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POSTWAR GOLD AND FOREIGN EXCHANGE RESOURCES OF THE TWENTY LATIN AMERICAN REPUBLICS

Florence Guild Nixon

One of the major aspects of the Latin American Republics' postwar readjustment has been the rapid dissipation of war-accumulated foreign exchange resources. During the six and one-half year period between the end of 1939 and the middle of 1946, the net international assets of the twenty Republics increased greatly, although the rates of accumulation were not uniform from country to country. By the end of this period, almost a full year after the end of the war, total net gold and foreign exchange assets of the majority of the Republics had multiplied five-fold to reach a level never before attained. Notwithstanding a considerable decline during the following year and a quarter, total net holdings of all of the Republics at the end of September 1947 were almost four times as great as at the end of 1939.

The wartime increase in gold and foreign exchange resources is explained mainly by persistent surpluses on current account. Exports from Latin America almost doubled during the war, while imports remained at prewar levels because of the wartime lack of shipping and the diversion or cessation of exports from the principal supplying countries. The trade developments in the years 1938-47 are shown in the following table. Additional foreign exchange resources were acquired in the form of remittances, loans, investments, and U.S. military expenditures at a rate which Latin America had never before experienced.

Table I
Total Trade of the Latin American Republics
(In millions of U.S. dollars)

Year	Exports	Imports	Export surplus
1938	1,720.1	1,474.2	245.9
1939	1,815.8	1,354.0	461.8
1940	1,673.4	1,403.9	269.5
1941	1,934.1	1,486.1	448.0
1942	2,056.0	1,394.8	661.2
1943	2,574.1	1,534.7	1,039.4
1944	2,963.3	1,937.7	1,025.6
1945	3,274.4	2,306.4	968.0
1946 a/	4,521.0 (est.)	3,358.0 (est.)	1,163.0 (est.)
1947 - 6 mos. b/	2,295.2	2,292.4	

a/ The estimated total for the year includes Paraguayan and Venezuelan estimates projected for 12 months on the basis of partial data.

b/ Exclusive of Bolivia, Guatemala, Paraguay, Venezuela, the Dominican Republic, and Panama, for which data are not yet available.

Source: Foreign Commerce Weekly, May 19, 1945. Data for the years 1945, 1946, and six months 1947 from Department of Commerce, Office of International Trade, American Republics Branch.

As a result of increased foreign exchange resources, there was considerable monetary expansion in the Latin American Republics. The inflow of foreign exchange resources directly augmented note issues and current account deposits. High reserves made further expansion possible in the granting of central bank credits to governments for military and other expenditures. In addition, the commercial banks' enlarged holdings of reserves and low reserve requirements allowed secondary credit expansion.

By the end of 1946, the Republics' total gold and foreign exchange holdings had begun to decline. High money incomes and exchange holdings fostered heavy importing. Large quantities of high-priced luxuries **were** imported when wartime controls were relaxed and before new exchange restrictions were more generally established in 1947. In addition, the backlog of demand for capital goods and necessaries tended further to draw down the foreign exchange holdings accumulated during the war. In some countries, increased emphasis on nationalistic programs for economic development, some features of which were of questionable economic worth, augmented heavy expenditures abroad. The drain on foreign exchange balances was intensified by the general rise in world prices. At the same time the net export surpluses of many countries were reduced. While in some countries receipts from exports in the case of various basic products such as coffee, sugar, tin, oil, grains, meats, and a few other commodities continued high, many countries progressively felt the effects of the financial disruptions of some of their chief traditional customers in Europe. Although total export values were maintained because of rising prices, stocks of export commodities began to accumulate and could not be disposed of domestically. In 1947, many Republics began to foresee a return to the instability of their prewar economic conditions.

At the end of September 1947, the Republics' total net gold and foreign exchange holdings of $3,469 million showed a decline of 17 per cent from the high level attained during the middle of 1946. This September figure still represented a level of holdings four times in excess of the $824 million at the end of December 1939.

However, not all of these September holdings were available to meet balance of payments deficits. Foreign exchange holdings of Latin America include substantial amounts of nonconvertible currencies. While these currencies may be used in specified areas for trade and for debt repatriation, as in the case of some of Argentina's holdings, Latin America's import trade since the war has been mainly with countries requiring payment in hard currencies.

As is shown in Table II, total foreign exchange resources held by official entities actually declined more between June 1946 and September 1947 than the total net holdings of the Republics, while the private banks' total net exchange assets increased by $56 million, or 19 per cent. Moreover, the decline in official holdings was due chiefly to a reduction in gold and dollar assets. The losses of gold were very unequally distributed among the Republics. The decrease in Argentine and Mexican official gold holdings alone, amounting to approximately $1 billion, was greater than the total net decline in official gold reserves of Latin America since June 1946. Furthermore, the losses of net official gold and foreign exchange holdings of Argentina, Brazil, Mexico, and Colombia exceeded by 14 per cent the decline in total net official gold and foreign exchange resources of all of Latin America. These countries' losses were partially offset by substantial increases in gold and foreign exchange holdings of Venezuela and Cuba.

Table II
Total Net Gold and Foreign Exchange Holdings
of the Latin American Republics
(In millions of U.S. dollars)

End of	Official Holdings a/			Private Banks' Holdings b/	Official plus Private Banks' Holdings
	Gold	Net foreign exchange assets	Total net (1)+(2)	Total net	Total net (3)+(4)
	(1)	(2)	(3)	(4)	(5)
Dec. 1939	710.7	67.7	778.4	56.0	834.4
1940	727.0	74.7	801.7	67.8	869.5
1941	856.4	161.1	1,017.5	74.3	1,091.8
1942	1,077.0	335.6	1,412.6	199.0	1,611.6
1943	1,770.4	607.1	2,377.5	223.5	2,601.0
1944	2,237.3	895.2	3,132.5	297.5	3,430.0
1945	2,765.4	1,034.7	3,800.1	310.3	4,110.4
June 1946	2,700.1	1,188.6	3,888.7	291.7	4,180.4
Dec. 1946	2,573.7	1,271.5	3,845.2	299.4	4,144.6
Mar. 1947	2,339.9	1,306.1	3,646.0	221.6	3,867.6
June 1947	2,051.0	1,198.2	3,249.2	392.3	3,641.5
Sept. 1947 c/	1,834.5	1,286.0	3,120.5	348.2	3,468.7

a/ Published gold and foreign exchange holdings of central banks or other official banks of issue of the Republics held, for own account and account of national government. In the case of Cuba, the figures represent the holdings of the Treasury, in Honduras those of the Exchange Control Commission, and in Panama those of the National Bank. Holdings of all official credit institutions in Mexico and member countries' net credit balances with the International Fund are also included.

b/ Holdings as reported by private commercial banks in each Republic. Data have never been made available for banks in this category in the Dominican Republic, Haiti, and Nicaragua.

c/ In the case of Uruguay, figures are those for July 1947, the latest date for which data are available.

However, in spite of the decreasing trend in total net official holdings as well as in total net official and private holdings, the Republics' gross dollar assets in September 1947 showed a very substantial increase over holdings at the end of 1939. Gross figures are cited because exact data on liabilities in dollars are not available for the countries concerned. Moreover, in 1939, dollar assets were considerably in excess of dollar liabilities and the proportionate relationship of liabilities to assets is believed to have been about the same in 1947 and in 1939. Dollar gross assets are shown in Table III. An increasing proportion of these holdings of dollar assets appear to be owned by private banks and non-banking entities, rather than by official entities. This is indicated by the decline in net official holdings of foreign currencies as a whole with, at the same time, an increase reported in the holdings of nonconvertible currencies. Moreover, it is believed that a large portion of the short-term dollar assets held on private account by banks in the United States belong not to banking entities but to private non-bank entities.

Table III
Total Gross Gold and Dollar Holdings of the Latin American Republics
(In millions of U.S. dollars)

End of	Official gold holdings a/	Official and private dollar assets b/	Total (1)+(2)
	(1)	(2)	(3)
Dec. 1939	710.7	391.7	1,102.4
1940	727.0	474.4	1,201.4
1941	856.4	435.1	1,291.5
1942	1,077.0	631.8	1,708.8
1943	1,770.4	722.1	2,492.5
1944	2,237.3	977.1	3,214.4
1945	2,765.4	1,106.4	3,872.0
June 1946	2,700.1	1,210.8	3,910.9
Dec. 1946	2,573.7	1,156.0	3,729.7
Mar. 1947	2,339.9	1,276.5	3,616.4
June 1947	2,051.0	1,447.0	3,498.0
Sept. 1947	1,834.5 c/	1,455.7	3,290.2

a/ See footnote a, Table II.
b/ These consist of: (1) total short-term dollar assets which U.S. banks reported they held for the account of Latin American official and private entities (banks and others); small amounts held for European dependencies in South and Central Americas cannot be eliminated; (2) other dollar assets of the Cuban Treasury, Honduran Exchange Control Commission, and the National Bank of Panama; (3) commercial banks' reported gold holdings; and (4) member countries' net credit balances with the International Monetary Fund.
c/ See footnote c, Table II.

If assets in nonconvertible currencies, estimated at $900 million at the end of June 1947, are subtracted from published total net holdings of $3,469 million in September 1947, the Republics' net resources immediately available for payment abroad appear to be reduced by about 25 per cent, to a level of approximately $2.6 billion.1/ A portion of these gold and exchange

1/ This figure is net of all liabilities reported by the Republics (including their reported dollar liabilities), and does not reflect the unknown amounts of dollar assets held in the United States for the account of private non-bank entities, which, of course, are not reported by the Latin American banks. Official and private dollar assets reported held by U.S. banks, as shown in Table III, do include unknown amounts of private non-bank holdings, and, therefore, show dollar holdings in excess of those estimated from data published in balance sheets of Latin American banks.

holdings would be needed to fulfill legal reserve requirements against note and deposit liabilities and, therefore, would not be available to cover expenditures abroad. Insofar as nonconvertible currencies may be substituted for gold and convertible foreign exchange in legal reserves, availability of the net gold and convertible holdings for current expenditures would not be reduced. Net resources of this magnitude for all Latin America, however, represent a level 207 per cent above that of December 1939.

Current holdings of foreign exchange resources of Latin America have been called "seriously low" and "inadequate"; on the other hand, they have been termed "unrealistically high". Because the rate of decline in holdings has been by no means uniform from country to country, generalizations in regard to Latin America as a whole are misleading.

Table IV
Total Net Gold and Foreign Exchange Resources of the Latin American Republics a/ for Specified Dates
(In millions of U.S. dollars)

	End of December 1939	End of June 1946	End of September 1947
Argentina	491.5	1,733.7 b/	1,164.0
Bolivia	7.3	33.9	29.6 c/
Brazil	70.4	740.9	644.5 d/
Chile	28.5	77.2	38.7 d/
Colombia	18.1	171.5	106.6
Costa Rica	2.5	5.1	6.5 d/
Cuba	7.1	441.0	633.9
Dominican Republic	n.a.	15.1 e/	13.4 e/
Ecuador	3.6	20.9	24.5
El Salvador	7.6	26.9	25.2
Guatemala	10.7	48.9	49.2
Haiti	3.0 e/	13.1 e/	11.3 e/
Honduras	2.3	14.5	12.3 d/
Mexico	37.8	265.4	123.4
Nicaragua	1.9 e/	6.7 e/	2.7 e/
Panama	n.a.	36.3	16.7
Paraguay	0.3 e/	8.0	5.1 f/
Peru	19.2	29.8	36.6
Uruguay	74.7 e/	257.0	262.4 g/
Venezuela	47.9	235.3	262.1
Total	834.4	4,180.4	3,468.7

n.a. = not available.

a/ See footnotes a and b, Table II.

b/ Official gold holdings of the Central Bank of Argentina for May 1946 have been used because detailed data for the end of June 1946 are not available.

c/ Figures for official liabilities and commercial banks' holdings are those for the end of August 1947, the latest date for which data are available.

d/ Holdings of commercial banks are those for the end of June 1947, the latest date for which data are available. e/ Reported official holdings only (see footnote a). f/ Figures for the Banking Department of the Bank of Paraguay are those for the end of June 1947 as end of September 1947 data are not available. g/ Official holdings are those at the end of July 1947, the latest date for which data are available.

As Table IV indicates, between June 1946 and September 1947, foreign exchange assets of more than half of the Republics were reduced, with noticeably large declines in the holdings of Argentina, Brazil, Chile, Colombia, Mexico, and Panama. In many of these countries, stricter exchange regulations have alleviated somewhat the pressure of demand for foreign currencies, and purchases of dollars from the International Monetary Fund, as in the case of Mexico and Chile, have increased the foreign exchange supply. On the other hand, Cuba and Venezuela experienced substantial increases in foreign exchange holdings during the same period. At the end of September 1947, Bolivia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Haiti, Honduras, Guatemala, Nicaragua, Paraguay, Peru, and Uruguay registered relatively small changes from total net holdings in June 1946 either because export values were maintained or because imports and net capital outflow were reduced by effective exchange regulations. Adequacy of the current levels of holdings must be judged on the basis of such factors as the legal reserve requirements and balance of payments needs of each individual Republic. In this regard, reserve requirements should be re-examined in the light of practical, realistic needs.

The net surplus on trade account from 1938 through 1946 (see Table I) indicates that foreign exchange requirements to cover imports were more than adequately met by export proceeds. But trade data for three-fourths of the Republics for the first six months of 1947 reveal a much smaller net surplus of exports over imports and preliminary statistics on Latin American exchange holdings in December 1947 indicate a possible trade deficit for the year. In 1948, however, the Latin American Republics will in all likelihood begin to receive substantial dollar payments for exports under the European Recovery Program. While some countries, of course, will not benefit as much as others, the Program can be expected to aid materially some of those countries which have recently experienced heavy declines in foreign exchange holdings. Accordingly, it may be expected that the drain on foreign exchange reserves will stop or at least decrease greatly in the course of the current year.

EASTERN EUROPE'S INTERTRADE

Caroline Lichtenberg

The problem of economic integration among the Russian satellites in Eastern Europe obviously bears on the area's economic relation with the West. At the same time, as shown by the rejection in Moscow of the Danubian customs union plans,1/ economic integration in Eastern Europe also poses a problem from Russia's point of view: closer economic ties among the countries concerned might obstruct rather than facilitate the process of Russian economic penetration in the area. One significant measure of the process of such integration is, of course, the development of the area's intertrade. The volume and distribution of such trade in 1947 compared with that of the prewar year 1938 is presented in the following paragraphs. Moreover, in order to ascertain probable future trends, an attempt has been made to estimate the volume of intertrade in 1948 on the basis of existing trade agreements. Needless to add, any such estimates are at best very rough approximations.

Volume of Intertrade in Eastern Europe

The volume of trade among Eastern European countries is shown in the following table.

Table I
Intertrade of Eastern European Countries
(In millions of 1938 dollars)a/

Country	Imports from Eastern Europe			Exports to Eastern Europe		
	Planned under trade agreements in 1948	1947	1938	Planned under trade agreements in 1948	1947	1938
Bulgaria	24.3	7.6	11	24.3	13.5	8
Czechoslovakia	64.4	37.7	50	49.4	40.9	73
Finland	12.1	7.5	12	10.6	4.1	2
Hungary	19.3	17.0	29	19.3	13.0	21
Poland	54.1	17.8	22	50.6	11.6	21
Rumania	.6	n.a.	25	.6	n.a.	28
Yugoslavia	40.3	n.a.	20	60.3	n.a.	17
Total b/	174.2	87.6	124	154.2	83.1	125

n.a. = not available.

a/ It was assumed that both import and export prices had increased by 100 per cent since 1938. Both 1947 and 1948 figures were adjusted accordingly.

b/ Totals do not include figures for Rumania and Yugoslavia.

The table shows that in 1947 the volume of intertrade was considerably below prewar. Eastern European imports of goods originating in the area were about 30 per cent below the prewar level, and the corresponding figure for exports is even lower.

1/ Pravda, January 28, 1948.

On the import side the volume varied considerably from country to country. In Czechoslovakia and Poland imports from the area were 25 and 20 per cent, respectively, below prewar. In Bulgaria, Finland, and Hungary the corresponding percentage decline varied between 30 and 40 per cent. The current trade agreements envisage a great change in this respect. The volume of imports in intertrade is expected to be double the 1947 level, and to be very substantially above 1938. Inasmuch as a certain amount of trade takes place outside the trade agreements, the planned increase may actually be larger than is suggested by the figures in Table I.

The most outstanding increases on the import side will be made by Bulgaria, Poland, and Yugoslavia. The total value of goods which Bulgaria plans to import in 1948 under her trade agreements with the other Eastern European countries is about $24 million in comparison with total imports from these countries in 1938 of only $11 million. The corresponding figures for Poland and Yugoslavia are $54 million ($22 million) and $40 million ($20 million). For Bulgaria and Poland this would mean a 200 per cent increase over the 1947 volume.

On the export side, Bulgaria and Finland exported a larger volume of goods to the area in 1947 than in 1938. But Czechoslovakia, whose exports in 1938 amounted to almost 60 per cent of the total exports in the area's intertrade, remained more than 40 per cent below the 1938 volume. If the current agreements are fulfilled, programmed exports to the area in 1948 will be about 85 per cent higher than in 1947. As in the case of imports this would imply an even greater rise in total exports. The commitments of Poland and Yugoslavia require the greatest expansion of exports to the area. In 1938, Poland exported to Eastern Europe $21 million worth of goods; her program for 1948 calls for $50 million worth. For Yugoslavia, the figures are $17 million in comparison with $60 million. Czech exports to the area are scheduled to expand much less rapidly, showing only a 20 per cent increase over 1947, at which level they would amount to no more than 68 per cent of the volume exported to these countries in 1938. It is quite conceivable, however, that the recent political change in Czechoslovakia might result in an upward revision of the Czech trade agreements.

Pattern of Trade of the Eastern European Countries

The changing pattern of trade for these countries is shown in the following table.

Table II
Trade of the Eastern European Countries with
All Other Eastern European Countries
as Per Cent of Total Trade

	Imports from Eastern Europe				Exports to Eastern Europe			
	1948a/	1947	1946	1938	1948a/	1947	1946	1938
Bulgaria		24.0b/	8.8	18.3		36.9b/	17.0	11.8
Czechoslovakia		13.1	18.1	16.1	15.5	14.3	9.9	18.1
Finland	6.7	4.4	.2	5.5	5.8	2.4	.1	.6
Hungary	23.6	27.3	43.2	23.8	23.6	29.1	25.6	13.5
Poland		12.5b/	10.7	8.1	24.7	10.1b/	6.7	9.5
Rumania	n.a.	20.0c/	n.a.	18.2	n.a.	42.0c/	n.a.	18.2
Yugoslavia	n.a.	n.a.	36.8	17.5	n.a.	n.a.	32.7	14.5

n.a. = not available.
a/ Estimated.
b/ Based on 11 months' data.
c/ Based on 9 months' data.

In 1938 Eastern European trade was oriented toward the Western European countries, principally Germany. Immediately after the war, however, the tendency was to create stronger ties with the East. Trade with Russia assumed a dominant place in their trade, with the result that these countries were far more dependent on Russia in 1946 than they had been on Germany in 1938.

The 1946 pattern changed in the following year. In 1947, Russia's share in the trade of the Eastern European countries declined considerably in every case. A part of the growing volume of trade was absorbed by the West. On the export side, the percentage share of the area's intertrade increased in all cases for which data are available. On the import side, the development was less marked, largely because of the strong shift in Czechoslovakia and Hungary to supply sources outside the area and to Russia. But in some cases, as for instance in Bulgaria, the relative increase of imports from the area was very substantial indeed. A comparison of the relative importance of the area in 1947 and 1938 shows, particularly on the export side, substantially higher percentage shares in the more recent year for all countries except Czechoslovakia, where the role of the area both in imports and exports is lower percentagewise than in 1938, and Finland, where the area's percentage share was slightly below prewar.

To estimate the probable relative importance of the area in the trade of its individual members in 1948 is, of course, a very dubious enterprise. On the basis of the data in Table I, however, in conjunction with such official forecasts or plans for total trade values as have been announced, it is possible to assume that a substantially greater proportion of the foreign trade of both Finland and Poland will be directed to the area than was the case in 1947. Czech export trade is also expected to develop in a similar manner to a greater extent than in 1947. On the other hand, Hungarian exports to the area may well be smaller in relation to total trade than they were last year. The picture is more uniform if the 1948 targets are compared with the trade pattern in 1938. In general, the share of the area in the trade of its members is expected to be higher in 1948 than in 1938, but for Czechoslovakia the relative importance of exports to the area remains below 1938.

To sum up, the development of the area's intertrade in the years since the end of the war together with the plans for the future point toward an increased role of the area in the trade of the individual countries. In some cases this change is quite pronounced. On the whole, however, it has not been sufficiently large to denote any great increase in the degree of economic integration of the area. This may be ascribed to two divergent causes: (1) the industrialization policies of the countries counsel strong commercial ties with the West; (2) closer economic integration of the area, while perhaps less objectionable from Russia's point of view than the area's trade with the West, also seems to have been frowned upon by the Soviet Union, presumably because of the potential strength and independence that the area might then acquire. It is, however, perhaps plausible that, as soon as Russia feels that its political position in the area has been sufficiently consolidated, Russian objections to increased intertrade in the area may be considerably lessened. It is too early to say whether or not this point has been reached with the recent political coup in the most important trading country of the region.

EUROPEAN MULTILATERAL CLEARING - II

Robert W. Bean

An article in this Review for January 27, 1948, described the development of the multilateral clearing system now being operated by the Bank for International Settlements, and analyzed briefly the mechanics of clearing and some practical difficulties which tended to limit its effectiveness. The present article is intended to develop further the discussion of clearing techniques and certain basic problems involved.

Techniques of Clearing Bilateral Balances

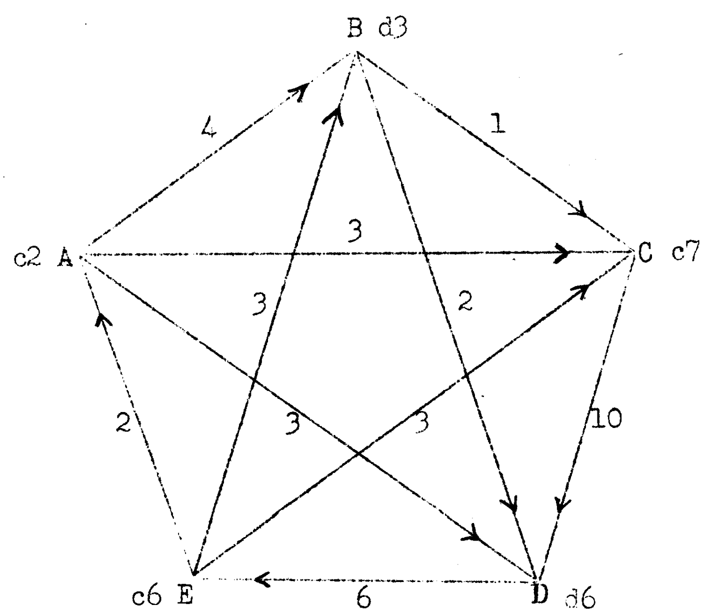
The system of clearing which has been put into operation proceeds via the established bilateral relationships, rather than by way of a central pooling of debits and credits. The result is that only a partial clearing is achieved.1/ Having made this concession to bilateralism, however, one may then seek to achieve the maximum reduction of balances possible within the limitations which are imposed. In the previous article it was pointed out that the technical problems of circuit clearing were rather forbidding, which in itself--because the results could not readily be foreseen by the member countries--was a deterrent to effective operation of the system. The proposition was advanced, however, that as a general rule the maximum compensation would be achieved by successive clearing of the longest possible

1/ Although theoretically a complete clearing might be obtained, this would be extremely unlikely in any but the simplest system involving only a few countries.

circuits. Although difficulties might be encountered in finding the longest circuits, they were thought not to be insuperable. Further study has made it clear, however, that an attempt to apply this rule to a complicated system of balances usually breaks down precisely on that ground--the possible circuits are so numerous and so intricate that selection according to the rule becomes virtually impossible.

It has been necessary, therefore, to resort to a painstaking method of experimentation and correction, involving the trial clearing of every possible circuit. This is a method which was developed in detail by the Dutch mathematician, M. H. Ekker, and put to use by the Bank for International Settlements. It permits the assigning of priorities to certain categories of "critical" balances, which in actual practice has meant giving a weight of 3 to those balances amounting to more than 75 per cent of the credit margin imposed by the payments agreement, and a weight of 2 to those within 50-75 per cent of the margin. This method will not be described here in full, partly because it is more laborious than ingenious, and partly because the B.I.S.--for various reasons[1]--has declared itself in favor of abandoning the priority system, thereby permitting the use of a less time-consuming and more interesting technique, which likewise was developed by Dr. Ekker. Although the latter cannot be applied if one wishes to give priority to various classes of critical balances, it proves very useful when the objective is maximum compensation without regard for critical balances. This technique consists, not of the successive clearing of circuits, but of computing the "compensation ceiling" for each bilateral balance, and for each country with respect to all its balances. We shall describe the procedure in detail, and for this purpose may use a model comprising five countries (Figure A).

Figure A
Tentative Country Ceilings



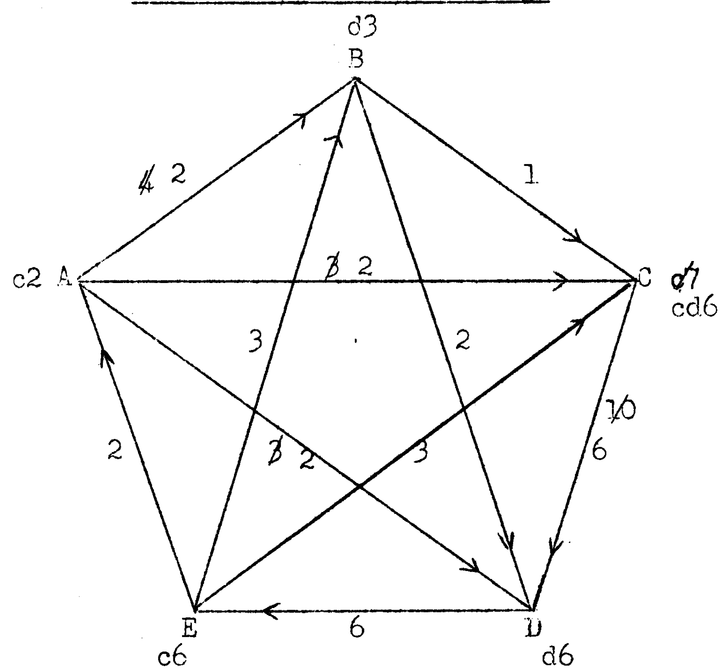
1/ The reasons for this recommendation related to the fact that certain credit margins are not always firmly defined, and also to the tendency of the priority system to encourage creditor countries to ensure early compensation of claims against particularly weak-currency countries by lowering credit margins extended to those countries.

The figure alongside each line represents the amount, and the arrow the direction, of net indebtedness in that bilateral relationship: these are the given data. The first step is to establish a tentative compensation ceiling for each country (to be called a "country ceiling"). Country A, for example, has credit balances (EA) totaling 2, and debit balances (AB, AC, and AD) totaling 10. The tentative compensation ceiling is therefore determined by its credit balances, and amounts to 2. This has been indicated by setting alongside country A the designation "c2". For country D the ceiling is 6, as determined by its single debit balance, and the designation "d6" has accordingly been entered on the diagram.

The next step is to replace the figures representing debit balances with figures indicating the tentative compensation ceiling for each balance (to be called a "balance ceiling"). Thus, the amount which can be cleared from the balance CD cannot exceed 6, which is the ceiling for country D. In some cases (e.g., DE) the tentative amount to be cleared is equal to the full amount of the balance. This procedure is illustrated in Figure B. (It will be noted that the ceiling for country C has been reduced by this operation from 7 to 6, and is imposed both by C's credit and its debit balances.)

Figure B

Tentative Balance Ceilings



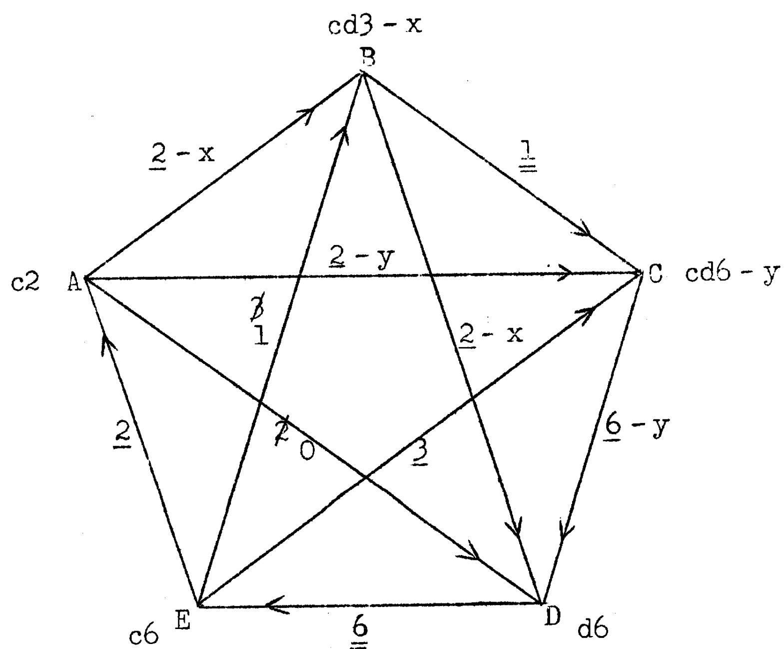
Whatever method is to be subsequently employed, these two preliminary steps provide a useful starting point, enabling the clearing agent at this stage to notify each member country of the maximum compensation possible for each of its balances (without regard for conflicts with "competing" balances). The member country then informs the agent of the extent to which it is willing to accept compensation for each balance; these data become the new tentative compensation ceilings, and the agent can then proceed to complete the clearing either by trial of successive circuits or in the manner to be described. For the purposes of this illustration, we shall assume that none of the possible compensations is refused by a member country.

Examination of Figure B reveals that further adjustments are required in order to make all the ceilings compatible with each other, i.e., to equate for each country the sum of its credit-balance ceilings and the sum of its debit-balance ceilings by reducing the larger.1/ Selecting a random example, we find that the tentative compensation ceilings for country D's credit balances (AD, BD, and CD) total 10, but that a maximum of only 6 can be compensated (via DE); some or all of D's credit-balance ceilings must therefore be reduced.

The effect of reducing a balance ceiling, however, may be to lower one of the country ceilings, and so to diminish the total compensation possibilities. Thus, if it were decided not to clear the balance BD, country B's compensation ceiling would be correspondingly reduced, for it is a ceiling determined by B's debit balances. We may therefore regard BD as a "strategic balance", because it serves to determine a country ceiling, and this has been indicated in Figure C by underlining the ceiling figure for BD, as well as for other strategic balances. Those strategic balances which determine country ceilings on both the credit and debit end have been underlined twice. So far as possible we shall avoid reducing the amount to be cleared via strategic balances.

If one begins, then, to reduce D's credit-balance ceilings, totaling 10, so as to equal its debit-balance ceiling of 6, it becomes apparent that the first reduction should be applied to AD, which is a non-strategic balance.2/ This still leaves a surplus of 2 which has to be deducted from BD and/or CD, both of which are strategic balances. The distribution of this reduction can be determined only by examining the effect on country ceilings. At this stage it will be found convenient simply to reduce the ceiling for BD by "x" and the ceiling for CD by "y", the sum of which equals 2.

Figure C
Final Compensation Ceilings



1/ Upon agreement by the member countries, compensation might sometimes be effected by increasing certain balances; this raises no technical problems in itself, however, and is not specially dealt with here.
2/ It is not necessary to begin with country D; any country may be selected as a starting point.

The country ceilings for B and C now both contain unknowns, and one may seek to solve these by next examining either of the remaining countries. Proceeding in the same manner as before, we find that E's debit ceilings, totaling 8, must be reduced to 6, and the reduction may be applied to the ceiling for EB. This makes it necessary to underline the ceilings for EB and AB, which now total 3 and are equal to the country ceiling for B (assuming a value of zero for "x"). Turning next to country A, it is found that the sum of the debit-balance ceilings AB and AC has to be reduced by 2. Apportionment of this reduction is determined by the country ceilings for B and C, i.e., AB is reduced by "x" and AC by "y". Examination will show that all ceilings have now been made compatible, and that the total compensation, which is equal to the sum of the final country ceilings, amounts to 21.1/

However complicated the technique just described may appear on first reading, it is in practice relatively simple to apply. The technical problems of clearing bilateral balances have, therefore, proved surmountable, but there remain many more fundamental difficulties which deserve discussion.

Obstacles to Clearing Bilateral Balances

The fifteen countries reporting their positions on June 30, 1947, had debit and credit balances with each other amounting to $760 million in each direction. A central pooling of balances would have cleared $270 million of this amount. By adhering to the bilateral pattern, the theoretical maximum offset would be $82 million. But refusals from a few key countries in the system could easily reduce the clearing possibilities to zero, and in fact in none of the three clearing operations performed so far has any appreciable amount been compensated. The reasons which might lie behind such refusals were briefly outlined in the preceding article. In view of the lack of success which has persisted, it may be worthwhile to pursue the analysis further, with some reference to the position of particular countries.

1/ Obtained as follows:

Country	Compensation ceiling
A	2
B	3 - x
C	6 - y
D	6
E	6
	23 - x - y

Since x + y = 2, total compensation amounts to 21. In this particular case, there is no unique solution for x and y, and the amount of the total compensation will be unaffected by our choice of values assigned to them.

Although it is not necessary to trace actual circuits which have been cleared by this process, it can easily be done. They are: ABDE (or ACDE) by 2, BCDE by 1, and CDE by 3. We may note that application of the longest-circuit rule (which is practicable in this rather simplified model) would have resulted in the same total compensation for the system, but would have proceeded via a somewhat different set of balances, viz, ABCDE by 1, ABDE (or ACDE) by 1, CDE by 3, and BDE by 1.

The basic difficulty is that the compensation of each individual balance must always be deemed to the advantage of each party involved, for each has the right of refusal. Where firm transfer obligations have arisen or are imminent, one may generally expect the debtor country to favor an offset, but the creditor country to refuse. Agreement is unlikely to be achieved unless the creditor country can offset its claim against a debit balance of its own which also is critical. But then it is all too probable that the third country, or perhaps a more remote member of a large circuit, will block the clearing.

A refusal from one of the key countries has a chain effect which brings down the whole structure of possible circuits. An example is the manner in which Denmark, France, and the United Kingdom fit into the present constellation of balances. France is generally indebted to all member countries, with the exception of a substantial claim against the United Kingdom and a lesser claim against Denmark. The United Kingdom likewise is a debtor all around, excepting only its large credit with Denmark. Both the United Kingdom and France, then, depend solely on Denmark for compensation of their debit balances, which in turn affects the clearing possibilities for practically every other member country. But Denmark also has only a single credit balance, its claim against Sweden. By this thread hang many possible circuits. Any limitation imposed by either Sweden or Denmark on the reduction of this balance seriously diminishes the total compensation for the system.

Apart from the constricting effect of refusals, the clearing is greatly hampered by the present imbalance of the European payments structure. Denmark, France, and the United Kingdom are predominantly debtors, and Belgium is predominantly a creditor. In this situation, clearing by means of reducing balances inevitably reaches an early impasse, from which one could break away only by persuading the chief creditor country to redistribute its credits, e.g., Belgium might accept sterling from, say, France or the Netherlands in settlement of its claims on those countries, thus facilitating expansion of French and Netherlands trade with both Belgium and the United Kingdom. But there is little likelihood that this tactic would be acceptable to Belgium, which has been notably successful in obtaining gold and dollars from its several European debtors.

What prospects are there, then, for the liberation of European trade? Owing to the near-breakdown of the payments agreement system, during recent months there have been many cases in which it became necessary to close the gates. France for a time was compelled to cease its imports from Belgium and Switzerland; Italy has had to revert to strict barter with a number of countries; the United Kingdom has greatly reduced its imports from the continent; and, most recently, Sweden has placed a ban on imports from Belgium. Presumably the European Recovery Program will ease the situation, but only to the extent that cognizance is taken of the need for dollars to make payments in Europe. The amount needed would be substantially reduced if the ERP countries could be persuaded to participate in an effective clearing scheme, i.e., a system for complete pooling of balances. This could probably be accomplished by making dollars available specifically for settlement of net balances after clearing. Whether or not this remains possible under the ERP legislation would appear to depend on the feasibility, legal and technical, of applying the "off-shore purchases" provision to this purpose.