, however, the maintenance of value is based on changes in the exchange rate taken at the initiative of the foreign government, it might actually increase incentives for equilibrium exchange rate changes. In this circumstance, a country experiencing a balance-of-payments surplus and a dollar inflow would benefit from the maintenance-of-value option only if it appreciated its exchange rate. Any time a country appreciated, the United States would stand ready to increase the nominal value of its dollar reserves in proportion to the appreciation. Presumably, when a country depreciated, the United States would have to reverse the process. However, some governments which have experienced chronic inflation, and therefore periodic devaluations,

only economically viable one — reduce or eliminate the dollar component of international reserves. This would require eliminating the undesired dollar balances which accrued to central banks during 1971 and would insure that future accruals of dollars do not exceed desired holdings.

Eliminate Current Excess Dollar Holdings

This issue can, in the final analysis, be solved only in the market place. If the exchange rates established in December 1971 represent realistic values for the major currencies in the sense of eliminating the overvalued dollar, private speculators will come to accept them as reasonably permanent. They will then take their speculative profits by selling foreign denominated assets acquired in 1971 to the respective central banks for dollars. This natural market force should reduce dollar holdings of most central banks to more desired levels.

If the December 1971 exchange rates have not convinced speculators that the overvalued dollar has been eliminated, then no amount of international negotiation (other than on new exchange rates) will reduce the excess holdings of international reserves of central banks. An international conference could conceivably negotiate a *switch* of reserves from dollar denomination to some other form, such as SDR denomination. However, the only way the stock of reserves can be reduced is if private speculators are convinced that there are no more profits to be gained by continuing to hold assets denominated in foreign currency, or if the United States runs a sufficient surplus to officially absorb the dollars. The elimination of the overvalued dollar is the necessary and sufficient condition for either development.

Prevent Future Excess Dollar Holdings

Most proposals for reforming the international monetary system include as a key element the renewal of dollar convertibility into gold, SDRs, or both. This is designed to allow central banks to control their dollar holdings by converting undesired balances into alternative reserve assets. There are basically only two ways these proposals could be implemented. The first would be a system similar to that which existed prior to August 15 — either by returning to the gold-dollar system or by developing a new SDR-dollar

would be reluctant to participate in this type of arrangement. They should have the option of, in effect, choosing ahead of time whether or not to participate in the maintenance-of-value agreement. However, it is unlikely that this procedure with its appearance of a "bribe" would ever be agreed to.

system. The second method would require the virtual elimination of the dollar from its reserve asset role, with nearly all dollars acquired by central banks in the foreign exchange market being immediately converted into a truly international currency, unrelated to any national currency.

Achievement of the first proposal would result in the re-establishment of a multiunit international currency with the U.S. dollar continuing to be a major element. In a world of "N" national currencies and "N-1" exchange rates between those currencies, the dollar would continue to be the "Nth" currency, the exchange rate of which would be residually determined by the collective exchange rates of the "N-1" currencies. The only unilateral action the United States could take would be to change or suspend convertibility of the dollar into the other forms of international currency. This would destroy the new system just as U.S. action in August 1971 destroyed the old system.

In the case of the gold version of this system, it would be identical to that which existed before August 15 except that with the U.S. gold stock standing at \$10 billion, the life expectancy of such a system would not be very long.¹⁶ The second version with SDRs and dollars would presumably be negotiated within the context of a substantial increase in SDR balances for the United States. This would permit the United States to act as a residual supplier of SDRs to other central banks as they operated to achieve desired portfolio ratios of SDRs and dollars.

This system could work only as long as inflation in the United States (or some other major change in the structure of world trade) did not lead to an overvalued dollar. However, it is possible that the dollar could eventually become overvalued again, because a dollar-SDR system provides no mechanism to automatically keep the international value of the dollar in line with its domestic value. Central banks of countries with balance-of-payments surpluses could adjust their international reserve portfolios between dollars and SDRs by means of U.S. convertibility of dollars to SDRs. These central banks would have no incentive to make the adjustment by changing the exchange

rate at which they would purchase dollars with their national currency.

Neither a dollar-gold or a dollar-SDR system would provide the present incentives for foreign governments to make equilibrium changes in their exchange rates, nor would either provide a greater opportunity for the United States to unilaterally change its exchange rate. Thus, these proposals would lead to a system which is in these respects inferior to the present dollar standard for the United States.

The only reform of the present dollar standard which would provide incentive for equilibrium exchange rate changes (exclusive of *freely* floating exchange rates) would be a system based on a truly international currency. The natural candidate for the role of a truly international currency would be Special Drawing Rights (SDRs) of the IMF.¹⁷ This is an established and functioning system with \$9.5 billion already credited to the countries which are members of the IMF.

Establishing a Truly International Currency — SDRs

In a truly international currency system, the great bulk of international reserves would be in the form of SDRs and gold.¹⁸ Whether any minimum working dollar balances were held by central banks would depend upon the extent to which the dollar continued to be used as a market intervention currency. In any event, modest dollar holdings by central banks would not be inconsistent with an SDR standard. The SDR-gold conversion rate would be fixed and unchangeable. There would be nothing to cause speculation about a change in this conversion rate, because neither unit is a national currency. All national currencies, including the U.S. dollar, would define their exchange rates in terms of SDRs.

There are a number of features which would make such a system attractive. For the United States it has the potential of increasing unilateral control over its exchange rate, thus reducing dependence on other countries making equilibrium exchange rate changes. For the rest of the world, it implies U.S. financing of

¹⁶The value of the U.S. gold stock could be increased if the dollar price of gold were increased substantially. However, as such a price change could only be accomplished by the United States, it is not likely to occur. Although a higher gold price may allow a dollar-gold system to last longer, it would be at substantial economic cost to the United States. Equally important, it would take away the present incentive of other governments to make equilibrium exchange rate changes. It would have the same problems as a dollar-SDR standard as discussed in the text, plus future speculation about another change in the dollar-gold conversion rate.

¹⁷A pure gold standard would provide the same incentives as an SDR standard. However, a gold standard is inferior because the monetary supply of gold is constrained by changes in gold mining techniques, commodity demand, and discovery of new mine fields. None of these problems are faced in an SDR standard because it is a pure fiduciary currency, the supply of which is regulated by the member countries of the IMF.

¹⁸A proposal along this line has been made by Andre Vlerick, the Belgian Minister of Finance. See *American Banker*, July 17, 1972.

its balance-of-payments deficits with reserve assets rather than increased dollar liabilities.

Advantages to the United States – The movement from the present international currency based on the dollar to one based on SDRs would solve the “Nth” currency problem. With the SDR as the international currency we would have, in effect, “N” national currencies and an “N + 1” international currency. This would permit “N” independent prices or exchange rates to exist. The United States could then change its exchange rate with respect to SDRs. With SDRs and gold as the dominant forms of reserve assets, and dollars held to minimum working balances, a change in the dollar-SDR exchange rate would leave an unchanged conversion rate between the major components of the international currency.

The United States would be in the same position as other countries in being able to change unilaterally its exchange rate and thus move towards eliminating an overvalued national currency. This would not only help the United States achieve balance-of-payments equilibrium, but by indirectly reducing the undervalued position of other national currencies, it would help achieve world-wide balance-of-payments equilibrium.

The United States still would not have complete control over its exchange rate. No country ever does. There are two factors which have inhibited this control in the past. The first is “monetary” – the dollar’s role as an international money – and the second is “real” – the size of the United States in world trade. An international monetary reform could deal with the first issue, but not with the second. However, this “real” factor constrains every country to some extent and is not unique to the United States. Just as countries with large and important trade ties with the United Kingdom generally follow sterling in any exchange rate change, so some other countries would follow the dollar in any exchange rate change.

These “real” constraints on U.S. control of its exchange rate have been steadily declining because of a decline in the relative importance of the United States in world trade. The U.S. share of world exports fell from 21 percent in 1953 to 18 percent in 1960 and to 14.7 percent in 1971. Although the rate of decline may be reduced by a correction of U.S. inflation, its direction will undoubtedly continue to be downward for some years to come unless present trade talks are successful in blunting the effects of preferential trading blocks, such as the enlarged Common Market.

Advantages to Others – A major criticism by foreign governments of the old monetary system was the



asymmetry which allowed the United States to partially finance balance-of-payments deficits by increasing dollar liabilities while foreign governments had to draw down international reserve assets. This asymmetry which appeared to be to the advantage of the United States was, of course, matched by a parallel asymmetry which was to the disadvantage of the United States – the requirement that the United States refrain from changing its exchange rate. It is in the nature of the system that when a domestic currency is also used as the international money, that country will have both the inability to control its own exchange rate and the ability to finance at least part of its payments deficits with increased liabilities rather than decreased assets.

If SDRs replaced the dollar as the international currency, then the United States would be on the same footing as other countries.¹⁹ Dollars which came into the hands of foreign commercial or central banks would automatically be converted into SDRs at the

¹⁹The use of SDRs as an international currency would also make the United States similar to other countries in terms of domestic monetary policy control. With the dollar as the international currency and the Federal Reserve free from intervening in the foreign exchange market, domestic monetary actions are not impeded by international trade and capital flows. The fixed exchange rate for the United States is maintained by other countries. Under an SDR regime, the Federal Reserve would have to intervene in the foreign exchange market to maintain the fixed exchange rate for the dollar. The purchases and sales of SDRs in the foreign exchange market would have the same effect on the monetary base and bank reserves as purchases and sales of Treasury bills from open market operations.

This could be offset by the Federal Reserve in the short run. However, as world capital markets become more integrated, it will be progressively more difficult for central banks in general, and the Federal Reserve in particular, to isolate the domestic monetary policy from international capital flows under a regime of fixed exchange rates.

Federal Reserve. Thus U.S. payments deficits would be financed completely with reserve assets.

Problems of an SDR Standard

An SDR standard would be a new and untried system. Governments and central banks would naturally be reluctant to place something as important as the international monetary standard in an untested framework. One cannot anticipate all the problems which would emerge from the system until it is actually implemented. However, some foreseeable problems can be grouped under the headings "Supply" and "Demand" for SDR.

Supply — On the supply side, the potential problem can be stated simply. What would insure that the issuance of SDRs would be such as not to contribute to the present international inflation? The SDR is a fiat currency, the supply of which is determined by the issuing agency. In this case, the agency is the International Monetary Fund (IMF) and the amount of each issue is decided by an 85 percent weighted vote of the member countries. This, in effect, gives a veto power to the United States and also to the Common Market countries (if they vote as a group). In deed, any group of countries with 15 percent of the weighted votes can veto an increase in an SDR issue, which would seem to eliminate any inflationary bias in an SDR standard.

Demand — On the demand side, the problems are somewhat more complex, but they all come down to one issue, how to induce central banks to actually hold a significant share of reserves in the form of SDRs. It is not sufficient to just change the IMF articles of agreement making SDRs rather than gold the *de jure* currency. As long as the dollar continues to be the *de facto* international currency, the world will continue to be on a dollar standard.

The movement to an SDR standard would represent a substantial change in the working practices of central banks and perhaps of commercial banks and others in international trade and finance. The SDR is a relatively new concept and has been in active use by central banks for less than three years. An international SDR standard would represent a major expansion from its present use, and the confidence which comes with years of use and experience with a facility is not present in this case. Thus, to make SDRs actually replace dollars in international use, institutional changes would be required to encourage the use of SDRs at the expense of dollars. Only when central banks actually have been induced to hold SDRs instead of dollars would the SDR standard be operative.

At present, there are no incentives to induce foreign central banks to hold SDRs rather than dollars. Dollar reserves are held in interest-earning form, such as Treasury bills or certificates of deposit. SDRs, on the other hand, pay only a nominal 1.5 percent rate of interest. In addition, the dollar would be in constant demand in the foreign exchange market as the intervention currency by central banks and as the trading currency for private international transactions. Both factors would create incentives for central banks to increase their share of reserves in dollar form versus SDR form over time. Indeed, this is how the dollar assumed its reserve asset role in the old monetary system.

There are two obvious steps which could be taken to make SDRs more attractive for central bankers to hold. First, the interest rate on SDRs could be increased to be more competitive with dollar assets. Second, central bank intervention in the foreign exchange market could be switched from dollars to SDRs. If the interest rate on SDRs could be increased substantially, then perhaps only this action need be taken. However, if for institutional reasons the interest rate on SDRs can be raised only marginally, perhaps SDRs would also have to replace dollars as the central bank intervention currency in the foreign exchange markets. This would also require commercial banks to hold SDRs. One method of implementing these proposals is described in the appendix.

With gold or SDRs making up the bulk of international reserves and dollars reduced to minimum working balances, a change in the U.S. exchange rate would not affect central banks as in the past. Central banks would not incur an accounting loss on the domestic value of their international reserves or a financial loss through a decline in the international purchasing power of their reserves if the dollar was devalued.

In this SDR world, if private speculators anticipated a devaluation of the dollar, they would attempt to convert their dollar balances into SDRs at the Federal Reserve (or if the dollar continued to be an intervention currency, at other central banks). The United States could react to this development with almost the same array of alternative actions as any other government. If it was considered that private speculation reflected a "true" overvaluation of the dollar, the United States could devalue with respect to the new international numeraire — SDRs. If the dollar was not considered to be overvalued, the United States could arrange special credit facilities with the IMF or other governments to satisfy the speculative demand.

One action the United States could not take which other governments could, would be to suspend convertibility of the dollar into SDRs. As long as the dollar continued to be the intervention currency of other central banks, dollar-SDR convertibility would be needed to insure that foreign central bank dollar holdings did not increase beyond minimum working balances.

Conclusions

The intention of this article has been to analyze the role of an international currency with respect to its contribution to achieving international monetary stability. The article assumes that the international system advocated by most economists — freely floating exchange rates — is not applied, and thus looks at the effects which alternative forms of international currency can have on promoting equilibrium exchange rate changes within a system of basically fixed rates.

The old monetary system based on a multiunit dollar-gold international currency was deficient in that it did not encourage foreign governments to make equilibrium exchange rate changes and it inhibited the United States from taking such actions. This rigidity in the face of changing economic conditions made existing exchange rates increasingly unrealistic. As a result, private speculation reflected in massive short-term capital flows became increasingly frequent occurrences in the second half of the 1960s, culminating in the breakdown of the old system in 1971.

The international dollar standard which emerged in 1971 is superior to the old system in encouraging other governments to make equilibrium exchange rate changes, even though it still inhibits the United States

from making exchange rate adjustments. The Smithsonian Agreements attest to the success of the dollar standard in that direction. The act of the United States in changing the conversion rate between the dollar and gold from \$35 to \$38 per ounce has no economic meaning as long as the dollar remains inconvertible into gold.

Discussions of the need for further changes in the international monetary system are largely based on foreign dissatisfaction with a single-unit dollar standard. This is primarily due to expectations of further inflation in the United States which would reduce the real value of international reserves denominated in dollars.

Given the reluctance of major central bankers to accept freely floating exchange rates, the great challenge for international monetary reform is to devise a system which would simultaneously encourage governments to make exchange rate adjustments and satisfy the legitimate concerns of foreign central bankers about holding excessive dollar balances. One way to accomplish these two goals would be the establishment of a truly international currency unrelated to the national currency of any country. This would permit the United States more control over its own exchange rate without having to rely on the actions of other countries to eliminate an overvalued dollar and, at the same time, insure that dollars accruing to foreign central banks would “automatically” be converted into the new international currency. A modified form of the present Special Drawing Rights (SDRs) of the IMF is a natural candidate for this truly international currency function if the real problems associated with an SDR standard can be overcome.

APPENDIX

Substituting SDRs for Dollars as the International Numeraire

To replace dollars with SDRs as the international numeraire, it would be necessary to make it more attractive to hold SDRs. Two proposals along this line are (1) increase interest payments on SDRs and (2) make SDRs the intervention currency in the foreign exchange market. This appendix considers how these proposals could be implemented.

Interest Payments on SDRs — There would be two ways to increase SDRs and two sources of interest

payments.¹ The first source would be the conversion of presently outstanding dollar assets in the hands of foreign central banks into SDR assets. The dollar assets could revert directly to the United States or to the IMF. In either case, the interest rate which would normally have

¹A number of studies have indicated the theoretical desirability of increased interest payments on SDRs. It is postulated that it would increase the demand for international reserves without adding to the pressures for world inflation. With larger reserves, temporary deficits in the balance of payments can be met with smaller and more time-consuming adjustment actions which would reduce economic instability and resource misallocation.

been paid on the dollar assets could be used to pay interest on the SDRs. If the dollars reverted to the U.S. Treasury and were replaced by a special SDR issue, the interest on Treasury bills would be reduced and that on special SDRs increased by an equal amount. If the dollars were transferred to the IMF, the Treasury bills would still be outstanding and the interest payments made to the IMF, which in turn would credit it to member countries in proportion to their SDR holdings. In either case, the interest cost to the U.S. Treasury would probably be no greater than it is now.²

The second source of increased SDRs would be the annual addition to total reserve assets needed to meet the demand for international reserves of central banks. The *amount* of the interest payment must be the same on all forms of SDRs, otherwise either a "black market" would develop with the price on low earning SDRs lower than on high earning SDRs, or Gresham's law might operate. Low earning SDRs would be used to settle international accounts and high earning SDRs would be held for income purposes. The method of interest payments could continue as at present on net additions of SDRs, with countries paying interest on SDRs according to their allocation and receiving interest according to their holdings.

SDRs as an Intervention Currency—A major incentive for foreign central banks to hold dollars as a reserve asset is its role as an intervention currency in the foreign exchange market. The standard way to control the international value of the domestic currency is to buy and sell dollars in the private foreign exchange market at a fixed price with respect to the domestic

²There are auxiliary issues which must be dealt with. (1) Would the interest *rate* earned on SDRs be just equal to that earned on Treasury bills? (2) Would the interest *payment* be denominated in dollars or SDRs?

With respect to the interest rate, a case can be made that it should be lower on SDRs than dollars because SDRs are a less risky asset. It is not subject to change in value by the unilateral act of one government. This same argument would imply that interest payments should also be in SDRs. This, in effect, would extend the maintenance of value protection implicit in originally exchanging SDRs for dollars, to the interest income on the assets.

If the U.S. Treasury paid interest in SDRs rather than dollars, the effect on the balance of payments would be almost identical. In the SDR case, the Treasury would have to acquire SDRs in the exchange markets before the interest payments were due. In the dollar case, the Treasury would not have to settle in SDRs until after the interest payment was made. In either case, the United States would have to run a proportionately larger balance-of-payments surplus to pay the interest cost.

The only difference in the two cases is that in the former the U.S. Treasury takes the exchange risk, and in the latter case the foreign country takes the exchange risk. It would be in keeping with the standard market practices for the U.S. Treasury to pay a somewhat lower interest rate if it absorbed the exchange risk by making interest payments in SDRs.

currency. When almost all countries do this, they, in the aggregate, determine the international value of the dollar.

Although it is possible for the SDR to be the major reserve asset without also being the intervention currency, SDRs would be in greater demand if they performed both functions. First, it would reduce transactions costs if SDRs did not have to be swapped for dollars when intervention is conducted in the foreign exchange market. There are problems of delay, and sources of dollar balances that could be avoided if the SDR were the intervention currency. Second, if the dollar itself were fluctuating within its band in the foreign exchange market, there would be serious problems of valuating transactions within the market and distributing the exchange risk of dealing with a variable dollar.

From the point of view of central banks dealing with other central banks, the IMF, the Federal Reserve, and the private foreign exchange markets, it is less costly and less risky to have the reserve asset also used as the intervention currency.

Achieving an intervention role for SDRs would not be easy. Such a role would require commercial banks to hold working balances of SDRs. They would be reluctant to take this step given the present low interest rates. An alternative to paying a higher interest rate would be to introduce an administrative rule that all foreign exchange transactions between the public and the central bank must be in SDRs or the domestic currency. Commercial banks which want the advantages of acquiring foreign exchange at the official price would have to hold SDRs. When the United States has a balance-of-payments deficit, the excess supply of dollars which would accrue to foreign commercial banks would be converted into SDRs at the Federal Reserve, which would be the only central bank allowed to deal in dollars. The SDRs, in turn, could be sold by these commercial banks to their national central bank for domestic currency. The converse would happen when the United States had a balance-of-payments surplus.

The United States could control its exchange rate by standing ready to buy and sell dollars for SDRs at whatever rate it unilaterally established. The United States could choose to deal with a deficit either by changing the price at which SDRs were exchanged for dollars, or by shifting the international supply and demand schedules for dollars through domestic monetary and fiscal actions.

If the dollar continued to be the intervention currency, foreign central banks would have to take action *explicitly* to validate the new dollar-SDR exchange rate by deliberately changing the rate at which they exchange dollars for domestic currency. With the SDR as the intervention currency, this explicit "cooperation" by other central banks would not be required.

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