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2

CONSTRUCTING THE RECORD

A. DESIGN OF THE RECORD

An international transaction consists of the transfer of ownership of something of value between two parties residing in different countries at some point in time. To be useful and meaningful, a comprehensive record of such transactions must employ principles for consolidating transactions according to the attributes mentioned, and in constructing such a record a decision must be made on the principles to be followed.

The International Monetary Fund's *Balance of Payments Manual* (hereafter cited as the *Manual*), which embodies much past experience and thinking, has been extremely useful and has made it possible to avoid considering here every problem of balance-of-payments accounting and to concentrate instead on those offering some particular difficulty.[1]

Moreover, the task of preparing a record of transactions between world areas has been greatly facilitated by the regionally elaborated accounts which countries publish or file with the International Monetary Fund and by the compilations of merchandise trade statistics by the United Nations, the IMF, and the Organization for European Economic Cooperation (OEEC). Our record was designed with an eye to using these official accounts and trade statistics with a minimum of adjustment.

One basic principle that should be followed need only be stated: To achieve comparability of paired entries in a comprehensive two-valued matrix, it is necessary that the countries party to a transaction should record it alike—give it the same value, call it the same kind of transaction, allocate it to the same time period, and identify it with the same national or residential characteristics.[2]

The problems of designing a matrix of international transactions may be considered according to the following attributes, or dimensions, of an individual transaction: (1) geography, (2) item, (3) time, and (4) currency.

1. The Geographic Dimension

The geographic dimension poses several problems. First, how are boundaries to be drawn around different parts of the world so as to permit transactions with domestic and foreign residents to be distinguished for every place? Then, for each country we must secure a record of all of the transactions of residents with foreigners. This problem of coverage is partly a matter of ensuring an accounting for all places in the world and partly a matter of ensuring that every account covers all transactions. There also arises a problem of direction: the residence of partners to a transaction must be properly identified and consistently given. A particular phase of this problem is the difficulty arising from transactions that remain unallocated by partner area in some of our country accounts. A final problem concerns the grouping of countries into a manageable number of combinations suitable for analysis.

[1] The problems were discussed more fully in my paper "On the Elaboration of a System of International Transaction Accounts" in *Problems in the International Comparison of Economic Accounts,* Studies in Income and Wealth 20, Princeton for National Bureau of Economic Research, 1957. The second edition of the *Manual* (1950) was the one relied upon here; a third edition was issued in 1961.

[2] On the surface this basic principle seems plain enough, but it is frequently violated when systems of classification are adopted under which a given transaction can be viewed differently by countries whose residents are party to it. Thus, gold may be current production to one country, while it is a monetary reserve to another; bank balances may be regarded as official reserves by the country of ownership but be treated as a private short-term liability by the country in which the balance is held; commodities may be merchandise exports to the selling country but "government" purchases to the buying country.

Defining Country Boundaries

It is desirable to divide the world into statistical reporting units—countries or groups of countries—so as not to obscure important features of the world economy, double count, or leave gaps in the record. This might seem to be a straightforward task. Disputes arise, however, about some boundaries and areas and become touchy subjects politically. What is East Germany's relation to West Germany for purposes of recording international transactions? Is Southwest Africa a part of South Africa?

The IMF *Manual* met this difficulty by laying down an explicit definition: "A reporting country is defined as the economic unit delimited by a customs area and a single currency system, or by similar unifying economic arrangements. A separate schedule should be completed for each reporting country. In particular a schedule for a country with dependencies should cover only the metropolitan area." [3]

The language permitted the United Kingdom, Belgium, and the Netherlands to report one way and the United States, France, and Portugal another. The U.K., at least some of whose dependencies had distinct currencies and their own customs systems (and were on the way to Commonwealth status),[4] reported the external transactions of the British Isles only, and these included transactions between the metropolitan territory and dependencies overseas. Belgium and the Netherlands did likewise. The United States has a unitary customs area and a single currency within that area; it reported transactions of the customs-currency area with the rest of the world and excluded from consideration in its external payments accounts transactions within the area.[5] France reported for the franc area, and Portugal for the escudo area. The Union of South Africa treated Southwest Africa as

part of its internal economy, including transactions of Southwest Africa with other countries and excluding transactions between the Union and Southwest Africa. West Germany likewise excluded transactions between West and East Germany, considering these as internal transactions, but it did not cover East Germany's transactions with other countries.

The treatment followed here in constructing a set of accounts has been to consider all European overseas dependencies as reporting units, but to consider U.S. overseas dependencies as part of the U.S. economy and Southwest Africa as part of the Union of South Africa. East Germany has been considered as part of the Soviet Bloc in Europe. Accordingly, at least partial accounts have been constructed for European Overseas Territories, including transactions with their Own Currency Area, and for the Soviet Bloc with the free world, but not, however, for transactions of West Germany with East Germany. All told, we have worked with, adjusted, and, in some cases, constructed seventy-eight country accounts as the basis for our matrixes of international payments.

Securing Coverage

A number of places recognized as independent countries did not publish international payments accounts at the time we developed our record, and one problem was to identify the omitted countries and to devise means of constructing the fullest account possible of their transactions by partner area. The IMF compilation of total world merchandise trade was of considerable aid in spotting countries not reporting balance-of-payments statistics to the IMF. In due course totals were built up for world merchandise transactions which, as can be seen in Table 2, differ from totals for world merchandise exports compiled by *International Financial Statistics* by less than 0.1 per cent of the five-year totals. This comparison suggests that the list of countries included in the present compilations is about as complete as it possibly could be. As will be noted later in this chapter, however, the coverage of merchandise trade is much more complete that that of other payments transactions.

Trial-run matrixes for each type of transaction, which were cast up from an initial compilation for 1951, provided leads on nonreporting "countries" and also on certain important unreported transactions. The trial-run matrix of merchandise transac-

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[3] *Manual*, 2nd ed., p. 9. Member countries with colonies or dependencies are requested to fill schedules for each one or for appropriate groups.

[4] The political status of territories is not static. Countries are grouped here according to their status in the early 1950's; though, since the study was undertaken, most of the British, French, and Belgian territories in Africa and Asia have become independent.

[5] The IMF also receives an account of Puerto Rican transactions with the U. S. and the rest of the world, apparently out of regard for its special "commonwealth" status in relation to the U. S. However, in contrast to, say, French Overseas Territories, Puerto Rico has not pressed for autonomy as have the larger African and Asian territories of France.

TABLE 2

Comparison of Total Merchandise Credits
in International Payments Statistics with
IFS Export Totals, 1950–54
(million U.S. dollars)

	1950	1951	1952	1953	1954	1950–54
World merchandise exports, f.o.b., payments statistics[a]	57,364	76,808	73,411	72,521	76,994	357,098
Less Soviet Bloc exports to free world[b]	-1,386	-1,599	-1,461	-1,419	-1,566	-7,431
Total, adjusted	55,978	75,209	71,950	71,102	75,428	349,667
Free world merchandise exports, f.o.b., IFS[c]	56,730	76,535	73,837	74,715	77,237	359,054
Less U.S. military aid exports[d]	-282	-1,065	-1,988	-3,511	-2,255	-9,101
Total, adjusted	56,448	75,470	71,849	71,204	74,982	349,953

[a] Table B-4.

[b] Country account for Soviet Bloc, NBER files.

[c] International Financial Statistics (IFS); the issue for July 1958 shows somewhat revised figures as follows: $56,680 million for 1950; $76.557 million for 1951; $73,860 million for 1952; $74,830 million for 1953; $77,662 million for 1954. The last revision brings the IFS total very close to the merchandise credit total for that year.

[d] Economic Indicators, March 1955, March 1954, and March 1953.

NOTE: Custom records, which frequently provide the basis for preparing the merchandise account in a country's international payment statistics, usually have to be adjusted to bring them more into conformity with the accounting principles underlying transactions accounts. Recorded goods movements not involving transfer of ownership must be excluded; unreported transfers (e.g., smuggled goods or some kinds of merchandise transactions abroad) must be added; the record of goods movement must be adjusted, or offset in the capital account, to approximate the time of change in ownership; the recorded values may be more or less arbitrary and need to be adjusted; and the direction of movement may not show the residence of the partner to the transaction. (For a more complete analysis of the problems involved in preparing merchandise transactions from recorded trade, see Walter Gardner's article, "Merchandise Trade in the Balance of Payments," in International Trade Statistics, edited by R. G. D. Allen and J. Edward Ely, New York, 1953, and the IMF Manual, pp. 21–28.) The IMF Balance of Payments Yearbook usually shows for each country as much information as the country supplies on the adjustments made to total merchandise trade.

The adjustments to conform to payments account usage sometimes augment and sometimes reduce the recorded trade total of the country. Except for the revaluation of imports c.i.f. to f.o.b., they tend to subtract out. The net effect of adjustments to trade was modest as can be seen in this table by comparing total merchandise credits from the matrix of merchandise transactions in Appendix Table B-2 with the total of world exports according to IFS.

IFS trade totals include U.S. "special category" exports, some of which were military aid items, while the U.S. payments account entering into our merchandise transactions matrix excludes military aid. Moreover, our transactions matrix includes an account for exports of the Soviet Bloc to the free world which the IFS trade totals exclude. To make the comparison, it is necessary to adjust the two series so that U.S. military aid exports and Soviet Bloc exports to the free world are excluded from both.

tions pointed to the necessity for including a report for Soviet Bloc transactions with non-Soviet Bloc countries (i.e., an account with the Soviet Bloc as a reporting area rather than as a partner area). The trial run for transportation indicated the need to include a report for fleets flying the flags of Panama, Honduras, and Liberia (hereinafter referred to as the PHL fleet), which are considered nonresident both

by the countries owning the vessels and by the countries of registration.[6] Auditing trial-run matrixes of

[6] The U. S. reports transactions of foreign-flag vessels operated by residents of the U. S., but this is only a part of these fleets (Survey of Current Business, Balance of Payments Supplement of 1952, p. 31). In consolidating accounts for the eight-area matrix, we have treated the PHL account as a Latin American reporting "country," although partner countries may have shown transportation transactions with the Liberian fleet in Other Countries. It

official transfers and capital flows showed the necessity of including accounts for the International Organizations located in the United States (U.N., IMF, and International Bank for Reconstruction and Development), which provided a channel for a substantial amount of grants and loans to countries, and for the European Payments Union, which served as a short-term lending agency and clearing house for countries participating in that organization. While countries report their own transactions with the international agencies, no country has the responsibility of reporting for them.

The audit of trial-run matrixes pointed out not only the need to add some new "country" accounts but also the omission of items from accounts of reporting countries. Oil-source countries and the United Kingdom generally did not report gross transactions on oil company operations. In order to have a merchandise matrix in which exporting country accounts would match importers' records of goods received, it was decided to follow an accounting convention of entering petroleum on a trade record basis, directing the payment for petroleum imports to the country which the importer counts as the country of provenance. This required using trade records to adjust the direction of petroleum in the merchandise debits of countries entering these debits according to purchase records or exchange control records (U.K., France, West Germany, India, New Zealand, Norway, and Greece). (A similar decision was made to adjust Mexican cotton, recorded as sold to the U.S., to a final-destination basis.) The oil-source account thus needed to be credited with the f.o.b. value of petroleum exports. This value was estimated for each of six oil-source countries and then allocated back to local expenditures, including royalties due the local government, and investment income (including reinvested earnings) due British and American companies, in proportions appropriate to the participation of each in local production. The U.K. account then needed to be credited for the investment income of British and British-Dutch companies from the six oil-source countries, marketing earnings on the Continent, and earnings from participation in Shell (U.S.). It also needed to be debited for earnings accruing to the Dutch interest in the

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would have been better to divide the PHL fleet account so as to be able to combine the reporting of Liberian flag transactions with Other Countries, but the underlying estimates were not prepared in such a way as to permit this.

Royal Dutch-Shell group and for American oil company earnings in the United Kingdom.

Just as it was necessary to create an account for the transactions of the PHL fleet, so it was necessary to develop and introduce into the U.K. statement an account of tanker transactions of British and British-Dutch oil companies; allowances also had to be made for transactions of vessels registered in Greece which were introduced into the Greek statement on the principle that the ships could properly be identified with that country, even though not effectively controlled by Greek exchange regulations. Both the U.K. and Greece gave only net transactions of these fleets (and Greece gave only the net exchange realized by the authorities). We, of course, wanted gross transactions. The Greek dry cargo transactions also had to be estimated.

Bunker sales, which of course are usually by British, British-Dutch, or American oil companies, were not always included in transportation although petroleum exports to bunkering stations were included in merchandise exports from oil sources and frequently were in merchandise imports of the bunkering country. To remedy this, a special calculation was made of bunker sales by country (the results of which are reported in Appendix F).

Establishing Direction

Even after handling these questions of coverage, there remained the problem of direction, that is, securing a consistent treatment of the residence of the parties to a given transaction, particularly for goods and services sold by international companies operating in several different countries.

Broadly speaking, there are three methods for recording direction of imports and exports: first, to identify the country of origin for imports and the country of final consumption for exports; second, to identify the country of consignment for imports and exports; and third, to identify the country of purchase for imports and the country of sale for exports. The last most clearly conforms to the definition of the direction taken by international "transactions." The three approaches do not differ when goods are sold by residents of the country of origin and consigned directly to purchasers in the country of ultimate consumptions, which is the case for most of world trade. Only about 15 per cent of merchandise appears to come under the control of residents of countries other than the originating and consuming

countries. But this 15 per cent will be differently treated by different countries depending on which of the three concepts of direction they employ. Or, if they rely on exchange control records, they may enter transactions according to the currency of contract and thus introduce a fourth variant.

Petroleum accounts for about one-third of the merchandise trade in this category, and for almost all of petroleum trade we have been able to present the record on both an origin-destination or consignment basis (whichever countries use in their trade statistics) and a purchase-sales basis, channeling the trade through the accounts of the United States and the United Kingdom. Thus the effects on the pattern of gross trade, net trade, and net settlements of following one approach or the other can be observed. This exercise is presented and discussed in Chapters 4 and 5 and Appendix C.

As for the rest of world trade that passes through middlemen, it is only possible to speculate on the direction which a similar adjustment would require.

The problem of the consistent treatment of the direction of transactions is not limited to merchandise; it may also apply to some services, particularly freight. Where countries report merchandise import transactions c.i.f. (making the regional elaboration according to customs records without any special adjustment), clearly the direction of freight is not consistently reported unless the country supplying the goods also happens to supply the shipping services. In view of the prominence of Norwegian and Greek shipping in world trade, this is frequently not the case. Where we have deducted freight from merchandise imports valued c.i.f., we have had to allocate the freight payments to the partners supplying shipping; and, for want of a better basis, we have used the flag of vessels calling at the importing country's ports or unloading tonnage there. Some countries are known to have employed the same device in their estimates. Yet the flag of a vessel does not necessarily denote the residence of the person operating it and receiving the freights paid. Vessels may be chartered under various arrangements, some of which make the charterer the operator (e.g., bareboat and long-time charters). The residence of the operator may not be known to statisticians making the payments estimates; hence inconsistencies may arise in the transportation account about the direction of freight payments and also, of course, about

that of receipts from port charges and other ship disbursements.

Some other services and financial transactions pose difficulties in recording direction. For instance, there may be no good guide to the source of tourist receipts. Investment income may be paid to parties of uncertain residence, as when individuals doing business in several different countries are the recipients of earnings from foreign investments, and of course the related capital flows are equally ambiguous.

Allocating Unallocated Transactions

It will be noted in Table 1 and in the related tables of Appendix B that a small part of the transactions of some areas remain unallocated by partner area. After studying the patterns of divergence between paired entries in the matrix tables for each type of transaction, we thought it might be possible to improve the agreement on figures by reviewing each country account and allocating these unallocated amounts, bearing in mind the country in whose account they appeared, the nature of the unallocated transactions, and the record of partner areas. The result of this effort is included in the five-year consolidated matrixes of *net* transactions in Table A-4.

As an illustration, consider the $2,309 million of unallocated merchandise debits over the five years 1950-54 in Table B-5. These arose mainly in the accounts of Continental OEEC countries, Latin America, and Other Countries.[7] Detailed examination showed that $1,056 million of the total (including all the unallocated amounts in the Continental OEEC account) represented the import of marine bunker oil (usually imported in bond) to be supplied to ships bunkering at ports in the importing country. The method of allocation followed here was to distribute these imports by source according to the pattern of all petroleum imports over the five years established for each importing area in the special study of petroleum trade (see Table C-1).

Another $837 million of the unallocated merchandise debits arose in the account of a single country, Lebanon, and represented imports for re-export. Correspondingly, there was in the merchandise credit matrix in Table B-4 $947 million of unallocated Lebanese exports. Allocating this Lebanese middleman trade required guessing its pattern, and, on the basis of quite limited evidence drawn partly from

[7] See following section on grouping of countries.

partner trade records, half the unallocated Lebanese imports was attributed to the U.S., 5 per cent to Canada, 10 per cent to the Middle East (Other Countries), 15 per cent to the U.K., and 20 per cent to the Continental OEEC countries. The heaviest allocations were made to sources of manufactures on the grounds that they accounted for most of the goods flowing through Lebanon to nearby countries, but the 10 per cent figure for the Middle East allowed for some imports from Syria for re-export to world markets. As exports, these Syrian goods were allocated 5 per cent to the Continent, 3 per cent to the U.S., and 2 per cent to the U.K.; and of the remaining unallocated exports, one-third was allocated to the Rest of the Sterling Area (Iraq and British Arabian States) and two-thirds to Other Countries (including Saudi Arabia).

After the disposal of unallocated bunker oil imports and Lebanese middleman traffic, the remaining unallocated merchandise debits fell $61 million in the account of the Continental Overseas Territories, $258 million in the Latin American account, and $96 million in the account of Other Countries (mostly in the Korean account). The unallocated imports of the Continental Overseas Territories were distributed about equally among the Rest of the Sterling Area, Latin America, and Other Countries on the grounds that they were mostly imports by African colonies from small partner countries. For lack of any better basis, the unallocated imports of Latin America and Other Countries were distributed in proportion to allocated imports.

In the merchandise credit matrix, the unallocated exports over five years totaled $2,035 million, almost half of which was the Lebanese exports discussed above. Another $471 million of unallocated exports arose in the accounts of the Netherlands Antilles and Venezuela in the form of unallocated exports of petroleum. In support of the hypothesis that these exports were sales to government, the government transactions matrix in Tables B-19 and B-20 was found to show sizable U.S. debits to Continental Overseas Territories (which includes the Netherlands Antilles) that were not matched by any corresponding credit entry of the latter group. Similarly, the government account for Latin America shows receipts on government account from the U.S. that are much below U.S. government debits to Latin America. Accordingly, it was judged that, for com-

parable treatment, these $471 million of merchandise debits should be transferred to the services account in Table A-4.

In reviewing the unallocated transactions in the various matrixes of Appendix B in relation to the pattern of interarea divergence, we also observed a number of other differences for which the appropriate remedy, for the purposes of Table A-4, seemed to be to introduce offsetting entries in certain of the accounts. In the investment income account of the United Kingdom with nonsterling EPU countries, there were large debit entries not matched in the Continental OEEC account with the Sterling Area. In constructing our account for the U.K. we had entered $1,052 million of debits for the Dutch share of Royal Dutch-Shell group earnings, and we observed only $188 million of investment income over the five years from the Sterling Area in the Netherlands account. Most of this ($181 million) was accounted for by dividends declared by the Royal Dutch-Shell group to the Dutch parent. Evidently, the reinvested earnings of the Royal Dutch Petroleum Company in the Royal Dutch-Shell group were omitted from the Dutch account, and, accordingly, we increased services credits and capital debits of Continental OEEC countries with the U.K. by $871 million in the five-year consolidated figures in Table A-4.

Unallocated U.K. transportation credits and debits were tanker transactions related to oil exports of British companies (Table C-1) unallocated by destination. As with the unallocated oil exports of Venezuela and the Netherlands Antilles, we considered that these were oil sales to military vessels, in this case to the British military, and, accordingly, the transportation credits and debits were considered domestic transactions and deducted.

Large unallocated travel credits and debits in the Latin American account came in the accounts of Venezuela and Mexico. To judge from the larger partner entries, the unallocated debits should count partly as expenditures in the U.K. and the Continent. However, raising Latin American debits up to the larger partner credits did not dispose of more than $88 million of the $609 million unallocated. Possibly part of the rest was spent in Latin America itself (thereby helping to account for part of the unallocated credits), but since the unallocated debits also came in the accounts of Venezuela and Mexico and

the unallocated credits came in the Mexican account, this is also unlikely. From conversations with government officials we understood that the Mexican travel account was grossly overstated. Rather arbitrarily, we reduced unallocated credits and debits by $465 million and $313 million, respectively, in moving from the Appendix B tables to Table A-4.

The unallocated miscellaneous services credits and debits in the U.K. account were in the nature of an error term, and in Table A-4 these credits and debits were charged to the multilateral settlements and error account.

Finally, it should be mentioned that the allocation of unallocated gold transactions and the reconciliation of net credits with net debits in that account resulting in the gold entries in Table A-4 involved a rather complicated piece of guesswork. Net gold sales in the unadjusted gold matrix (Table B-27) consistently exceeded net gold purchases each year. It is not possible to infer the purchaser from the selling side since large amounts of sales are unallocated. To effect a reconciliation in the account and to allocate the unallocated gold sales, we proceeded for purposes of Table A-4 as follows. First, we raised the total of (net) gold purchases over the five years to equal total (net) sales. This meant adding $1,708 million of net gold purchases to the accounts of some areas. On the basis of fragmentary information on the probable pattern of gold hoarding, we allocated one-third to each of the Rest of the Sterling Area, the Continental OEEC countries, and Other Countries.[8] We then constructed the matrix of interarea

gold sales on the following assumptions: that each area met its demand for gold first out of the unallocated gold sales of countries in the area; that Other Countries secured their residual gold purchases from Latin America; that the balance of gold sales by Latin America and Canada went to the Continent; and that the rest of the Continent's needs were met by the U.K.

Clearly other matrixes could be constructed assuming different patterns for unreported net gold purchases and for the allocation of unallocated gold sales. The particular allocation we made has a considerable element of arbitrariness in it both in the way over-all gold disappearance was allocated by partner area and the fairly simple assumptions made about the flow of unallocated gold sales into the hands of purchasers. It does, however, preserve all that has been reported about the destinations of gold sales and of itself does not change the direction of net multilateral settlements between Latin America and Other Countries or between Latin America and the Continent from the pattern observable in the unadjusted matrix of multilateral settlements (Table B-28). While it does not alter the pattern of net settlements between the Continent and either the U.K. or the Rest of the Sterling Area, it does result in a Sterling Area credit balance with the Continent in contrast to the deficit shown in the unadjusted annual tables.[9]

The effect of all of these adjustments to allocate the unallocated transactions was in general to reduce the extent of divergence in the set of accounts and also to alter some of the measures of total trans-

[8] The gossip in the bullion reports of gold brokers and the existence of premium gold markets indicate that Tangier, Lebanon, Saudi Arabia, Egypt, Thailand, Indonesia, and Communist China were likely places among Other Countries for gold to be hoarded. Disappearance into India and the British protectorates on the Persian Gulf, among sterling countries, and into private and sometimes unreported government holdings in France, Switzerland, and other Continental countries is also a common presumption.

Writing on Indian gold, Arthur H. Taylor (*Gold and Its Price*, New Delhi, 1954, p. 17) says: "It is alleged that gold is smuggled in [to India] from Kuwait via Goa and Pondichery and in dhows along the coast. It is said that the gold is bought in Kuwait from the international markets, Switzerland, France, Hong Kong, Macao and Bangkok, against dollars. . . . I have heard it from a reliable source that between 1¼ and 1½ million ounces [$50–$60 million] are smuggled into India annually." Taylor is Vice Chairman of John Taylor and Son, Ltd., which operates the Kolar gold mine in India.

Samuel Montague and Company's *Annual Bullion Review*, 1951, states: "We estimate that during the year under review the net absorption of gold by the free markets

of the world for non-monetary purposes [was] . . . 40% . . . by European markets, 30% in the Middle East and the balance [30%] in the Far East." Montague's review for 1952 carried the observation (p. 3) that the "main support of the free market [in 1952]' was the French hoarding demand."

Two entertaining accounts of the shady activities involving gold are an article by H. R. Reinhardt in *The Reporter* (July 22, 1952), entitled "Trailing Illicit Gold Across a Hemisphere," and Joachim Joesten, *Gold Today* (New York, 1954).

[9] The reporting of partner information about gold transactions is very spotty. As with foreign aid, reinvested capital, and investment income, the statistical offices of other countries have frequently resorted to the use of published U. S. records to fill their accounts, and where official country accounts do not provide an entry, we have sought to fill in the record. Consequently, many of the paired entries in the unadjusted gold matrix actually are from one side only. For this reason it has not been thought useful to study the divergence between paired entries in Table B-27 in Chapter 5.

actions. In consequence, totals obtained from summing the annual matrixes of net transactions in Appendix B will differ from the corresponding figures given in the consolidated matrixes of net transactions in Table A-4.[10]

The net excess of merchandise credit transactions of all areas with all areas in the adjusted Table A-4 ($5,112 million) is less than the $5,583 million of net merchandise credits summed up from the unadjusted matrixes of Table B-6, given below in Table 3; and the net excess of services debits in the adjusted table is −$8,209 million compared with −$8,951 million. Likewise, the over-all net excess of capital credits, ($2,419 million in the adjusted matrix in Table A-4) is less than the $3,290 million obtained from the unadjusted matrixes of Appendix B and shown in Table 4 below. However, largely because the gold account is reconciled and balanced out to zero, the over-all balance in the residual multilateral settlements and error account rises from −$29 million in the unadjusted settlements matrix of Appendix B to $2,279 million in Table A-4.

We have not carried these adjustments to allocate the unallocated transactions back into annual matrixes because, for the most part, they are rather speculative, but they do suggest that the agreement in the annual accounts could be improved with more work than has been possible here.

Grouping Countries

The final geographic problem was to decide what groupings of partner countries to keep in each country account. The IMF *Manual* asks for a twelvefold division of the world: [11]

> United States
> Canada
> Latin America
> Continental OEEC
> United Kingdom
> Rest of Sterling Area: Europe
> Rest of Sterling Area: Far East
> Rest of Sterling Area: Elsewhere
> Eastern Europe
> Middle East
> Far East
> Rest of World

However, inspection showed that this scheme was

[10] Note that the gross and net goods and services transactions matrixes given in Table A-1 are *not* so adjusted and represent a simple consolidation of the annual lines of Tables B-1, B-2, and B-3; while adjusted matrixes have been prepared for gross goods and services transactions, they are not given in this book.

[11] 2nd ed., Table A.

not followed by some important countries, particularly those participating in or affiliated with the Organization for European Economic Cooperation. These countries followed a format, worked out in connection with the European Recovery Program, to facilitate the operation of the European Payments Union (EPU) and to illuminate the problems of the Sterling Area. In their scheme, Continental Overseas Territories were generally combined with the metropolitan territory, and Continental OEEC accounts showed the Sterling Area as a combined group. Similarly, in accounts of Sterling Area countries, transactions with Continental OEEC countries and with their Overseas Territories were usually combined, and the U.S. was combined with Canada, but transactions with the U.K. and the Rest of the Sterling Area were usually shown separately. The U.S. followed the OEEC definitions in distinguishing the U.K., other European sterling countries, British dependencies, and other Sterling Area, Continental OEEC countries, and their Overseas Territories. The countries participating in the OEEC frequently did not distinguish the U.S. as a partner but combined it with Canada or with an even broader dollar area.

Faced with this multiplicity of practices and with three objectives in mind—first, to keep as close as possible to the framework of each country's own report; second, to employ the *Direction of International Trade* and OEEC records of merchandise (which were tabulated in the common numéraire) to distribute more aggregate groupings; and, third, to respect the importance of the United States, the United Kingdom, and Continental OEEC countries as economic centers—we determined the following eight areas for our two-valued matrixes:

> United States
> Canada
> United Kingdom
> Rest of Sterling Area
> Continental OEEC Countries
> Continental Overseas Territories
> Latin America
> Other Countries

These eight areas were augmented by the addition of columns and rows for transactions with International Organizations and the EPU and columns and rows in the accounts of the Continental OEEC countries and of their Overseas Territories for transactions with their own currency area. The Organization for European Economic Cooperation had found it necessary to distinguish transactions within the

currency areas of particular countries from transactions between currency areas. Only the latter were cleared through the European Payments Union. In order to provide a record which would be useful for studying the financial history of the period, we have respected, and maintained, the distinction. The International Organizations and the EPU were quite unimportant for goods and services transactions but of some importance for the financial accounts—transfers, capital, etc.

In general we employed all available evidence on transactions of each reporting country to elaborate its payments account according to this eight-area scheme. Where we developed accounts ourselves, we distinguished the eight areas and the supplementary rows and columns.

To obtain an elaboration of the U.K. transactions with the dollar area, we compiled the record of partner transactions with the United Kingdom, consolidated countries according to the U.K. definition of dollar area, entered the partner record as an allowance, and attributed the balance to the U.S. as a partner. Thus our account of the U.K. transactions with Canada is as reported by Canada; that with Latin America includes a component reported by fourteen dollar Latin American Republics and by our PHL fleet account; and that with Other Countries includes a component reported in the accounts of Liberia, Saudi Arabia, and the Philippines. For transactions of the Rest of the Sterling Area as a whole with the U.S. and Canada, the same procedure was followed. Transactions reported by all the Rest of the Sterling Area countries with the U.S. and Canada were allocated to Canada (and International Organizations) according to the report of the partner area and the balance attributed to the U.S.

The elaboration of transactions reported by the component EPU areas with partner areas within the EPU could not be made by this method. However, in the matrix for each type of transaction we did have, on the one hand, reports of transactions by the U.K. and the Rest of the Sterling Area with the nonsterling EPU area and, on the other hand, reports by the Continental OEEC countries and their Overseas Territories with the Sterling Area as a whole. We subdivided these totals into components by assuming that both the Rest of the Sterling Area and U.K. transactions with the nonsterling EPU area were distributed between the Continental OEEC countries and their Overseas Territories in proportion to the totals which the Continent and their Overseas Territories reported with the Sterling Area, and similarly that transactions of the Continent and their Overseas Territories were distributed within the Sterling Area subdivisions in the proportions indicated by the transactions of the U.K. and the Rest of the Sterling Area with the whole nonsterling EPU area. A similar procedure was used to distribute the transactions of Continental OEEC countries and of their Overseas Territories with the nonsterling EPU area. Estimates obtained by use of partner data have been entered in parentheses in the two-valued matrix tables. This method was applied to goods and services as a whole and to merchandise, and the distribution of services was derived by differences. Only in the case of services transactions between the Rest of the Sterling Area and Continental Overseas Territories does the method result in nonsense.[12]

The eight-area grouping used in the country accounts has thus been taken for the sake of convenience and to minimize adjustments to published accounts, but we are not confined to it. Since our record has been developed country by country, it is possible to consolidate the country accounts in different groupings to produce asymetrical matrix tables of transactions with the eight standard partner areas. Most of the transaction relations among countries grouped by Hilgerdt's criterion can be established in this way.[13] One can observe transactions between countries grouped by principle trading interest or any other criterion one might wish to examine, as, for example, the pattern of the balance over the five years with the U.S., the U.K., and Continental OEEC countries for a given type of transaction.

2. The Item Dimension

In designing the format for items to be distinguished in the accounts, we have been guided in the main by the detail which the International Monetary Fund generally carries in its *Yearbook*. The only

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[12] This could have been avoided and a better result obtained had the method been applied to services directly. The allocation of merchandise transactions could better have been made from trade records which are usually available. The method described was modified somewhat in distributing net transfers and capital where a presumption exists that transactions were with the Continent and the U.K.

[13] Hilgerdt's criterion was employed in *The Network of World Trade*, League of Nations, Geneva, 1942.

major departure arose from the need to show a given transaction as the same type in the accounts of both the area credited and the area debited. For this reason, nonmonetary gold has been omitted from the goods and services account (where it is normally placed by the IMF) and combined with monetary gold in the section of financial accounts.[14]

Merchandise has been kept separate and valued f.o.b. in all accounts. Where there was evidence (as in the case of certain petroleum sales) that some merchandise export was counted in the U.S. or U.K. account as government purchases, the sale has been entered in the government services line. Otherwise, in general government purchases of merchandise (e.g., in the Indian account) have been shown as merchandise imports.

Most countries report merchandise imports valued c.i.f. As noted above, these accounts had to be adjusted to an f.o.b. valuation to permit a separate entry in the accounts for freight and insurance payments abroad, and these payments had to be allocated by countries. These adjustments had to take account of the differing commodity composition and origin of each country's imports and entailed substantial work which is described more fully in Appendix E.

In making these adjustments, it was convenient to

keep the allowance for insurance on imported goods in with freight charges. Consequently, where the marine insurance item was distinguished, we have included it in transportation.

We did not keep the full detail on services transactions provided for in the IMF *Manual* and *Yearbook* but considered that five types would be sufficient for most analytic purposes and about the most that would be generally reported.

We have included reinvested earnings in both investment income and capital accounts whenever possible, notably in the accounts of and with the U.S., Canada, and oil-source countries.

In worksheets we sought to distinguish private from official unilateral transfers, and this distinction is made in the consolidated five-year matrixes of Table A-4. Where the annual accounts are given, as in Appendix B, private and official transfers are combined. We also sought to compile gross credits and debits for unilateral transfers, but many countries evidently give only net transfers. Agreement between paired entries in the net transfer matrixes was somewhat better than in the gross matrixes; hence we have found it better in general to work with the former.

We prepared trial-run matrixes for private and official, long- and short-term capital, net, but to distinguish these categories would have taken much supplementary work. One problem is the conceptual difficulty already mentioned that capital which is official on one side may be private on the other; then too, countries do not always keep to a common criterion for distinguishing short- from long-term capital. Walther Michael has undertaken a searching examination of these questions.[15] In this volume we do not attempt to subdivide our matrix on capital movements, but in Section B of Chapter 5 we do make a partial segregation of liquid assets on the basis of information for the two principal reserve centers, the United States and the United Kingdom.

We thus came to distinguish eleven main items: merchandise valued f.o.b., five types of services, private and official transfers, capital, gold, and the residual net multilateral settlements and error. For the goods and services accounts, credits and debits have been kept as well as the net of the two; for the financial accounts, only net transactions with

[14] The IMF includes nonmonetary gold movements in goods and services. Such a treatment of newly produced gold is particularly useful and appropriate in analyses relating a country's balance of payments to its domestic production and income, but not at all appropriate in relating a country's payments account to transactions reported by others. Newly produced gold sales are nonmonetary to the selling country but usually monetary to the buying country. There are only a few countries to which newly produced gold is important; for most countries gold transactions are monetary. The simplest, and I believe the most useful, treatment of gold is the one followed here. One must, however, bear in mind the availability of newly produced gold in some countries to cover goods and service deficits or add to reserves. New gold production by country is regularly tabulated in *International Financial Statistics*. It is of prime importance (amounting annually to several hundred million dollars) only to the Union of South Africa (and hence to the Rest of the Sterling Area). It is of substantial importance (over $100 million annually) to Canada and of only minor importance (less than $50 million annually) to Australia, the British Colonies, and a few other countries. It is also of importance in some years in the account for the Soviet Bloc. For a fuller discussion of this problem, see Poul Høst-Madsen's comment on my preliminary paper, "Transactions between World Areas in 1951," in *Problems in International Economics* (Supplement to the *Review of Economics and Statistics*, February 1958, pp. 23 ff.) and my reply (pp. 33 ff.).

[15] "International Capital Movements: The Experience of the Early Fifties, 1950–54," unpublished Ph.D. dissertation, Columbia University, 1965.

partner areas have been kept. This format was largely dictated by the available data. An elaboration of the merchandise account into components was started in a special investigation by C. Dwyer of petroleum transactions; therefore petroleum can be presented in the merchandise matrix both on a trade records basis and on a purchase-sales basis, and the nature of the adjustments needed to go from one basis to the other can be observed (Appendix C).[16]

The Residual Item: Net Multilateral Settlements and Error

In such a system of accounts as we have developed, interest tends to focus on the pattern of final net multilateral settlements and error, which it is desirable to consider at some length.

First of all, it should be noted that for most of our accounts the net settlements and error line has been obtained as a residual. Conceptually, of course, the final balance with all partners in this account should be zero for any reporting country or area. In general it is not, and the over-all balance represents *net* error in the sense that all errors of omission, valuation, timing, etc., in the various items balance out to an amount which must be offset by the net error term. When it is large, the over-all net error term indicates a large error; but when it is small, it may be that large errors are offsetting.[17] Thus, the over-all net error term in country accounts is not a measure of error, but is still a magnitude which should be examined.

The regional elaboration of net settlements in a

[16] It should be noted that, although our goods and services account is primarily composed of newly produced goods and services, in fact it includes some "movables" that are not part of the current production of the supplying country. Countries quite generally include in their merchandise transactions account all movable goods changing ownership. The presumption is that international trade in movables draws either on current production or "stocks." Actually, art works, antiques, used ships and aircraft, second-hand articles generally, and scrap move in international trade and are a part neither of current production nor of the stocks which are normally replaced in the conduct of business. Transfers of war surplus and used ships on occasion have been large, and there is a continual business in scrap. Our goods and services category is only approximately a measure of trade in currently produced goods.

[17] In a few accounts (usually with a zero net over-all error), the net capital account is made the balancing item on the ground that the largest omitted transactions are capital movements. In such cases, coverage and valuation errors are netted out in the capital account rather than in the final settlements account.

country's account, conceptually, should represent the element of multilateralism in its trade and payments relations with partners; and our accounts have been designed so that, apart from errors producing the over-all net error term and apart from error of direction, the balances offset by the last line represent balances to be settled by multilateral transfers between partner areas. They represent, in principle, the net on the bilateral transactions between the reporting country or area and each of its partner areas after all types of exchanges are entered—i.e., the net in each case, which has to be compensated by earnings from other areas or by payments to other areas. Apart from errors, therefore, the multilateral settlements matrix consists of settlements between areas on account of all exchanges—whether of goods for goods, goods for assets (including money and gold), or assets for assets (including money and gold). Shifts from assets held in one area to assets held in another area give rise to multilateral settlements, just as merchandise trade involving purchases and sales in different areas does. Both kinds of settlement are in the matrix, gold being considered as an asset. The significance of the record of multilateral settlements and error is considered at some length in Chapter 5.

3. The Time Dimension

Like any operational accounting statement, a record of transactions between world areas must be related to some definite time period, and every account in the system should relate to that period. These are elementary considerations but do pose some practical problems. The use of the Gregorian calendar year is not universal. Moreover, a strong argument can be made in favor of another accounting period, notably, the fiscal year ending June 30, which more nearly approximates the agricultural crop year.[18] But most countries use the calendar year ending December 31, and we have sought to adjust accounts of countries to that basis when they were reported otherwise.

The *Manual*[19] provides a criterion for establishing the time referent for a transaction: "when the goods are sold and the services rendered." The change in ownership is the crucial question. Changes in asset

[18] For a fuller discussion of the time dimension, see my paper in *Problems of the International Comparison of Economic Accounts.*
[19] 2nd ed., p. 4.

positions and liabilities should, in principle, also be based on the time of a change in ownership. In practice, various expedients are used to approximate the timing of transactions; and, as these expedients are not always consistent, errors of timing are introduced which give rise to divergence between paired entries in the two-valued matrixes.

Countries seem to make more of an effort to maintain a "vertical" consistency in the timing of transactions of different kinds in their own account (e.g., between trade and finance) than to maintain a "horizontal" consistency with partner areas in the timing of transactions of the same type. This seems to be one important source of the tendency for the divergences in two-valued matrixes to be offsetting between transactions of different types. We have not been able to go very far in correcting differences in timing, but have resorted instead to consolidating accounts over the five-year period when observing structural relationships. The longer the time period taken, of course, the less important are the horizontal inconsistencies in timing.[20]

4. The Currency Dimension

Every international transaction is valued in some currency and may also be related by a specified exchange rate to a second currency. Third-country currencies may be used. The many international transactions expressed in different currencies must be converted into a single unit of account if the world matrix is to have any meaning at all.

In general each country compiling a payments statement expresses the transactions in local currency units; these must then be converted into a unit common to all countries. For 1951, thirty-two countries submitted statements to the IMF in their own currency while twenty-eight used U.S. dollar equivalents.[21] The choice of a unit of account for the 1950's thus offered little problem—U.S. dollar equivalents was the most convenient unit.[22]

For the conversion from local currency into dollar equivalents, we have generally used the conversion rates given by the IMF in its *Yearbook*. Only in the accounts of Argentina, Lebanon, and Syria were there serious problems and these were dealt with by special techniques described in the notes on those countries. Countries with conversion difficulties characteristically sacrifice comparability with their internal accounts in order to maintain the comparability of their external accounts with those of other countries.[23]

Another aspect of the currency dimension of great practical importance during the period under study was the difficulty that countries (notably Western European ones) had to maintain a tenable equilibrium in the foreign exchange market at the established rates of exchange. Discriminatory trade and exchange controls were used to defend overvalued currencies in the belief (since proved well founded in many cases) that the difficulties were temporary and would be overcome with recovery from wartime dislocation and devastation. Because many countries had a "dollar problem," it would have been desirable to distinguish transactions according to the international currency actually employed. A number of countries sought to do this directly; others used geographic groupings as an approximation; but the most we have done is to use combinations of the eight areas or special groupings of countries to cast some light on the nature of the demand for and supply of currencies widely used in international trade.

B. PREPARING THE RECORD

The opportunity to compile a set of accounts such as we present here arose because of the great effort government and central bank statisticians all over the world, following the lead of the IMF, have expended in preparing regionally elaborated payments accounts. The Secretariat of the Monetary Fund hos-

pitably afforded us access to their unclassified files of statements supplied by countries, and these materials provided the basic core of data. Each country ac-

[20] It is well to remember that vertical errors in timing do exist because, for example, merchandise export credits may be measured by the time that customs records are tabulated, while short-term capital debits may be measured by the time papers are sent air mail to correspondent banks.

[21] The IMF asks countries to render an account in "some convenient unit of the domestic currency" but where multiple currencies are in force, also in "some fixed currency unit . . ." (*Manual,* 2nd ed., p. 9).

[22] This has not always been the case: Hilgerdt found it necessary in the *Network* study to express 1928 data both in "new gold" and "old gold" dollars.

[23] Earl Hicks noted this in his article, "Exchange Conversion," in *International Trade Statistics,* pp. 108–109.

count was reviewed in terms of the geographic structure and itemization desired and, where possible, was adjusted to the format employed. Where our special studies indicated the need, the accounts were modified appropriately. We also developed accounts for transactions not reported on by countries to the IMF.[24]

We worked out the method of compiling the accounts in stages, first concentrating on all the country accounts for 1951 (the latest year available at the time) to develop a trial-run matrix for merchandise, transportation, other services, and finally the financial accounts. Then we went back and did all accounts for all types of transactions for the years 1950 and 1952–54. Walther Michael conducted the phase of this work which drew on IMF files and, with several assistants, prepared most of the country accounts. It was not until we had two-valued matrixes for all types of transactions for 1951 that we could identify many of the problems of adjustment and supplementation.

1. Special Studies

Petroleum and transportation provided peculiarly challenging difficulties to the construction of a matrix of transactions between world areas. Special studies were consequently planned for these topics. Cornelius Dwyer undertook the study of petroleum transactions, Herman Karreman the study of transportation, and Carmellah Moneta the tasks of estimating freight and insurance on imports valued c.i.f. and the value of bunker sales. Since a substantial part of the landed cost of petroleum is transportation, since bunkers are largely petroleum bunkers, and since the adjustment of merchandise valuation was a corollary to the construction of an adequate transportation matrix, these three studies were closely meshed. They contributed also to a fourth special study, made by Robert Lichtenberg, which focused on the problems of adjusting the record of merchandise transactions to a purchase-sales basis.

The study of petroleum transactions was not limited to trade. Rather, the comprehensive compilation and estimation of trade in petroleum between world areas which Dwyer prepared for 1951–54 provided a basis for examining a "verticle slice" out of the whole set of accounts. The transactions of petroleum

companies not only represented 10 per cent of all goods trade, they were also prominent in the transportation sector—tanker freights comprising 30 per cent of all freight payments; [25] prominent in the investment income account—making up nearly a third of international payments of this type over the five years; and prominent in the capital account—representing about 30 per cent of all U.S. direct investment abroad (including reinvested profits) over the five years.

The special knowledge Dwyer brought to the study made it possible to develop accounts for nonreporting oil-source countries and to treat petroleum transactions in the merchandise account in two ways, as discussed in Chapter 4 and Appendix C. Dwyer also supplied much of the expertise entering into the preparation of accounts for tanker transactions for the U.K. and PHL fleets, especially the underlying assumptions about the chartering and employment of the world's tanker fleet by British and American companies.

In contrast to the "vertical" study of petroleum, the transportation study was conceived as a "horizontal" study of a single component of the whole set of accounts. It has been fully reported on in Karreman's technical paper.

2. Some Deficiencies in the Record

In spite of our efforts to adjust published country accounts and to introduce accounts where none was published, the record presented in Appendix B is still deficient in a number of important respects. Some of these deficiencies have been discussed in connection with the effort to allocate the unallocated transactions and reconcile the gold account. While the country coverage is reasonably complete, for certain countries adequate information is not available on all types of transactions. Most notably, our account for Soviet Bloc transactions with the free world lacks all types of transactions except merchandise (f.o.b.) and gold. We could find no adequate basis for estimating Soviet services, transfers, or capital transactions. Our accounts for transactions between European countries and associated Overseas Terri-

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[24] Adjustments of official accounts are described for each country in the country notes on file at the National Bureau.

[25] According to Dwyer's calculation, tanker freights were $1.35 billion in 1953 out of the $4.53 billion total freight payments compiled by Karreman (*Methods for Improving World Transportation Accounts, Applied to 1950–1953,* Technical Paper 15, New York, NBER, 1961, Table A-9).

tories are also extremely deficient in the coverage of services and financial flows. Particularly lacking are allowances for services (except transportation), unilateral transfers (private and official), and capital flows between France and her Overseas Territories, between Portugal and her Overseas Territories, and Spain and Spanish possessions. Accounts for oil-source countries in the Middle East (which we constructed outright or modified substantially) fail to explain the disposition of the large oil royalties and local oil company expenditures received by local governments. These deficiencies result in some large residual error entries (see Section D of Chapter 3).

In addition to not measuring completely all types of transactions by all countries, we have met with numerous difficulties in treating transactions uniformly according to type. The most notable such deficiency arises from the category "government transactions" in the U.S. account, which includes goods and transportation and thus cuts across the more conventional classification. There is also a ten- dency in a number of accounts to lump private unilateral transfers with miscellaneous services. The recording of gold transactions leaves a great deal to be desired.

These and lesser deficiencies are discussed in succeeding chapters as they affect the comparability of paired entries in the set of accounts and as they affect the usefulness of the record for measuring international transactions. The extent to which paired entries in the two-valued record differ is examined for the light it sheds on the statistical limitations of the accounts. Complete success in reconciling accounts would have given an agreed record in which world balances for each type of transaction equal zero. The observable differences that remain indicate uncertainties of measurement on one side or the other or both, the extent of the problem depending on the magnitude of the difference. Where paired entries differ little, it is still possible that both records err. The user of the record must be particularly alert to the possibility of omissions on both sides.