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THE GOLD-DOLLAR SYSTEM: CONDITIONS OF EQUILIBRIUM AND THE PRICE OF GOLD

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

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In the present essay the author has deliberately not discussed events that have occurred since he prepared the manuscript in the summer of 1967, in order to avoid matters on which there are differences in official views. None the less, the analysis presented of the fixed-rate system with two reserve media—gold and dollars—deserves a public forum.

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FRITZ MACHLUP, *Director*
International Finance Section

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THE GOLD-DOLLAR SYSTEM: CONDITIONS OF EQUILIBRIUM AND THE PRICE OF GOLD

This essay was written in the summer of 1967; its purpose was to explain the nature of the international monetary system and how it functioned up to mid-1967 as a background to the consideration of various possible improvements in the system. Hence, it deals with the system as it has been—not as it might become. While I have made drafting changes and clarifications, I have deliberately not extended the paper to cover the events of the past year so as to avoid discussion of matters about which there are differences in official views. My objective is to analyze the system and not to enter into the political problems of its future evolution.

More specifically, the essay aims to distinguish between difficulties arising from inadequate adjustment policies of individual countries and difficulties arising from a disequilibrium[1] in the system as a whole, which concerns the relationship between gold and the dollar. The analysis is focused on the persistent deficit in the balance of payments of the United States and is designed to bring out its underlying and transient causes.

The Gold-dollar System

The present system is usually called the gold-exchange standard. As it emerged from Bretton Woods and as it has functioned in the postwar period, however, it is more to the point to call it the gold-dollar system.

It may seem curious that economics textbooks do not provide an analytical model of the system. Indeed, there is not really a formal theory of the gold-exchange standard, comparable to the theory of the gold standard. This may be, partly, because the system has not been static but has been developing under the changing conditions of the last two decades. However, it is also because the system does not lend itself easily to presentation by a simplified model, as does the gold

[1] My use of the terms "equilibrium" and "disequilibrium" to characterize concrete situations in the real world seems to unbalance the editorial equanimity of Fritz Machlup, who has long and resolutely maintained that these terms should be used only with reference to theoretical models with all variables fully specified. For want of more suitable terms, I shall continue to use the proscribed ones in their real-worldly meanings.

standard, since central banks do not constitute a homogeneous universe and do not act according to a set pattern of economic considerations.

The absence of an accepted theory of the gold-dollar system has made for much confusion in public discussion. Economists and officials do not start with a generally agreed conception of how the system works or ought to work, such as they have, say, in dealing with problems of demand management. They do not have a model for the equilibrium of the system or a common view on the respective roles of gold and the dollar. In these circumstances, very diverse, and often contradictory, proposals have been offered to solve the problems of the system and the deficit of the United States. In the main, these proposals are either unconvincing as prescriptions for establishing equilibrium in the framework of the present system, or they involve changes so fundamental as to constitute a new system. It is hardly surprising that the political authorities have not been able to find their way out of the maze.

I. BASIC PRINCIPLES AND BEHAVIOR CHARACTERISTICS OF THE SYSTEM

The system rests on a series of basic principles and behavior characteristics which determine its mode of operation. These derive from law, from international agreements, from the policy aims of central banks and governments, and, in some respects, from technical necessity. It is, of course, an evolving organism, which was different thirty years ago and which will, no doubt, be different thirty years hence. The concern here, to repeat, is with the system as it has existed during the past two decades.

A. Fixed Exchange Rates

1. Fundamental to the system is the aim of monetary authorities to adhere to fixed rates of exchange. Maintenance of the rate has a high priority with all countries and other objectives are often sacrificed to it. It is apparent that fixed rates have overwhelming support from the business and financial community also.

2. To say that we have a fixed-rate system raises the question of what the rates are fixed to. Under the IMF Articles, a country may declare its par value in terms either of gold or of the dollar of the gold weight and fineness in effect on July 1, 1944. There is only a minor technical difference between these two standards.

However, the operative standard for most countries is the dollar as such, and central banks in practice intervene in the market when necessary by buying or selling dollars against their own currencies to keep the dollar exchange rate within agreed limits. The cross rates with other currencies are kept in line by market arbitrage. There are exceptions, of

course, such as the countries of the sterling area, which peg their currencies to sterling and rely on the Bank of England to maintain the fixed rate between sterling and the dollar. But, generally, central banks operate directly on the market for dollars vis-à-vis their own currency, and it is the market rate on the dollar that is significant for their international competitive position—irrespective of the legal gold content of the dollar.

3. The exception in the system is the dollar itself, which both in law and in fact is fixed in terms of gold—at $35 an ounce. The United States is not obliged to intervene in the exchange market; it has only to be prepared to buy and sell gold at $35 and can leave it to the intervention of other central banks to maintain fixed rates to the dollar. The United States has intervened in the market at times in recent years, both spot and forward, but the purpose was to avoid losses of gold from temporary movements of funds rather than to keep rates in line.

B. Reserves

1. To maintain fixed rates the monetary authorities must hold reserves so that they are in a position to iron out fluctuations in supply and demand in the foreign-exchange market. Reserves consist of liquid international assets, readily available for intervening in the market, and are almost entirely confined to gold and to foreign-exchange assets in dollars and sterling.

However, while sterling is important to the international economy as a trading currency, it is active as a reserve currency only in settlements between the United Kingdom and sterling-area countries. Hence, it is a regional reserve currency and quite different from the dollar, which is the reserve currency of the system. To simplify matters I will discuss only dollars, thus treating the sterling area (and, likewise, any other monetary area) as a unit which holds reserves in gold and dollars.

It will be seen, therefore, that the system is a gold-dollar system for two reasons: first, currencies are fixed either to the dollar or to gold and, secondly, the reserves of the system are gold and dollars.

2. Each central bank is free to determine the composition of its reserves as between gold and dollars. Its policy in this respect is in its own hands, because it can sell or buy gold against dollars at the U.S. Treasury. If there is any constraint on such exchanges, even psychological or political, the convertibility of the dollar at its fixed relationship to gold comes into question. In practice, there is a wide range among the countries in the ratio between holdings of gold and dollars, indicating that central banks give different weight to the benefits to themselves of the two categories of assets.

3. Dollars are held almost entirely in money-market instruments and time deposits, as these are liquid assets that earn interest. Gold, on the other hand, produces no revenue. It is important to realize that, if central banks could not earn interest on dollars, their reserves would be almost entirely in gold. Some central bankers have stressed that they are not primarily concerned with interest earnings in determining the composition of their reserves. This may be true of marginal changes in reserves; but the point is that, if the United States did not permit central banks to invest dollars at interest, they would never have acquired the dollars in the first place; they would have acquired gold.

Hence, the first requirement for a currency to become a reserve currency is that there must be an open money market in which foreign central banks can freely invest in short-term paper. In addition, the money market must be capable of absorbing large central-bank transactions, and the convertibility of the currency at a fixed rate must be rather secure. It is because New York and London are the only two open money markets of any size that the dollar and sterling are the only two significant reserve currencies. And it is because exchange rates between sterling and other currencies have not been secure that the dollar, supported by large gold reserves, supplanted sterling as the reserve currency of the system.

Other currencies have not become reserve currencies either because the central bank discourages placements of funds at interest by foreign central banks or because their convertibility at a fixed rate does not seem reasonably assured over the longer run. Continental European countries have not wanted to become reserve centers; they are reluctant to have their markets and reserves disturbed by large-scale operations of foreign central banks and some, also, see no point in their country bearing the interest burden attached to having their currency held as reserves.

It has been said that dollars are kept in reserves primarily as a matter of convenience, since dollars can be used directly in the exchange market whereas gold must first be converted into dollars for the purpose of market intervention. However, dollars held in money-market paper or on fixed-term deposit must equally be converted into cash to be available for market intervention, and there is no great difficulty in converting gold into cash.

While a variety of developments went to make the dollar the reserve currency of the system, the United States took no initiative in the matter; its action was only permissive.

4. With respect to its reserves, also, the United States is an exception. While other countries are free to hold their reserves in any combination of gold and dollars they wish, including 100 per cent in dollars, the

United States must hold its reserves essentially in gold. This is because there is no other currency besides the dollar that can be used for general intervention in the exchange market; hence, any foreign currencies held by the United States cannot be used for general support of the dollar in the way that other countries use the dollar as a general support for their currencies. The United States can generally use foreign-exchange holdings only for bilateral settlements. To underline the importance of this point, France could hold all its reserves in dollars if it were so minded, but the United States could only hold a quite small fraction of its reserves in French francs.

The foreign-exchange assets that have appeared in the reserve statistics of the United States in recent years were always acquired for specific purposes. For example, there may be a temporary holding of D-Mark which were acquired in the market in anticipation of repaying D-Mark Roosa bonds to the Bundesbank. Or, there may be small holdings of Swiss francs to be fed into the market when the dollar is under pressure so that the Swiss National Bank will not have to acquire the excess of dollars which it might then want to convert into gold.

The only currency that the United States has held in large amounts has been sterling. These holdings arose mainly because American assistance to the Bank of England was given in the form of swaps of dollars against sterling—rather than as simple advances. The sterling, of course, could not be used at the same time by the United States to meet its own deficit or to avoid gold losses and, therefore, was not "reserves" in the ordinary sense of immediately marketable assets. To count such sterling assets in reserves is about as appropriate as it would be, say, for a business firm to include its accounts receivable in its cash.

5. Since the United States is the only country obliged to hold its reserves in gold, the function of gold as a "discipline" against excessive money creation is primarily applicable to the United States. Other countries are subject to balance-of-payments discipline, but the discipline lies in the loss of any reserves—whether dollars or gold. Even so, a loss of gold makes a much greater impression on public opinion in many countries than a loss of foreign-exchange reserves or foreign borrowing by the central bank. If other countries entirely stopped acquiring gold, the discipline of gold on the United States would become rather theoretical. This is particularly so because increases in its liabilities to foreign official institutions seem to have exerted little discipline on the United States.

6. Why do central banks, apart from the United States, hold non-interest-bearing gold at all and what determines the proportion between their holdings of gold and dollars? Several considerations are involved, to which the various countries attach different importance.

(a) Gold is unique in that the asset of the holding country is not a liability of another country. For dollar assets, on the other hand, there must be a liability in the United States—either money-market paper or bank deposits. Hence, the disposition of gold is entirely in the hands of the holding country, while the use of dollars may require the acquiescence of the United States. However remote it may seem, countries take account of the possibility that exchange balances may be blocked in times of political trouble, such as war, and they hold some gold over which they are the sole masters. This is the "war chest" motive and it is often said that holding gold is an aspect of sovereignty. Gold buying by China in 1965 and 1966 probably reflected this motive, and one sees its influence frequently in times of political stress. The war-chest motive is sometimes disparaged by writers who look upon gold as anachronistic, but it is evident that every major country gives it some weight in its reserve policy. Apart from the fact that gold reserves have been drawn upon in past wars, their existence supports a country's credit standing in such troubled times. It is a fact also that foreign-exchange balances have been blocked for political reasons.

(b) The exchange risk to a central bank on its gold reserves is limited to a possible fall in the price of gold or to an appreciation of its own currency vis-à-vis gold. On dollar reserves there is the additional risk of its own currency appreciating vis-à-vis the dollar as a result of a rise in the dollar price of gold while its own price of gold remains unchanged. When sterling depreciated in 1931, some central banks had large balance-sheet losses on their sterling holdings by the change in exchange relationships. The small group of central banks that hold almost all of their reserves in gold are concerned primarily to avoid such risk to their balance-sheet position. They do not consider it a primary function of the central bank to earn interest on its reserves; they took their increases of reserves in gold even when there seemed to be no possible threat to the convertibility of the dollar, because they knew, if the risk should arise, there might be practical limitations to conversion of dollars into gold. Having their reserves in gold, they believe, gives them greater independence of action in the event of a future monetary crisis; that is, if the United States should reduce the gold content of the dollar, they would be free to fix their exchange rate with the dollar on prospective balance-of-payments considerations alone —without the complication of a possible loss in the domestic-currency value of their reserves.

In holding gold, of course, a central bank must have confidence in the intrinsic value of gold in terms of its own currency. But, then, they all do—and that is putting it mildly.

(c) Another consideration in reserve policy is the possibility of a universal rise in the price of gold. A central bank which held only dollars in that event would not take any loss on its reserve holdings, but it would not have the benefit of the marked-up value of reserves that gold-holding countries would have. I know of only one central bank which calculated years ago that the book profit from a possible rise in the gold price was too uncertain to set against realizable interest earnings; it, therefore, made the decision to hold a minimum in gold, to take its interest earnings on dollar holdings, and to stick to this policy even if a rise in the gold price became more of a possibility. But many other central banks have not been that unwavering. Besides, some feel themselves open to internal political criticism when their ratio of gold reserves gets much out of line with that of neighboring countries.

(d) A large number of central banks have a very low gold ratio. These are mainly capital-importing countries. They have not given much weight to the exchange risk because they expect to maintain a fixed rate with the reserve currency under almost any circumstances. Furthermore, they look upon their reserves partly as overborrowing by their country from abroad, and they see their interest earnings as a partial offset to the interest payments which have to be made abroad. Some central banks, also, have little scope for earnings on domestic operations and it is only interest receipts on their reserves that allow them some independence from the government.

(e) A few central banks have always considered it an obligation to take at least part of any increase of reserves in gold so that the "discipline of gold" should be a reality for the United States. Likewise, some have continued to buy some gold from the United States to maintain the principle of the convertibility of the dollar, even after it became impractical to exercise the right of convertibility to the limit. They have felt it necessary to resist full acceptance of a dollar standard and have been strengthened in this view by what they consider to be an inadequate priority which the United States gives to correction of its payments deficit. As one official put it, if we accept a full dollar standard, it would be like having a country with two central banks—sometimes working at cross purposes.

(f) In several countries the law requires the central bank to maintain reserves in gold as backing for the domestic currency. This legal provision is a leftover from the days when gold coins were in active circulation and has little relation to present-day conditions. It is the only motive for central banks holding reserves in gold that is entirely traditional.

Given this variety of motives, it is apparent that the comparative benefits of holding gold relative to dollars cannot be calculated. In other words, central banks cannot know what reserve policy will make their country better off—and, perhaps, they cannot even define precisely what being "better off" is. What many do, therefore, is work to some rule of thumb. A few years ago, for example, there were several central banks that aimed to have about a 50-50 ratio between gold and dollars, whereas others held mostly gold and still others mostly dollars. Reserve ratios generally are not set once for all, however, but are subject to change according to circumstances—particularly to changes in the degree of certainty regarding the gold convertibility of the dollar at its fixed price.

7. Besides reserves, IMF facilities are available in the system to assist countries that encounter balance-of-payments difficulties. The amount any country may draw is originally fixed by its quota, which broadly reflects its size and economic strength. In establishing its quota, each country as a rule pays 25 per cent to the IMF in gold and 75 per cent in its own currency and agrees that its currency may be drawn upon in case of need to finance other countries' drawings. The Fund may also finance drawings partly by selling gold in order to acquire the needed currencies.

The right of a country to draw on its gold subscription is practically automatic; so also is its right to draw on any credit balance it may have built up by having had its own currency drawn upon. These two amounts have come to be called a "reserve position in the Fund." If a country draws on its quota above its reserve position in the Fund, it is taking credit and its right to this credit is conditional upon the IMF judging that its policies are likely to correct its external deficit.

From the standpoint of meeting a deficit, therefore, a Fund reserve position is equivalent to a country's own reserves. But it differs from reserves in three respects:

(i) A drawing on the 25 per cent gold tranche of its quota carries repayment obligations.

(ii) Public confidence in a currency depends more on the size of reserves than on the country's reserve position in the Fund.

(iii) A Fund reserve position—except for credits under General Arrangements to Borrow (GAB)—does not yield interest like dollar reserves, nor does it have the characteristics that induce countries to hold non-interest-bearing gold; thus, when surplus countries supply resources for drawings by deficit countries, they do so as an act of cooperation rather than an act of investment for its own sake.