

ESSAYS IN INTERNATIONAL FINANCE

No. 74, April 1969

PRIVATE AND OFFICIAL
INTERNATIONAL MONEY:
THE CASE FOR THE DOLLAR

RONALD I. McKINNON



INTERNATIONAL FINANCE SECTION

DEPARTMENT OF ECONOMICS

PRINCETON UNIVERSITY

Princeton, New Jersey

This is the seventy-fourth number in the series ESSAYS IN INTERNATIONAL FINANCE *published from time to time by the International Finance Section of the Department of Economics of Princeton University.*

The author, Ronald I. McKinnon, is Associate Professor of Economics at Stanford University, in California, but has been for a good part of the current academic year at Stanford in France. He is the author of a number of articles in the areas of international trade, finance, and development, as well as co-author of an issue in this Section's series of PRINCETON STUDIES IN INTERNATIONAL FINANCE, The Implications of International Economic Integration for Monetary, Fiscal, and Exchange-Rate Policy, published in 1966.

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FRITZ MACHLUP, *Director*
International Finance Section

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Department of Economics
Princeton University
L.C. Card 70-81843

Printed in the United States of America by Princeton University Press
at Princeton, New Jersey

PRIVATE AND OFFICIAL INTERNATIONAL MONEY: THE CASE FOR THE DOLLAR

International money has no supernational legal framework to which analysts can refer in order to establish its properties. Its natural domain is divided among autonomous national jurisdictions. Yet the classical need for a numeraire, medium of exchange, and store of value is felt at the international level just as it is felt within nation-states. Indeed, international money does now exist, with its use continually expanding according to certain conventions. But these conventions are elusive, as are the mechanisms underlying the creation of international money. Both are prone to different interpretations by national authorities, leading to crises and possible disruption of world commerce. The basis of much economic growth in the postwar period is thereby threatened.

It is worth much to the world to have an established and fully coherent monetary mechanism that is both understood and adhered to by national authorities because they believe it to be mutually beneficial. This essay favorably interprets the American dollar as international money, based on what have become virtual conventions of international exchange, requiring very little alteration in our existing political and economic institutions. The implications of an international dollar standard for economic policy and welfare are then drawn.

I. INTRODUCTION

The demand for international money has two important components: (1) reserve assets held by official institutions such as central banks and treasuries, and (2) private holdings of internationally liquid assets by individuals and by financial and nonfinancial corporations. Official reserves have dominated academic and governmental thinking on international "liquidity," as evidenced by the prolonged negotiations within the Group of Ten resulting in the Special Drawing Rights (SDR's) facility of the International Monetary Fund. SDR's would be used exclusively by governmental institutions.

In his most recent book, *Our International Monetary System: Yesterday, Today, and Tomorrow*, Robert Triffin reiterates the need for deliberate expansions in world liquidity, but confines his attention to official institutions (pages 88-102) and does not discuss the problem of private

international money. He envisages that SDR's, or a somewhat broader facility, will eventually replace gold and national currencies in official reserves. Indeed, one of the points of unanimous agreement among the conferees in the Group of Ten deliberations was that the use of the dollar—and the concomitant deficits in the balance of payments of the United States—should cease or greatly diminish once the new international facility is ratified.

However, the dollar is, internationally, much more than an official reserve asset. Besides being the vehicle currency which governments use to enter the foreign-exchange market to peg their own exchange rates, there are enormous private holdings by foreigners of short-term dollar claims on American banks and additional pyramided claims on Euro-dollar banks. Indeed, the spectacular growth of the Euro-dollar market—and more recently of dollar-denominated Euro-bonds—has consolidated the dollar's role as *the* dominant international money. It is used as a numeraire and as a means of finance for both trade in goods and trade in securities. It is the center of the world's international capital market where both official and private institutions borrow and lend.

Given this second “nonofficial” role of the dollar, this essay analyzes a number of issues related to the dichotomization of our thinking on official and private international liquidity. We shall investigate the determinants of private and official demand for international money in Section II. There it is demonstrated, among other things, that floating exchange rates are not a solution to the general liquidity problem, as is commonly thought. The demand for international money would continue to exist and possibly be augmented under floating rates. Moreover, there is a need to establish a single financial instrument, most conveniently dollars, as international money.

Having established the international demand for money, the mechanism for supplying dollars to the rest of the world is developed in Section III. What ensures that the foreign demand for international money in real terms—after price-level deflation—can be satisfied by the apparently “random” balance-of-payments deficits of the United States? It is demonstrated that a systematic and probably adequate mechanism for supplying international money does in fact exist. However, the workings of this mechanism are not recognized by American authorities in their policies for international payments, particularly in their restrictions on outflows of capital.

Knowing that the dollar standard can function well but does function haphazardly, the attendant welfare implications are investigated in Section IV. It is frequently said that a dollar-based monetary system is exploitive because of the ability of the United States to create credit

“costlessly” and to obtain real goods and services in exchange. Numerous alternative plans have been made for channelling the “proceeds” of, or “seignorage” from, the issue of international money to underdeveloped economies. The capture of this surplus would be accomplished by centralizing money creation in an international agency rather than having it accrue to a single national economy. However, it is contended in this essay that such seignorage need not accrue to the issuer of international money. Indeed, it will be shown that the presence of unrequited seignorage would mean the international monetary mechanism was functioning suboptimally. Under the correct policies, the dollar standard can function efficiently on a quid pro quo basis.

In Section V, a more “collectivist” approach to the issue of international money is investigated. Is it possible for an international agency to establish an independent monetary standard? The properties of Special Drawing Rights or similar facilities are explored in this connection, as is the whole relationship between them and international holdings of dollars. It turns out that SDR’s will necessarily have a secondary although possibly supporting role *within* the dollar system.

Finally, after establishing that a dollar standard can be nonexploitive and a most efficient practical instrument for providing badly needed international money, we shall investigate the implications for American monetary, fiscal, and exchange-rate policy in Section VI. Peripherally, economic policy in other countries, particularly regarding exchange rates, will also be examined. It seems at first glance that many complications would arise in domestic monetary and fiscal policy if American authorities finally recognized that they are responsible for the health of the international monetary mechanism. This essay contends that such is not the case. Full recognition of international obligations would, on net balance, simplify American economic policy. In the recent past, foreign-exchange and internal-policy mistakes have been compounded by continual failure to recognize the true strength and international status of the dollar, to the detriment of all concerned.

II. THE DEMAND FOR INTERNATIONAL MONEY

The demand for official reserves is usually associated with the pegging of exchange rates at preassigned levels and the free convertibility of external transactions. With these commitments, a national authority must buy back its own currency by selling foreign exchange if the price of foreign exchange rises; and it must buy foreign exchange with its own currency if the price of foreign exchange falls. Exchange rates can then be kept within the narrow range prescribed by the International Mone-

tary Fund without resorting to controls on imports or other direct interventions. To be able to buy and sell freely, national authorities hold reserves of convertible foreign exchange.

Dollar Reserves and Exchange Stabilization

In the postwar period, outside of the Sterling Area and outside of the now defunct European Payments Union, the vehicle currency commonly used as foreign exchange has been the American dollar. There is a legal reason for this which in turn reflects underlying economic forces. Legally, under the Articles of Agreement of the International Monetary Fund, member countries are obligated to peg their currencies either to gold or to the currency of a country which is pegged to gold. Among major countries, only the United States has opted to peg its currency directly to gold. Other noncommunist industrial countries have pegged their currencies to the American dollar within a margin of 1 per cent on either side of parity. Thus, all countries—other than the United States—are obligated to buy and sell dollars in the foreign-exchange market to maintain the international value of their currency. The United States retains the residual obligation to buy and sell gold within $\frac{1}{4}$ of 1 per cent of \$35 per ounce. Since the gold crisis of March 1968, the Government of the United States has restricted its buying and selling of gold to foreign central banks.

This asymmetrical relationship of the United States to the rest of the world has distinct administrative advantages. The Fund's mandate to maintain stable exchange margins is made easier by having one anchor or reference currency to which all the others are pegged. Each government directly maintains the range of 2 per cent (1 per cent on either side of parity) for the rate of exchange between its currency and dollars; and the resulting private arbitrage maintains a range of 4 per cent for the exchange rate between any pair of nondollar currencies (2 per cent on either side of parity). The obligations of national authorities in the foreign-exchange market are, therefore, simply and unambiguously defined. For example, no decisions have to be made as to whether France or Germany is responsible for the rate of exchange between francs and marks, as long as both maintain their official parity with the dollar.

Under the current system of pegging within 1 per cent of dollar parities, it is perhaps instructive to illustrate with a numerical example the maximum variation of 4 per cent possible between nondollar currencies. Suppose the parity dollar-price of pounds is \$2.40 and the parity dollar-price of francs is \$.20. Therefore, at parity, 12 francs exchange for 1 pound. Suppose now that pounds move to their minimum dollar price

of \$2.376 and francs to their maximum dollar price of \$.202. Triangular arbitrage by private speculators in pounds, dollars, and francs will then drive the franc-pound rate to 11.76, which is just 2 per cent *below* the parity rate of 12.

In contrast, if pounds move to their maximum dollar price of \$2.424 and francs to their minimum dollar price of \$.198, then private arbitrage will drive the franc-pound rate to 12.24, which is just 2 per cent *above* parity. Thus, a complete range of variation of 4 per cent of parity is possible between francs and pounds. Of course, only a maximum 2-per-cent variation is possible between pounds and dollars or between francs and dollars.

However, with more than one reference currency, the 4-per-cent variation would *not* be automatically maintained if the reference currencies varied with respect to each other. Indeed, increased but not complete exchange flexibility—as advocated by many economists—would still require the use of a single reference currency for maintaining unambiguous, if increased, exchange margins. In the pre-1914 gold standard, gold provided this point of reference. However, in the absence of any desire to perpetuate the gold standard, it is convenient to settle on one major national currency as the reference point. Thus, the United States is left without an exchange-rate policy of its own with respect to other national currencies, since they are all responsible for maintaining parity with the dollar.

This singular position of the United States is of great convenience to all concerned and is the proximate cause for other countries holding “working” dollar balances for intervening in the market for foreign exchange. Nevertheless, the legal mechanism should not obscure the underlying real strength of the dollar. After World War II, the dollar was the only major currency which was freely convertible and had the best reputation for maintaining its value in terms of a representative bundle of internationally traded goods. It became the most convenient numeraire for official settlements among currencies of limited convertibility. Since major European currencies returned to a higher degree of convertibility in 1958, foreign private corporations and individuals have exercised this increased leeway to acquire and hold dollar balances. The dollar is used increasingly to denominate international economic transactions, even those not directly associated with the United States. Thus, the international use of the dollar is not dependent on the rules of the International Monetary Fund, which themselves represent underlying economic forces. Nevertheless, these rules do conveniently formalize the central role of the dollar in exchange stabilization.

Flexible Exchange Rates

Pegged exchange rates and the desire to maintain external convertibility contribute to the demand for official reserves. Nevertheless, it would be naive to suppose that freely flexible or floating exchange rates would eliminate this demand. Nations would still find it desirable to maintain contingency reserves even with no official parity in their exchange rates.

Authorities in Korea find it convenient to hold foreign exchange against the possibility of failure of the national rice crop. The French Government finds it convenient to hold gold and foreign exchange, which is usable to support the flow of domestic expenditures (absorption) in case of events like those of May 1968. Both countries have a positive demand for liquid reserves for contingencies seen in a broader sense than that of simply maintaining parity in the rate of exchange. Thus, increased exchange-rate flexibility, going so far as to eliminate formal parities altogether, would reduce but not eliminate official demands for international liquidity.

Although floating exchange rates might ease official demands for international money, they would *increase* private demand. This is an important point to establish. The usual debate on the merits or demerits of floating exchange rates omits consideration of private demands for international money and focuses on the reduction of official demand—the latter being indeed likely to occur. A most interesting exception is the discussion by Fritz Machlup in *International Payments, Debts and Gold*. He develops several arguments, based on optimal-inventory considerations (pages 267-276), for increased private holding of foreign exchange to substitute for official holdings if floating exchange rates were introduced. These arguments can be extended in a multi-country world to show how private traders would concentrate their transactions in the most suitable major currency in order to economize on inventory-carrying costs and to minimize the informational uncertainty arising from floating rates.

Even in a world where exchange rates change infrequently, the development of the Euro-dollar and Euro-bond markets and the international use of the New York money market are evidence of the convenience of having a single numeraire, store of value, and medium of exchange for international transactions. As long as confidence is maintained in the dollar value of other national currencies, they remain good but not perfect substitutes for international money (dollars). That is, mark, sterling, or franc balances—whether held by domestic nationals or foreigners—are near-money as far as international transactions are concerned. How-

ever, floating exchange rates, leading to wider short-term variations in dollar values, would make other national currencies less good substitutes for holding dollars to finance the international flow of commerce. Correspondingly, the foreign private demand for holding dollars would increase under floating exchange rates.

These are not arguments against flexible exchange rates. Once one carefully defines the optimal size of a currency area, then an exchange rate with no fixed parity may be the preferred method of solving the adjustment problem in external payments. Then, too, in the case of domestic monetary instability associated with chronic inflation, it is folly for even small nations to maintain an official parity. What is suggested is that floating exchange rates will not eliminate the foreign demand for American dollars. Consequently, floating rates will not eliminate "deficits" in the international payments of the United States as currently measured.

The "liquidity" definition of the American deficit roughly measures the annual increase in short-term dollar claims held by both private and official foreigners, plus losses of monetary gold. If the world moved toward a regime of floating exchange rates, increases in the demand for privately held dollars may offset decreases in the demand for officially held dollars or gold. Thus, the net impact on the liquidity measure of the deficit could go in either direction. If there were significant economies of scale in national holdings of exchange stabilization funds as compared to individual private holdings, one could conceive of the "deficit" under the liquidity definition actually increasing. That is, additions to private holdings of dollars as the world economy grows would be greater than reductions in official holdings under a system of flexible exchange rates.

The "official-settlements" definition of the deficit is confined to measuring annual increases in dollar holdings of official foreigners plus annual gold losses. Under this definition, the introduction of a regime of floating exchange rates would, in the long run, reduce the American deficit without eliminating it. In the short run, the elimination of official intervention to maintain parities may lead some foreign authorities to liquidate "excessive" existing dollar holdings, thereby leading to a temporary surplus in American payments under the official-settlements definition. This short-run effect is a matter of conjecture, given the apparent instability of official portfolio preferences. Nevertheless, in the absence of official parities, official institutions would have some demand for dollar holdings which would eventually grow with world income and lead to deficits in American payments under the official-settlements definition. Indeed, for certain classes of foreign banking institutions, it might be difficult to distinguish official from private holdings.

The important point is that floating exchange rates are not a solution to the international liquidity problem in the sense of eliminating or even reducing the demand for international money. That is, there still would be the "problem" of providing international money even if it is largely privately held. Academic debate on flexible exchange rates has generally not distinguished the "adjustment" problem from the "liquidity" problem. The debate is relevant for the former but only peripherally so for the latter. Flexible exchange rates, then, are not an alternative to the development of institutions that provide international money. Since the American "deficit" is the vehicle by which international money is created, it would not, in the long run, be ended by generally floating exchange rates.

Gold and the Confidence Problem

Although dollars are widely held officially and privately as working balances, some governments and a few individuals have elected to hold their longer-term "precautionary" balances in the form of gold. If in fact the dollar is basically a superior monetary asset, as is claimed here, why is there any significant demand for gold by both governments and individuals? (One must remember that, unlike national monetary systems where coins and hand-to-hand currency are a significant proportion of outstanding money, foreign holdings of dollars are generally held in large quantities in interest-bearing form—as facilitated by the presence of the Euro-dollar market.)

There is, of course, the long history of gold's serving both a national and international monetary function. Internationally, the use of money is still a matter of convention, so history remains psychologically important. But international monetary history of the last century and a half is one of shifting from the direct use of gold—sometimes supplemented by silver—to the use of fiat money, first with gold backing and then without. Robert Triffin (*op.cit.*, page 26) provides some interesting statistics on the extent to which this substitution has taken place. In the great era of the gold standard, 1815-1913, commodity money—gold or silver—was 67 per cent of total national money outstanding in 1815 but had been reduced to 13 per cent of the total by 1913. It was replaced by fiat paper money and deposits. In the international sphere, holdings of fiat money relative to gold have varied more sporadically, with international holdings of sterling being important prior to 1931 and dollars beginning in 1945.

Because of the formal American commitment to buy and sell gold at a fixed price, and the long international history of gold, one naturally thinks of gold as the "ultimate" monetary asset. It is easy to concede

that the dollar has superior short-run liquidity properties as a vehicle currency both privately and publicly, and also to concede that it pays an attractive rate of interest which gold does not. Even with such concessions, most bankers and civil servants, and some eminent and influential academicians like Robert Roosa and Arthur Burns, hold to the thesis that the demand for dollars as international money requires the tie to gold. But is this really so, and what are the implications of the gold tie?

In congressional testimony in 1959, Triffin pointed out the consequences. If international supplies of gold are fixed and increments to international liquidity are largely satisfied by a build-up in foreign holdings of dollars, the underlying system is unstable. As foreign holdings of dollars increase with a monetary gold supply which is relatively stationary, doubts arise about the American ability to convert gold into dollars at the fixed price. Speculative attempts to convert dollars into gold, in anticipation of a sharp rise in the price of gold, multiply. The overall convertibility of the dollar-based system becomes threatened, as it was by the gold rush of March 1968. From Triffin's now very familiar argument, American policymakers face an impossible dilemma. If they try to reduce the deficit as defined by the Department of Commerce, the growth of international liquidity would be halted and convertibility threatened. If they let the deficit run, the system becomes increasingly unstable and convertibility is threatened anyway.

There are two nonexclusive schools of thought for solving the dilemma. One is to replace the dollar/gold-exchange standard with an international money whose issue is controlled by an international institution. The prolonged negotiations over the development of Special Drawing Rights are the result of this influential view. However, as mentioned in the Introduction, SDR's are envisaged (even under their widest conception) to be official instruments only. The rapidly growing demand for private international liquidity and an official vehicle currency has been completely outside of the negotiations. Possible relationships between SDR's and dollars will be explored in Section V of this essay. Here, it suffices to note that SDR's are not sufficient to replace dollars as international money.

The other school of thought suggests that the demand for international liquidity in the form of dollars can be satisfied and stabilized by demonetizing gold in the sense that central banks will no longer enter the private gold market as either buyers or sellers. This view is subscribed to in this essay and rests on two premises: (1) the provision of international money is a "natural" monopoly associated with one independent financial instrument, and (2) the dollar is preferred to gold

as an international monetary asset. The first premise rests on Gresham's Law. Any system with more than one money linked together by a nominally fixed price is unstable, as exemplified by the gold-dollar standard. This line of thought, again mainly in terms of official reserve preferences, is more fully developed by Robert Z. Aliber in "Gresham's Law, Asset Preferences, and the Demand for International Reserves" (*Quarterly Journal of Economics*, November 1967). Incidentally, the fact that a single national currency is used as a natural monopoly does not mean the banks of that country are given monopolistic advantages (see Section IV).

The second premise of the superiority of the dollar bears some examination. International transactions in commodities and securities are largely denominated in dollars, without effective gold clauses. The dollar has superior liquidity value in its use as a vehicle currency on both private and official account, whereas gold is not used at all. It is a superior store of value in the sense that dollar holdings bear a substantial rate of interest even for sight obligations in the Euro-dollar market. Longer-term obligations bear higher rates. So for all the textbook properties of money—as a numeraire, as medium of exchange, and as a store of value—the dollar dominates gold. It is now incorrect to think in historical terms of gold being the ultimate asset.

As pointed out by many writers, the speculative demand for gold now is similar to the demand for any easily storable metal whose floor price is fixed but whose ceiling price is not. By assessing the limited size of the American gold stock, speculators believe there is some significant probability that the official price of gold can be forced upward by buying-pressure. One cannot lose by taking a long position in gold with these ground rules. One can lose, however, if the ground rules are changed so that the price of gold can dip below \$35 per ounce as well as rise above it. This change in the rules would greatly reduce the monetary attractiveness of gold and would cause some substantial private dishoarding and probably a significant fall in its free-market price. More importantly, this demonetization of gold would stabilize the demand for international money in the form of dollars.

The current two-price system for gold is a partial but not complete movement toward demonetization. It is partial because the official communiqué (March 17, 1968) is ambiguous as to whether a floor price for gold of \$35 per ounce in the free market will be supported. It is too early to tell what the ultimate effect will be. Nevertheless, even this limited step has the effect of establishing the dollar as the unit of account in official reserve holdings, which are now effectively denominated in dollars irrespective of what happens to the price of gold on the free

market. (SDR's would also be effectively denominated in dollars if they are ever issued.)

The fact that the Union of South Africa and major European holders of gold have recently put pressure on banking authorities to guarantee the floor price is an indication of the dependent status of gold. The apparent willingness of European central banks to give such a guarantee to put a \$35-per-ounce floor price under South African gold sales does not augur well for the demonetization process. In part, it nullifies the action taken the previous March, and private traders can now speculate with more impunity by holding gold. Whether or not the essential strength of the dollar is recognized by American authorities and full demonetization is carried out remains to be seen. The international demand for dollars can, and does, exist in the face of uncertainty in gold policy. However, greatly increased stability in official and private portfolio preferences for dollars would be introduced if the gold link were completely broken.

III. THE SUPPLY OF DOLLARS

With heavy official and private international demand for dollars, what governs the supply response? Common to all monetary mechanisms, there remains the control problem of satisfying the "real" (price-deflated) demand for money while maintaining a stable price level and steady growth in world commerce. Would not the world's money supply become subject to the vicissitudes of American payments deficits under a dollar standard? What ensures that the supply of international money expands *pari passu* with the size of the world economy, but that there is no flood of unwanted holdings of dollars? In order to establish the properties of a pure dollar standard, let us assume gold is fully demonetized.

There is potentially much more order in the process of supplying dollars than initially meets the eye. One wants the "Euro-dollar/New York banking system" to be highly elastic or responsive to the needs of countries that get into temporary difficulties—such as Canada in 1962, Italy in 1963-1964, or France in 1968. Thus, large short-term lending potential would be desirable. At the same time, the long-run trend in foreign holdings of dollars should match the potential growth of world real income. This trend could be adjusted upward if the income elasticity of the world demand for international money were greater than unity. Even though the money supply is capable of elastic short-term expansion to meet liquidity crises in particular countries, the aggregate holdings of international money should not depart far from this long-term

trend in *either* direction. A completely passive supply mechanism that expands or contracts with the state of demand for nominal money is not a sufficiently stabilizing influence on international prices or real income flows.

Asset Preferences and Money Creation

The "liquidity" definition of the deficit in American external payments includes both capital and current account and approximately measures the change in private and official holdings of short-term dollar assets by foreigners if gold is demonetized. However, holdings of international money (these short-term dollar assets) can change with or without a change in the *net* position of foreigners. Changes in their net asset position depend on the size of a properly defined deficit or surplus on *current* account of the United States. From a purely bookkeeping point of view, there is always an offset on capital account to any entry on current account. That is, a surplus on current account in the United States means that Americans are acquiring claims on foreigners, once long- and short-term capital movements are netted out.

In the absence of long-term capital inflows into the United States, an American deficit on current account increases the supply of international money by increasing short-term dollar assets in the hands of foreigners. In doing so, the current deficit also increases the net asset position of foreigners. Correspondingly, pure financial intermediation where foreigners sell long-term bonds in New York but maintain short-term American bank balances with the proceeds, leads to the creation of international money without any change in the *net* asset position of foreigners.

In the whole postwar period, the United States has run surpluses on current account rather than deficits. In the absence of covering long-term outflows of capital, these surpluses would have diminished the liquid asset holdings of foreigners. The fact that outflows of long-term capital have generally exceeded the American surplus on current account is not merely a fortuitous circumstance but directly reflects the asset-preference functions of official and private foreigners. In order to build up their liquid-asset positions, foreigners borrow long in New York. This process of financial intermediation more than offsets the current surplus to permit the international money supply to grow at or close to the desired rate. A more complete account of this intermediation process is given by E. Despres, C. Kindleberger, and W. Salant in "The Dollar and World Liquidity—A Minority View" (*The Economist*, February 5, 1966, pp. 526-529). However, the net total of liquid and illiquid claims on the United States held by foreigners is steadily becoming more negative as the American surplus on current account continues—which can be per-

fectly consistent with portfolio equilibrium in a growing world economy.

Financial intermediation is not the only way in which the rest of the world adjusts to the American surplus on current account. The size of the current surplus is not autonomously given but depends in significant measure on the elasticity of the financial mechanism. For many countries, the availability of American long- and short-term lending determines their demand for imports, and hence the size of the current surplus itself, since the United States is an important world exporter. This demand for imports financed by American lending can operate directly on American exports, or indirectly through increasing exports of third countries, which in turn increase their imports from the United States. In summary, the surplus on current account of the United States, the desired holdings of liquid assets by foreigners, and the net asset position of foreigners, *vis-à-vis* Americans, are all jointly determined.

The Supply Elasticity and Liquidity Needs

This complicated exercise in portfolio choice requires more detailed investigation—empirical and theoretical—than can be carried out within the confines of this essay. Nevertheless, the underlying elasticity of the supply mechanism is very great. The development of borrowing facilities in the Euro-dollar market seems to have offset the more negative effects of direct controls or taxes on American lending abroad. Otherwise, such controls would have seriously disrupted the supply mechanism. The controls themselves are a measure of the misunderstanding by American officials of the international role of the dollar.

On private account, if foreigners have an immediate need to hold international money, they can borrow at long term either directly from New York banks or, if turned away there, from Euro-dollar banks. If they have an excess of short-term international liquidity, they can restrict their “normal” longer-term borrowing so as to permit their holdings of liquid balances to decline. The short-term elasticity of the mechanism depends on having large stocks of outstanding loans and securities through which changes in short-term preferences for liquidity can be easily handled. The large and growing real size of the market for short- and long-term dollar securities seems to be increasingly able to accommodate these demands.

What controls desired *official* balances of international money? Is the elasticity of the supply mechanism sufficiently responsive? With fixed-exchange-rate obligations, official holdings of dollars can only be controlled indirectly through domestic monetary and fiscal policy. For example, if excess liquidity in dollars takes the form of excess demand for francs by private individuals, then the French authorities must step

into the market and acquire dollars. The obligations to maintain fixed exchange rates and free convertibility give the French Government no other immediate choice.

National authorities can react to the acquisition of short-term dollar claims by direct reinvestment in longer-term dollar securities or they can leave them in liquid form. The existence of a well-developed international market gives them wide portfolio choice. If the authorities do not care to acquire dollar assets on a net basis, they can encourage internal monetary expansion. Indeed, the process of creating francs in order to buy dollars would naturally augment the domestic money supply if the authorities followed a passive monetary policy. This internal monetary expansion works on both capital and current account to reduce excess dollar accumulation. Fortunately, in a highly developed international capital market, much of the adjustment could be confined to changes in the flow of securities without sharp repercussions on the commodity market.

As long as national authorities have scope for considerable changes in the size and composition of their dollar holdings—which a highly developed international capital market would give them—they have some independent, though limited, scope for internal monetary policy under a system of both fixed exchange rates and free convertibility. Any country that deems it inadvisable to accept any restraint arising from external considerations is probably outside the “optimal currency area” defined by exchange rates fixed in dollar terms. In this case, a floating exchange rate would be the correct policy to restore sovereignty over internal monetary policy and, externally, over holdings of exchange reserves. However, as discussed above, even without a fixed external parity, a country would aim to hold some contingency reserves of dollars, which it could “buy” in the free foreign-exchange market with its own currency.

Long-Run Stability

The elasticity of the mechanism for supplying dollars seems potentially adequate to service the needs of both private and official foreigners so as to maintain free and convenient convertibility in international transactions. However, there remains the important longer-run issues of keeping the world price level of tradable goods determinant and stable while avoiding cycles in income and employment. Fortunately, the preeminence of the United States in the world economy and the highly diversified nature of its exports permits it to influence broadly world prices of tradable goods. Correspondingly, the trade balance is not tied to the ebb and flow of a small number of commodities. Indeed, maintaining a stable real value for the American dollar in terms of American tradable goods

is sufficient to maintain the liquidity value of the dollar for the rest of the world. The prices of foreign tradable goods cannot rise much above or fall below their American equivalents without inducing longer-run expansions or contractions in the balance of trade of the United States. These movements in the American balance of trade in turn induce international monetary contractions or expansions through American surpluses or deficits, respectively, of the "outside" variety, which in the long run maintain the prices of foreign tradable goods close to American levels.

This process of long-run equilibration working through the American trade balance is analogous to one once hypothesized for the 19th-century gold standard. Deflation would be halted because gold production would be stimulated as factor prices fell. Similarly, gold mining would be halted in periods of inflation, forcing a monetary contraction. Of course, this equilibrating mechanism did not work at all in the textbook fashion because of the vagaries of the mining industry and the fact that new gold discoveries might bear little or no relationship to the state of inflation or deflation in the world. Indeed, as Robert Triffin points out, variations in the rate of money creation were necessary to compensate for the variations in gold output! So the gold mechanism itself was hardly a long-run stabilizing influence.

Fortunately, the mechanism for creating internationally held dollars is based broadly on the production of thousands of goods and does not depend on the vicissitudes of production in any one industry. Therefore, it is potentially a much more stable and sensitive mechanism than the old gold standard. Much, of course, depends on the nature of internal American monetary and fiscal policy, which we treat in detail in Section VI. It is conjectured there that the maintenance of internal-price-level stability with full employment in the United States makes it possible for the rest of the world to enjoy also such stability if it cares to avail itself of the opportunity.

IV. INTEREST RATES AND THE SEIGNORAGE PROBLEM*

What are the principal objections to the United States playing this centralized role in the world economy? The idea that the United States can "print paper" or costlessly create credit in order to acquire real goods and services from the rest of the world is prevalent. It is held by a very large number of academic economists, as strikingly revealed in the numerous plans for creating international money via the establishment of an international bank. The Stamp Plan or Kaldor-Hart-Tinbergen Plan

* My colleague at Stanford University, Edward S. Shaw, provided the inspiration for this section.

and many others all have elaborate provisions for funnelling the "proceeds" of international-money creation to underdeveloped countries. *In contrast, it is argued here that the provision of international money on a competitive basis will insure that: (1) the optimum amount of money is created, and (2) no significant seignorage will accrue to the agency or country whose currency is used.*

The "seignorage" problem has been most helpfully discussed by Herbert Grubel and Harry Johnson in *Monetary Problems in the International Economy* (ed. by R. A. Mundell and A. K. Swoboda). However, Grubel suggests that, "A regime of perfectly flexible exchange rates eliminates the demand for international reserves and consequently the seignorage problem does not exist"—in contrast to the thesis being advanced here where floating exchange rates may augment the demand for international money.

The notion that significant seignorage accrues to the issuer of international money is, partly, a hangover from associating international money with holdings of official exchange reserves. Official holders can sometimes be induced to hold noninterest-bearing assets such as monetary gold (excluding the possibility of price appreciation), but generally even they have preferences for liquid interest-bearing assets. Private holders of money will always balance liquidity convenience against earned rates of return. Although there may be some possibility of persuading official holders to accept voluntarily rates of return below the opportunity costs of creating the money, private holders cannot be so organized. Private holders can only be "exploited" if they are confronted with an organized monopoly in the supply of money that leaves them with no alternatives. This monopoly power may or may not arise from the underdeveloped state of the financial markets. Let us briefly review how national governments can exercise their monopoly power to extract seignorage within the confines of their own territory.

The Extraction of Seignorage in a Nation State

In many underdeveloped economies, hand-to-hand currency is the principal financial asset available to savers. Underdevelopment extends to the capital market. For administrative reasons, currency bears no deposit rates of interest, yet it is fairly costless to create. Thus, in an underdeveloped setting, new issues of coin and currency (appropriately deflated) can be an important source of real revenue to the state. Indeed, currency issue may be the most important way of tapping private savings for use outside the households and firms in which the saving takes place. The use of this flow of seignorage by the state then may be of critical importance in the development process.

However, what is significant in the underdeveloped setting becomes less so as the degree of financial sophistication increases. As demand and savings deposits supplant currency, it becomes possible to pay interest to money-holders. The policy of the state regarding deposit rates of interest and reserve requirements becomes more important. If deposit rates of interest are kept low or zero by fiat and, at the same time, the reserve requirements of the banks to hold debt of the central government are high, then the banking structure can still be viewed as the financial arm of the state and an important source of "seignorage." Imposing the inflation tax on private holdings of money can, although it need not, increase state revenues even further.

Even in the absence of high formal reserve requirements, but with usury laws keeping deposit and lending rates below equilibrium levels, the state can exercise substantial power over the *flow* of real finance in the economy. With the state depressing rates of interest, the amount of bank loans demanded by the private sector plus state reserve requirements usually exceeds the amount of deposits private individuals are willing to hold. This excess demand for bank loans over deposits by the private sector is usually "cleared" by having the government specify preferred borrowers. This is broadly true of the French financial system today. In this situation, the state, when not directly collecting seignorage, is exercising financial power which is very close to it. Clearly, either the direct collection of substantial seignorage or the exercise of direct controls over the savings-investment process by a national government is unacceptable for an *international* financial mechanism.

In a sophisticated financial system, a wide variety of interest-bearing deposits is available to savers. If deposit rates may be freely set without restrictions, and formal reserve requirements are not high or may be met by selling private assets to the central banks, and the specifications of the types of assets banks can acquire or the lending rates they can charge are not detailed by government authority, then the direct seignorage the government can collect or power it can exercise is limited. If, in turn, banking services are competitively provided, the spread between deposit and lending rates closely approaches real costs. Within this context, potential monopoly rents available to the government are relatively small even though the real size of the financial system may be large indeed.

To understand fully the ability of the state to appropriate real resources by the issue of its own debt would require a detailed examination of the inflation process, which is beyond the scope of this essay. If we maintain the simplifying assumption that the state is committed to a policy of price stability, then its own nominal debt issue is constrained by

the demand, in real terms, for bank deposits and currency in the private sector. There are a variety of ways, which we cannot explore here, to control the relationship between the debt of central banks and the outstanding holdings of money by the public.

Suppose we take one extreme, perhaps ideal, control system relying almost completely on equilibrium rates of interest. Suppose commercial banks must use central-bank debt, which is interest-bearing, for clearing purposes but there are no formal reserve requirements. The ratio of government debt to loans to the private sector in the portfolios of the commercial banks depends on their relative rates of interest. All holdings of money by the public are in the form of deposits with no interest-rate limitations. Other than by taxation, the only way the government can appropriate additional real economic resources is to issue its own interest-bearing debt to the public or to the banks with an interest rate high enough to bid away the requisite resources from the private sector. These resources can be released by curtailing private borrowing or by increasing private saving through raising lending and deposit rates of interest, respectively.

Is it accurate to claim the government is collecting seignorage in this extreme case? The government may be in a strong position to borrow because of its ability to create money. For this reason, it may have more "liquidity" than private borrowers. It is debatable whether or not the exercise of this greater liquidity should be termed "seignorage" when the government borrows at equilibrium rates of interest. I prefer to limit the use of the term "seignorage" to situations in which the state appropriates real resources through the issue of noninterest-bearing debt, through the suppression of interest rates, or through the exercise of reserve requirements. Eliminating these and adding the additional proviso of maintaining a stable price level pretty well limits the state's ability to "exploit" the financial system in any tangible way.

Unless they are systematically repressed, financial institutions continually evolve to higher levels of complexity. The more complex the system, the more difficult technically it becomes to extract seignorage. With a wide variety of banks, near banks, and other financial intermediaries, any attempt to control or exploit one class leads to greater real growth of other classes. Attempts to extend controls to all classes thwarts financial evolution.

There is, however, another consequence of such attempts to expropriate or control the flow of savings through the monetary system. The maintenance of deposit rates of interest below "equilibrium" levels (in part defined by the rate of inflation) depresses the real size of the financial sector below its social optimum. Savers are driven to self-finance, to

overly costly (for small savers) direct lending, or away from saving altogether. At the same time, the real stock of money is depressed and there are welfare losses from inadequate liquidity in the payments process. In short, the provision of real finance is driven below the point where marginal convenience yield plus deposit rate equals the marginal social cost of providing the financial service. Like any attempt at monopolistic exploitation for revenue purposes, losses in efficiency occur.

The International Money Market

Do conditions exist for the American government to extract seignorage or control the flow of funds in the *international* financial system based on dollars? It is difficult to conceive how effective monopolistic exploitation could be so organized. The degree of financial sophistication in the international money market is very great. Outstanding foreign holdings of hand-to-hand dollar currency are insignificant. Both private and official institutions hold dollars in interest-bearing form—even for sight deposits in the Euro-dollar market. Internally, the United States traditionally does not require financial institutions to support particular investment projects as is done in France—except for national emergencies. More important, the government of the United States does not even exercise effective control over many institutions providing international dollar services! Because of its lack of international legal jurisdiction, it cannot exercise the detailed controls over interest rates, reserve requirements, and lending practices internationally of the sort which many nation-states exercise internally.

It is paradoxical that the provision of international money for both private and official use should be centered on a single national currency, yet the nationals of that country do not gain monopoly rents from their asymmetrical position with the outside world. Nevertheless, this can be true as long as American banks freely compete among themselves to set competitive deposit and lending rates—the difference representing the real cost of providing financial services. Insofar as they do not compete freely, because some deposit rates are prescribed by the government—such as interest ceilings on time deposits under Regulation Q and the prohibition of interest on demand deposits—Americans now face very effective competition from the unregulated Euro-dollar market. Overseas subsidiaries of American banks and foreign banks can bid away dollar deposits by offering higher deposit rates of interest. Then, too, these Euro-dollar banks stand ready to undercut the lending rates of American banks. Indeed, the capturing of some of these monopoly rents was probably a major impetus for the development of the Euro-dollar market. This development is discussed by Alexander Swoboda in *The Euro-*

Dollar Market: An Interpretation (Essays in International Finance No. 64, 1968).

Similarly, American banks have lost business to the Euro-dollar market because of the "voluntary" restrictions on their external lending. Otherwise, the rate of interest charged European borrowers would have risen more steeply. Of course, the smooth functioning of the whole monetary system is hampered by such restrictions and there are losses in economic welfare for all concerned. Nevertheless, the inconvenience of these restrictions to foreigners is largely reduced by this strange phenomenon of foreign banks operating with an American monetary base. The U.S. Government could move so far from convertibility that the overall usefulness of the dollar for international monetary purposes is impaired. Then, too, the mechanisms for adjusting the state of the international payments of the United States to overseas asset-holding—as discussed in a previous section—could be disrupted by such restrictions. Nevertheless, the narrowly conceived seignorage gain to the United States would be negligible because of foreign competition.

The seignorage gained by the Federal Reserve system due to the reserve requirements of commercial banks in the United States are of minimal importance. American time and savings deposits are a high multiple of their reserve requirement that must be held with the Federal Reserve System; and Euro-dollar deposits are in turn pyramided on American deposits. Indeed, if an American bank sets up a foreign subsidiary to collect Euro-dollar deposits and the subsidiary in turn holds balances with its parent bank, these latter balances are not subject to formal reserve requirements. Of course, in establishing its equilibrium portfolio position, the parent bank will choose to hold some liquid reserves, but these are tiny compared to the total volume of primary Euro-dollar deposits. This indirect lending outside the scope of American reserve requirements is an illustration of the weakness of the supranational control exercised by the Federal Reserve Bank.

The Optimum Stock of International Money

If a national authority attempts to collect considerable seignorage from its internal financial system, we have established that substantial losses in efficiency can occur. Indeed, abusing financial-monetary systems has a long history: from Renaissance princes sweating coins or expropriating financiers, to underdeveloped countries today suppressing real finance via the inflation tax, via heavy reserve requirements, and via interest rates set far below their equilibrium levels. In the debate on

international liquidity, this notion of free largesse accruing to the issuer of international money is surprisingly prevalent, as evidenced by the many suggestions for channelling the proceeds to poor countries.

Since international money is held by private as well as official institutions, the extraction of seignorage from private financial holdings would require an organized monopoly of the kind that can exist in nation-states but cannot be organized within the present context of the international-dollar standard. Even if such a monopoly could be organized, it would be socially undesirable. For example, attempts to reduce interest rates paid on deposits would reduce the real size of international-dollar holdings below their socially optimum levels. Indeed, in the absence of any agency with supranational powers to specify legal tender, private holders would attempt to change the international medium of exchange. For example, if one national currency became unattractive (say, dollars), the use of another might develop (say, marks).

With international money such as Special Drawing Rights confined to official institutions, it is politically easier to negotiate holding obligations and make these somewhat independent of rates of return or the liquidity properties of the assets themselves. Here it is possible to think of seignorage existing in the sense that the use of international money by some countries and its acquisition by others represents a real transfer of resources from the latter to the former with no real quid pro quo involved. That is, one country spends or uses assets whose rate of return is below the opportunity cost of capital, and other countries are obligated to acquire them. There is, then, a strong incentive to reduce holding of such assets which can only be resisted by political agreement and some collective coercion to maintain the demand for this money.

Needless to say, any such elaborate political mechanism is not likely to be a flexible instrument for maintaining the real stock of international money in official hands at its socially optimal level. Moreover, it raises a whole series of issues regarding intercountry transfers. These issues are best avoided. If internationally liquid assets, on which the rate of return reflects the opportunity cost of capital and the cost of providing the liquidity service, are used, the mechanism can be kept on a quid pro quo basis. Fortunately, the elaborate development of an international capital market makes dollar assets well suited to provide a liquidity service and to reflect the opportunity cost of capital to both private and official foreigners. With such assets, seignorage in the sense of a freely exploitable economic "surplus" does not exist, and the real size of the financial system can expand to its optimum level.

V. THE ISSUE OF MONEY BY AN INTERNATIONAL AGENCY

The coexistence of gold and dollars as international money leads to the instability noted in Section II. By contrast, we have argued that a pure dollar standard can work well if national authorities stop resisting it. Resistance has taken the form of controls on outflows of capital by American authorities, the maintenance of the gold link (albeit in attenuated form), and the occasional disequilibrium exchange rate of individual national currencies vis-à-vis dollars. A pure dollar standard would not require any complex supranational authority to control the issue of international money, nor would it place any great burden on domestic economic policy in the United States—a point which is discussed in detail in Section VI.

Still, what is a political advantage to some may seem like a liability to others. After all, the attractiveness of a national currency like the American dollar does depend on American monetary and fiscal policy. An international money under international control seems to be an appealing concept both politically and economically. In this section, we shall investigate two related issues: (1) is the absence of any attempt to create an internationally controlled money for *private* use simply an error of omission, reflecting previous unawareness of private holdings of dollars, and (2) can Special Drawing Rights, or some similar facility confined to official institutions, efficiently coexist with private and official dollar balances?

International Control of Private Money

Consider the “error of omission” first. Free convertibility of private transactions from one currency to another is a dominant goal of any foreign-exchange mechanism associated with market-oriented economies. Even with this constraint, it is quite possible for ministers of finance to meet and agree to hold official reserves in a particular form. For example, there is the continuing Canadian agreement with the United States for Canada not to increase official Canadian holdings of gold and to limit increases in holdings of American dollars. However, it is quite another matter for the private holdings of international money to be specified by official agreement without introducing exchange controls among national currencies and the “official” international currency.

What is involved here? After all, national governments can specify legal tender internally and give monetary properties to specifically designated assets. Indeed, it is difficult for a domestic monetary system to operate effectively without official sanction and support. Why, then, could not an international agency designate an international money for private use?

The domains of purely national monies are typically defined by specifying that all purely national transactions must use national money as a medium of exchange. With this constraint satisfied, freedom to hold one or more foreign currencies by domestic nationals is essential to the conversion process for transactions moving from one national domain to another. The task of an international agency is fundamentally different from that of national central banks in that the former has to respect the jurisdictions of the latter. Further, the international agency must accept convertibility among national currencies to avoid exchange restrictions.

Only if the international agency could issue money to be used domestically as well as internationally for all countries (that is, if it had the authority to impose a single unified currency system), could it prevent the holding of national currencies for international transactions. A unified world currency is beyond our political capabilities at present and may be of doubtful economic merit when one defines the size of an optimum currency area.

Even though an internationally controlled money for private use cannot be established by fiat under present circumstances, can it be established by "persuasion"? The use of the American dollar as private international money represents a voluntary choice based on its liquidity properties and rates of return. Could an international agency issue a financial asset with superior liquidity properties and more attractive rates of return to private depositors?

Any unseemly haste to collect seignorage would make the earned rate of return on the money issues by an international agency quite unattractive to private holders—as our discussion in the preceding section indicated. More fundamentally, perhaps, there is the problem of establishing the international money as a standard of value in terms of physical commodities. An important mandate of the Federal Reserve System of the United States is to maintain the value of the dollar in terms of a representative bundle of goods and services. The "Fed" has a wide variety of techniques—open-market operations, rediscounting, reserve requirements for commercial banks—which it can use in conjunction with government budgetary policy to substantially affect the American price level. The Fed itself can intervene in the financial markets, and the Treasury can, if it wants, operate directly in the markets for goods and services. In this manner, the real value of the American dollar is established. This, together with financial efficiency as reflected by deposit rates of interest, establishes the dollar as money both nationally and internationally.

But how would an international agency operate so as to establish an independent standard of value of its own? Would it be possible to construct some general price index of goods and services which are inter-

nationally traded and which the international authority kept stable in terms of its own currency? It is difficult to imagine the kinds of interventions in the goods and financial markets that the international agency could perform under existing political arrangements. It is harder still to imagine international fiat money being the basis of a financial system that could pay its depositors more than the current dollar-based system. Inevitably, the money of this agency must be firmly attached to a national currency(ies) which does have deep roots in the commodity and financial markets. Even so, private individuals may opt to hold directly the most attractive national currency instead of the international one. The task of creating internationally controlled private money is likely to be difficult and unrewarding at this stage in our political evolution.

Special Drawing Rights

Although *official* holdings of money issued by an international agency may be politically negotiated, they too must maintain some liquidity properties satisfactory to the holders. Let us examine Special Drawing Rights (SDR's) in this connection. Their outstanding characteristic is that they are financial instruments for central banks only. Subject to certain limitations, a central bank may use SDR's to buy convertible currencies from another central bank for the purpose of performing support operations in the foreign-exchange market. In practice the convertible currency commonly purchased for this purpose would be dollars, since purchases and sales of dollars are the technique by which exchange rates are supported.

Since SDR's are not to be used as a private vehicle currency, they would have a reserve status much closer to official holdings of monetary gold than to the dollar. SDR's are distinguished from the International Monetary Fund's other lending facilities in the sense that: (1) access to SDR's to finance payments deficits would be fully automatic, and (2) there would be no full repayment required when a line of credit was used. In this way the world supply of money could be increased. SDR's would be allocated to countries more or less in proportion to their IMF quotas.

Initial allocations of SDR's are one thing, getting any country to hold them is quite another. Complicated rules have to be evolved to define the circumstances under which surplus countries *must* hold SDR's. A country somehow designated to be in surplus is tentatively required to hold SDR's by selling convertible currencies or gold up to twice its initial allotment of SDR's. (Unfortunately, the holding obligations are ambiguous because official reserves can be shifted to the commercial banks, or an accounting surplus can be understated.) Countries will be

enjoined from getting rid of SDR's when they are not in deficit to prevent them from changing their reserve composition by increasing gold or convertible-currency holdings. There are provisions permitting a country to opt out of any agreed-upon expansion of SDR's even though it may have participated in the initial agreement. Chronic-surplus countries could opt out of new expansions if they did not wish to continue acquiring SDR's, thus adversely affecting the usefulness of SDR's.

SDR's will bear a nominal fixed rate of interest of the order of only 1 or 1½ per cent. At any point in time, transfers of this asset from deficit to surplus countries will not reflect the opportunity cost of capital to both. Thus the deficit country will receive a form of seignorage, as discussed at the end of the preceding section. Since SDR's cannot be used directly in the world's private capital markets, they would probably be viewed as less liquid than dollars. For these reasons, SDR's may be unattractive to surplus countries and collective holding agreements would have to be rigorously enforced.

More fundamentally, perhaps, SDR's will not introduce a separate standard of value into the world. Their value is nominally tied to gold, but at the official price of \$35 per ounce rather than the fluctuating price in the free market—the latter being hardly attractive as a stable numeraire. (Either gold price is largely determined by the policies of national governments.) But the official price of gold is completely a dollar-determined value, so, for all practical purposes, SDR's are denominated in terms of dollars.

The problem of finding an independent standard of value for "international" money is as acute for official assets as it is for private holdings. De facto, it comes down to the use of a national-currency base (dollars) as a numeraire. SDR's may have the form of independent international money but they do not have the substance. This is not meant to be a critique of the particular arrangements of the SDR facility. An independent international money really requires a strong world government with deep roots in financial and commodity markets—something that is, unfortunately, not presently attainable.

The Coexistence of Dollars and Special Drawing Rights

SDR's can still play a limited role in the sense of supplementing inter-government borrowing, although this task is complicated by the absence of an equilibrium rate of interest. It might even evolve into an instrument for replacing official monetary gold stocks if gold is fully demonetized, as it should be. However, it seems unlikely that it can ever become a freely acceptable international money on both private and official account for the reasons outlined above. Nevertheless, with tightly con-

trolled holding provisions, it could have some use as a reserve asset that is exchanged among central banks. For example, if Italy is acquiring dollars and Belgium losing them, Belgium could purchase dollars from Italy and give SDR's in return. It would mean that central banks would not have to borrow dollars directly in the international money market in order to restore their depleted balances. Without repayment provisions, the net result would be to give central banks a feeling of being more liquid. This advantage is what the architects of the facility had in mind.

However, this use of SDR's as a reserve asset simply supplements the use of dollars, while the latter remain the "fundamental" asset. In this sense, the relationship of SDR's to dollars internationally is different from the relationship of the Federal Reserve Bank to the commercial banks within the United States. Clearing by the commercial banks requires deposits with the Federal Reserve to be shifted without violating reserve requirements. Federal Reserve money remains the ultimate asset in the American banking system and, by controlling its supply, the outstanding supply of dollar deposits with the public can be altered in a fairly predictable way.

In the international sphere, we outlined in Section III the mechanism by which the real supply of dollars held by foreigners was increased or decreased. The short-run demand for international money could be freely met by foreigners borrowing in the New York money market. This mechanism would continue to function with or without the presence of SDR's. The stock of private holdings of money by foreigners would be unaffected by variations in the amount of SDR's in official portfolios. Thus, changes in outstanding SDR's would not have the impact that changes in Federal Reserve money would have on commercial-bank deposits in the United States. In the aggregate, private foreigners could still freely augment or decrease their holdings of international money without being subject to any official controls.

The *composition* of official portfolios would undoubtedly be affected by the issue of SDR's. However, the net impact on *total* reserve holdings by foreign central banks would be much less than the gross amount of SDR issue. Foreign central banks can always offset an increase in SDR holdings by letting their dollar holdings decline from what they would otherwise be. This can take place through reduced direct borrowings in New York by official or quasi-official foreign institutions, through a variety of changes in internal economic policy which can affect international payments, and possibly even through changes in foreign-exchange rates.

It is true that official portfolio adjustment is a very haphazard affair, impeded by a variety of commitments—appropriate and inappropriate—

in domestic policies. Nevertheless, most countries have vague long-run targets in reserve holding, and dollars can always be used as the residual component which brings total reserves in line with national needs. Thus, in the long run, SDR's may not have a substantial impact on total reserve holdings of foreign central banks.

In summary, SDR's cannot supplant the dollar as a numeraire for international transactions in goods and securities. Nor are SDR's likely to have a substantial long-run impact on the holding of private and official international money. SDR's may provide a service in giving some central banks more of a feeling of liquidity, particularly those that have difficulty controlling their own portfolios. This can be valuable. Nevertheless, the international monetary system will continue to be based on the dollar. It would be a great mistake if the creation of the SDR facility was used as an excuse to put further arbitrary curbs on the acquisition of dollar balances by foreigners, as reflected in the international-payments accounting of the United States.

VI. TOWARDS ABOLITION OF AMERICAN BALANCE-OF-PAYMENTS POLICY

There is another role the United States can usefully play that is complementary to the provision of international money. In a world of N countries, if $N-1$ have targets for their balances of payments which they successfully achieve, this automatically determines the payments position of the N th. (In a two-country world, if country A fixes the size of its payments surplus or deficit, this determines the international-payments position of country B. By similar reasoning, one can generalize to N countries.) Unless at least one of the N countries reacts passively or sponge-like to the policies of the others, a high probability of conflict arises. The absence of a degree of freedom in targeting balances in international payments has been christened the "redundancy problem" by Robert Mundell.

The Redundancy Problem

Conflict can arise out of inconsistent accounting definitions of surplus and deficit. Indeed, under current accounting practices, the sum of the world's deficits can exceed substantially the sum of the world's surpluses in the presence of short-term capital movements. Countries receiving inflows of short-term capital often do not register them as such, whereas short-term outflows of capital are duly registered. Therefore, even if all N countries were aiming for a state of balance in the accounting of their international payments, they could not achieve it.

More important, the problem is aggravated because nations typically wish to build up private and public reserve holdings as their economies grow, and to do so they must aim for surpluses—even when defined under a consistent set of accounting definitions. Even with adequate reserves, nations in surplus are frequently unwilling to alter their policies for political or psychological reasons. At least one *major* country must be willing to run deficits so as to provide an offset. The logical choice of country is, of course, the one country whose currency is used to supply international liquidity. The “liquidity” and “redundancy” problems can then be handled simultaneously.

An important part of the American position in this respect is its favorable balance sheet regarding other countries. American claims on foreigners amount to about \$120 billion, whereas foreign claims on the United States amount to approximately \$60 billion, albeit in more liquid forms. This uniquely large stock of both net and gross assets permits great flexibility in changing external-payments flows of the United States in any one year. Thus, the United States is ideally suited for playing the role of both banker and sponge.

The abolition of any conscious target in international payments is consistent with the lack of an exchange-rate policy available to the United States. As pointed out in Section I, redundancy exists in exchange rates as well. It proved very convenient in the postwar period to let N—1 countries in the world fix their exchange rates vis-à-vis a single anchor currency—the American dollar. The dollar was then used as a stabilization vehicle for these N—1 rates and each country had a well-defined commitment in the foreign-exchange market. To maintain consistency, the United States became the Nth country without an exchange-rate policy of its own.

If, in spite of its inability to alter the relative value of its currency, the United States adopts targets in international payments, policy-makers will be induced to try either (1) direct intervention in international trade in goods and securities, or (2) the bending of internal monetary and fiscal policy to alter the flow of international payments. Neither technique is acceptable. The first endangers free convertibility, as is well illustrated by the web of controls on capital outflows. The second is inappropriate in a country where only 5 per cent of its total output is exported. Monetary and fiscal policy are far too important instruments to be geared to events in the small foreign-trade sector.

More fundamentally, we have argued that the state of American external payments is largely a function of the portfolio preferences of foreigners. Therefore, only the most detailed controls—completely inconsistent with world-wide convertibility—will stop foreigners from exercising

these preferences. Exchange-rate changes are preferable to direct controls, but it is vital for the United States to play its Nth-country role with neither a payments target nor an exchange-rate policy. Additionally, because of foreign demand to increase dollar holdings, it is very doubtful whether the United States dollar is overvalued in terms of foreign currencies from what it should be under floating exchange rates.

How real is this redundancy problem, or is it merely a figment of academic imagination? Reading the *New York Times* in the month of June 1968, we note that most of the world's principal trading countries (Britain, Canada, France, Japan, and the United States) imagined themselves simultaneously to be going through external-payments crises, some mild and some severe. This leaves Germany and Italy to be on the other side of the fence, but there are no counterbalancing signs of joy from them on the financial pages. They remain watchful and wary. The *Wall Street Journal* publishes articles on the loss of American competitiveness in world markets; at the same time, Europeans read and are deeply affected by Servan-Schreiber's *Le Défi Américain* (*The American Challenge*), which tells of the growing technological superiority of the United States over Europe.

It is clear that we should extricate ourselves from the almost comic situation of major world traders setting mutually inconsistent goals in international payments. If some countries wish, unrelentingly, to build up excess liquidity through balance-of-payments surpluses year after year, an elastic financial system should be able to accommodate them without having this accumulation upset everybody else. (Even as late as January 1968, in the face of enormous surpluses, the Germans went ahead and substantially raised border taxes on imports. They were reduced only with great reluctance in December 1968, in the face of a substantial crisis.) The simple way out is for the United States to abandon completely any payments targets of its own and to permit the other N—1 countries in the world to set their own payments targets unhindered.

This abandonment should take the form of removing all American restrictions or taxes on portfolio purchases, direct investments, or bank lending abroad, as well as avoiding the tying of foreign aid and the hindering of imports of goods and services. It would also imply that the Department of Commerce should publish international-payments statistics much as it now does but *without* adding up any subset of accounts as a measure of the "deficit." This last entry should be omitted as a casualty to a changing technology. There is no plausible definition of a deficit in the balance of payments of the Nth country which is also a reserve center. Fritz Machlup, in "The Mysterious Numbers Game," gives an account of the impossibility of suitably defining the deficit of the

United States and of the changing views of those who have tried it (in *International Payments, Debts and Gold*, Charles Scribner's Sons, 1964).

American Internal Policy

The proposal for abandoning policies of the United States regarding exchange rates and the balance of payments should in no sense be interpreted as abandoning international obligations in terms of foreign aid or other economic assistance. Indeed, it is out of respect for the valuable international role that the United States is uniquely suited to play, that it should maintain a passive policy with respect to its balance of payments. However, the United States would have an increased obligation to maintain stable internal policies. It would be the balance wheel of the world economy. As such, maintenance of stability in the prices of tradable goods is highly important, as is the avoidance of cyclical fluctuations in income and employment.

Monetary policy should be more stable than in the past, with the Federal Reserve System enjoined to create money—broadly defined—at a constant predictable rate associated with the growth of American output in real terms. Foreigners as well as domestic participants in the capital market could then better accommodate themselves to what was a known and established policy. Such episodes as great monetary liberality in 1965, followed by a “crunch” in the summer of 1966, followed by periods of excessive expansion in 1967 and 1968, should be avoided. The important point is that there need be no conflict between internal- and external-policy goals, of the kind commonly outlined in textbooks on foreign-trade theory, as far as the United States is concerned.

Notice that the policy advocated here is, in some respects, the opposite of that advocated by Richard Cooper (*The Economics of Interdependence: Economic Policy in the Atlantic Community*, McGraw-Hill, 1968). He suggests that in a world of growing interdependence, policies of the United States and other countries should increasingly be consciously geared to the outside world. For example, unemployment in France should enter American decision-making. The opinions of European bankers should be heeded. In practical terms, one implication might be that, in the frequent meetings of the Board of Governors of the Federal Reserve System, general economic conditions throughout the world would be weighed in detail in setting the immediate course of American monetary policy.

In contrast, it is suggested here that the United States abandon policy consciously directed at the outside world and concentrate on maintaining a stable internal economy toward which the rest of the world can accommodate itself. A multiplicity of policy goals leading to numerous short-

run shifts in policy, whose full consequences are uncertain, can easily lead to destabilizing behavior. Steady and predictable monetary expansion by the Federal Reserve is one way of dealing with this uncertainty domestically and of also providing an independent point of reference for the rest of the world. The United States is in an enormously powerful position which its own balance-of-payments accounting fails to recognize. The conscious use of this enormous power for maintaining internal stability would make the United States and the rest of the world better off.

Exchange-rate Policy in the Rest of the World

It was mentioned in Section II that policy regarding exchange rates was *not* the dominant determinant of the demand for international liquidity in a world where private holdings of international money are important. However, flexible exchange rates can be a convenient device for adjusting the balance of payments of certain classes of countries and may also prove convenient for permitting independent domestic monetary policies. Some countries may wish completely floating exchange rates, others might optimally increase the band limits (defined in terms of dollars) within which their rates fluctuate without official intervention. Rigid rates within a few blocs of countries may well be desirable as a basis for building a unified currency system. Again, the United States can remain passive in all of this.

Passivity in American policy regarding its balance of payments can preserve world-wide convertibility in the face of a wide variety of exchange-rate policies on the part of other nations. For example, if any country wishes to build up substantially its exchange reserves by maintaining an undervalued exchange rate or an equivalent complex of "border" taxes and subsidies on imports and exports, this can normally be handled by accommodating American deficits. The willingness of the United States to do this relieves much of the pressure on those neighboring countries which cannot themselves create international reserves. The experience with Germany and France in the late 1950's and early 1960's is a case in point. Large reserves were built up by these two countries with free convertibility fairly easily maintained—even enhanced—as the United States ran more or less equivalent "deficits" as the Nth country.

However, flexible as the dollar standard is when the United States plays its passive role correctly, there are some exchange-rate policies on the part of other countries that are inimical to world-wide convertibility. If, for example, one major trading country not only maintains a set of policies which lead to continuous reserve acquisition over a long period (which can be handled by the dollar system if gold is demonetized), but also takes measures in banking and tax policy which have the effect of

strongly accelerating this reserve acquisition, then the pressure on neighboring countries can become intolerably great. (This pressure is made even greater, of course, if American authorities lose their "cool" and try to strengthen controls on outflows of capital.) The neighboring countries lose their dollar reserves and can then be forced into imposing trade restrictions or devaluing. In fact, one can imagine one sufficiently strong surplus country forcing a whole chain of devaluations for all major trading countries other than the United States, the last not having an exchange rate to change. Nth-country passivity is not sufficient in the presence of strong "neighborhood" effects.

In this kind of situation, there is substantial likelihood of a breakdown in international agreements prohibiting trade restrictions and tariff increases. The neighboring countries are likely to lose control of their internal economic policies. Furthermore, substantial devaluations vis-à-vis the dollar may throw the international use of the dollar into question—although, again, it may not if the United States is not frightened further into abandoning a passive policy in the face of increases in its imports and decreases in its exports.

The moral of this fable is easy to see. Some collective pressure on the one country whose currency is badly undervalued is necessary to avoid an upheaval. If a formal large appreciation cannot be negotiated, then a general move towards flexible exchange rates—the abandonment of fixed parities—is desirable. Under the last policy, international holdings of dollars on private account would be of enhanced importance.

In a world of recurrent crises in the gold market and the foreign-exchange markets, it is all too easy to forget the great progress that has been made under the dollar system. Rapid growth of world trade in goods and securities has been enormous by any historical standard. These crises should not obscure the fact that a little adroit tinkering with the system can permit growth to continue even faster without the crises. A movement to complete the demonetization of gold, to correct one or two exchange rates which are badly out of line, and to remove American restrictions on outflows of capital would be sufficient. It would be tragic if the increasingly recurrent crises were to inculcate the psychology of an inevitable collapse in the dollar standard. There are no handy alternatives.

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