# RESEARCH SEMINAR IN INTERNATIONAL ECONOMICS

Department of Economics
The University of Michigan
Ann Arbor, Michigan 48109-1220

## SEMINAR DISCUSSION PAPER NO. 276

# Trade Structure, Economic Development and International Transactions in Services*
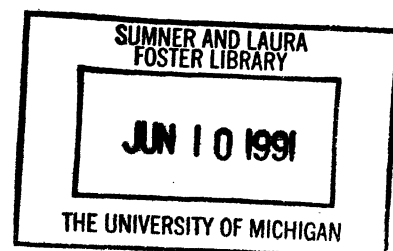
by

Bernard M. Hoekman and Guy Karsenty
GATT Secretariat

March 1991

Address correspondence to:

B. Hoekman
Economic Research and Analysis
GATT Secretariat
154 Rue de Lausanne
CH-1211 Geneva 21
Switzerland

# I. Introduction

International transactions in services have been a rather neglected topic in both the theoretical and empirical trade and development literature. One reflection of this is that studies analyzing the structure of international trade for countries or regions rarely take into account the existence of services. For example, in the literature on (changes in) revealed comparative advantage as measured by the relative specialization of a country's exports, the trade database is restricted to trade in merchandise (frequently manufactures). There is a corresponding lack of theoretical analysis of the role of service exports and imports in the development process.

In principle, the theoretical neglect of trade in services might be justified by arguing that what matters is not whether a product is a service or a tangible good, but whether a product is tradable or not. If this argument holds, standard theories of international trade and economic development should be applicable. However, the converse of this argument is that services, insofar traded, should then be taken into account when analyzing trade flows. Alternatively, it might be argued that standard theories do not apply. For example, the nonstorability of many services frequently implies that for international trade to occur, a necessary condition may be that factors of production move physically to the location of the consumer, that consumers move to the location of the producer, or that the services can be transported via telecommunications media.[1] Thus, while trade in merchandise implies the physical movement of goods across frontiers, trade in services may require differing "modes of delivery." This may well have implications for trade and investment patterns.[2]

Whether or not standard theories can be applied to services is therefore a question

---

[1]Sampson and Snape (1985).

[2]Many of the issues that arise in this context have been identified if not always analyzed in great detail in the existing literature. For discussions and references to the literature, see for example the contributions in Inman (1985), as well as Riddle (1986) and Stern and Hoekman (1988).

that is of both theoretical and empirical interest. To the extent that such theories are relevant, and many have argued that this should be the case,[3] it is then necessary to take into account international transactions in services when analyzing the trade performance of a country or region. The goal of this paper is to investigate the empirical significance of trade in services for countries with different levels of economic development. Data are presented that characterize the relative importance of trade in services for countries with widely differing per capita income levels, population, and growth experiences.

The plan of the paper is as follows. Section II discusses a number of possible hypotheses concerning the relationship between services-related production and trade and the level of economic development, and briefly reviews some of the relevant literature. Section III describes the contents of the database on service statistics used throughout the paper and discusses some of the problems that affect the data. Section IV investigates the impact of the existence of traded services for commonly used measures of relative specialization (revealed comparative advantage), initially suggested by Balassa (1965). The importance of trade relative to domestic production and apparent consumption is discussed in Section V. In Section VI the impact of alternative measures of trade in services is investigated. Section VII summarizes the results of the data exploration exercise.

## II. Some Theoretical Considerations

As noted in Hoekman and Stern (1990), the per capita demand for both goods and services can be expected to depend upon the level and rate of increase in per capita real incomes and relative prices and costs. For any given country the impact of the former will depend in part on the value of the relevant demand and income elasticities, while the latter will be a function of changes in factor productivity (technological change), as well as

---

[3]See, for example, Hindley and Smith (1984) and Deardorff (1985).

changes in economic structure and business practices. Of course, if the country is small,
and in the absence of trade barriers and other distortions, prices for tradables will be
determined on world markets.

Baumol (1967) and Fuchs (1968) have argued that services tend to lag behind
goods-producing sectors in terms of productivity improvements and to have income
elasticities of demand greater than unity. To the extent that this is true, the share of
spending on nontradable services will tend to rise with increases in per capita income.[4]
Available statistics indicate that the relative importance of marketed (as distinct from
nonmarketed, household) services in output and employment tends to be positively related
to differences in levels of development and per capita incomes. Possible reasons for this
include lagging productivity in services and structural changes such as rising labour force
participation rates for women,[5] greater urbanization, technological changes, and
increased specialization. These have led to the creation of new service activities, expansion
of part-time employment opportunities, and the growth of government services.[6] The
relative importance of different types of services is also likely to vary over time. A
comparison of low and high income countries by Park and Chan (1989) showed that the
relative importance of producer services (finance, insurance, real estate, professional
services such as engineering, consulting, and accounting, as well as cleaning and
maintenance) tends to be about three times greater in the high income countries.

Several complementary theoretical explanations have been suggested why countries
with low levels of economic development will tend to have lower relative prices for services

---

[4]While the service sector as a whole tends to lag behind goods-producing sectors in terms
of productivity growth, certain service activities have experienced very large increases in
productivity. As Baumol (1985) has emphasized, there are both "stagnant" and
"progressive" service activities. See also Carter (1987).

[5]There is a two-fold effect here. First, female employment is frequently concentrated in
service sectors, and second, increased labour force participation of women increases the
demand for paid services (household services, childcare, etc.).

[6]These issues have been analyzed at length in the literature. For a summary discussion,
see Stern and Hoekman (1988).

than more industrialized nations. Most tend to focus on a combination of assumed labour intensity and nontradability of services with differences in factor endowments and/or technologies.[7] For example, Balassa (1964) has argued that industrialized countries tend to have more productive labour in manufacturing activities than do developing countries, but that productivity differentials are much smaller for services as these tend to be labour intensive. Lower wages in developing countries then imply a lower relative price for services in developing countries (i.e., those with low per capita incomes). Clague (1990) argues that differences in relative efficiency are due in part to the fact that developing countries may not be able to produce goods that are not "self-contained," i.e., those whose production require extensive interaction with the rest of the economy or large scale organization.

Bhagwati (1984) has argued that labour abundance in developing countries implies lower wage-rental ratios than in industrialized nations. This in turn implies a lower relative price of labour intensive nontradable services, because more services can be bought in the developing country per unit of its exported (relative labour intensive) tradable good than in an industrialized country. Another explanation revolves around assumed economies of scale in manufacturing production as opposed to constant returns in service industries (Panagariya, 1988). Industrialized countries are assumed to be economically larger than poor countries, so that unit costs tend to be lower and per capita incomes higher. Industrialized country relative prices for services are then higher as a result of (1) greater relative demand for services (given higher per capita incomes); and (2) lower relative supply of services (due to specialization in increasing returns to scale manufactures production).

All these theories take the nontradability of services as given, even though service

---

[7]A recent exception is Feldman and Gang (1990), who argue that financial repression may be an additional explanation for lower relative prices for nontraded (service) products in developing countries. The reason is that this fosters rural-urban migration, expands the urban service sector, and thereby lowers relative prices.

transactions account for at least 20% of global trade (GATT, 1989). Many theorists believe that standard trade models may be applied or adapted to international transactions in services. As noted in Hoekman and Stern (1990), this implies that the evolution of trade and investment in services will depend on differences in per capita income levels, variations in factor endowments, distances from markets, technology and technological gaps, the degree to which capital, labour, and demanders are mobile, government policies, and firm strategies (market structure).

Of course, services differ from goods in important ways, the former usually being both nonstorable and intangible. In applying standard models and theories to services-related production and trade it may be that these differences are not adequately captured. For example, even if services are tradable, nonstorability implies that arbitrage will often be very difficult, so that there is unlikely to be a "world" market price. Alternatively put, product differentiation will be very prevalent. However, the distinguishing characteristics of services do not raise insurmountable problems in applying or adapting standard models and techniques. Thus, some of the recent models that have incorporated trade in services focus on trade in (differentiated) intermediate service inputs, and allow for the nonstorability of services.[8] The limited empirical evidence available supports the view that standard approaches can be fruitfully used to analyze trade in services.[9] However, the literature has little to say about the role of trade in services in the development process.

Building on the Heckscher-Ohlin-Samuelson and the specific factors models of

---

[8]E.g., Helpman and Krugman (1985), Jones and Kierzkowski (1989), and Markusen (1989). Others, such as Djajic and Kierzkowski (1989), analyze the possible linkages that may exist between trade in goods and trade in services.

[9]See, for example, Sapir and Lutz (1980, 1981), Sagari (1988), and Langhammer (1989). There is not complete agreement that standard trade theories can be applied to services. Even if they remain valid, their application is made more difficult due to the fact that there are multiple modes through which trade may occur (i.e., movement of producers or consumers, or embodiment in a telecommunication flow). For more discussion see Deardorff (1985), Gray (1988), and Hindley and Smith (1984).

international trade, a "stylized theory" of the evolution of trade in the development process has emerged in the literature.[10] A developing country with little capital is expected initially to produce and trade primary products in exchange for manufactured products. Over time the country will begin to produce labour intensive manufactures as the stock of industrial capital per worker is built up, resulting in an increase in the relative specialization in these products, as well as an increase in the export/output ratio of these products. The greater the endowment of labour relative to natural resources and capital, the lower relative wages, and the sooner the country can be expected to produce and export (low skilled) labour-intensive products. As countries at any point in time have different levels of development, trade patterns will change over time to reflect the evolution of relative costs. Thus, as comparative advantage in particular industries declines over time, export/output ratios in these industries stop rising and may fall, while import penetration ratios rise.

Empirical studies have shown that developing countries do tend to specialize in exporting relatively labour intensive goods (Yeats, 1990). Services are frequently relatively labour intensive. Does this imply that resource poor developing countries may (initially) have comparative advantage in such services? Presumably the answer is yes. The higher relative prices of services in developed countries is another indicator of potential developing country comparative advantage. Given that the services involved will frequently be relatively labour-intensive, developing countries should be able to provide such services at lower cost. However, it is also a characteristic of many services that they require factor mobility in order to be provided in a foreign country. Due to the well-known restrictions on such labour mobility, developing countries may find themselves unable to exploit their advantage.

Natural resources may be important for the production and export of services as well as goods. The obvious example pertains to such natural resources as the climate, the

---

[10]See Park and Anderson (1990) for a review of the literature and a synthesis.

availability of which is frequently a necessary condition for the export of tourism services (sun and beaches, ski slopes, etc.). It can therefore be supposed that, all other things equal, the greater such "tourism-related" natural resources, the less quickly will one observe a country starting to produce and export (labour-intensive) manufactures or other types of services. However, if the costs of capital-intensive infrastructure and other necessary inputs required to export tourism services are substantial, this may not occur. It is also necessary to take into account variables such as political stability, safety, etc.

Nonetheless, relatively large, densely populated, and resource-poor countries can be expected to be relatively specialized in labour-intensive products, both manufactures and services. Conversely, countries with significant endowments of service-specific natural resources will tend to export such services (i.e, tourism). It can also be hypothesized that the dynamics of the "standard" story should also apply to trade in services as well as to goods, i.e., countries gradually shift from natural resource-intensive production and trade in goods *and* services to labour-intensive production and trade, progressing from mostly unskilled to more skilled labour input requirements.

Unfortunately, the high level of aggregation for the services trade data make it a rather meaningless exercise to relate the factor intensity of traded services to endowments and net exports. Currently, the most that realistically can be done is to determine (changes in) the structure of exports. Subsequent sections of this paper explore the extent to which the available data shed light on the relative importance of trade in services for different country groups. Three related issues will be addressed in particular:

1. Both theoretical considerations and empirical studies of merchandise trade flows suggest that developing countries tend to have comparative advantage in producing and exporting either relatively labour intensive and "self-contained" products (to use Clague's terminology), or country-specific natural resource intensive products. Given that many services are labour or natural resource intensive, on average it can be expected that developing countries have a comparative advantage in services. What do the data indicate

concerning the "revealed" comparative advantage of these countries?

2. Countries with high (low) per capita income levels tend to have high (low) proportions of their GDP originating in marketed service sectors. An implication of this is that if poor countries are relatively specialized in exports of service products, the ratio of trade to output is likely to be higher than for richer countries. To what extent is this the case?

3. Services differ from merchandise in that frequently mobility of producers or consumers is required for provision to be feasible. In conjunction with such technological requirements, higher relative prices for services in industrialized countries constitute an obvious incentive for producers from developing countries to relocate. However, to the extent such movement occurs it will tend to be registered in the balance of payments in the form of remittances and investment income. What do existing data suggest concerning the relative importance of factor mobility as opposed to cross-border trade in services?

Before addressing these issues, a brief summary is given of to the database that is used.

### III. The Database on Services

The trade data that are used are drawn from balance-of-payments statistics as reported by countries to the IMF. Production data have been incorporated from the United Nations Statistical Office (UNSO) and the World Bank, while data for important Asian economies such as Hong Kong and Taiwan that do not report to international organizations are drawn from national sources. IMF balance-of-payments statistics are currently the only source of information on trade in services available on a global basis.[11] The database therefore simply records the standard components of the current account of the balance of payments as defined in IMF (1977) and reported on the data tapes of the IMF. "Commercial services" transactions are considered to comprise the sum of "transport"

---

[11]See GATT (1989) or Hoekman (1990).

(largely freight and passenger transport by sea and air), "travel" (expenditures by nonresidents — mostly tourists — while staying in a foreign country), and "other services and income." The last category includes items such as brokerage, insurance, communications, leasing and rental of equipment, technical and professional services, as well as labour and property income.[12]

As discussed elsewhere, data on services are less reliable and comparable than data on merchandise (GATT, 1989; Hoekman and Stern, 1990). One indication of the weakness of the data is the fact that imbalances between imports and exports at the world level are quite large. Table 1 shows that reported world imports of commercial services are greater than world exports. As a percentage of total world trade (exports plus imports), the total imbalance was 2.3% in 1985, down from approximately 3% during the 1970s. In comparison, the discrepancy for merchandise trade flows for the same set of countries was only $3.1 bn (0.1%) in 1985. By far the largest source of discrepancy is due to nonreporting of transport receipts by significant exporters (Greece, for example) and users of flags of convenience, as well as the nonavailability of transport data for non-IMF members (such as the Soviet Union). In absolute terms the difference between total transport imports and exports was about US $24 billion in 1985, or about 8% of total trade in transport services. The discrepancy between global exports and imports of the category "other services and income" is also significant, averaging about 4% of total trade in these services during the 1970s. In 1985, however, the discrepancy declined to less than 1%.

While country coverage for aggregate categories such as "transport," "travel," and "other services and income" is relatively comprehensive, this is not the case for more disaggregated data. Given that more detailed statistics are only available for OECD

---

[12]This follows GATT (1989). Thus, official transactions and investment income are excluded from commercial services. Labour and property income are included because some countries include these items indistinguishably in the aggregate category "other services and income."

countries, in this paper use is only made of the three aggregate categories.[13] Production

data consist of sectoral contributions to total value added (i.e., GDP) in current prices

based on the International Standard Industrial Classification (ISIC). Data are available

from the UNSO on a 1-digit ISIC basis and from the World Bank according to an

aggregated 3-sector breakdown (agriculture, industry, and services). The UNSO data are

used in this paper as they are the most detailed. A comparison of World Bank and UNSO

production data indicates that aggregate figures reported by the two sources are almost

identical.[14]

Given problems of nonreporting, care has been taken to ensure that time series

comparisons across country groups are for the same set of countries and that all of the

countries report the required data in each of the relevant years. Countries that do not

report trade data for 1970, 1975, 1980, and 1985 were excluded from the analysis of

revealed comparative advantage. 1985 is the latest year included because a significant

number of countries do not report data to the IMF and the UNSO for more recent years.

## IV. Revealed Comparative Advantage

Specialization indices have been used extensively in the literature as a proxy for

determining the pattern of comparative advantage across countries. While only loosely

consistent with the theoretical literature on comparative advantage — which relates trade

patterns to differences in technology and factor endowments that are reflected in relative

costs of goods and services — these indices are nonetheless useful for descriptive purposes.

Indeed, recent empirical research has indicated that revealed comparative advantage

indices are highly correlated with what the Heckscher-Ohlin theory would predict. Yeats

---

[13]A comparison of OECD and IMF data reveals that on average reported values for the aggregate categories "transport," "travel," and "other services and income" reported in the two sources are very similar. See Hoekman and Karsenty (1990) for more detailed comparisons (available from the authors on request).

[14]More detailed comparisons between sources of production data are made in Hoekman and Karsenty (1990).

(1990) compared revealed comparative advantage indices with indices based on relative labour and capital inputs for specific products and showed that products in which developing countries have achieved a revealed comparative advantage are highly concentrated in a broad group of labour intensive products.

Specialization indices are defined as the ratio of exports of a "product" category to a country's total exports, divided by the same ratio for the sum of all the countries in the database (i.e., $[X_{ij}/Y_j]/[X_{iw}/Y_w]$, where $X_{ij}$ are exports of product i by country j, $Y_j$ are total exports of goods and services by country j, and w stands for the "world:" the sum of all countries). The value of this index may range from zero to a very large number. If the index is greater than one this implies that the country is relatively specialized in the product concerned.

Table 2 reports indices of relative specialization for selected country groupings for five-year intervals from 1970 to

985. Definitions of country groups can be found in the appendix. The indices have been calculated for exports on a balance of payments basis at a very high level of aggregation – merchandise, transport services, travel, and "other services and income" – reflecting the nonavailability of detailed trade statistics for services. However, as our main interest is to investigate the relative importance of services in the structure of international trade, this was not felt to be a significant problem. It should be noted that merchandise accounts for about 80% of world trade. Thus, if a country exports no commercial services at all, the merchandise index will be about 1.2. The upper bound for the commercial services ratio is much higher at 5.6, as their share in world exports is only 18%. Given that "transport," "travel," and "other services and income" account for 6%, 5%, and 7% of world trade, respectively (GATT, 1989), upper bounds for their specialization ratios are 16.7, 20, and 14.3. This should be kept in mind when interpreting the reported figures.

Observe that indices vary significantly across country groups. Small countries (defined as those with less than one million people) and least developed countries are the only country groups to be or have become relatively specialized in exports of services in 1985. Moreover, their relative specialization increased significantly during this 15-year period, with the "service-intensity" of exports of the group of small countries being more than double the world average in the mid-1980s. These countries have higher than average export intensities for all three services categories, but are clearly most highly specialized in travel, that is, tourism. The relative importance of travel receipts was almost three times the world average in 1970, rising to almost five times in 1985. Not surprisingly, developing countries that are major exporters of petroleum products or manufactures tend to be relatively specialized in merchandise. This is also the case for very large developing countries (defined as those with populations greater than 100 million). The relative importance of exports of commercial services tends to be low for many of these countries.

Countries that are highly indebted or experienced negative average annual real

growth rates of GDP during the 1965–88 period are also relatively specialized in merchandise. The same holds for countries demonstrating substantially higher than average growth rates of GDP.[15] Thus, there is apparently no obvious difference between the fast growing and stagnating countries insofar as (changes in) the relative specialization in service exports is concerned. But, significant differences exist regarding the composition of exports. In particular, fast growing countries are relatively specialized in exports of transportation services. In part this is due to the inclusion of Japan and Norway in this group. Indeed, if these two countries are excluded, the revealed comparative advantage index becomes only 0.57 in 1970, but rises to 1.03 in 1985. This indicates that most of the members of the group of rapidly growing countries have been specializing in transport, and that the decline in the index for transport for the group as a whole reported in Table 2 is due to a decline in revealed comparative advantage for Japan and Norway.

Per capita income levels also have no clear relationship with the service intensity of exports. Services appear to be comparatively unimportant for very poor countries (less than US $500 per capita in 1985) and those with per capita incomes between $1,500 and $6,000, while countries with per capita incomes ranging from $500 to $1,500 and $6,000 to $10,000 are relatively specialized in commercial services.[16] Nonetheless, as noted earlier, least developed countries have become relatively specialized in commercial services (as reflected by indices greater than one in 1985 for all categories of services), and the same is the case for countries in the $500 to $1,500 per capita income range. This raises the question why the group of countries with per capita incomes below $500 appear not to have revealed comparative advantage in services, as the membership of the group overlaps to a large extent with that of the least developed countries. The reason is that

---

[15]Countries were selected based on whether average annual growth rates exceeded 3.5% during the 1965–88 period, as reported in the World Bank's *World Development Report, 1989.*

[16]Countries are grouped according to 1985 per capita income levels as calculated from the World Bank's *World Tables* diskettes.

two large members of this group (Nigeria and Indonesia) have very low indices. If the four large countries in this group are excluded, the average specialization index for the remaining countries becomes 1.18.[17]

In contrast to the structure of exports, there appears to be a negative relationship between per capita income and the relative service intensity of imports. It can be seen from Table 3 that in 1985 poorer countries (with per capita incomes below US $3,000) tended to be relatively specialized in imports of commercial services, while the opposite holds for richer countries. A similar pattern can be observed for the non-income based groups in the second part of Table 3.

All of the country groups in the second part of Table 3 experienced either a relatively constant or an upward trend in the relative importance of imports of commercial services between 1970-85, while the imports of the most highly industrialized countries (with per capita incomes of US $10,000 or more) have become slightly less commercial service intensive since 1975. The relative increases in commercial services imports during the 1975-85 period is across the board, in that imports of all three components of commercial services became more important for all of the nonincome-based groupings of countries.

It was noted earlier that as per capita incomes rise there is not only a rise in the share of marketed services in GDP and employment, but there is generally also a shift in the composition of service sector activities. In particular, the relative importance of producer services rises, while that of personal and distribution services declines (Park and Chan, 1989). As many producer services tend to be more tradable than most personal and distribution services, it may therefore be expected that the relative importance of imports of the current account component "other services and income" will also rise over time, as these largely comprise producer services. This may be the case for imports by high-

---

[17]Up from 0.82 in 1970. Both Nigeria and Indonesia are net oil exporters, with obvious implications for relative specialization indices. It is noteworthy that the other two large countries in the less than $500 group (India and Pakistan) more than doubled their relative specialization in commercial services between 1970 and 1985, reporting indices of 1.39 and 1.19, respectively, in 1985.

growth developing countries in particular — Asian NICs, for example — as it is unlikely that these countries can source all the required service inputs locally. Table 3 shows that as of 1985, fast growing countries have the highest degree of import dependence for "other services" of all the country groups. However, this is partly due to the inclusion of Japan and Norway, these countries having indices of 1.52 and 1.37, respectively. If they are excluded, the remaining countries have an average index of 1.21, equal to that reported by both the large and the poor developing countries. Thus, data indicate that a relative increase in imports of "other services and income" is likely to be a general phenomenon for the poorer countries, whatever their average growth rates.[18]

Summarizing, least developed countries and small nations tend to be relatively specialized in exports of services. The same holds for the group of countries with per capita incomes in the $500 to $1,500 range. If the four large countries are excluded from the group of countries with per capita incomes below $500, the same finding emerges. The reason that the less than $500 group as a whole does not report a revealed comparative advantage in commercial services is due to the very high specialization in merchandise on the part of Nigeria and Indonesia, as the other two large countries had developed a revealed comparative advantage in services by 1985. Thus, it can be concluded that many of the poorest developing nations tend to be relatively specialized in services exports, and their revealed comparative advantage has been increasing since 1970. Developing countries as a group, i.e., not just the poorer ones, also tend to import more commercial services than the world average. For the group of poorer countries this is primarily due to imports of transport and "other services and income."

## V. Trade/output ratios

In addition to the structure of trade, the magnitude of trade in services relative to

---

[18]"Other" services may in part also be provided via inward foreign direct investment. As many services require a local presence to be sold, in many cases the necessary inputs may be provided by affiliates of foreign firms. Hoekman and Stern (1990) have noted that inward FDI in services has been increasing in many countries during the last decade.

production or apparent consumption is of interest. The greater trade flows are in comparison to output, the more important trade will be to the country involved. As is the case with the structure of trade, analyses of the importance of trade in relation to output tend to focus on merchandise. Table 4 reports data on export/output and import penetration ratios for commercial services. While the country groups are the same as those used in Tables 2 and 3, as noted in the Appendix the country coverage of the statistics is greater because more countries report data in 1975 than in 1970.

Export/output ratios for services (merchandise) are defined as exports of commercial services (merchandise) divided by value added produced in ISIC sectors 6–8 (ISIC 1–3).[19] Import penetration ratios are defined as imports of commercial services (merchandise) divided by value added of ISIC sectors 6–8 (ISIC 1–3) minus exports plus imports of commercial services (merchandise). While the choice of ISIC sectors used in the denominators of the ratios is somewhat arbitrary, our interest is only to compare differences in these ratios across country groupings. Value added data are used due to a lack of comparable gross output information on a sectoral basis, implying an upward bias in the level of all of the ratios, but especially the merchandise ones. The reason for this is that value added/gross output ratios tend to be less in manufacturing than in services. Alternatively put, intermediate consumption by the former is on average higher.

Inspection of Table 4 reveals that both export/output and import penetration ratios for merchandise are much higher than those for services, and would be higher still if construction, social services, and government (ISIC sectors 5 and 9) were to be included as part of the denominator for the services ratios. This is not unexpected, of course, as it reflects the limited tradability of many services. More surprising is the fact that the difference between export/output ratios for merchandise and for services is significantly smaller than the average for some groups of countries. This is the case for poor countries

---

[19]ISIC sectors 1–3 comprise agriculture, mining, and manufacturing, while ISIC 6–8 covers wholesale and retail trade, hotels and restaurants, transport, storage, communications, real estate, business and financial services.

in particular. The average merchandise export/output ratio for countries with per capita incomes between $500 and $1,500 is only twice the services ratio, while for the group of least developed countries the increment is only 50%. This contrasts with very rich countries and nations that have experienced much higher than average growth rates. For both groups of countries the merchandise export/output ratio is about seven times greater than the services ratio. Thus, the magnitude of export/output ratios in services relative to export/output for goods appears to be inversely related to both the level and rate of growth of per capita income. It might be hypothesized that in part this difference can be explained by the fact that the share of services in total output is higher in more industrialized countries. It can also be noted that the share of agriculture tends to be high in developing countries. As a large share of this output tends to be consumed locally, merchandise export/output ratios can be expected to be lower than in industrialized nations.

It was noted earlier that small countries (with less than one million people) tend to be relatively specialized in commercial service exports. Table 4 indicates that these countries also have the highest export/output and import penetration ratios for services. However, the merchandise ratios for these countries are even bigger, exceeding 100%. Thus, these countries are extremely dependent on foreign trade in general, not just services. Merchandise export/output and import penetration rates are also very high for countries with per capita incomes ranging between $6,000 and $10,000, again indicating the relative importance of trade for these countries. Table 4 suggests that both service and merchandise ratios tend to rise with per capita income levels. Poor countries are generally least open to foreign trade, whether services or merchandise. Among developing countries, very large countries tend to demonstrate very low export/output ratios.

A number of interesting results emerge if changes in ratios between 1975–85 are calculated. As illustrated in Table 5, export/output ratios for services grew much faster than merchandise export/output ratios in poorer countries, while the converse occurred for richer nations. On average, merchandise ratios grew much faster than services ratios.

The greatest increases for both export/output and import penetration ratios took place in developing country exporters of manufactures. In six instances, primarily rich countries and those with very high average annual increases in real per capita income, an increasing merchandise ratio was accompanied with a *decrease* in the corresponding services ratio. The message appears to be that the "intensity" of services trade relative to merchandise declines with economic development and growth.

It is generally accepted that in the development process the relative importance of services and manufactures tends to grow in tandem. While very rich countries may at some point experience a decline in the share of manufactures in GDP, while building up a manufacturing base it is also necessary to build up a services infrastructure. To the extent that services are tradable and/or foreign direct investment is allowed, one implication of this may be that trade-output ratios for merchandise and for services should grow in tandem for developing countries. The data offer some support for this conjecture, as changes in export/output ratios for both merchandise and services tend to be positive for developing countries, including large countries, in contrast to richer countries.

Table 6 presents data on export/GDP ratios, focusing on the impact of including commercial services as a component of total exports. Such ratios are frequently used as an indicator of openness and ongoing integration of the world economy.[20] It is clear that the inclusion or exclusion of commercial services has only a minor impact for most country groups. However, for some groups including services has a significant impact. This is the case for small countries (a 24 percentage point difference in 1985) and for countries with per capita incomes in the $6,000 to $10,000 range (an eleven percentage point difference in 1985). These two groups saw the ratio of merchandise exports to GDP decline during 1975–85, a decline that is largely compensated if commercial service exports are taken into account.

---

[20]See, e.g., GATT (1989).

## VI. Alternative measures of trade in services

In this Section the impact of alternative measures of trade in services is explored. As noted earlier, commercial services consist of a mix of services and returns to labour and intellectual property. Returns related to longer-term labour movement and portfolio and foreign direct investment (i.e., interest-related flows, re-invested earnings, and repatriation of profits) are excluded. As provision of many services requires physical proximity between supplier and demander, suppliers may establish a local presence in the country of consumption. If the presence is longer-term, this will be registered in the balance-of-payments as foreign direct investment. While the sales made by affiliates, be they services or goods, do not constitute trade, Rugman (1987) has argued that returns on foreign direct investment (FDI) should be included as a category of trade in services, as these can be considered to be a proxy for trade in the intangible intermediate (service) products of multinational enterprises (MNEs).

The effect of doing this is demonstrated in Table 7. Clearly, FDI income is only significant for industrialized countries, i.e., those with per capita incomes exceeding US $10,000. The magnitude of FDI income for these countries as a whole is about 20% that of their commercial exports.[21] For all other country groups FDI-related income flows are trivial. The only exception are the fast growing countries. The relative importance of FDI income for these countries doubled during 1975–85, largely due to the inclusion of Japan in this group. If Japan and Norway are excluded, the relative importance of FDI income drops to only 1% in 1985, up from 0.5% in 1975.

Table 7 also provides information on the relative importance of income related to factor movement as opposed to cross-border trade in service products and intangible assets. The former are approximated by FDI flows, labour income, and worker remittances, while the latter is defined as commercial services minus labour income.

---

[21]As noted earlier, commercial services do not include returns to FDI. FDI flows are expressed here as a percentage of total commercial services only to determine their relative magnitude for each of the country groups.

Calculating the ratio of these two magnitudes provides an indication of the relative importance of factor movement.[22] Observe that factor movement is very important for poor countries. Indeed, for the least developed countries factor returns — largely labour movement — are over 50% *larger* than non-labour income related exports of commercial services. Returns to movement of labour are also very important for large developing countries, being over 75% of commercial service exports. Note also that the relative importance of labour-related flows has increased dramatically for these countries, doubling between 1975 and 1985.

## VII. Concluding Remarks

The data that have been presented in the foregoing indicate that as far as global patterns of trade are concerned, the poorer developing countries appear to be relatively specialized in exporting services. Very small nations, although they tend to account for an insignificant share of world trade, are the most highly specialized in services exports. Given that many poor developing countries appear to have a "revealed comparative advantage" in certain categories of services, it is likely that this implies that these services are either labour intensive, natural resource-based, or both. It was hypothesized in Section III that relatively large, densely populated and resource-poor countries should specialize in relatively labour intensive products, including services. Two of the countries that best meet these conditions, i.e., India and Pakistan, had developed a "revealed" comparative advantage in exports of commercial services by 1985.

Not only are the poorer developing countries more likely to be relatively specialized in commercial service exports, but the ratio of trade relative to output for services tends to be significantly higher than merchandise trade/output ratios in these countries as compared to industrialized (industrializing) nations. In part this is likely to be a reflection

---

[22]It should be mentioned that the calculations that follow are approximations, as not all countries report labour income separately, For most country groups the reported ratios are biased downward.

of the phenomenon noted in Section III that the share of services in GDP (and the relative price of nontraded services) tends to rise as economic development proceeds. However, it demonstrates that trade may be of greater relative importance to these countries than to industrialized countries. Furthermore, for some groups of countries service exports are sufficiently important to significantly increase trade/GDP ratios.

The concept of trade in services that was used throughout most of the paper was rather narrow. If a broader, more comprehensive definition of trade in services is used, the relative importance of service exports increases for both industrialized and developing countries. It was shown that services "trade" may become much more significant for developing countries if the definition of trade is broadened to include labour flows. As is suggested by the theoretical considerations noted in Section II, labour movement is very important for many of these countries, often generating greater revenues than direct exports of service products.[23] For industrialized countries receipts related to outward foreign direct investment are significant, but in relative terms of much lesser importance than labour flows for developing nations.

A general conclusion that emerges is that trade in services should explicitly be taken into account when analyzing the structure of trade for a country or groups of countries. This is the case especially for small nations, as these are frequently highly dependent on services. The same holds for least developed countries. These countries are not only relatively specialized in service exports, but such exports are more important in relation to total output and total exports than is the case for richer countries.

---

[23]Hoekman (1990) reports some country specific data on the volume of labour flows.

**References**

Balassa, Bela. 1964. "The Purchasing Power Parity Doctrine: A Reappraisal," *Journal of Political Economy*, 72, 584–96.

Balassa, Bela. 1965. "Trade Liberalization and "Revealed" Comparative Advantage," *Manchester School of Economics and Statistics*, 33, 99–124.

Baumol, William. 1967. "Macroeconomics of Unbalanced Growth," *American Economic Review*, 57, 415–24.

Baumol, William. 1985. "Productivity Policy and the Service Sector," in Robert P. Inman (ed.), *Managing the Service Economy: Prospects and Problems*. New York: Cambridge University Press.

Bhagwati, Jagdish. 1984. "Why Are Services Cheaper in the Poor Countries," *Economic Journal*, 94, 279–86.

Carter, Michael. 1987. "The Service Sector," in Rodney Maddock and Ian McLean (eds.), *The Australian Economy in the Long Run*. Cambridge: Cambridge University Press.

Clague, Christopher. 1990. "Relative Efficiency, Self-Containment, and Comparative Costs of Less-Developed Countries," *Economic Development and Cultural Change*, forthcoming.

Deardorff, Alan. 1985. "Comparative Advantage and International Trade and Investment in Services," in Robert Stern (ed.) *Trade and Investment in Services: Canada/U.S. Perspectives*. Toronto: Ontario Economic Council.

Djajic, Slobodan and Henryk Kierzkowski. 1989. "Goods, Services, and Trade," *Economica*, 56, 83–95.

Feldman, David and Ira Gang. 1990. "Financial Development and the Price of Services," *Economic Development and Cultural Change*, 38, 341–52.

Fuchs, Victor. 1968. *The Service Economy*. New York: Columbia University Press.

General Agreement on Tariffs and Trade. 1989. *International Trade, 1988–89*. Geneva: GATT.

Gray, H. Peter. 1988. "Services and Comparative Advantage Theory," in H. Giersch (ed.), *Services in World Economic Growth*. Tubingen: J.B. Mohr.

Helpman, Elhanan and Paul Krugman. 1985. *Market Structure and International Trade*. Cambridge: MIT Press.

Hindley, Brian and Alasdair Smith. 1984. "Comparative Advantage and Trade in Services," *The World Economy*, 369–90.

Hoekman, Bernard M. 1990. "Production, Employment, Trade and Foreign Direct Investment in Services: A Global Perspective," in Patrick Messerlin and Karl Sauvant (eds.), *The Uruguay Round: Services in the World Economy*. Washington D.C.: The World Bank.

Hoekman, Bernard and Guy Karsenty. 1990. "Statistics on Services and Multilateral Negotiations: A review of the available data," paper presented at the fifth meeting of the Voorburg Group on Service Statistics, Paris, October 2–5, 1990.

Hoekman, Bernard and Robert Stern. 1990. "Evolving Patterns of Trade and Investment in Services," in Peter Hooper and J. David Richardson (eds.), *International Economic Transactions: Issues in Measurement and Empirical Research*, University of Chicago Press, forthcoming.

Inman, Robert (ed.). 1985. *Managing the Service Economy: Prospects and Problems.* Cambridge: Cambridge University Press.

International Monetary Fund. 1977. *Balance of Payments Manual.* Washington D.C.: IMF.

Jones, Ronald and Henryk Kierzkowski. 1989. "The Role of Services in Production and International Trade: A Theoretical Framework," in Ronald Jones and Anne Krueger (eds.), *The Political Economy of International Trade.* Oxford: Basil Blackwell.

Langhammer, Rolf. "North-South Trade in Services: Some Empirical Evidence," in Herbert Giersch (ed.), *Services in World Economic Growth.* Tubingen: J.B. Mohr.

Markusen, James. 1989. "Trade in Producer Services and in Other Specialized Intermediate Inputs," *American Economic Review*, 79, 85–95.

OECD. 1990. "OECD Countries' International Trade in Services, 1970–1987." Paris: OECD.

Panagariya, Arvind. 1988. "A Theoretical Explanation of Some Stylized Facts of Economic Growth," *Quarterly Journal of Economics*, 103, 509–26.

Park, Se-Hark, and Kenneth Chan. 1989. "A Cross-country Input-Output Analysis of Intersectoral Relationships between Manufacturing and Services," *World Development*, 17, 199–212.

Park, Young-Il and Kym Anderson. 1990. "The Rise and Demise of Textiles and Clothing in Economic Development: The Case of Japan," *Economic Development and Cultural Change*, forthcoming.

Riddle, Dorothy. 1986. *Service Led Growth: The Role of the Service Sector in World Development.* New York: Praeger.

Rugman, Alan. 1987. "Multinationals and Trade in Services: A Transaction Cost Approach," *Weltwirtschaftliches Archiv*, 123, 651–67.

Sagari, Silvia. 1988. "International Trade in Financial Services," The World Bank, mimeo (November).

Sampson, Gary and Richard Snape, 1985, "Identifying the Issues in Trade in Services," *The World Economy*, 8, 171–81.

Sapir, Andr? and Ernst Lutz. 1980. "Trade in Non-Factor Services: Past Trends and Current Issues," World Bank Staff Working Paper No. 410. Washington D.C.

Sapir, Andr? and Ernst Lutz. 1981. "Trade in Services: Economic Determinants and Development-Related Issues," World Bank Staff Working Paper No. 480. Washington D.C.

Stern, Robert and Bernard Hoekman. 1988. "The Service Sector in Economic Structure and in International Transactions," in Leslie V. Castle and Christopher Findlay (eds.), *Pacific Trade in Services*. London and Sydney: Allen & Unwin.

Yeats, Alexander. 1990. "What do Alternative Measures of Comparative Advantage Reveal about the Composition of Developing Countries' Exports?," PRE Working Paper No. 470, The World Bank.

BH/ac
2/11/90

Table 1

Global discrepancies between exports and imports of commercial services and major components. 1970-1988
(US $ billion)

|  | 1970 | 1975 | 1980 | 1985 |
|---|---|---|---|---|
| Commercial services | -3.5 | -11.3 | -23.2 | -17.8 |
| Transport | -5.5 | -16.2 | -31.0 | -23.9 |
| Travel | 0.7 | -0.7 | -2.1 | 3.9 |
| Other servises | 1.4 | 5.6 | 9.9 | 2.2 |

Discrepancies as a percentage of total trade
(Exports plus imports)

|  | 1970 | 1975 | 1980 | 1985 |
|---|---|---|---|---|
| Commercial servies | -2.7 | -3.3 | -3.0 | -2.3 |
| Transport | -10.1 | -11.5 | -10.0 | -8.5 |
| Travel | 1.9 | -0.8 | -1.1 | 1.8 |
| Other services | 3.6 | 4.9 | 3.8 | 0.8 |

Note: Negative magnitudes imply imports exceed exports. Absolute values of commercial service exports were $63 billion, $165 billion, $364 billion and $380 billion, respectively, in 1970, 1975, 1980 and 1985.

Source: GATT database.

## inclusive export relative specialization indices

| | Merchandise | | | | All Comm.Services | | | | Transport | | | | Travel | | | | Other services | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1970 | 1975 | 1980 | 1985 | 1970 | 1975 | 1980 | 1985 | 1970 | 1975 | 1980 | 1985 | 1970 | 1975 | 1980 | 1985 | 1970 | 1975 | 1980 | 1985 |
| **ta income groups** | | | | | | | | | | | | | | | | | | | | |
| < 500 | 1.10 | 1.13 | 1.11 | 1.07 | 0.57 | 0.42 | 0.52 | 0.67 | 0.74 | 0.55 | 0.53 | 0.54 | 0.36 | 0.37 | 0.72 | 0.76 | 0.55 | 0.33 | 0.35 | 0.71 |
| < 1 500 | 1.02 | 0.98 | 0.94 | 0.88 | 0.91 | 1.07 | 1.27 | 1.53 | 0.57 | 0.82 | 1.07 | 1.36 | 1.35 | 1.62 | 1.85 | 1.90 | 0.93 | 0.95 | 1.06 | 1.41 |
| < 3 000 | 1.01 | 1.03 | 1.07 | 1.08 | 0.97 | 0.85 | 0.66 | 0.65 | 0.56 | 0.56 | 0.55 | 0.66 | 1.55 | 1.43 | 0.91 | 0.80 | 0.97 | 0.76 | 0.98 | 0.54 |
| < 6 000 | 1.08 | 1.06 | 1.03 | 1.03 | 0.68 | 0.74 | 0.85 | 0.85 | 0.68 | 0.70 | 0.77 | 0.75 | 0.84 | 1.11 | 1.07 | 1.08 | 0.54 | 0.52 | 0.79 | 0.78 |
| <10 000 | 0.82 | 0.83 | 0.89 | 0.89 | 1.75 | 1.74 | 1.50 | 1.49 | 1.29 | 1.38 | 1.37 | 1.43 | 3.51 | 3.04 | 2.54 | 2.43 | 0.75 | 1.21 | 0.89 | 0.86 |
| >10 000 | 1.00 | 1.00 | 0.99 | 1.00 | 1.01 | 1.01 | 1.03 | 1.01 | 1.07 | 1.06 | 1.06 | 1.02 | 0.87 | 0.86 | 0.89 | 0.90 | 1.05 | 1.07 | 1.10 | 1.08 |
| **Least developed countries** | 1.05 | 0.99 | 0.96 | 0.93 | 0.79 | 0.85 | 0.96 | 1.25 | 0.80 | 0.99 | 0.96 | 1.14 | 0.56 | 0.62 | 0.95 | 1.13 | 0.97 | 0.86 | 0.97 | 1.44 |
| Oil exporters | 1.03 | 1.10 | 1.14 | 1.11 | 0.87 | 0.58 | 0.39 | 0.50 | 0.37 | 0.32 | 0.31 | 0.31 | 1.89 | 1.20 | 0.65 | 0.78 | 0.57 | 0.42 | 0.28 | 0.45 |
| Manufactures exporters | 1.07 | 1.02 | 1.03 | 1.06 | 0.70 | 0.91 | 0.87 | 0.75 | 0.94 | 0.82 | 0.96 | 1.03 | 0.57 | 0.77 | 0.69 | 0.59 | 0.51 | 1.10 | 0.92 | 0.63 |
| Highly indebted | 1.02 | 1.04 | 1.06 | 1.05 | 0.91 | 0.81 | 0.71 | 0.76 | 0.58 | 0.56 | 0.62 | 0.71 | 1.72 | 1.45 | 0.97 | 0.93 | 0.60 | 0.64 | 0.62 | 0.67 |
| Small nations | 0.87 | 0.91 | 0.76 | 0.67 | 1.56 | 1.49 | 2.07 | 2.48 | 1.11 | 1.07 | 1.56 | 1.87 | 2.72 | 3.01 | 4.50 | 4.87 | 0.98 | 0.76 | 0.85 | 1.37 |
| Large LDCs | 1.13 | 1.14 | 1.13 | 1.11 | 0.45 | 0.38 | 0.43 | 0.52 | 0.65 | 0.48 | 0.46 | 0.58 | 0.19 | 0.24 | 0.51 | 0.43 | 0.43 | 0.38 | 0.35 | 0.53 |
| Fast growth | 1.04 | 1.03 | 1.04 | 1.06 | 0.83 | 0.88 | 0.84 | 0.75 | 1.37 | 1.37 | 1.31 | 1.18 | 0.33 | 0.33 | 0.37 | 0.39 | 0.63 | 0.76 | 0.68 | 0.64 |
| Negative growth | 1.13 | 1.12 | 1.13 | 1.09 | 0.59 | 0.49 | 0.44 | 0.63 | 0.65 | 0.60 | 0.52 | 0.69 | 0.70 | 0.61 | 0.52 | 0.88 | 0.41 | 0.26 | 0.29 | 0.39 |

definition, the value of the index for the world as a whole equals one. Values greater than one indicate that the country group is y specialized, i.e. has a "revealed" comparative advantage. For definitions of country groups, see text and the appendix.

inclusive import specialization indices

| | Merchandise | | | | All Comm.Services | | | | Transport | | | | Travel | | | | Other Services | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1970 | 1975 | 1980 | 1985 | 1970 | 1975 | 1980 | 1985 | 1970 | 1975 | 1980 | 1985 | 1970 | 1975 | 1980 | 1985 | 1970 | 1975 | 1980 | 1985 |
| ta income groups | | | | | | | | | | | | | | | | | | | | |
| < 500 | 1.00 | 0.97 | 0.96 | 0.95 | 1.02 | 1.12 | 1.19 | 1.20 | 1.37 | 1.52 | 1.52 | 1.65 | 0.50 | 0.43 | 0.57 | 0.52 | 0.94 | 1.10 | 1.25 | 1.24 |
| < 1 500 | 0.99 | 1.00 | 0.98 | 0.97 | 1.05 | 0.99 | 1.10 | 1.15 | 1.22 | 1.24 | 1.39 | 1.38 | 0.88 | 0.78 | 0.77 | 0.74 | 0.93 | 0.78 | 0.97 | 1.20 |
| < 3 000 | 0.97 | 1.01 | 0.97 | 0.94 | 1.11 | 1.01 | 1.14 | 1.28 | 0.97 | 0.97 | 1.14 | 1.25 | 1.31 | 1.01 | 1.13 | 1.15 | 1.14 | 0.91 | 0.98 | 1.14 |
| < 6 000 | 1.00 | 1.03 | 1.00 | 1.03 | 0.98 | 0.87 | 0.99 | 0.86 | 0.99 | 1.04 | 1.19 | 1.06 | 0.71 | 0.73 | 1.02 | 0.71 | 1.23 | 0.75 | 0.70 | 0.73 |
| <10 000 | 1.06 | 1.05 | 1.03 | 1.02 | 0.75 | 0.78 | 0.84 | 0.91 | 0.86 | 0.85 | 0.89 | 0.98 | 0.51 | 0.61 | 0.75 | 0.68 | 0.80 | 0.81 | 0.85 | 1.02 |
| >10 000 | 1.00 | 0.99 | 1.00 | 1.01 | 1.00 | 1.02 | 0.99 | 0.98 | 0.98 | 0.97 | 0.93 | 0.93 | 1.05 | 1.09 | 1.05 | 1.05 | 1.00 | 1.05 | 1.03 | 0.98 |
| Least developed countries | 0.97 | 0.98 | 0.94 | 0.91 | 1.15 | 1.14 | 1.26 | 1.41 | 1.54 | 1.68 | 1.77 | 1.96 | 0.79 | 0.56 | 0.57 | 0.59 | 0.89 | 0.69 | 0.79 | 0.94 |
| Oil exporters | 0.91 | 0.95 | 0.93 | 0.92 | 1.33 | 1.20 | 1.31 | 1.35 | 0.95 | 1.12 | 1.23 | 1.31 | 1.70 | 1.21 | 1.51 | 1.25 | 1.61 | 1.29 | 1.27 | 1.49 |
| Manufactures exporters | 1.05 | 1.06 | 1.03 | 1.01 | 0.82 | 0.74 | 0.88 | 0.97 | 1.05 | 0.96 | 1.05 | 1.05 | 0.54 | 0.48 | 0.66 | 0.82 | 0.72 | 0.64 | 0.82 | 0.99 |
| Highly indebted | 0.93 | 0.97 | 0.94 | 0.93 | 1.25 | 1.13 | 1.29 | 1.29 | 1.12 | 1.22 | 1.29 | 1.39 | 1.60 | 1.14 | 1.51 | 1.29 | 1.14 | 0.98 | 1.10 | 1.17 |
| Small nations | 0.99 | 0.97 | 0.95 | 0.95 | 1.04 | 1.15 | 1.21 | 1.20 | 1.39 | 1.54 | 1.85 | 1.77 | 0.63 | 0.96 | 0.85 | 1.00 | 0.86 | 0.79 | 0.69 | 0.76 |
| Large LDCs | 1.00 | 1.00 | 0.98 | 0.97 | 0.99 | 0.99 | 1.08 | 1.14 | 1.21 | 1.30 | 1.35 | 1.52 | 0.50 | 0.47 | 0.48 | 0.51 | 1.12 | 0.97 | 1.19 | 1.22 |
| Fast growth | 1.00 | 0.99 | 0.98 | 0.96 | 1.01 | 1.04 | 1.09 | 1.17 | 1.33 | 1.32 | 1.36 | 1.33 | 0.41 | 0.53 | 0.61 | 0.68 | 1.07 | 1.04 | 1.10 | 1.38 |
| Negative growth | 0.97 | 0.94 | 0.90 | 0.94 | 1.11 | 1.25 | 1.48 | 1.28 | 1.45 | 1.60 | 1.57 | 1.77 | 0.96 | 0.93 | 1.83 | 0.87 | 0.71 | 1.02 | 1.07 | 1.06 |

Table 2.

Table 4 - Export-output and "dependence" ratios

| | Export/ouput merchandise | | Export/output services | | Import pen. merchandise | | Import pen. services | |
|---|---|---|---|---|---|---|---|---|
| | 1975 | 1985 | 1975 | 1985 | 1975 | 1985 | 1975 | 1985 |
| **Per capita income groups** | | | | | | | | |
| < 500 | 18.8 | 19.4 | 4.4 | 6.5 | 20.3 | 22.4 | 10.3 | 12.1 |
| < 1 500 | 25.1 | 36.0 | 9.7 | 18.8 | 34.1 | 40.5 | 11.5 | 14.9 |
| < 3 000 | 19.8 | 37.7 | 6.6 | 7.1 | 25.2 | 29.6 | 8.1 | 8.2 |
| < 6 000 | 49.6 | 65.8 | 15.6 | 16.8 | 51.5 | 64.8 | 16.8 | 14.8 |
| <10 000 | 90.8 | 138.8 | 34.0 | 32.8 | 86.6 | 140.1 | 32.1 | 41.4 |
| >10 000 | 42.6 | 48.4 | 8.2 | 7.2 | 41.3 | 48.9 | 8.5 | 7.7 |
| **Least developed countries** | 13.3 | 14.3 | 8.5 | 10.5 | 24.4 | 27.4 | 13.9 | 14.4 |
| Oil exporters | 58.0 | 36.6 | 10.1 | 5.7 | 42.6 | 27.9 | 16.3 | 12.6 |
| Manufactures exporters | 25.3 | 56.8 | 7.7 | 12.6 | 32.3 | 54.0 | 7.4 | 11.2 |
| Highly indebted | 21.0 | 35.3 | 6.0 | 7.5 | 24.5 | 27.2 | 7.9 | 7.9 |
| Small nations | 145.2 | 139.6 | 49.2 | 59.9 | 138.1 | 129.3 | 54.8 | 53.0 |
| Large LDCs | 17.1 | 22.4 | 2.8 | 4.0 | 19.9 | 19.9 | 6.7 | 7.5 |
| Fast growth | 33.2 | 45.5 | 7.6 | 7.0 | 34.2 | 38.3 | 9.9 | 9.2 |
| Negative growth | 57.3 | 47.3 | 9.3 | 8.1 | 51.6 | 39.5 | 20.3 | 12.3 |

Note:   Import pen. : import penetration

BH-28.DOC

Table 5 - Changes in ratios, 1975-85, percentage

| | Export/ouput merchandise | Export/output services | Import pen. merchandise | import pen. services |
|---|---|---|---|---|
| **Per capita income groups** | | | | |
| <    500 | 3 | 49 | 10 | 18 |
| < 1 500 | 44 | 93 | 19 | 30 |
| < 3 000 | 91 | 8 | 17 | 0 |
| < 6 000 | 33 | 8 | 26 | -12 |
| <10 000 | 53 | -4 | 62 | 29 |
| >10 000 | 14 | -12 | 18 | -10 |
| | | | | |
| **Least developed** | | | | |
| countries | 8 | 24 | 12 | 4 |
| Oil exporters | -37 | -44 | -35 | -23 |
| Manufactures exporters | 124 | 62 | 67 | 52 |
| Highly indebted | 68 | 25 | 11 | 1 |
| Small nations | -4 | 22 | -6 | -3 |
| Large LDCs | 31 | 45 | 0 | 12 |
| Fast growth | 37 | -8 | 12 | -6 |
| Negative growth | -18 | -13 | -24 | -39 |

Note:   See Table 4.

BH-28.DOC

Table 6 - Exports to GDP ratios, 1975-85

| | Merch./GDP | | Ratio of merch. and services to GDP | | % change in merch. to GDP ratio | % change in merch. and services to GDP ratio |
|---|---|---|---|---|---|---|
| | 1975 | 1985 | 1975 | 1985 | | |
| **Per capita income groups** | | | | | | |
| < 500 | 10.2 | 9.5 | 11.4 | 11.3 | -6 | 0 |
| < 1 500 | 11.5 | 15.8 | 15.2 | 22.5 | 37 | 48 |
| < 3 000 | 7.7 | 14.5 | 10.0 | -17.3 | 89 | 73 |
| < 6 000 | 22.8 | 26.4 | 27.8 | 32.2 | 16 | 16 |
| <10 000 | 47.4 | 45.9 | 55.4 | 56.9 | -3 | 3 |
| >10 000 | 13.5 | 13.6 | 16.8 | 16.8 | 1 | 0 |
| **Least developed countries** | 7.6 | 7.7 | 10.2 | 10.9 | 2 | 7 |
| Oil exporters | 31.1 | 15.2 | 34.1 | 17.3 | -51 | -49 |
| Manufactures exporters | 10.2 | 22.4 | 12.8 | 27.1 | 119 | 111 |
| Highly indebted | 8.6 | 14.1 | 10.7 | 17.0 | 64 | 59 |
| Small nations | 46.8 | 38.7 | 62.9 | 62.1 | -17 | -1 |
| Large LDCs | 8.0 | 10.0 | 8.9 | 11.2 | 25 | 27 |
| Fast growth | 12.6 | 16.1 | 15.4 | 18.8 | 28 | 22 |
| Negative growth | 27.2 | 19.8 | 30.3 | 22.7 | -27 | -25 |

Table 7 - Alternative measures of trade in services

| | | CS<br>CS + merch. | | labor inc.<br>CS | | FDI inc.<br>CS | | FDI+LI+Remitt.<br>CS-LI | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1975 | 1985 | 1975 | 1985 | 1975 | 1985 | 1975 | 1985 |
| **Per capita income groups** | | | | | | | | | |
| | < 500 | 8.6 | 12.4 | 6.3 | 3.3 | 0.2 | 0.2 | 43.2 | 94.7 |
| > 500 | < 1 500 | 20.3 | 28.2 | 2.5 | 9.1 | 0.8 | 2.0 | 60.5 | 61.1 |
| >1500 | < 3 000 | 16.1 | 12.1 | 8.3 | 5.1 | 2.3 | 2.2 | 17.2 | 12.4 |
| >3000 | < 6 000 | 14.0 | 15.7 | 2.5 | 3.5 | - | 0.5 | 48.1 | 28.8 |
| >6000 | <10 000 | 33.0 | 27.5 | 1.4 | 1.2 | 0.4 | 1.5 | 11.9 | 7.8 |
| | >10 000 | 19.2 | 18.6 | 2.5 | 2.5 | 19.5 | 19.5 | 23.4 | 23.3 |
| **Least developed** | | | | | | | | | |
| countries | | 20.0 | 24.2 | 26.3 | 14.0 | 0.1 | 0.3 | 120.6 | 156.3 |
| **Oil exporters** | | 11.0 | 9.1 | 3.4 | 2.9 | - | 0.1 | 12.6 | 11.7 |
| **Manufactures** | | | | | | | | | |
| exporters | | 17.3 | 13.9 | 1.1 | 1.7 | 0.1 | 0.7 | 1.3 | 2.4 |
| **Highly indebted** | | 15.4 | 13.9 | 6.1 | 0.3 | 0.6 | 10.5 | 15.6 | |
| **Small nations** | | 28.2 | 41.8 | 2.3 | 3.1 | 0.3 | 0.1 | 4.8 | 4.5 |
| **Large LDCs** | | 7.2 | 9.5 | 0.8 | 0.1 | 0.1 | 1.1 | 31.4 | 76.9 |
| **Fast growth** | | 16.8 | 13.9 | 0.5 | 2.7 | 2.8 | 5.5 | 5.2 | 15.0 |
| **Negative growth** | | 9.2 | 10.9 | 3.9 | 4.5 | 0.2 | 1.1 | 11.1 | 16.0 |
| **World** | | 19.0 | 18.4 | 2.8 | 2.9 | 15.6 | 15.0 | 24.2 | 24.9 |

Notes:  CS: commercial services;  LI: labour income;  Remitt: workers' remittances

BH/ac
5.11.90

<u>APPENDIX</u>

| <$500 | <$1500 | <$3000 | <$6000 | <$10,000 | >$10,000 | Least developed |
|-------|--------|--------|--------|----------|----------|-----------------|
| (Bangladesh) | Bolivia | Algeria | Barbados | (Bahrain) | Australia | (Bangladesh) |
| Benin | (Bostwana) | Argentina | Greece | Cyprus | Australia | Benin |
| Burkina | Coté d'Ivoire | Brazil | Korea Rep. | Ireland | (Bahamas) | (Bostwana) |
| C.Afr.Rep. | Cameroon | Chile | Libya | Israel | Belgium | Burkina |
| (Chad) | Colombia | Costa Rica | Malta | New Zealand | Canada | C.Afr.Rep. |
| Ethiopia | (Congo) | Fiji | (Portugal) | Singapore | Denmark | (Chad) |
| Ghana | Dominican Rep. | Gabon | Trinidad | Spain | Finland | Ethiopia |
| Guyana | Ecuador | Hungary | Venezuela | | France | Haiti |
| Haiti | Egypt | Malaysia | | | Germany | (Lesotho) |
| India | Guatemala | Mauritius | | | Iceland | Malawi |
| Indonesia | Honduras | Mexico | | | Italy | Mali |
| Kenya | Jamaica | (Romania) | | | Japan | Mauritania |
| (Lesotho) | Jordan | South Africa | | | Netherlands | Myanmar |
| (Liberia) | Morocco | Suriname | | | Norway | Niger |
| Madagascar | Nicaragua | Syrian Rep. | | | Sweden | (Rwanda) |
| Malawi | Paraguay | Uruguay | | | Switzerland | (Sao Tm. Prn.) |
| Mali | Peru | | | | U. K. | Samoa |
| Mauritania | Philippines | | | | U.S.A. | Sierra Leone |
| Niger | El Salvador | | | | | Somalia |
| Nigeria | Samoa | | | | | Sudan |
| Pakistan | Senegal | | | | | Tanzania |
| (Rwanda) | (Solomon Is.) | | | | | Togo |
| Sierra Leone | (Swaziland) | | | | | Uganda |
| Somalia | Thailand | | | | | (Yemen) |
| Sri Lanka | (Tonga) | | | | | Yemen Dem. |
| Sudan | Tunisia | | | | | |
| Tanzania | Turkey | | | | | |
| Togo | (Yemen) | | | | | |
| Uganda | | | | | | |
| Yemen Dem. | | | | | | |
| (Zaire) | | | | | | |
| (Zambia) | | | | | | |

APPENDIX (continued)

| Oil exporters | Manufactures exporters | Highly indebted | Small countries | Large LDCs | Fast Growth | Negative Growth |
|---|---|---|---|---|---|---|
| Algeria | Argentina | Argentina | (Bahamas) | Bangladesh | (Botswana) | Bolivia |
| (Bahrain) | Brazil | Bolivia | (Bahrain) | Brazil | Brazil | C.Afr.Rep. |
| (Congo) | Korea Rep. | Brazil | Barbados | India | Cameroon | (Chad) |
| Ecuador | Singapore | Coté d'Ivoire | Cyprus | Indonesia | Egypt | Ethiopia |
| Gabon | Taiwan | Chile | Fiji | Nigeria | Hungary | Ghana |
| Indonesia | | Colombia | Guyana | Pakistan | Indonesia | Jamaica |
| Libya | | Ecuador | Malta | | Japan | Madagascar |
| Mexico | | Mexico | Mauritius | | Korea | Mauritania |
| Nigeria | | Morocco | Samoa | | Malaysia | Nicaragua |
| Syrian Rep. | | Nigeria | (Solomon Is.) | | Norway | Niger |
| Trinidad | | Peru | Suriname | | Singapore | El Salvador |
| Venezuela | | Philippines | (Swaziland) | | Thailand | Senegal |
| | | Venezuela | (Tonga) | | | Tanzania |
| | | | | | | Uganda |
| | | | | | | Venezuela |
| | | | | | | (Zaire) |
| | | | | | | (Zambia) |

Note: Countries in parentheses are excluded from Tables 2 and 3 due to non-availability of data for 1970.

DEMCO