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## GOODS AND SERVICES TRADE

Whereas the last chapter dealt mainly with two dimensions of the record—items and time—this chapter introduces the third, spatial, dimension. We can thereby observe not only the course and composition of trade but also the nature of specialization by countries and areas and the orientation of trade. While we do not have much to add to the stock of knowledge about trade between areas in merchandise, our record of services transactions is unique and warrants special comment (Section C below).

One may ask, first, whether the two-valued matrix accounts consistently measure the *magnitude* of inter-

area transactions for the five years as a whole and for each year separately; second, whether they consistently measure the *movements* from year to year and over the five years. These questions may be applied to the record of both gross and net transactions, for uncertainties in reporting and errors of estimation may be compounded or offset in balances. We shall proceed by examining the structure of trading shown for the five years as a whole in the two-valued matrixes, gross and net, and then the structure and movement of trading as shown by the annual matrixes.

### A. THE GEOGRAPHIC STRUCTURE OF TRADING OVER THE FIVE YEARS

#### 1. Gross Transactions in the Two-Valued Matrix

When the annual two-valued matrixes are aggregated for the five years 1950–54 (Table A-1), credit and debit records are obtained in which the errors of reporting introduced by time leads and lags and erratic errors can offset each other. Divergence between paired entries is thus reduced. However, divergences of a continuing nature in the annual matrixes will tend to cumulate in the five-year aggregates. In examining the consistency of reports in the five-year matrix, therefore, we necessarily focus upon the structural, persisting reporting differences.

That slightly more than 1 per cent of credits and debits are not allocated by area is immediately apparent. In spite of this defect, the two-valued matrix shows that our country accounts are broadly consistent. The percentage distribution of the world's debits and credits (the first column in Part I and the first line in Part II of Table A-3) is measured the same to the nearest 1 per cent of the total whether sellers' or buyers' records are used.<sup>1</sup> The interarea

distribution of sales or purchases by each area to or from partners is measured the same to the nearest 1 or 2 per cent of the total from buyers' or sellers' records with few exceptions (and some of these would be reduced to within 2 per cent of the total if the unallocated transactions were spread out).

If areas are ranked on the basis of the 1950–54 data as suppliers of goods and services or as buyers (including intra-area trade), the same sequence is found using credit or debit records and, as it turns out, viewing the areas as buyers or sellers:<sup>2</sup> (1)

described in Chapter 2 on the whole improved agreement between paired entries in the matrix of gross goods and services as measured by the sum of the differences without regard to sign. We have not reproduced this matrix for the five years with all transactions allocated, but the net effect is carried in Table A-4 and can be observed by comparing net goods and services in that table with line A of Table A-2.

<sup>2</sup> How an area is ranked, of course, reflects the particular grouping of countries employed. While it is of some interest to observe the ranking and participation of the several areas in world trade, the result of primary interest here is the quality of measurement. Both records give the same result for rankings and much the same result for percentage distributions.

<sup>1</sup> The effort to allocate the unallocated transactions

Continental OEEC countries, (2) United States, (3) Rest of Sterling Area, (4) United Kingdom, (5) Other Eastern Hemisphere, (6) Latin America, (7) Canada, and (8) Continental Overseas Territories. About a quarter of world imports were supplied, and a quarter of world exports taken, by the Continental OEEC countries; not quite a fifth of world imports were supplied by the U.S., and not quite a sixth of world exports went to the U.S.; the U.K. supplied about an eighth of world imports and took a little less than an eighth of world exports; and other Sterling Area countries supplied a little more than an eighth and took about a seventh. The share of these and other areas in world trade in goods and services is indicated by the percentage distributions in Table A-3.

It is also evident that particular interarea, or intra-area, relations in the matrix would rank about the same whichever record was used as the measure. Trade among Continental OEEC countries as given in Table A-1 was the largest and nearly twice the next largest—U.K. exports to other Sterling Area countries; this was followed by U.S. exports to Latin America, Rest of the Sterling Area exports to the U.K., Latin American exports to the U.S., and U.S. exports to Canada. (These were all the interarea flows which amounted to \$20 billion or more over the five years.)

The structure of trading reflected in the distribution of an area's credits and debits appears much the same from partners' records. The U.K. trade was heavily concentrated on the Rest of the Sterling Area (38–39 per cent of imports and 46–47 per cent of sales), and vice versa (41 per cent of imports and 36–37 per cent of sales). More than half of the latter's trade was with the Sterling Area as a whole. An important part of U.K. trade (but less than 30 per cent of imports or exports) was with the Continent and the Continental Overseas Territories; the proportion of trade by the Rest of the Sterling Area with the Continent was smaller than that of the U.K.

The trade of both Canada and Latin America was concentrated on the United States while U.S. trade was concentrated on the Western Hemisphere. Trade of the Continental Overseas Territories was concentrated on the associated metropolitan area while that of the Continental OEEC countries was concentrated on trade within the group. The group "Other Countries" was not a dominant market nor source of supply for any area.

The trade of particular areas evidently does not spread over partner areas in proportion to the latter's importance in all world trade. Rather it exhibits a systematic departure.<sup>3</sup> The trade of peripheral countries tends to focus on one of the three more advanced central areas—the U.S., the U.K., and the Continent—and the same concentration is found in the reverse direction. Trading thus tends to radiate out from the centers, but this radial system of trade is only suggested by the structure shown in our matrixes since the countries were not grouped according to a trading orientation criterion. Our arrangement, largely determined by the nature of the available data, results in a dispersed pattern of trade by Other Countries, some of which trade principally with the U.S., some principally with the U.K., and some with the Continent.

The pattern of divergence in paired entries in Table A-1 shows that the records, while exhibiting a high measure of agreement, are subject to systematic rather than random errors (this would be even more evident if the unallocated transactions were distributed). The most striking systematic divergence is the tendency for the U.S., Canada, and Latin America to report larger transactions both ways with Eastern Hemisphere areas than the latter report. Apart from this, the Continental OEEC countries tend to report smaller sales and larger purchases than partners report for them. There are a number of instances in which a divergence in accounts with the Rest of the Sterling Area is offset by an opposite divergence in accounts with the U.K., and similarly divergences with Continental OEEC countries and their Overseas Territories tend to offset each other.

These systematic tendencies seem to reflect several reporting inconsistencies in the accounts. One is the practice followed by some countries of reporting some transactions, particularly minor services, on a net basis. Another stems from the fact that the merchandise transactions have been developed in good part from customs records and some countries use a "general trade" record system and others a "special

<sup>3</sup> See my "Observations on the Structure of World Trade and Payments," *World Politics*, July 1956. Trading ties of individual countries are even more pronouncedly with centers when measured by their gross goods and services transaction account than when measured simply by merchandise because service transactions tend to be more concentrated on the principal center of a country than merchandise.

trade" system. Also the differences between customs practices in identifying countries of provenance and destination may contribute systematic discrepancies.<sup>4</sup> Transactions involving intermediary countries may not be recorded alike in all the countries concerned.<sup>5</sup> The wonder is that, given the many possible sources of difference, the pattern and magnitude of gross goods and services transactions seem to be measured more or less the same from either side.

## 2. *The Effect of Redirecting Petroleum Trade and the Influence of Middlemen on the Trading Pattern*

One reason for the extent of agreement between paired entries in Table A-1 is that the country accounts were adjusted to place petroleum (and Mexican cotton) on a trade records basis. Each movement of petroleum across customs boundaries was considered a transaction whether or not its ownership changed. An alternative method would be to treat oil originating in free world sources outside the U.S., the U.K., and Continental OEEC countries and entering into international trade as though it were sold by the producing country to enterprises in the U.S.

<sup>4</sup> For a discussion of the peculiarities of customs records which may affect the comparability of merchandise trade in the balance of payments, see R. G. D. Allen and J. Edward Ely, eds., *International Trade Statistics* (New York, 1953), Chapter 9 by Walter R. Gardner. Systems of reporting are discussed in detail in Chapter 3 and country classification in Chapter 7.

The two-valued matrixes of merchandise transactions in Tables B-4, B-5, and B-6, which are unique in presenting paired entries both valued f.o.b., provide an unusual basis for studying the extent of agreement in measuring interarea merchandise transactions. These exhibit a systematic pattern of divergence, with Western Hemisphere areas generally showing greater debits than partner areas acknowledge receiving. A large excess of credits in intra-Continental trade persisted. Indeed, every area shows more exported to the Continent than it reports importing. Altogether, over the five years areas showed over \$5 billion of exports more than the amounts the Continent acknowledged importing. This difference in reports was of considerable significance to the staff analysis of the American foreign aid program for Europe. Commodity analysts working from a historical record derived from exporters' records f.o.b. continually arrived at larger European import bills than country analysts who were working with merchandise debits in payments accounts. While the difference was only about 5 per cent, translated into the need for American aid it implied a difference of \$1 billion per annum.

<sup>5</sup> Robert Lichtenberg's paper *The Role of Middleman Transactions in World Trade* (NBER Occasional Paper 64, New York, 1959) was undertaken in an effort to establish whether or not this particular difficulty could be remedied.

or the U.K. and distributed by the U.S. and the U.K. to the countries of refining or ultimate consumption.<sup>6</sup> To consider the effect of a different treatment of petroleum transactions, such an adjustment is presented in Appendix C. It, of course, increases the amount of world trade to the extent of the value of the oil considered moving through the U.S. and U.K. That part of petroleum trade for which the adjustment was made adds 5 per cent to merchandise trade and 4 per cent to goods and services trade.

The general effect of adjusting petroleum transactions to a purchase-sales basis is to increase the proportion in which nearly every area trades with the United States, and most areas also show larger proportions traded with the U.K. The Rest of the Sterling Area shows a higher proportion of its trade, both purchases and sales, with the U.K., but curiously enough the proportion traded by the U.K. with the Rest of the Sterling Area is somewhat lower because the added oil trade of the U.K. is out of proportion with the added oil trade with the Rest of the Sterling Area. The Continental Overseas Territories show greater proportions traded with the U.S. and the U.K. because of the redirection of Netherlands Antilles trade. The middleman activity in the oil trade tends also to disperse the trade of the U.S. and U.K.<sup>7</sup>

The modifications introduced into the pattern of interarea trade from placing petroleum on a purchase-sales basis are considerably greater than the rather minor differences in pattern shown by credit and debit records and hence are of greater importance for structural analyses. Yet the orientation of trade toward three centers indicated by the unadjusted country accounts would still hold if the individual country accounts could be adjusted to place

<sup>6</sup> I considered various alternative ways of accounting for petroleum transactions in my paper "On the Elaboration of a System of International Transaction Accounts," in *Problems of International Comparison of Economic Accounts*, Income and Wealth 20, Princeton for NBER, 1957. I have not redirected the oil refined on the Continent since most of it was sold for EPU currencies by subsidiaries of American and British companies resident on the Continent and the European governments in question controlled the foreign exchange proceeds.

<sup>7</sup> A similar adjustment for countries grouped according to trading orientation had the general effect of showing stronger trading ties between outlying countries and their associated center, at the expense of their secondary trading ties with other areas, and of dispersing slightly the trade of the two centers conducting this world-wide business.

petroleum on a purchase-sales basis. Such an adjustment would probably provide additional supporting evidence in certain cases (e.g., Saudi Arabia and the Netherlands Antilles) where we have otherwise looked to foreign investment interest rather than to the movement of goods for an indication of the country's trading orientation.<sup>8</sup>

Although petroleum is the most important of the internationally traded items channeled through middleman countries, it is not the only one. Rubber, coffee, cocoa, tea, nonferrous metals, cotton, wool, cereals, fats and oils, and most other bulk items are also subject to middleman control.<sup>9</sup> Lichtenberg's estimates indicate that in 1952 international trade in products other than petroleum handled by middlemen amounted to about 10 per cent of all merchandise trade (hence about 8 per cent of goods and services).<sup>10</sup> His data show that large proportions of the exports of European Overseas Territories, Southeast Asia, the independent outer Sterling Areas countries, and Canada passed through the control of middleman countries, notably the U.K. and its Asian outposts (Hong Kong and Singapore), the Netherlands, Belgium, and the U.S. Lichtenberg's observations on the record of trade in coffee, rubber, and cotton give some clues to the nature of the adjustment necessary to place the record of interarea goods and services transactions on a purchase-sales basis. The broad effect would be to increase the sales of affiliated countries to their principal trading partner and to increase purchases by the centers from each other. Trade between the centers would be much more concentrated in basic foods and raw materials than customs records show.

It is difficult, however, to say how great an adjust-

<sup>8</sup> We were not in a position, however, to carry out the oil adjustment in the basic country accounts, for this would have required information on the imports of oil by each country by source and the market share enjoyed by U.S. and British companies, respectively, in each country in each of the five years. Data on oil imports by source could be obtained for most countries, but information on market shares by country is not available. We were prepared to estimate U.S. and British company shares in the broad grouping employed in the eight-area tables, which could be checked out against information on sales in company reports, refining capacity, etc.

<sup>9</sup> Lichtenberg, *Role of Middleman Transactions*, Table 2, pp. 12 and 13.

<sup>10</sup> *Ibid.*, pp. 34-38 and 73. The figure of 10 per cent is obtained after allowing for that part of all middleman trade which was in petroleum.

ment would have to be made to put trade in items other than petroleum on a purchase-sales basis. The redirected petroleum transactions represented 4 per cent of world trade in goods and services. It seems unlikely that the adjustment for other items would be as much as twice the petroleum adjustment since some countries basing their accounts on exchange control records already carry merchandise transactions approximately on a purchase-sales basis. We can be reasonably sure that the adjustment for items other than petroleum would not be so highly concentrated on the U.S. and the U.K. as middlemen since Continental countries are involved to a considerable extent in some trades, especially as sellers to other Continental countries.

### 3. Net Transactions in the Two-Valued Matrix

The systematic differences in reporting gross goods and services (Table A-1) fortunately tend to reduce rather than augment the divergences between paired records of the interarea balances (Table A-2). Although these differences are sometimes sizable in relation to the balance, as may happen when the net is close to zero, in no case do the two measures of interarea balances differ in direction.<sup>11</sup> The only paired entries in Table A-2 that differ in sign are all those for intra-area balances and those of Latin America and Continental OEEC countries for balances with all areas. The former discrepancies are clearly in error since trade within an area should balance out. The latter appear related to the former; the two values recorded for balances with all outside countries agree on the surplus of Continental OEEC countries and the deficit of Latin American countries. This circumstance suggests that in these two cases the proper adjustment to balance out the intra-area trade would correct the disagreement in the over-all balances.

Not only do the paired entries in Table A-2 agree on the direction of the balances between areas, but in nineteen out of twenty-nine instances they also agree on the amount of the balance to within 25 per cent of the mean of the two measures, and in all but two of the remaining instances they agree to within 50 per

<sup>11</sup> The two records of trade of areas with International Organizations are not sufficiently independent to provide a test of the direction of the net; both records are based on the account we have developed for International Organizations.

cent, which I would count as agreement on the "order of magnitude."<sup>12</sup> The two instances of wider divergence involve the small balances of Continental Overseas Territories with the U.S. and Canada, which are known to be deficient in our accounts for the Overseas Territories.

In Table A-2 small amounts (net) remain unallocated in several area accounts. The allocation of the unallocated transactions described in Chapter 2 reduced the divergence in gross transactions but widened the divergence in balances between the areas; it did not, however, increase the differences enough to alter the general nature of our observations on the agreement of direction and magnitude of interarea balances (see footnote 1 above).

*Patterns of Net Trade*

Over the five years the three central areas ran trade surpluses with the world while each of the peripheral areas ran over-all deficits; the U.S. was the main surplus area.

Table A-2 suggests that the goods and services balances of countries outside the economic centers follow a symmetrical pattern in which each group of affiliated countries ran deficits with the economic center with which it traded principally. Thus, the Western Hemisphere groups were in deficit with the U.S., the Rest of the Sterling Area in deficit with the U.K., and Continental Overseas Territories (if transactions are combined with their Own Currency Area and with other Continental countries) were in deficit with Continental OEEC countries. The group Other Countries was also in deficit with the Continental OEEC countries.

In contrast to these deficits with their principal trading partner, the affiliated areas seem to have had surpluses from one or both of the other two centers. Thus, Canada ran surpluses with the U.K. and the Continent, the Rest of the Sterling Area ran surpluses with the Continent (but a deficit with the U.S.), and Continental Overseas Territories ran surpluses with both the U.K. and U.S., but both Other

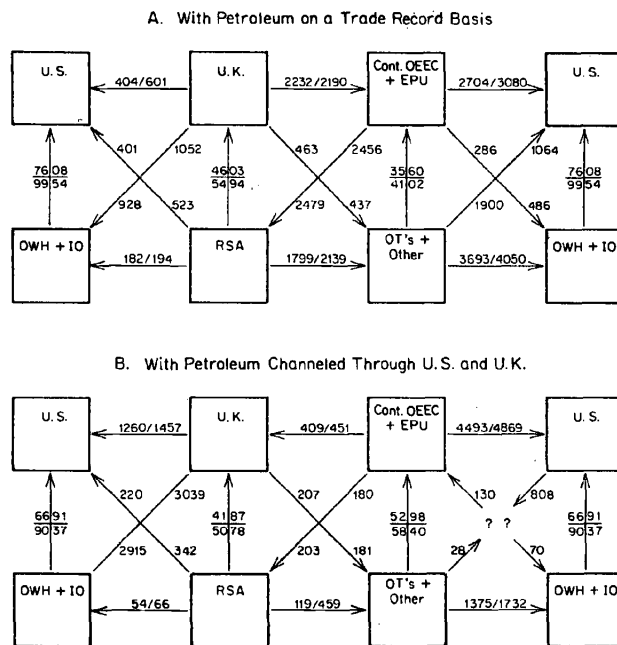
<sup>12</sup> If two numbers and their mean are in the relationship of 7:8:9, the relative divergence will be 25 per cent of the mean; if the relationship is 3:4:5, the relative divergence will be 50 per cent of the mean; if the relationship is 1:2:3, the relative divergence will be 100 per cent of the mean. There is a sense in which even the last, relatively wide divergence can be said to represent "agreement on order of magnitude," but in general I have used the term to refer to agreement within 50 per cent of the mean.

Countries and Latin America were in deficit with all three centers.

The net trade orientation of countries is, of course, imperfectly shown in the two-valued matrix tables of Appendixes A and B since there the countries (and particularly Other Countries) are not grouped by trading interest or by trade balances.

The basic trading pattern in the eight-area matrix becomes rather complicated to diagram. It has, therefore, been reduced to a six-area scheme by consolidating Canada, Latin America, and International Organizations into Other Western Hemisphere and combining Overseas Territories with Other Countries to give a grouping of nonsterling countries of the Eastern Hemisphere outside the OEEC.<sup>13</sup> Chart 3,

**CHART 3**  
*Combined Goods and Services Balances Between World Areas over the Five Years 1950-54: Six-Area Consolidation of the Two-Valued Matrix (arrow points from area debited to area credited; figures are placed adjacent to area of report) (million U.S. dollars)*



SOURCE: Tables A-2 and C-1.  
NOTE: Unallocated transactions have not been allocated.

<sup>13</sup> Anyone who wishes to draw the distinctions between patterns for the component areas of Other Western Hemisphere and between Overseas Territories and Other Countries can do so readily from the data in Table A-2.

Part A, shows the direction of balances and paired entries from the two-valued matrix consolidated into the six areas. The three central areas are placed at the top of the diagram and three peripheral areas below them with the Rest of the Sterling Area under the U.K., Other Western Hemisphere under the U.S., and Overseas Territories and Other Countries under Continental OEEC.<sup>14</sup>

It can be seen from Chart 3 that the three economic centers ran surpluses with the areas beneath them, which were largely composed of countries trading principally with them, and deficits with peripheral areas on the diagonal, which were largely composed of countries trading principally with one of the other centers. There are, however, two exceptions to the last rule: the surpluses of the U.S. with both groups of peripheral Eastern Hemisphere countries. The Other Western Hemisphere area, however, ran surpluses with both Eastern Hemisphere centers, and the Overseas Territories and Other Countries ran a surplus with the Rest of the Sterling Area. Oil movements contributed heavily to this pattern, and, to a lesser extent, so did the inclusion of International Organizations in Other Western Hemisphere.

Evidently, there was a general tendency for balances between centers and areas placed in the chart under another center to be small and for balances between centers and areas placed under them to be large. This tendency is more pronounced when petroleum transactions are placed on a purchase-sales basis (Part B of Chart 3).

#### *Petroleum Trade, Middlemen, and the Pattern of Net Trading*

The changes in gross merchandise and goods and services transactions between world areas required to channel petroleum transactions through the U.S. and the U.K. to reflect purchases and sales were discussed above and are given in Appendix C (see Table C-1).

Channeling petroleum transactions through the U.S. and the U.K. has the effect of directing to those

centers the net debits which consuming areas previously directed toward the oil sources and the net credits which the oil sources previously directed toward the consuming areas. The amounts redirected are large relative to some of the interarea balances in Table A-2. In eight instances the petroleum adjustment reverses the direction of the balance previously shown by both sides, and in two more instances it reverses the direction of one of the two records so that they no longer agree on direction. In seven other instances the adjustment reduces the balance between the paired areas without changing its direction. In ten other instances, however, it works to increase the balance previously shown. The adjustment does not affect balances with International Organizations.

Most strikingly altered is the pattern of net trading between the U.K., the Continent, and the Rest of the Sterling Area. The U.K.'s previous deficits with the Continent and its Overseas Territories are more than offset by British petroleum company earnings, and the Rest of the Sterling Area's surplus with the Continent is reduced to small proportions. Striking reversals from deficit to surplus appear in the relations of Other Countries with the U.S. and the U.K. and of Latin America with the U.K. The Latin American deficit with the U.S. is substantially reduced; the Rest of the Sterling Area's deficits with the U.K. and the U.S. are also improved modestly. The larger Latin American surplus from Continental Overseas Territories, which reflected the refining of oil in the Netherlands Antilles, is wiped out by the adjustment and is replaced by a small, ambiguous net position.

Trade by middlemen in commodities other than oil is less heavily concentrated on the U.S. and the U.K. than oil, as was observed above, and many items are dealt in by Continental traders and toll processors. The trade most heavily controlled by middlemen is that of countries politically or economically closely associated with an economic center—the Overseas Territories of Western Europe, former colonies like Indonesia, the sterling Commonwealth, Chile, and other Latin American countries in which the U.S. has invested heavily. The economic centers, on a purchase basis, are likely to control more of the produce exported by countries trading principally with them than the latter's export record indicates and to supply more of their imports. In the case of U.S.-oriented countries, the U.S. role as a middleman in marketing produce very likely was consider-

<sup>14</sup> The figure is conceived as a cylinder split down one side and laid out flat. To carry out that sense of circularity, the U.S. and Other Western Hemisphere areas are entered on both sides of the figure. Note that in this type of diagram (which also will be employed in the next chapter) the arrow points in the direction of the net payment to be made from the area in deficit to the area in surplus.

ably more important than its role as a middleman in supplying imports originating in other countries.<sup>15</sup> Hence, on a purchase-sales basis the deficit of U.S.-oriented countries with the U.S. was probably less than indicated in Chart 3 even after being reduced by a petroleum adjustment, but in view of the size of the deficit its direction would probably not be reversed.

In the case of countries oriented toward the U.K. and the Continent, particularly colonial territories, one may wonder whether the middleman role of the centers is more important in the marketing of exports than in the supplying of imports. Since, however, the exports of these countries are concentrated on specialties and the food and raw materials which account for most middleman trade, it seems likely that, even for the colonial territories, middlemen of the associated center would be more important factors in handling exports than imports. Hence, we would expect that an adjustment to a purchase-sales basis, if that were possible, would increase sales in relation to purchases in a peripheral area's trade with its

principal trading center and would produce the opposite effect in its trade with other centers.

It is difficult to guess how balances between centers would be altered: I suspect that British sales in the United States of wool, rubber, nonferrous metals, and beverages (cocoa, coffee, tea) from Sterling Area sources more than offset U.S. sales to Britain of sugar, cotton, flour, and nonferrous metals from Other Western Hemisphere sources, and that such sales by both the U.S. and the U.K. to the Continent exceeded Continental sales to the U.S. and the U.K. of Congo minerals, tropical fats and oils, North African phosphate rock, and Russian furs. I would therefore suppose that the U.S. and the U.K. earned more from the Continental OEEC countries and the U.K. more from the U.S. than Chart 3 shows.

It seems likely that the intervention of middlemen tended to reduce the extent to which areas of the world offset trade deficits in one direction by trade surpluses in another. Surpluses of centers with affiliated areas were probably smaller and deficits with the affiliated areas of other centers also smaller.

### B. THE ANNUAL MATRIXES

In Appendix D the differences between paired credit and debit records in the eight-area matrix have been examined to judge the agreement on the size of the gross and net trade between areas, on the direction and magnitude of year-to-year change in trade, and on changes over the five years. Despite the fact that in the annual accounts trade among parts of the sterling and nonsterling EPU areas has been esti-

mated (see Chapter 2, Section A-1) and fairly large transactions remained unallocated by area, the divergence between paired entries is not such as to impair the usefulness of the record for most descriptive and analytical purposes. From the detailed examination of the divergence, we conclude the following.

Most of the magnitudes traded between paired areas were measured alike to within 10 per cent, though in a few cases, mainly involving the trade of peripheral areas, only the order of magnitude (see footnote 12 above) was agreed. In most of the latter cases there were good reasons for preferring one record to the other.

In most cases paired records of gross trade exhibited year-to-year movements in the same direction and differed by no more than 10 per cent absolutely or relatively (Appendix Table D-2). Many times when movements were in opposite directions, they were so small as to represent virtual stability by either record. Moreover, most cases of significant divergence in direction of movement involved the trade of peripheral countries and could be resolved in favor of one side or the other.

<sup>15</sup> See the Commerce Department study by Samuel Pizer and Frederick Cutler, *U. S. Investments in the Latin American Economy*, Washington, 1957. Reporting on the activities of many of the most important U.S.-controlled foreign subsidiaries in Latin America, the authors observed export sales by these enterprises of \$800 million in 1955 to countries (including other Latin American republics) other than the U.S. and imports by these enterprises from countries other than the U.S. of \$140 million (*ibid.*, pp. 9-10). These enterprises include the principal U.S. firms producing petroleum, sugar, bananas, nonferrous metals, meat products, locally distributed manufacturers, and utility services. They would account for the bulk of the Latin American exports controlled by U.S. enterprises (Mexican cotton and Brazilian coffee are notable exclusions) and probably also for the bulk of Latin American imports from sources outside the U.S. controlled by U.S. companies. The U.S. trading and distributing concerns that were not included probably did not deal to any great extent in products originating outside the U.S.—apart from products produced by Canadian affiliates.

Similarly, the movements of the paired records over the five years agreed in direction and, for the most part, agreed closely also in magnitude. Peripheral areas were mainly involved in instances of large divergence, but Continental European and U.K. sales to the U.S., while agreeing with the U.S. record in direction, showed a cumulative divergence amounting over the five years to more than 10 per cent.

In most cases paired records agreed on the direction of the balances between areas in each year, and disagreement arose mainly when balances were very small. Where disagreement on direction of the balance was sizable, a basis existed for preferring one partner's record to the other. Paired records usually agreed also on order of magnitude of the balance; two-thirds of the time they diverged by no more than \$100 million or no more than 10 per cent of their mean. In over half the cases the divergence was not more than \$50 million or not more than 10 per cent. The worst cases of large absolute and relative divergence in the balance were the U.S. with Latin America and with the Continent.

In most cases paired entries for net trade showed

year-to-year movements in the same direction; in about two-thirds of these cases the paired records also agreed on the order of magnitude of the movement. Differences in direction of change of the balance were most frequent in 1951-52 and 1953-54 when trade tended to reverse direction. Notable instances of large differences in direction as measured on the two sides came in U.S. transactions with Latin America and Canada in 1951-52 and seem to reflect time lags in reporting.

Agreement on the direction of change in balances over the five-year period was somewhat better; in about half the cases they agreed on the relative change to within 25 per cent of the mean. Only a quarter of the trade balances showed agreement in direction but diverged by more than \$50 million in the amount of the change or by more than 50 per cent of the mean of the two figures. In four cases the direction of change was not agreed.

This review shows that at certain points the record is subject to considerable ambiguity and it is well to have the full account from both sides as a check on the magnitudes of and changes in trade.

### C. THE NATURE OF SPECIALIZATION IN TRADE: THE SERVICES MATRIXES

We have stated that the trade of nations in the early 1950's tended to focus on three economic centers—the United States, the United Kingdom, and the Continent—for nearly every country could be identified as trading primarily with one of these centers. Most countries also had important trade ties with either or both of the other centers, and close trade relations were common among neighboring countries.

Much has been written about the product content of world trade, especially by the U.N. in its annual *World Economic Report* and the Secretariat of the General Agreement of Tariffs and Trade in its annual review of *International Trade*. The particular contribution we can make to an understanding of international specialization lies in the record (given in Appendix Tables B-7 through B-24) of services transactions.

#### 1. The Nature of Trade in Services

On balance, services are supplied by the centers and

bought by the peripheral areas.<sup>16</sup> This pattern reflects the role of the centers in supplying capital for international investment, ocean transportation, and special skills. At the same time the centers make large net payments for travel and military expenditures.

The share of the centers in world services credits was relatively larger than in merchandise credits, and they also incurred relatively more services debits. For peripheral areas services credits were generally small compared with their part in merchandise credits, but services debits were usually proportional to merchandise debits. There were some notable exceptions among peripheral area countries for which services credits were high in proportion to merchandise.

The maritime nations, especially those with tonnage in excess of domestic needs, are mainly countries of the North Atlantic, and fleets registered elsewhere are largely owned by the economic centers. The cen-

<sup>16</sup> For annual matrixes on services, see Table B-7 through B-24.

ters realized 80 per cent of all transportation credits, including those earned by the PHL fleet, close to 90 per cent of gross freights, and (on a purchase-sales basis) almost all bunkers. The U.K. and the Continent particularly earned a disproportionate amount from transportation compared with merchandise.

Countries tend to employ the transportation services of the center with which they trade principally, but the U.S. fleet is in a weak competitive position compared with the European fleets in carrying the trade of Other Western Hemisphere countries.

In spite of large differences in the paired records (which suggest an underreporting of credits by the Continental OEEC countries and, possibly, a general overstating of debits), the pattern of net transportation transactions between world areas is generally agreed as to direction and rough order of magnitude. Each of the three centers earned from each peripheral area; the U.S. paid the U.K., which paid the Continent, which (over the five years but not the last two years of the period) paid the U.S.

Travel expenditures mainly originated in and were spent in the more developed countries. The heaviest expenditures were by Western Hemisphere countries and the U.K. (the U.S. being the largest spender). The Continent was the largest earner followed by Western Hemisphere areas. Travel balances tended to flow from the Western Hemisphere to the Eastern Hemisphere; the U.K. and Rest of the Sterling Area tended to run deficits with the nonsterling areas of the Eastern Hemisphere.

Seven countries—the U.S., the U.K., Canada, France, the Netherlands, Belgium, and Switzerland—received 90 per cent of all investment income, including some reinvested earnings;<sup>17</sup> the U.S. earned not quite half of all investment income; nearly 30 per cent was earned by the U.K., including the estimated earnings of British petroleum companies.

Peripheral countries incurred the bulk of total investment income debits. The largest were by the Rest of the Sterling Area and Latin America and their debits went mainly to the U.K. and the U.S., respectively. The direction of flow points to the concentration of foreign investments by principal trading interest and to a substantial exchange of investments between the three centers. The largest sources of investment income were: countries that were themselves large earners of investment income, oil-supply-

ing countries, and the larger countries in the outer Sterling Area and in Latin America.

Each of the centers had a surplus on investment income with each of the five peripheral areas. The U.S. ran a surplus with the other centers as well. Divergence in the two-valued matrix of investment income appears not to impair its usefulness for observing the main flows of investment income.

The U.S. made nearly two-thirds of all government expenditures and, together with the U.K., made 80 per cent. The pattern of interarea government transactions was largely set by the expenditures of these two countries. The U.S. spent heavily in Other Countries and the Continent; the U.K. spent heavily in the Sterling Area. These three partner areas realized most of the government debits. The U.S. and the U.K. ran over-all deficits; other areas surpluses. The U.S. ran a deficit with all areas, the U.K. ran a deficit except with the U.S. and Canada, and the Continent ran a surplus with the Anglo-American areas. Military necessities rather than commercial interests evidently set the pattern of government expenditures.

Miscellaneous services, like investment income, tended to follow the principal trading interests and to flow heavily between the centers. With some exceptions, balances tended to flow from peripheral areas to the centers.

## 2. Further Comment on the Services Matrixes

The foregoing observations drawn from an examination of the services matrixes require qualification because of the limitations of the record mentioned in Chapter 2.

The record of transport transactions (Tables B-10, B-11, and B-12) is subject to considerably more relative error in both level and direction of transactions than the merchandise matrix. Altogether the estimates we have made add considerably to the account of transportation transactions, raising the totals in published country accounts for 1951 by about 40 per cent.<sup>18</sup>

It must be remembered that the PHL fleet was owned mainly by residents of the United States, the United Kingdom, and the Continent, and that bunker oil sales were almost entirely by American and British-Dutch companies. Thus, the extent to which transportation credits and debits came under the

<sup>18</sup> Herman Karreman, *Methods for Improving World Transportation Accounts, Applied to 1950-1953*, NBER Technical Paper 15, New York, 1961.

<sup>17</sup> See Chapter 2, Section A-2.

control of residents of the centers is somewhat understated by the accounting conventions followed, notably by the reliance upon the flag of a vessel to give the direction of transactions.<sup>19</sup>

A noteworthy feature of the transportation account is that partner areas in deficit with the Continental OEEC countries showed larger net payments to the Continent than the Continent reported receiving (Table B-12). In the case of sterling transactions the comparison is between nonsterling EPU and Sterling Area records. We disregard the balance within Continental currency areas which we calculated from merchandise trade records and which, consequently, shows a close agreement. The records of net payment by Sterling Area, Latin America, and Other Countries, in particular, showed large differences from the Continental records. This suggests that not all the foreign exchange earnings of Continental shipping companies came under the control of European exchange authorities.

Since travel is a small item in many country accounts and is difficult to distinguish in some respects from miscellaneous services and remittances, travel transactions appear to suffer from general underreporting of credits. Every area showed greater payments than partner areas (especially Eastern Hemisphere) showed receiving. Even so, the over-all excess of debits reported was about 5 per cent of the mean of total travel debits and credits, a smaller proportion than for transportation and government services but larger than for investment income and miscellaneous services (see Chart 1).

Because of the persisting tendency for travel credits to be less well reported than debits, the two-valued record of balances (Table B-15) is subject to somewhat more disagreement of direction than either the merchandise or the transportation matrixes.

The direction of net investment income flows between areas was generally agreed upon between paired entries in the matrix (Table B-18). Disagreements of direction were all small flows between peripheral areas, not more than \$20 million each over the five years. This general agreement is perhaps not surprising since 70 per cent of the investment income payments originated in the peripheral areas, 90 per cent was earned by the centers, and the flows were mainly to centers.

The flow of international investment income, in-

<sup>19</sup> The U.S. transportation account does not include Panama Canal tolls which are carried as miscellaneous government services.

cluding a good deal of reinvested income, came to about \$27 billion over the five years, with the record of payments exceeding the record of credits by 3 per cent. The total includes investment income for the United Kingdom (\$7.8 billion for 1950-54) nearly double the figure for investment income reported in the official U.K. balance-of-payments statement, which places interest profits and dividends over the five years at £1,461 million—\$4.01 billion.<sup>20</sup> The published figure "excludes overseas earnings of U.K. insurance, shipping, and oil companies." It "represents for the most part total earnings remitted for the payment of interest and dividends, taxation and management expenses in the U.K. and for later reinvestment, but to some extent also reinvested profits not remitted."<sup>21</sup> The excluded earnings are sizable, and the true investment income position of the U.K. is much greater than the published \$4 billion.

American oil companies earned \$4,525 million on their foreign investments in the five years 1950-54.<sup>22</sup> Despite losses arising from the dispute over Iranian oil, which interrupted operations during most of the five years in Iran, British oil companies, with a worldwide business comparable in scope to American companies,<sup>23</sup> must have realized earnings of a comparable order of magnitude—although these earnings may have been reinvested in good part. Our direct calculation of U.K. oil company "income," including reinvested earnings abroad and that part of the gross margin over sales used to cover home office expense, came to \$3.72 billion for the five years.<sup>24</sup>

<sup>20</sup> *United Kingdom Balance of Payments, 1946-1957*, London, 1959. In the official account net current transactions of oil companies were counted among miscellaneous services.

<sup>21</sup> *United Kingdom Balance of Payments, 1946 to 1954* (No. 2), Command Paper 9430, London, 1955, p. 49, item 10.

<sup>22</sup> *Survey of Current Business*, August 1956, Table 9, p. 22.

<sup>23</sup> *The International Petroleum Cartel* (U.S. Senate Select Committee on Small Business, Staff Report to the Federal Trade Commission, Washington 1952, pp. 24-25) shows the crude production and refining capacity of the seven largest international companies, two British and five American.

<sup>24</sup> Income from petroleum transactions was only the largest category of investment income counted in the British official accounts in miscellaneous. Profits from the overseas operations of British shipping and insurance companies were also put (net) into miscellaneous. With one of the worlds largest dry cargo merchant fleets and one of the most highly developed insurance businesses in the world, both operating widely outside the British Isles, the U.K. must have realized substantial earnings from those overseas operations, too. Thus, our estimates may even understate British investment income.

Altogether, investment income from petroleum company operations accounts for a very sizable part of all investment income over the period. If we add to the oil company income earned by the U.K. the \$4,525 million earned by American oil companies from all sources, we arrive at a five-year total of \$8,247 million, which is 31.5 per cent of total investment income credit. This tends to understate the proportion of the total contributed by petroleum operations since it excludes income earned by Continental interests in foreign oil concerns (notably Dutch, Belgian, and French).

The agreement between investment income credits and debits in the Sterling Area account arises because transactions of the British colonies with the U.K. were estimated as those that balanced the intra-Sterling Area investment income account. We do not have an independent report on service transactions of British colonies including Hong Kong and petroleum company transactions.

If we could include reinvested earnings in the table where they are not now entered, this would reduce the U.S. fraction of the total but it would still be the largest part.

The degree of concentration of foreign investments in the hands of a few countries indicates that a study of international capital movements can concentrate on a few suppliers and would be greatly facilitated if the governments concerned were to provide a complete accounting of public and private, long-term and short-term capital transactions by partner with some industry detail. If the analyst were to have from five European governments—the U.K., France, Switzerland, the Netherlands, and Belgium—the kind of information published by the U.S. and Canadian governments, his understanding of world capital flows in the early 1950's would be greatly enhanced.<sup>25</sup>

With debits totaling \$16,762 million and credits \$12,609 million for the five years 1950–54, the government transactions matrix (Tables B-19, B-20, and B-21) shows a large divergence in the over-all total, the largest divergence for any of the goods and serv-

ices matrixes. This reflects the fact, discussed in Chapter 2, that the U.S. and the U.K. report a substantial part of their transactions not in the conventional categories but rather in a category that has the government in question as one party to the transaction. While partner countries are instructed by the IMF to report the transactions of their residents with foreign governments, it is plain from the large discrepancies in amounts reported on both sides that the payments which the U.S. and the U.K. report as "government debits" are not similarly reported by partners as government credits. Over the five years the U.S. reports government payments to the world totaling \$10.8 billion, but partners only account for \$7.6 billion with the U.S.<sup>26</sup> The U.K. account shows government payments totaling \$3.2 billion while partner accounts show only \$1.9 billion credited.<sup>27</sup> Thus, approximately \$5.5 billion of U.K. and U. S. government debits do not appear in partner records as government transactions, though they may show up in accounts for a different category.

Comparing the U.S. balance of payments for 1951 given by the Commerce Department in 1952 with a revision the following year, one can infer that the Commerce Department once counted as "merchandise" more than \$400 million of military purchases in 1951 which it later put into the government account. Any ocean freight payments to foreigners on these purchases likewise now go into government rather than into transportation.<sup>28</sup> Partners might well have counted these transactions, as the Commerce Department once did, as merchandise and transportation credits.

Similarly, U.K. government debits in 1951 included \$340 million of "overseas expenditures of U.K. military forces, including f.o.b. value of food

<sup>26</sup> The \$7,929 million of transactions with U.S., Canada, and International Organizations less transactions by Canada and International Organizations with the world.

<sup>27</sup> This assumes that the debits of the Rest of the Sterling Area with nonsterling EPU countries were with the Continent. The close agreement between the U.K. and the Rest of the Sterling Area entries for the latter's credits arises from using U.K. records on both sides. (The slight discrepancy shown comes from rounding.) The excess of the Rest of the Sterling Area debits to the U.K. over U.K. credits from the Rest of the Sterling Area arises in the country accounts and could not be reconciled by introducing more debits by British colonies.

<sup>28</sup> Compare the corresponding adjusted merchandise import figures of the revised balance of payments in the *Survey of Current Business* (July 1954, Table 3, p. 10) and in the 1952 supplement (*Balance of Payments of the U. S., 1949–1951*, Table 1, p. 118).

<sup>25</sup> U.S. investment income and capital transactions are reported in *Survey of Current Business*, August issues. Canadian transactions are reported in *Canada's International Investment Position, 1926–1954*, Dominion Bureau of Statistics, International Trade Division, Balance of Payments Section; and *The Canadian Balance of International Payments and International Investment Position*, Annual Report, Ottawa, 1956. In the middle 1960's one might need to add Germany and possibly Italy and Japan to the list of principal capital suppliers.

and oil purchased and consumed overseas.”<sup>29</sup> To the extent that these purchases involved consumption in a country different from the one supplying the goods, the transaction might well have been entered into the partner’s merchandise account or, if it were bunker oil, into its transportation account.

The U.S. government account also includes a variety of other transactions which partners might put into a miscellaneous category, not knowing that the U.S. government was party to the transaction. These include expenditures of government personnel abroad and expenditures for government travel, wages and salaries of foreign employees, purchases of lands and buildings not of an income-producing character, and troop pay disbursed abroad.<sup>30</sup> Thus, it is not surprising to find that miscellaneous receipts of certain areas from the U.S. exceed payments recorded as “miscellaneous” by the U.S. France, Italy, and Germany in particular show large miscellaneous receipts from the U.S. not matched in the U.S. account.

The matrix of miscellaneous services is the only one of the services accounts to show an excess of credits. This was a slight one—only 2.6 per cent on gross transactions of around \$17 billion. However, this close apparent agreement emerges only after the rather substantial adjustments (previously described) to the U.K. miscellaneous services accounts to transfer petroleum transactions to the shipping and investment income accounts and after a further adjustment which consisted of entering into the U.K. account with each partner area the partner’s account of *gross* miscellaneous transactions with the U.K. Thus in the two-valued matrix the entries for the U.K. are the same on both sides.<sup>31</sup> One further feature of this adjustment should be noted. A balancing entry to maintain the over-all net miscellaneous services total remaining after all other adjustments was introduced into the U.K.’s unallocated column as a credit or debit depending on the sign needed. The over-all net services total in the U.K. account thus is that shown by the White Papers. The entries, gratifyingly, were usually small and less than \$100 million except in

<sup>29</sup> *Balance of Payments Yearbook*, IMF, Vol. 5, U.K. section, p. 5.

<sup>30</sup> See *Balance of Payments, Supplement, 1952*, pp. 6 ff.

<sup>31</sup> U.K. net miscellaneous service transactions with nonsterling EPU countries were obtained by subtracting the Rest of the Sterling Area transactions with nonsterling EPU countries from the nonsterling EPU transactions with the Sterling Area.

1954.<sup>32</sup> Besides the net overseas transactions of British petroleum companies, the net miscellaneous account of the U.K. includes (net) overseas transactions of dry cargo shipping companies, insurance companies, and the net profit of merchandise transactions not involving passage of goods through the U.K. customs territory. The fact that the balancing entry tended to rise over the period undoubtedly reflects the growing participation of British middlemen in world trade.

The treatment we have given to the U.K. miscellaneous services account also has the effect of excluding from the miscellaneous account (and from the net goods and services account) the interarea transfers implied in the official account by the inclusion of net profits from overseas merchandise transactions.

By following this procedure we arrive at a matrix which describes the main transactions for miscellaneous services apart from the profits on middleman trade. The method does not provide an estimate for British net miscellaneous transactions with British colonies, which are therefore excluded. Since we also lack any estimate of miscellaneous services transactions between France, Portugal, and Spain and their respective Overseas Territories, the totals shown in the matrix table, both around \$17 billion, are probably somewhat understated.

### 3. *The Contrasting Patterns for Merchandise and Services*

Economic centers tended to run services surpluses while almost all peripheral countries ran services deficits, and, in contrast, peripheral countries tended to run merchandise surpluses while the economic centers in Europe were mostly in merchandise deficit. This contrast can be readily seen in panels i and ii of Chart 4.<sup>33</sup> Areas composed predominantly of countries trading principally with the U.S. and the Sterling Area were in merchandise surplus while the Overseas Territories and Other Countries together

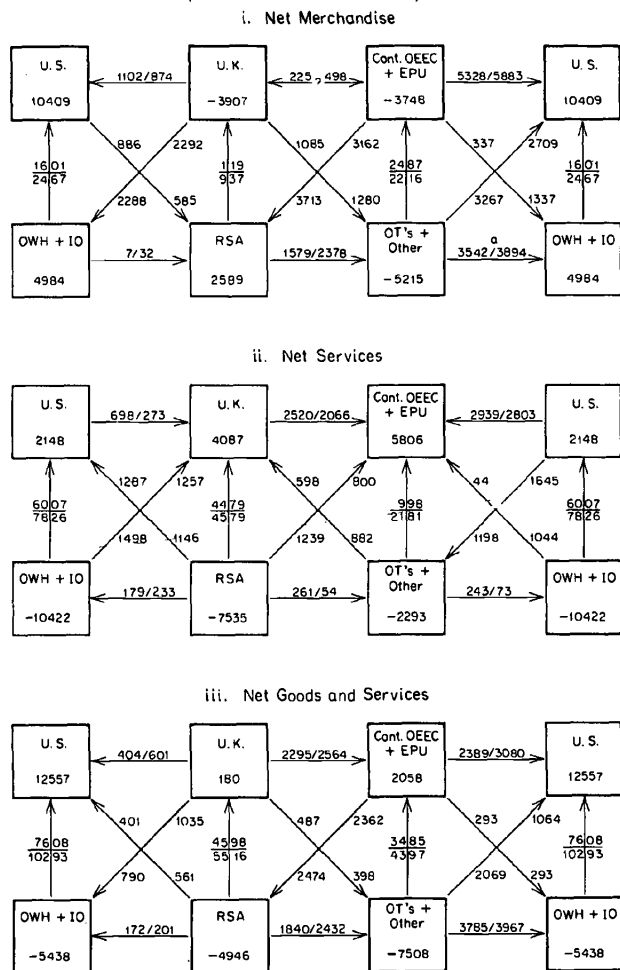
<sup>32</sup> They were \$40 million credit in 1950; \$97 million debit in 1951; \$74 million credit in 1952; \$25 million credit in 1953; and \$225 million credit in 1954.

<sup>33</sup> Panel iii of Chart 4 is a repetition of Chart 3 but with values appropriate to the adjusted net goods and services table (Table A-4) in which unallocated transactions are spread out. Comparison of the two diagrams will show that the adjustment has not altered the pattern nor the order of magnitude of the interarea balances; although some paired entries are brought closer together, the over-all effect is to increase the divergence.

(and separately) were in deficit. The two European centers were in goods deficit while the U.S. had a goods surplus. The over-all balances of areas on services account show the marked contrast between the surpluses of centers and the deficits of peripheral areas previously noted.

CHART 4

*A Comparison of Merchandise and Services Balances Between World Areas over the Five Years 1950-54: Six-Area Consolidation of the Two-Valued Matrix (arrow points from area debited to area credited; figures are placed adjacent to area of report; entries in boxes are the area's over-all balances)*  
(million U.S. dollars)



SOURCE: Table A-4.

NOTE: In contrast to Chart 3, unallocated transactions have been allocated. This figure is continued in Chart 5 in the next chapter.

<sup>a</sup> Venezuelan exports to the Netherlands Antilles were \$3049 million.

In spite of the merchandise deficits of European centers, each center ran goods surpluses with the areas entered in Chart 4 directly below it and composed mainly of countries trading principally with it, and each center ran goods deficits with the areas placed under the other principal centers—except for Overseas Territories and Other Countries which were in deficit with the U.S. The U.S., in fact, had a merchandise surplus with each of the five partner areas except the Rest of the Sterling Area.<sup>34</sup>

The services balances, in most cases, ran contrary to goods balances between the six areas diagramed. The economic centers earned net services from the peripheral areas in every instance but one—the U.S. made net services payments, largely because of military expenditures, to Overseas Territories and Other Countries (payments accruing to each). The Continent—which had goods deficits with the U.S., Other Western Hemisphere countries (Canada, but not Latin America according to the Continental accounts), and possibly the U.K.—enjoyed a services surplus with every partner; the U.K. ran services surpluses with every partner but the Continent.

A comparison of net merchandise and net goods and services (panels i and iii in Chart 4) shows that services not only tended to offset net merchandise but sometimes more than offset the balance of the goods account. The most marked such reversal came in the balance between U.S. and the Rest of the Sterling Area which, after taking account of services, favored the U.S. The small balance between the Rest of the Sterling Area and Other Western Hemisphere coun-

<sup>34</sup> The goods balance between the U.K. and Continental OEEC countries is ambiguous in that each side shows a surplus. It will be recalled that the balance between these areas was obtained by allocating U.K. transactions with the nonsterling EPU area between components, using partner reports as a guide, and by allocating Continental OEEC transactions with the Sterling Area by a similar method. The assumption was made that the U.K. distributed its goods sales and purchases to the Continent and Overseas Territories in proportion to the purchases and sales by the latter to the whole Sterling Area. Quite possibly a disproportionate part of the trade was conducted with the economic centers; if this were the case, it would seem more likely that several hundred million dollars of the Continent's net deficit with the Rest of the Sterling Area were incurred with the U.K. than that equal amounts of the Overseas Territories' much smaller surplus with the U.K. and other sterling countries was earned by the Continent. The balance in any case appears to have been small in relation to the large trade between the areas, and perhaps the most we can infer is a rough balance between the U.K. and the Continent.

tries was also reversed and came to favor the latter. In addition, reversals appear in the more detailed eight-area table in the balances of U.K. with Latin America and Other Countries and in the accounts of the last two areas with the Continent. The amount of the services surplus of the Continent with the U.K. was so large as to overshadow the uncertainty attaching to the goods balance, and the combined goods and service net was clearly in favor of the Continent (on the accounting principle used for directing petroleum transactions). Where net services and net

merchandise were augmenting, combining the two together produced sizable balances, e.g., between peripheral areas and the center of principal interest. In contrast, where net services offset net merchandise, the result was to reduce the balance in favor of the peripheral area substantially, e.g., between centers and the areas composed of countries trading principally with another center. The net goods surplus of the U.S. with the Overseas Territories and Other Countries also was substantially offset by U.S. net services payments (mainly on government account).

#### D. CONCLUDING OBSERVATIONS

Can the two-valued record of goods and services transactions be used to observe the structure of trading? The answer is a qualified yes. For gross inter-area trade, the broad structure is recorded very similarly by both creditor and debtor areas and it is much the same whether based on customs records or adjusted to a purchase-sales principle. Indeed, the differences introduced by different accounting principles are more important in modifying the view obtained of the structure of trade than the divergences between paired records in the two-value matrixes.

For net interarea trade, differences in accounting concept obviously loom larger. An even approximately complete adjustment to a purchase-sales matrix could not be made. The partial one given was sufficient, however, to indicate that its results could very well be different in pattern and magnitude.

Can the two-valued record of goods and services

transactions be used to observe the direction and magnitude of changes in gross and net trade from year to year and over a five-year period? The answer to this question is also a qualified yes. When the two values do not agree well, the one from the partner with the more complete record can usually be adopted, but disagreement indicates the usefulness of a two-valued record as a check.

By including services in the trade account, we obtain a more complete picture of the nature of specialization among countries, and we see that in a number of interarea relationships the net services trade is sufficiently important to offset (or more than offset) net goods trade. Thus, it is apparent that one should not seek to discuss the pattern of net trade between world areas without taking into account trade in services as well as merchandise.