PRINCETON STUDIES IN INTERNATIONAL FINANCE NO. 12

# The Evolution of the International Monetary System: Historical Reappraisal and Future Perspectives

Robert Triffin

INTERNATIONAL FINANCE SECTION
DEPARTMENT OF ECONOMICS
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## PRINCETON STUDIES
## IN INTERNATIONAL FINANCE

This is the twelfth number in the series called PRINCETON STUDIES IN INTERNATIONAL FINANCE, published from time to time under the sponsorship of the International Finance Section of the Department of Economics at Princeton University.

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FRITZ MACHLUP
*Director*

*Princeton University*
*June 1964*

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# THE EVOLUTION OF THE INTERNATIONAL MONETARY SYSTEM: HISTORICAL REAPPRAISAL AND FUTURE PERSPECTIVES

The debate on international reform has, at long last, spread from academic to official circles. Two parallel investigations were launched a few months ago, at the October 1963 Annual Meeting of the International Monetary Fund, and are now in process: one by the Fund itself, and another by the Ministers of Finance and Governors of Central Banks of ten major industrialized countries (The United States, the United Kingdom, the Netherlands, France, Germany, Italy, Belgium, Sweden, Canada, and Japan).

This should not absolve the academic economists from their responsibility to the international community in which they live. They should, on the contrary, provide whatever assistance they can by stressing the broad and long-term theoretical and historical perspectives which official negotiators may be all too inclined to neglect, because of their legitimate concern with narrower national interests and shorter-term problems.

The present study will first concentrate attention on the broad features of the nineteenth century experience which explain the successful maintenance of currency convertibility—over a large part of the world—for the longest period in recorded history, but which are often misread and misunderstood in current academic literature. It will then summarize, more cursorily, the vast changes in the economic and political environment which led to the collapse of the system in the interwar period and to the dangers which today threaten the stability of the new convertibility experiment launched, little more than five years ago, without any of the safeguards for which I vainly argued at the time.[1] These theoretical and historical considerations will serve as a background for the suggestions that follow regarding the long-term evolution of our present international monetary system. Finally, I shall attempt to sketch the compromises and transitory solutions which are most likely to prove negotiable in the short run, distinguishing between those that may open the door to further evolutionary progress and those that might, on the contrary, be the harbingers of future crises and setbacks in the slow and painful adjustment of our outworn national institutions to the inescapable interdependence of all men in the atomic age.

[1] See particularly *Europe and the Money Muddle* (Yale University Press, 1957), pp. 269-304.

# I. THE MYTH AND REALITIES OF THE SO-CALLED GOLD STANDARD

The monetary traditions and institutions of the nineteenth century provided a remarkably efficient mechanism of mutual adjustment of national monetary and credit policies to one another, essential to the long-term maintenance of exchange-rate stability between national currencies.

The reasons for this success, and for the breakdown of the system after the first world war, are very imperfectly reflected in most of our textbooks. Most of all, however, overconcentration on the mechanism of *intercountry* adjustments fails to bring out the broader forces influencing the *overall pace* of monetary expansion on which individual countries were forced to align themselves.

## A. THE MECHANISM OF ADJUSTMENT AMONG COUNTRIES

### *Textbook Abstract*

Starting from an initial position of balance-of-payments equilibrium, the emergence of a fundamental deficit is generally described in terms of divergent movements of exports—downward—and imports—upward—in the deficit countries, with opposite, and equally divergent, movements in the surplus countries.

The money flows associated with the international settlement of such imbalances, if not offset by domestic "neutralization" policies, should then tend to prompt downward price readjustments in the deficit countries, and upward readjustments in the surplus countries. This would restore a competitive price and cost pattern among them, and bring their balances of payments back into equilibrium.

These "automatic" adjustment forces were strengthened and speeded up by central banks through the so-called "rules of the game." Discount-rate policy and open-market interventions would raise interest rates and tighten credit in the deficit countries, while lowering interest rates and expanding credit in the surplus countries. This would both (1) cushion balance-of-payments and monetary transfers in the short term, by stimulating compensatory capital movements from the surplus to the deficit countries, and (2) accelerate the desirable downward readjustment of prices and costs in the latter countries and their upward readjustment in the first.

The "rules of the game" were widely violated after the first world war. The surplus countries adopted "neutralization" policies which increasingly concentrated upon the deficit countries the burdens of

adjustment previously distributed between surplus and deficit countries alike. At the same time, the development of stronger resistance to downward price and wage adaptations—particularly as a result of the growing strength of the trade unions—blocked the price-adjustment mechanism in the deficit countries, transferring its impact to fluctuations in economic activity and employment. The resulting social and political strains gradually became unbearable, particularly during the world depression of the 1930's, and induced governments to abandon the harsh gold-standard disciplines in favor of fluctuating exchange rates and/or trade and exchange restrictions.

*Historical Abstract*

This highly simplified digest of the theory of international adjustment under the actual gold standard certainly meets the first test of an economic theory, i.e. the test of logical consistency. Does it meet equally well the second test by which a theory should be judged, i.e. its conformity to the major facts calling for explanation?

It undoubtedly fits *some* of the facts. Comparative price—or exchange-rate—movements obviously play a role in the fluctuations of balances of payments on current account, and are themselves influenced by the tightening or expansion of money flows arising both from international settlements and from domestic policies or lack of policies.

Other facts, however, must also be taken into account if we are to develop a general and politically meaningful theory of balance-of-payments adjustments.

1. First of all, the most cursory look at international trade statistics reveals an enormous degree of parallelism—rather than divergent movements—between export and import fluctuations *for any one country*, and in the general trend of foreign-trade movements *for the various trading countries*. Over the eighty years from 1880 to 1960, all significant increases or decreases in the exports of Western Europe were marked by *parallel* increases, or decreases, *for the eleven major trading countries of the world* in 91 per cent of the cases, and by *simultaneous* increases, or decreases, of *exports and imports for each country*, taken separately, in 88 per cent of the cases. These proportions fall to 77 and 73 per cent, respectively, for fluctuations of one year only, but rise to 95 and 92 per cent for fluctuations of more than a year's duration, and to 98 and 100 per cent for movements extending over more than four years.[2]

[2] The above percentages are derived from 287 observations of national increases or decreases for eleven countries (the United States, the United Kingdom, France, Germany, Italy, Belgium, the Netherlands, Switzerland, Sweden, Austria and

2. Equally impressive is the overall parallelism—rather than divergence—of price movements, expressed in the same unit of measurement, between the various trading countries maintaining a minimum degree of freedom of trade and exchange in their international transactions. In spite of wide differences and fluctuations in the composition of each country's exports, the indices of export unit values—measured in current dollars—for the same eleven countries over the period 1870-1960 moved in the same direction in 89 per cent of the observed fluctuations, and in opposite direction in only 11 per cent of the cases.[3]

This solidarity of national price movements—when measured in a common unit of account—is not incompatible, of course, with sharp divergences in national price levels, offset by opposite divergences in exchange-rate fluctuations. One does find indeed that any large variations in the evolution of national prices are invariably offset, more or less rapidly, by exchange-rate fluctuations, and vice versa. Such variations were, however, eschewed—except in wartime—by most industrial countries in the nineteenth century, but were relatively frequent in the countries of the so-called "periphery," and particularly in Latin America.

3. Thirdly, downward wage adjustments rarely reached any sizable amplitude, even in the nineteenth century, among the countries which maintained exchange-rate stability, and it may be doubted whether they would have proved much more acceptable at that time, economically, politically, and socially, than they are today. Wherever substantial inflation had been allowed to develop, international cost competitiveness was nearly invariably restored through devaluation rather than through downward price and wage adjustments.

Standard statistical series for the United States, the United Kingdom, France, and Germany show only four or five instances of actual declines in any broad-based indices of money wages during the fifty years preceding the first world war. Such declines were, moreover, usually confined to one or a few percentage points only. They were far exceeded, in post-gold-standard days, by the much sharper wage drops of the 1920-1922 recession—37 per cent in the United Kingdom—and of the first years of the great depression—22 per cent in the United States and Germany.[4]

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Canada), in the course of seventeen upward or downward movements of more than one per cent in Western European exports, in the period 1880-1960. The estimates used in these calculations are those of Angus Maddison in "Growth and Fluctuations in the World Economy," *Banca Nazionale del Lavoro Quarterly Review*, June 1962, pp. 179-181.

[3] Based on estimates from the same source, pp. 189-190.

[4] See, for instance, *Historical Statistics of the United States* (Bureau of the

4. The "neutralization" policies stigmatized by Ragnar Nurkse as another major cause—alongside of increasing price and wage rigidity—of the downfall of the gold standard[5] were by no means a postwar innovation. Using exactly the same techniques of measurement as Nurkse, Arthur I. Bloomfield found that "central banks in general played the rules of the game just as badly before 1914 as they did thereafter!"[6] It might be noted in passing, however, that Nurkse's method defines as neutralization the cases where fluctuations in a central bank's domestic portfolio offset only a fraction—no matter how small—of the changes in its international assets. In many cases, however, there remained a *positive* correlation between the latter and changes in the central bank's sight liabilities. The impact of the latter changes upon the country's money supply would most often be magnified, in turn, several times by the operation of the private banking system under customary cash and liquidity requirements. Nurkse's "neutralization" policies, therefore, could still permit a *multiple* impact of international gold—or foreign-exchange—movements upon money supply, as contrasted with the mere 1 to 1 impact which would have resulted under the pure gold-coin system of monetary circulation assumed in the most abstract formulations of gold-standard theory.[7]

5. The impact of discount rates on *cushioning* capital movements and on *corrective* changes in cost competitiveness was also far less general and uniform than is usually assumed.

The first seems indeed to have been particularly effective for the well-developed money and capital markets of the major creditor countries and financial centers, and most of all in the case of the United Kingdom. Discount and interest-rate changes could accelerate, or slow down, the normal, or average, pace of capital exports, and had to be resorted to frequently by the Bank of England to defend its very slender gold reserves. The much higher reserve levels of the Bank of France enabled it, on the other hand, to cushion temporary deficits out

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Census, Washington, 1960) pp. 90-92; B. R. Mitchell, *Abstract of the British Historical Statistics* (Cambridge, 1962), pp. 343-345; and France's *Annuaire Statistique—1938* (Paris, 1939) pp. 443-444.

[5] See R. Nurkse, *International Currency Experience* (League of Nations, 1944), pp. 66-88.

[6] Arthur I. Bloomfield, *Monetary Policy under the International Gold Standard: 1880-1914* (Federal Reserve Bank of New York, 1959), p. 50. The evidence of neutralization, measured by Nurkse's formula, was present in 60 per cent of total observations, in the period 1880-1913, coinciding exactly with Nurkse's results for the 1922-1938 period.

[7] See R. Triffin, "National Central Banking and the International Economy," in *International Monetary Policies* (Postwar Economic Studies, No. 7, Board of Governors of the Federal Reserve System, Washington, 1947), pp. 52-53.

of its own reserves, with much rarer recourses to discount-rate changes. Most of all, however, capital-importing countries were far less able to influence in the same way the pace of their capital imports, these being primarily determined by the ease or stringency prevailing in the major financial centers.

The impact of Britain's international surpluses and deficits on British bank reserves was cushioned, moreover, by the ample use of sterling balances as cash reserves by overseas banks, particularly throughout the British Empire. Surpluses and deficits between Britain and its Empire—and even, to some extent, with other countries—merely led to a reshuffling of British bank deposits, rather than to an overall expansion or contraction in their amount and to correlative gold inflows or outflows.

Finally, the enormous role played by the London discount market in the financing of the food and raw-materials exports of the less-developed countries probably imparted to the Bank of England's discount-rate policy an influence on British terms of trade—and balance of payments—which has escaped the attention of economic theorists. Increases in discount rates did, indeed,—as is usually pointed out—tend to reduce British prices and costs, improving the competitiveness of British exports in world markets and of home-made import-substitute goods on the domestic market. What is forgotten, however, is that the tightening of the London discount market also affected, most directly and overwhelmingly, the ease with which inventories of staple foods and raw materials could be financed, thus forcing also a quicker liquidation and attendant price declines in Britain's chief import goods. Such declines could be expected to be far larger than those in the less sensitive and volatile prices of British industrial exports. Thus, the favorable impact of discount-rate increases on British competitiveness (lowering British prices in relation to foreign prices in competing industrial nations) would be reinforced in its balance-of-payments effects by a simultaneous improvement of Britain's terms of trade (i.e., by decreases in the prices of foreign suppliers of complementary goods to Britain, larger than the decreases in British export prices to them).[8]

6. The importance of international capital movements, and of their fluctuations, is often obscured by the disproportionate emphasis often placed on comparative price and cost fluctuations as the major factor in balance-of-payments disequilibria and their correction. Attention is thereby centered on the current-account items of the balance of payments, and tends to suggest that most disturbances arose

[8] See R. Triffin, "National Central Banking and the International Economy," pp. 60-63; and Peter B. Kenen, *British Monetary Policy and the Balance of Payments* (Harvard University Press, 1960), pp. 59-62, and especially the Chart on p. 60.

in this area and had to be corrected promptly by the restoration of equilibrium between receipts and expenditures on current—or even merely merchandise—account.

In fact, however, international capital movements often did cushion —and even stimulate—vast and enduring deficits, or surpluses, on current account without calling for any correction whatsoever, except in an extremely long run indeed. Developing countries, such as the United States, Canada, Argentina, Australia, etc., could maintain, over an average of years, large and persistent deficits on current account, financed by correspondingly large, persistent, and growing capital imports from the more advanced countries of Western Europe. Rough estimates, compiled by the United Nations,[9] place at about $40.5 billion, on the eve of the first world war, the gross long-term foreign investments of the principal creditor countries of Western Europe, and at $3.5 billion those of the United States. Of this $44 billion total, $12 billion had been invested in Europe itself, $6.8 billion in the United States—which was still a net debtor country at the time—$8.5 billion in Latin America, $6.0 billion in Asia, $4.7 billion in Africa, $3.7 billion in Canada, and $2.3 billion in Australia and New Zealand.

The lion's share of these investments was that of the United Kingdom ($18 billion), followed by France ($9 billion), and Germany ($5.8 billion). The United Kingdom had indeed been running persistent and growing surpluses on current account for more than a century, without any tendency whatsoever toward equilibrium. On the contrary, these surpluses rose continually from about $35 million a year, on the average, over the years 1816-1855 to more than $870 million a year in the last years before the first world war (1906-1913). Nobody could ever dream of explaining this favorable balance—and its fluctuations—in terms of the cost-competitiveness adjustment mechanism depicted in the textbooks, since it arose primarily from Britain's earnings on its swelling foreign-investment portfolio, and coincided with large and increasing *deficits* on merchandise account—close to $670 million a year over the period 1906-1913—offset themselves, for the most part, by net receipts on services and remittances account.

These current-account surpluses were nearly fully absorbed by Britain's investments abroad, which rose over the same period from an average of less than $30 million a year in 1816-1855 to more than $850 million a year in 1906-1913, and indeed more than a billion dollars a year in the last three prewar years, i.e. about a third of the British export level at the time, and 10 per cent of net national income.[10]

[9] *International Capital Movements during the Inter-War Period* (New York, 1949), p. 2.

[10] The above estimates are derived from Albert H. Imlah, *Economic Elements in the Pax Britannica* (Harvard University Press, 1958), Table 4, pp. 70-75.

Foreign investments on such a scale undoubtedly accelerated economic development and helped at times relieve balance-of-payments pressures in the recipient countries. In the case of the United States, for instance, net capital inflows from Europe—primarily Britain—financed large and growing deficits on current account throughout most of the nineteenth century. They reached a peak of close to $300 million in 1888, tapering off afterwards, and shifting to net capital exports around the turn of the century, as the United States finally turned from chronic deficits to equally chronic surpluses on current account.[11]

7. The cyclical pattern of international capital movements, however, had a very different impact upon the capital-exporting and the capital-importing countries.

A mere slowdown of capital exports could help relieve, in the first countries, any pressures on central-bank—and private-bank—reserves arising from unfavorable developments in other balance-of-payments transactions. In the British case, for instance, capital exports dropped year after year, from their 1872 peak of roughly $480 million to $60 million in 1877, recovered again to $480 million in 1890, and declined once more in the following years to $110 million in 1898, rising nearly uninterruptedly afterwards to $250 million in 1904, and booming to $400 million in 1905, $570 million in 1906, to reach finally close to $1,100 million in 1913.[12]

The borrowing countries, on the other hand, were far less able to control the rate of their capital imports which tended, on the whole, to swell in boom times and dry up in hard times, contributing further to the economic instability associated with their frequent dependence on one or a few items of raw material or foodstuff exports, themselves subject to wide quantity and/or price fluctuations. All in all, therefore, the balance of payments of the countries of the so-called "periphery" would be assisted, over the long run by the large capital imports available to them from the financial markets of industrial Europe, but these countries would pay for this dependence through perverse fluctuations in the availability of such capital and in their terms of trade over the cycle. The exchange-rate instability of most underdeveloped countries—other than those of colonial or semi-colonial areas tightly linked to their metropolitan country's currency and banking system—finds here one of its many explanations.[13]

8. Another important qualification of the traditional theory of

[11] See *Historical Statistics of the United States*, pp. 562-566.

[12] See Albert H. Imlah, *Economic Elements in the Pax Britannica*, pp. 73-75.

[13] Another, closely connected with the main topic of this study, lies in the retention of a silver standard long after the effective abandonment of silver or bimetallic standards in Europe and the United States.

balance-of-payments adjustments relates to the international timing of reserve movements and discount-rate changes. The textbook explanation suggests that rate increases were undertaken by the deficit countries in order to relieve a drain of their reserves to the surplus countries. As noted by Bloomfield, however, "the annual averages of the discount rates of twelve central banks [England, Germany, France, Sweden, Finland, Norway, Denmark, Belgium, Switzerland, the Netherlands, Russia, and Austria-Hungary] reveal the . . . interesting fact that, in their larger movements at least, the discount rates of virtually all the banks tended to rise and fall together. . . . To some degree, and certainly for many of the banks, this broad similarity reflected competitive or 'defensive' discount rate changes. . . . But a more important explanation lies in the fact that discount rates in most . . . of the individual countries tended . . . to show a positive correlation, though generally not a very marked one, with domestic business cycle fluctuations. Since, as is well known, major cyclical fluctuations tended to be broadly synchronous in all countries, discount rate movements thus generally tended to exhibit a broad parallelism over the course of the world cycle—although there were, of course, many dissimilarities with respect to short-term movements in the various countries."[14]

This importance of parallel movements, associated with the international business cycle—as against divergent movements between surplus and deficit countries—brings us back to the first two points made above (pp. 3-4) and to the comparative neglect of this parallelism in textbook discussions centered nearly exclusively on intercountry balance-of-payments adjustments.

*Reinterpretation and Conclusions*

1. The nineteenth-century monetary mechanism succeeded, to a unique degree, in preserving exchange-rate stability—and freedom from quantitative trade and exchange restrictions—over a large part of the world.

2. This success, however, was limited to the more advanced countries which formed the core of the system, and to those closely linked to them by political, as well as economic and financial ties. The exchange rates of other currencies—particularly in Latin America—fluctuated widely, and depreciated enormously, over the period. This contrast between the "core" countries and those of the "periphery" can be largely explained by the cyclical pattern of capital movements and terms of trade, which contributed to stability in the first group, and to instability in the second.

[14] *Monetary Policy under the International Gold Standard: 1880-1914* (Federal Reserve Bank of New York, 1959), pp. 35-37.

3. The adjustment process did not depend on any tendency toward equilibrium of the national balances of payments on current account. Vast and growing capital movements cushioned over many years, up to a century or more, correspondingly large and increasing surpluses—and deficits—on current account.

4. The preservation of exchange-rate stability depended, however, on the impact of international monetary settlements—of the combined current and capital accounts—upon domestic monetary and credit developments. Large or protracted deficits or surpluses had to be corrected, residually, by a slowdown or acceleration of bank-credit expansion sufficient to bring about—through income and/or price and cost adaptations, and their impact on exports and imports—a tenable equilibrium in overall transactions, and a cessation of persistent drains in the deficit countries' stock of international money (i.e. gold and silver initially, and increasingly gold alone as all major countries shifted from the silver or bimetallic standard to the gold standard).

5. This residual harmonization of national monetary and credit policies depended far less on *ex post* corrective action, requiring an extreme flexibility, downward as well as upward, of national price and wage levels, than on the *ex ante* avoidance of substantial disparities in cost competitiveness and in the monetary policies which would allow them to develop.

As long as stable exchange rates were maintained, national *export* prices remained strongly bound together among all competing countries, by the mere existence of an international market not broken down by any large or frequent changes in trade or exchange restrictions. Under these conditions, national price and wage levels also remained closely linked together internationally, even in the face of divergent rates of monetary and credit expansion, as import and export competition constituted a powerful brake on the emergence of any large disparity between internal and external price and cost levels.

Inflationary pressures could not be contained within the domestic market, but spilled out *directly*, to a considerable extent, into balance-of-payments deficits rather than into uncontrolled rises of internal prices, costs, and wage levels.[15] These deficits led, in turn, to corresponding monetary transfers from the domestic banking system to foreign banks, weakening the cash position of domestic banks and their ability to pursue expansionary credit policies leading to persistent

[15] This is still true today, in the absence of major changes in exchange rates and/or trade and exchange restrictions. See R. Triffin and H. Grubel, "The Adjustment Mechanism to Differential Rates of Monetary Expansion Among the Countries of the European Economic Community," *Review of Economics and Statistics*, November 1962, pp. 486-491.

deficits for the economy and persistent cash drains for the banks. (Banks in the surplus countries would be simultaneously subject to opposite pressures, which would also contribute to the harmonization of credit policies around levels conducive to the re-equilibration of the overall balance of payments.)

Central banks could, of course, slow down this adjustment process by replenishing through their discount or open-market operations the cash reserves of the commercial banks. As long as exchange controls or devaluation were effectively ruled out from their horizon, however, they would themselves be responsive to similar pressures, arising from the decline in the ratio of their own reserves to liabilities. While their liabilities were internal, and thus easy to expand, their reserves were—and still are today—limited to international assets over which they had no direct control.

6. These pressures for international harmonization of the pace of monetary and credit expansion were indeed very similar in character to those which continue today to limit divergent rates of expansion among private banks within each national monetary area.

They were further reinforced, as far as central banks were concerned, by the fact that a substantial portion of the domestic monetary circulation itself was in the form of commodity money—gold and silver—wholly or partly international in character, rather than in credit money. Expansionary credit policies were thus accompanied by an outflow of gold and silver assets from the coffers of central banks into internal circulation and commercial banks' reserves, as well as to foreign countries. This movement of specie into internal circulation was all the more pronounced, as the lowest denomination of paper currency was usually much too high—often equivalent to several times the level of monthly wages—to be usable in household and wage payments. Central-bank credit expansion was therefore limited not only by *foreign* deficits and gold losses, but also by *internal* gold and silver losses, very much as commercial banks' credit and deposit expansion may be limited today by the drain on their paper-currency reserves. While the latter can be replenished by central-bank credit, central banks themselves did not have access to any gold or silver "lender of last resort."

The overall pace of advance of commercial banks' credit and deposit-money creation in a national economy was and remains subject today to the policies of the central bank. Similarly, the overall pace of credit creation by the central banks as a group was limited, in the nineteenth century's international economy, by their ability to increase simultaneously their international reserves.

7. This latter observation brings once more into the limelight a most important question left unanswered by the theory of balance-of-payments adjustment among countries: granted the need for mutual harmonization of national monetary policies among the gold-standard countries, what were the factors determining the *international pace* on which such alignments did take place? The question is all the more significant in view of the size and parallelism of major fluctuations in national price, export, and import levels over the period 1815-1914 as a whole.

### B. THE INTERNATIONAL PACE OF ADJUSTMENT

#### *A Gentle Reminder to the Apostles of Gold Money*

1. The gold standard is often credited with having reconciled, to an unprecedented degree, price stability with a high rate of economic growth over the nineteenth century. Contemporary advocates of a return to gold rarely miss the opportunity of quoting, in this respect, Gustav Cassel's observation that "the general level of prices in 1910 was practically the same as in 1850."[16] This stability is then attributed to the safeguards erected against inflation by the small size of new gold production and monetary gold increases in relation to existing stocks, and, more generally and optimistically, to the response elasticity of new gold production to any substantial decreases or increases in the price level: price declines or increases would be kept in check by their impact on gold-mining costs and profitability, and the resulting stimulation or slowdown of new gold production and monetary expansion.

2. As pointed out by Cassel himself, however, price fluctuations were by no means inconsiderable in the nineteenth century. Increases and decreases of 30 to 50 per cent, or more, accompanied the famous Kondratieff cycles,[17] and have been attributed by many writers—including Cassel—to fluctuations in gold production, following new mining or refining discoveries.

The evidence of long-term stability—or rather reversibility—of prices seen in the return of the 1910 index to its 1850 level is, to say the least, extremely misleading. Such an arbitrary choice of dates

[16] Gustav Cassel, "The Supply of Gold," in *Interim Report of the Gold Delegation of the Financial Committee* (Geneva, 1930), p. 72. The calculation is based on the Sauerbeck-Statist index of wholesale prices, and carried back to 1800 on the basis of Jevons' index. See also, in the same report, Joseph Kitchin, "The Supply of Gold Compared with the Prices of Commodities," pp. 79-85.

[17] See N. D. Kondratieff, "Die langen Wellen der Konjunktur," *Archiv für Sozialwissenschaft*, December 1926, abridged in English by W. Stolper in "The Long Waves of Economic Life," *Review of Economic Statistics*, November 1935.

would allow us, for instance, to demonstrate equally well the "stability" of the price level over the period from 1913 to the early thirties, since the precipitous fall of prices during the Great Depression brought back both the U.S. and the U.K. price indices down to approximately their 1913 level in 1931-1932!

The starting point of Cassel's comparison—1850—is taken close to the very bottom of a long depression during which prices had fallen by 50 per cent or more, while the end year—1910—comes at the end of a fifteen-year upward trend during which the index used by Cassel had risen by more than 30 per cent.

Making the same comparison from peak to peak, or from trough to trough, we would find a rather pronounced downward long-run trend of wholesale prices in all major countries (Table 1). Prices declined,

TABLE 1

Wholesale Price Indices, 1814-1913

| | *U.S.* | *U.K.* | *Germany* | *France* | *Italy* |
|---|---|---|---|---|---|
| *Indices* (1913 = 100) | | | | | |
| 1814 | 178 | 178 | 129 | 132(1) | |
| 1849 | 80 | 90 | 71 | 96 | |
| 1872 | 133 | 125 | 111 | 124 | |
| 1896 | 67 | 76 | 71 | 71 | 74 |
| 1913 | 100 | 100 | 100 | 100 | 100 |
| *Changes* (in %) | | | | | |
| 1814-1849 | −55 | −49 | −45 | −27(2) | |
| 1849-1872 | +66 | +39 | +56 | +31 | |
| 1872-1896 | −50 | −39 | −36 | −43 | |
| 1896-1913 | +49 | +32 | +41 | +41 | +35 |
| **1814-1913** | **−44** | **−44** | **−22** | **−24**(2) | |

*Notes:*

(1) 1820
(2) since 1820

*Sources:*

(1) *For the United States:*
  a) Warren and Pearson index until 1890;
  b) BLS index since 1890.
(2) *For the United Kingdom:*
  a) Gayer, Rostow, and Schwartz index until 1849;
  b) Rousseaux index from 1844 to 1871;
  c) Board of Trade index since 1871.
(3) *For Germany, France, and Italy: Annuaire Statistique* (Paris), pp. 513-515 of 1951 edition (Paris, 1952).

for instance, by 25 per cent in the United States from 1814 to 1872, and by 25 per cent again from 1872 to 1913, adding up to a cumulative 44 per cent decline over the century, from 1814 to 1913. In the United Kingdom, price declines of 30 per cent from 1814 to 1872, and 20 per cent from 1872 to 1913 also add up cumulatively to a similar 44 per cent decline for the century as a whole.

3. The influence of fluctuations in gold production upon these broad price trends seems far more plausible than the supposed inverse relationship from commodity prices to gold production. The significance of any such relationship as may have existed was certainly dwarfed by the gold avalanche unleashed by the discovery of new gold fields and the improvement of mining and refining techniques, both after 1848 and after 1888. On both occasions, current production just about doubled, over twenty-four or twenty-five years, the gold stock accumulated over the previous three-and-a-half or four centuries. The yearly rate of growth in the estimated *monetary* gold stocks—after deduction for hoarding, industrial, and artistic uses—rose abruptly from 0.7 per cent in the first half of the nineteenth century to 4.3 per cent over the years 1849-1872, declined precipitously to only 1.3 per cent in 1873-1888, and rose again to 3.2 per cent in 1889-1913 (see Table 17 in Appendix II).

4. The neat mechanistic explanation derived by some authors from this broad parallelism between gold production and long-run trends in commodity prices fails, however, to give a full account of the complex factors involved in the process of nineteenth-century economic growth. The Kondratieff long waves were certainly influenced also to a major degree by the clustering and spread of technological discoveries and innovations in production, transportation, etc., by the vast migrations from old to new settlement areas, and—last but not least—by the preparation, waging, and aftermath of wars. These powerful influences, brilliantly analyzed by Schumpeter[18] among others, obviously cannot be reduced to any mechanistic monetary explanation. It would be equally absurd, on the other hand, to deny that monetary and banking developments also had a role—even if primarily permissive, rather than initiating—on the acceleration or retardation of price trends and production growth. Schumpeter himself insisted abundantly on the role of bank credit in the process of capitalistic development.

One might well wonder, indeed, whether the unprecedented stability of the major currencies in terms of gold—and exchange rates—in the nineteenth century was not due to the spectacular growth of bank money or "credit money"—in the form of paper currency and bank

[18] Joseph A. Schumpeter, *The Theory of Economic Development* (Harvard University Press, 1934), and *Business Cycles* (New York, 1939).

deposits—rather than to the residual, and fast declining, role of gold and silver "commodity money." Certainly, full dependence of the monetary system on gold and silver, in pre-nineteenth-century days, to the exclusion or near-exclusion of credit or paper money, did not prevent wide inflationary excesses—through debasement of the coinage—and wide fluctuations in exchange rates. The pound sterling lost three-fourths of its gold value and the French franc more than nine-tenths, from the middle of the thirteenth century to the end of the eighteenth century.

5. It is rather ludicrous to reflect that the vast literature devoted to the so-called nineteenth-century gold standard is practically devoid of any quantitative estimates of the enormous changes that modified, out of all recognition, the actual structure of the volume of money, or means of payments, as between gold, silver, currency notes, and bank deposits, between the end of the Napoleonic wars and the outbreak of the first world war.

Yet, according to the League of Nations estimates, paper currency and bank deposits already accounted in 1913 for nearly nine-tenths of overall monetary circulation in the world, and gold for little more than one-tenth. Comprehensive estimates for earlier periods are practically nonexistent and can only be pieced together from disparate sources, the reliability of which is most difficult to assess. Yet, some broad facts and orders of magnitude can hardly be in doubt. Bank currency and demand deposits probably constituted less than a third of total money supply at the beginning of the nineteenth century, but close to nine-tenths by 1913. Silver exceeded gold in actual circulation by about two or three to one until well into the second half of the century, but dropped considerably behind in the latter part of the period, the previous proportion being just about reversed by 1913. Increases in credit money—paper currency and demand deposits—accounted, in the major and more developed countries, for two-thirds or more of total monetary expansion after the middle of the century, and more than 90 per cent from 1873 to 1913 (see Tables in Appendix I).

These facts can hardly be reconciled with the supposed *automaticity* still ascribed by many writers—particularly in Europe—to the so-called nineteenth-century gold standard. The reconciliation of high rates of economic growth with exchange-rate and gold-price stability was made possible indeed by the rapid growth and proper management of bank money, and could hardly have been achieved under the purely, or predominantly, metallic systems of money creation characteristic of the *previous* centuries. Finally, the term "gold standard" could hardly be applied to the period as a whole, in view

of the overwhelming dominance of silver during its first decades, and of bank money during the latter ones. All in all, the nineteenth century could be far more accurately described as the century of an emerging and growing credit-money standard, and of the euthanasia of gold and silver moneys, rather than as the century of the gold standard.

*Monetary Expansion and International Reserves Before the First World War*

A more precise assessment of the nature of the nineteenth-century international monetary mechanism and of its relation to production and price fluctuations must await the development of better monetary and reserve statistics than are now available, not only for the world as a whole, but even for the major countries which formed the basic core of the so-called gold standard. The job certainly exceeds the capacity of any lone researcher and demands, in addition, a familiarity with the literature and methodology of economic history to which I could not lay the slightest claim.

Yet, I have tried boldly—and probably unwisely—to present in Appendix I of this study a provisional digest of the evolution of the structure of money and reserves from 1815 to 1913. These estimates are admittedly extremely rough, incomplete, and conjectural at this stage. I hope to be able to expand and improve them somewhat in a forthcoming book, in which the underlying country data and techniques of calculation briefly summarized here will be developed in greater detail. Most of all, I hope to stimulate economic historians to dig into a most fascinating and productive field of investigation left largely fallow up to now.

The task should not prove impossible, if two limitations are accepted from the start. The first relates to the dearth of meaningful and reasonably reliable statistics for many countries. This should not prove too damaging for an appraisal of the international monetary mechanism in the few major countries which formed in the nineteenth century—and still form today—the core of the system. I have assembled some rough estimates of this sort, running back to 1885, for eleven such countries (the present so-called Group of Ten, or Paris Club, plus Switzerland). They accounted in 1885 and 1913 for 60 to 80 per cent of the world money supply and monetary reserves. Earlier estimates—back to 1815—are for three countries only—the United States, the United Kingdom, and France—but accounted for about half the world money and reserves in 1885 and 1913, and for about two-thirds to three-fourths of the eleven core countries.[19] Tables 2 and 3 of Ap-

[19] World totals, however, are somewhat incomplete and particularly unreliable. See introductory note in Appendix I.

pendix I give further indications in this respect, revealing an encouraging parallelism between the estimates in the three groups.

The second limitation lies in the incompleteness and lack of full comparability of available data even for the major countries. Yet, this could hardly be more damaging than similar—and often far worse—limitations on the validity of other nineteenth-century estimates, in the field of national accounting for instance. They certainly remain, moreover, very minor in relation to the broad orders of magnitude involved in the enormous shifts in the monetary structure revealed by the Tables. In any case, imperfect as they are bound to be, such estimates are essential to an understanding of the nineteenth-century international monetary mechanism, and far better than the implicit and totally unwarranted assumptions that underlie most of past and current theorizing about the so-called gold standard.

With these qualifications in mind, the following observations can be derived from these tables:

1. Although the 1816-1848 estimates are particularly venturesome, there can be no doubt about the very slow growth of monetary gold stocks—just about nil, if we can trust the estimates—and of total money supply—about 1.4 per cent a year—over this period. Monetary expansion was sustained, not by gold accretions, but by an approximate doubling of silver stocks, accounting for about two-thirds of the total increase in the money supply, and for the remaining third by the incipient increase in internal credit monetization.[20]

2. The gold avalanche of the next twenty-four years produced an average increase of 6.2 per cent yearly in the total stock of monetary gold. This rate of growth declined sharply, to about 1.4 per cent a year, from 1873 to 1892, but recovered to about 3.7 per cent in the last twenty years preceding the outbreak of the first world war.

These enormous fluctuations in gold-stock increases were significantly smoothed down by concurrent adaptations in the functioning of the monetary and banking system. The yearly rate of growth of money supply declined only from 4.2 per cent in 1849-1872 to 3.3 per cent in 1873-1892, and recovered to 4.3 per cent, on the average, in the period 1893-1913.

This smoothing down was due, to a minor extent, to the partial offsetting of gold fluctuations by opposite fluctuations in the monetary silver stocks. These contracted substantially in the two periods of fastest gold expansion, but more than doubled during the leaner gold years from 1873 through 1892. Far more significant is the dwarfing

[20] The latter being measured, indifferently, by the excess of money supply increases over the increase of monetary gold and silver stocks, or by the excess of credit money increases over the increase of monetary reserves.

of gold and silver stock changes by the spectacular growth of credit money, which fed more than 70 per cent of total money increases over the years 1849-1872, and about 95 per cent throughout the rest of the period.

3. Credit money—i.e. paper currency and bank deposits—did not, however, normally circulate beyond the national borders of the issuing country and banking institutions. Exchange-rate stability thus depended on their ready convertibility—directly by the issuing banks, or ultimately through a national central bank—into the foreign currencies required, or into metallic currencies or bullion of international acceptability. Silver bullion lost its previous role in this respect around 1872, and silver-coin settlements remained acceptable only among the countries of the Latin Monetary Union. Silver, however, was no longer "full-bodied" money, as the commercial value of silver coins fell well below their nominal value.[21] Gold thus emerged increasingly as the primary guarantor of international exchange stability even for the countries which remained on a so-called "limping" bimetallic standard.

Three factors explain the maintenance of stable exchange rates in the face of growing issues of *national* credit moneys, side by side with fast declining proportions of *international* gold and silver moneys.

The first is the *de facto* harmonization of the national rates of monetary and credit expansion among the gold-standard countries. This harmonization itself, however, depended, as pointed out above (pp. 10-11), on the reaction of the issuing banks to the fluctuations in their reserve ratio arising from cyclical movements in internal circulation, as well as from external settlements of balance-of-payments disequilibria.

The *overall* pace of expansion, in turn, could not but be strongly influenced by the ability of the national banking systems to accumulate sufficient gold reserves to guarantee the convertibility of their national credit money issues into the gold through which foreign currencies could be acquired at stable exchange rates. The maintenance of relatively fast rates of monetary expansion after 1848 was thus conditioned by two further factors which the Tables of Appendix I bring clearly into light.

The first was the spectacular spurt in gold production that followed the discovery of new gold fields and improved mining and refining techniques, and was of course predominantly accidental in character.

[21] The valuation of silver at nominal par in the Tables thus *understates* the importance of credit money, since silver coinage included in effect a substantial credit money component. Its acceptance at par among the countries of the Latin Union demonstrates the feasibility of international credit money settlements, even under the very imperfect arrangements negotiated to this effect among the countries of the Latin Union.

The second lay in the resiliency and adaptability of monetary and banking institutions, and the enormous economy of the precious metals which resulted from their increasing transfers from actual circulation in the public to the reserve coffers of commercial banks and of national central banks—or Treasury in the case of the United States.[22] The proportion of monetary gold and silver stocks absorbed in centralized monetary reserves rose from about 10 per cent in 1848 to 16 per cent in 1872, 41 per cent in 1892, and 51 per cent in 1913.[23] Even more significant is the relative proportion of new gold accretions absorbed by central reserves, on the one hand, and by the public and banks on the other. During the first gold avalanche of 1849-1872, 81 per cent of the new gold was dispersed among the public and banks, only 19 per cent being accumulated in reserves. These proportions were nearly exactly reversed in the leaner gold years from 1873 through 1892, 82 per cent of the new gold feeding the increase of central reserves, with a multiple impact on overall money creation. When gold production rose again at a faster pace in the period 1893-1913, the proportion absorbed by central reserves declined to 66 per cent, while that of private holdings rose from 18 to 34 per cent.

These spectacular changes in the structure of money and reserves thus contributed powerfully both to the maintenance of relatively fast rates of monetary expansion, and to a considerable smoothing out of money supply fluctuations in relation to fluctuations in the available gold stocks.

4. There was nothing inherently stable, however, in a process of monetary creation so heavily dependent on the accidents:

(a) of gold and silver discoveries and production rates;

(b) of uncoordinated—and largely irrational—national decisions regarding the adoption, retention, or abandonment of silver, gold, or bimetallism as the basic monetary standard; and,

(c) of compensatory adaptations in banking structure, the scope of which would inevitably taper off over time, especially when central

[22] The reserve estimates of the Tables refer to the centralized holdings of central banks and treasuries only. The gold and silver components of money supply estimates include, therefore, gold and silver held by other issuing banks and commercial banks, thus overstating once more the metallic component of money supply in the modern sense of the word—coin, currency, and demand deposits in the hands of the public—and understating the proportion of credit money in circulation outside banks.

[23] The proportion of gold alone temporarily dropped from 31 per cent in 1848 to 20 per cent in 1872, rising later to 35 per cent in 1892, and 51 per cent in 1913. The 1848-1872 decline, however, was more than compensated by the increased absorption into centralized reserves of silver which could still be regarded at that time as a valid reserve component. After 1872, the movements of gold alone are more significant than those of gold and silver combined.

banks could no longer replenish their own reserves from the dwindling—relatively, if not yet absolutely—amounts of gold still in circulation.

In any case, the slow evolution which had adjusted gradually the international monetary system of the nineteenth century to the economic requirements of peacetime economic growth, but had also changed it out of all recognition between 1815 and 1913, was brutally disrupted by the outbreak of the first world war. The ensuing collapse of the system ushered in half a century of international monetary chaos, characterized by widespread exchange-rate instability and/or trade and exchange controls, with only brief interludes of nostalgic and vain attempts to fit upon the twentieth-century economy the monetary wardrobe of the nineteenth-century world.

## II. A HALF CENTURY OF INTERNATIONAL MONETARY ANARCHY: 1914-1964

### A. *The Aftermath of World War I*

The financing of the first world war and of postwar reconstruction forced, as has always been the case in previous and later wars, sharp and inflationary increases in the monetary liabilities of national banking systems, while gold production expanded at a much slower rate than previously. The ratio of gold reserves to money supply—and foreign trade—thus fell drastically, well below the levels compatible with the maintenance of convertibility in most of the belligerent countries. Convertibility was suspended over a large part of the world.

Freely fluctuating exchange rates failed signally, in the following years, to restore a competitive price and cost pattern among the major trading nations, to induce the adoption of monetary policies compatible with even a moderate degree of stability in prices and exchange rates, and to bring about any sort of tenable equilibrium in the world's balance-of-payments pattern. They stimulated instead speculative movements of hot money which contributed to a considerable overvaluation of the pound sterling—at its old prewar parity—to a parallel undervaluation of the French and Belgian francs, to an utter collapse of the German mark, and to various degrees of overvaluation and undervaluation in the bilateral relationships among these and other currencies.

Currency convertibility was finally restored, in one country after another, in the second half of the 1920's, but under conditions which could not fail to usher in its early collapse, after a brief period of euphoria in some countries and of unendurable hardships in others.

First of all, the outflow of hot money from the European continent to Britain led to the adoption of fundamentally undervalued exchange rates in the first countries and of an overvalued rate in the latter, thus unleashing strong expansionary forces on the continent, but a deep slump in exports, economic activity, and employment in Britain.

Secondly, the return to convertibility had to be sustained by the reconstruction of adequate reserve levels by the central banks. This was achieved in the undervalued countries with the help of foreign loans, of the revaluation of the outstanding gold and foreign-exchange assets of central banks at the new gold and foreign-exchange parities,[24]

[24] French gold and foreign-exchange reserves, for instance, rose from 5.5 billion old francs in 1927 to 64.7 billion new francs in 1928, 87 per cent of the total

and of the large balance-of-payments surpluses stimulated by the undervaluation itself.

A substantial component of these surpluses, however, was constituted by the return of refugee capital from London, under the triple impact of currency stabilization and booming economic activity on the continent, and of the deep economic slump in Britain. The reconstruction of adequate reserve levels in Britain, on the other hand, had been achieved very largely on the basis of these previous inflows of continental hot money, and was now severely threatened both by its repatriation to the home countries and the attraction of Wall Street.

The British authorities were by no means unaware of the vulnerability of this position, and had long prepared two lines of defense to protect it. One was the agreement between Benjamin Strong, President of the Federal Reserve Bank of New York, and Montagu Norman, Governor of the Bank of England, to try and preserve higher interest rates in Britain than in the United States. The agreement became harder and harder to implement, however, in the face of the British slump and of the boom on Wall Street. The other line of defense was the attempt of Britain to propagandize the adoption—by other countries—of a so-called "gold-exchange" standard under which their central banks would hold a substantial portion of their international monetary reserves in the *national* currency of major trading and financial centers, i.e. very largely in sterling. This succeeded, for a while, in shoring up Britain's slender gold reserves against the impact of speculative-capital withdrawals, following the stabilization of European currencies. Central-bank reserves of foreign exchange rose from about $700 million in 1913 to more than $3 billion in 1928, of which some $2½ billion—i.e., three to four times the total gold reserves of England—may be estimated to have been held in sterling, legally convertible into gold on demand or on very short notice.

The Bank of France, however, showed itself increasingly reluctant to continue to retain as a permanent component of its reserves the whole amount of the sterling balances which it had to buy from the market in order to prevent a further appreciation of the French franc, after its sharp rise from 260 francs to 125 francs per pound in the latter part of 1926. Conversions of official French holdings of sterling into gold or dollars became a growing source of worry for the Bank of England, which had to plead also with other countries to refrain *voluntarily* from converting their gold-convertible sterling into gold.

The financial sequels—particularly in Germany and Central Europe—of the 1929 world crisis finally swept away the fragile convertibility

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increase arising from the nominal revaluation profits resulting from the redefinition of the franc parity.

façade, so painfully restored in the late 1920's. Convertibility was once more suspended in Britain, on September 21, 1931, ushering in long years of international monetary chaos, compounded by the great depression of the 1930's, the second world war and its aftermath, and the worldwide spread of exchange-rate instability, exchange control, and bilateralism.

B. *The Aftermath of World War II*

The monetary aftermath of World War II presents a number of contrasts to, but also a striking similarity with, that of World War I.

Once again, wartime and postwar reconstruction financing brought about vast increases in money supply and a considerable decline in the ratio of international reserves to national monetary liabilities. Generalized recourse to exchange controls slowed down, or postponed, the exchange-rate readjustments which had characterized the 1920's, and bunched up many of them in September 1949. In spite of the 1949 devaluations, however, the ratio of gold reserves to money supply for the eleven major countries of the Paris Club, taken as a group, fell from about 39 per cent in 1937 to 19 per cent in 1949 (see Table 6 in Appendix I).

The pound sterling was, this time, engulfed also in the devaluations which swept the other European currencies. Its international status as a reserve currency had never fully recovered from the 1931 collapse, and had been weakened further by the forced or semi-forced accumulation of inconvertible pounds by many countries, during and after the war. Refugee capital had flown, not to London, but to New York, contributing in the end to a long-term undervaluation of the European currencies in general in terms of the mighty postwar U.S. dollar.

Central banks once more accumulated a growing portion of their international reserves in the form of foreign exchange, alongside of gold metal, but this accumulation centered now on the dollar rather than the pound. The reserve liabilities of the United States to foreign monetary authorities rose from about $0.8 billion in 1939 to $8.7 billion in 1957 and $12.9 billion in 1962 (see Table 15 in Appendix II).

The gradual undermining of the U.S. net reserve position from nearly $23 billion in 1949 to about $16 billion in 1957 took a more precipitous turn with the huge U.S. balance-of-payments deficits of the later years, when the effects of the relative undervaluation of the European currencies were compounded by the reflux of European refugee capital, following the restoration of currency confidence and convertibility in Europe. Net U.S. reserves declined by more than a half, from $16 billion to $7 billion, between the end of 1957 and the end of 1960.

The latent dollar crisis burst into the open in October 1960, with the sudden flare-up of gold prices on the London market.[25] The reversal of short-term private-capital movements has continued, ever since, to exercise a heavy drag on our overall balance of payments. Normal inflows averaging $500 million a year in the early 1950's and about $1 billion a year in the late 1950's were replaced by persistent outflows of more than $2 billion in 1960, and about $1.6 billion in each of the following two years (see Table 14 in Appendix II).[26]

The gold drain from the United States was kept at tolerable levels by the accumulation of dollar balances by foreign central banks, but as these continued to pile up the U.S. authorities had, like Britain some thirty years earlier, to try and elicit, through bilateral and multilateral discussions and negotiations, voluntary restraints on the conversion into gold of the gold-convertible dollar balances accumulated by foreign central banks under the ill-fated gold-exchange standard. Continuous efforts had to be devoted also to eliciting international cooperation in discount and interest-rate policies—as had also been hammered out in a reverse direction between Benjamin Strong and Montagu Norman in the late 1920's—so as to moderate short-term capital outflows from New York to the European markets. Once more, such policies proved harder and harder to impose, or preserve, in the face of national economic conditions calling for an exactly opposite pattern of interest rates, in Europe as well as in the United States.

In brief, the contrast between financial and economic developments in the United States and in Europe after World War II closely resembles the previous contrast between developments in the United Kingdom and in continental Europe after World War I:

1. In the early postwar years, large movements of private capital and central-bank funds from Europe to the United States;

2. The consequent undervaluation of European currencies in relation to the dollar, when a new and durable pattern of exchange rates emerged, in September 1949, under the influence of such capital movements;

3. The resulting stimulation of exports and economic activity in Europe, and downward pressures on growth rates and employment in the United States;

4. The repatriation of European refugee capital, under the double

[25] The influence of the cessation of U.S.S.R. sales, and of other accidental factors, was sharply aggravated by the sudden withdrawal of the Bank of England from the market, following dark hints by our own Treasury officials that the support operations of the Bank might not fall within the scope of "legitimate monetary purposes" conditioning central banks' access to the U.S. Treasury gold.

[26] See also R. Triffin, "The Latent Crisis of the Reserve Currencies," *The Banker*, London, August 1963.

impact of (2) and (3), after the restoration of confidence in European currencies;

5. The acceleration of U.S. capital outflows and reserve losses, prompted by speculative expectations of possible changes in gold prices and exchange rates, as well as by the differential evolution of earning prospects and interest rates in Europe and in the United States under the impact of (2) above;

6. The growing conflict between domestic and external criteria governing the choice of credit and interest-rate policies, on both sides of the Atlantic; and the predictable frustration of European attempts to persuade the U.S. authorities to raise interest rates in the face of heavy unemployment, as well as of American attempts to persuade European authorities to lower interest rates in the face of heavy inflationary pressures at home;

7. The U.S. efforts to elicit further purchases and retention of dollar balances by foreign central banks, and to discourage conversions of such balances into gold or foreign currencies;

8. Protracted discussions and negotiations on the need to remedy the gold—or liquidity—shortage and the instability inherent in the haphazard accumulation and liquidation of foreign exchange reserves under the gold-exchange standard.

There remain, fortunately, major differences between the British monetary problem in the aftermath of World War I and the United States problem today.

First of all, the world economy is in far better shape today than it was in 1931, and the overall economic and financial position of the United States far stronger than that of 1931 Britain.

Secondly, the world's financial and political leaders are now keenly aware of the disastrous consequences which any repetition of the 1931 policies, or lack of policies, could entail for the international monetary and economic order of the West. They have also developed since the second world war deeply ingrained habits of cooperation in vital matters and laid the foundations, at least, of the worldwide and regional monetary institutions necessary to organize, on a durable basis, the functioning of an international monetary system adapted to the realities of the financial, economic, and political interdependence of their theoretically sovereign countries.

### C. *Stopgaps and Expedients*

This spirit of cooperation found its first expression in the negotiation, under the able leadership of Per Jacobsson on the one hand, and of Under Secretary of the Treasury Roosa on the other, of a bewildering array of multilateral and bilateral agreements, designed to shore up

the U.S. dollar and the international gold-exchange standard—now so dependent on the continued stability of the dollar—against the crises which threaten them both. While these agreements should, in the end, pave the way for more fundamental and systematic reforms of our outworn international monetary system, their negotiation was accompanied at first by indignant denials of any need for such reforms.

The accent was put throughout on the need to protect the reserve currencies, and the gold-exchange standard itself, against sudden shifts by reserve holders or private speculators from one currency into another or into gold. Two different methods of approach were successively followed to fulfil that aim.

The first was to increase the International Monetary Fund's lending resources, thus enhancing its ability to intervene in cases of crisis. The normal capital resources of the Fund were increased by more than 50 per cent in 1959, and a further $6 billion of resources were negotiated among the so-called Group of Ten,[27] in 1961-62, to be made available to the Fund "when supplementary resources are needed to forestall or cope with an impairment of the international monetary system . . . in the new conditions of widespread convertibility, including greater freedom for short-term capital movements."

The second approach was through less formal short-term commitments of mutual support among the central banks of roughly the same group of countries, plus Austria, Switzerland, and the Bank for International Settlements. We can range under this heading the support extended to sterling on two occasions—in March 1961 and March 1962—by a group of other central banks, the so-called gold pool in operation since December 1961, and, most of all, the vast array of bilateral swap and swap stand-by agreements, and purchases of nonmarketable dollar and foreign-currency securities, negotiated with major financial centers in the last two years by Mr. Roosa.[28] Mention should also be made of the Monetary Committee of the EEC countries, and of Working Party No. 3 of OECD, which review periodically developments and policies bearing on international payments and monetary stability of the member countries, individually and as a group.

[27] The United States, the United Kingdom, Canada, Japan, Germany, France, Italy, the Netherlands, Belgium, and Sweden. Since the agreement is primarily designed to cushion dangerous capital movements *between* the signatories themselves, the *maximum* resources callable could not, however, exceed half of the total, and are most unlikely to reach even that figure. For further analysis and criticism of this agreement, see my "Lendemains de Vienne: Mesures conservatoires et germes d'avenir," in *Trois Études sur le Problème des Liquidités Internationales*, Banque Nationale de Belgique, April 1962, pp. 15 and 16.

[28] Operations under these agreements are summarized periodically in reports prepared by Charles A. Coombs and published in the *Federal Reserve Bulletin* (see issues of September 1962, March 1963, and September 1963).

Considerable success was achieved thereby in offsetting and discouraging the speculative capital movements which have threatened, ever since October 1960, the two key currencies—sterling and, particularly, the dollar—on which the international gold-exchange standard is anchored. On the other hand, most of the commitments described above remain of a short-term character, subject to frequent renegotiation, and aim only at warding off future crises in the international monetary system, rather than at eliminating the basic vulnerability of the system which is at the root of such crises.[29]

### D. *The Process of International Reserve Creation over the Last Half-Century*

This vulnerability emerges clearly from even the most cursory examination of the actual process of international reserve creation over the last fifty years (see Tables 8-12 in Appendix II). For the world as a whole,[30] international monetary reserves had increased by 1962 to nearly fourteen times their 1913 level, i.e. at an average rate—on a compound basis—of about 5.5 per cent a year, but with a considerable range of variations, from actual declines in the years 1929-32 to nearly 7 per cent a year in 1914-28.

The role of gold in gross world reserves has fallen from 85 per cent in 1913 and 95 per cent in 1933-34 to about 60 per cent in 1962. Even more striking is the steadily decreasing role of Western gold production as a source of current reserve increases. From 78 per cent of such increases in 1934-37, it fell to 51 per cent in 1938-49, 30 per cent in 1950-57 and less than 19 per cent in 1958-62. In these last five years, the overall reserve increases derived from Western gold production alone represented an average growth rate of roughly one half of one per cent a year in total world reserves, only slightly larger on the average—and far smaller, in fact, in 1960 and 1962—than the amounts derived from U.S.S.R. gold sales in Western markets.

Overall reserve increases have been fed overwhelmingly, and increasingly, over the last fifty years, from other, and even more erratic sources:

1. The withdrawal of gold coin from active circulation and from commercial banks' cash reserves. This source of supply accounted for

[29] For a more detailed review of the measures briefly summarized in the above text, see the excellent study of Robert Z. Aliber on *The Management of the Dollar in International Finance* (Princeton Studies in International Finance, No. 13, to be published later this month).

[30] Excluding the Eastern bloc countries. The same qualification will, regrettably, apply throughout to all reserve statistics, owing to the unavailability of reliable information. See, however, the note presented in Appendix II on U.S.S.R. gold production and reserve estimates.

about 31 per cent of total reserve increases over the years 1914-28, but finally dried up in 1933.

2. The devaluation of the dollar accounted for more than the total reserve increases of the years 1929-33, which would, otherwise, have been negative owing to the wholesale liquidation of foreign-currency reserves by central banks.[31]

3. The net impact of IMF transactions contributed 7 per cent of world reserve increases over the years 1950-57, and 9 per cent in the following five years.

4. Russian gold sales to the West have, as already mentioned, fed a modest, but increasing proportion—up to 14 per cent in 1958-62—of the Western world's reserve increases, and about two-thirds of the small gold reserve increases of the years 1960 and 1962.

5. Finally, the lion's share of overall reserve increases has been derived increasingly, but most erratically, from central-bank accumulation of national currencies as international reserves. From 30 per cent in 1914-28, it dropped to *minus* 28 per cent in 1929-33, recovered to a modest 17 per cent in 1934-37, rose sharply to 49 per cent in 1938-49, and to about 58 per cent in 1950-62. Sterling remained the largest component, by far, of such so-called key-currency reserves until the end of the second world war, but has ceased since then to contribute any significant amount to the world reserve pool. Its place had been taken by the dollar balances which, alone, contributed more than half of the world's reserve increases in the period 1950-62.

Adding to this the U.S. gold losses and reduction of net claims on the IMF, we see that other countries derived from net U.S. reserve losses nearly 60 per cent of their total reserve increases in 1950-57, and 80 per cent in 1958-62, i.e., in these last five years nearly eight times as much as the amount of reserves derived from gold production in the West (see Table 13 in Appendix II).

Nobody can any longer seriously defend such a system—or rather lack of system—as a safe and rational way to regulate the increase of international reserves which must serve as the ultimate basis, particularly under convertibility conditions, for the increases in national money supplies necessary to support growing levels of production and trade in an expanding world economy. Legitimate, non-inflationary reserve requirements of economic growth can hardly be defined—and met—by the algebraic addition of the monetary gold released by new production in a country threatened with civil war and by Premier Khrushchev's sales in Western markets, *minus* the erratic amounts absorbed by private gold speculators and industrial and artistic uses,

[31] This calculation is based on the shift of the gold price from $20.67 to $35.00 an ounce, although this new parity was not legally determined until January 1934.

*plus* the financing of variable U.S. (and subsidiarily U.K.) deficits through autonomous or induced accumulation of dollar (and sterling) IOU's by central banks, *minus* the ever possible conversion into gold metal of such IOU's accumulated over many years past.

Our present international monetary system is not necessarily deflationary. It may, on the contrary, lead to excessive reserve creation at times, and unduly weaken normal balance-of-payments disciplines for the reserve-currency countries. In the longer run, however, even "normal" and desirable contributions of the reserve currencies to the maintenance of an adequate growth rate of the world reserve pool inevitably entail a persistent decrease in the net monetary reserves of the reserve-currency debtors, and a gradual undermining of the acceptability of such currencies as safe reserve assets for other central banks. After that point is reached, the only alternative paths still open to national monetary authorities are to accept and enforce world deflation or restrictions, to trigger the devaluation of the reserve currencies—followed by a spiral of other devaluations to offset the ensuing distortion of competitive export and production costs—or to continue to hold and accumulate, more and more reluctantly, the reserve currencies in order to ward off such a devaluation.

Even if the latter path is adopted—as it has been over the last few years—the growing mistrust of private speculators in the ultimate stability of the system is likely to aggravate the difficulties of the reserve currencies in question, and to impel central banks to step up their stabilization interventions and absorb even larger amounts of reserve currencies than would otherwise be necessary.

Such, at least, was my "diagnosis" in *Gold and the Dollar Crisis*, written in 1958 and 1959, and which subsequent events would hardly lead me to repudiate today. As for the "prescription" proposed at that time, I would still regard it as basically valid, with minor adaptations to take account of recent developments and particularly of the ever changing course of negotiating obstacles and opportunities.

I shall, in the next section of the present study, present a bold—and somewhat academic—outline of the long-run aims that should, in my opinion, guide and inspire future attempts at monetary reform. This outline will systematically ignore the realities of the negotiating process itself, and leave for the concluding section of this study the examination of the compromises—acceptable or undesirable—which are likely to emerge from the current exploration of international monetary reforms at long last launched during the last annual meeting of the IMF, in October 1963.

## III. THE LONG-RUN EVOLUTION OF OUR INTERNATIONAL MONETARY SYSTEM

### A. *A Single Reserve Center*

The long-term consolidation of the international reserve system, and the adaptation of international reserve creation to the full, non-inflationary growth potential of the world economy, would obviously be enormously facilitated by the adoption of a single clearing and reserve Center for national central banks. Each central bank would hold all of its monetary reserves—except for moderate, day-to-day working balances—in the form of international deposits with such a center.

Central banks would acquire, at the start, their initial reserve deposit with the Center by transferring to it their outstanding holdings of gold and other convertible reserve assets (see D below).

### B. *Cash Settlements*

The Center would then operate as a clearing agency for all subsequent international settlements not cleared by the private exchange market itself. Three types of operations would come under this heading:

1. Direct settlements among central banks would be effected by mere bookkeeping transfers, debiting the account of the payor, and crediting the account of the payee.

2. Stabilization interventions by central banks on the exchange markets involve either the purchase, or the sale, of foreign exchange by the bank concerned. The foreign currencies needed to reconstitute working balances depleted by such sales would be bought from the Center, through corresponding debits in the buying bank's reserve account. Conversely, foreign currencies—in excess of working balances —accumulated by a central bank in opposite stabilization interventions would be transferred to the Center and credited to the depositing bank's reserve account.

The reserve account of the central bank whose currency had been sold to the Center would be debited by the amount transferred. In the opposite case when a currency is bought from the Center, two alternative techniques could be considered. The simplest one would be for all central banks to authorize the Center to sell their currency directly against corresponding credits to their reserve account. The other would be for the Center to accumulate and maintain adequate

working balances in the major currencies used in fact in such stabilization operations.

3. A third type of cash transaction would relate to the Center's purchases and sales of gold, and depend very much on the future policies jointly adopted among the world's monetary authorities regarding the suspension or continuation of the support extended by them up to now to the stabilization of gold-metal prices.

Under the radical reforms envisaged above, gold could well be dispensed with as a medium of reserve accumulation, by the Center as well as by the national central banks. The essential requirement of a national currency is to be generally acceptable in payment within the country's borders. Such general acceptability can be elicited by other means than convertibility in gold metal, in one case as well as in the other, and we shall examine below[32] how this could be done.

The continued guarantee of stable gold prices by the Center, or the world central banks, would then be tantamount to a decision to continue the traditional support given to gold-metal prices by the purchases of the monetary authorities. The main arguments in favor of such a policy would be:

1. to take advantage of the continued popular illusion that gold reserves alone can constitute an effective barrier against inflation and a proper backing for the liabilities of central banks—or of the proposed Center itself;

2. to avoid the bookkeeping losses that a demonetization of gold would almost certainly entail;

3. to avert a sudden disruption of the economies of the major gold-producing countries.

None of these arguments is very powerful, and the latter two problems could be solved, in a different manner, on their own merits. On the other hand, the continuation of gold support prices might well require very large purchases of gold, and unleash inflationary increases in world reserve assets and monetary liabilities, if the contemplated reform were to trigger large gold dishoarding by speculators. This would not be inconceivable, once people fully realized that such a reform had equipped central banks with ample means to dispense with gold altogether, and—at the very least—to rule out any probability of an increase in world gold prices in the foreseeable future.

If the decision were nevertheless adopted to support the world gold price at its present level, official interventions in the private gold market could be conducted either by the Center itself, or by the central banks. In the latter case, central banks would sell to the Center—

[32] See p. 36.

against corresponding credits to their reserve account—any gold purchased in the course of such stabilization operations; and they would buy from the Center—against corresponding debits to their account—the gold they might need to sell.

Until the U.S.S.R. and the countries associated with it decided to join the Center, any of the techniques described above would strengthen the Western world against any possible abuse of the large gold stock—and gold production—of these countries for disruptive interventions, of an economic-warfare character, in the Western gold markets.

C. *Credit Operations*

The major central banks, at least, will probably wish to continue to increase their reserve levels—in future years as well as in the past—in order to facilitate the maintenance of international convertibility, at stable rates of exchange, of the rising amounts of their national currency issues needed to support expanding levels of production. The mechanism of reserve creation should adjust to this fact and promote a continuous adaptation of the world's reserve pool to the demand for reserves associated with feasible rates of non-inflationary growth in world trade and production.

Under the reform suggested here, all—if gold price support is abandoned—or a large portion, at least, of the necessary reserve increases would have to be derived from the progressive expansion of the Center's loan-and-investment portfolio. The pace of overall increases should be determined jointly, in the light of—and in such a way as to combat or moderate—discernible inflationary or deflationary pressures of a worldwide character.

Prospective surplus countries, however, will probably want to incorporate in Treaty form some guarantees against inflationary abuses of the Center's lending potential, since indeed this potential would otherwise be unlimited.[33] Such a Treaty might specify, for instance, a presumptive ceiling of 3 to 5 per cent in any twelve-month period, on the net expansion of the Center's global assets and liabilities. Such a ceiling would not necessarily be reached in any period of time—particularly at times of inflationary pressures—but it could not, in any

[33] Excessive lending to deficit-prone countries would merely increase *pari passu* the assets and liabilities of the Center. Subsequent drawings on their deposits by the borrowers could only reshuffle the Center's liabilities among its depositors, without producing any decline in overall liabilities. A worldwide Center would therefore be exempt from the discipline exercised upon a national central bank by national balance-of-payments deficits, in the same way as a national central bank can elude the discipline exercised upon commercial banks by losses of deposits from the more expansionary to the less expansionary banks of the system.

case, be exceeded, except by qualified voting majorities of two-thirds, three-fourths, etc., of the total voting power.

Within these broad limitations, individual loan and investment operations would be designed to support mutually acceptable policies of member countries against temporary balance-of-payments pressures, thus providing a powerful stimulus for the long-run harmonization of members' policies, and the avoidance of unnecessary recourse to exchange restrictions, devaluation, or deflation by the deficit countries.

Desirable balance-of-payments disciplines upon countries following persistently inflationary policies would therefore be maintained, and indeed reinforced. No country could escape them through the automatic, but erratic and precarious, access to international borrowing enjoyed in the past by the reserve-currency countries—a type of borrowing the haphazard use and liquidation of which could unleash at any time highly disruptive forces upon these countries themselves, upon the rest of the world, and upon the stability of the international gold-exchange standard.

The nature of the Center's lending operations would have to be adapted to the character of the resources used by it. Since its overall portfolio would be called upon to expand continually—although at a variable rate—over the years to come, but rarely—if ever—to be substantially contracted, some of its loans and investments might be granted in theory for extended maturities. They might even take a form similar to that of the famed British "consols," without any repayment date whatsoever, but on which interest would be paid indefinitely by the borrowers. This would make it easier to channel the world's thirst for reserves into long-term development financing of the countries most in need of such assistance.

Yet, direct long-term loans to, or investments in, the underdeveloped countries by the Center may well be regarded as unadvisable as well as unnecessary in practice. They would, first of all, have to overcome powerful taboos in the financial community whose "orthodox" canons, inspired by commercial-banking criteria, would damn any long-term assets as inappropriate backing for the short-term liabilities of a monetary institution. Secondly, even though its total portfolio would not be subject to the threat of sudden and massive contraction, the Center should remain able to reshuffle its loans and investments among members, in order to counteract undesirable capital movements and other short-term disturbances in the international balance-of-payments pattern. Thirdly, long-term investments require a very different type of knowledge and expertise than those that should be relevant to stabilization interventions in the exchange market.

The bulk of the Center's assistance to long-term development

financing should thus, in all probability, be channelled through—and cushioned by—intermediary institutions, specialized in such long-term lending. The Center might, for instance, distribute its investment portfolio between marketable obligations of international institutions, such as the International Bank for Reconstruction and Development, and other short-term or medium-term investments in the major financial centers—New York, London, Paris, Frankfurt, Amsterdam, etc.—enabling these to engage more boldly and actively in long-term lending, in the knowledge that temporary pressures on the country's reserves would be offset by a reshuffling of the Center's own investment portfolio.

Taken in conjunction with one another, the credit criteria suggested above would essentially tend to recreate some of the basic features of the adjustment mechanism of the nineteenth-century gold standard.[34] Vast amounts of private long-term lending then cushioned, for long periods of time, the current-account deficits of developing countries and made more bearable and acceptable the discipline exercised upon monetary policy by residual balance-of-payments pressures. Fifty years of monetary and economic instability and the constant threat of governmental interference in private contracts have paralyzed, or perverted, much of these private capital flows in modern times. They can be revived, in part, and redirected by official policies designed to stabilize the international framework in which they take place. They have, in addition, been supplemented by official lending which can itself be further encouraged, and better distributed as between the U.S. and other countries, by the international underwriting of monetary stabilization policies.

Similarly, concerted international action is necessary today to harmonize relative rates of monetary and banking expansion in such a way as to preserve long-run balance in the international pattern of payments, without unnecessary recourse to trade or exchange restrictions or exchange-rate readjustments. Market pressures, arising from deposit losses and cash settlements by the more expansionist to the less expansionist banks, usually sufficed, in the nineteenth century, to ensure such harmonization among *individual* banks—and therefore, among national banking systems—*irrespective of the existence of national political borders.* This ceased to be true as

1. commercial banks' cash assets progressively shifted from internationally acceptable commodity moneys—gold and/or silver—to nationally issued credit money; *and*

2. central banks' credit policies and monetary issues became more and more responsive to a variety of national objectives—such as price

[34] See above, Section I, pp. 9-10.

stabilization and satisfactory employment levels and growth rates—competing with, and often overriding, their initial concern with the maintenance of international reserve levels fully adequate to preserve full convertibility of their own liabilities into gold or foreign exchange, at stable rates.

International consultation among responsible national monetary authorities has thus become the only effective channel for the development of compatible and mutually supporting policies, and the minimization of unnecessary recourse to internationally disruptive, contagious, and mutually defeating policy measures. Unilateral action by the deficit countries alone to eliminate rapidly any emerging balance-of-payments disequilibria—whether lasting or temporary—often contributes to the unnecessary adoption and spread of deflation, devaluation and/or trade and exchange restrictions among member countries. Concerted action by surplus and deficit countries alike can certainly offer far more attractive, even though often slower-acting, means to correct such disequilibria over time, with a minimum of disruption of the national economies concerned. Conditional access to the Center's lending resources would (1) provide an added stimulus to such policy harmonization, and deterrent to unilateral action, (2) supplement the deficit country's ability to finance residual, temporary deficits through the depletion of its independent monetary reserves, and (3) discourage speculative capital movements which might otherwise create further, and possibly unbearable, drains on such reserves.[35]

D. *Consolidation of Outstanding Currency-Reserve Balances*

The transition from the old system to the new would, of course, involve a once-and-for-all type of credit operations determined by the Treaty itself, i.e. the transfer to the Center of the large currency-reserve balances now held by member countries.

The Center would, as a result, initiate its operations with large credit claims on the United States and the United Kingdom, inherited from many years of functioning of the gold-exchange standard. There would be no reason to liquidate systematically such investments, long incorporated into the international reserve system itself. Provisions for their amortization—through equivalent debits to the debtor's reserve account—should be limited in the following manner:

1. voluntary amortization, at the request of the debtor;
2. compensatory amortization up to the amounts of current reserve

[35] Complementary—and partly alternative—measures aiming at a better adaptation of the world reserve pool itself to non-inflationary growth requirements of the world economy are amply discussed in other sections of this paper.

increases bringing their overall level above some agreed—"normal" (?) —ratio to the country's imports; and, possibly, if regarded as necessary,

3. an optional right for the Center to request additional amortization by no more than $x$ per cent—5 per cent, for example—of the country's outstanding debt balance; such option, however, to be exercised only

(a) when deemed necessary to meet other countries' legitimate requests for assistance without expanding the global loan and investment portfolio of the Center; and

(b) when compatible with the preservation of an adequate reserve level and the pursuit of internationally acceptable policies by the debtor.

E. *International Guarantees*

All the claims and debts of the Center should obviously carry adequate guarantees against unilateral inconvertibility or exchange-devaluation decisions, or default by the debtors. Some common unit of account, adapted from the EPU unit of account, could be used for that purpose in all Center transactions, and embody in effect an exchange guarantee in terms of whichever currency remains most stable in the future. Alternatively, this exchange guarantee could be expressed in terms of a weighted average of the major currencies used in world trade and payments.

Guarantees against default could be provided in two ways:

1. through a commitment of all members to channel, as far as possible, through the defaulting country's account with the Center, all payments due to it until the default is made up;

2. through a geographical distribution of the Center's gold assets, approximating, on a *pro rata* basis, the pattern of the Center's deposit liabilities to its members.

Such guarantees would indeed erect stronger safeguards against defaults than any ever devised in past international lending operations.

F. *Surrenders of National Sovereignty?*

Proposals such as these are lightly shrugged off in many circles as involving revolutionary surrenders of national sovereignty to a world-wide "super-bank," incapable in fact of discharging its responsibilities without the full backing of a supranational world government. "The money created by a super-bank would be the most high powered ever generated by a man-made institution, yet it would have no supporting super-government to make good on its debts or claims. . . . Simply to establish the super-bank would require all countries of the

world to give up their present reserves and accept instead the fiat issue of a super-authority existing without a super-state."[36] These emotional slogans bear little or no relation to the concrete content of the long-term proposals developed above. They are even less relevant to the more modest suggestions for short or medium-term negotiations that will be outlined in the following section of this study, and which would merely streamline and rationalize the technical provisions endowing the International Monetary Fund with whatever level of lending capacity is deemed appropriate by its members, and is now derived from equivalent, but far more rigid, arbitrary and cumbersome capital subscriptions and other national commitments (such as those embodied in the so-called "General Arrangements to Borrow").[37]

Reserve holders would retain, under the plan, far more control over the size and use of future accretions to world credit reserves than they have had—or now have—over the size and use of the IOU's dropped by the reserve-currency centers into the world's reserve pool. They would, it is true, renounce their present right to sudden and massive cashing of their credit reserves into gold metal, but they well know that such a right has already become largely theoretical and could not be exercised in fact on a large scale without bringing to an end the effective convertibility of the currencies involved, and without causing the collapse of the international gold-exchange standard itself.

Prospective borrowers, on the other hand, would in no way be forced to accept the advice—and the investments—offered them by the Center. They could refuse both, if they wish, particularly as the Center could not invest in their market without obtaining from the national authorities in charge the exchange guarantees described under E above.

Present reserve borrowers, moreover, would regain—through the transfer to the Center of their outstanding indebtedness to central banks—a degree of control over future monetary policies strongly handicapped today by the volatile character of this indebtedness.

Neither would the joint consultations and decisions relating to the Center's investments be revolutionary in character nor involve necessarily the setting up of supranational institutions or voting rules. The

[36] Robert V. Roosa, "Assuring the Free World's Liquidity," *Business Review Supplement*, Federal Reserve Bank of Philadelphia, September 1962, p. 8. More concrete objections are developed in the following paragraphs of the text, which quote the conflicts and disturbances which might arise from sudden shifts by individual countries from international deposits to national currency holdings or to gold metal. This might better be formulated, however, as a valid stricture on the present gold-exchange standard than as a criticism of proposals specifically designed to protect the international monetary system against such unnecessary sources of disturbance.

[37] See below, pp. 47-48.

IMF and the EPU, for instance, have long functioned essentially along the lines suggested here without raising any objection to their supranational character.

Finally, the Center could hardly be described as a world central bank, since its reserve liabilities would circulate only among the national central banks themselves, and these would retain full control over, and responsibility for, their currency issues, each within its own national territory. One consequence of this is that exchange readjustments could in no way be ruled out, and would indeed prove imperative at times for countries which failed to harmonize their monetary policies with those prevalent in the world community.

This raises a broad question which cannot be adequately explored within the confines of the present paper, i.e., the proper scope of institutional commitments to exchange-rate stability.

### G. *Stable versus Fluctuating Rates*

This question is usually discussed in abstract terms as if the same solution were always advisable for all countries and at all times. I would prefer to answer it in terms very similar to those given to it in a recent paper of Ronald I. McKinnon.[38]

I have myself long expressed a preference for stable exchange rates, subject to readjustments only in the case of obvious failure to preserve adequate cost competitiveness for long-run equilibrium in the country's balance of payments at optimum levels of employment, economic growth, and trade and exchange liberalization. This preference was based on three main arguments:[39]

1. Stable exchange rates tend to spread and even out among the trading countries the inflationary and deflationary gaps arising from differential rates of national monetary and financial expansion. Balance-of-payments disequilibria and changes in monetary reserves provide, under this system, an alternative outlet to the development of domestic pressures—upward in the more expansionist countries, and downward in the less expansionist ones—upon prices and employment, and do indeed bear a far closer relationship to differential rates of monetary expansion than to differential changes in national price and cost levels.[40] The latter tend in fact to be kept roughly in line with one

[38] "Optimum World Monetary Arrangements and the Dual Currency System," *Banca Nazionale del Lavoro Quarterly Review*, Dec. 1963, pp. 366-396. See also a brief communication on "Optimum Currency Areas" in *The American Economic Review*, September 1963, pp. 717-725.

[39] See *Gold and the Dollar Crisis* (Yale University Press, 1960), pp. 82-86.

[40] See Robert Triffin and Herbert G. Grubel, "The Adjustment Mechanism to Differential Rates of Monetary Expansion Among the Countries of the European Economic Community," *Review of Economics and Statistics*, November 1962, pp. 486-491.

another through the impact of competition in internationally traded goods—and particularly by export competition in third markets—as long as domestic policies can be readjusted in time to avoid devaluation or trade and exchange restrictions, isolating national price levels from one another.

Freely floating rates—à la Friedman—would "bottle up" within each country's borders the inflationary or deflationary pressures arising from every expansionist or contractionist error in domestic policies. Exchange-rate fluctuations would absorb the full brunt of the disequilibria formerly cushioned by reserve gains or losses, and help preserve competitiveness in each country's current-account transactions; but they would also lift the barrier previously erected by stable exchange rates against divergent movements in national price and cost levels.

The upward flexibility of wage rates would, moreover, tend to sanction with permanent and irreversible wage increases any inflationary mistakes or mishaps in monetary and credit policies, and any consequent increases in foreign exchange rates, import costs, and consumers' prices; while deflationary errors would be unlikely to result in parallel, and offsetting, downward wage adjustments in a modern economy. Freely floating rates could hardly fail, therefore, to introduce a permanent bias toward currency depreciation—at least in terms of goods, if all countries adopted the system—and to elicit from Friedman's highly farsighted speculators one-way flights from the national currency into equities, real assets, gold, and/or foreign exchange, rather than alternating, and "stabilizing" capital inflows and outflows. Such de-stabilizing capital movements might, it is true, still be dubbed "equilibrating," but merely in the sense of accelerating the adjustment of exchange rates to price and cost disparities fostered by the system itself, and which might have been avoided under a system of stable exchange rates.

2. Secondly, "managed" floating rates—à la Meade—are too often advocated as though each country could determine by itself a desired rate in respect to all other countries. Exchange rates, however, express a relation between *several* currencies. Will the sterling-dollar rate, for instance, be abandoned by the United States to British management, or by the United Kingdom to U.S. management? And what will happen if the countries involved take a different view of the "desirable" rate between their currencies? (Meade himself is, of course, perfectly logical in his proposal, and recognizes that it involves the surrender of such management, by all countries, to an *International* Equalization Account).

3. Finally, I doubt whether floating rates can really provide, in the long run, a viable bridge between persistently divergent national monetary policies. They are far more likely to be a form of escapism, for which other and better methods could be substituted in the case of merely temporary lapses from responsible monetary management, and which would merely end in currency collapse in the case of protracted inflationary developments.

The spectacular growth and success of European monetary cooperation and policy harmonization since World War II seems to me to demonstrate the feasibility of an alternative path, far more deserving of support than the advocacy of exchange-rate-flexibility palliatives to monetary nationalism.

Yet, I would agree that these arguments are particularly applicable to the case of exchange relations between relatively small, highly open and competitive economies, capable of developing a satisfactory—and, in this case, highly desirable—degree of monetary cooperation and policy harmonization with one another. They are far less applicable to the exchange relations between larger countries, or groups of countries, which, because their external transactions are dwarfed by the size of their internal markets, are far better able to conduct effective monetary policies on their own, and are therefore far less interested and willing to subordinate their freedom of action to international consultation and effective policy harmonization.

Even in this case, however, the elimination of national currencies as an international reserve medium would remain a necessary prerequisite for the successful implementation and functioning of exchange-rate flexibility, particularly in the case of the present reserve-center countries.

### H. *Whether and When?*

So-called realists will merely shrug their shoulders at the above proposals and dismiss them with the simple word: "Utopia!" They will prefer to "build directly upon the existing payments procedures to which governments and individuals are already well accustomed."[41] In the words of Erich Fromm, "it is, indeed, one of the irrationalities of human nature that we are prone to seek for easier, short-term solutions because we are afraid of the difficulties of the fundamental and real solutions. But in individual as in social life, it is the logic of facts that determines reality, not the logic of wishful thinking."[42]

This is why I have little doubt about the inevitability of a continued evolution of our international monetary institutions in a direction so

[41] Robert V. Roosa, *op. cit.*, p. 12.
[42] Erich Fromm, *May Man Prevail?* (New York, 1961), pp. 207-208.

clearly charted by the historical development of national monetary systems in every country of the world, and by similar trends already perceptible in the changing structure of the international reserve system itself over the last half century.

In every country, "commodity money" has been gradually displaced by "credit money" (see Tables in Appendix I). Credit money remained at first unorganized, and its creation—or destruction—abandoned to the uncoordinated decisions and policies of multiple issue and deposit banks. The instability of such a system prompted the development of national central banks. These did not replace and eliminate previous institutions, but assumed initially centralized clearing and reserve functions, out of which further instruments for policy coordination and orientation of bank credit and monetary expansion developed gradually over the years. As in the case of other human institutions, this evolution was rarely blueprinted in advance through conscious planning. It came, in most cases, as the unforeseen consequence of "short-term" expedients, adopted to meet pressing problems and crises, but which then developed a life of their own through the internal logic of institutional adaptation to man's changing environment.

Speaking of the development of the gold standard itself, Jacques Mertens noted that:

> "Most of those interventions do not flow from any clearly planned monetary policy and objectives. In general, the authorities intervene only in case of difficulties, during periods of monetary troubles. Time is then of the essence, and action is most often limited to partial and temporary measures. . . . What emerges are compromise solutions along the path of least resistance, whose merit in the eyes of the administrators is that they do not commit them in the future, but leave them a free hand to determine later final decisions whose timing is always postponed. It has certainly been one of the most tenacious illusions of the executive power to believe that by postponing decisions, by cumulating temporary expedients and half-measures, it retained its freedom of action. Have we not seen, on the contrary, that repeatedly and without wishing it, administrations have put their finger in the cog and have found themselves dragged on, against their will, toward unexpected results by measures which they considered as totally secondary or purely temporary?"[43]

The displacement of "commodity money" by "credit money," in national monetary systems, finds an exact parallel in the incipient, but fast growing, displacement of "commodity reserves" by "credit re-

[43] Jacques E. Mertens, *La Naissance et le Développement de l'Étalon-Or* (Louvain and Paris, 1944), pp. 356-357.

serves" in the international field. The proportion of credit reserves to total reserves has grown, for the countries of the Paris Club, from about 3 per cent in 1885 and 7 per cent in 1913 to 13 per cent in 1949, 21 per cent in 1957, and 28 per cent in 1962 (see Table 6 in Appendix I).

For the world at large, but excluding the two reserve-center countries of the gold-exchange standard, credit reserves totalled, in September 1963, $26.7 billion out of total reserves of $48.1 billion, i.e., more than 55 per cent, as against less than 45 per cent for gold itself.[44]

While the bulk of these credit reserves are still in the form of national currencies, a modest but growing portion is already held in the form of deposits with the IMF—under the name of "gold tranches,"—and national currency holdings themselves are becoming stabilized, little by little, by informal agreements, such as those long in effect in the sterling area and those more recently negotiated by the United States with the major dollar holders of Western Europe.

The main question facing us is not whether this evolution will continue over the sweep of history, but whether the international agreements necessary to that effect will be negotiated in time to avert further crises, such as that which swept away nearly overnight the "credit component" of the 1931 international reserves and brought about a protracted collapse of the international monetary system.

[44] Calculated from pp. 15, 17 and 18 of the February 1964 issue of *International Financial Statistics*.

## IV. NEGOTIATING PROSPECTS FOR 1964

The prospects for a basic, and long overdue, overhauling of our international monetary system have improved vastly over the last two years. The awakening of responsible monetary officials to the full magnitude of the problem that faces them was a gradual process, but has in fact been faster than could have been reasonably anticipated in, let us say, September 1960, on the eve of the London gold crisis. While President Kennedy and Prime Minister Macmillan should be given full credit for having first called attention to the need for boldness in this field,[45] the Maudling Plan embodied the first concrete suggestions for negotiating action. Presented at the 1962 Annual Meeting of the IMF, it was cavalierly cold-shouldered by most of Chancellor Maudling's colleagues at that meeting.

Yet, other proposals were gradually developing, both in the United States and in Europe. Under Secretary Roosa's article on "Assuring the Free World's Liquidity,"[46] while negative in many respects, admitted the need for long-run reform, and argued for the expansion of monetary reserves through mutual currency accumulation by all the leading countries, including the United States. In Europe, the Monetary Committee of the European Economic Community devoted many sessions to the discussion of the Posthuma Plan[47] and of other suggestions aiming at the development of a joint approach to the problem by the countries of the Community.[48]

A major breakthrough was finally announced at the last Annual Meeting of the IMF, in October 1963. Mr. Pierre-Paul Schweitzer, Managing Director of the Fund, announced in his opening statement that: "In the coming year the Fund will develop and intensify its studies regarding international liquidity, the functioning of the inter-

[45] See President Kennedy's *Message to Congress on the Balance of Payments and Gold* (February 6, 1961); the *United States Aide Mémoire on the Balance of Payments Situation* (February 20, 1961); and Prime Minister Macmillan's speech at MIT in April 1961. Relevant excerpts are quoted in *Gold and the Dollar Crisis* (1961 edition), pp. 179-181, and in "The Gold Exchange Standard: Crisis and Reconstruction," *Amerikanische Gelehrtenwoche* (Munich, 1962), p. 213.

[46] *Business Review Supplement*, Federal Reserve Bank of Philadelphia, September 1962.

[47] See S. Posthuma, "The International Monetary System," *Banca Nazionale del Lavoro Quarterly Review*, September 1963; and "Wandlungen im internationalen Währungssystem," *Kieler Vorträge* (Kiel, 1963).

[48] Mémorandum de la Commission sur le *Programme d'action de la Communauté pendant la deuxième étape* (Bruxelles, 1962), pp. 75-80.

national monetary system, and the effective role of the Fund in this field." A few days later, Mr. Dillon, Secretary of the Treasury of the United States, issued a "Statement on Behalf of the 'Group of Ten' Members of the Fund," in which the Ministers and Central Bank Governors of the ten countries (Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, the United Kingdom, and the United States) announced the launching of a high-level and "thorough examination of the outlook for the functioning of the international monetary system and of its probable future needs for liquidity."[49]

This examination formally ruled out from the start the two "false solutions" of the problem—an increase in the price of gold, or the adoption of flexible rates—the rejection of which constituted the first chapter of my own "Prescription" in *Gold and the Dollar Crisis*.[50] Representatives of the major countries concerned—and of the IMF—have also indicated that new solutions should be sought in *multilateral* arrangements, rather than in any considerable extension of the *bilateral* agreements concluded in recent years.

Behind this surface of agreement, one could detect, however, significant differences of viewpoint and emphasis, particularly between the currency-reserve debtors—primarily the United States and the United Kingdom—and their creditors.

The key-currency debtors tend to emphasize the inadequacy of gold production to satisfy future liquidity requirements in an expanding world economy, rather than the weakness of their own monetary position. They would like this gap to be met through agreed limitations on gold holdings, and the continued use of national currencies—particularly their own—as normal media for reserve accumulation. They are also reluctant, however, to concede that gold or exchange guarantees are in any way useful or necessary to extract from reserve holders firm and long-term commitments against sudden or massive conversions of reserve holdings from one currency into another or into gold.

The major reserve holders—and reserve-currency creditors—of continental Europe, on the other hand, consider as still relatively remote the danger of a worldwide liquidity shortage. They suspect in the liquidity thesis a convenient cover for an attempt of the United States and the United Kingdom to elicit from surplus nations an advance underwriting of future deficits, relieving the deficit countries from harsh, but healthy, balance-of-payments disciplines. They would also welcome greater equality and reciprocity in any arrangements regulating the future composition of world reserves. Any ceiling on gold

[49] See *Summary Proceedings*, Annual Meeting 1963, International Monetary Fund, pp. 30 and 285-286.

[50] Pp. 79-86.

holdings, for instance,—in relation to each country's total reserves—should apply to the United States and the United Kingdom—which traditionally hold their reserves almost entirely in gold—as well as to the continental countries, most of which already keep a high proportion of their reserves in foreign exchange. Reciprocity should imply the eventual use of continental currencies, and not only of dollars and sterling, as international reserves. Finally, some gold or exchange guarantees are regarded as a well-nigh indispensable feature of any agreement consolidating the use of national currencies as international reserves, and limiting their free convertibility into gold.

Recent official speeches and comments—before, during, and after the last IMF meeting—give reasonable grounds for hope that these initial divergencies of negotiating positions and approaches will yield to the logic and realities of the basic problems to be solved. The French Minister of Finance, Giscard d'Estaing, was particularly blunt and candid in expressing the European point of view at the IMF meeting, but the very conditions which he outlined implied a willingness to face the real issues and to limit the creditor countries' present rights to gold accumulation and gold conversions.[51] On the other hand, Under Secretary Roosa envisaged, more than a year ago, substantial accumulation of foreign currencies in the future by the U.S. monetary authorities, Chancellor Maudling suggested—also more than a year ago—mutual reserve holdings backed by full gold-exchange guarantees, and Secretary Dillon has now agreed[52] that exchange guarantees would be a proper, and probable, topic for discussion by the Group of Ten.

It is, further, extremely probable that the initial search for agreements will focus primarily on the more urgent, and universally recognized, problem of consolidating the foreign-exchange component of existing reserve levels, rather than on the more controversial and less immediate issues raised by the desirable rate of expansion of world liquidity in future years.[53]

[51] See particularly pp. 60 and 61 of his statement in the *Summary Proceedings* quoted above.

[52] As indicated in answer to a blunt question, in the course of his press conference of October 2, 1963, at the IMF Meeting.

[53] I have suggested elsewhere as most urgent and immediately negotiable the consolidation of outstanding reserve-currency balances into longer-term "reserve certificates," excluding unnecessary conversions into gold metal, but protected by adequate exchange guarantees and fully transferable for all balance-of-payments settlements insofar as such transfers would be conducive to a more—rather than a less—uniform proportion of gold and certificates in member countries' overall reserves. See, for details, Section II A of the article quoted below, footnote 57, p. 47. This suggestion was *unanimously* endorsed last January by academic econo-

Yet, it will be difficult to elude entirely the question of the proper role to be assigned to reserve-currency countries' deficits in the present, and future, process of reserve creation. If a ceiling is to be placed on gold accumulation, as a proportion of total reserves, in order to avoid a deflationary scramble for gold, should not some ceiling be placed also on the accumulation of national currency reserves, in order to limit inflationary excesses in world reserve creation? Secondly, to the extent that the need for future increases in credit reserves is recognized, and that reserve holders accept definite commitments in this respect—in the form of a maximum ratio of gold to global reserves, for instance—they will also have to decide on the distribution of such credit-reserve accumulation as between dollars, sterling, other national currencies, and/or claims on the IMF and other multilateral monetary institutions.

Some automatic formulas have recently been proposed in this respect by Dr. Posthuma[54] and Dr. Bernstein,[55] in order to escape the need for international, or supranational, decisions, imposing unwanted disciplines on national monetary authorities. I doubt whether such total surrenders of sovereignty to any automatic formula would be more acceptable to central banks, in the long run, than the limited mergers of sovereignty involved in joint, international decisions, as have long been traditional in the operations of the IMF, EPU, etc. Jointly decided credit transactions of this sort have long been, moreover, and will remain, a powerful stimulus to the harmonization of national policies, necessary to promote long-run equilibrium in the countries' balances of payments. As to the discipline imposed thereby on individual countries, it is itself desirable if harmonization is to be achieved, and can in any case be rejected—together with the proffered assistance—by any country which deems it nationally unacceptable. It is certainly difficult to conceive of a system under which any country should, or would, be guaranteed automatic access to international lending, on any substantial scale, to support policies which the lenders deem disruptive of international equilibrium.

Finally, major reserve holders—particularly in continental Europe—are likely to insist upon retaining a closer degree of control over the investment of their credit reserves than would be compatible with present—or negotiable—patterns of voting rights in the IMF Executive Board. This is the major consideration underlying the setting up, in

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mists representing all shades of opinion regarding the long-term objectives of international monetary reform.

[54] See, above, references in footnote 47, p. 43.

[55] "A Practical Program for International Monetary Reserves," *Quarterly Review and Investment Survey*, Model, Roland and Co., New York, Fourth Quarter, 1963.

October, of two separate explorations of the problem: one by the IMF and another by the Group of Ten. There is every reason to hope, however, that the ultimate conclusions of these two inquiries will be fitted together in a manner which reconciles the legitimate interests of the Ten with those of other countries, and integrates the policies and institutions of the Ten within the broader framework of a reformed, and more decentralized, IMF machinery.[56]

I have discussed in a separate paper[57] some concrete negotiating suggestions relative to these various points and to the prospective initial area of agreement that might emerge from recent and current discussions among the Ten, and more particularly among the countries of the European Economic Community. These suggestions fall far short, of course, of the broad, long-range perspectives outlined in Section III above and which could hardly serve as a "take it or leave it" scheme for realistic agreements, negotiable in the near future. Major adaptations and adjustments are undoubtedly necessary to that end, but should be molded in such a way as to keep the door wide open to the future evolution of the system.[58]

[56] Broad readjustments of IMF quotas, and greater flexibility of access to the Fund—particularly through the enlargement of present gold tranches—are indeed among the most predictable results of the current explorations. If they were to be the only ones, flowery press releases on such a meager achievement should be regarded as mere "face-saving," disguising the utter failure to reach the broader objectives of the negotiations now in process.

[57] "The Problem of International Monetary Reform: Major Questions and Prospective Initial Area of Agreement," *Banca Nazionale del Lavoro Quarterly Review*, March 1964.

[58] Comprehensive and rigid agreements at the Tokyo meeting itself might indeed be unfortunate from this point of view, if they contributed to a premature crystallization and freezing of the limping solutions most likely to prove negotiable at the present juncture. More modest, and even temporary, but flexible, agreements might be far preferable, particularly if complemented by the creation of some high level *consultative* group, entrusted with the exploration and orientation of the future measures and negotiations that will be required for continuing and evolutionary adjustments of the international monetary system to actual needs and possibilities.

The experience of the EPU Managing Board, of the Rome Treaty negotiations, and of the European Economic Community suggest that later agreements would be greatly facilitated if the members of such a group were designated *jointly* by the countries concerned—rather than separately appointed by national governments—and freed from any unanimity rule in the presentation of their reports and recommendations. Such a technique would permit a much freer exploration of alternative solutions which national representatives, tied by their "instructions" from the home governments, would often be unable to suggest, or bound to oppose. Final action would, of course, still require in most cases the unanimous approval of the governments concerned, but the deliberations of the national decision-making bodies would be far better enlightened and guided regarding the full range of alternative solutions theoretically available and the actual

The first of these adjustments would be to limit to a jointly agreed proportion of total reserves the amounts that should be kept in the form of deposits with the Center, leaving each country free to retain the remainder of its reserves in gold metal if it wished. Such a system of compulsory reserve requirements would be operated through the IMF, and could indeed be *substituted* advantageously for the present capital subscriptions to the Fund in such a way as to provide it with a roughly equivalent amount of lending resources. Such a system would present two advantages over the present haphazard and rigid quota system of the Fund. It would, first of all, express in a more obvious and traditional form—that of reserve deposits—the fully liquid character of the claims now accumulated on the Fund in the form of "gold-tranche" capital subscriptions. Secondly, and foremost, it would continually adapt the pattern of Fund resources to the contributive capacity of each member, and to the actual payments surpluses that the Fund may be called upon to finance. It would dispense, for that reason, with the necessity of periodic adjustments in members' lending quotas.

A second area of adjustment would recognize the need for greater decentralization in the IMF machinery, and for the encouragement of closer monetary cooperation and responsibility on a regional scale, under the general aegis of the Fund.[59]

A third, but more unfortunate, area of compromise, is likely to consist in the retention of national currencies as a major component of credit reserves, in lieu of IMF deposits, and in the addition of currencies other than sterling and the dollar to the list of reserve currencies. This would perpetuate, and might even aggravate, the major source of instability of the present system, except to the extent that the accumulation—or liquidation—of such holdings would be regulated through *joint* decisions of the main reserve holders, or the application of automatic formulas, à la Bernstein or Posthuma. Such automatism, however, hardly seems viable in the long run, and would waste the Godsent opportunity that joint decisions in these matters

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chances of reaching international agreement—or a paralyzing deadlock—on any of them.

[59] For further discussions and concrete suggestions, see for instance: Robert Triffin, *Europe and the Money Muddle* (Yale University Press, 1957), pp. 137-138, 177-179, 256-268 and 280-294; *Gold and the Dollar Crisis* (Yale University Press, 1960), pp. 119-144; "Intégration économique européenne et politique monétaire," in *La Restauration des Monnaies Européennes* (Special number of *Revue d'Economie Politique*, Paris, 1960); "Toward a Latin American Monetary Organization," in a forthcoming volume of Miguel S. Wionczek, ed. (Harvard University Press, 1964); and Pierre Uri, *Partnership for Progress* (New York: Harper and Rowe, 1963), pp. 96-107, particularly p. 103.

would offer for the harmonization of national policies essential to the long-run payments balance of the member countries.

The main arguments offered in favor of undesirable compromises of this latter kind are derived from a misplaced attachment to customary procedures, an instinctive fear of untried innovations, and nationalistic resistance to an institutional recognition of the factual interdependence of so-called sovereign countries in this atomic age of ours.

Bureaucrats, diplomats, and statesmen might ponder with profit, today more than ever, one of the most poetic pages of Maurice Maeterlinck:

> "At every crossway on the road that leads to the future, there stand a thousand men appointed to guard the past. Let us have no fear lest the fair towers of former days be insufficiently defended. The least that the most timid among us can do is not to add to the immense dead weight which nature drags along.
>
> "Let us not say to ourselves that the best truth always lies in moderation, in the decent average. . . . The average, the decent moderation of today, will be the least human of things tomorrow. At the time of the Spanish Inquisition, the opinion of good sense and of the good medium was certainly that people ought not to burn too large a number of heretics; extreme and unreasonable opinion obviously demanded that they should burn none at all.
>
> "Let us think of the great invisible ship that carries our human destinies upon eternity. Like the vessels of our confined oceans, she has her sails and her ballast. The fear that she may pitch or roll on leaving the roadstead is no reason for increasing the weight of the ballast by stowing the fair white sails in the depths of the hold. They were not woven to molder side by side with cobblestones in the dark. Ballast exists everywhere; all the pebbles of the harbor, all the sand of the beach, will serve for that. But sails are rare and precious things; their place is not in the murk of the well, but amid the light of the tall masts, where they will collect the winds of space."

# APPENDIX I

## TENTATIVE ESTIMATES ON THE EVOLUTION OF THE WORLD MONEY AND RESERVE STRUCTURE, 1815-1962

Hundreds of books have discussed *ad nauseam* the theory of the gold standard and the impact of international settlements upon the harmonization of monetary and credit policies as between the members of the system.

Far less attention has been paid to the forces influencing the general pace of monetary expansion upon which national—or rather institutional—policies had to align themselves, except for a few broad generalizations focusing on the impact of gold production alone, and ignoring the spectacular shift from bimetallism to gold, currency, and deposits in the world monetary structure. *Nowhere in the vast literature on the gold standard can one find any comprehensive statistical estimates on this evolution for the world as a whole, or even for major countries other than the United States.* The monetary history of the nineteenth century is still to be written.

The accompanying tables aim primarily at stimulating research along these lines by economic historians. When completed, they will provide rough estimates of money supply and reserves for the major industrial countries, extending from 1815 to the present.

The word "rough," however, could hardly be overstressed. I am no economic historian and have had neither the time nor the competence necessary to use more than a small portion of available sources of estimates. These, and other, limitations had to be made up by questionable "short-cut" techniques to fill gaps in the information at hand. I am keenly aware of the imperfections of the tables presented here, which aim only at communicating to other, more qualified, workers my conviction that there exists a crying need for research in this field, and at enticing them to criticize ruthlessly, *and improve considerably*, my own "guesstimates."

### A. *Sources and Acknowledgements*

Postwar (and, in some cases, 1937) estimates are derived primarily from *International Financial Statistics*; interwar and 1913 estimates from *Banking and Monetary Statistics* (Board of Governors of the Federal Reserve System, Washington, 1943) and various *League of Nations* publications on money and banking; and 1885 estimates from Ad. Soetbeer's *Materials toward the Elucidation of the Economic Conditions affecting the Precious Metals and the Question of Standards*

(Second edition, translated by F. W. Taussig, and published in Edward Atkinson's *Report* in Executive Document No. 34, 50th Congress, 1st Session, Washington, Government Printing Office, 1887) and Ottmar Haupt's *Arbitrages et Parités* (Paris, 1894). Silver stock estimates for 1913 are from the Director of the Mint's *Reports* and Karl Helfferich's *Money* (London, 1927).

National sources were used to complement and correct these estimates, for the United States, the United Kingdom, France, Italy, Belgium, and Japan, but only incidentally for other countries. French, German, Italian, Belgian, and Japanese estimates were further improved through the courteous and invaluable assistance of high central-bank officials from these countries and particularly from Messrs. Boccon-Gibod, Emminger, de Mattia, and Beauvois. Professor Arthur I. Bloomfield also helped me with a number of suggestions and little known sources of data. Finally, I am greatly indebted to the Ford Foundation for a research and travel grant, without which the present work could not have been undertaken.

B. *Procedures and Major Qualifications*

National estimates were converted into U.S. dollars, at current par values or exchange rates, in order to provide a common denominator for group totals. Such conversions are particularly hazardous for 1933. The average exchange rates for December were used in all cases, except gold which was converted directly from old ($20.67 per ounce) to new ($35 per ounce) dollars.

Before the second, and particularly the first, world war, estimates of the money supply often include the coin and notes held in the cash reserves of commercial banks, but exclude the deposit liabilities of central banks. Bronze and nickel coinage is included with currency, and all silver—including subsidiary coinage—valued, of course, at its legal monetary parity until 1913, rather than at commercial prices. Silver is totally excluded from reserves, and included with currency and coin, after 1913. Gold is no longer regarded as an effective circulating medium after 1913, except in the United States and the Netherlands, where small, but still significant, amounts were reported as in circulation until 1933.

Pre-1913 demand deposit estimates were particularly difficult to track down. Various estimating procedures—often close to guesswork—were used in the official and private sources listed above, including a rough proportionate allocation of total deposits between "demand" and "time" deposits, on the basis of the earliest available estimates. The resulting errors probably lead to an overestimation, rather than an underestimation, of demand deposits, and are relatively minor in

view of the smaller role played by demand deposits in total money supply the farther we go back in time.

Foreign-exchange reserves for 1913 and 1885 are from Arthur I. Bloomfield's *Short Term Capital Movements Under the Pre-1914 Gold Standard* (Princeton, 1963).

In U.S. statistics, the $287 million of gold previously estimated in circulation, but not returned to the Treasury in 1933-34, was progressively deducted—on a logarithmic basis since 1892—starting from the "lost gold" estimates of M. L. Muhleman, Deputy Assistant Treasurer of the United States, in *Monetary Systems of the World* (New York, 1895) for 1873-1894. Reserves include only those of the Treasury and Federal Reserve System. Better money supply estimates than those used are available since 1892, and even for some earlier years, but they would be less comparable with those available for the other countries.[60] (See below, p. 55.)

The only long-range series of deposit statistics for the United Kingdom is that for the London clearing banks, still used today in the *International Financial Statistics* money supply statistics. Our series links with current *IFS* estimates, except that the latter now include—since 1951 only—deposit accounts other than demand deposits. Pre-1913 deposits were broken between demand and time deposits, *pro rata* of the estimates available from the early years following the first world war. Scottish and Irish banks are excluded throughout, and gold reserves are only those of the Bank of England, although note circulation includes that of the country banks. The French gold estimates of Ottmar Haupt were revised upward to correct obvious errors in his calculations. Revised estimates agree more closely with those of Mr. Boccon-Gibod for later years. Haupt's estimates of silver circulation have been criticized as too high by some French writers—particularly de Foville—but seem consistent with those of Charles Rist. Demand deposits for early years have been roughly estimated by doubling those reported by the three or four large reporting banks, and adding private deposits at the Bank of France, in accordance with the procedure followed for later years by *Statistiques et Études Financières* (see *Supplément* No. 144, December 1960, p. 2018).

Dutch demand deposit estimates are particularly unsatisfactory. For 1913 and the interwar years, they are those reported by the largest banks only, but I found no satisfactory basis for correcting them upward. They were wholly estimated, for 1885, by applying the same rate of increase as that of Belgian and Swedish deposits. The error involved may be considerable, but could not affect significantly the totals shown for the eleven countries.

Estimates for Japan were derived from the *Historical Statistics of*

*the Japanese Economy* (Bank of Japan, 1962) and from Hiroshi Shinjo's *History of the Yen* (Kobe University, 1962). Foreign-exchange reserves include only those reported by the Government and the Bank of Japan, but not those of the Yokohama Specie Bank.

C. *Brief Comments*

*Tables 2 and 3* are intended only for gauging the comprehensiveness and representativeness of the three and eleven-country samples that follow. The world estimates are those of Ottmar Haupt for 1885, and of the League of Nations (*Interim Report of the Gold Delegation of the Financial Committee*, Geneva, 1930, p. 120, completed and corrected for demand deposits and gold estimates).

In 1962, the eleven countries accounted, as a group, for about 72 per cent of all countries'—outside the Soviet bloc—overall reserves, and more than 85 per cent of their gold reserves.

*Tables 4 and 5*, for the United States, the United Kingdom, and France have been amply discussed in the text of this study.

Note, in addition, that the true significance of gold and silver in *effective* monetary circulation *in the public* before 1913 was even far smaller than suggested by these Tables (and also by Tables 6 and 7), since much of the gold and silver shown under "money supply" was

a) held as cash reserves by the banks—but could not be isolated from that held outside banks by the public;

b) hoarded rather than in active circulation, particularly in France (gold hoarded in the United States, if any, was assimilated to gold lost, as explained above). The Bank of France estimates, on the basis of various inquiries conducted in the latter part of the nineteenth century and the early part of the twentieth century, that only 20 to 30 per cent of the gold shown in circulation in 1914 was effectively used in payments.

*Tables 6 and 7* present estimates for eleven major countries which formed the core of the old gold standard and whose role in the international monetary framework remains determinant today.

Among the main indications which may be derived from these tables, one may note particularly the following:

1. The overwhelming share of credit money increases (94 per cent) in total money growth, even before the first world war.

2. The remarkable stability of the proportionate shares of currency and deposits in credit money since 1928, except during the banking crisis of the great depression.

3. The sharp increase in the ratio of monetary reserves to money supply, following the devaluations of the early thirties, and its equally sharp decline since 1937. The 1962 ratio, however, is just about equal to the 1885 and 1913 ratios, for overall reserves as well as for gold, the increase of credit reserves compensating the disappearance of silver reserves.
4. Total monetary gold stocks, however, have dropped from 32 per cent of money supply in 1885 to 22 per cent in 1913 and 13 per cent in 1962.
5. Credit reserves have risen sharply, both in relation to money supply and to metallic reserves, ever since the first world war—except for the spectacular setback that followed the devaluation of the pound and the dollar in the early 1930's—just as credit money had gradually displaced metallic money in the nineteenth century and in the aftermath of the first world war. They now account for 28 per cent of total reserves for the eleven countries, and far more still (about 56 per cent) for the world at large outside the two major reserve-center countries. In the last five years (1958-1962), gold has contributed only 22 per cent of the increase in the eleven countries' overall reserves, and credit reserves 78 per cent. This raises questions very similar to those raised by the expansion of bank deposits, in national monetary systems, previous to the assertion of leadership by national central banks.

An incipient centralization of world reserves, however, similar to the previous centralization of national reserves in central banks, may be read in the current growth of the portion of reserves held in the form of IMF gold-tranche deposits.
6. The average growth rate of money—measured in U.S. dollars—has been surprisingly stable, at about 4 to 4½ per cent a year, except during the 1929-1933 monetary collapse, when it became negative, and during the second world war when it was about double. Monetary reserves rose exceptionally fast as a result of the dollar and sterling devaluations of the early 1930's, but have increased at an average rate of only 2½ per cent a year in the last twelve years, against much higher rates in all previous periods and in the growth of money itself.

[60] See particularly the brilliant study of Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States, 1867-1960* (Princeton University Press, 1963).

TABLE 2

COMPARATIVE EVOLUTION OF MONEY
AND RESERVE STRUCTURE, 1885 AND 1913

| End of | Three Countries[1] | | Eleven Countries[2] | | World | |
|---|---|---|---|---|---|---|
| | 1885 | 1913 | 1885 | 1913 | 1885 | 1913 |
| *IN BILLIONS OF U.S. DOLLARS* | | | | | | |
| I. *Money Supply* | **6.3** | **19.8** | **8.4** | **26.3** | **14.2** | **33.1** |
| A. Gold | 1.4 | 2.0 | 1.8 | 2.7 | 2.4 | 3.2 |
| B. Silver | 0.7 | 0.6 | 1.0 | 1.2 | 3.0 | 2.3 |
| C. Credit Money | 4.1 | 17.2 | 5.6 | 22.4 | 8.8 | 27.6 |
| *1. Currency*[3] | *1.6* | *3.8* | *2.3* | *5.9* | *3.8* | *8.1* |
| *2. Demand Deposits* | *2.6* | *13.3* | *3.3* | *16.5* | *5.0* | *19.6* |
| II. *Monetary Reserves* | **1.0** | **2.7** | **1.5** | **4.0** | **2.0** | **5.3** |
| A. Gold | 0.6 | 2.1 | 0.9 | 3.2 | 1.3 | 4.1 |
| B. Silver | 0.4 | 0.6 | 0.6 | 0.8 | 0.7 | 1.2 |
| III. *Total Gold and Silver* | **3.1** | **5.4** | **4.3** | **7.9** | **7.4** | **10.8** |
| A. Gold | 2.0 | 4.1 | 2.7 | 5.9 | 3.7 | 7.3 |
| B. Silver | 1.1 | 1.2 | 1.6 | 2.0 | 3.7 | 3.5 |
| *IN % OF MONEY SUPPLY* | | | | | | |
| I. *Money Supply* | **100** | **100** | **100** | **100** | **100** | **100** |
| A. Gold | 23 | 10 | 21 | 10 | 17 | 10 |
| B. Silver | 11 | 3 | 12 | 5 | 21 | 7 |
| C. Credit Money | 66 | 87 | 67 | 85 | 62 | 83 |
| *1. Currency*[3] | *25* | *19* | *27* | *22* | *27* | *25* |
| *2. Demand Deposits* | *41* | *67* | *39* | *63* | *35* | *59* |
| II. *Monetary Reserves* | **16** | **14** | **18** | **15** | **14** | **16** |
| A. Gold | 9 | 11 | 11 | 12 | 9 | 12 |
| B. Silver | 7 | 3 | 7 | 3 | 5 | 4 |
| III. *Total Gold and Silver* | **49** | **27** | **51** | **30** | **52** | **33** |
| A. Gold | 32 | 21 | 32 | 22 | 26 | 22 |
| B. Silver | 17 | 6 | 19 | 8 | 26 | 11 |

*Notes*:
(1) United States, United Kingdom, and France
(2) United States, United Kingdom, France, Germany, Italy, Netherlands, Belgium, Sweden, Switzerland, Canada, and Japan
(3) Including subsidiary (non-silver) coinage, except in last column.

TABLE 3

REPRESENTATIVENESS OF THREE AND ELEVEN-COUNTRY SAMPLES

(in per cent)

| End of | Share of Eleven Countries in World Total | | Share of Three Countries in World Total | | Share of Three Countries in Eleven-Country Total | |
|---|---|---|---|---|---|---|
| | *1885* | *1913* | *1885* | *1913* | *1885* | *1913* |
| I. *MONEY SUPPLY* | **59** | **79** | **44** | **60** | **75** | **75** |
| A. Gold | 75 | 84 | 58 | 62 | 78 | 74 |
| B. Silver | 33 | 52 | 23 | 26 | 70 | 50 |
| C. Credit Money | 64 | 81 | 47 | 62 | 73 | 77 |
| *1. Currency and Coin* | *60* | *73* | *42* | *47* | *70* | *64* |
| *2. Demand Deposits* | *66* | *84* | *52* | *68* | *79* | *81* |
| II. *MONETARY RESERVES* | **75** | **75** | **50** | **51** | **67** | **67** |
| A. Gold | 69 | 78 | 46 | 51 | 67 | 66 |
| B. Silver | 86 | 67 | 57 | 50 | 67 | 75 |
| III. *TOTAL GOLD AND SILVER* | **58** | **73** | **42** | **50** | **72** | **68** |
| A. Gold | 73 | 81 | 54 | 56 | 74 | 69 |
| B. Silver | 43 | 57 | 30 | 34 | 69 | 60 |

*Source*: Table 2

TABLE 4

STRUCTURE OF MONEY AND RESERVES, 1815-1913:
UNITED STATES, UNITED KINGDOM, AND FRANCE

| *End of* | *1815* | *1848* | *1872* | *1892* | *1913* |
|---|---|---|---|---|---|
| *IN MILLIONS OF U.S. DOLLARS* | | | | | |
| I. *Money Supply* | **1,010** | **1,591** | **4,279** | **8,142** | **19,801** |
| A. Gold | 329 | 274 | 1,187 | 1,268 | 2,002 |
| B. Silver | 349 | 728 | 561 | 693 | 636 |
| C. Credit Money | 332 | 589 | 2,531 | 6,181 | 17,163 |
| *1. Currency and Coin* | *267* | *311* | *1,355* | *1,816* | *3,818* |
| *2. Demand Deposits* | *65* | *278* | *1,176* | *4,365* | *13,345* |
| II. *Monetary Reserves* | **26** | **107** | **322** | **1,368** | **2,701** |
| A. Gold | 14 | 76 | 294 | 673 | 2,111 |
| B. Silver | 12 | 31 | 28 | 695 | 590 |
| III. *Total Gold and Silver* | **704** | **1,109** | **2,070** | **3,329** | **5,339** |
| A. Gold | 343 | 350 | 1,481 | 1,941 | 4,113 |
| B. Silver | 361 | 759 | 589 | 1,388 | 1,226 |

| | | | | | |
|---|---|---|---|---|---|
| *IN % OF MONEY SUPPLY* | | | | | |
| I. *Money Supply* | **100** | **100** | **100** | **100** | **100** |
| A. Gold | 33 | 17 | 28 | 16 | 10 |
| B. Silver | 34 | 46 | 13 | 9 | 3 |
| C. Credit Money | 33 | 37 | 59 | 76 | 87 |
| *1. Currency and Coin* | *26* | *20* | *32* | *22* | *19* |
| *2. Demand Deposits* | *6* | *17* | *27* | *54* | *68* |
| II. *Monetary Reserves* | **3** | **7** | **75** | **17** | **14** |
| A. Gold | 1 | 5 | 69 | 8 | 11 |
| B. Silver | 1 | 2 | 7 | 9 | 3 |
| III. *Total Gold and Silver* | **70** | **70** | **48** | **41** | **27** |
| A. Gold | 34 | 22 | 35 | 24 | 21 |
| B. Silver | 36 | 48 | 14 | 17 | 6 |
| *MONETARY RESERVES IN % OF CREDIT MONEY* | **7** | **18** | **13** | **22** | **16** |
| A. Gold | 4 | 13 | 12 | 11 | 12 |
| B. Silver | 4 | 5 | 1 | 11 | 3 |
| *MONETARY RESERVES IN % OF GOLD AND SILVER STOCKS* | **4** | **10** | **16** | **41** | **51** |
| A. Gold | 4 | 31 | 20 | 35 | 51 |
| B. Silver | 3 | 4 | 5 | 50 | 48 |

TABLE 5

COMPOSITION OF MONEY AND RESERVE INCREASES, 1816-1913: UNITED STATES, UNITED KINGDOM, AND FRANCE

| | *1816-1913* | *1816-48* | *1849-72* | *1873-92* | *1893-1913* |
|---|---|---|---|---|---|
| *IN MILLIONS OF U.S. DOLLARS* | | | | | |
| I. *Money Increases* | **18,791** | **581** | **2,688** | **3,863** | **11,659** |
| A. Gold | 1,673 | –55 | 913 | 81 | 734 |
| B. Silver | 287 | 379 | –167 | 132 | –57 |
| C. Credit Money | 16,831 | 257 | 1,942 | 3,650 | 10,982 |
| *1. Currency and Coin* | *3,551* | *44* | *1,044* | *461* | *2,002* |
| *2. Demand Deposits* | *13,280* | *213* | *898* | *3,189* | *8,980* |
| II. *Reserve Increases* | **2,675** | **81** | **215** | **1,046** | **1,333** |
| A. Gold | 2,097 | 62 | 218 | 379 | 1,438 |
| B. Silver | 578 | 19 | –3 | 667 | –105 |
| III. *Total Gold and Silver Increases* | **4,635** | **405** | **961** | **1,259** | **2,010** |
| A. Gold | 3,770 | 7 | 1,131 | 460 | 2,172 |
| B. Silver | 865 | 398 | –170 | 799 | –162 |
| IV. *Internal Credit Monetization* (I — III = IC — II) | **14,156** | **176** | **1,727** | **2,604** | **9,649** |

| | | | | | |
|---|---|---|---|---|---|
| *IN % OF MONEY INCREASES* | | | | | |
| I. *Money Increases* | **100** | **100** | **100** | **100** | **100** |
| A. Gold | 9 | –9 | 34 | 2 | 6 |
| B. Silver | 2 | 65 | –6 | 3 | — |
| C. Credit Money | 90 | 44 | 72 | 95 | 94 |
| *1. Currency and Coin* | *19* | *8* | *39* | *12* | *17* |
| *2. Demand Deposits* | *71* | *37* | *33* | *83* | *77* |
| II. *Reserve Increases* | **14** | **14** | **8** | **27** | **11** |
| A. Gold | 11 | 11 | 8 | 10 | 12 |
| B. Silver | 3 | 3 | — | 17 | –1 |
| III. *Total Gold and Silver Increases* | **25** | **70** | **36** | **33** | **17** |
| A. Gold | 20 | 1 | 42 | 12 | 18 |
| B. Silver | 5 | 69 | –6 | 21 | –1 |
| IV. *Internal Credit Monetization* | **75** | **30** | **64** | **67** | **83** |
| *PER CENT ABSORPTION OF NEW GOLD INTO:* | | | | | |
| I. Reserves | 56 | 886 | 19 | 82 | 66 |
| II. Circulation | 44 | –786 | 81 | 18 | 34 |

## TABLE 6

STRUCTURE OF MONEY AND RESERVES, 1885-1962:
ELEVEN MAJOR COUNTRIES

| *End of* | *1885* | *1913* | *1928* | *1933* | *1937* | *1949* | *1957* | *1962* |
|---|---|---|---|---|---|---|---|---|
| *IN BILLIONS OF U.S. DOLLARS* | | | | | | | | |
| I. *Money Supply* | **8.4** | **26.3** | **50.1** | **49.6** | **58.0** | **155.6** | **212.8** | **266.4** |
| A. Gold | 1.8 | 2.7 | 0.1 | — | x | x | x | x |
| B. Silver | 1.0 | 1.2 | x | x | x | x | x | x |
| C. Credit Money | 5.6 | 22.4 | 50.0 | 49.6 | 58.0 | 155.6 | 212.8 | 266.4 |
| *1. Currency and Coin* | *2.3* | *5.9* | *13.0* | *18.4* | *18.3* | *42.8* | *58.5* | *72.6* |
| *2. Demand Deposits* | *3.3* | *16.5* | *37.0* | *31.2* | *39.7* | *112.8* | *154.2* | *193.8* |
| II. *Monetary Reserves* | **1.5** | **4.3** | **10.1** | **17.3** | **23.5** | **34.3** | **41.4** | **47.0** |
| A. Gold | 0.9 | 3.2 | 7.9 | 16.9 | 22.8 | 29.7 | 32.7 | 33.9 |
| B. Silver | 0.6 | 0.8 | x | x | x | x | x | x |
| C. Credit Reserves | 0.05 | 0.3 | 2.3 | 0.4 | 0.7 | 4.6 | 8.7 | 13.0 |
| *1. IMF Gold Tranches* | *x* | *x* | *x* | *x* | *x* | *1.6* | *2.2* | *3.1* |
| *2. Foreign Exchange* | *0.05* | *0.3* | *2.3* | *0.4* | *0.7* | *3.0* | *6.5* | *9.9* |
| *IN % OF MONEY SUPPLY* | | | | | | | | |
| I. *Money Supply* | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** |
| A. Gold | 21 | 10 | — | x | x | x | x | x |
| B. Silver | 12 | 5 | x | x | x | x | x | x |
| C. Credit Money | 67 | 85 | 100 | 100 | 100 | 100 | 100 | 100 |
| *1. Currency and Coin* | *27* | *23* | *26* | *37* | *32* | *27* | *28* | *27* |
| *2. Demand Deposits* | *39* | *63* | *74* | *63* | *68* | *73* | *72* | *73* |
| II. *Monetary Reserves* | **18** | **17** | **20** | **35** | **40** | **22** | **19** | **18** |
| A. Gold | 11 | 12 | 16 | 34 | 39 | 19 | 15 | 13 |
| B. Silver | 7 | 3 | x | x | x | x | x | x |
| C. Credit Reserves | 1 | 1 | 5 | 1 | 1 | 3 | 4 | 5 |
| *1. IMF Gold Tranches* | *x* | *x* | *x* | *x* | *x* | *1* | *1* | *1* |
| *2. Foreign Exchange* | *1* | *1* | *5* | *1* | *1* | *2* | *3* | *4* |

TABLE 7

COMPOSITION OF MONEY AND RESERVE INCREASES, 1886-1962:
ELEVEN MAJOR COUNTRIES

| | 1886-1913 | *1914-28* | *1929-33* | *1934-37* | *1938-49* | *1950-57* | *1958-62* |
|---|---|---|---|---|---|---|---|
| *IN BILLIONS OF U.S. DOLLARS* | | | | | | | |
| I. *Money Increases* | **17.9** | **23.9** | **–0.5** | **8.4** | **97.5** | **57.2** | **53.6** |
| A. Gold | 0.9 | –2.5 | –0.1 | — | x | x | x |
| B. Silver | 0.2 | –1.2 | x | x | x | x | x |
| C. Credit Money | 16.8 | 27.6 | –0.4 | 8.4 | 97.5 | 57.2 | 53.6 |
| *1. Currency and Coin* | *3.6* | *7.1* | *5.4* | *–0.1* | *24.4* | *15.8* | *14.0* |
| *2. Demand Deposits* | *13.2* | *20.5* | *–5.8* | *8.5* | *73.1* | *41.4* | *39.6* |
| II. *Reserve Increases* | **2.8** | **5.8** | **7.2** | **6.2** | **10.8** | **7.2** | **5.5** |
| A. Gold | 2.3 | 4.6 | 9.1 | 5.9 | 6.9 | 3.0 | 1.2 |
| B. Silver | 0.2 | –0.8 | x | x | x | x | x |
| C. Credit Reserves | 0.3 | 1.9 | –1.9 | 0.3 | 3.9 | 4.1 | 4.3 |
| *1. IMF Gold Tranches* | *x* | *x* | *x* | *x* | *1.6* | *0.6* | *0.9* |
| *2. Foreign Exchange* | *0.3* | *1.9* | *–1.9* | *0.3* | *2.3* | *3.5* | *3.4* |
| *IN % OF MONEY INCREASES* | **100** | **100** | **–100** | **100** | **100** | **100** | **100** |
| A. Gold | 5 | –11 | –19 | — | x | x | x |
| B. Silver | 1 | –5 | x | x | x | x | x |
| C. Credit Money | 94 | 116 | –81 | 100 | 100 | 100 | 100 |
| *1. Currency and Coin* | *20* | *30* | *1045* | *–1* | *25* | *27* | *26* |
| *2. Demand Deposits* | *74* | *86* | *–1126* | *101* | *75* | *73* | *74* |
| D. Reserve Increases | 16 | 24 | 1406 | 73 | 11 | 13 | 10 |
| *IN % OF RESERVE INCREASES* | **100** | **100** | **100** | **100** | **100** | **100** | **100** |
| A. Gold | 83 | 80 | 126 | 95 | 64 | 42 | 22 |
| B. Silver | 8 | –13 | x | x | x | x | x |
| C. Credit Reserves | 9 | 34 | –26 | 5 | 36 | 58 | 78 |
| *1. IMF Gold Tranches* | *x* | *x* | *x* | *x* | *15* | *8* | *17* |
| *2. Foreign Exchange* | *9* | *34* | *–26* | *5* | *22* | *49* | *61* |
| *AVERAGE YEARLY RATE OF GROWTH (IN %)* | | | | | | | |
| I. Money | **4.1** | **4.4** | **–0.2** | **4.0** | **8.6** | **4.0** | **4.6** |
| II. Reserves | **3.8** | **5.9** | **11.3** | **7.9** | **3.2** | **2.4** | **2.5** |

# APPENDIX II

## BASIC TABLES ON THE EVOLUTION OF INTERNATIONAL MONETARY RESERVES AND THE U.S. BALANCE OF PAYMENTS, 1913-1962

TABLE 8

COMPOSITION AND DISTRIBUTION OF
GROSS INTERNATIONAL MONETARY RESERVES, 1913-1962
(in millions of U.S. dollars)

| *End of* | *1913* | *1928* | *1933*[1] | *1933*[2] | *1937* | *1949* | *1957* | *1962* |
|---|---|---|---|---|---|---|---|---|
| I. *GOLD* | **4,110** | **9,850** | **11,380** | **19,265** | **25,285** | **33,500** | **37,305** | **39,230** |
| A. World | 4,110 | 9,850 | 11,380 | 19,265 | 25,290 | 35,005 | 38,765 | 41,430 |
| B. International Institutions (–) | — | — | — | — | –5 | –1,505 | –1,460 | –2,200 |
| II. *IMF GOLD TRANCHES* | — | — | — | — | — | **1,660** | **2,315** | **3,795** |
| III. *RESERVE CURRENCIES* | **700** | **3,160** | **1,115**[3] | **1,115**[3] | **2,370** | **11,710** | **17,745** | **22,545** |
| A. U.S. Dollars[4] | — | 600 | 60 | 60 | 430 | 3,200 | 8,705 | 12,925 |
| B. Pounds Sterling[5] | | | | | | | | |
| C. Other and Discrepancies | 700 | 2,560 | 1,055 | 1,055 | 1,940 | 6,420<br>2,090 | 6,420<br>2,620 | 6,220<br>3,400 |
| TOTAL | **4,810** | **13,010** | **12,495** | **20,385** | **27,655** | **46,870** | **57,365** | **65,570** |
| I. *PARIS CLUB* | **3,430** | **9,845** | **10,290** | **17,190** | **23,445** | **33,900** | **40,150** | **47,130** |
| A. Reserve Centers | 1,455 | 4,495 | 4,940 | 8,365 | 16,930 | 27,775 | 27,205 | 20,530 |
| 1. United States | *1,290* | *3,745* | *4,010* | *6,795* | *12,790* | *26,025* | *24,830* | *17,220* |
| 2. United Kingdom | *165* | *750* | *930* | *1,570* | *4,140* | *1,750* | *2,375* | *3,310* |
| B. European Community | 1,570 | 4,365 | 4,435 | 7,375 | 4,730 | 2,765 | 8,125 | 18,355 |
| C. Other Countries[6] | 410 | 985 | 910 | 1,450 | 1,785 | 3,360 | 4,820 | 8,240 |
| II. *OTHER COUNTRIES IN:* | **1,375** | **3,170** | **2,205** | **3,195** | **4,215** | **12,970** | **17,215** | **18,440** |
| A. Western Europe[7] | 550 | 955 | 765 | 1,210 | 1,325 | 1,740 | 2,870 | 5,000 |
| B. Latin America | 425 | 1,160 | 430 | 685 | 915 | 2,775 | 3,865 | 2,375 |
| C. Non-European Sterling Area | 350 | 695 | 735 | 920 | 1,355 | 5,685 | 6,935 | 7,250 |
| D. Other[7] | 55 | 355 | 285 | 375 | 620 | 2,770 | 3,545 | 3,815 |

*Notes*:

(1) Gold valued at $20.67 per ounce.
(2) Gold valued at $35 per ounce.
(3) Rough estimate calculated from *League of Nations* publications, on basis of old pound parity ($4.8665), around which the pound was fluctuating again in the latter part of 1933.
(4) Estimated at about nil in 1913; and from 1957 on basis of April 1963 *Federal Reserve Bulletin* (p. 423) and *Survey of Current Business* (for breakdown of "notes and bonds" between "official" and "private"), but including in 1962 $251 million of non-marketable securities.
(5) Residual estimates until 1949; rough estimates for 1949 and 1957, including downward adjustment of previously published estimates (of *Bank of England Bulletin*) to improve comparability with new 1962 gross estimates.
(6) Canada, Japan, Switzerland, and Sweden.
(7) Including slight discrepancies between reported country totals and area or world estimates.

*Sources*:

These can only be regarded as rough estimates (particularly for earlier years) calculated from a variety of sources, such as:

(1) *International Financial Statistics* (November 1963 and Supplement to 1963-64 issues), starting in 1937, with personal estimates of missing data, and excluding throughout claims of EPU (to avoid misleading impression of sudden contraction of foreign-exchange reserves at the end of 1958).
(2) For earlier years *International Reserves and Liquidity* (IMF, 1958) Federal Reserve Board and League of Nations publications, supplemented for most of 1913 foreign-exchange reserves by A. I. Bloomfield's estimates in *Short-Term Capital Movements Under the Pre-1914 Gold Standard* (Princeton University, International Finance Section, 1963).

These estimates exclude *throughout* Communist countries' reserves, unreported in recent years (approximately $1,145 million in 1913, $525 million in 1928, $695 million in 1933 in old dollars, and $1,130 million in the same year in new dollars).

Minor discrepancies in the totals arise from the rounding of estimates to the closest $5 million. Even this conveys an unjustified impression of precision in these estimates, most of which are certainly subject to much larger errors.

TABLE 9

SOURCES AND DISTRIBUTION OF
GROSS RESERVE INCREASES, 1914-1962
(in millions of U.S. dollars)

| *Period* | *1914-62* | *1914-28* | *1929-33* | *1934-37* | *1938-49* | *1950-57* | *1958-62* |
|---|---|---|---|---|---|---|---|
| I. *GOLD* | **37,325** | **5,745** | **9,415** | **6,025** | **9,715** | **3,760** | |
| A. Physical Increases | 26,445 | 3,165 | 1,120 | 6,025 | 9,715 | 3,760 | 2,670 |
| 1. Western Sources | 24,465 | 3,165 | 1,120 | 5,695 | 9,855 | 3,120 | 1,515 |
| a) Production | 36,050 | 5,600 | 2,115 | 3,675 | 11,575 | 7,210 | 5,870 |
| b) Private Absorption (–) | –11,585 | –2,435 | –1,000 | +2,020 | –1,720 | –4,090 | –4,350 |
| 2. U.S.S.R. Sales | 1,980 | — | — | 330 | –140 | 640 | 1,150 |
| B. Coin Withdrawal | 2,990 | 2,580 | 410 | — | — | — | — |
| C. Dollar Devaluation | 7,890 | — | 7,885 | — | — | — | — |
| II. *INTERNATIONAL INSTITUTIONS* | **1,595** | **—** | **—** | **–5** | **155** | **700** | **740** |
| A. Gold Accumulation (–) | –2,200 | — | — | –5 | –1,500 | 45 | –745 |
| B. IMF Gold Tranches | 3,795 | — | — | — | 1,660 | 655 | 1,480 |
| III. *RESERVE CURRENCIES* | **21,845** | **2,460** | **–2,045** | **1,255** | **9,340** | **6,035** | **4,800** |
| A. U.S. Dollars | 12,925 | 600 | –540 | 370 | 2,770 | 5,505 | 4,220 |
| B. Pounds Sterling | 8,920 | 1,860 | –1,505 | 885 | 4,480 | — | –200 |
| C. Other and Discrepancy | | | | | 2,090 | 530 | 780 |
| TOTAL | **60,765** | **8,205** | **7,375** | **7,275** | **19,210** | **10,495** | **8,205** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| I. *PARIS CLUB* | **43,700** | **6,410** | **7,345** | **6,255** | **10,455** | **6,250** | **6,980** |
| A. Reserve Centers | 19,075 | 3,040 | 3,870 | 8,565 | 10,845 | –570 | –6,675 |
| 1. United States | *15,930* | *2,455* | *3,050* | *5,995* | *13,235* | *–1,190* | *–7,610* |
| 2. United Kingdom | *3,145* | *585* | *825* | *2,570* | *–2,390* | *620* | *935* |
| B. European Community | 16,790 | 2,795 | 3,010 | –2,645 | –1,965 | 5,360 | 10,230 |
| C. Other Countries | 7,835 | 575 | 465 | 335 | 1,575 | 1,460 | 3,420 |
| II. *OTHER COUNTRIES IN* | **17,065** | **1,790** | **25** | **1,020** | **8,755** | **4,245** | **1,225** |
| A. Western Europe | 4,450 | 405 | 255 | 115 | 415 | 1,130 | 2,130 |
| B. Latin America | 1,950 | 735 | –475 | 230 | 1,860 | 1,090 | –1,490 |
| C. Non-European Sterling Area | 6,905 | 345 | 225 | 430 | 4,330 | 1,250 | 320 |
| D. Other | 3,760 | 300 | 20 | 240 | 2,150 | 775 | 270 |

*Sources and Notes*:

(1) Western Production excludes throughout U.S.S.R., Rumania, and China for which estimates have been unavailable since the second world war. Estimates are derived from Table 159 of Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics*, 1943, pp. 542-543; *International Financial Statistics;* and Oscar L. Altman, "A Note on Gold Production and Additions to International Gold Reserves," IMF *Staff Papers*, April 1958, p. 259.

(2) Estimates of U.S.S.R. sales are taken from the *Federal Reserve Bulletin*, September 1954, p. 938; and the annual *Reports* of the BIS.

(3) Private absorption is estimated residually and includes until 1934 the impact of U.S.S.R. sales.

(4) For other sources and notes see Table 8.

TABLE 10

COMPOSITION AND DISTRIBUTION OF GROSS INTERNATIONAL MONETARY RESERVES, 1913-1962

(in per cent of yearly totals)

| *End of* | *1913* | *1928* | *1933*(1) | *1933*(2) | *1937* | *1949* | *1957* | *1962* |
|---|---|---|---|---|---|---|---|---|
| I. *GOLD* | **85.4** | **75.7** | **91.1** | **94.5** | **91.4** | **71.5** | **65.0** | **59.8** |
| A. World | 85.4 | 75.7 | 91.1 | 94.5 | 91.4 | 74.7 | 67.6 | 63.2 |
| B. International Institutions (–) | — | — | — | — | — | –3.2 | –2.5 | –3.4 |
| II. *IMF GOLD TRANCHES* | — | — | — | — | — | **3.5** | **4.0** | **5.8** |
| III. *RESERVE CURRENCIES* | **14.6** | **24.3** | **8.9** | **5.5** | **8.6** | **25.0** | **30.9** | **34.4** |
| A. U.S. Dollars | | 4.6 | 0.5 | 0.3 | 1.6 | 6.8 | 15.2 | 19.7 |
| B. Pounds Sterling | } 14.6 | 19.7 | 8.4 | 5.2 | 7.0 | {13.7 | 11.2 | 9.5 |
| C. Other and Discrepancies | | | | | | { 4.5 | 4.6 | 5.2 |
| TOTAL | **100** | **100** | **100** | **100** | **100** | **100** | **100** | **100** |
| I. *PARIS CLUB* | **71.3** | **75.7** | **82.4** | **84.3** | **84.8** | **72.3** | **70.0** | **71.9** |
| A. Reserve Centers | 30.2 | 34.6 | 39.5 | 41.0 | 61.2 | 59.3 | 47.4 | 31.3 |
| 1. United States | *26.8* | *28.8* | *32.1* | *33.3* | *46.2* | *55.5* | *43.3* | *26.3* |
| 2. United Kingdom | *3.4* | *5.8* | *7.4* | *7.7* | *15.0* | *3.7* | *4.1* | *5.0* |
| B. European Community | 32.6 | 33.6 | 35.5 | 36.2 | 17.1 | 5.9 | 14.2 | 28.0 |
| C. Other Countries | 8.5 | 7.6 | 7.3 | 7.1 | 6.5 | 7.2 | 8.4 | 12.6 |
| II. *OTHER COUNTRIES IN*: | **28.6** | **24.4** | **17.6** | **15.7** | **15.2** | **27.7** | **30.0** | **28.1** |
| A. Western Europe | 11.4 | 7.3 | 6.1 | 5.9 | 4.8 | 3.7 | 5.0 | 7.6 |
| B. Latin America | 8.8 | 8.9 | 3.4 | 3.4 | 3.3 | 5.9 | 6.7 | 3.6 |
| C. Non-European Sterling Area | 7.3 | 5.3 | 5.9 | 4.5 | 4.9 | 12.1 | 12.1 | 11.1 |
| D. Other | 1.1 | 2.7 | 2.3 | 1.8 | 2.2 | 5.9 | 6.2 | 5.8 |

*Notes*: (1) Gold valued at $20.67 an ounce.
(2) Gold valued at $35 an ounce.

*Sources*: See Table 8.

TABLE 11

SOURCES AND DISTRIBUTION OF GROSS RESERVE INCREASES, 1914-1962

(in per cent of yearly totals)

| *Period* | *1914-62* | *1914-28* | *1929-33* | *1934-37* | *1938-49* | *1950-57* | *1958-62* |
|---|---|---|---|---|---|---|---|
| I. *GOLD* | **61.4** | **70.0** | **127.7** | **82.8** | **50.6** | **35.8** | **32.5** |
| A. Physical Increases | 43.5 | 38.6 | 15.2 | 82.8 | 50.6 | 35.8 | 32.5 |
| 1. Western Sources | 40.3 | 38.6 | 15.2 | 78.3 | 51.3 | 29.7 | 18.5 |
| a) Production | 59.3 | 68.3 | 28.7 | 50.5 | 60.3 | 68.7 | 71.5 |
| b) Private Absorption (–) | –19.1 | –29.7 | –13.6 | +27.7 | –9.0 | –39.0 | –53.1 |
| 2. U.S.S.R. Sales | 3.3 | — | — | 4.5 | –0.7 | 6.1 | 14.0 |
| B. Coin Withdrawal | 4.9 | 31.4 | 5.6 | — | — | — | — |
| C. Dollar Devaluation | 13.0 | — | 107.0 | — | — | — | — |
| II. *INTERNATIONAL INSTITUTIONS* | **2.6** | — | — | **–0.1** | **0.8** | **6.7** | **9.0** |
| A. Gold Accumulation (–) | –3.6 | — | — | –0.1 | –7.8 | +0.4 | –9.1 |
| B. IMF Gold Tranches | 6.2 | — | — | — | 8.6 | 6.2 | 18.0 |
| III. *RESERVE CURRENCIES* | **36.0** | **30.0** | **–27.7** | **17.3** | **48.6** | **57.5** | **58.5** |
| A. U.S. Dollars | 21.3 | 7.3 | –7.3 | 5.1 | 14.4 | 52.0 | 52.0 |
| B. Pounds Sterling | 14.7 | 22.7 | –20.4 | 12.2 | 23.3 | — | –2.4 |
| C. Others and Discrepancies | | | | | 10.9 | 5.5 | 9.0 |
| TOTAL | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** | **100.0** |
| I. *PARIS CLUB* | **71.9** | **78.2** | **99.7** | **86.0** | **54.4** | **59.6** | **85.1** |
| A. Reserve Centers | 31.4 | 37.1 | 52.5 | 117.7 | 56.5 | –5.4 | –81.4 |
| 1. United States | *26.2* | *29.9* | *41.4* | *82.4* | *68.9* | *–11.3* | *–92.7* |
| 2. United Kingdom | *5.2* | *7.1* | *11.2* | *35.3* | *–12.4* | *5.9* | *11.4* |
| B. European Community | 27.6 | 34.1 | 40.8 | –36.4 | –10.2 | 51.1 | 125.8 |
| C. Other Countries | 12.9 | 7.0 | 6.3 | 4.6 | 8.2 | 13.9 | 41.7 |
| II. *OTHER COUNTRIES IN* | **28.1** | **21.8** | **0.3** | **14.0** | **45.6** | **40.4** | **14.9** |
| A. Western Europe | 7.3 | 4.9 | 3.5 | 1.6 | 2.2 | 10.8 | 26.0 |
| B. Latin America | 3.2 | 9.0 | –6.4 | 3.2 | 9.7 | 10.4 | –18.2 |
| C. Non-European Sterling Area | 11.4 | 4.2 | 3.1 | 5.9 | 22.5 | 11.9 | 3.9 |
| D. Other | 6.2 | 3.7 | 0.3 | 3.3 | 11.2 | 7.4 | 3.3 |

*Sources*: See Table 9.

TABLE 12

RATIOS OF GROSS INTERNATIONAL RESERVES TO IMPORTS AND TO MONEY SUPPLY, 1937-1962

(in per cent)

| End of | Reserves as % of Imports | | | | Reserves as % of Money Supply | | | |
|---|---|---|---|---|---|---|---|---|
| | *1937* | *1949* | *1957* | *1962* | *1937* | *1949* | *1957* | *1962* |
| I. *RESERVE CENTERS* | **195.2** | **172.9** | **104.9** | **67.6** | **44.6** | **22.1** | **17.7** | **12.2** |
| 1. United States | 358.0 | 345.0 | 169.8 | 96.9 | 43.2 | 23.4 | 18.0 | 11.4 |
| 2. United Kingdom | 81.2 | 20.6 | 21.0 | 26.3 | 49.6 | 12.1 | 14.9 | 19.0 |
| II. *EUROPEAN COMMUNITY* | **81.9** | **25.7** | **32.6** | **51.3** | **29.7** | **13.9** | **20.0** | **27.8** |
| 1. France | 163.1 | 17.6 | 10.4 | 53.9 | 24.1 | 7.5 | 3.8 | 15.3 |
| 2. Germany | 3.2 | 8.8 | 55.5 | 56.7 | 2.3 | 5.8 | 47.3 | 48.0 |
| 3. Italy | 28.9 | 37.4 | 36.9 | 60.2 | 11.2 | 15.7 | 16.1 | 22.2 |
| 4. Netherlands | 106.2 | 23.0 | 22.6 | 36.4 | 69.8 | 22.7 | 38.9 | 53.8 |
| 5. Belgium | 280.7 | 54.2 | 29.5 | 38.5 | 48.3 | 31.4 | 25.5 | 34.4 |
| III. *OTHER PARIS CLUB COUNTRIES* | **58.8** | **57.5** | **32.4** | **45.4** | **39.2** | **36.1** | **25.5** | **25.6** |
| 1. Canada | 21.3 | 41.5 | 31.1 | 40.0 | 19.2 | 33.3 | 34.3 | 38.3 |
| 2. Japan | 26.0 | (22.1) | 12.2 | 35.9 | 16.7 | (10.6) | 6.7 | 11.8 |
| 3. Switzerland | 187.0 | 191.8 | 95.7 | 95.1 | 73.9 | 65.6 | 53.7 | 50.4 |
| 4. Sweden | 94.8 | 23.0 | 20.2 | 25.7 | 75.2 | 21.7 | 25.2 | 28.6 |
| IV. *ELEVEN-COUNTRY TOTAL* | **134.1** | **103.8** | **61.1** | **55.9** | **40.1** | **21.9** | **18.8** | **17.7** |

*Sources and Notes*:

(1) Underlying estimates of international reserves, imports, money supply, and exchange rates have been taken, with few exceptions, from *International Reserve Statistics* (November 1963 and *Supplement* to 1963-1964 issues).

(2) See also Table 8 for other sources and notes.

TABLE 13

SOURCES OF GROSS RESERVE INCREASES OF COUNTRIES OTHER THAN THE UNITED STATES, 1950-1962

| | *In Millions of U.S. Dollars* | | | *In Per Cent of Total* | | |
|---|---|---|---|---|---|---|
| | *1950-62* | *1950-57* | *1958-62* | *1950-62* | *1950-57* | *1958-62* |
| I. *DECLINE IN U.S. NET RESERVES* | **19,330** | **6,895** | **12,430** | **70.3** | **59.0** | **78.6** |
| A. Gold Losses | 8,505 | 1,705 | 6,800 | 30.9 | 14.6 | 43.0 |
| B. Reduction of Net Claim on IMF | 1,195 | –315 | 1,510 | 4.3 | –2.7 | 9.5 |
| C. Growth (–) of U.S. Foreign Currency Reserves | –100 | — | –100 | –0.4 | — | –0.6 |
| D. Debt Increase to Foreign Monetary Authorities | 9,725 | 5,505 | 4,220 | 35.4 | 47.1 | 26.7 |
| II. *INCREASE OF WORLD MONETARY GOLD STOCK* | **6,425** | **3,760** | **2,665** | **23.4** | **32.2** | **16.9** |
| A. From Western Sources | 4,635 | 3,120 | 1,515 | 16.9 | 26.7 | 9.6 |
| B. From U.S.S.R. Sales | 1,790 | 640 | 1,150 | 6.5 | 5.5 | 7.3 |
| III. *NET IMPACT OF IMF TRANSACTIONS* | **640** | **500** | **140** | **2.3** | **4.3** | **0.9** |
| A. IMF(1) Gold Accumulation (–) | –695 | 45 | –745 | –2.5 | 0.4 | –4.7 |
| B. IMF Gold-Convertible Investments (–) | –800 | –200 | –600 | –2.9 | –1.7 | –3.8 |
| C. Gold Tranches on IMF | 2,135 | 655 | 1,480 | 7.8 | 5.6 | 9.4 |
| IV. *INCREASES IN RESERVE-CURRENCY BALANCES OTHER THAN REPORTED OFFICIAL DOLLAR HOLDINGS*(2) | **1,110** | **530** | **580** | **4.0** | **4.5** | **3.7** |
| V. *TOTAL* | **27,505** | **11,690** | **15,815** | **100** | **100** | **100** |
| VI. *AVERAGE YEARLY GROWTH RATE OF TOTAL RESERVES (in %)* | **+6.7%** | **+5.7%** | **+8.3%** | | | |
| VII. *AVERAGE YEARLY DECLINE (–) IN U.S. NET RESERVES (in %)* | **–16%** | **–5%** | **–36%** | | | |

*Notes*:

(1) Including small fluctuations in EPU, European Fund, and BIS Gold.

(2) Including unidentifiable Euro-dollar holdings that should be classified under I D.

*Sources*: See Tables 8 and 9.

TABLE 14

THE BALANCE OF PAYMENTS OF THE UNITED STATES, 1958-1962[1]

(in millions of U.S. dollars)

| | *Total 1958-62* | *Yearly Average* | *1958* | *1959* | *1960* | *1961* | *1962* |
|---|---|---|---|---|---|---|---|
| I. *Current Account* | **12,753** | **2,551** | **1,484** | **–657** | **3,097** | **4,739** | **4,090** |
| A. Receipts | 131,618 | 26,324 | 23,067 | 23,476 | 26,974 | 28,311 | 29,790 |
| B. Payments (–) | –118,865 | –23,773 | –21,583 | –24,133 | –23,877 | –23,576 | –25,700 |
| II. *Capital Account* | **27,456** | **5,491** | **4,511** | **2,062** | **6,721** | **6,699** | **7,463** |
| A. *Official*: | 13,290 | 2,658 | 2,304 | 2,278 | 2,438 | 2,963 | 3,307 |
| 1. Grants & Loans | 17,913 | 3,583 | 3,131 | 3,040 | 3,405 | 4,056 | 4,281 |
| 2. Scheduled Repayments | –2,973 | –595 | –544 | –619 | –588 | –606 | –617 |
| 3. $ Holdings of Int'l & Regional Institutions other than IMF | –1,384 | –277 | –283 | –144 | –337 | –407 | –213 |
| 4. Other U.S. Gov't Liabilities | –266 | –53 | — | — | –42 | –80 | –144 |
| B. *Private*: | 14,166 | 2,833 | 2,207 | –216 | 4,283 | 3,736 | 4,156 |
| 1. Long Term | 10,893 | 2,179 | 2,552 | 1,589 | 2,114 | 2,143 | 2,495 |
| a) U.S. Capital | 12,842 | 2,568 | 2,625 | 2,298 | 2,544 | 2,609 | 2,766 |
| b) Foreign Capital | –1,949 | –390 | –73 | –709 | –430 | –466 | –271 |
| 2. Short Term | 3,273 | 655 | –345 | –1,805 | 2,169 | 1,593 | 1,661 |
| a) U.S. Capital | 3,784 | 757 | 311 | 77 | 1,348 | 1,541 | 507 |
| b) Foreign Commercial Credits | –74 | –15 | 51 | –154 | 90 | –177 | 116 |
| c) Foreign $ Balances | –2,150 | –430 | –219 | –1,316 | 48 | –676 | 13 |
| d) Errors & Omissions | 1,713 | 343 | –488 | –412 | 683 | 905 | 1,025 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| III. *Monetary Balance (I–II)* | **–14,703** | **–2,941** | **–3,027** | **–2,719** | **–3,624** | **–1,960** | **–3,373** |
| A. *Foreign Prepayments of*: | –2,276 | –455 | — | –435 | –32 | –673 | –1,136 |
| 1. U.S. Loans | –1,817 | –363 | — | –435 | –48 | –668 | –666 |
| 2. U.S. Military Exports | –459 | –92 | — | — | 16 | –5 | –470 |
| B. *Net U.S. Reserves* | –12,427 | –2,485 | –3,027 | –2,284 | –3,592 | –1,287 | –2,237 |
| 1. Liabilities To: | –4,817 | –963 | –735 | –1,248 | –1,449 | –681 | –704 |
| a) Foreign Monetary Authorities | –4,217 | –843 | –735 | –948 | –1,149 | –681 | –704 |
| b) IMF | –600 | –120 | — | –300 | –300 | — | — |
| 2. Assets: | –7,610 | –1,522 | –2,292 | –1,036 | –2,143 | –606 | –1,533 |
| a) Foreign Exchange | 99 | 20 | | | | 116 | –17 |
| b) IMF Gold Tranche | –910 | –182 | –17 | 39 | –441 | 135 | –626 |
| c) Gold | –6,799 | –1,360 | –2,275 | –1,075 | –1,702 | –857 | –890 |



*Notes*:

(1) For comparable U.K. balance-of-payments and reserve estimates, see Tables on pp. 529-530 of my article "The Latent Crisis of the Reserve Currencies," *The Banker,* London, August 1963.

(2) Estimates are derived from the *Survey of Current Business* (primarily Table 1, p. 12, of the September 1963 issue). The absence of sign, however, in the Capital and Monetary Balance Accounts denotes throughout an increase in assets or a decline in liabilities, while a *minus* sign denotes a decline of assets or an increase in liabilities. This should be less misleading to the layman than the opposite procedure usually adopted by balance-of-payments accountants, and should facilitate the reconciliation of flow and stock accounts of our international transactions and capital position.

The Monetary Balance (III) thus reflects the excess —or shortage—of the Current Account (I) in relation to other Capital Accounts (II).

(3) Item II B 1 is taken from line A 9 of Table 1 of the *Survey,* item II B 1 a from line I 10 and 11, and item II B 1 b obtained by difference.

(4) Item II is obtained by difference from items I and III, item II A by deducting II B from II, and items II A 4 by deducting II A 1, 2, and 3 from II A.

(5) Item III B 1 totals up lines D 2 and B 3, 4, 5, and 6 of the *Survey.* Gross monetary reserve assets are defined as the gold, foreign-exchange assets and IMF gold tranches of the U.S. national monetary authorities, and reserve liabilities as the claims—irrespective of minor differences in maturity or marketability—of foreign national monetary authorities in our own market.

TABLE 15

THE INTERNATIONAL INVESTMENT POSITION
OF THE UNITED STATES, 1869-1962
(in millions of U.S. dollars)

| *End of* | *1869* | *June 1914* | *1919* | *1933* | *1939* | *1949* | *1957* | *1962* |
|---|---|---|---|---|---|---|---|---|
| I. *NET MONETARY RESERVES* | | **1,200** | **2,500** | **6,700** | **16,800** | **22,824** | **15,927** | **3,495** |
| A. *Assets* | | 1,200 | 2,500 | 6,800 | 17,600 | 26,024 | 24,832 | 17,220 |
| 1. Gold | | 1,200 | 2,500 | 6,800 | 17,600 | 24,563 | 22,857 | 16,057 |
| 2. IMF Gold Tranche | | — | — | — | — | 1,461 | 1,975 | 1,064 |
| 3. Foreign Currencies | | — | — | — | — | — | — | 99 |
| B. *Liabilities (–) to* | | | | –100 | –800 | –3,200 | –8,905 | –13,725 |
| 1. IMF | | — | — | — | — | — | –200 | –800 |
| 2. Foreign Monetary Authorities | | | | –100 | –800 | –3,200 | –8,705 | –12,925 |
| II. *OTHER ASSETS AND LIABILITIES* | **–1,460** | **–3,700** | **3,000** | **9,600** | **2,600** | **15,525** | **28,923** | **45,320** |
| A. *Short-Term Private* | –150 | –500 | –300 | 700 | –1,900 | –5,245 | –6,506 | –6,208 |
| 1. U.S. Assets | | | 500 | 1,100 | 600 | 1,312 | 3,182 | 7,234 |
| 2. Private Foreign Holdings (–) | –150 | –500 | –800 | –400 | –2,500 | –6,557 | –9,688 | –13,442 |
| B. *Long-Term Private* | –1,310 | –3,200 | 3,300 | 8,900 | 4,500 | 8,515 | 19,986 | 32,375 |
| 1. U.S. Assets | 80 | 3,500 | 6,500 | 13,800 | 10,800 | 15,637 | 33,748 | 52,576 |
| a) Direct | | 2,600 | 3,900 | 7,800 | 7,000 | 10,700 | 25,394 | 37,145 |
| b) Portfolio | | 900 | 2,600 | 6,000 | 3,800 | 4,937 | 8,354 | 15,431 |
| 2. Foreign Assets (–) | –1,390 | –6,700 | –3,200 | –4,900 | –6,300 | –7,122 | –13,762 | –20,201 |
| a) Direct | | –1,300 | –900 | –1,800 | –2,000 | –2,941 | –5,710 | –7,597 |
| b) Portfolio | | –5,400 | –2,300 | –3,100 | –4,300 | –4,181 | –8,052 | –12,604 |
| C. *U.S. Government* | — | — | — | — | — | 12,255 | 15,443 | 19,153 |
| III. *NET ASSETS* (I + II) | **–1,460** | **–2,500** | **5,500** | **16,300** | **19,400** | **38,349** | **44,850** | **48,815** |

*Notes*:

(1) The Commerce Department Tables do not include the U.S. gold reserves.

(2) End of 1933 gold reserves are valued at $35 an ounce.

(3) Liabilities to Foreign Monetary Authorities include personally estimated official holdings of "bonds and notes."

(4) Private holdings are arrived at by deducting line I B estimates from reported short-term assets and U.S. Government obligations of foreigners.

(5) U.S. Government Assets, on line II C, exclude monetary claims reported on lines I A 2 and 3. They also exclude World War I loans, estimated at $10 billion at the end of 1933, and $11.4 billion at the end of 1939.

(6) For other qualifications, see original sources quoted below.

*Sources*:

Estimates (except for net monetary reserves) are taken from the U.S. Department of Commerce Tables on the International Investment Position of the United States, published in the *Historical Statistics of the United States* (Washington, 1949), p. 242; in *The United States in the World Economy* (Washington, 1943), p. 123; *Balance of Payments, Statistical Supplement* (Washington, 1963), pp. 248-249; and the *Survey of Current Business* (August 1963), p. 22.

TABLE 16

GOLD RESERVES AND DOLLAR HOLDINGS, 1937-1963

(in billions of U.S. dollars)

| *End of* | *1937* | *1949* | *1955* | *1957* | *1958* | *1959* | *1960* | *1961* | *1962* | *1963* |
|---|---|---|---|---|---|---|---|---|---|---|
| I. *WORLD* (GOLD) | **25.3** | **35.0** | **37.6** | **38.8** | **39.4** | **40.2** | **40.5** | **41.1** | **41.4** | **42.3** |
| II. *UNITED STATES* (Net = A–B) | **10.9** | **16.3** | **6.5** | **6.3** | **2.9** | **–2.0** | **–5.8** | **–8.4** | **–11.3** | **–14.0** |
| A. Gold | 12.8 | 24.6 | 21.8 | 22.9 | 20.6 | 19.5 | 17.8 | 16.9 | 16.1 | 15.6 |
| B. Foreign Dollar Holdings | 1.9 | 8.2 | 15.2 | 16.6 | 17.6 | 21.6 | 23.6 | 25.4 | 27.4 | 29.6 |
| III. *REST OF WORLD* (Gold plus Dollar Holdings) | **14.4** | **18.7** | **31.1** | **32.6** | **36.5** | **42.2** | **46.3** | **49.5** | **52.8** | **56.3** |
| A. International | — | 0.7 | 4.0 | 2.9 | 3.3 | 6.2 | 7.4 | 7.3 | 8.3 | 8.2 |
| B. Countries | 14.4 | 15.4 | 27.1 | 29.6 | 33.2 | 36.0 | 39.0 | 42.3 | 44.5 | 48.1 |
| 1. Continental Western Europe | 7.2 | 6.1 | 13.2 | 14.7 | 17.2 | 19.2 | 21.1 | 23.8 | 25.3 | 27.8 |
| 2. United Kingdom | 4.4 | 2.0 | 2.9 | 3.1 | 3.9 | 3.8 | 4.9 | 4.9 | 4.6 | 4.3 |
| 3. Latin America | 1.0 | 3.1 | 4.0 | 4.5 | 4.2 | 4.0 | 3.5 | 3.5 | 3.4 | 4.1 |
| 4. Canada | 0.4 | 1.5 | 2.6 | 3.2 | 3.4 | 3.6 | 3.8 | 4.2 | 4.4 | 4.5 |
| 5. Asia | 1.1 | 2.0 | 3.2 | 2.9 | 3.3 | 4.0 | 4.4 | 4.4 | 5.0 | 5.6 |
| 6. Other | 0.3 | 0.7 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.4 | 1.8 | 1.9 |

*Note*:

Estimates of gold reserves—excluding Eastern Europe and Mainland China—and dollar holdings are derived from the *Federal Reserve Bulletin*. They include, beginning in 1949, U.S. Government bonds and notes with original maturities of more than one year and, since 1962, all non-marketable U.S. Treasury bonds and notes held by foreign official institutions ($251 million at the end of 1962, and $788 million in June 1963).

TABLE 17

GOLD, 1493-1962

(in millions of U.S. dollars)

| | Current Flows | | | End of Year Stocks | | | Yearly Growth Rate (%) | |
|---|---|---|---|---|---|---|---|---|
| | *Production* | *Non-Monetary Uses* | *Monetary Uses* | *Total* | *Non-Monetary* | *Monetary* | *Total Stock* | *Monetary Gold* |
| I. *At $20.67 Per Ounce:* | | | | | | | | |
| 1493-1600 | 502 | | | 502 | | | | |
| 1601-1700 | 606 | | | 1,108 | | | | |
| 1701-1800 | 1,265 | | | 2,373 | 1,573 | 800 | | |
| 1801-1848 | 649 | 349 | 300 | 3,022 | 2,022 | 1,100 | 0.5 | 0.7 |
| 1849-1872 | 2,943 | 1,043 | 1,900 | 5,965 | 2,965 | 3,000 | 2.9 | 4.3 |
| 1873-1888 | 1,697 | 997 | 700 | 7,662 | 3,962 | 3,700 | 1.6 | 1.3 |
| 1889-1913 | 7,528 | 3,046 | 4,482 | 15,190 | 7,008 | 8,182 | 2.8 | 3.2 |
| *Eastern Bloc* | | | | 1,685 | | 1,086 | | |
| *Excluding Eastern Bloc* | | | | 13,505 | 6,409 | 7,096 | | |
| *After 1913:* | | | | | | | | |
| 1914-1928 | 5,600 | 2,437 | 3,163 | 19,105 | 8,846 | 10,259 | 2.4 | 2.5 |
| 1929-1933 | 2,117 | 998 | 1,119 | 21,222 | 9,844 | 11,378 | 2.2 | 2.1 |
| II. *At $35 Per Ounce:* | | | | | | | | |
| Revaluation Impact | 14,709 | 6,823 | 7,886 | 35,931 | 16,667 | 19,264 | | |
| 1934-37 | 4,007 | –2,019 | 6,026 | 39,938 | 14,648 | 25,290 | 2.7 | 7.1 |
| 1938-49 | 11,437 | 1,722 | 9,715 | 51,375 | 16,370 | 35,005 | 2.1 | 2.8 |
| 1950-57 | 7,849 | 4,091 | 3,758 | 59,224 | 20,461 | 38,763 | 1.8 | 1.3 |
| 1958-62 | 7,019 | 4,351 | 2,668 | 66,243 | 24,812 | 41,431 | 2.3 | 1.4 |

*Sources and Notes:*

(1) *Production estimates* (col. 1) are calculated from:
  (a) *1493-1913*: Joseph Kitchin, "The Supply of Gold Compared with the Price of Commodities," *Interim Report of the Gold Delegation to the Financial Committee* (Geneva, 1930) p. 80; and George F. Warren and Frank A. Pearson, *Gold and Prices* (New York, 1935), p. 121.
  (b) *1914-1937*: Board of Governors of the Federal Reserve System, *Banking and Monetary Statistics* (Washington, 1943), pp. 542-543, deducting from world total the estimated production of the U.S.S.R., Rumania, and China.
  (c) *The Eastern Bloc production through 1913* is estimated by deducting Russian production over the years 1914-29 (from preceding source) from the estimate of total Russian production to the end of 1929 in Joseph Kitchin "Production and Consumption of Gold—Past and Present," Gold Delegation *Interim Report*, p. 56.
  (d) *1938-62: International Financial Statistics*; and Oscar L. Altman, "A Note on Gold Production and Additions to International Gold Reserves," IMF *Staff Papers*, April 1958, p. 259.
  (e) U.S.S.R. Gold sales in Western Markets (as estimated in the Annual BIS *Reports*, and for early years in the September 1954 issue of the *Federal Reserve Bulletin*, p. 938) are added to gold production after 1933.
(2) *Monetary Gold Stocks* (col. 6) including both central gold reserves and gold in active circulation:
  (a) *1800-1888*: Joseph Kitchin's estimates in Gold Delegation *Interim Report*, pp. 82-84, adjusted upward (by about 6.5 per cent) to agree with 1913 estimate below, and rounded to next $100 million.
  (b) *1913*: A. Loveday, "Gold: Supply and Demand," Gold Delegation *Interim Report*, p. 114, corrected by later estimates of *Banking and Monetary Statistics*, pp. 544-551, and including—following a suggestion of Milton Friedman—an exponential correction of the $287 million of estimated gold circulation not returned to the Treasury in 1934 (and dropped abruptly from the Federal Reserve statistics in 1913). The final estimate retained ($8,182 million) is intermediate between those of Kitchin ($7,684 million) and of Loveday ($8,773 million).
  (c) *1928 and 1933*: previous sources plus other League of Nations publications and International Monetary Fund, *International Reserves and Liquidity* (Washington, 1958), p. 102.
  (d) *1937-1962: International Financial Statistics* (November 1963 and 1963/64 *Supplement*).
(3) *Non-monetary stocks and annual flows* are derived residually from the previous estimates.

TABLE 18

SILVER, 1493-1913

(in millions of ounces and of U.S. dollars)

| | Current Flows | | | End of Year Stocks | | | Yearly Growth Rate (%) | |
|---|---|---|---|---|---|---|---|---|
| | Production | Non-Monetary Uses | Monetary Uses | Total | Monetary | Non-Monetary | Total Stock | Monetary Silver |
| I. *In millions of ounces* | | | | | | | | |
| 1493-1600 | 734 | | | 734 | | | | |
| 1601-1700 | 1,197 | | | 1,931 | | | | |
| 1701-1800 | 1,834 | | | 3,765 | | | | |
| 1801-1848 | 999 | | | 4,764 | | | | |
| 1849-1872 | 860 | | | 5,624 | | | | |
| 1873-1888 | 1,341 | | | 6,966 | | | | |
| 1889-1913 | 4,356 | | | 11,322 | | | | |
| II. *In millions of U.S. dollars* | | | | | | | | |
| 1493-1600 | 1,013 | | | 979 | | | | |
| 1601-1700 | 1,652 | | | 2,575 | | | | |
| 1701-1800 | 2,535 | | | 5,020 | | | | |
| 1801-1848 | 1,318 | | | 6,352 | 4,752 | 1,600 | 0.5 | |
| 1849-1872 | 1,147 | 747 | 400 | 7,499 | 5,499 | 2,000 | 0.5 | 0.9 |
| 1873-1888 | 1,497 | 97 | 1,400 | 9,288 | 5,888 | 3,400 | 1.3 | 2.3 |
| 1889-1913 | 2,819 | 2,619 | 200 | 15,096 | 12,496 | 3,600 | 2.0 | 0.2 |

*Sources and Notes:*

(1) Production estimates are calculated from the Table on pp. 105-106 of the *Annual Report of the Director of the Mint* for the Fiscal Year Ended June 30, 1933 (Washingington, 1933).

(2) Dollar estimates for current flows are from the same source, and estimated at the commercial value of silver during each period. Stock estimates, however, have been recalculated at a uniform price corresponding to the legal parity of the Latin Monetary Union (and very close to the commercial valuation of silver in the nineteenth century until 1872), in order to provide comparability with the legal valuation of estimated monetary stocks.

(3) Monetary stock estimates are extremely rough, personal (and, I hope, provisional) guesses, drawn from a variety of standard, but unfortunately divergent, sources such as Soetbeer, Haupt, Helfferich and the *Reports of The Director of the Mint.*

## NOTE ON U.S.S.R. GOLD ESTIMATES

I *Production*

Russian production was estimated as averaging about $180 million in the last five prewar years, 1935-1939 (Board of Governors of the Federal Reserve System, *Monetary and Banking Statistics,* Washington, 1943, p. 543).

In "A Note on Gold Production and Additions to International Gold Reserves" (IMF *Staff Papers,* April 1958, p. 282), Oscar Altman quotes various estimates ranging from a low of $150 million to a high of $560 million a year for the postwar period through 1956, and a Samuel Montagu and Co. estimate of $600 million for 1957.

A $600 million production rate in 1957 would imply an average annual rate of growth of roughly 6 per cent a year over the years 1938-1957.

II *Stock*

Official U.S.S.R. gold holdings were last reported as about $840 million in 1935. Adding to this the gold from current production levels rising at an average rate of 6 per cent a year from 1938 through 1957, but deducting estimated sales to the West and $25 million to $30 million a year for industrial uses within the U.S.S.R., would place the U.S.S.R. gold holdings at slightly more than $7 billion at the end of 1957. This is identical with Altman's estimate of "7 billion or more," in the article quoted above (p. 282).

Production in 1958-1963 at an unchanging $600 million a year ($3,600 million) minus estimated sales to the West ($1,650 million) and internal industrial uses at $30 million a year ($180 million) would add $1,800 million more to official stocks and estimate them at close to $9 billion at the end of 1963. At a continuing 6 per cent growth rate of production, holdings at the end of 1963 would total about $9.5 billion.

III In a more recent article ("Russian Gold and the Ruble," IMF *Staff Papers,* pp. 416-438), Mr. Altman revised downward his previous estimates. Assuming a gold production of "from somewhat less than $5 billion to somewhat more than $7 billion" and sales of "at least $2 billion" over the years 1936-1959, shipment of $500 million of Spanish gold to Russia during the civil war, and a 1935 gold stock of $840 million, he arrived at an estimate of $4.0 billion to $6.5 billion at the end of 1959 (article quoted, p. 427).

Production at an annual $600 million rate, minus internal absorption and sales to the West, would have added about $1 billion to the

U.S.S.R. gold stock over the four following years, and brought it to about $5 billion to $7.5 billion at the end of 1963.

*P-S*: Startlingly lower estimates of about $150 million to $175 million for annual gold production and $2 billion for the current gold stock of the U.S.S.R. were recently released by the Central Intelligence Agency of the United States.

They have been greeted with considerable skepticism outside the CIA itself. The last *Annual Bullion Review* of Samuel Montagu and Company (London, 1964), for example, reaffirms previous estimates of Russian gold production of about $450 million in 1956 and more than $500 million in 1957, probably raised since then by extensive and successful prospecting for minerals in Siberia in recent years. Montagu's reference to the existence of a 25 per cent statutory gold-cover requirement against Russian currency issues—of unknown amounts—may, however, carry as little conviction as the CIA estimates regarding the probable size of outstanding gold stocks.

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