Volume Title: Problems in the International Comparison of Economic Accounts

Volume Author/Editor: The Conference on Research in Income and Wealth

Volume Publisher: Princeton University Press

Volume ISBN: 0-870-14176-7

Volume URL: http://www.nber.org/books/unkn57-2

Publication Date: 1957

Chapter Title: On the Elaboration of a System of International Transaction Accounts

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Chapter URL: http://www.nber.org/chapters/c2685

Chapter pages in book: (p. 217 - 300)

3. On the Elaboration of a System of International Transaction Accounts

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Data Requirements for International Trade and Financial Problems

THE NEED FOR A WORLD-WIDE VIEW OF INTERNATIONAL PROBLEMS

THE pursuit of neutrality and individualistic nationalistic policies has historically been the privilege of small countries. Having but a small influence in the world, each could behave without regard to the effect on the situation of the world as a whole. The course of world affairs was, and is, largely determined by the actions and policies of the great powers, and these have been compelled to recognize the effect of their actions on the world as a whole. The United States has emerged but recently as a great power and potent economic force. Belatedly, and not without some retrogression in behavior, America is finding it necessary to abandon ways of action and of thinking open to a small country. No longer can it ignore the far-reaching and indirect effect of its policies and decisions on the world. The tragic consequences of isolationist policies of the interwar period visited on the world in the 1930's and 1940's stand as

Note: Without the courteous assistance of the Balance of Payments Division of the International Monetary Fund in giving access to unpublished materials and in providing facilities for visiting scholars to work with their files, the analysis of country payments statements presented in the section of this paper on Preliminary Results of a Trial-Run Matrix for 1954 would not have been feasible. And I wish to acknowledge the assistance of Mr. Walther P. Michael in preparing these trial-run matrixes. The study of the structure of world trade and payments, on which this is in a sense a progress report, also benefits from the active cooperation of the United Nations Secretariat and Library, the Department of Commerce, and the Foreign Operations Administration. The project has been made possible by generous support from the Ford Foundation.

I have benefited particularly from discussing the problems of handling petroleum transactions with Cornelius J. Dwyer, who is undertaking a study of the petroleum account of the world for the National Bureau. Miss Louise Smith has been most helpful in preparing the manuscript.

reminders in quite recent history barring the way to a narrow, short-sighted behavior. The different tack expressed in the political cooperation of the late 1940's and 1950's offers some basis for the belief that the people of America will not again make the mistake of forming policies and making decisions primarily with regard to their domestic impacts and ignoring, or treating as secondary, effects on the rest of the world.

More than emerging as a great power, the United States now finds itself in a position to exercise leadership for the group of countries still outside control of the Communist conspiracy bent on world dominion. The exercise of such leadership requires that America take into account the effect of developments and actions everywhere upon the political and economic strength of the free world. The United States finds itself quite concerned with political and economic strife between Pakistan and India, Israel and Arabia, or Germany and France. Disease and unrest in the far corners of the world have been recognized as matters vital to America's interests.

The position of the United States now clearly requires that it view the world's economic problems as a consistent whole, and the threat of tyranny to free institutions requires that all countries of the free world do likewise. There is need for a framework of analysis and a body of data encompassing all the economic activities of the world and expressing the interrelationships between national economies. We need an organized and consistent record which can be used as the basis for weighing the consequences on every part of the world's economy of alternative policies and programs of governments—not only the government of the United States, but also of other free world governments, not only alternatives open to free world governments but those open to Soviet countries as well.

Consider American farm policy as an illustration. To maintain farm income at home, high prices are set. In consequence, surpluses pile up. Now in a hungry world the obvious way to dispose of surpluses is to feed those in need, so the surpluses are sold off at reduced, even distress, prices or are given away. So far so good: American farmers are happier and the foreign consumer is happier, but the foreign producer is not. Governments in Australia, Argentina, Canada, Denmark, and Pakistan observing the "give-away" policies of the United States understandably conclude that it is unwise for them to compete in such a business. Prodded by

their own nationalists, they follow policies and programs to stimulate the home production of things other than traditional exports—the cotton textiles they formerly secured in trade, for example. They may even underwrite the cost of living in the cities (e.g. by fixing the price of bread) at the expense of fixing low prices for farm goods. Of course, they may also find tariff protection needed, but they may well reason it is better to incur the costs of inefficient production than to commit resources to expanding agricultural production in competition with subsidized American agriculture. So they do not expand agricultural production. They may even provide deterrents to agriculture. As their own populations grow, their export shipments decline. Europe thus finds that it can trade less in the way of textiles for farm products from Australia, Argentina, Pakistan, and Canada, and is grateful for the give-aways from the United States—for awhile. But under threat of terminating American "aid" prudence dictates that Europe seek some other way than reliance upon American largesse, and it intensifies programs for producing more food at home. Being high cost, this of course required protection, but in time production expands. In the end American farm policy contributes to breaking down the division of labor between other parts of the free world which historically proved mutually beneficial to Europe and the third areas involved.

Such a picture is the more ironic in light of surveys of arable land around the world showing that to feed the rising population of the world fuller production will be needed from temperate zone lands everywhere.[1]

When the world-wide ramifications of American farm policy are considered in a setting somewhat wider than simply the welfare of the American farmer, or even Americans as a whole, it seems evident that the problem cannot be solved satisfactorily outside the framework of a solution which takes into account, and resolves, conflicts between the hopes and aspirations of peoples in Latin America, Oceania, and Western Europe, as well as in the United States, and which rests upon the efficient use of resources around the world to produce and trade specialties.

AN INTERNATIONAL TRANSACTION MATRIX ANALYSIS

The obvious peculiarity of the world economy—the feature distinguishing its problems from those of a closed national economy

[1] L. Dudley Stamp, *Land for Tomorrow*, Indiana University Press, 1952, Chap. VIII.

—lies in the fact that it consists of a constellation of national economies more or less separated by design. The national economy is the creature of the modern state. The economic powers conferred on the federal government by the states under the American Constitution rather well sum up the features of a "national" economy: They include the power to regulate commerce both within its boundaries and with areas outside; the power to establish and regulate the currency; the power to control the movement of peoples, goods, and funds into and out of the boundary. These are sufficient to separate one area of the world from the rest, but in addition the political structure—the exercise of police power and the administration of justice, the protection of property, the levying of taxes and a host of other measures for securing the general welfare (e.g. public health measures)—may also serve to mark off the national area from the rest of the world. Indeed, the pervading influence of the differential exercise of the powers of sovereignty which go with political power renders the conduct of business in one area a considerably different proposition from what it is elsewhere. While sovereigns could exercise power to differentiate areas within a nation and produce interregional differences, usually they do not. Governments usually practice nondiscrimination internally. All nationals are usually accorded equal treatments before the law. Even when discrimination does exist within a country, generally it produces differences of a lesser order of magnitude than those demarcating national market areas. Interregional differences within countries do not exhibit such sharp contrasts as international differences. The elements which all areas within a national market area have in common—language, currency, taxes, courts, and "national" treatment in the law—overlie all.[2]

Social accounting for national economies is now well developed in principle and is fully practiced in some places. The additional need is for a comprehensive and consistent accounting of transactions *between* national economies to record and expose their interrelations. The international sectors in every national income account, input-output account, and account of moneyflows need to be "pulled out" and elaborated so as to fit into a world-wide matrix of transactions between the several parts of the world. When the world as a whole is considered, the arithmetical properties of

[2] Cf. Edgar M. Hoover, *The Location of Economic Activity* (McGraw-Hill, 1945, pp. 215 ff.), for a discussion of this.

double entry bookkeeping within a closed system yield additional advantages.

Like all forms of double entry bookkeeping, the balance of payments account of a single country is a particularly useful form of social accounting *because* it must balance. Even when, in practice, balance between receipts (or more accurately credits) and payments (debits) is secured by introducing an "error" term, the need for such a term itself reveals useful information about the whole account. In a world-wide system, not only must each country's payments account balance, so to speak, vertically, but for each type of transaction the world's total of receipts should equal the world's total of payments. Moreover, if accounts are elaborated to show transactions of each country with every other country, the record of payments from one side should equal the record of receipts on the other for each type of transaction, and the two entries can check each other. The mathematical restraints of a world-wide system of accounts illuminate both the limits of available data and the transactions of some obscure corners of the world. Policy makers employing analyses set in world-matrix form also are restrained. The problems of one part of the world cannot be resolved at the expense of another part without reappearing.

Hilgerdt has shown the usefulness of matrix analysis in analyzing shifts in the structure of the world's merchandise trade in the interwar years, and Frisch has discussed some features of the multilateral balance of payments.[3] Here we wish to discuss salient features of an international matrix of transactions, to examine the extent to which existing records permit the construction of such a comprehensive world-wide account, and to point up a number of the problems met in doing so.

Requisites of a World Matrix

The world is a large place. People in over a hundred countries transact business with each other. The buying and selling is recorded in contracts expressed in many different currencies, and concerns a variety of goods, services, chattels, and rights. Some measure of aggregation is required in order to simplify the multiplicity and render it comprehensible.

[3] *The Network of World Trade*, Geneva, League of Nations, 1942 (mainly the work of Folke Hilgerdt); and Ragnar Frisch, "Forecasting a Multilateral Balance of Payments," *American Economic Review*, September 1947, p. 535.

The attributes of any transaction provide a basis for aggregation. A transaction concerns a change in ownership of some item; ownership passes from parties of one country into the hands of parties of another; the transaction represents an exchange of values or a transfer of values which the parties to the transaction must reckon in some currency units; and the transfer of ownership occurs at a definite point in time. Aggregation must proceed according to each of these attributes.

We do not meet this problem *de novo*. Balance of payments analysis has a long history. So much has been done in this field, in fact, that possibly only from a special vantage point can one dare venture suggestions, and these necessarily must be advanced against the background of the monumental work of experts around the world in compiling accounts for individual countries, notably, in light of the *Balance of Payments Manual*[4] of the International Monetary Fund, which embodies the experience and thinking of all who have gone before.

The existence of this legacy permits one to avoid considering every problem of balance of payments accounting and instead to concentrate here on those aspects which offer some particular difficulty to the construction of a satisfactory world-wide system of international accounts. Those difficulties may be considered under four headings according to the attributes (or dimensions) of an individual transaction:

A. The geographic dimension
B. The currency dimension
C. The item dimension
D. The time dimension

THE GEOGRAPHIC DIMENSION

Whoever constructs a world-wide matrix of international transactions must decide himself, or secure agreement among the parties contributing elements to the matrix, on a number of basic geographic matters.

The Problem of "Nationality"

The first and most obvious matter is the need for securing agreement among countries on the division of the world into reporting units—"nations"—so as not to obscure important features of the

[4] *Balance of Payments Manual*, International Monetary Fund, January 1950 (hereafter referred to as the *Manual*).

world economy, double count, or leave gaps in the record. One might think this an easy task. Surely political entities are well known. But this is true only in broad terms. At the fringes, disputes arise. The definition of the territory of the reporting country, involving as it may rival claims to territory, can be a touchy subject politically. Moreover, the exercise of sovereignty shades off in certain areas of the world. The IMF *Manual* meets 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."[5]

However, the language permits of some interpretation. The United Kingdom, some of whose dependencies at least have distinct currencies and their own customs systems, reports the external transactions of the British Isles only, showing transactions between the metropolitan territory and dependencies overseas. The same is done by Belgium and the Netherlands. The United States has a unitary customs area and a single currency within that area; it reports transactions of the customs-currency area with the rest of the world and excludes from consideration transactions within the area.[6] France reports similarly for the franc area[7] and Portugal for the escudo area. The Union of South Africa treats Southwest Africa as part of its internal economy, including transactions of Southwest Africa with other countries but excluding transactions between the Union and Southwest Africa.

These practices differ from the scheme of national accounting advanced by the UN in which "the domestic territory of a country is defined to exclude overseas territories and possessions. . . ."[8] In

[5] *Ibid.*, p. 9. Schedules are requested from member countries having colonies or dependencies for each or for appropriate groups.

[6] The IMF also receives an account of Puerto Rican transactions with the United States and the rest of the world, apparently out of regard for the special "commonwealth" status accorded Puerto Rico. *Balance of Payments Yearbook*, IMF Vol. 4, 1951 (hereafter referred to as *Yearbook* of specified volume).

[7] Since 1952, France reports on the franc area in two parts: Metropolitan France and Overseas Territories. Both accounts, however, are with the rest of the world; relations between Metropolitan France and Overseas Territories are not covered.

[8] *A System of National Accounts and Supporting Tables*, United Nations, Statistical Office, Studies in Methods Series F, No. 2, 1953, p. 7 (hereafter referred to as the UN's *System*).

that *System* national product is obtained by excluding that part of the domestic product contributed by "foreign suppliers" of factor services and including that part of the domestic products of other countries contributed by residents of the domestic territory in question. Thus to relate the product of a given customs area to its external transactions account, one may need to combine the domestic products or national products of a metropole with those of the several territories within its customs and currency area.

The way countries interpret their national boundaries results in serious gaps in the available data as presently handled. The United Kingdom treats the overseas territories as separate countries; this would give no difficulty except for the lack of information on their transactions. The fourth IMF *Yearbook* carries a statement for a single United Kingdom dependency—Northern Rhodesia. The situation is improving, year by year, however. In the last two years the Colonial Office has published current accounts of some of the dependencies excluding Hong Kong, intercolonial trade, and British oil company transactions with third countries.[9] Merchandise and gold are specified, but other current transactions are netted out and capital transactions are not given. Because of the exclusions and summary treatment the accounts are as yet of only a limited value for the kind of analysis considered here.

If overseas territories are included in a country's external account, the transactions between a metropole and its territories will not be shown and will be omitted from a system of interarea accounts. Whether this is a serious omission depends on the purposes a world-wide system of accounts is to serve. The lack of data on transactions between the continental United States and its territories and possessions does not seem to hamper analysis of current international problems; in the case of transactions with Puerto Rico, where standards of living are low and where an important national movement exists, an account is provided. In contrast, the lack of data on transactions between the Overseas Territories in the franc area and Metropolitan France does seriously hamper analysis of important problems. Parts of the French Union do not exhibit the same sense of common interest and the same political unity as do the territories of the United States. The transactions of parts of the French Union with Metropolitan France are ger-

[9] *The Colonial Territories, 1952-53* and *1953-54*, H. M. Stationery Office, Cmd. 8856, May 1953, p. 156 and Cmd. 9169, May 1954, pp. 189-191. These have been included in the fifth *Yearbook*.

mane to an understanding of the economic origins of political unrest in Indochina or North Africa. Likewise, the drain of economic resources from Metropolitan France to the Overseas Territories has an important bearing on economic difficulties encountered in Metropolitan France. Thus an international transactions matrix should include separate accounts of Metropolitan France and French Overseas Territories showing transactions between them. Relations of British Overseas Territories to the United Kingdom and the rest of the sterling area should also be shown, for somewhat similar reasons.

The Grouping of National Economies

A world-wide matrix of transactions showing the interrelations between countries of the world would contain more than 10,000 boxes; the number of possible entries could be twice that number for each type of transaction if entries could be secured from both paying and receiving sides. The *Direction of International Trade* published by the UN gives approximately 10,200 entries in recording merchandise trade of some 80 countries with partners. Even if systematic relations could be discerned in such a mass of data, the task of presentation would require some aggregation of countries, and the tasks of establishing and quantifying them are formidable without some consolidation of entries into country groupings. A structure of country groupings is needed to reveal systematic economic relationships between sectors of the world economy; its design must precede construction of the record and hence must both represent something of a working hypothesis to be tested and reflect some judgment about the character and importance of international economic relationships.

The most interesting relationships between parts of the world represent the working out of competition between rival suppliers and rival buyers in common markets or complementary trading between noncompeting suppliers. These relationships result either in balanced trading between partners or changes in holdings of short-term assets, foreign exchange, and gold. Multilateral patterns may emerge in which the surpluses of a country with one part of the world are more or less offset by deficits in another part giving rise to triangular settlements between areas; the pattern of triangular settlements is of particular importance in conditioning the actions of governments in establishing rules for international commerce.

Obviously, triangular relationships cannot be exhibited by division of the world into two parts. Nevertheless, we begin a consideration of area groupings with the simplest possible division.

Two-Area Structures. With countries grouped into two broad divisions, A and Z, it is possible to observe the course of: (1) complementarity between the A group and the Z group, including terms of trade between them; (2) complementarity of countries within the A and Z groups exhibited in intraregional totals for A and Z; (3) on any particular item (e.g. textile manufactures), competition of A's sellers as a group with Z's sellers as a group in A and Z markets; and (4) the over-all financial balancing between the A and Z groups—gains and losses in short-term assets, exchange reserves, and gold. A two-area structure suppresses competitive relations *among* countries which are members of A or Z as they participate in the other market and as they participate in the gain or loss of reserves by the area.

A division of the world into "industrial" and "primary producing" areas has recently been used effectively by the General Agreement on Tariffs and Trade Secretariat in its annual review of international trade for 1953 and by the UN in its annual *World Economic Report.*[10] The distinction also is basic to the Neisser-Modigliani international trade model.[11] A similar distinction, between "highly industrialized" and "other" has been used in a League of Nations' study.[12]

Besides the limitations of the two-group structure in omitting all consideration of triangular relations, the attempt to divide countries into "industrial" and "other" runs into an important difficulty. Several industrial countries are significant suppliers of foodstuffs and raw materials: the United States, Canada, Scandinavian countries, and, before the war, Japan (with silk). Out of $17 billion of exports to primary producing areas in 1951, industrial areas sent $4.6 billion of primary products.[13] Then too, as underdeveloped countries grow and industrialize, they tend to develop export markets for manufactures. Brazil, for example, has traded textiles

[10] *International Trade 1953*, Geneva, GATT, June 1954, e.g. pp. 9 ff., and *World Economic Report, 1952-53*, United Nations, 1954, Part II.

[11] Hans Neisser and Franco Modigliani, *National Income and International Trade*, University of Illinois Press, 1953, e.g. p. 6.

[12] *Industrialization and Foreign Trade*, League of Nations, Economic and Financial Series II, 1945.

[13] *International Trade 1953*, p. 12, Table 3.

for Argentine wheat and India supplies textiles to the United Kingdom.

In spite of difficulties, this particular twofold division has merit. The GATT report on 1953 quite clearly shows that industrial countries (the United States, Canada, and countries in the Organization for European Economic Cooperation in their tables) mainly exchange manufactures for primary products in trading with primary producing areas (all other countries) and that terms of trade between the groups have changed substantially from 1951 to 1953.[14]

Other twofold divisions have been found useful. Regional organizations, such as OEEC, have combined accounts of member countries to focus on the common problems of trading with the rest of the world. An analysis of Soviet bloc trading relations with the free world as a whole is essential to any analysis of the bloc's external relations. Then, of course, any analysis of a single country's balance of payments with the rest of the world is a form of the twofold division of the world.

Three-Area Structures. Because information on triangular trading relations and competitive relations between sellers of two regions competing in third markets is particularly relevant to current problems, two-area schemes of analysis are seriously deficient. Division into the United States, Western Europe, and third areas will throw some light on each of three main international trade and financial problems for which an international payments matrix is needed: the balance of payments difficulties which have plagued Western Europe in postwar years, the impact of industrialization in underdeveloped countries on the structure of world trade, and the impact of changing business conditions in the United States (or Western Europe) on the world economy.

Within it can be observed the competitive relations between the United States and Western Europe selling and buying in third areas and between the United States and third areas selling and buying in Western Europe. These are of fundamental importance to an understanding of all three problems and, of course, will be illumined as transactions of different kinds are examined within the three-area framework. While suppressing information on the competitive relations among individual countries in Western Europe and in third areas (for example between the United Kingdom and Germany or between Argentina and Australia), the

[14] *Ibid*, pp. 9 ff.

grouping provides information on the complementary character of trade within and between these broad areas. Triangular net settlements between Western Europe, third areas, and the United States appear in the system and contribute to an understanding of the role dollar drains or gains play in shaping Western Europe's financial position and that of third areas. However, the participation in dollar drains and gains by parts of Western Europe and of the third areas cannot be observed in this model.

The scheme differs in one respect from present usage by the Secretariats of OEEC and GATT, which combine the United States and Canada into "North America."[15] That combination obscures the triangular relationships of the United States, Canada, and Western Europe, a triangle of considerable significance to each and vital to Canada. It typifies the problem confronting Western Europe of competing as seller and buyer with the United States in a "third" market under conditions of exchange convertibility; it is essentially the problems Western Europe faces in such third markets as Colombia and Indonesia.

It is also important to keep the United States payments relationships distinct from those of Canada to permit observation of the impact of developments in the United States on the world economy. The United States is peculiar among countries in two not unrelated respects. First, its gold reserve position has been so strong in recent years that foreign exchange earnings have not, as a matter of policy or practice, been a factor determining exchange expenditures. This has not been so for any other major country of the free world. Second, unlike the economy of any other country of importance in world trade, the United States economy is now so large and so relatively self-contained that changes in its exports are a relatively minor element affecting the level of its economic activity. Other domestic variables—government finance, private domestic investment, and consumption expenditures—are far more important. The reserve position of the United States and the way it is managed, of course, are related to this fact. The supply of dollars available to the world from United States import purchases of goods and services and through public and private capital transactions are mainly determined (in a "market" sense, though perhaps less so in a structural sense) by the level of United States

[15] *Progress and Problems of the European Economy*, OEEC, January 1954, p. 296 (see also, *Europe—The Way Ahead*, OEEC, December 1952, pp. 140-141).

economic activity and by decision of the United States government. The extent to which other countries privately, or by government action, can affect the supply of dollars is small in contrast. Thus it can be argued that the United States payments account stands in sharp contrast to that of every other country in the world because of its unique position—on the one hand, the tremendous influence of the course of its economic life on the rest of the world and, on the other hand, the relatively small impact of the rest of the world on the United States economy. These considerations make it expedient to maintain the United States as a separate corner of any three-area structure of the world.

The relative importance of trade between the three parts of the world here considered is evident in Table 1, in which world trade in the first half of 1952, as recorded by country of export, is distributed by area.

TABLE 1

Distribution of Exports among Three Areas of the World, First Half 1952

(billions of U.S. dollar equivalents)

	EXPORTS TO			
EXPORTS BY	*All areas*	*United States*	*Western Europe*	*Third areas*
All areas	36.3	5.0	14.8	16.5
United States	6.9[a]		1.8	5.1
Western Europe	13.8	0.9	6.5	6.4
Third areas	15.6	4.1	6.5	5.0

[a] Excluding $1.1 billion of exports not reported by destination.

Source: *Monthly Bulletin of Statistics*, United Nations, February 1953, pp. viii-xi.

Trade within areas and between areas in this three-by-three matrix, except for United States-Western Europe trade, is pretty much of the same order of magnitude in each box. Third areas divide their trade about equally between the three areas both on the side of exports and on the side of imports (somewhat more with Western Europe, somewhat less with the United States). Western Europe trades about equally with itself and third areas.

More Elaborate Structures. The three-area grouping is, of course, a simplification. Both Western Europe and third areas need some elaboration to illumine important features of the world's economy.

Countries in the free world divide into three broad categories as they trade "principally" with the United States, Continental OEEC countries, and the sterling area; the United States trades "principally" with countries trading principally with it. This is seen from an analysis of the distribution of trade, country by country, in 1951, developed in further detail in the Appendix below. A "principal" trading interest has been considered to exist if a country traded 30 per cent or more of exports or imports with a market. Countries divide according to that criterion into the three broad groups with little overlapping. In the overlapping, or ambiguous cases, dominant interest can be established with little difficulty in almost every case (Japan is the worst problem). A basic "regionalism" thus characterizes the free world, and, of course, Soviet countries are a highly integrated bloc.

According to trade patterns in 1951, those "principally interested" in the United States market are Israel, the Philippines, Saudi Arabia, Netherlands Antilles, and all Western Hemisphere countries except the River Plate countries—Argentina, Uruguay, and Paraguay. Those principally interested in the Continental OEEC market are Yugoslavia, Spain, Iceland, Argentina, Uruguay, Egypt, Syria, Lebanon, the Continental OEEC countries themselves, and their dependencies (except Netherlands Antilles). Countries in the sterling area (except Iceland), Anglo-Egyptian Sudan, Iran, and Ethiopia in the Middle East, and Indonesia, Thailand, and (possibly) Japan in the Far East are principally interested in the sterling area market.

In addition to such a primary interest, countries usually have a "secondary" interest in trade with one or both other major markets and frequently have secondary interests in trade with countries in the same neighborhood: Japan and a number of industrial countries in Western Europe have a secondary interest in Latin America. "Secondary interest" in this connection denotes the sale or purchase of 10 per cent of a country's exports or imports.

The primary trading relationship of every Continental OEEC country with the group as a whole was the common concern bringing these countries together in an Organization for European Economic Cooperation. The large secondary interest of most of them with the sterling area, reciprocated by most sterling area countries, provided a basis for widening the OEEC to include European sterling area countries.

The orientation of countries to three major market areas strongly suggests a basis for distinguishing Continental OEEC countries from European sterling countries in Western Europe and for dividing free world third areas into groups as they trade principally with the United States, Continental OEEC, or sterling area.

Grouping countries by their principal trading interest demarcates lines of cleavage in the world. When the world economy was placed under stress of depression, wartime shortages, postwar recovery from devastation, and, most recently, the stress of accommodating to a rapid rise in defense preparation in the West, these lines of cleavage appeared as countries sought to protect primary interests at the expense of secondary ones through a whole gamut of trading and financial arrangements and controls. New world-shaking crises that would force countries to choose between markets might result in further measures, reflecting and protecting predominance of trading and financial interests, binding countries the more tightly into groups. In *International Trade 1953* the staff of the GATT organization notes that in adjusting to the wide swings in terms and volume of trade in the 1950-1951 period "there has been an intensification of exchanges between each industrial area and that primary producing region with which it is most closely associated through monetary and other arrangements."[16]

Existing monetary and financial arrangements, however, reflect political as well as strictly economic factors. Questions of social discipline and lines of influence and control enter. While they are related to the structure of trading relationships already discussed, monetary groups are more tightly drawn. The sterling area as defined for British exchange control purposes does not include all countries principally interested in the sterling area market; and the group of nonsterling countries participating in the European Payments Union (EPU) does not include all countries principally interested in the Continental OEEC countries. In recent years the EPU has aided trade among member and associated countries. These have settled large parts of their transactions through the EPU and have set up discriminatory rules favoring trade within the EPU. The franc monetary area, Dutch florin area, Belgian franc area, and Portuguese escudo area are subdivisions of the EPU area. Monetary areas such as these strengthen and preserve strong primary trading interests on both sides; lesser secondary

[16] Pp. 6 and 19 ff.

interests and primary interests of small countries with larger countries tend, in a world of inconvertible currencies, to be supported by special agreements. Historical analyses and analyses linking the near future to the near past will need to respect the existence of the sterling area and the EPU even though a freer system of exchange may come into being.

Thus the "associated monetary area" of Western Europe (AMA) should be identified among third area countries. This distinction is particularly useful for assessing government policy alternatives since these countries either are under the policy control of Western Europe, as in the case of colonies, or they coordinate economic policy more or less closely with Western Europe, as in the special sterling area relationship. They are distinct in their behavior from "independent third areas" (ITA). The AMA's make up a market in which the United States and Western Europe compete on unequal terms in contrast to ITA's where competition is pretty much on a most-favored-nation basis. Western Europe stands in a favored market position in the AMA through the EPU clearing arrangement, through the special relationships of metropole with dependencies, and through British Empire preference. True, Canada, among ITA countries, is also a preferred market for the United Kingdom in competition with the United States, but it does not participate in the EPU, and the proximity of United States suppliers and Canada's enjoyment of American mass advertising media tend to offset "Empire preference." Table 2 shows the relatively closer links between Western Europe and its AMA's and those between the United States and ITA's, which are to be expected in view of principal trading interests.

A relationship of a somewhat different character provides the central theme of *The Network of World Trade*. The Secretariat of the League of Nations grouped countries into five categories and "all other" in such a way as to highlight the circular pattern of multilateral settlements. In 1928 and also in 1938 the United States experienced trade surpluses with each of three areas—regions of recent settlement, Continental Europe, and non-Continental Europe—and a deficit with the tropics. Regions of recent settlement ran a surplus with Europe and a deficit with the tropics; Continental Europe had a surplus with non-Continental Europe; and non-Continental Europe a surplus with the tropics in 1928 and deficit in 1938.[17]

[17] *The Network of World Trade*, pp. 78 and 90.

TABLE 2

Distribution of Exports among Five Areas of the World, First Half 1952

(billions of U.S. dollar equivalents)

EXPORTS BY	EXPORTS TO: *All areas*	*United States*	*Western Europe*	*AMA's*	*ITA's*	*Soviet bloc*
All areas	36.3	5.0	14.8	7.0	8.9	0.6
United States	6.9[a]	...	1.8	0.9	4.2	+
Western Europe	13.8	0.9	6.5	3.6	2.4	0.4
AMA's	6.3	0.8	3.4	1.1	0.9	0.1
ITA's	8.6	3.3	2.7	1.3	1.2	0.1
Soviet bloc	0.7	nil	0.4	0.1	0.2	n.a.

[a] Excluding $1.1 billion of exports not reported by destination.
n.a. = not available.
Source: *Monthly Bulletin of Statistics*, United Nations, February 1953, pp. viii-xi.

This system has much in common with the others just discussed. The United States is distinguished from Western Europe, and Western Europe is divided into parts roughly equivalent to sterling and nonsterling.[18] Its greatest difference lies in the division of third areas. "Regions of recent settlement" consist of temperate zone countries, including Canada, Australia, Argentina, and South Africa. "Tropics" include most of Latin America, Central Africa, the Indian and Indo-Malayan peninsulas, and the South East Asian Archipelago with some exceptions. "Other" includes the Soviet Union, North Africa, Middle East, India, Japan, and China.[19] This system makes it possible to see the actual and potential competitive character of production in regions of recent settlement with that in the United States and Western Europe and the dollar earning capacity of the tropics.

Further elaboration of the sterling area would be desirable in two ways and for two reasons.

1. The prominent role of the United Kingdom as a leading trading country and as "principal" market for other sterling area countries and some others as well makes it worthwhile to distinguish the United Kingdom among European sterling countries. If countries are arrayed according to the size in 1951 of total trade (combined exports and imports), it is seen that the United States, with

[18] The League's Western Europe is broader than OEEC countries (see *ibid.*, p. 76).
[19] *Ibid.*, pp. 11-13 and 76.

a total trade of $26 billion (including special category exports), and the United Kingdom with a total of $18.5 billion, conducted a trade of a different order of magnitude from other countries. The next largest trading country, France, had less than half as much trade as the United Kingdom.

2. The limited choice open to colonies and protectorates in contrast to the independence of action enjoyed by the independent sterling countries makes it worthwhile to distinguish them. The British Overseas Territories include important dollar-earning tropical countries—West Africa and Malaya—while the independent sterling countries include the British countries of recent settlement. Distinguishing the two will help develop, within a suitable analytic framework, an approximation to the multilateral circular flow features so strikingly apparent in the *Network* study.

Among important nonsterling European dependencies, only the Netherlands Antilles seems to have enjoyed a net merchandise export surplus to the United States.

Among ITA's a division according to principal trading interest would sort out:

a. Western Hemisphere countries (except River Plate countries), Philippines, Liberia, Saudi Arabia, and Israel trading principally with the United States
b. Other Europe (than OEEC and Soviet), Egypt, Syria, Lebanon, and River Plate countries trading principally with Continental OEEC
c. Anglo-Egyptian Sudan, Iran, Ethiopia, Indonesia, Thailand, and Japan trading principally with the sterling area

The dollar-earning countries in these groupings are Indonesia and Thailand in (c) and, potentially at least, pretty much all except Canada in (a). If Canada is distinguished, the rest of (a) will be fairly closely identified with an area exhibiting dollar-earning characteristics like the tropics of the *Network* study. It is questionable whether Indonesia and Thailand are sufficiently important to warrant separate treatment. This division of ITA's differs from those used by the UN and IMF. The latter keeps all Latin American republics together, and the former distinguishes "dollar Latin American" from nondollar.

The foregoing thus leads me to advance, as a compromise elaboration of the basic three-area model, the following geographic scheme using 13 basic areas:

		Comments
I.	EPU countries	
	A. Sterling area countries	One of three major world markets
	1. United Kingdom	One of two leading trading countries
	2. Other sterling Europe	Together with 1 makes up European sterling
	3. British Overseas Territories	Distinguished as mainly tropical, dollar earners, and dependent
	4. Other	Independent countries; includes regions of recent settlement and some tropics
	B. Nonsterling countries	
	5. Continental OEEC	Together with 1 and 2 makes up Western Europe, a major world market
	6. Continental overseas territories except Netherland Antilles	
II.	7. United States	Major world market
III.	Independent third areas	
	C. Associated with the United States as principal market	
	8. Canada	Important region of recent settlement
	9. Other	Mainly tropical; all Latin America excluding Argentina, Uruguay, and Paraguay, plus Philippines, Liberia, and Israel; Saudi Arabia and Netherlands Antilles would go here
	D. 10. Associated with Continental OEEC as principal market	Other Europe, Argentina, Uruguay, Paraguay, Egypt, Syria, Lebanon
	E. 11. Associated with sterling area as principal market	Other Middle East, Indonesia, Thailand, and Japan
IV.	Soviet bloc	
	F. 12. Europe	
	G. 13. Asia	

This framework will "fold" into the three-area grouping advanced above; it will display the pattern of multilateral settlements and competitive and complementary relationships essential to an understanding of the financial problems of Western Europe and,

perhaps less exactly, a circular flow of multilateral settlements like the *Network*; it will permit analysis of the free world tendency to solidify into trading blocs, and will show the relations of the free world with the Soviet bloc.

Questions of Residence

Dividing the world into nations and combining nations into useful groupings pose difficulties. A third geographic difficulty arises from the problem of denoting consistently the nationality of the parties to transactions.

The balance of payments statement of a country is defined as ". . . a systematic record of all economic transactions during the period between residents of the reporting country and residents of other countries. . . ."[20] Conceptually, the residences of the two parties to each transaction can be established; transactions between residents of the same country enter the country's internal accounts and do not interest us; those between residents of different countries should all be incorporated in the payments matrix of the world, and in a "two-valued" matrix they should enter twice, reported by each side. But the residence of one or both parties to some important transactions is not consistently maintained in accounts of all countries. In important instances countries do not always report transactions which partner countries report with their residents.

The business activities of some individuals and concerns is so diversely spread over the territories of several countries that it becomes a matter of judgment to establish the residential character of their transactions. The IMF *Manual* looks to a "center of interest" principle as a guide to establishing "residence," mainly in the case of individuals. This concept turns on such considerations as the permanence of transactors' stays abroad and "the extent to which they may concentrate abroad their earning activities and their investments." The residence of business enterprises is judged to be "the country in which they operate." But quite a lot of international business is conducted by firms "operating" in several countries. The UN, noting that this can be troublesome, allots production and income "to the territory in which production takes place," which only raises the question of locating "production." On the question of residence, the UN relies on IMF definitions and in borderline cases on the country's submission to IMF.

[20] *Manual*, p. 1, par. 1.

The IMF leaves borderline cases to the decision of the reporting country.[21] And reporting countries do not agree.

Two kinds of transaction give particular difficulty in being sizable and not agreed upon as to residence: (a) transactions involving ships registered under Panamanian, Greek, Honduran, and Liberian flags and (b) transactions of petroleum companies. The latter are the most important instances of a more general category of transactions by foreign concessionaires—usually mining companies but sometimes plantations—which have a kind of extraterritorial character.

Shipping Transactions. Recent news dispatches illustrate how slippery the residence principle can be in the case of shipping transactions. Reports received in June 1954 told of an agreement between the government of Saudi Arabia and a private shipowner for the creation of a Saudi Arabian merchant marine. The private party in question was identified as "Mr. Aristotle Socrates Onassis of Greek birth and Argentine nationality, residing in Montevideo and with his office in Paris." The agreement concerned the operations of a fleet of ships to be registered under the Saudi Arabian flag.[22] When, and if, the Saudi Arabian fleet becomes party to various shipping transactions, a question will surely arise as to its proper treatment under the residence principle, based as it is on the "center of interest" rule.

A second news item reports that Panama, a nation with 540 ships under her flag, has only a handful of small old vessels engaged in Panamanian coastal trade and is considering launching a government-owned fleet. The news item observes that "non-Panamanian owners, mostly Greek and United States, have registered 540 ships, of 5,931,000 deadweight tons, under Panamanian flag to avoid restrictions that would limit them if they operated under their own flag."[23] A companion news story says that the United States government is authorizing sales of some idle American flag vessels under certain conditions, one of which is that "transfers are limited to flags of Panama, Liberia, and Honduras, where many of the so-called 'refugee' vessels have wound up in recent years, under direct or indirect American control."[24]

Panama, Honduras, and Greece do not attempt to include in

[21] *Ibid.*, pp. 1 and 2 and the UN's *System*, pp. 18 and 19.
[22] "Arab and Greek," *The Economist*, June 26, 1954, p. 1073.
[23] *New York Times*, August 20, 1954, p. 35.
[24] *Ibid.*

their balance of payments statements transactions of the vessels registered under their flags.[25] Liberia has not published a payments statement. Altogether, the gross transactions of these fleets come to a sizable figure. Rough and highly tentative calculations we have made indicate that they did over half a billion dollars of the world's ocean transportation business in 1951 and that most of these transactions have not been reported as receipts by any country. Countries paying freight charges to these fleets and receiving port disbursements from them will, for the most part, have reported the payments. Countries owning the fleets may or may not have counted the net earnings.

The residence of these fleets seems not to be agreed among countries involved. Clearly the registering country has a basis for considering that their center of interest is somewhere else. "These ships rarely touch at Panamanian ports and carry Panamanian seamen only by chance."[26] Honduras considers transactions of foreign-owned ships operating under its flag as "not an integral part of the Honduran economy."[27] The owning country apparently may also consider their center of interest somewhere outside of its territory. In the United States payments account transactions of " . . .the Panamanian, Honduran and other foreign-flag fleets owned by foreign subsidiaries of United States companies . . . are treated as 'foreign' unless they are chartered to the United States parent or other United States operator. In other words, these foreign subsidiaries are treated as are other United States direct investments abroad and their income, whether earned from the hire of vessels chartered to the parent or others or from operations for their own account, is part of the income on investment account. The operations of United States-owned vessels directly under foreign registry and not through foreign subsidiaries are considered as United States operations."[28] The Greek payments account includes only exchange surrendered to the Exchange Control by shipping operators or used by them to service foreign debt guaranteed by the Greek government.[29] Countries buying the services of these fleets may take either the country of ownership (if they know it) or country of registry as

[25] *Yearbook*, Vol. 4, pp. 135, 144, and 217.
[26] *New York Times*, as cited.
[27] *Ibid.*
[28] *Balance of Payments of the United States 1949-1951, A Supplement to the Survey of Current Business*, Dept. of Commerce, 1952, p. 31 (hereafter referred to as the *B/P Supplement*).
[29] *Yearbook*, Vol. 4, p. 135.

indicating the ship operator's "center of interest." The buying country stands a good chance of disagreeing with the partner country whichever way it decides.

These borderline cases of uncertain residence are not unimportant to the small country under whose flag the vessels are registered, although in relation to the United States balance of payments and national product account they are of minor significance. The net return from the operation of these ships may be adequately covered in the accounts of some of the countries concerned, but accounting for their gross transactions presents a serious difficulty in constructing an account of transactions between areas. Almost any way of reconciling accounts involves some element of fiction or conventionality.

The basic difficulty lies in the uncertain residence of enterprises spanning several countries and, perhaps most accurately, may be said to fall in the ocean. Some international business activities may be purposely designed to obscure the nationality of the enterprise or avoid coming under governmental regulations of one type or another, be it taxation, exchange regulation, or labor laws. One interest central to their successful operation is to maximize net earning of convertible currencies, notably dollars.

Because the center of interest of these operations, at best, is vague, it might be easiest to remedy the accounting problem by arbitrarily assigning a "residence" to these fleets for balance of payments purposes. The simplest adjustment from the point of view of countries employing the services of these fleets would probably be to treat ships registered under flags of Panama, Greece, Honduras, and Liberia as being resident there. It is possible to know the flag distribution of ships calling at various ports and hence—on some simplifying assumption—of allocating freight payments and receipts from port disbursements according to flag of vessel. While this approach might be simplest from the point of view of the country paying the freight, it might prove awkward to adjust the United States account to exclude transactions of foreign registered vessels operating out of the United States and in any event would introduce a set of sizable entries into the accounts of Panama, Greece, Honduras, and Liberia which would be considered extraneous to their national economies. Any alternative designation, such as listing ships with an arbitrary "residence" for purposes of accounting based on some other criterion (e.g. U.S. practice), would cut across flag lines and require countries buying shipping services to distinguish

freight payments on another basis. This might well prove impossible.

Petroleum Company Transactions. Countries in which concessionaire enterprises reside frequently treat them as of interest only as they contribute net exchange receipts to the local economy. On the principle that these enterprises and the local economy have somewhat different "centers of interest" or at least stand in significantly different relationship to the local government, the countries may prefer to account only for transactions of "nationals" rather than residents. This view may reflect *de facto* lack of local governmental control over the international activities of the resident. Indeed, the local authorities, lacking control, may also lack information needed to make up an account.

Indonesia, which has a substantial trade in petroleum products, gives only net exchange earnings from petroleum companies in its balance of payments account. Netherlands Antilles likewise carries only net exchange earnings from oil companies, although petroleum refining is its principal economic activity, accounting for most of its imports and substantially all of its exports (totaling $768 million f.o.b., and $708 million f.o.b., respectively, in 1951 according to *International Financial Statistics*). This is a somewhat better performance, however, than for several other important sources of petroleum, notably Kuwait, Bahrein, and Qater (British protectorates in the Persian Gulf), and Saudi Arabia, which do not publish any balance of payments estimates, nor even any foreign trade statistics. It contrasts with the success Venezuela, Iran, and Iraq have had in compiling balance of payments statements on oil company transactions more elaborate than a one-line entry for net exchange earnings.

Petroleum company operations are not the only ones which may be treated separately in the balance of payments account. While accounting for them in some detail, Chile finds it useful to distinguish current and capital transactions of large companies mining copper, iron ore, and nitrates, and Bolivia likewise distinguishes transactions of companies mining tin and other nonferrous metals.[80] If one were to construct an external account for Liberia, it would be useful to distinguish transactions of "Firestone's Liberia" from other transactions of residents. Firestone enjoys concessionaire status for taxation, the use of land, and other purposes.

However, petroleum company transactions pose a special prob-

[80] *Ibid.*, Vol. 3, pp. 81 and 119.

lem because of their size, the number of partner countries affected, and their triangular character. The reporting of petroleum transactions concerns not only the country in whose territory the activity is carried on (e.g. petroleum refining in Netherlands West Indies), it also concerns the countries of ownership—the United States and the United Kingdom—and the many other countries dealing with petroleum companies.

Both the United States and the United Kingdom consider that the activities of petroleum companies abroad are resident "abroad." The United Kingdom explicitly includes only the net foreign earnings and investments of British oil companies.[31] The United States applies the rule that foreign branches of American concerns are residents of the countries where they operate.[32] Countries buying petroleum products, however, tend to charge purchases from American companies to the United States or to a "dollar area" and those from British companies to the United Kingdom or the "sterling area." In this practice, they can appeal to the IMF *Manual*, which asks for allotment of payments according to the country of residence of the seller of the product. Particularly if it makes up its payments account from exchange control records, but also if it uses a customs record employing the purchase-sale principle,[33] the European country will know that its purchase was from an office in New York City or London and that shipment might have been made from any of a number of sources. It is likely to regard as highly fictional the notion that the residence of the American British Oil Company is Iraq or Saudi Arabia, although they are the territories "in which production takes place." Thus the United States (or the United Kingdom) and the buying countries will not agree on their mutual transactions.

It is difficult to say much about divergence involving the supplying countries and buying countries out one leg of the triangle and supplying countries and the United States and the United Kingdom out the other, because so few supplying countries publish regionally distributed payments accounts. Of the three major petroleum

[31] *United Kingdom Balance of Payments, 1946 to 1953*, H. M. Stationery Office, April 1954, Cmd. 9119, p. 46.

[32] *B/P Supplement*, p. 16.

[33] The purchase-sale principle of reporting trade statistics contrasts with the origin-destination principle, the latter giving the country of production for imports and the former the country selling the item (see *International Trade Statistics*, R. G. D. Allen and J. Edward Ely, editors, Wiley, 1953, Chap. 7).

sources publishing payments statements (Venezuela, Iran, and Iraq) only Iraq has submitted a regionally elaborated payments account to the IMF for 1951. Comparison of the figures given in this account with partner country customs records of imports from Iraq indicates that in distributing its exports by region, Iraq has evidently attributed receipts to the country of sale rather than to the country of destination.

It may be presumed from the practice of Iraq that if other supplying countries were to develop regionally elaborated payments accounts, they would confront the same problem and might well, on IMF *Manual* principles (given freedom to decide borderline cases of residence themselves), allot sales to the United States or the United Kingdom contrary to the existing accounting practice of these two countries. If, instead, petroleum sources were to allot sales to country of ultimate destination (the buying countries referred to earlier), the practice would be contrary to that of ultimate buyers which, as noted, tend to count their purchases as coming from the United States and the United Kingdom.

The way out of this difficulty, as in the case of shipping, seems to lie in, somewhat arbitrarily, assigning a conventional residence for accounting purposes to the oil company transactions, and instructing all parties to account on this basis. Two basic alternatives for assigning residence of petroleum company transactions are: (1) the "production" or "straight line" approach, and (2) the "value-added" or "radial" approach. One can conceive of variants in between.

Consider this prototype of the relations involved in the international petroleum industry: Oil produced in Venezuela by an American-owned foreign subsidiary is shipped for refining to the Netherlands West Indies, and further shipped as refined products to an ultimate consuming country in Europe. If we look at this sequence by analogy with a "production line," the American investor and enterpriser provide savings and managerial services to the development of an oil field in Venezuela; local residents in Venezuela and the government of Venezuela contribute a variety of services to the mining operation in Venezuela (including the services for which royalty payments and taxes are paid); tankers resident in the United States (registered in Panama) contribute services in carrying the crude from Venezuela to the Netherlands West Indies; further American investment and managerial services combine with local services in the Netherlands West Indies to refine the crude;

and further transportation services move the refined products to the consuming market in Western Europe. Services of one kind or another are contributed to the production of intermediate products in different countries along a "production line" that moves forward to the ultimate market, and, correspondingly, payments flow back along the production line. In this view, production takes place outside the United States in a series of places in sequence.

Another way of looking at the sequence is to consider that the production activity takes place within the economy of the United States. A resident of the United States "economy" (now considered as encompassing the activities of American petroleum companies anywhere in the world) "imports" values added by residents of other countries, combines them with American investment and managerial services, and perhaps shipping services, and sells the package to Western Europe. On this approach, services contributed by all parties are conceived as being supplied to the United States, the production occurs within the United States economy, and payments flow from ultimate consumer to the United States, which then distributes them back to factors in a radial fashion.

Under either approach, the net exchange earnings of each economy will be the same. The approaches differ in attributing the productive activity to the United States or elsewhere. In the one case, the provision of investment, managerial, and shipping services by United States residents is considered a foreign transaction, and American earnings on these accounts are counted as investment income, shipping services, and salaries received from abroad; in the other case, with all production considered as taking place within the United States economy, these services are rendered domestically and American earnings are counted as a part of merchandise export values.

The radial approach would appeal to those concerned mainly with the position of the national economies of petroleum-supplying countries narrowly defined. The operations of petroleum companies, while geographically within their territories, would be treated as outside their national economies; they would realize earnings from the sale of a variety of services to foreign oil companies, notably local labor and governmental services. The destination of the services would be unambiguous—definitely the United States (or the United Kingdom).

However, United States (and United Kingdom) payments accounts would require considerable modification. These now show

earnings of petroleum companies from such activities abroad in service accounts of the balance of payments. If, instead, the activities were counted as within the American economy and the value of their services in United States and United Kingdom merchandise sales, they would presumably be excluded from the services lines. Since American petroleum operations abroad represent the largest single source of investment income from abroad by American industry and the largest single form of private long-term investment, an accounting approach eliminating these from the foreign account of the United States would certainly omit a good deal of information.

Moreover, since all petroleum sales by American oil companies would be counted as part of United States exports under the radial approach, the net merchandise trade balance of the United States account would take on new meaning, depending on the exact treatment accorded such payments by the oil companies for the services of imported values added by nationals of other countries.

One can conceive of compromises between the production line and radial approaches; a possible one we shall term the "middleman approach": the United States would be considered as selling the final product to Western Europe and buying the landed cost of final products partly from the Netherlands West Indies and foreign shipping companies. Likewise, the Netherlands West Indies would be considered as buying crude from, and Venezuela as selling crude to, the United States. By introducing fictitious "wash-out" transactions, the middleman approach yields totals for merchandise and shipping transactions by the United States (and the United Kingdom)—and therefore for all countries—which are too high. However, net balances of merchandise and shipping transactions are not changed over-all but are changed as to direction, and some payments flows now counted in the United States account as multilateral settlements would not appear.

On another compromise, if Venezuela in fact sold crude to a resident of New York City who kept title during all succeeding phases of the operation, one could consider the Netherlands West Indies refining operation as processing on toll. The Venezuelan crude then might be counted as sold to the U.S., the final product bought from the United States, and values added in between would represent transactions of the United States.

On the one hand, is it wise to enlarge the conception of the American economy to include extraterritorial activities as implied by the "value-added" approach? On the other hand, does it seem

meaningful for payments flows to reverse the path of petroleum along the "production line" even though money never leaves New York City? Since interest in underdeveloped countries focuses on the nonconcessionary activities of local nationals, is it wise to complicate their accounts by introducing concessionary transactions?

Choice among the several possibilities depends on a variety of considerations, not the least of which is the availability of data about ownership at different stages. If it can simply be established that countries of ultimate consumption have secured dollar and sterling oil from particular sources in some proportions and, further, if their treatment of petroleum transactions in existing statements can be known, then it may be possible to reconcile accounts of all countries by adopting the simple expedient of channeling all dollar petroleum transactions through the United States account and all sterling transactions through the United Kingdom account, accepting the double counting of certain types of transactions as a lesser evil.

Merchanting Trade. Most of the world's merchandise moves directly from country of production to country of ultimate consumption or fabrication. A small part, however, may be purchased by residents of a third country and resold. Chains of intermediaries are possible. The United States, the United Kingdom, the Low Countries, and, in the Far East, Hong Kong and Singapore are important centers of such "merchanting trade." It is known that the Netherlands, at least, does not show more than the net profits from merchandise transactions abroad in its merchandise account. While the United States and the United Kingdom include such transactions if they involve the movement of goods into and out of their countries, they include only net profits of transactions not entering the country. This type of transaction gives rise to differences in treatment in the accounts of original supplier, ultimate buyer, and intermediary.

Like the petroleum transactions, merchanting poses triangular accounting problems, but there is less uncertainty about residence. The accounting difficulty arises mainly from lack of information. Given the facts, there would seem to be no reason for not applying the *Manual's* instruction and including both the purchase and sale in the account of the intermediary country—rather like the "middleman approach" discussed for petroleum transactions but differing in that the transactions are not fictitious.

THE CURRENCY DIMENSION

Every transaction between residents of two countries is, overtly or implicitly, expressed in some currency and perhaps also by an exchange rate into a second currency. The currencies are not always those of the two countries; third currencies may be used. The many transactions expressed in different currencies must be converted into a single *numéraire* if the world matrix is to have any meaning at all.

Conversion to a Common Numéraire

In general, such conversion is a two-step operation: first, each reporting country compiling a payments statement expresses the transactions in local currency units, after which they must be converted into a unit common to all countries. For 1951, 32 countries submitted statements to the IMF in their own currency, while 28 used United States dollar equivalents.[34] The choice of a *numéraire* for the postwar period thus offers little problem—United States dollar equivalents is the most convenient unit.[35] Conversion of amounts from local currency into dollar equivalents seems, from our work thus far, to pose little difficulty; only in the accounts of Argentina, Lebanon, Syria, and possibly Indonesia have we observed serious problems. 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.[36]

In a study recently published by the OEEC, Gilbert and Kravis held that "international comparisons of income levels based on conversions by exchange rates must be suspect."[37] However, these writers appear to have been chiefly concerned with the comparability of the larger components of national incomes composed main-

[34] The IMF instructs countries in consolidating the transactions of their residents into a payments statement to render the account in "some convenient unit of the domestic currency," but where multiple currencies are in force, also in "some fixed currency unit. . . ." *Manual*, p. 9, pars. 3 and 4.

[35] 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. However, the present and prospective strength of the United States dollar warrants using it as *numéraire*, and few would contend otherwise.

[36] Earl Hicks notes this in his article on "Exchange Conversion" in *International Trade Statistics*, pp. 108-109.

[37] Milton Gilbert and Irving B. Kravis, *An International Comparison of National Products and the Purchasing Power of Currencies*, Paris, OEEC, 1954, especially pp. 14 and 15.

ly of goods and services not traded internationally. With the application of their conclusions to such goods, I would not disagree. However, their results do not appear to apply to the international sector of national accounts.[38]

There *is* a problem of conversion to a common *numéraire* in constructing an account of transactions between world areas, but it is not the problem considered by Gilbert and Kravis, and it must be met, if it can be met at all, in a different way. It arises when countries' exchange practices involve multiple exchange rates and perhaps broken cross-rates. In these situations almost every transaction must be examined individually and revalued with reference to the market situations in which dollar equivalent values are established. But, as noted, other problems more seriously obscure international economic relations.

Currency versus Residence

A more difficult problem occurs when a party to a transaction pays or is paid in currency not that of his country of residence. A fair number of countries maintain exchange controls and base their balance of payments statements upon those records.[39] Such countries tend to allot transactions according to currency rather than according to the residence of the transactor and use an "area" classification accordingly. Indonesia, for example, has employed an account in three parts: transactions in dollars, in sterling, and in guilder; France distinguishes transactions with "the United States

[38] Gilbert and Kravis did not reprice internationally traded goods and services individually. They handled net exports as a single entity, using the official exchange rate as the "price" of exports. Their method involves revaluing United States net exports into foreign currency at the official rate and then back into dollars at the purchasing power parity rate for the whole United States national product. This is equivalent to "inflating" a country's foreign balance in binary comparisons (with another country) by an index of the purchasing power parity of their two currencies in relation to the official exchange rate. Since the index is the same for both countries, the comparison of the net exports of one with the net exports of the other is necessarily unaffected: they still have the relationship given by the official exchange rate even if expressed in common "prices." Thus Gilbert and Kravis arrive at per capita net exports of the United States and of the four European countries bearing the same quantity relationship to each other whether expressed in United States "relative price weights" or relative price weights of the European country and having "purchasing power equivalents" equal to the official exchange rates (see their Tables 27-30, pp. 113-119).

[39] See the *Manual*, p. 4, for some observations on the difference between exchange transactions and a balance of payments statement.

and Canada" and "sterling area" but includes therein dollar and sterling transactions with other areas.[40]

Such a practice makes it difficult to develop a clean-cut, two-valued matrix of transactions among world areas. However, by maintaining the identity of the three principal trading areas, the United States, Continental OEEC countries, and the sterling area, and the areas principally interested in them, it should be possible to develop combinations of transactions of the "dollar area," "sterling area," etc., which measure transactions according to broader currency areas more accurately than for component areas.

Currency-residence differences particularly complicate the travel account of the world. Black, grey, and free markets in one country may well serve to supply exchange that tourists use in another. However, among current items the travel account is of minor significance in comparison with, say, merchandise and transportation.

In a world matrix it should be possible to distinguish settlements according to currency. Dollars, sterling, and EPU credits, particularly, should be distinguished. Other currencies, florin, francs, and yen, do not enjoy the extensive international use of the dollar and pound sterling as currencies of account, and it is not thought that the additional complication of detailing them in a world payments matrix would be warranted.

THE ITEM DIMENSION

Any individual "transaction" between residents of two countries refers to the transfer of ownership of something. The interest attaching to the size of international transactions without regard to the things transferred is about as much as to the total of all transactions within a country. Analysis of international economic relationships requires a grouping of transactions according to the kinds of thing transferred. Whatever the basis for defining account "lines" in a matrix of international transactions, it is important that for the world as a whole the total of payments by all countries for the purchase of any given item in question conceptually equals the total of receipts by all countries from its sale. In short, *if one country includes a certain transaction in a given account line, it is essential that partner countries also include the transaction in that line.* This is the basic rule for items. If violated, the usefulness of international matrixes will be seriously impaired.

One basis for grouping transactions by type is provided by in-

[40] *Yearbook*, Vol. 5, French section issued February 1954, p. 5.

terest in the structure and flow of new production and income payments around the world. On this approach, things from which residents in the selling country derive income periodically, i.e. which represent the part of the periodic gross national product of the country sold to nonresidents, would be distinguished from other things. The first category of things may be considered the "current account" of the world. According to our basic rule for items, "current earnings" of one country must match "current expenditures" by another. For any individual country a "current balance" then may be derived consisting of the value of GNP items which its residents sell to residents of other countries less the value of things which they secure out of the gross national product of some other country. (In the sense used here, "sell" means to transfer title.) On this approach, the grouping principle is derived from the selling side. It depends on an answer to the question: is the item part of the seller's GNP? This approach to the current account fits into the UN's *System of National Accounts*.[41]

Things (and services) not included in the gross national product of the selling country—the second category of things noted above —are all assets of one sort or another by virtue of the mutually exclusive division of the universe of "things" into those newly produced, which are gross income items, and those which are not income items but, having value, must be assets. In the terminology of the UN's *System*, the second category of transactions may be called the capital reconciliation account of the world. As with

[41] In the UN's *System* an economic system is conceived as having a domestic product consisting of production "attributable to factors of production located in the territory of the given country" and a national product "attributable to the factors of production supplied by the normal residents of the given country" (pages 7 and 17). The product account of a country is drawn up to show on the credit side its disposition including exports (Account 1, page 18). The external demand for a country's domestic product is different, and may be sizably different, from the external demand for its national product, for the latter includes and the former excludes demand for the services of factors located abroad but owned and supplied by residents. The UN's *System* gives an account for the gross domestic product (Account 1) but does not give the similar account for the gross national product. However, it can be obtained from Account 1 by adding to both sides of the gross domestic product account net factor income payments from the rest of the world (6.2). The credit side would then include all the items which the UN puts into its current account balance (Account 6) and which, except for a difference in treatment of gold, the IMF calls goods and services (see pages 16, 25, and 31 of the *System* and page 5 of the *Manual*, especially the example of workers' earnings). Thus the current balance defined in the text "fits" into the UN *System*, both into the country's gross national product account (Table I, page 22) and its external account (Account 6).

the current account, we must define these transactions in accounts of both paying and receiving countries with reference to the content of the GNP of the country: if the item transferred is in the selling country's GNP, the item is "current" for both countries; if it is not, then it is "capital reconciliation" for both countries.

Both the UN and the IMF distinguish current and capital accounts in their accounting systems. While the UN arrives at a capital reconciliation account as the remainder of international transactions after current transactions, the IMF first defines capital transactions as those "representing changes in the international creditor-debtor position of the reporting country and in its monetary gold holdings"; all other transactions then are current.[42]

The two approaches would come to the same thing if it were not for unilateral transfers. In both instances, the goods and services (including factor income) transferred are included in the current account, but the *financing* of these transfers is counted differently. The UN includes transfers in its capital reconciliation account, whereas the IMF enters "donations" in its current account. Gifts are subtracted from the IMF current account balance to show the net transactions affecting the country's creditor-debtor position. The IMF divides international transactions into three kinds: (1) those which the UN calls "current" and which IMF calls "goods and services," (2) unilateral transfers or "donations," and (3) those which the IMF calls "capital." The IMF combines (1) and (2) in its current account; the UN combines (2) and (3) in its capital reconciliation account.[43] This practice has the advantage of permitting the user to combine the three in whichever fashion most suits his purpose, and so should be followed in the construction of a world-wide system of accounts. The IMF (followed by the UN, which basically relies on IMF *Manual* definitions) has not explicitly adopted the approach we have outlined above to defining the content of the goods and services account. The transactions termed "current" are identified by the IMF as

[42] *Manual*, p. 5.

[43] "Brief Description," *Manual*, p. 2; also, UN's *System*. See also Walter Salant, "International Transactions in National Accounts," (*Review of Economic Statistics*, Vol. 33, 1951, p. 304, especially sec. II) for a related comment. Note that the UN excludes from international trade in goods and services (line 1.8 and 1.9) the value produced by factors owned by residents of one country and located in another. The latter are treated separately (item 6.2). However, it is included in the current account as defined by the UN (page 25). The IMF, in contrast, includes factor income in its definition of goods and services. Goods and services is used here in the IMF sense.

being "movables" or "services."[44] Now, of course, not all movable goods are part of the current production of a country, although services necessarily are. The presumption is that international trade in movables draws either on current production or "stocks," the kind of stocks which are a normal part of the conduct of business, and in its *System* the UN offsets exports of goods by an entry for change in stocks. However, the concept of "stocks" employed by the UN does not appear to encompass such movables as art works, antiquities, gems, used ships, and second-hand articles generally.[45] On the domestic side, these are explicitly deducted from private consumption expenditure in the UN's *System*.[46] On the same principle, they should be deducted from exports. However, presumably they are not considered sufficiently important to the accounting of national income to provide for explicitly; the UN simply takes over the IMF definitions for "merchandise."[47] This points up the approximate character of the goods and services category in country payments accounts as a measure of transactions involving currently produced goods. Transfers of war surplus, used ships, and aircraft on occasion have been large.

Divisions of the Goods and Services Account

Distinguishing transactions involving currently produced goods and services seems particularly important for a world matrix of accounts. Great interest attaches to the international transmission of changes in the level of economic activity in different countries, and these effects work importantly (but not exclusively) through the buying and selling of current production. International economic activity centers around the supplying of market demands, and interest also focuses on the working out of competition between suppliers in various parts of the world supplying the needs of different markets and the complementary exchanges of currently produced goods and services. How revealing of these basic economic relations are present schemes for dividing the goods and services account?

The fullest elaboration of the world's goods and services account is given in the IMF *Manual*; the UN modifications are minor.

[44] See *B/P Supplement*, p. 19. The IMF defines investment as including all financial claims and immovable property (*Manual*, p. 1), so that all movables fall into its merchandise account.

[45] UN's *System*, p. 30.

[46] *Ibid.*, p. 26.

[47] *Ibid.*, p. 31.

Table I, Balance of Payments Summary, of the *Manual* and the Basic Presentation table of the fifth *Yearbook* carry an eightfold division of the goods and services account, as follows: merchandise trade (other than nonmonetary gold), nonmonetary gold, and six lines for different types of service transactions (travel, transportation, insurance, investment income, government not included elsewhere, and miscellaneous). This division details minor transactions while lumping important things together. It lacks balance in failing to reveal anything of the content of the merchandise package. In the goods and services account of the United States for 1951, for example, total payments and receipts came to $19.5 billion and $15.3 billion, respectively. Over 70 per cent of these transactions were for merchandise. The rest was scattered over the other seven lines, the largest of which did not amount to as much as one-fifth of the merchandise entry, and together all other lines amounted to scarcely more than one-third of merchandise. For most countries the merchandise entry accounts for even a larger part of all goods and services.

One gets the impression that the mechanics of compilation rather than the needs of analysis have shaped the present system of accounts. The present practice may also reflect the division of labor among government agencies, whereby financial experts are mainly interested in the debtor-creditor position of countries while trade experts are concerned with commercial policy problems. Such specialization is to be deplored in a world of economic interdependence.

For most analytic and descriptive purposes one would wish to divide the merchandise line into several sectors. What divisions are meaningful? One which some have found revealing is primary products and manufactures. Among primary products, foods have been distinguished from raw materials by some and agricultural from mineral by others. Among minerals, fuels have been separated from others. Among manufactures, it has been found useful to distinguish capital goods from consumer goods and semimanufactures and, at a different level of detail, cotton piece goods, metals and metal manufactures, and machinery and transport equipment.[48]

The more detailed the division of the merchandise account, the

[48] See *World Economic Report, 1952-53; International Trade 1953; Industrialization and Trade*; Neisser and Modigliani, *op. cit.*; and *The Network of World Trade*, pp. 22 ff.

more revealing it will be and the more useful for analytic purposes. As they sought to assess the progress of European recovery and the continuing need for economic assistance, the successive United States government aid agencies found it necessary to consider the world-wide impact of the recovery program on a fairly long list of foods, feeds, fibers, fertilizers, fuels, forest products, metals, machinery, and other manufactures. However, United States agencies did not, to my knowledge, bridge the statistical gap between payments accounts of transactions for merchandise and customs records of the flows of goods. Sensible analysis of international economic relations is difficult to undertake if it is not possible to relate the movement of specific goods to the transfers of ownership encompassed in the balance of payments.

To bridge the gap, a great deal of careful work needs to be done to develop the commodity dimension of the merchandise account. *International Financial Statistics* lists eleven commodities as specific as petroleum, cotton, coffee, and wheat, each of which accounted in 1951 for 1 per cent or more of the world's merchandise exports and which together accounted for about one-quarter of the total.[49] The largest of these commodities, petroleum, represents a total of international transactions f.o.b. almost half as large as all payments for transportation. The merchandise account lends itself to indefinite subdivision along commodity lines. International trade is highly concentrated in a relatively few commodities and products moving between a relatively few sources and destinations. It should be possible, by working with the largest trades, to analyze a large part of the world's merchandise matrix in rather concrete terms. To avoid becoming mired in mounting costs, it might be feasible for the large countries to report comprehensively and the smaller ones to report only specialties.

Once the goods account has been detailed in some measure it will become fruitful to divide interarea trade tables for individual commodities into quantity and price components. At this level of analysis, it will be possible to link the work on individual commodities by agencies like the Food and Agriculture Organization and the Study Groups on rubber, tin, etc., to that of the Monetary Fund.

Developing a division of the goods and services account along commodity and product lines is a subject on which we, at the

[49] See, for example, *International Financial Statistics*, IMF, April 1954, p. 26.

National Bureau, are still working, and I am not as yet prepared to make a specific proposal. I suspect, however, that the product stub most useful for the analysis of international problems is not likely to coincide with the Standard Industrial Classifications used in other national accounts but might be so devised as to fit in with them.

While I am not prepared to be specific about the elaboration of the merchandise line, I am prepared to urge the exclusion of nonmonetary gold from goods and services in a world matrix and to combine it, instead, with monetary gold. This departure from the IMF *Manual* principles and the UN's *System* represents another application of the basic rule for itemization given above.

Inclusion of monetary gold in the goods and services account of an interarea matrix results in an unbalanced account, because buying countries are not under instruction, and cannot be expected, to record their purchases in the same way as selling countries. The IMF asks that gold be treated by countries according to its relation to their own monetary reserve or current production. On *Manual* definition, sales of newly mined gold by one country to the monetary authority of another country will be recorded differently in the accounts of the two. Hence, if nonmonetary gold were entered in a world-wide matrix of goods and services transactions, total receipts could not, conceptually, be expected to equal total payments. This detracts seriously from the usefulness of the world-wide matrix of goods and services. One cannot quarrel with the proposition that newly mined gold is not unlike other commodities to the producing country. However, not many countries produce significant amounts of gold, and from the world-wide point of view most gold transactions are like dealings in rare antiquities rather than currently produced goods. Gold, of course, is also a store of value and a monetary reserve. Thus it is quite unlike other newly produced goods. Little goes into consumption; most is held in someone's reserve or hoards against a day when it will be sold abroad. In a world-wide system of transaction accounts it seems advisable to give greater weight to the monetary aspect of gold than to its income aspect and to exclude it from the goods and services item, thus preserving interarea comparability of external accounts at the expense of comparability of external accounts with internal accounts for a few countries.

The basic rule for items also eliminates the possibility of allowing some countries to carry their merchandise account at an

f.o.b. valuation for exports and c.i.f. (cost, insurance, and freight) for imports. If a world goods account is to be developed whose total of receipts equals the total of payments, a single valuation basis must be taken for any given transaction. Now it would be possible to have a mixed system with some goods c.i.f. and some f.o.b. if the same transactions were counted c.i.f. and f.o.b. by both sides. Apart from the difficulty one would have in securing country reports according to this principle, such a scheme has the disadvantage that the transportation account would lose greatly in meaning.

Among services represented in the current account, the transportation account is one of the largest and of interest in its own right. The use of merchandise imports c.i.f. in the balance of payments overstates international transport payments and receipts to the extent that countries' imports are carried on vessels operated by residents. To avoid this mistatement and to develop a clean-cut accounting of international transactions related to shipping, the IMF practice of introducing merchandise transactions on an f.o.b. valuation should be followed in an international payments matrix. It is because it does not contemplate the construction of a trade matrix from both sides of the record at once that the UN Statistical Commission Group of Experts justifies the recommendation that imports be valued c.i.f.[50]

The problem of securing uniform reporting so that transport costs are shown by all countries in the same account line typifies a kind of problem one confronts in defining any subdivision of the balance of payments account. The treatment of "government" and "private" transactions particularly gives difficulty in this regard, since a transaction which is "government" to one side may be "private" on the other. This problem is not confined to goods and services. If a world matrix of transactions is to include account lines distinguished as representing transactions of governments, then it must be decided either to confine it to government-to-government transactions or to widen it out to include private-government trans-

[50] *Principles for Statistics of External Trade*, United Nations (E/CN. 3/142), October 6, 1952, pp. 20-21. The experts contend: "Matrices are normally constructed on either an export or an import basis, not a combination of the two, and the differences in value for the exporting and importing country under both f.o.b. and c.i.f. definitions create no difficulties." As one might expect from this quotation, the UN is content with a matrix from the export side only. The reader can judge from the comparisons given in the next section whether reliance on one side is satisfactory, particularly to indicate net surpluses and deficits between areas.

actions. A third possibility would be to consider certain government-private transactions as too much like commercial undertakings to warrant counting them as "government" on either side.

It is, of course, necessary to determine whether the world matrix shall cover transactions in military end items. In its *System* the UN is careful to exclude from exports of goods and services the value of military equipment transferred between governments.[51] Apparently, the aim is to count this value in the government expenditure offset to the GNP rather than in the external account. However, cash sales of military end items would be included in exports. This is also the treatment accorded military end aid items by the OEEC.[52] It seems designed to facilitate an analysis of the ability of countries to carry military burdens *before* allowing for the extension of military end item aid, rather than to provide an analysis of the working out of history. For a *post facto* view of the disposition of current production in countries around the world, and of the availability of currently produced goods, it would seem desirable to include military end items in the total of goods and services exported, as is done by the United States in its balance of payments account.[53] Apart from the burden-sharing exercise, it is difficult to see any conceptual reason for treating military end item aid differently either from other military end items generally or from other aid items. However, the subject of military end item aid borders on security matters which countries are somewhat loath to record, and it seems likely that practical necessity will compel omitting them from the world's matrix of international transactions.

Since the IMF *Manual* and country payments statements provide greater detail for service transactions than for merchandise, the problem for service account lines is to consolidate, rather than elaborate. Taking the United States payments account as a guide, one observes that transportation, investment income, and government (including military) transactions are the largest items. Travel, though a small item, is relatively homogeneous and of considerable interest to countries seeking to expand their tourist

[51] P. 38.

[52] *Standardized System of National Accounts*, Paris, OEEC, 1952, pp. 72 and 83.

[53] See *B/P Supplement*, p. 22, and Table 4, p. 136. The IMF has adjusted the United States account to exclude military gifts (see *Yearbook*, Vol. 5, United States section issued February 1954, p. 4).

business. It will likely be useful to maintain these subdivisions of the services account and an All Other services.

Subdivisions of the Capital Reconciliation Account

A desire to illuminate the structure of international intercourse in things currently produced in one country provided the basis for considering subdivisions of the goods and services account. The other things transferred internationally relate to financial claims (promises and rights), immovable assets, and gold. In addition, an accounting entry for unilateral transactions is necessary to provide double-entry offsets to gifts and reparations. Other things should be subdivided in a way to reveal the impact on a country's financial position of transactions representing the net external cost of current operations. That impact is importantly different depending on whether the claims built up or used are more or less liquid and whether they reflect private decisions or government operations. Gold is, of course, one of the most liquid of assets.

The suggestion of the UN that transfers be distinguished according to the character of the decision-making unit—households, nonprofit institutions, and private-profit institutions—while perhaps of some consequence from the point of view of accounting for other expenditures in the national income, does not seem sufficiently important to the analysis of international financial problems to carry through systematically in a world matrix. Gifts become of significance in the accounts of only a few countries (Israel comes to mind). This detail can be dealt with in footnotes. In general, relatively few capital transactions (in the narrow sense, excluding gifts) are undertaken by households and nonprofit institutions. It would not be a worthwhile complication to divide the standard capital account lines into these parts to meet the needs of the national income accountants. I give below the greatest detail it now seems possible to maintain. If more divisions can be carried, the distinctions between direct and portfolio investment and between own resident and foreigner are of greater significance.

It is necessary in a world-wide matrix to include a line (which conceptually should sum to zero for all countries) for multilateral settlements, and, in view of the discussion of the currency dimension above, settlements in dollars, sterling, and other currencies should be distinguished in this line.

A Tentative Itemization of the World's Matrix of International Transactions

Our work on a payments matrix for the world so far has been mainly with the merchandise, transportation and marine insurance, and travel items. We are not far enough along to be positive about other components for the item dimension. How one must treat the "error term" is uncertain. The following, however, would pretty well meet the needs as I now see them (each would carry payments and receipts):

1. Merchandise, f.o.b. (excluding gold)—elaborated in some combination of specific commodity matrixes, by quantity and value, and broader groups of products
2. Services
   a. Transportation (possibly with marine insurance)
   b. Investment income
   c. Government
   d. Other (it may be useful to break out travel)
3. Donations
   a. Private
   b. Government (including reparations)
4. Long-term capital
   a. Private (excluding banks)
   b. Government and banks
5. Short-term capital and all gold
   a. Gold
   b. Government and banks
   c. Private (excluding banks)
6. Multilateral settlements
   a. In dollars
   b. In sterling
   c. Other
7. Error

THE TIME DIMENSION

The IMF's *Manual* has pinpointed the time-referent of an individual transaction,[54] although in practice countries find it expedient to approximate the required timing (e.g. clearance of cus-

[54] *Manual*, p. 1, sec. 2, and p. 4, defines "Transactions" and states that they should be entered "as they occur," i.e. "when the goods are sold and the services rendered."

toms). These approximations give rise to troublesome errors, as will be noted in the next section, and it may be that further study of country accounting practice will indicate the need for developing arbitrary conventions in respect to the timing of transactions.

Another problem of the time dimension concerns the period to be used in the construction of an international transactions matrix; the requirement that all transactions in a world matrix should pertain to the same period of time is so elementary a principle of bookkeeping that, perhaps, it need not even be stated. However, countries do employ different periods of time in preparing their individual statements, reflecting the peculiarities of their own economies. Hence there is a problem.

Practically everyone uses a period of approximately twelve months as an accounting unit.[55] Not all start the twelve months at the same place. The seasonality of economic activity in different areas prompts countries to avoid starting an accounting period in the middle of a season. Thus Australia employs a financial year ending June 30 to coincide with the dull season in the wool trade. The Canadian government uses a fiscal year beginning in April, just before, or at about the time of, the spring thaw.

How to deal with the special seasonal patterns around the world has plagued the Food and Agriculture Organization, and it now records data according to a crop year. The crop year may vary some from product to product, but the year ending June 30 pretty well fits crops as a whole, considering that the largest part of the world's agricultural activity occurs in the northern temperate zone. For this reason the United States adopted such a year for the government budget when the Republic was young.

The strong seasonal swing in economic life, of course, most markedly affects the pursuit of agriculture, but the icing up of northerly ports also creates important seasonal variations affecting all movement of goods, and other things (e.g. fuel) are significantly affected. Since we have argued above that the merchandise account matrix would be more valuable if broken down into commodity components, it would be consistent to advocate use of the agricultural year to facilitate such analysis.

In the years of the Marshall Plan, aid programs and correspond-

[55] Even this is not universal among countries. Differences arise as countries employ calendars other than the Gregorian. Thus, Iran uses a solar calendar.

ing balance of payments analyses were tied to the United States fiscal year. While the Committee for European Economic Cooperation (CEEC) made its report in the summer of 1947 in terms of calendar years, American budgetary practice resulted in a shifting to the United States fiscal year in the work of the organization (OEEC) which succeeded the Committee. The year ending July 30, however, did not conform well to the budgetary practices of countries cooperating in the OEEC. Various fiscal years are used in Europe, and, since practice varies, the OEEC has reverted to a calendar year now that economic aid has declined. It now follows the practice of the IMF in its *Yearbook* of using years ending December 31 wherever possible.

A tabulation would show that most countries employ the calendar year. It is thus a great deal easier and likely to introduce less error to modify the few accounts prepared on another basis to conform to the calendar year than to go over to another annual period such as the agricultural year.

Among possible annual periods the serious choice lies between the calendar year ending December 31 and the agricultural year ending June 30. Perhaps 20 to 25 per cent of all world exports, and considerably higher ratios of the exports of particular areas, are basic agricultural commodities affected by seasonality. But most countries are already on the calendar year. It is a question whether the importance of relating the flow of funds to the flow of goods warrants the great effort required to move all countries onto the same annual accounting period employed by the FAO.

Perhaps the solution lies in use of semiannual accounts which can be combined in either calendar or agricultural years. However, if annual periods are to give way to shorter periods, perhaps a quarter year might be even more useful as a period short enough to provide a sense of seasonality in the pattern of transactions.

If resources available for the task of preparing a world matrix are limited, it seems reasonable to give first priority to the use of years ending December 31.

Some Preliminary Results of a Trial-Run Matrix for 1951

In the previous section I have discussed a number of aspects of the matrix of international transactions which I would like to see prepared and some of the problems met in doing so. It has been written against the background of an effort to construct a trial-run matrix of transactions between world areas for 1951. The aim

of this continuing effort is to compile the materials which might contribute to the construction of a desired matrix and to attempt to fit them together into a trial run which will at once show the extent of the existing record and its limitations. By casting up a two-valued matrix with entries from the records of countries on both sides, we hope to gain insight into the uncertainty attaching to the present scheme of reporting, and to find the points at which reporting should be modified and special research should be undertaken to permit the reconciliation of data and their adjustment to the desired matrix form.

The opportunity for making such an audit arises because a large number of countries of the world have published or submitted to the IMF balance of payments statements showing accounts with several parts of the world. Thus far we have been able to compile trial-run matrixes for merchandise (excluding gold) and for transportation and marine insurance. We plan to compile matrixes for other account lines listed above. The results so far have been encouraging, particularly in showing the feasibility of developing a set of accounts along the general lines described above. They also underscore the difficulties and provide a measure of the magnitude of the task.

The trial-run matrix is designed to adhere as closely as possible to published country accounts. Consequently, it departs from the desirable structure developed above. All data have been adjusted to refer to calendar 1951. Merchandise has been adjusted to an f.o.b. basis uniformly, and where freight and insurance have been deducted from imports c.i.f., they have been added back in the transportation and marine insurance matrix. Gold has been excluded. Data have been converted to United States dollar equivalents as a common *numéraire*, generally using rates indicated as appropriate by the country or the IMF.

The main shortcoming of the trial-run matrix lies in its geographic structure. An effort has been made to allow for the transactions of overseas territories of metropolitan countries in Europe, including transactions with "own metropole." But it has not been possible in the trial run to do more than observe the difficulties of accounting for the residence of shipping, petroleum, and merchanting transactions. Country payments accounts were found to lend themselves rather well to the construction of a five-area account of transactions among the sterling area, the nonsterling EPU area, the United States and Canada, Latin America, and Other. A more

elaborate account for merchandise transactions was constructed, distinguishing parts of the sterling area, continental overseas territories from metropoles, the United States from Canada, and dollar from nondollar Latin America, but this more detailed matrix is imperfect.

Separate papers have been prepared on the merchandise and transport trial runs, explaining more fully the adjustments and estimates made and scrutinizing the results.[56] Here, I shall only give the highlights.

THE AGREEMENT OF WORLD TOTALS

The merchandise matrix shows receipts from exports of $76,167 million and payments for imports (f.o.b.) of $74,463 million. The two should agree; $1,704 million excess of receipts (2.2 per cent) requires explanation.

In contrast, the transportation matrix shows receipts of $5,306 million and payments of $7,873 million. The $2,567 million excess of payments also requires explanation.

Much too quick an explanation of both differences is that freight and insurance deductions employed in revaluing imports from c.i.f. to f.o.b. have been too large. Altogether, $6,180 million have been deducted from imports c.i.f. in arriving at an f.o.b. valuation of merchandise[57]—a deduction which is more than the whole of receipts in the transport account. While the possibility of excessive freight adjustments must be looked into, other explanations are more likely.

Judging by the totals of world trade published in *International Financial Statistics*, the merchandise matrix covers all but about $1 billion of world exports (excluding United States military aid exports) and about the same amount of imports f.o.b. The agreement in world totals of merchandise transactions would probably not be improved by more complete country coverage.

The merchandise and transport divergences are in the direction

[56] Herbert B. Woolley, "A Trial-Run Matrix of Merchandise Transactions between World Areas in 1951," NBER, June 1954, mimeographed, and Herbert B. Woolley and Walther P. Michael, "A Trial-Run Matrix of Transportation Transactions between World Areas in 1951," NBER, October 1954, mimeographed.

[57] $3,877 million was deducted by countries in payments accounts submitted f.o.b., representing an average deduction of 11.4 per cent of the c.i.f. value, and $2,303 million was deducted by Woolley and Michael, representing an average 10.4 per cent of the c.i.f. value, with varying percentages deducted country by country and source by source.

which would result from the improper inclusion of bunker sales in merchandise rather than transport and the proper inclusion of bunker purchases in transport rather than merchandise. Bunker sales and purchases are not supposed to be included in the merchandise account.[58] While this treatment seems generally to have been respected by countries submitting payments statements, the hypothesis should be explored further.

The more promising explanation for the merchandise divergence is that merchandise accounts do not express the same timing, being based largely on customs records. In a period of rising trade, like 1951, more goods will have been recorded as shipped than arrived and estimates of receipts based on customs clearance will exceed estimated payments similarly based. One can see the magnitude of the difference that might be introduced into annual totals as a result of the rise of trade in 1951 by comparing the total of world exports in the twelve months beginning with fourth quarter 1950 with the total in calendar 1951. For the whole world, exports in calendar 1951 exceed those in October 1950—September 1951 by 3.4 per cent.

As noted above, according to IMF *Manual* principles the time of change in ownership is the criterion for allotting a transaction to any given period. This raises a question as to actual business practice, and there is some reason to believe that if countries each time transactions by port clearance, when trade rises they will tend both to understate payments for imports and overstate receipts from exports. Thus the truth in 1951 might be expected to lie somewhere between the two totals for merchandise transactions.[59]

Whereas lack of coverage does not seem a likely explanation of the divergence in merchandise totals, it does help explain the sizable shortfall in receipts on account of transportation and marine insurance. The considerable receipts of ships registered under Panamanian, Liberian, Honduran, and Greek flags are not included in the accounts of those countries and are only partly counted in the United States account (to the extent that the ships are operated from the United States). The United Kingdom reports only dry cargo transport transactions; British oil tanker transactions and bunker sales, which likely show a sizable net surplus, are omitted from the transportation line in the United Kingdom's balance of payments. Nevertheless, payments for the services of these ships

[58] *Manual*, pp. 24-25.

[59] This point is more fully developed in the paper on the trial-run matrix of merchandise.

are part of the freight bill of countries using their services. At a guess, something more than $1 billion of the excess of payments may be attributed to these factors.

Moreover, insurance on merchandise is rather fully allowed for on the side of payments, either directly or as part of the c.i.f. adjustments to imports, while receipts of insurance premiums are seriously understated, being omitted from the statements of the United States and United Kingdom. It is estimated that receipts in 1951 are understated $500 million on this account.[60]

A further explanation of the divergence in over-all transport and marine insurance transportation lies in the absence of any report of receipts from port expenditures in the overseas territories of European countries and other countries for which payments accounts were unavailable. The only allowance for transportation transactions by these countries in the trial run is for payments of freight and insurance on imports. Any receipts by them for bunkers or other port charges have escaped. Possibly $250-300 million of such receipts are missing.

A sizable part of the $2.6 billion over-all divergence in total transport receipts and payments thus seems to occur because countries on the payments side are not matched on the receipts side. In contrast, for the merchandise account "timing" seems the most likely source of divergence between over-all receipts and payments.

The results of the trial runs on merchandise and transportation are both encouraging and sobering: encouraging because it has been possible to build up a merchandise matrix which comes close to covering the whole of world trade with comparable entries from both sides agreeing to within 2.2 per cent in the highly dynamic year of 1951; sobering because total merchandise in 1951 is uncertain to that extent and not known within a range of $1.7 billion. That an even larger absolute and relative difference characterizes total transport and insurance payments and receipts is likewise sobering, but we are encouraged by the nature of the deficiencies, since they suggest that both accounts can be substantially improved by a careful study of the world's shipping account.

THE AGREEMENT OF REGIONAL TOTALS

Merchandise

The full trial-run matrix of merchandise transactions is given in Table 4. In it are 75 pairs of figures on interregional transactions, not including pairs that can be summed up from other pairs.

[60] See Woolley and Michael, *op. cit.*

Examination of the absolute and relative differences between pairs of figures discloses, first, that the accounts of countries on either side of any trade generally agree on the "order of magnitude of the transaction." In only two instances does the divergence between pairs of observations exceed 40 per cent of the exporting side's record of receipts. The 2.2 per cent divergence in the world's totals is seen to result from the offsetting of widely ranging cases of positive divergence by equally widely ranging, but not quite so sizable, cases of negative divergence.

Table 3 shows the distribution of cases entering into the 2.2 per cent divergence of total receipts and payments. Of 68 pairs of figures which are statistically significant and not in agreement, about half show excess of receipts over payments (positive divergence). Positive and negative divergence is rather symmetrically balanced along frequency distributions tailing off for higher "error." Considerable, and rather symmetrical, offsetting of positive and negative divergence results in the relatively small over-all 2.2 per cent excess.

This statistical property of the trial-run merchandise matrix is highly suggestive of some systematic inconsistency in the underly-

TABLE 3

Distribution of Relative Differences between Receipts and Payments in the Trial-Run Matrix of Merchandise Transactions between World Areas, 1951

Class interval percentage of divergence from receipts (+ or −)	*No. of cases*	*Value receipts (mill. $)*	*Value divergence*	*Weighted average divergence (%)*	*No. of cases*	*Value receipts (mill. $)*	*Value divergence*	*Weighted average divergence (%)*
Over 40	1	412	356	86	1	79	−76	−96
26–40	4	1,554	471	30	6	683	−210	−31
13–25	8	9,205	1,640	18	10	4,933	−840	−17
7–12	8	5,667	458	8.1	2	2,887	−205	−7.1
4– 6	6	15,732	862	5.4	10	13,830	−667	−4.8
1– 3	6	7,311	123	1.7	6	13,752	−198	−1.4
Sum	33	39,881	3,910	9.8	35	36,164	−2,196	−6.1
No divergence	1	115	0	0				
Relative difference not significant	6	7	−10					
Negative cases	35	36,164	−2,196	−6.1				
Total	75	76,167	1,704	2.2				

TABLE 4

The Records of Payments and Receipts on Account of Merchandise Trade between World Areas in 1951
A = exporter's account of receipts; B = importer's account of payments
(*millions of U.S. dollars, f.o.b.*)

PAYEE		ALL AREAS (1)	STERLING AREA All (2)	STERLING AREA U.K. (3)	STERLING AREA O.E. (4)	STERLING AREA OT's (5)	STERLING AREA Other (6)	NONSTERLING EPU[a,b] All (7)	NONSTERLING EPU Metropoles (8)	NONSTERLING EPU OT's (9)	OWN MET. OR OT'S (10)	U.S. (11)	CANADA (12)	L.A. (13)	$ AREA (14)	NON-$ L.A. (15)	OTHER AREAS (16)
1. All areas	A	76,167	21,154	n.a.	n.a.	n.a.	n.a.	20,803	n.a.	n.a.	2,947[c]	n.a.	n.a.	n.a.	n.a.	n.a.	9,306[d]
	B	74,463	21,005	9,789	584	3,810	6,822	20,233	18,731	1,502	2,870[e]	11,668	4,065	6,932		3,761	7,690
2. Sterling	A	19,500	9,442	3,522	[f]	[f]	[f]	4,012				[f]	[f]	[f]	[f]	[f]	2,574
	B	19,412	9,482	3,573	338	1,764	3,807	4,247	4,080	167[a]		2,226	691	620	n.a.	451	2,146
3. United	A	7,694	3,570		[f]	[f]	[f]	1,985				[f]	[f]	[f]	1,092	322	725[d]
Kingdom	B	n.a.	3,720		285	932	2,503					483	396	412	1,011[g]	287	689
4. Other	A	270	206	202	+	2	2	33				16	1	2	[f]	[f]	12
Europe	B	n.a.	[f]	[f]	+	—	1					17	1	1		1	10
5. Overseas	A	4,743	2,248	1,260	—	515	473	664				647	120	94	[f]	[f]	970
territories	B	n.a.	[f]	[f]	14	388	468					738	156	92		76	700
6. Other	A	6,793	3,418	2,060	34	450	874	1,330				944	119	115	[f]	[f]	867
	B	n.a.	[f]	[f]	39	444	835					988	138	115		87	747
7. Nonsterling	A	18,986	4,500	n.a.	n.a.	n.a.		8,799	n.a.	n.a.		1,639	141	1,606			2,301
EPU	B	18,015	4,214	2,587	105	539	983	8,351	8,153	198[a]		1,848	164	1,430		1,037	2,008
8. Metropoles	A	17,483	4,152					8,454	[h]	[h]		1,333	130	1,525			1,889
excluding own OT's	B	n.a.							[h]			1,531	149	1,332		978	1,952
9. OT's excluding own metropoles	A	1,503	348[a]					345[a]				306[a]	11	81[a]			412[a]
	B	n.a.							[h]			317	15	98		59	56
10. Own metropoles or OT's	A	2,947[c]									2,947[c]						
	B	2,870[e]									2,870[e]						
11. United States	A	14,091[i]	2,331[j]	1,024[j]	61	205	1,041	3,193	2,899[k]	294			2,682	3,741			2,144[l]
	B	n.a.	[f]	[f]	72	219	1,018	3,288	3,012	276[a]			2,873	3,791		1,471	1,629
12. Canada	A	3,921	891	630	21	70	170	370	350	20		2,306		214			140
	B	n.a.	[f]	[f]	22	73	157	249	237	12[a]		2,296		134		51	110

(*continued on next page*)

TABLE 4 (continued)

PAYEE		ALL AREAS (1)	STERLING AREA All (2)	U.K. (3)	O.E. (4)	OT's (5)	Other (6)	NONSTERLING EPU[a,b] All (7)	Metropoles (8)	OT's (9)	OWN MET. OR OT'S (10)	U.S. (11)	CANADA (12)	L.A. (13)	$ AREA (14)	NON-$ L.A. (15)	OTHER AREAS (16)
13. Latin America	A	7,816	947	818	13	48	68	2,097	1,408	689		3,513	203	658			398
	B	n.a.	[f]	[f]	12	51	79	1,984	1,290	694[a]		3,533	259	607		497	407
14. Dollar area	A			1,944[g]													
	B	n.a.	[f]	2,050													
15. Nondollar Latin America	A	3,870	605	540	4	16	45	1,043	1,024	19		1,459	39	448			276
	B	n.a.	[f]	512													
16. Other areas	A	8,906	3,043	1,158	27	1,000	858	2,332	2,253	79		1,460	59	263			1,749
	B	8,741[d]	3,044	1,067[d]	35	1,164	778	2,114	1,959	155[a]		1,765	78	350		254	1,390

[a] Except with Other trade of Netherlands Antilles entered as derived from available partner country data; Antilles trade with All areas is from *International Financial Statistics*, IMF, with the undistributed balance allocated to all Other. Antilles imports from Venezuela, estimated at $630 million, included in both A and B entries of line 13, column 9.

[b] Excluding trade between associated metropoles and overseas territories.

[c] Of which OT exports to own metropoles is $1,193 million and metropole exports to own overseas territories is $1,754 million, including French exports of $1,558 million.

[d] Excludes United Kingdom trade with Philippines which United Kingdom shows under trade with dollar area. The United Kingdom trade record in the *Direction of International Trade* shows exports to Philippines of $6.6 million and imports (c.i.f.) of $11.9 million, which agrees as to order of magnitude with the Philippine record of $12.7 million of exports (f.o.b.) and $6.4 million of imports (f.o.b.).

[e] Of which OT's imports from own metropoles is $1,812 million and metropoles imports from own OT's is $1,058 million, including French imports of $854 million.

[f] United Kingdom does not give a breakdown of transactions with the sterling area or the dollar area; other sterling countries do not always distinguish the dollar area and nondollar Latin America.

[g] United States, Canada, dollar Latin America, and Philippines combined. No data available on sterling area dealings of United States oil companies.

[h] Not all Continental OEEC countries distinguish transactions with parts of the nonsterling EPU.

[i] Exports of military grant aid items excluded.

[j] Includes $113 million special category exports sold for cash to sterling area.

[k] On a different allocation of the special category exports referred to in footnote [j], figure might have been set as much as $113 million larger.

[l] Trade with international institutions in Other.

n.a. = not available.

ing accounting in country payments statements. The most likely possibility of such systematic error seems to be that countries do not adjust the direction of their transactions to a common purchase-sales basis, that is, they do not consistently define the residence of certain transactions, notably petroleum transactions and merchanting trade.

When countries are combined into a five-area matrix, as in Table 5, a number of striking features emerge.[61] The world's record of payments to an area, in the five-area matrix, agrees rather well with the area's record of receipts from the world (divergence ranges from 0.45 per cent to 4.8 per cent); this is in contrast to the area's record of payments to the world, which tends to vary rather more from the world's record of receipts from the area (—6.2 per cent to 17.4 per cent). Such variation in import totals has been found, on experiment, to be rather unlikely as a chance result of random combinations of the 75 cases. The contrast between rather close agreement on export totals and substantially greater disagreement on import totals probably reflects a tendency for buying countries to record rather accurately the origin of the goods they buy, for sellers to record immediate, rather than ultimate, destinations, and for intermediaries not to report some purchases and sales. Thus an export matrix alone is not likely to give an accurate picture of the structure of world trade.

Examination of the pattern of divergence suggests that merchanting transactions, notably by Continental and British intermediaries, would explain many of the discrepancies observed. Among them is the general tendency for areas not to account for as much in the way of receipts from the United States and Canada as these record paying, and the tendency for sales of the nonsterling EPU, Latin America, and Other to exceed payments by the nonsterling EPU to them. Similar difficulties in accounting for petroleum purchases by EPU countries and difficulties in estimating the direction and value of sales by a number of petroleum sources would explain many more instances of divergence in the five-area matrix.[62]

[61] The five-area matrix has been prepared on the arbitrary assumption that all divergence in the United Kingdom dollar account should be attributed to the United States and Canada. In effect, the accounts of dollar Latin America and the Philippines with the United Kingdom were taken as the best available guide to these transactions.

[62] The examination is done in detail in the paper on the trial-run matrix of merchandise transactions cited above.

TABLE 5

Trial-Run Matrix of Merchandise Transactions between Parts of the World Divided into Five Broad Areas, 1951

(*dollars in millions*)

RECEIVING AREA		PAYING AREA: *All areas*	*Sterling area*	*Nonsterling EPU*	*U.S. and Canada*	*Latin America*	*Other*
All areas	A[a]	$76,167	$21,154	$23,750	$14,810	$7,140	$9,313[b]
	B	74,463	21,005	23,103	15,733	6,932	7,690[b]
	C	1,704	149	647	−923	208	1,623
	D	2.2%	0.7%	2.7%	−6.2%	2.9%	17.4%
Sterling area	A	$19,500	$9,442	$4,012	$2,807[c]	$658[c]	$2,581[b]
	B	19,412	9,482	4,247	2,917	620	2,146[b]
	C	88	−40	−235	−110[c]	38[c]	435
	D	0.45%	−.42%	−5.9%	−3.9%	5.8%	16.9%
Nonsterling EPU	A	$21,933	$4,500	$11,746	$1,780	$1,606	$2,301
	B	20,885	4,214	11,221	2,012	1,430	2,008
	C	1,048	286	525	−232	176	293
	D	4.8%	6.4%	4.5%	−13.0%	11.0%	12.7%
United States and Canada	A	$18,012	$3,222	$3,563	$4,988	$3,955	$2,284
	B	17,691	3,321[c]	3,537	5,169	3,925	1,739
	C	321	−99	26	−181	30	545
	D	1.7%	−3.1%	0.73%	−3.6%	0.76%	23.9%
Latin America	A	$7,816	$947	$2,097	$3,716	$658	$398
	B	7,722	932[c]	1,984	3,792	607	407
	C	94	15	113	−76	51	−9
	D	1.2%	1.6%	5.4%	−2.0%	7.8%	−2.3%
Other	A	$8,906[d]	$3,043[d]	$2,332	$1,519	$263	$1,749
	B	8,753[d]	3,056[d]	2,114	1,843	350	1,390
	C	153	−13	218	−324	−87	359
	D	1.7%	−0.43%	9.4%	−21.3%	−33.1%	20.5%

[a] A = seller's record of receipts; B = buyer's record of payments; C = A − B; D = C ÷ A.

[b] Includes the United Kingdom to Philippines according to Philippine record of $7 million.

[c] Assuming zero divergence in dollar Latin America to United Kingdom—attributing all United Kingdom-dollar area divergence to United States and Canada.

[d] Includes United Kingdom with Philippines according to Philippine record of $12 million.

The five-area matrix does not reveal intrasterling area transactions and the separate trades of the United States and Canada. The fuller matrix of Table 4 brings out additional features regarding these trades which also seem to have their explanation in the merchanting activities of intermediaries, notably the United Kingdom, Singapore, and Hong Kong, in the case of intrasterling area trans-

actions, and the United States in the case of offsetting divergences involving Canada also.

Within the framework of the five-area matrix, an examination can be made of the uncertainties attaching to the calculations of net merchandise trade balances between countries. These are given, as calculated from both sides of the trade, in Table 6. The table is drawn up from the point of view of the selling area.

Among the 10 possible comparisons (out of 25 boxes, 5 involve intra-area trade and the remaining 20 boxes form 10 pairs of net

TABLE 6

Net Balances of Selling Areas in the Five-Area Trial-Run Matrix of Merchandise Transactions, 1951

(*dollars in millions*)

NET BALANCE OF		NET BALANCE WITH: *All areas*	*Sterling area*	*Nonsterling EPU*	*U.S. and Canada*	*Latin America*	*Other*
All areas	N[a]	+1,704					
Sterling area	N	−1,505	−40	−202	−514	−274	−475
	N'			−253	−305	−327	−897
	$N - N'$			+51	−209	+53	+422
	C_1			−235	−110	+38	+435
	C_2			+286	−99	+15	−13
Nonsterling EPU	N	−1,170	+253	+525	−1,757	−378	+187
	N'				−1,551	−667	−324
	$N - N'$				−206	+289	+511
	C_1				−232	+176	+293
	C_2				+26	+113	+218
United States and Canada	N	+2,279	+305	+1,551	−181	+163	+441
	N'					+209	+220
	$N - N'$					−46	+221
	C_1					+30	+545
	C_2					−76	−324
Latin America	N	+884	+327	+667	−209	+51	+48
	N'						+144
	$N - N'$						−96
	C_1						−9
	C_2						−87
Other	N	+1,216	+897	+324	−220	−144	+359
	N'						
	$N - N'$						

[a] N = net balance of exports over imports; N' = net balance of selling area according to partner records; C_1, C_2 = divergences entered from Table 5.

balances), none showed agreement as close as 10 per cent of the seller's net. The disagreement ranges from 12 per cent to 274 per cent. Half the comparisons indicate agreement on the "order of magnitude" of the net balance, taking that to mean agreement within 50 per cent of the seller's net balance. In five instances the two net balance figures disagreed to the extent of 50 per cent or more of the seller's net balance. However, in every instance but one, both sides agreed on the *direction* of the net balance.

In an equal number of cases in Table 6 divergences in the records of transactions between areas were "offsetting" and "augmenting." No dominant tendency is apparent. Sometimes differences in records of exports and imports cancel out in the net balance and sometimes they combine to increase the discrepancy in the nets.

Divergence in accounts of payments between areas thus casts considerable doubt on the calculated size of an area's net balance and even on its "order of magnitude," although the direction of the balance, it appears from 1951 experience, generally can be known from one side or another.[63]

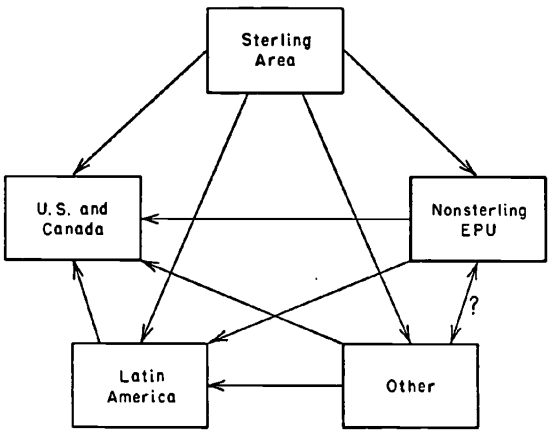
Some interest attaches to the fact that the net balances for 1951 in Table 6 can be arranged in a matrix, in the manner of Hilgerdt's *Network* for prewar years, in which every area earned (on merchandise account) from each preceding area. But the circle did not flow round and round as did Hilgerdt's *Network* for 1928. It stopped with the United States, which earned from all. The sterling area paid to all (in this respect 1951 was rather like the *Network* for 1938). The nonsterling EPU area was in deficit with every area except sterling (its net with Other is ambiguous); Other was in deficit with Latin America and the United States and Canada; and Latin America was in deficit with the United States and Canada.

The "network" in 1951 thus looked like this (arrow shows direction of net payments):

Transportation. Where countries had not distributed merchandise transactions in their payments accounts by region, it was

[63] Taking lines A and B of Table 5 separately one can compute two additional sets of net balances which widen the spread of "nets" observed in Table 6 for some areas and show disagreement on the direction of balance in sterling-nonsterling trade and United States and Canada-Other trade. I am inclined to consider these nets computed from the A and B lines of Table 5 less reliable than N or N' of Table 6 since the latter at least represent nets of internally consistent country accounts.

possible, in compiling the trial-run matrix of merchandise transactions, to make estimates based on the *Direction of International Trade*.[64] Only for a few countries was no basis in recorded trade available.



However, for the trial run on transportation, no such ready guide to estimating the distribution of transport payments and receipts was available. Hence, it was decided not to attempt more than to set down the figures pretty much as countries gave them. Only part of those were distributed regionally, either directly in their transportation accounts or as part of imports c.i.f. It was possible to adjust these figures in some cases to fit better into the common regional scheme. Because of the lack of a ready basis for elaborating accounts by region, only a five-area matrix was compiled.

The trial-run matrix of transport and marine insurance transactions is given in Table 7. Of total payments and receipts, 87 per cent and 89 per cent, respectively, have been allocated by area. The unallocated totals are relatively small in relation to the large over-all discrepancy. However, they are particularly large in relation to transactions of nonsterling OEEC and Latin America and receipts of Other. Because of the poor allocation of transac-

[64] *Direction of International Trade*, International Monetary Fund, International Bank for Reconstruction and Development, and United Nations, Statistical Series T, annual issues in Volumes IV and V.

tions by Continental Europe and Latin America, accounts involving those areas particularly are uncertain.

A striking feature of the matrix is the sizable excess of receipts as reported by the United States and Canada over payments reported to the United States and Canada—in spite of the absence of insurance from the United States report. This may be partly attributed to a full allocation of receipts in the United States and Canadian accounts compared with considerable unallocated amounts of payments in the accounts of partners. However, if the latter were distributed in proportion to known payments, area by area, the excess of United States and Canadian receipts could be offset only in the case of payments by nonsterling OEEC countries. If United States marine insurance were added to the United States account, receipts would be the larger.

At the same time receipts reported by Latin America and Other fall very much short of—indeed are not of the same order of magnitude as—payments allotted to those areas. Thus, total receipts account for only 6 per cent of payments to Latin America and 31 per cent to Other. By contrast, over 60 per cent of payments allocated to European areas are accounted for from the receipts side. We see in the great deficiency of Latin America and Other receipts and in the excess of United States and Canadian receipts the difficulty of accounting for ships under the Panamanian, Honduran, and Liberian flags. Payments tend to be allotted to country of flag; the receipts are either not recorded at all or, if recorded, appear in the account of the United States. Payments to Latin America and Other may also be overstated in the freight and insurance part of the merchandise bill which some countries have reported in treating imports c.i.f. and which we have simply divided between merchandise and transportation payments, keeping the same regional allotment as the country has shown. It is quite possible that United States or European fleets may have carried the goods imported from Latin America and Other countries and hence may have earned the freight and insurance.

The two areas which most fully allocate transactions—sterling area and the United States and Canada—agree surprisingly well on sterling receipts from services rendered to the United States and Canada but not as well on services rendered by the United States and Canada. (The latter again may reflect a misallocation of payments to Panamanian, Honduran, and Liberian flag ves-

TABLE 7

Trial-Run Matrix for Transportation and Marine Insurance Transactions, 1951

(dollars in millions)

RECEIVING AREA		PAYING AREA: *All areas including unallocated*	*Unallocated*	*All areas allocated*	*Sterling area*	*Nonsterling EPU*	*United States and Canada*	*Latin America*	*Other*
All areas including unallocated	A[a]	$5,306							
	B	7,873		$7,873	$2,135	$2,791	$1,138	$971	$838
Unallocated	A								
	B			$1,027	$120	$509		$369	$29
All areas allocated	A	$5,306	$606	$4,700	$1,609	$1,374	$690	$530	$497
	B			6,846	2,015	2,282	1,138	602	809
	C			−2,146	−406	−908	−448	−72	−312
	D			−45.7%	−25.2%	−66.1%	−64.9%	−13.6%	−62.8%
Sterling area	A	$1,421	$48	$1,373	$664	$261	$247[b]	$54[c]	$147
	B			1,937	891	530	240	80	196
	C			−564	−227	−269	+7	−26	−49
	D			−41.1%	−34.2%	−103.7%	+2.8%	−48.1%	−33.3%
Nonsterling EPU	A	$1,815	$437	$1,378	$469	$468	$250	$81	$110
	B			2,258	479	953	364	197	265
	C			−880	−10	−485	−114	−116	−155
	D			−63.9%	−2.1%	−103.6%	−45.6%	−143.2%	−140.9%

(continued on next page)

TABLE 7 (continued)
(dollars in millions)

RECEIVING AREA		PAYING AREA: *All areas including unallocated*	*Unallocated*	*All areas allocated*	*Sterling area*	*Nonsterling EPU*	*United States and Canada*	*Latin America*	*Other*
United States and Canada	A	$1,721		$1,721	$406	$583	$149	$376	$207
	B			1,477	355[a]	509	180	215	218
	C			+244	+51	+74	−31	+161	−11
	D			+14.2%	+12.6%	+12.7%	−20.8%	+42.8%	−5.3%
Latin America	A	$112	$80	$32	$2	$2	$16	$12	
	B			541[c]	48	126	257	64	$46
	C			−509	−46	−124	−241	−52	−46
	D			−1,590.6%	−2,300.0%	−6,200.0%	−150.6%	−433.3%	∞
Other	A	$237	$41	$196	$68	$60	$28	$7	$33
	B			633	242	164	97	46	84
	C			−437	−174	−104	−69	−39	−51
	D			−223.0%	−255.8%	−173.3%	−246.4%	−557.1%	−154.5%

[a] A = seller's record of receipts; B = buyer's record of payments; C = A − B; D = C ÷ A.
[b] United Kingdom data include United States, Canada, dollar Latin America, Liberia, and Philippines.
[c] United Kingdom data include only nondollar Latin America.

sels.) Even so, the figures agree to within 15 per cent of the smallest figure.

The poorest agreement on figures (to mention instances in which payments were double receipts) characterizes: sterling area receipts from nonsterling EPU countries (this could reflect the absence of tanker freights from the United Kingdom account); nonsterling EPU receipts from Latin America and Other (sizable amounts of Belgian, Dutch, and Norwegian receipts are unallocated); and, as mentioned, receipts by Latin America and Other from any source.

Even though interregional accounts disagree considerably, net balances between areas could agree if divergence was "offsetting." However, if only figures allocated by area are considered, it is seen from Table 8 that in most instances the divergence in the receipts of the seller tends to augment rather than offset the divergence in the net balance between the areas.[65] The result is that only in half of the cases do reports from both sides indicate agreement on the direction of payment. All but one of these involves the United States and Canada. The instances of disagreement on direction appear largely to reflect nonreporting of receipts by the United Kingdom (for oil freights); by Belgium, Norway, and the Netherlands; and by Panamanian, Honduran, and Liberian fleets.

Only in one instance, the net freight balance between nonsterling EPU countries and the United States and Canada, is there close agreement on the net balance (18 per cent of smallest net). This results from offsetting divergence. The next best agreement is on the net balance between the sterling area and the United States and Canada. Augmenting divergence results in a 54 per cent difference in the (smallest) net in this case. In spite of the spotty record it is gratifying to observe in Table 8 that the direction of the net balance with the United States and Canada is agreed by every partner area, notably in showing a net payment to the United States and Canada. This pattern is also indicated by the payments side along with a single exception, transactions with Latin America. However, payments by Brazil are not distributed by area and hence clearly understate the payments to the United States. In diagraming the likely pattern of transportation net balances (see below), we can have some confidence that the direction given by the United States and Canada is correct.

[65] In 8 out of 10 cases, C_1 and C_2 have the same sign and thus are augmenting.

TABLE 8

Net Balances of Selling Areas in Trial-Run Matrix of Transportation and Marine Insurance Transactions, 1951

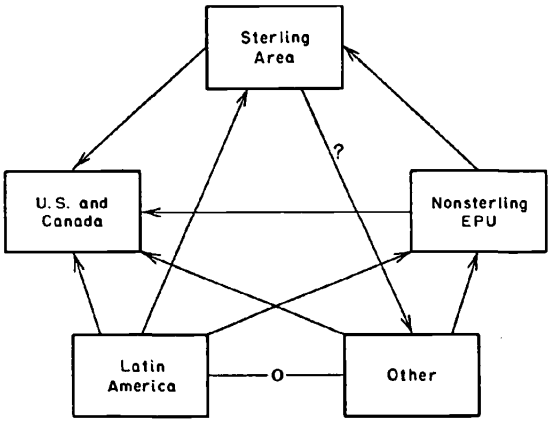
(dollars in millions)

		All areas including unallocated	*Unallocated*	*All areas allocated*	*Sterling area*	*Non-sterling EPU*	*United States and Canada*	*Latin America*	*Other*
All areas including unallocated	N[a]	−2,567							
Unallocated	N	−421	−421						
All areas allocated	N	−2,146		−2,146	−328	−884	−787	−11	−136
Sterling area	N	−714	−72	−642	−227	−218	−108	+6	−95
	N'					+61	−166	+78	+128
	$N - N'$					−279	+58	−72	−223
	C_1					−269	+7	−26	−49
	C_2					−10	+51	−46	−174
Nonsterling EPU	N	−976	−72	−904	−61	−485	−259	−45	−54
	N'						−219	+195	+205
	$N - N'$						−40	−240	−259
	C_1						−114	−116	−155
	C_2						+74	−124	−104
United States and Canada	N	+583		+583	+166	+219	−31	+119	+110
	N'							+199	+190
	$N - N'$							−80	−80
	C_1							+161	−11
	C_2							−241	−69
Latin America	N	−859	−289	−570	−78	−195	−199	−52	−46
	N'								+39
	$N - N'$								−85
	C_1								−46
	C_2								−39
Other	N	−601	+12	−613	−128	−205	−190	−39	−51

[a] N = net balance of exports over imports; N' = net balance of selling area according to partner records; C_1, C_2 = divergences entered from Table 7.

A net payment to sterling area by Latin America is indicated on both sides in Table 8. The sterling area probably understates the surplus owing to the exclusion of transactions of the British tanker fleet and inclusion of payments by sterling countries to the refugee fleets not reported on the Latin American side. We can draw that arrow with some confidence, too. The direction of the five other net balances in Table 8 is ambiguous. Perhaps the best indication of their direction is given by payments figures (lines B in Table 7). These indicate net payments by Latin America and Other to nonsterling EPU, by the latter to the sterling area, by the sterling area to other, and zero net between Latin America and Other. These are shown in the diagram. However, the net payments of the sterling area to Other seem doubtful (owing to the omission of British tanker transactions and the possibility that sterling area payments of freight on raw materials from these areas may actually have been paid to areas operating sizable fleets).

The pattern of net transport transactions in 1951 thus indicated is given in the following diagram (arrows show direction of payment).



Concluding Observations on Reporting and Special Studies

The view has been advanced in this paper that the analysis of international trade and financial problems could more fruitfully be carried on within the framework of a system of accounts fitted together into a matrix of transactions among world areas. The

broad outlines of such a system of accounts and a world matrix have been sketched and some difficulties of definition and construction noted. We have looked at some preliminary results of an attempt to compile a trial-run matrix based on existing country payments statements. Results thus far apply only to merchandise and transportation. Where do we come out?

For one thing, we are encouraged by the results so far to continue the effort. The "two-valued" audit feature of the approach, particularly, is valuable in providing a means of assessing results.

Numerous deficiencies in reporting have turned up to complicate the trial runs. Payments accounts are not available for all countries, the principal omissions, among free world countries, being overseas territories of Western Europe and petroleum sources. Outside North America and Western Europe the number of countries which publish regionally elaborated accounts is small, and the area breakdowns used by countries which do report regionally can be fitted together into a matrix only with difficulty and then not in the most desirable form. The United Kingdom treatment of the "dollar area" is particularly troublesome in this regard. Countries do not uniformly comply with the definitions of items in the IMF *Manual*, especially with respect to the f.o.b. valuation of imports and the coverage of the transport lines.

The difficulty introduced by lack of information on petroleum transactions around the world and inconsistencies in accounting for them is perhaps the leading deficiency in existing accounts. A special study of that sector of the world's payments matrix is evidently needed, and one is under way at the National Bureau as part of the study of the structure of world trade and payments. For successful integration in the world matrix, however, the analysis of the petroleum account must provide a basis for adjusting country payments accounts to a consistent accounting treatment. Such an adjustment requires that we identify and understand the treatment of petroleum transactions in existing accounts in order to secure the basis for making adjustments. As petroleum transactions are not now uniformly distinguished in country payments accounts, this will require the active cooperation of governments and international agencies. At a minimum, countries might be asked to distinguish petroleum transactions, line by line, in their payments accounts in order that these may be considered separately from transactions for other goods and services and capital flows.

As part of that effort, and before adjustments can be designed, it will be necessary to secure agreement on the treatment to be accorded petroleum transactions in all country payments accounts, or at least in a world-wide matrix including country payments accounts.

A second major deficiency of existing records involves the treatment of shipping services. Most countries do distinguish this item, so that the problem of securing additional reporting is much less serious. Again, some agreement needs to be secured on the accounting treatment of services by certain flag vessels, but given that agreement on principle, the deficiencies might be remedied by securing relatively accurate and comprehensive estimates of the world's freight and marine insurance bill by country of payment and its division among countries operating fleets. It should be possible to approximate these payments flows from the known flow of goods from origin to destination and the movement of ships of different registry and operation. The National Bureau also has under way a study of this special account line.

If these two studies can yield the answers required, the matrixes for merchandise and transportation should be considerably improved. In addition, it seems likely that reporting practices need to be improved with respect to the handling of merchanting transactions, i.e. transactions by a resident of one country involving a purchase in a second country and sale to a third. As yet we have learned little about the pattern of such transactions in 1951, but I expect that once the pattern is better known it should be possible to devise accounting practices and adjustments to existing accounts to reduce the divergences in the merchandise trial run. Such a study of merchanting transactions is under way at the National Bureau as part of our analysis of the merchandise account. This analysis also will seek to unravel the differences between customs and payments records in order to correct for differences in treatment of the timing of transactions and coverage in accounts.

These are the directions our work is taking as a result of the preliminary results so far. In addition, I anticipate that the trial-run matrix for gold will prove inadequate in accounting for new gold production and the flow of gold around the world. This subject will call for some special study to provide a basis for adjustments.

I will not try to guess the special problems and studies which trial runs on other account lines will suggest. However, with the active cooperation of the Balance of Payments Division of the

Monetary Fund, we at the National Bureau are proceeding with other accounts for 1951 in an effort to diagnose additional problems and points for study.[66]

Appendix

A Note on the Structure of Trading Relationships between World Areas in 1951

Political arrangements, financial and commercial ties, and economic policies of governments channel and condition the division of labor among countries. The structure of payments relationships of the world reflects them. To examine this structure I have divided the world into fifteen areas folding into broader groups. The division respects (1) the political ties relating dependency to metropole, British Commonwealth members to each other, and Soviet-dominated countries to the bloc; (2) the financial arrangements and commercial preferences facilitating intercourse among members of the sterling area and EPU; and (3) the geographic setting of some countries. It is to be judged less on its *a priori* merit than in the light of the relationships to be observed among countries thus arranged.

THE REGIONAL FRAMEWORK

A list of the fifteen areas follows (a special two-digit code number is given each area).

Regional Code	*Area Designation (abbrev.)*	*Remarks*
00	*Sterling area* (SA)	As defined by UK
01	United Kingdom (UK)	
02	Ireland and Iceland (O£E)	
03+08	Sterling dependencies (£OT's)	08 designates oil sources
04+09	Other sterling (O£)	09 designates oil sources
10	*Nonsterling EPU*	Excludes Indonesia
11	Continental (Cont.)	Also referred to as Continental OEEC countries
12+19	Dependencies (Non-£ OT's)	19 designates oil sources
20	United States (U.S.)	
30	Canada (Can.)	

[66] I reported further progress in constructing a world matrix for 1951 to a Conference on International Economics, April 13, 1956 in a paper entitled "Transactions between World Areas in 1951." A paper on the "World Transportation Account, 1950-1953" also was presented to the Conference by Herman F. Karreman (both papers in mimeograph available at the National Bureau of Economic Research).

40	*Latin American republics* (L.A.)	
41+49	Dollar countries ($ L.A.)	49 designates Venezuela
42	Nondollar countries (Non-$ L.A.)	As defined by UK
50	*Soviet bloc countries* (SB)	
51	In Europe (SB/E)	Includes USSR
52	In Asia (SB/A)	In 1951, Red China
60	Other Europe (OE)	Finland, Yugoslavia, and Spain and possessions
70	Middle East and Africa (ME)	
80	Far East (FE)	

Data are available showing the distribution of trade of 81 countries of the free world among these 15 areas in 1951. The 81 countries fall into the regions of the world designated above as follows:

Region	*Number of Countries*
00 *Sterling area*	23
01+02 European	3
03+08 Dependencies	11
04+09 Other	9
10 *Nonsterling EPU*	24
11 Continental	13
12 Dependencies	11
20+30+40 *Western Hemisphere*	21
20+30 U.S. and Canada	2
40 Latin American republics	19
50 *Soviet bloc*	...
60+70+80 *Other Eastern Hemisphere*	13
60 Other Europe	3
70 Middle East	7
80 Far East	3
Total	81

SOURCE OF DATA: OMISSIONS

With certain exceptions the analysis employs the record of trade in 1951 between countries given in the *Direction of International Trade* (*DIT*). The exceptions are:

1. Iraq exports (taken from IMF balance of payments data)
2. Iranian and Venezuelan exports ("derived" from partner country imports)
3. Bolivian imports (based on exports of partners)
4. Argentine trade ("derived" from partners)

Exports of the 81 countries, according to the *DIT* record as supplemented, amounted to $72.6 billion in 1951. This is close to 95 per cent of the free world's total.

The list of free world exports in *International Financial Statistics* (*IFS*) for 1951 includes $3.7 billion of exports by countries other than the 81.[1] The *DIT* trade record particularly fails to cover exports of Western European dependencies, Middle East countries (notably oil producers), and Far Eastern countries. The following breakdown of exports by countries listed in the *IFS* record and not in the (augmented) *DIT* record shows by area, in millions of dollars, the deficiency in coverage.

Sterling area dependencies:	
Specified	1,094
Unspecified	183
Nonsterling dependencies:	
Specified	799
Unspecified	135
Latin America (Paraguay)	38
Other Europe and possessions—specified	125
Middle East—specified	637
Far East—specified	475
Other unspecified	229
Total	3,715
Specified	3,168
Unspecified	547

The conclusions of this paper based on the pattern of trading relationships observed for 1951 are tentative. A similar analysis of the record for other recent years may prompt some modifications in detail, but the record for one year probably does not misrepresent the broad pattern. The general character of the conclusions is not likely to be affected by consideration of four or five recent years.[2]

[1] Published by the International Monetary Fund. The *IFS* total of exports for the 81 countries comes to $73.2 billion, exceeding the *DIT* total (as augmented), because of such adjustments as the inclusion of re-exports of certain countries and internal freight on Canadian and South African exports and the exclusion of gold exports. All free world exports in *IFS* total $76.9 billion. The *IFS* record includes more free countries than the UN "Matrix" (given in its *Monthly Bulletin of Statistics* and reproduced in the first *DIT* Annual Volume). The UN Matrix includes free world exports totaling $74.7 billion in 1951 and thus covers some exports not in the *DIT*, although without identifying the added countries of origin.

[2] A reconsideration of the analysis in light of other years was reported on to the Subcommittee on Foreign Economic Policy of the Joint Committee on

PRINCIPAL TRADING RELATIONSHIPS

Table A-1 shows countries buying or selling 30 per cent or more of imports or exports (a) with the United States, (b) with Continental EPU countries, (c) with the sterling area, and (d) with some other area. The 30 per cent "cut-off" employed in listing countries in Table A-1 has been devised after some experimentation. It reveals that 63 out of 81 countries have a "principal" trading interest either with the United States (16 countries), or with Continental EPU countries (25 countries), or with the sterling area (22 countries).

Among the remaining 18 countries, France sent 37.0 per cent of its exports to nonsterling overseas territories (almost entirely its own); with the whole nonsterling EPU area it traded 65.0 per cent of its exports and 44.6 per cent of its imports. The United States bought 30.5 per cent of its imports from Latin America, and with the Western Hemisphere as a whole it traded 41.2 per cent of its exports and 51.2 per cent of imports. This leaves 16 countries in the ambiguous position of trading 30 per cent or more of exports or imports with more than one of the 15 areas. The 16 ambiguous cases fall into six categories as follows:

Countries Trading 30 Per Cent or More of Exports or Imports with Two World Areas, 1951
(*parenthesis gives area judged of principal interest*)

BOTH WITH THE UNITED STATES AND:

Continental EPU	*Sterling area*	*A fourth area*
Yugoslavia (Cont.)	Bolivia (U.S.)	Venezuela (U.S.)
Haiti (U.S.)	Dominican Republic (U.S.)	
	Japan (SA)	
	Israel (U.S.)	
	Gold Coast (SA)	

BOTH WITH CONT. EPU AND:

Sterling area	*A fourth area*
Cyprus (SA)	Syria (Cont.)
Denmark (Cont.)	Lebanon (Cont.)
Finland (Cont.)	
Union of South Africa (SA)	

BOTH WITH STERLING AREA AND:

A fourth area
Malaya-Singapore (SA)
Hong Kong (SA)

the Economic Report in November 1955. It was found that Uruguayan and Egyptian trade had shifted after 1951 toward the Continental OEEC group and away from the United States and sterling area, respectively. Consequently, in the text these countries have been counted among countries principally interested in the Continental OEEC area although on the basis of 1951 alone they exhibit a different orientation.

No case occurred in 1951 among the 81 of a country trading 30 per cent or more of exports or imports with more than two areas. The 16 countries can be identified with one or another of the two areas in question without much difficulty. Yugoslavia's trade with Continental EPU countries is much heavier than with the United States. The Continent is clearly its trading area of principal interest. The same kind of evidence permits identifying most of the other cases with one of the three principal economic centers.

Designations of principal interest for Venezuela, Israel, Lebanon, Syria, Hong Kong, Malaya, and Japan require further comment. Venezuela's heavy exports to nonsterling overseas territories consist of petroleum sent to the Netherlands West Indies for refining. The petroleum interests are partly British and partly American, and the duality of interest seen in its export trade is paralleled by a duality of financial interests. But the United States is dominantly a supplier of its imports, and so I consider Venezuela principally interested in the United States. Israel drew most of its financial help from the United States in 1951 and thus is identified principally with the United States. Lebanon is the entrepôt for Syria, which accounts for its heavy trade with the Middle East. Apart from this trade, its interest is with the Continent and so I count it. Hong Kong and Malay are British entrepôt centers, in the one case for China and in the other for Indonesia and the Far East. Their financial interests and commercial ties lie with the United Kingdom. Finally, Japan poses a difficulty. The proportion of its trade with the sterling area was somewhat heavier than with the United States, but a large part of its current earnings accrued in dollars from invisible transactions associated with the occupation and the Korean War. It had a heavy stake in trade both with the United States and with the sterling area. Longer-run considerations suggest that the sterling area will tend to become more plainly its area of principal interest.

By this line of reasoning it is possible to identify each of 81 countries of the world, except the United States and France, as having a principal interest in transactions with one of three areas —the United States, Continental EPU countries, or the sterling area; and of the two exceptional cases France has a principal interest in trade with the whole nonsterling EPU area, while the U.S. has a principal interest in trade with the Western Hemisphere.

Countries in the world not included among the 81 are mostly dependencies of Western Europe. An association of the larger

TABLE A-1

Countries Trading 30 Per Cent or More of Exports or Imports (a) with the United States, (b) with Continental EPU, (c) with the Sterling Area, (d) with Other Area, 1951

(arrayed by percentage of exports or imports—whichever is larger)

(a) PER CENT OF TRADE WITH U.S.

Codes Country	Codes Area	Name	Per cent of E	Per cent of I
215	41	Guatemala	87.7	67.2
214	41	El Salvador	86.4	63.7
224	41	Panama Rep.	81.8	68.7
131	41	Mexico	70.5	81.4
315	41	Colombia	80.5	65.2
212	41	Cuba	54.5	77.0
211	41	Costa Rica	75.3	66.0
222	41	Honduras	72.8	74.1
221	41	Haiti	59.6	72.6
223	41	Nicaragua	55.5	72.3
861	81	Philippines	63.1	71.1
126	30	Canada	59.1	69.0
325	49	*Venezuela	22.3	67.5
312	41	Bolivia	65.6	53.4
321	41	Ecuador	60.2	64.8
213	41	Domin. Rep.	43.8	64.8
323	42	Peru	23.3	56.1
314	42	Chile	51.3	55.1
313	42	Brazil	49.0	41.8
324	42	Uruguay	43.5	37.5
633	60	Yugoslavia	14.6	37.5
841	81	Japan	14.0	34.5
730	71	Israel	22.9	31.9
936	03	Gold Coast	31.2	5.4

(b) PER CENT OF TRADE WITH CONTINENTAL EPU

Codes Country	Codes Area	Name	Per cent of E	Per cent of I
938	12	Fr. Cameroons	85.9	78.2
958	12	Fr. Eq. Africa	81.9	70.9
978	12	Tunisia	62.9	81.8
838	12	Indochina	46.5	80.6
948	12	Madagascar	70.1	79.8
908	12	Algeria	76.4	78.7
928	12	Fr. W. Africa	75.5	76.0
918	12	Fr. Morocco	64.1	69.0
911	12	Angola	64.1	63.7
951	12	Mozambique	62.6	49.7
912	12	Belg. Congo, Ru. Ur.	55.8	53.6
633	60	Yugoslavia	55.8	38.5
430	11	W. Germany	55.8	37.8
511	11	Greece	53.7	41.4
421	11	Austria	52.3	46.7
422	11	Belg.-Lux.	50.4	39.6
463	11	Switzerland	44.7	50.2
515	11	Turkey	48.9	49.9
716	03	Cyprus	49.7	25.2
459	11	Netherlands	47.3	44.4
423	11	Denmark	39.6	46.3
624	60	Finland	32.1	45.5
462	11	Sweden	43.3	41.9
461	11	Norway	43.1	40.9
753	71	*Syria	27.1	37.7
512	11	Italy	37.5	27.0
514	60	Spain	34.8	33.0
447	02	Iceland	34.8	27.9
513	11	Portugal	23.0	33.4
906	04	U. So. Africa	33.2	16.2
311	42	Argentina	32.6	33.0
221	41	Haiti	31.6	10.2
752	71	*Lebanon	13.5	30.3

(continued on next page)

TABLE A-1 (continued)

(c) PER CENT OF TRADE WITH £ AREA

Codes Country	Area	Name	Per cent of E	I
457	02	Ireland	85.3	56.7
976	04	So. Rhodesia	82.9	81.2
966	03	No. Rhodesia	76.7	82.3
711	71	A. E. Sudan	79.8	58.2
956	03	Nigeria	77.6	60.6
876	04	New Zealand	61.4	75.4
727	09	Iraq	72.2	45.9
816	04	Ceylon	51.2	69.9
236	03	Jamaica	66.7	51.2
807	04	Burma	63.8	65.1
916	03	Uganda	63.6	64.8
926	03	Tanganyika	59.7	64.7
946	03	Kenya	47.3	63.0
866	04	Australia	42.5	61.6
936	03	Gold Coast	45.0	59.6
716	03	Cyprus	23.0	56.3
836	04	India	53.0	41.9
723	79	Iran	52.2	36.5
416	01	U.K.	48.8	35.8
906	04	U. So. Africa	47.7	47.9
213	41	Domin. Rep.	46.2	6.5
841	81	Japan	45.2	22.4
839	82	Indonesia	44.6	28.4
246	08	Trinidad & Tobago	39.5	44.0
856	04	Pakistan	42.9	41.1
722	71	Ethiopia	42.5	41.6
423	11	Denmark	41.4	27.2
721	71	Egypt	37.3	30.5
846	03	*Malaya, Sing.	36.8	35.8
730	71	Israel	35.1	17.0
624	60	Finland	32.8	19.8
312	41	Bolivia	32.0	6.7
826	03	*Hong Kong	31.5	31.9

(d) PER CENT OF TRADE WITH OTHER AREA

Codes Country	Area	Name	Per cent of E	I
		with: 12 + 19—Nonsterling overseas territories		
325	49	*Venezuela	44.4	0.5
429	11	France	35.9	20.2
		with: 40—Latin American republics		
110	20	U.S.	24.0	30.5
		with: 52—Soviet bloc Asia		
826	03	*Hong Kong	39.3	19.0
		with: 70—Middle East		
752	71	*Lebanon	46.4	22.4
753	71	*Syria	39.9	15.3
		with: 80—Far East		
846	03	*Malaya	12.7	43.3

Note: Countries are underscored once if in column a and b or c, and twice if in b and c. They are starred if in d and one other column.

overseas territories in trade either with their own metropole, in the case of the continental overseas territories, or with the sterling area is evident for the dependencies for which figures are available. This association probably indicates the principal interest of those for which data are not given except in the case of the Netherlands Antilles, which mainly engages in refining petroleum from Venezuela and which I list, along with Venezuela and for the same reasons, as principally interested in the United States. Other notable omissions from the 81 country list are: Spanish possessions (principal interest in Spain), Middle East petroleum sources (financially linked to the United States or United Kingdom—Saudi Arabia to the United States and British Arabian Peninsular States to the United Kingdom), Formosa and South Korea (principal interest with the United States market), and Thailand. Thai exports are sent largely to sterling area countries, and I consider it principally interested in the sterling area.

SECONDARY TRADING RELATIONSHIPS

Relationships with one of the three major markets are not sufficiently pronounced to be overwhelming for most countries. Countries generally have a "principal" concern in trading with one of the three main markets, but they also have important secondary trading interests. A "secondary" trading interest can be said to exist when a country sends 10 per cent of its exports or draws 10 per cent of its imports from an area. Countries generally have such a secondary interest with one or both of the other two major market areas. Secondary interests of the 81 countries were as follows in 1951:

		NUMBER CONCERNED SECONDARILY WITH:				
					Other	
COUNTRIES PRIMARILY INTERESTED IN:	TOTAL NUMBER	*U.S.*	*Nonsterling EPU*	*SA*	*Intra-group*	*Other*
United States	21		18	9	12	
Nonsterling EPU	31	23		28	3	6
Sterling area	28	12	25		4	14
Subtotal (excl. U.S.)	80	35	43	37	19	20
United States	1		1	1		1
Total	81	35	44	38	19	21

Thus, out of 59 countries concerned with the sterling or nonsterling EPU areas as a primary market, 35 were also concerned

with the United States as a secondary market. Of 50 countries not primarily concerned with the nonsterling EPU area, 44 found it a market of secondary importance (in all but a few cases concerned with the Continent). Of 53 countries not primarily concerned with the sterling area as a market, 38 bought or sold at least 10 per cent of their purchases or sales in that area.

The table above shows that in addition to interests in three major market areas, countries frequently have a secondary trade with countries in the same group. Although countries outside the EPU area are almost all linked through primary interest with one of the three large market areas, in the case of 19 such countries trade with other countries in the same group was at least of secondary importance. Twelve Latin American republics traded 10 per cent or more of exports or imports with other Latin American republics; three Far Eastern countries—Japan, the Philippines, and Indonesia—traded to that extent with other Far Eastern countries; and among Middle East countries, four (Anglo-Egyptian Sudan, Ethiopia, Lebanon, and Syria) traded to that extent with other Middle East countries.

In addition, a number of countries have heavy trade with nearby countries, although their trading partners in these cases fall into another of the 15 groups into which the world has been divided. Finland, Austria, and Iran had a secondary interest in Soviet Europe, and Hong Kong with Soviet China. Italy and India secured more than 10 per cent of their imports from, and Cyprus sold more than 10 per cent of its exports to, the Middle East. Burma, Malaya, Hong Kong, Pakistan, Uganda, and Tanganyika in the sterling area traded substantially with other countries in the Far East, Jamaica traded heavily with Canada, and Trinidad with dollar and nondollar Latin America. These trades with nearby countries account for 16 of the 21 instances noted in the table above of secondary trading across group lines. The remaining cases include the secondary interest of Germany, Sweden, Switzerland and Japan in Latin America and the United States interest in Canada and Latin America.

In sum, the pattern of trading interests around the world consists of a set of primary interests in one of the three major market areas—the United States, the Continent, and the sterling area. These interests are supplemented usually by a set of secondary interests in one or both the other two major areas and frequently by a secondary interest in trade with countries in the same group

or with nearby countries in another group. In addition, Japan and a number of large industrial countries in Western Europe have a secondary interest in Latin America.

COMMENT

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The project of the National Bureau for elaborating a world-wide matrix of international transactions is an extremely important basic research effort. As I understand it, Herbert B. Woolley's paper is in the nature of a progress report on this project. We cannot now definitively answer the question of how useful the research effort will ultimately be for the formulation of policy both public and private. I feel sure that important results in these fields will be obtained, but I do not think it is useful to speculate about them at this time. I will only recall from my own experience that in the very recent past in the field of public policy problems have arisen for the solution of which a solidly based world-wide transactions matrix would have been enormously useful.

Before proceeding further, I want to make it clear that Woolley's paper is concerned with a range of technical issues concerning which a nonexpert like myself can only venture suggestions and raise questions of a highly tentative character.

"*The Need for a World-Wide View of International Problems.*" My first question is concerned with the introduction to, or perhaps more properly, the basic philosophy expressed in Woolley's paper. If I understand that philosophy correctly, it is to the general effect that the nationalization of economic policy has historically been and is today the "privilege of small countries." It is my feeling that this judgment runs counter both to history and to the prospects that face the world today. It seems to me that it is only the large and relatively self-sufficient nation which has in the past been able to pursue a nationalistic policy and which might be able to do so in the future. (A useful distinction could be drawn between pursuit of a policy of political neutrality and one of economic nationalism. This distinction does not appear in Woolley's paper. The small nation, Switzerland for example, which has no desire to make its influence felt in world affairs may successfully pursue a course of political neutrality, but this is a rather different thing or at least distinguishable from a highly nationalistic economic policy.)

In this matter of whether it is the large or the small country which today can nationalize its economic policies, a recently expressed judgment of Jacob Viner is relevant:

> No country except the United States has attained a high level of per capita income which has not maintained a high ratio of imports to total national product, and no country, except possibly Russia, can in this respect make the United States its model without courting perpetual poverty. The high degree of self-sufficiency of the United States was due in part to a deliberate national policy of high tariff protection. But it was the continental character of the United States, its richness and variety of natural resources and the great obstacle which internal transportation costs presented to international trade, as well as the technical skills of its people, which enabled the Americans to dispense with foreign products without having to pay a heavy cost in terms of either deprivation of products of any important kind or of extreme expensiveness of domestic substitutes, and which thus enabled the United States to achieve economic prosperity despite its restrictive commercial policy and its low ratio of foreign to domestic trade.[1]

Some Problems of Concepts and Definitions. Woolley states that the most difficult problems he has thus far encountered in his work have been the international petroleum account and the international shipping account. These two problems are, in part at least, interlocked, and it may be that they are hopelessly interlocked. In connection with the oil account, the analyst may have to construct two new sovereign states—Dollar Oil and Sterling Oil.

In a more serious vein, the so-called "toll account" approach alluded to by Woolley may have possibilities. At least it deserves the most careful consideration, which I am sure it will receive. I suggest this only because of a possible analogy here with certain problems inherent in Norway's balance of payments. I am convinced that without the incorporation of the toll concept in the Norwegian accounts, Norway's balance of payments would be a hopeless shambles. Whether the similar chaos now characteristic of the international oil account could be reduced to some order by means of the toll approach I do not know.

Statistically, the international shipping account could conceivably be handled on a named-vessel, single-voyage basis. For certain purposes—during wartime for example—this method was not only desirable, it was absolutely essential. But surely for present purposes such an enormous statistical effort would not be worth the investment of resources that would be required.

[1] Jacob Viner, *International Trade and Economic Development*, Free Press, 1952, p. 146.

I can suggest no approach to belie Woolley's tentative conclusion that both these accounts may ultimately have to be handled on the basis of a somewhat arbitrary, and possibly in some degree a fictionalized, manner. But it may ultimately turn out that the merchandise account (excluding petroleum) is both more important and more difficult than the problems involved in the handling of either oil or shipping. Let me give several illustrations.

1. One possible complexity in the merchandise account is the withdrawal from stocks. Woolley mentions surplus disposal as raising an issue between sales from stocks and sales from current output, but I rather suspect that the problem here involved is of somewhat larger dimensions than he implies. One indication of its dimensions is the present and growing size of the stocks held by Secretary Benson's Commodity Credit Corporation. Still another is our program of foreign military end-item aid. Briefly, this equipment comes from three sources: (a) items declared surplus by our military, (b) items approved for withdrawal from the United States war reserve by our military, and (c) items contracted for from new production. Only deliveries from the last of these categories result in exports from current United States production.

2. Another complexity is the customs clearance problem mentioned by Woolley: How can one work out satisfactory payments relationships from customs data? To make the problem specific, the case of Turkish tobacco sales to the United States may be cited. This tobacco usually moves from Turkey into bonded warehouses in the United States. Customs data reflect clearance of the tobacco from such warehouses. There is probably no coincidence between such clearances and payments made to Turkey by United States purchasers.

3. The problem discussed immediately above raises generally the issue of the relationship between payments and the movement of goods. For example, in the case of a commodity like wool handled on an auction basis, a serious problem is posed. A similar problem must undoubtedly exist with items like cotton, that are traded on a futures market. The sale of heavy capital equipment and the concept of substantial delivery associated with progress payments also raise serious difficulties in working from customs data.

Someone more expert than I could undoubtedly add to this list of conceptual difficulties to the unraveling of the merchandise account.

Some Special Problems of the United States Account. Walter S. Salant, in the following paper, covers most of the issues I had intended to raise, and these comments therefore will be no more than a footnote to his remarks. I believe that in any analysis or research effort involving the field covered by Woolley's paper, one special feature of the United States account is always deserving of emphasis: the very substantial volume of extraordinary expenditures abroad. I do not here refer to aid of the Marshall Plan type which could be readily folded into the matrix. Rather I have in mind such programs as military contracts let abroad and the purchase abroad of materials for the United States stockpile. Both are currently large but will soon begin to decline, if, in fact, they have not already done so. And both, in some part because of security considerations, do not fold readily into an international matrix.

Suggestions for Further Research. It is my understanding that this project will ultimately result in the production of a time series forward and backward from 1951, and that it is the intention to work up material both on the volume of trade and the terms of trade. I believe that this further work on the time series and on the volume of trade is of enormous importance. It is desirable to move into these fields even though such an effort may be possible only at the expense of a less exhaustive treatment of the petroleum and shipping accounts.

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The field of international trade and financial statistics in which Woolley has been working was not so long ago an almost unexplored statistical jungle. Much excellent work has already been done by the international agencies, especially the International Monetary Fund, to explore and bring order into it. Woolley is carrying these efforts further, apparently with good effect. In his present paper he takes a respite from these labors to report both on the pitfalls he finds in the remaining jungle and on the kind of order which he proposes to bring to it. I have not lived in this jungle or explored it intensively; I have been a mere dweller in territory adjacent to it, living on statistical ground which others have cleared and standing ready to move on to new ground only after Woolley and others clear it. I cannot, therefore, tell him of any paths better than those he has chosen or warn him of any

pitfalls that he does not know better than I. Aside from cheering him on in his efforts, all I can do is comment on some of the features of the landscaping he proposes.

1. Let me comment first on the geographical dimension of the matrix and especially the grouping of the national economies. Woolley rightly observes that the grouping must represent something in the nature of a working hypothesis to be tested and that it must reflect some judgment as to the character and importance of international economic relationships. I think there would be little point in extensive discussion of his proposed three-area grouping (United States, Western Europe, and all other). There are many problems to be solved and no single three-area matrix will best serve all purposes. Subject to that comment, I see no reason for preferring any other three-area grouping to his, if a single one must be chosen. But my comment implies a strong opinion that data should be presented in a way that does not force consumers of the statistics to use any single grouping.

The more important question is whether Woolley's more elaborate 13-area grouping of national economies gives us all the information we are likely to want.[1] If it does, of course, we can construct whatever simpler groupings best suit our varied purposes. On this question, I notice that Japan is included in a group designated as "independent third areas associated with sterling area as principal market" with Indonesia, Thailand, and "other" Middle Eastern countries (which appears to mean Anglo-Egyptian Sudan, Ethiopia, and Iran). Japan is, functionally if not geographically, in some respects like some of the countries of Western Europe. It is industrialized, heavily dependent on imports for food and raw materials, and has a serious payments problem. For some purposes (e.g. analysis of the dollar problem, examination of the role of services purchased by the United States government in international payments), one might wish to include it in a simpler grouping with Western Europe. For other purposes (e.g. as a competitor in exporting manufactured goods), it would be desirable to compare its position with that of Western Europe and the United States. I suggest, therefore, that Japan is important enough and sufficiently different from all other countries in one respect or another (considering both functional and locational

[1] This grouping appears to be a revision of the 15-area grouping referred to in his Appendix, based on an examination of the trading relationships with principal markets.

aspects) to be treated as a separate category so that it may be grouped in whatever way the user of the statistics finds appropriate to his particular problem. This suggestion seems to be justified on the basis of Woolley's choice of the three main international trade and financial problems for which an international payments matrix is needed. These were, you will recall, the postwar balance of payments difficulties of Western Europe, the effect of industrialization of underdeveloped countries on the structure of world trade, and the impact of changing business conditions in the United States (or Western Europe) on the world economy.

On this choice of the main problems I have no comment that leads me to suggest any change, but I should like to make a general comment that might lead Woolley to re-weight some of the pros and cons of the many alternative national groupings he must have considered. We, in the countries with substantial funds and facilities for statistical research, should, I believe, plan the collection and arrangement of international trade data with a view not only to our own needs but also to those of analysts with different points of view. This requires a conscious effort, because it is not natural to think of problems with which one has not been concerned. I say this because I have the suspicion that there *may* be a trace of Western, industrial-country bias in the choice of problems on which the national grouping is designed to throw light. For example, the groupings make it possible to examine aspects of the competition between the United States and Western Europe in buying from common sources of supply and in selling in common markets. Will they permit us to examine equally the competition between significant groups of underdeveloped countries in buying goods or in obtaining capital from industrialized countries? Will they permit us to examine trading relations between poor and rich countries? (I note that Australia and New Zealand are grouped with India and Pakistan.) Let me make it clear that, for the 13-area grouping with which I am here concerned, I have no clear view that the answer to these and other such questions is "no." Nor am I sure how much a negative answer should influence the grouping, for it is obvious that any manageable grouping will have to sacrifice something. My purpose in mentioning these questions is not to imply answers but only to be sure that the questions are asked. (I note that Woolley has asked such a question in connection with his discussion of how to treat petroleum transactions.) The only positive suggestion to which this point leads me

is that it might be desirable to submit the grouping to a few economists from nonindustrialized countries to see how it strikes them.

I feel somewhat embarrassed to have offered a suggestion about a matter which Woolley appears to have settled for himself and to have little to contribute to the vexed question which he has apparently not yet decided: How treat petroleum transactions? This appears to be one of the thickest parts of the jungle. Without being in the slightest degree sure that I understand all the implications of the "production line" versus the "radial" approaches, I believe that the radial approach fits the concepts of national accounting better. As I understand it, by this method Venezuelan crude oil owned by a United States company and shipped to the Netherlands West Indies for refining and sent from there to a consuming country would not appear as an export of Venezuela nor an import of the Netherlands West Indies, and the refined product would not appear as an export of the Netherlands West Indies. Venezuelan and Netherlands West Indian transactions would consist not of the petroleum movements but of the export to the United States of services performed by Venezuelan and Netherlands West Indian employees of the oil companies. Correspondingly, these would be imports of services for the United States. The shipment of refined oil from the Netherlands West Indies would be an export of the United States unless it were shipped to the United States, in which case it would not be an international transaction, even though it would be shipped into the United States customs area and therefore "imported" according to our present trade statistics.[2] This approach would be more consistent with the concepts underlying most national income accounts. It is true that exclusive use of this approach would require considerable modification of the present United States (and United Kingdom) accounts and would eliminate a good deal of the information they give. Some people might question, however, whether some of this information is not misleading. Thus the figures for the export of United States capital, to the extent that it takes the form of direct investment, tend to exaggerate the amount of capital which foreign countries have any freedom to use for their own purposes. A less familiar point is that shifts between imports (as now defined) and domestic production

[2] It is more amusing than important to make the further observation that if it were brought into the United States for sale to foreigners only temporarily residing here, it would, to that extent, be an *export* by the United States. And if the foreigner were a Netherlands West Indian, it would be an *import* by the Netherlands West Indies.

are often assumed to be shifts of purchases between foreign and domestic sellers to a greater extent than they really are. This, of course, is true not only for oil but for many other products. A heavy influx of copper mined abroad at the expense of copper mined in the United States, for example, is not necessarily a shift from American to foreign sellers and need not reduce the profits of United States producers, since the increase in imports may come entirely from mines owned by American companies, including the very companies whose American mines suffer. The effect on employment of American production workers is not exaggerated by the present method, of course, but this effect would also appear in data set up by the radial method, where it would take the form of an increase in purchases of labor services from abroad and a reduction of wages and salaries in the United States. It is true, of course, that the geographical basis for import statistics provides us with information essential for many important purposes which an ownership basis would conceal. For example, the fact that much of the petroleum (or other materials) which we use inside the borders of the continental United States comes from other countries, even if from United States-owned properties, is important for our national security. Use of the radial approach alone would not show this. However, it could presumably be used without displacing the geographical basis of present statistics. As usual, which basis is best depends upon the purposes and, since any method will either conceal some information or give a misleading impression if its content is not explored, none will relieve the user of the need for going behind the published statistics.

2. Skipping problems raised by the currency dimension, I have several comments regarding the item dimension. I heartily agree with Woolley as to the need for dividing the merchandise accounts into meaningful sectors. Speaking generally, I think such a division should be planned at least in part with an eye to the analytical needs of both those who wish to relate international trade to the major categories of gross national expenditure and those who wish to apply the input-output technique to problems of international trade and income flows. This seems to call for a broad division of commodities into consumers' goods, capital goods, and goods which are nonspecific with respect to these first two categories. These categories could then be further divided into whatever major industry classifications would provide the best raw material for the input-output analysts, so that individual industries of individual

countries could some day be put into the matrix.[3] I realize that classification along these lines is easier to suggest than to carry out and that it may be a long time before industrial classification becomes possible for more than a few countries. It is just as well, however, to keep this need in mind in planning present work.

Second, I want to supplement Woolley's statement about the desirability of keeping transportation, investment income, government transactions, and travel separate in the service account while consolidating its other components. One of the uses of the net balance on goods and services in these days of international aid is to show the difference between a country's production and the total resources it uses through its consumption, investment, and government expenditure. A country's current debits of goods and services (excluding donations) generally represent purchases or acquisition of goods and services which it has not produced, and credits generally represent sale of current production to foreigners, i.e. a using up of domestic resources the product of which is not available for domestic private consumption, private investment, or government. However, the inclusion of investment income in the goods and services account is misleading when this account is used for that purpose—at least in short-period analysis. Receipts of investment income are not a payment for an exhaustive use of resources as are most other current receipts; the country is not giving up current production or real assets to the extent of such "export" receipts. On the debit side, payments of investment income do not represent the acquisition of goods and services available for domestic use, as do imports of goods or transportation services. In this sense, receipts and payments of investment income are akin to unilateral transfers. In theory, of course, they are a payment for the use of capital and no doubt they should be so regarded for purposes of long-period analysis. But in connection with analyses of short periods, in which dividends especially may change substantially, care must be taken to avoid treating an increase of such receipts as an increase in output, and an increase in payments as an increase in the purchase of resources. The theoretically ideal method of avoiding confusion on this score would be, I suppose, to deflate the payments by an index of yields as we would deflate other goods and services items by a price index before drawing conclusions about real resources. This would permit us to eliminate

[3] Cf. Walter Isard, "Location Theory and Trade Theory: A Short-Run Analysis," *Quarterly Journal of Economics*, May 1954, pp. 310-318.

from the net balance the change in investment income which does not represent new capital made available, while retaining the change which does. But this seems impractical. In case Woolley has to consolidate more than he now expects, therefore, I hope he will not consolidate investment income with any other item, or at least with any other item that really does reflect the sale abroad of domestic output or the domestic use of foreign output.

My final suggestion is that for analysis of payments difficulties and of international transmission of changes of income, it would be desirable to have a division of *all* current transactions, i.e. in both goods and services, into private and governmental. I suggest further that this division be based on the identity of the payer. The reason for this suggestion is that governmental transactions in goods and services are now becoming nearly as large as aid transactions were a few years ago and they are more significant in their effects upon the recipient's income and output. In 1953, for example, the United States government paid to other countries about $3 billion for services labeled "military expenditures" and nearly $300 million for other services.[4] This does not include merchandise purchases for the strategic stockpile and other goods actually imported by the government into the United States, and of course does not include $4.3 billion of military and $1.8 billion of nonmilitary unilateral transfers. Other countries, too, are making payments for goods and services, although not on the enormous scale of American payments. I see no prospect that the total of such payments will disappear from the landscape or become insignificant. The reason it is desirable to show them separately is not their size alone, of course, but their size combined with the fact that governmental and private demand behave differently and are subject to different degrees of influence by policy decisions.

Though the division between private and governmental transactions could be based on the identity of sellers or payees, such a distinction seems to me less important, so far as the current account is concerned. The main reason for this conclusion is that the major problems confronting us are still, and I believe will continue to be, those for which an analysis of differences between

[4] The military expenditures include expenditures by military personnel in the foreign economies and purchases of equipment for transfer to foreign countries under military aid programs (cf. "Balance of Payments of the United States, 1919-1953," *Survey of Current Business*, Dept. of Commerce, July 1954).

private and governmental demand behavior is more urgent than analysis of differences with regard to supply. It may also be pointed out that governments buy more than they produce, so that if we merely want to identify international transactions in which governments participate and if we have to choose one or the other method, a division from the point of view of the buyers will identify such transactions more completely. This consideration, however, appears to me less significant, especially since I hope it may be possible sometime to have a division between private and governmental transactions from both the buying and selling sides, which will give a fourfold classification of payments: private to private, government to private, private to government, and government to government.