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LABOR AND THE EMERGING WORLD ECONOMY

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ABSTRACT

This paper explores the emergence of a world economy since 1950 and its implications for the world's labor force. There are four main sets of conclusions.

First, although the integration of national economies since 1950 has been considerable, the world economy is still in its adolescence. Rapid integration has occurred among the industrial economies, but integration among the developing economies and between the industrial and developing economies has proceeded slowly.

Second, international labor mobility can account for little, if any, economic integration since 1950. The economic integration that has been achieved is due mainly to the increased flow of capital across international boundaries and to a dramatic increase in trade, especially among the industrial countries. These developments have been driven by technological and institutional changes that have reduced the transactions costs for trade and capital mobility while maintaining or increasing barriers to international labor mobility.

Third, these patterns of integration are associated with a sharp decline in income inequality among the industrial economies, but not in world income inequality as the income gap between the industrial and developing countries has increased.

Finally, the large increase in developing economies' share of the world labor force projected for the next few decades will magnify their incentives to integrate more closely among themselves and with the industrial economies. World income per capita will be promoted by such integration.

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Labor and the Emerging World Economy

> The greatest improvement in the productive powers of labour, and the greater part of the skill, dexterity, and judgment with which it is any where directed, or applied, seem to have been the effects of the division of labour....
>
> As it is the power of exchanging that gives occasion to the division of labour, so the extent of this division must always be limited by the extent of that power, or, in other words, by the extent of the market. When the market is very small, no person can have any encouragement to dedicate himself entirely to one employment, for want of the power to exchange all that surplus part of the produce of his own labour...for such parts of the produce of other men's labour as he has occasion for....
>
> As by means of water-carriage a more extensive market is opened to every sort of industry than what land-carriage alone can afford it, so it is upon the sea-coast, and along the banks of navigable rivers, that industry of every kind naturally begins to subdivide and improve itself.
>
> Adam Smith, *Wealth of Nations*, chapters I and III.

For centuries countries have had economic ties of various kinds with each other. However, in recent decades economic integration among countries has increased dramatically. The share of international trade in the world's gross domestic product (GDP) increased from 9 percent in 1950 to 15 percent in 1989, while international borrowing increased nearly tenfold in real terms between the 1970s and 1990. Two main factors have driven these and other related developments: technological

changes that have reduced the costs of transportation and communication, and institutional changes that have reduced the barriers to trade and capital mobility.

Technological advances have effectively reduced the distances between countries and continents. Trips that used to take weeks by boat now take a few hours by plane. Larger and faster ships have reduced international freight costs. The ratio of insurance and transportation costs to the value of internationally-traded goods decreased by 36 percent between 1950 and 1990.

Communication systems have also become more efficient, facilitating more frequent interactions between individuals and organizations around the world. Bank managers in New York can check the status of an account in their Hong Kong branch without leaving their desks, and managers of Japanese automotive companies can check the level of inventories in their Tennessee plant without leaving Tokyo. Similarly, corporate executives can sign contracts by faxing their signatures rather than flying to the same location. These improvements in communication technology, which have substantially lowered the cost of monitoring operations and carrying out transactions across countries, helped to increase the share of direct foreign investment in world capital formation by 50 percent between 1965 and 1985.

Institutional changes that have facilitated the expansion of international transactions include the constant decrease, since

the 1930s, of tariffs through the General Agreement on Tariffs and Trade (GATT) system and various regional trade agreements. In the developed economies, import tariff revenues are currently less than 5 percent of the value of imports. In the 1930s, for example, this figure was 18 percent for the United States. Regional treaties like the European Economic Community (EEC), the European Free Trade Association (EFTA), and the United States-Canada free trade area have also reduced non-tariff barriers to trade and eliminated many constraints on economic cooperation between individuals and firms in different countries.

Efforts to enhance international economic cooperation continue, focusing on expanding the GATT; completing the economic unification of Europe; implementing the recent North American Free Trade Agreement (NAFTA); and, most dramatically, integrating Eastern Europe and the former Soviet Union into the world economy. The International Monetary Fund (IMF), the World Bank, and several regional development banks have also increased in prominence and are helping to promote international capital flows and the coordination of countries' macroeconomic policies.

World economic integration has proceeded even though international labor mobility has not increased in recent decades. In the developed economies, immigration-population ratios decreased or remained constant between the 1950s and the mid-1980s. Developed country governments generally do not encourage international migration and often inhibit it through the imposition of various legal or financial barriers. Sizable labor

movements have occurred in some developing regions, especially the Gulf countries, that are significant regionally, but less significant for the world economy. Limitations on the physical mobility of labor, however, have not prevented the emergence of a global market for labor services as services can be exchanged in a variety of ways that do not require the physical proximity of buyers and sellers.

Consider, for example, a British entrepreneur who hires an Italian company to design a new line of clothing, then has those designs sent for production to a clothing factory in southern China, and has a shipping company in Hong Kong send the finished product for sale in the United States. Without the entrepreneur or any worker having to cross a national border, this example involves the labor services of workers in five countries being exchanged.

Alternatively, consider a United States shoe manufacturer trying to take advantage of low-wage labor in Mexico by hiring workers in northern Mexico to operate machinery that is shipped across the border from the United States to produce shoes that are then shipped back to the United States for sale. In this example, labor services have also been exchanged internationally, although the mobility of capital facilitated the exchange in this case.

Finally, consider the latter example, but with a Mexican producer who uses equipment produced in Mexico. Mexico is still selling labor services, though in this case only by trading

goods. As in the previous two examples, an international exchange of labor services is taking place despite the lack of labor mobility across national borders. The emergence of an integrated world economy gives rise to many similar examples.

The objective of this study is to explore the implications of the emerging world economy since 1950 for the world's labor force. Section I will present a statistical portrait of the world labor force since 1950 and its distribution by geographic region, gender, age, and quality. Section II presents a conceptual analysis of the gains associated with the emergence of an integrated world economy and its implications for the world's labor force. Section III will provide evidence on factors that are directly related to the actual integration of the world economy, including trade and immigration barriers, freight costs, and international trade agreements. Section IV will examine the extent to which world markets have become more integrated because of labor, capital, or trade flows. Section V summarizes the main findings and speculates on their effects on future economic integration, national economic stability, the evolution of national and international economic institutions, and income inequality within and between nations.

I. The World Supply of Labor

This section distinguishes between potential labor force, defined as the working-age population, and the actual labor force, defined as the number of individuals engaged in market

economic activity or seeking employment. In so doing, it will ignore such issues as the number of hours people work; measurement errors related to whether individuals are, or would like to be, in the labor force; and characteristics such as ability and motivation. Although such issues are important determinants of the productive capacity of the world labor force, they are beyond the scope of this study.

The productive capacity of the world economy also depends on the human capital embodied in the world's labor force. Increased numbers of educated and trained people increase the potential stock of labor services, and hence the world's productive capacity. We will provide some evidence on the growing stock of human capital by reporting statistics on the growth of educational attainment from the 1960s to the 1980s. Due to data limitations, we will overlook other forms of human capital, such as work experience and specialized training.

In addition, we will examine the distribution of the world's labor supply across country groups. As historical experience shows that capital accumulation promotes labor productivity, we will also examine whether the supply of labor is growing relatively faster where physical capital is most abundant.

Table 1 reports statistics on the world's population and its potential and actual labor force in 1950 and 1980, with estimates for 1990 and projections for the years 2000 and 2025. In 1990, the actual world labor force consisted of 2.3 billion people, more than twice the number in 1950. These members of the actual

labor force represented about two-thirds of the potential labor force, and were supporting roughly three billion other people who were not part of the world labor force.

The statistics in table 1 show that industrial countries' share of the world labor supply decreased over time. [1] While their share was about one-third of the world labor supply in 1950, it had decreased to about one-quarter by 1990, and the projected share for the year 2025 is about one-sixth. The projections suggest that only 3.3 percent of the increase in the world labor force between 1990 and 2025 will occur in the developed economies (which is only half of their share in projected population growth because of relatively more aging in the developed countries). The table also predicts that the annual growth rate of the world labor force will decrease from 1.8 percent between 1950 and 1990 to 1.3 percent between 1990 and 2025.

Table 2 sets out the mean age of the world labor force and what proportion of it is female. These statistics are also reported separately for the developed and the developing economies. [2] The table shows an increase in the share of women in the labor force of the developed countries and no change for the developing economies. The data also show that the mean age of the world labor force was stable between 1950 and 1990, reflecting a small increase in the mean age of the labor force in the developed economies and a slight decrease in the developing countries. The projections into the twenty-first century suggest

an increase in the mean age of the world labor force.

Table 3 reports labor force participation rates (LFPR) broken down by country group, age, and gender. For most of the categories shown, participation rates increased in the industrial economies and decreased in the developing economies. The participation rates for younger people have decreased significantly for all countries because of increased educational attainment. In the developed economies the increased participation of women offset this decrease. However, this did not occur in the developing economies (at least according to the available data), and thus the overall LFPR decreased. [3]

A comparison of LFPR by gender shows that the rate for men is higher than the rate for women, but that these rates are tending to converge in the developed countries. The LFPR for women is higher in the industrial than in the developing countries, although as noted earlier, data on female LFPR in developing countries should be interpreted with caution.

In contrast to tables 1 to 3, which presented the labor supply in terms of numbers of workers and their demographic characteristics, tables 4 and 5 provide information on a key dimension of labor quality: education. According to table 4, the average number of years of schooling for people aged twenty-five to twenty-nine was 7.1 years in 1980, about two years more than for those aged forty-five to forty-nine. This difference is a key indicator that the human capital embodied in the world labor force has increased sharply over time. Table 4

also shows that increased schooling occurred in both developing and industrial countries, although the proportional increase in schooling was much larger in the developing countries. The ratio of average years of schooling in the industrial countries to average years of schooling in the developing countries was three for the older age group and only two for the younger age group. [4]

Table 5 reports enrollment-population ratios, broken down by education level and income group. The statistics show a sharp increase in educational attainment at all levels between 1965 and 1989 for both the developed and developing countries and for the world as a whole. [5] The proportional increase was faster at the higher education levels, reflecting, at least partially, the fact that in many countries enrollment-population ratios reached the natural ceiling of universal attendance in primary--and sometimes secondary--education.

Enrollment-population ratios in the industrial countries are higher than in the developing countries, and the differences in the ratios are larger at the higher education levels, partially reflecting the same ceiling effect noted earlier. The increase in educational attainment was, however, faster in the developing countries, with larger differences in growth rates at higher education levels.

The estimates in tables 4 and 5 draw additional strength from their consistency, which is notable given that the data come from different sources. For example, a comparison of the actual

years of schooling for the twenty-five to twenty-nine age group, as reported by Horn and Arriagada (1986) (see table 4) with an estimate based on the World Bank data presented in table 5, yields relatively similar results.

To sum up, this section has shown that the share of the world's labor force located in developing countries increased significantly between 1950 and 1990 and is predicted to continue to grow. This change in geographical distribution of the world labor force puts most of the increments in the world labor force at locations where both human and physical capital are relatively scarce. Tables 4 and 5 show that developing countries are addressing the need to increase the supply of human capital by increasing people's access to education, and doing so at a faster pace than in the industrial countries.

II. Gains Associated with the Emergence of a Global Labor Market

One of the main features of the world supply of labor is that it has grown at different rates in the industrial countries than in the developing countries. This differential is a result of differential rates of population growth and of behavioral changes that affect labor force participation rates. The behavioral changes mainly involve school enrollment decisions, retirement behavior, and female labor force participation.

Taking these labor supply changes as our jumping off point, this section examines the incentives they create for national economies to integrate more closely. We do this by reviewing

basic economic principles regarding the gains that can be realized by removing the barriers that separate economies. The footnotes provide some references to more advanced models.

Example I: Gains from International Factor Mobility

Consider a world that consists of two islands: A and B. Suppose both islands are endowed with three types of production factors: land, which is freely available in unlimited supply on both islands, and workers and mules, which work together to cultivate the land, but whose supply is limited as follows:

	----Island----	
	A	B
Production factor		
Workers	1,000	100
Mules	100	1,000

Assume that one worker using one mule can cultivate one acre per year, and that workers without mules cannot cultivate any land at all.

In this highly-stylized example, islands A and B will each enjoy the fruits of 100 acres per year, since this is the maximal number of worker-mule pairs on both islands. Clearly, however, resources are being underutilized on both islands. On island A 900 workers have no mules with which to work, and island B has 900 mules with no workers to guide them. If the economies of islands A and B could integrate, total output could increase more

than fivefold. As land is abundant, this could be done by either shipping 900 mules from island B to A, or shipping 900 workers from island A to B, or by some intermediate combination.

This example demonstrates the general principle that there are potential gains from factor mobility (which we assume to be costless in this example) when the presence of one production factor enhances the productivity of others. In this example, the contribution of one more worker to production (also known as the marginal product of labor) is zero on island A and one on island B. The marginal product of a mule on island A is one and on island B is zero. It is efficient to move labor to the location where its productivity is higher, island B, or to move mules in the opposite direction. Locational (or sectoral) differences in the marginal product of specific factors, such as labor, are an indication of potential gains to factor mobility.

Thus, gains in output can be achieved by integrating separate economies. Achieving these gains does not require the movement of labor across borders, because the mobility of other production factors can achieve the same gains. As long as no other production factors are location-specific and transportation costs for the different factors are effectively the same, labor and capital mobility are good substitutes for achieving efficient production.

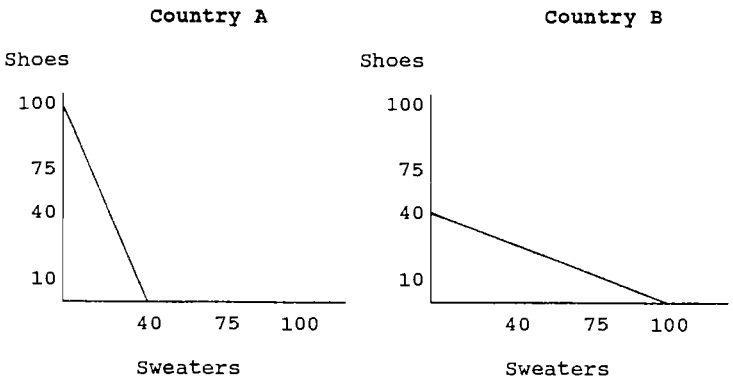
Example II: Gains from International Trade

Another way in which economies can increase their production and consumption through integration is by trading goods and

services with other economies. Consider, for example, two economies that each use labor to produce shoes and to knit sweaters. Suppose that both countries have the same size labor force, but that workers in country A are more efficient at producing shoes, while workers in country B are more efficient at knitting sweaters. [6] In this case, as Ricardo (reprinted in Sraffa, 1951, vol. I, p. 135) first suggested, both countries would benefit from trade, with A concentrating on producing shoes and B on sweaters.

To demonstrate this point one can use a standard tool in economics: the production possibilities frontier (PPF). This frontier represents the maximal combinations of different outputs that an economy can produce through the efficient use of its entire stock of inputs. The frontier must slope down, as the economy cannot increase the production of one good without decreasing the production of another good. In the absence of trade, consumption in each country can lie on, but not outside, its PPF.

Assume in this example (a) that the world consists of two countries, A and B, and that each country has ten workers, (b) that each worker in country A can either produce ten pairs of shoes or knit four sweaters per day, and (c) that each worker in country B can either produce four pairs of shoes or knit ten sweaters per day. These assumptions of differential productivity imply the following PPFs for the two countries:

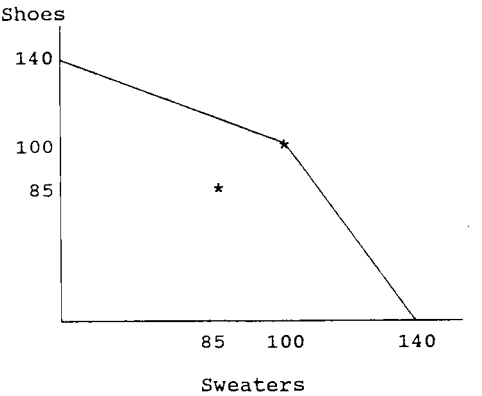


In the absence of trade, the cost of knitting a sweater, in terms of the resources that could have been used for other purposes (that is, the opportunity cost), is 2.5 shoes in country A and 0.4 shoes in country B. Similarly, the opportunity cost of crafting a pair of shoes is 0.4 sweaters in country A and 2.5 sweaters in country B.

Assume now that consumers' tastes in the two countries are such that consumers in country A choose to consume seventy-five shoes and ten sweaters, while consumers in country B choose to consume ten shoes and seventy-five sweaters. World consumption is therefore eighty-five sweaters and eighty-five pairs of shoes. Note that in neither country can consumers increase the consumption of one good without giving up consumption of the other.

If the countries start to trade with each other, however, the world economy benefits as consumers in both countries can

increase their consumption and improve their welfare. The difference in production costs between the two countries will result in imports of shoes to country B (as country A produces them more cheaply) and imports of sweaters to country A (as country B produces sweaters more cheaply). The world PPF now becomes the boundary of the world's consumption possibilities.



Production is allocated in the world market so that country A produces shoes as long as world demand does not exceed country A's production capacity. If world demand exceeds country A's capacity to produce shoes, some shoes will be produced at the less efficient location: country B. One can see now that the initial consumption (and production) level of the world economy was inside the world PPF, and that consumption of both goods can be increased by allowing the two countries to trade.

This example demonstrates the classic economic result of

gains from trade. It also demonstrates that trade and labor mobility are substitutes in achieving efficient production from a global point of view. In this example, if all workers moved to the same location, consumption along the world PPF is also possible. [7]

When many production factors exist, and when their proportions are very different in different countries, trade may not be a perfect substitute for factor mobility. However, even in such a case trade allows the world economy to move closer to its PPF, and in that sense is at least a partial substitute for labor mobility. [8]

Summary

In 1936 the father of supply-demand analysis, Alfred Marshall, wrote: "The direct demand for a finished product is in effect split up into many derived demands for the things used in producing it" (p. 381). This section has elaborated on this observation to make the crucial point that the demand for labor services need not be a direct demand for labor. It may instead be expressed through the demand for the goods that embody labor services. For example, when one buys a hand-made Turkish carpet, one is buying the services of the workers who wove the carpet and not just the materials.

Thus, labor markets in different countries can be integrated by movements of labor, capital, or goods. Within certain limits,

international movements of these three factors are close substitutes for each other in the integration of the world economy and the effective emergence of a global labor market. As long as countries differ in the productivities of their labor or other resources, and incomes, there will be forces impelling further international economic integration. [9] The particular form that the integration takes will depend on a variety of economic factors such as the relative costs of mobility, but may also depend on political, cultural, and social factors.

III. Allocation and Performance of World Labor Resources

One of the key factors driving the integration of the world economy is the existence of differential benefits across national economies and economic sectors from additional units of labor and capital (that is, cross-national differences in the marginal productivity of different factors of production). In the presence of such differentials, moving labor from low productivity countries to high productivity countries can improve efficiency. Shifting labor within each country or group of countries from low to high productivity sectors can result in similar gains. This section discusses measures of these productivity differences in order to assess the potential for further gains from economic integration of the world economy. [10] It also examines changes in those differentials over time to establish the extent to which efficiency gains have been realized in past decades.

Table 6 reports the distribution of the world labor force across the agricultural, industrial, and service sectors during the years 1950 to 1980. The data show that the agricultural sector's share decreased steadily over time, while the shares of the industrial sector and (especially) the service sector increased. This pattern holds in both the developed and the developing countries. [11] In 1980 the service sector dominated employment in the industrial countries while the agricultural sector dominated employment in the developing economies. The decline in the share of the agricultural sector in the developed countries was proportionately much greater than in the developing countries.

Table 7 reports real labor productivity (output per worker) for the same sectors and countries as table 6 between 1960 and 1980. [12] Productivity increased in every sector from 1960 to 1980, with larger increases for the world as a whole in the industrial and service sectors, which were the high productivity sectors in 1960. In the industrial economies, labor productivity in the agricultural sector grew faster than in the other sectors, but slow productivity growth in the agriculture sector of the developing countries left agriculture behind the two other sectors in world productivity. Productivity in the industrial sector grew faster than in the service sector, both in the developed and the developing countries.

Taken together, tables 6 and 7 show that employment shifted out of low-productivity agriculture to the higher-productivity

service and industry sectors. These shifts tended to decrease productivity differentials across sectors in the developed countries from 1960 to 1980. The ratio of productivity in industry to productivity in agriculture in those countries decreased from about three in 1960 to about two in 1980. By contrast, the smaller proportionate shifts that took place in the developing countries did not erode the productivity gaps between sectors, which actually increased between 1960 and 1980. These results show the great potential that still exists for increased efficiency within the developing countries and from integration of the industrial economies with the developed ones.

Table 7 also shows that overall productivity differentials between the developed and developing countries decreased only slightly between 1960 and 1980. These decreases partly reflect the temporary effect of high energy prices in 1980 [13], and are therefore evidence that little, if any, productivity convergence between developed and developing countries took place during that period. [14]

Table 8 documents the developing countries' increasing share in world employment, broken down by sector, between 1960 and 1980. In 1980 workers in developing countries comprised 97 percent of the world labor force in agriculture, where their productivity relative to workers in the developed economies is the lowest. During 1950 to 1980 the share of developing country workers in industry increased from 41 to 63 percent, and in services from 54 to 58 percent. Table 8 also shows that while

workers in the developing countries made up 71 percent of the world labor force in 1980, they produced only 25 percent of the world's output.

Table 9 compares productivity and unit labor costs in the industrial countries with those in the developing countries. [15] The data are broken down by manufacturing branch, which is the finest level of disaggregation available. The unit labor cost data are important because from the standpoint of employers a less productive labor force is undesirable only if wages are not comparably low.

The data in table 9 reveal three notable results. First, productivity is higher in the developed countries in all manufacturing branches. Second, relative productivity in the developed countries increased in all but two industries between 1963 and 1980. Third, in 1980 wage differentials exceeded the corresponding productivity differentials, resulting in higher unit labor costs in the developed economies. The north/south ratio of unit labor cost vary in a surprisingly narrow band from 1.3 to 1.6 for most industries. For the manufacturing sector as a whole, however, this ratio is higher because, as Brender (1988) notes, industrial economies tend to concentrate their production in industries where unit labor costs are higher.

The developing countries' share in world production of most manufacturing industries increased between 1980 and 1987. This rise may indicate that the world allocation of labor does respond to differences in relative costs of production. However, it may

also reflect differential changes in local demand as a result of population growth when domestic markets are protected. One indication that the increasing share of the south in the world's manufacturing production is not a response to cost differentials is that there is virtually no correlation between the size of the cost differential and the increase in the developing countries' production share.

The rising productivity ratios in table 9 indicate that whatever integration the economies of the north and south achieved during the 1960s and 1970s, it was insufficient to overcome the big differences in labor force growth rates between the two groups of countries. Specificially, the increasing productivity gap indicates that the combination of capital flows from north to south and labor flows from south to north were not sufficient to overcome the relatively large labor supply increments in the south. Expansions of international trade, with the south countries specializing in labor-intensive products, could have also contributed to a narrowing productivity gap, but in practice the gap widened.

IV. The Contribution of Labor and Capital Mobility and International Trade to World Economic Integration

Section II argued that national economies can be effectively integrated into a world economy through (a) labor mobility, (b) capital mobility, or (c) international trade of goods and services. Section III established that productivity differentials between high- and low-income countries did not

decrease over time, and that wage differentials were even larger than productivity differentials. These results suggest that whatever integration took place between the industrial and developing countries was not enough to overcome the large differentials in labor force growth rates that prevailed between those country groups. This section explores this result by focusing directly on some major mechanisms that underlie international economic integration, namely, labor mobility, capital mobility, and trade between developed and developing countries. It also examines economic integration within each country group.

Labor Mobility

Estimates suggest that in the late 1980s about 80 million people lived outside their nations of citizenship (Widgren 1987). This number constitutes only 1.5 percent of the world's population and indicates that population mobility across borders is a relatively limited phenomenon. Of the migrants, about 44 percent were located in Sub-Saharan Africa, reflecting labor movements between the poorest nations, and about 8 percent were Afghani war refugees in Pakistan and Iran. These data imply that migrants from the developing countries to the industrial ones constitute only a modest proportion of the world stock of migrants.

Data on international migration flows support the observation that labor mobility is fairly limited relative to the size of the world economy. Table 10 presents data on

immigration-population ratios for selected developed countries. The figures show that the ratio varies substantially across countries, but only slightly over time. Between 1950 and 1984 immigration to Australia, the Federal Republic of Germany, New Zealand, and Switzerland accounted for more than ten percent of their average population. By contrast, in Japan and the United States, immigration flows constituted a much smaller proportion of the population. For all the countries in table 10 taken as a whole, migration flows as a share of population were quite stable across decades. The ratio increased somewhat during the 1960s, but then declined again until 1984. [16] Bearing in mind that many migrants do not stay at their destination for more than a few years, and that the countries reported in table 10 absorb relatively large numbers of immigrants compared to other countries (except Sub-Saharan Africa and the Gulf), these numbers are relatively small compared to the 10 percent population growth per decade in the developed countries during 1950-84. If national economies have become more integrated since the 1950s, then the stability of immigration-population ratios shows that labor mobility was not the factor responsible for such integration.

Tables 11 and 12 summarize data from a 1987 United Nations survey (UN 1988) of 170 of its member countries. The figures suggest that most countries do not view migration as particularly desirable and that governments design policies accordingly.

Table 11 reports government perceptions of emigration and

immigration for the countries surveyed. Of the 170 countries, 105 reported that emigration was insignificant. Only 2 of those 105 countries viewed this level of migration as too low. Sixty-five countries viewed current emigration levels as significant, and more than half of them perceived that level as too high.

As concerns immigration, 112 countries viewed it as insignificant, of which 107 found the situation satisfactory. Among the industrial countries, all twenty-three that perceived immigration as insignificant are satisfied with that situation. Fifty-eight countries perceived immigration levels as significant, of which thirty-four perceived that level as too high and only two as too low. Of the sixteen industrial economies that viewed immigration as significant, none thought that level was too low and nine thought that the level was too high.

Table 12 goes beyond perceptions and reports on actual policies the surveyed countries adopted toward migration. The data show that only eight countries had policies to encourage emigration while thirty-seven countries had policies designed to reduce emigration. Another 101 governments did not find a need to adopt policies on emigration or expressed the view that more emigration is not desirable. Thirty-two countries had adopted policies aimed at reducing future immigration, while only five had implemented policies encouraging higher rates of immigration. Among the industrial countries surveyed, thirteen had adopted

policies to cut future immigration rates while none had adopted policies to promote more immigration.

The figures in tables 10 to 12 indicate that labor mobility has not been an important factor in the integration of the world economy during the last forty years. Labor mobility did not increase during that period and the statistical indications do not suggest that governments will encourage more migration in the future by relaxing legal constraints. Thus, (a) labor mobility across national boundaries is not large; (b) it has not increased over time; and (c) whatever integration of national economies occurs in the foreseeable future, it is unlikely to be the result of increased labor mobility.

Capital Mobility

International capital mobility is difficult to measure because it can take many forms, including loans to foreign governments by private banks, intergovernment loans, transactions in financial instruments, loans to private enterprises in foreign countries, and direct foreign investment. Not all international financial transactions represent direct shifts of productive capacity between countries, and therefore may not relate directly to the integration of national economies. Our discussion here begins by examining direct foreign investment, which is clearly one form of capital mobility that is directly tied to production. We will also provide some indications of the increase in other forms of international capital mobility, although we do not claim to offer any comprehensive measure of capital mobility in this

paper.

Direct foreign investment is defined as the net amount nonresidents invest or reinvest in enterprises in which they or other nonresidents exercise significant managerial control. Direct foreign investment increased significantly from 1965 to 1985. Table 13 shows that during that period the share of direct foreign investment in the world's capital formation increased by 50 percent. The absolute share of direct foreign investment in capital formation remained quite small, however. As expected, almost all direct foreign investment originated in the industrial countries.

Table 14 shows that from 1965 to 1985, 67 to 80 percent of the world's direct foreign investment ended up in the industrial countries. This figure has drifted upward somewhat over time, with evidence of large fluctuations in the distribution across countries. Clearly, however, no increase over time has occurred in the share of direct foreign investment flowing to the developing countries despite their increasing share of the world labor force. Table 15 reports another indicator of international capital mobility: the participation of non-U.S. companies in U.S. stock markets. In June 1992, 6 to 8 percent of the securities/companies listed on the New York Stock Exchange (NYSE), the American Stock Exchange, and the NASDAQ were foreign based.

Even though foreign participation in United States capital markets is limited by the Securities and Exchange Commission's

accounting practice and disclosure requirements, these numbers display a significant increase over time. Of 414 net additions to the NYSE from 1974 to 1992, 79 were foreign companies. The number of securities listed on the American Stock Exchange decreased by 20 percent from 1970 to 1992, while the number of foreign listings increased by 25 percent. This increase in foreign companies' participation in U.S. stock exchanges took place at a time when the United States became less dominant as a global financial center as other international financial centers developed in Tokyo, Frankfurt, and Hong Kong. These statistics, like the ones on direct foreign investment, reflect a trend toward greater integration of world capital markets, although in both cases the level of integration achieved is fairly low. The data for the NYSE also show that most of the growth in foreign participation (about 90 percent) was associated with companies from industrial economies.

Other indicators of the integration of world capital markets in the 1980s are available. Between 1982 and 1989 the value of new issues of international bonds increased from US$76 billion to US$254 billion. The share of borrowers from developing countries (excluding offshore financial centers) in these issues declined from 6 percent in 1982 to 2 percent in 1989. International trading in equities, that is, transactions in domestic stocks involving nonresidents (except direct foreign investment), increased from US$73 billion in 1979 to US$1,213 billion in 1988. Even after correcting for increases in equity prices, the volume

of these transactions more than quadrupled. The correlation coefficient between stock price indices in the United States and in other countries increased, on average from 0.35 in 1975-79 to 0.62 in 1985-88 (Howell and Cozzini 1989; IMF 1990).

Table 16 reports indicators of foreign borrowing by developing countries in 1970 and 1990. Developing countries' foreign debt increased sharply during this period, both in absolute terms and relative to their income and the value of their international trade. The increase was especially high for low-income countries whose ratio of external debt to GNP increased fivefold. [17] This increase is an indication of capital mobility to both the public and private sectors of developing countries as most corporations in these countries have severely limited access to world capital markets, and have to coordinate their borrowing with their governments, and in many cases rely on government guarantees to facilitate foreign borrowing. Foreign borrowing can also finance direct government investment in developing human capital and physical infrastructure.

The lower panel of table 16 also demonstrates the increased importance of foreign borrowing to the developing countries. Actual interest payments (interest paid in foreign currency, goods, or services) have increased as a percentage of exports, especially for the low-income developing countries, even when one accounts for changes in the interest rates paid on debt.

Table 17 sets out some indicators of the international

integration of financial institutions. Between 1975 and 1990, the amounts that banks borrowed internationally from other banks increased more than twelvefold, international bank credits to non-banks increased by a factor of more than thirty between 1970 and 1990, and non-bank deposits in banks located outside their country of residence increased dramatically during 1971 to 1990.

The data in table 17 also show that financial integration proceeded proportionately faster among the industrial economies than among the developing economies. Industrial countries' share in international interbank liabilities has increased, and borrowers from these countries almost doubled their share of international credit to non-banks. Non-bank residents of the industrial countries more than tripled their share of cross-border deposits of non-bank institutions. The share of banks located in the industrial countries in total international deposits by non-banks decreased, however. (This decrease is fully accounted for by the increasing share of the major offshore banking centers in the Bahamas, Cayman Islands, Hong Kong, and Singapore.)

In sum, international capital mobility increased significantly between the 1960s and 1990. Although the extent of this development varies from indicator to indicator, capital mobility is clearly a significant factor in the integration of the world economy.

International Trade

Perhaps the most dramatic development in the world economic

system in the last forty years is the rapid growth of international trade. Table 18 documents this increase by presenting ratios of exports to GDP for the world and for different country groups. For the world as a whole, exports increased from 9 percent of GDP in 1950 to 15 percent in 1988. This increase was entirely due to the virtual doubling of the export-GDP ratio among the industrial economies. This ratio fluctuated among the developing countries, but was almost the same in 1950 and 1990.

The stability of the export-GDP ratio for the developing economies masks three developments that took place during the period under review: (a) the large, but transitory, increase in the value of petroleum exports during the two oil price shocks of the 1970s; (b) the accelerating growth of exports by the six major exporters of manufactures among the developing countries Argentina, Brazil, Hong Kong, Korea, Singapore, and Taiwan; and, (c) the decrease in the ratio of exports to GDP among the developing countries between 1950 and 1970, mainly because of the decrease in world demand for primary goods (as a percentage of aggregate demand), which constituted over 90 percent of the exports of the developing countries in the 1950s.

Note also that exports are a larger proportion of the GDP in the developing countries than in the industrial ones. This difference arises because the developing countries' economies are smaller, and therefore have had to rely more heavily on trade to satisfy needs that the domestic market cannot readily satisfy.

It also reflects the relative importance of tradeable goods in the GDP of the developing countries. Thus, the data do not indicate that the developing economies are closed economies, but rather that their degree of openness has not increased over time.

One natural explanation for the increase in world trade is the decline in the cost of transporting goods over time. Table 19 provides evidence of this decline by examining changes in cost in full (CIF)/free on board (FOB) ratios. [18] CIF reflects the value of cargo, including insurance and transportation costs. FOB is the cost of the goods before adding insurance and transportation costs. The CIF/FOB ratio is thus a measure of transportation and insurance costs as a share of total costs. Table 19 shows that for the world as a whole this ratio decreased by 36 percent from 1950 to 1990.

Table 19 also shows that transportation costs among the industrial countries are relatively low, and are determined largely by the distance between them and their trading partners. The ratio for Germany, which trades mostly with other EEC members, is only 1.03, while the ratio for Japan, which is located relatively far from its trading partners, is 1.09. The decline over time in the CIF/FOB ratio was sharper for the developed countries, which dominated the increase in world trade.

Table 20 examines the share of exports from different country groups in world exports. The figures reveal that the industrial economies have accounted for the dominant share of world exports during the past four decades, maintaining a roughly

70 percent share between 1960 and 1989. Among the industrial economies, Japan's share of world trade increased sevenfold between 1950 and 1989, while the United States' share decreased by a quarter.

The developing countries' share of world trade declined in the 1950s, a consequence of decreasing demand for the primary goods that constituted the vast majority of their exports (table 21). Since 1960, the share of the developing countries in world trade has remained fairly stable after one accounts for changes in oil prices. The figures also reveal a reallocation of exports among the developing countries. The six major exporters of manufactures increased their share of world exports from 4 percent in 1960 to 10 percent in 1989, while at the same time the share of all the other developing countries decreased from 18 percent to 12 percent.

Table 22 examines the trade linkages between developed and developing countries. During 1958 to 1960, 69 percent of exports by the industrial countries were destined for other industrial countries. During 1987 to 1989, this figure rose to 77 percent, suggesting increased economic integration among the industrial economies relative to the economic integration between industrial and developing economies.

The lower panel of table 22 displays similar results for the developing economies. During 1987 to 1989, 30 percent of exports by the developing countries were imported by other developing countries, up from 24 percent in 1958 to 1960. This increase is

associated with a decrease in the share of exports to industrial economies. Taken together, the two panels indicate that the degree of economic integration increased faster within each group of countries than between them. The share of world trade that occurred between the groups decreased from 42 percent in 1960 to 35 percent in 1989 (calculated from figures reported in tables 20 and 22, excluding the socialist economies in Eastern Europe).

The results also indicate that world trade activity did not evolve in a way that takes full advantage of the large and increasing labor force pool in the developing countries, suggesting that there are still large potential gains associated with further integration.

Summary

The analyses presented in this section support three main conclusions: (a) there is relatively little international labor mobility and it has not increased over time (at least through the 1980s); (b) the flow of capital across international boundaries has increased sharply over time, though the absolute levels of some measures of international capital mobility are still relatively low; and (c) trade has increased substantially over time, especially among the industrial countries, which accounts for the strong integration of their national economies.

V. Conclusion

As recently as fifty years ago the concepts of a world labor market and a world economy were little more than hypothetical

constructs. International trade represented a small share of world production, and was limited by relatively high institutional barriers (including quotas and tariffs), high transportation costs, and high transaction costs created by a far less efficient communications system. Capital mobility was limited by some of the same factors. Physical labor mobility, limited by the psychological and pecuniary costs associated with migrating across international borders, was insufficient to integrate the different economies of the world to an appreciable degree.

The past 50 years have seen the gradual emergence of a world economy. This emergence was accomplished even though physical labor mobility failed to increase. In addition, increased labor mobility is unlikely in the future given the proliferation of legal and financial restrictions on international migration and policymakers' generally negative attitudes toward international migration.

A world economy has emerged through increased international trade and international relocation of jobs, facilitated by capital mobility. For at least the past twenty-five years, every indicator of the volume of international capital mobility and international trade has increased, some of them dramatically. A world economy has begun to thrive because technological and institutional changes have decreased significantly the relative costs of conducting transactions in international goods, capital, and labor services markets.

National governments generally look favorably upon growth-enhancing capital infusions into their economies. Governments, especially in developing economies, have actively tried to attract foreign capital through giving tax concessions, relaxing various legal requirements, providing guarantees to private borrowers, and introducing direct subsidies. Many governments, especially in the industrial economies, have also adopted more favorable policies toward international trade by reducing tariff and non-tariff barriers to trade and by signing international or regional agreements that facilitate trade expansion. These include the GATT and the establishment and development of the EEC, EFTA, and more recently, NAFTA. However, governments have done very little to encourage international migration, and have generally tightened migration restrictions during the last forty years for a variety of economic, social, and political reasons.

To date integration of the world economy has proceeded mainly among the industrial market economies. Trade and capital mobility have increased faster among these economies than between industrial and developing economies. This is especially true if one considers that a small number of developing economies account for half the international trade of this group of countries and a large share of capital mobility to and from the developing countries.

Economic integration may have implications for income inequality between countries. On the one hand, economic

integration could decrease income inequality as factor prices converge as a result of trade and capital mobility. On the other hand, economic integration could increase inequality of GNP per capita because of the unequal distribution of capital across countries. [19]

To illustrate these possibilities, consider the recent opening of Eastern Europe. This opening may lead to an inflow of capital that will increase capital-labor ratios, labor productivity, and wages in Eastern Europe. One might expect this process to continue until unit labor costs between Eastern Europe and Western countries are equalized, leading to a convergence of wages between Eastern Europe and the West. However, this process also increases the incomes of capital owners in the West as they enjoy access to a new stock of relatively low-cost labor. Depending on the relative sizes of these changes, income inequality between the West and Eastern Europe can increase or decrease as a result of this process.

Table 23 reports Gini coefficients, a standard measure of income inequality. The coefficients measure inequality of GNP per capita across countries in 1965 and 1990, with higher values of the coefficient indicating greater inequality. The analysis only includes countries with income figures for both 1965 and 1990. Between those years, the coefficient for the world's twenty-two industrial market economies fell precipitously, losing nearly two-thirds of its value. By contrast, inequality rose slightly among the fifty countries that had the lowest levels of

per capita GNP in 1990.

Despite the sharp decrease in inequality within the high income group and the stability of inequality within the low-income group of countries, world income inequality increased between 1965 and 1990. This increase is a consequence of the widening gap in average income between the industrialized countries and the developing countries. Given the rapid integration that occurred among the industrial economies and the slow pace of integration among the developing economies, these results are consistent with the view that economic integration promotes both (a) income growth and (b) the convergence of material well being across those countries whose economies become integrated.

Although many of the world's national economies have become more closely integrated during the last forty years, many others have remained more or less economically isolated. Labor productivity differentials between more- and less-developed countries have failed to decrease, and unit labor costs are still 30 to 60 percent higher in the industrial economies. The persistence of these differentials indicates that the integration of economic activity between the industrial and developing countries has been limited at best. The existing labor productivity differentials indicate that large benefits could be realized from further integration. Indeed, per capita GDP has grown much faster for those developing countries that chose to integrate into the world economy than for those that did not. As

institutional barriers to economic integration are reduced with the relaxation of trade controls and the removal of limitations on technology transfers and impediments to capital mobility, fundamental economic forces will operate undisturbed and will naturally bring about further integration. Judging by recent historical experience, economic integration is associated with income growth and reduced inequality between nations.

However, income inequality within nations may increase as a result of economic integration. In many developed countries wage differentials between more- and less-educated (and experienced) workers have increased since the 1970s (Blackburn, Bloom, and Freeman 1990 and 1991; Blackburn and Bloom 1992; Katz and Loveman 1992; Davis 1992) and trade may also be expected to increase the returns to physical capital relative to labor. Unless governments develop and apply income reallocation mechanisms to compensate those who lose from integration, consistent political opposition to further integration is likely. The development of trading blocks as a way to accelerate economic integration within groups of countries may also require future intrablock compensation to achieve economic integration between blocks.

Another consequence of increased economic integration is increased economic dependence between countries. For example, remittances to the People's Democratic Republic of Yemen of Yemeni workers were 15 percent of GDP in 1989, down from 79 percent in 1980. In 1990 remittances decreased even further as Yemeni workers were deported from Saudi Arabia and other oil-

exporting countries as a result of their government's support of Iraq during the Gulf war. This loss of remittances choked off the main source of foreign exchange to Yemen's economy. In addition, returning migrants flooded the Yemen labor market. Egypt also experienced substantial return migration and a corresponding loss of foreign exchange from remittances when oil prices dropped in the mid 1980s (see Hansen and Radwan 1982).

These examples demonstrate that the essence of world economic integration is greater economic dependency, and a consequent magnification of the risks associated with political and economic change abroad. At the same time, however, integration reduces the importance of other risks by allowing for greater risk diversification (Gavin 1992). For example, grain crops in the former Soviet Union were exposed to risks associated with weather changes from year to year. Even though the Soviet Union was a relatively closed economy, it relied upon international trade to reduce the risk of famine in years of bad weather by trading gold and other primary products for grain, and by doing so diversified the risk of famine among several suppliers.

International economic integration also increases the degree of competition in goods and factor markets by increasing the number of participants in each market. Labor unions provide an excellent example of this phenomenon. Product markets have grown larger as a result of economic integration without a corresponding expansion of the scope of union organization, the

predictable result being a loss of union bargaining power. (Hildebrand 1965). Indeed, union membership has decreased steadily in the United States since the mid-1950's (Blanchflower and Freeman 1992). Until labor unions find ways to "take wages out of competition by organizing the relevant product market" (Commons 1913) or lobbying for limitations on trade or capital mobility, the declining economic strength of labor unions is unlikely to be reversed.

Growing economic integration necessitates the development of supranational economic and legal institutions that will secure the rights of parties involved in international economic activities. Risk premiums associated with uncertain legal rights when operating in foreign countries are one of the barriers to achieving efficient capital allocation across countries. Such organizations as the EEC, IMF, the World Bank, and the G-7 also try to coordinate international or interregional economic activities and so reduce the risks associated with companies' international operations.

Over two centuries ago, Adam Smith pointed out the possible production gains from the division of labor into specialized tasks, and noted that the size of the market for different goods and services created natural limits on the division of labor. In other words, full realization of the gains from specialization requires large markets. The emergence of a world economy as a result of technological and institutional developments coincides with a growth in the size of markets, thereby promoting further

specialization and production gains. As more developing countries integrate into the world economy, the world will increasingly realize its potential for further economic growth.

Notes

1. Different parts of this study use slightly different definitions of industrial and developing countries depending on the data sources. For exact definitions see the notes to the tables.

2. Data on labor force participation by women are notoriously poor due to problems of definition and measurement (see Dixon 1982).

3. The decrease in the LFPR of individuals aged fifteen to twenty-four has a larger effect on the overall LFPR in the developing countries than in the industrial economies because the share of this age group in their population is greater.

4. Because some countries deviate from World Bank standards in their reporting practices, the reported enrollment-population ratio for primary school may exceed 1.0. In particular, China reports an enrollment-population ratio of 1.35, probably because students in the seventh and eighth grades are categorized as attending primary school. Excluding China, the enrollment-population ratio in primary schools for the developing countries was 0.73 in 1965 and 0.92 in 1989. For the world, the corresponding rates were 0.80 and 0.93, respectively.

5. Even though enrollment-population ratios increased within both the industrial and developing countries, it does not necessarily follow that the overall enrollment-population ratio for the world also increased. Shifts in the distribution of the world supply of labor away from the industrial countries could actually have resulted in a decline in the overall enrollment-population ratio. For example, if industrial countries' share of the world supply of labor had remained stable after 1965, our calculations indicate that the world's enrollment-population ratios in 1989 would have all been higher: 108 percent for primary education, 57 percent for secondary education, and 17 percent for tertiary education. (The same qualitative result is obtained when China is excluded from the calculation.) Thus, the increase in educational attainment from 1965 to 1989 within country groups was large enough to dominate the effects of the shifting distribution of the world labor force away from the high-enrollment industrial economies and toward the low-enrollment developing economies.

6. This example ignores the reasons for differences in efficiency. The reason may be accumulation of human capital (e.g., knowledge or craftsmanship) over time, the existence of different natural resources, or other conditions (e.g., the weather). Also, as Heckscher (1919) and Ohlin (1933) first suggested, different factor proportions in different countries can lead to different economic efficiency in producing different

goods.

7. Dixit and Norman (1980) and Helpman and Krugman (1985) extend Samuelson's (1949) work to show that as long as the resources of the different economies are sufficiently similar, trade will lead to the same world production as perfect factor mobility. Mundell (1957) comes to the same conclusion. In the previous example trade cannot substitute for factor mobility because only one good is produced.

8. In the presence of distortions such as tariffs or subsidies, trade or factor mobility may decrease the value of production because countries may specialize in the "wrong" products or labor may move in the "wrong" direction (see Lipsey and Lancaster 1956).

9. Samuelson (1948), McKenzie (1955), and Chipman (1966) show that as long as factor proportions are sufficiently similar in the trading countries, within the context of the Heckscher-Ohlin model, trade will lead to factor price equalization.

10. While these potential gains are based on differences in marginal productivities, we report average productivities as a proxy because of data limitations.

11. In the developed countries, the entire increase took place in the service sector.

12. By using a common deflator for all sectors we allow changes in relative prices to affect the relative productivity of the sectors.

13. Note that productivity differentials between the developed and developing countries narrowed mostly in the industrial sector, which includes oil production, and that most of the narrowing occurred between 1970 and 1980, when oil prices increased sharply.

14. This statement refers to the developing countries as an aggregate and not to individual developing countries. Some developing economies performed very well during this period and their labor productivity grew much closer to that of the developed economies.

15. The classification of countries as northern or southern is based on the same criteria as that used to define more and less developed. However, the north and south categories are subgroups of the countries that are covered in the more developed and less developed country tables, respectively. For a complete list of countries see UNIDO (1987).

16. Migration flows in Europe appear to have increased following

the political changes in Central and Eastern Europe, but the period since these changes occurred has been too short to estimate their long-run effects.

17. The figures for 1990 in Table 16 are net of the substantial debt write-offs that took place during the 1980s.

18. The CIF/FOB ratio is an indication of transportation and insurance costs. It is not standardized for changes in distance between trading partners or for the nature of the goods being transported.

19. In terms of GDP per capita, incomes will converge as a result of capital mobility when capital moves to labor-abundant locations and increases domestic production.

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TABLE 1. WORLD POPULATION AND LABOR FORCE, SELECTED YEARS

Category	1950	1980	1990[a]	2000[b]	2025[b]	ANNUAL PERCENTAGE CHANGE 1950-90	ANNUAL PERCENTAGE CHANGE 1990-2025
World Population							
Total (billions)	2.5	4.4	5.2	6.1	8.2	1.85	1.29
Percentage in developing countries	66.9	74.5	76.9	79.1	83.0		
Potential World Labor Force							
Total (billions)	1.5	2.6	3.3	3.9	5.4	1.92	1.45
Percentage in developing countries	64.6	71.6	75.2	78.2	83.7		
Actual World Labor Force							
Total (billions)	1.1	1.9	2.3	2.7	3.6	1.81	1.31
Percentage in developing countries	65.9	71.0	74.5	77.0	82.5		

a. Estimated
b. Projected

Notes: The potential labor force is defined as all those aged fifteen to sixty-four. The actual labor force consists of all employed and unemployed persons (including those seeking work for the first time). It covers employees, self-employed persons, salaried employees, wage earners, unpaid family workers, members of producer cooperatives, and members of the armed forces. The developing countries are considered to be all countries except the more developed countries (MDC), i.e., Australia, Canada, Japan, New Zealand, the United States, and the European countries.

Source: ILO (1986).

TABLE 2. AGE AND GENDER OF THE WORLD LABOR FORCE, SELECTED YEARS

Category	1950	1980	1990[a]	2000[b]	2025[b]
Percentage of women in the actual labor force					
World	34	37	36	35	35
MDC	37	42	41	42	43
Developing countries	33	34	34	34	33
Average age of actual labor force[c] (years)					
World	34.2	34.0	34.1	36.6	36.8
MDC	35.5	36.3	37.0	37.7	38.3
Developing countries	33.6	33.1	33.1	34.2	36.4

Note: For definitions, see table 1.

a. Estimated
b. Projected
c. Average ages are calculated as weighted averages of average ages across countries, with labor force figures used to construct the weights. Average ages within countries are calculated by averaging across five-year age groups. For each five-year age group the arithmetic average of the endpoints of the age interval is used as the average age.

Source: ILO (1986).

TABLE 3. LABOR FORCE PARTICIPATION RATES BY AGE AND GENDER, SELECTED YEARS

Category	1950	1980	1990[a]	2000[b]	2025[b]
Ages 15-64					
World	71	69	69	68	66
MDC	68	71	71	72	71
Developing countries	72	69	68	68	65
Ages 15-24					
World	70	62	61	57	55
MDC	70	59	59	58	58
Developing countries	70	62	61	57	54
Ages 25-64					
World	71	73	73	73	69
MDC	67	75	75	77	74
Developing countries	74	72	72	72	68
Men Aged 15-64					
World	93	87	87	87	85
MDC	91	84	84	83	82
Developing countries	94	88	88	87	85
Women Aged 15-64					
World	49	52	51	50	47
MDC	47	59	59	60	60
Developing countries	50	49	48	47	44

a. Estimated
b. Projected

Note: The labor force participation rate is defined as the ratio of the actual labor force to the potential labor force. For other definitions, see table 1.

Source: ILO (1986).

TABLE 4. AVERAGE YEARS OF SCHOOLING BY AGE GROUP, 1980

Country Group	Age Group	
	25-29	45-49
World	7.1	5.2
MDC	11.5	9.5
Developing Countries	5.5	3.1

Note: The figures reported here are population weighted averages of each country's years of schooling. The average is across the countries that are included in Horn and Arriagada (1986). The population in each age group is used to construct the weights of the different countries. For definitions see table 1.

Sources: Horn and Arriagada (1986); ILO (1986).

TABLE 5. ENROLLMENT-POPULATION RATIOS, 1965 AND 1989

Country group	Year	Primary education	Secondary education	Tertiary education
World	1965	85	31	9
	1989	105	52	16
MDCs	1965	104	63	21
	1989	105	95	43
Developing countries	1965	78	22	3
	1989	105	43	8

Note: The entries in this table are calculated by (a) dividing the student enrollment in each education level by the population in the relevant age group, (b) calculating a weighted average of these figures using population in the relevant age groups to construct the weights, and (c) multiplying by 100. The relevant age groups are as follows:

Primary education:	age 6-11
Secondary education:	age 12-17
Tertiary education:	age 20-24

The reported figures may exceed 100 if sizeable numbers of students are drawn from outside the relevant age group.

Sources: ILO (1986); World Bank (1992).

TABLE 6. DISTRIBUTION OF THE WORLD LABOR FORCE BY ECONOMIC SECTOR (PERCENT), SELECTED YEARS

Country group	Agriculture	Industry	Services
World labor force			
1950	69	14	17
1960	63	16	21
1970	58	18	24
1980	54	19	27
MDC labor force			
1950	30	36	34
1960	20	37	42
1970	13	37	50
1980	8	35	57
Developing countries' labor force			
1950	81	7	12
1960	76	10	15
1970	71	12	17
1980	65	15	20

Note: Totals may not add exactly to 100 because of rounding. The statistics do not include the Eastern European economies except for Hungary and Yugoslavia. For definitions of MDCs and developing countries see table 1.

Source: ILO (1986).

TABLE 7. PRODUCTIVITY OF THE WORLD LABOR FORCE BY SECTOR, SELECTED YEARS (GDP per economically active person in 1980 U.S. dollars)[a]

Country Group	Agriculture	Industry	Services	Total
World				
1960	505	7,106	7,004	2,938
1970	489	7,705	7,723	3,510
1980	706	11,146	10,884	5,442
MDC				
1960	2,398	7,793	8,808	7,132
1970	3,285	9,663	10,154	9,097
1980	6,665	15,251	14,478	14,102
Developing countries				
1960	312	2,451	2,329	815
1970	318	2,709	2,331	953
1980	487	5,366	4,172	1,904

Note: The data do not include East European economies (except for Hungary and Yugoslavia) or the socialist economies in Asia (except for China). For definitions of MDCs and developing countries see table 1.

a. Using the U.S. GNP deflator.

Sources: ILO (1986); IMF (1984, sup. [8]).

TABLE 8. DEVELOPING COUNTRIES' SHARE OF THE WORLD ECONOMY, SELECTED YEARS (PERCENT)

Category	Agriculture	Industry	Services	Total
Share of world GDP				
1960	49.7	13.8	15.5	18.4
1970	53.8	14.0	11.8	18.6
1980	58.0	27.0	19.0	24.8
Share of world employment				
1950	90.1	40.6	54.3	65.9
1960	92.5	45.8	53.7	66.4
1970	95.3	54.3	55.3	68.6
1980	97.0	63.3	58.2	71.0

Note: The data do not include East European economies (except for Hungary and Yugoslavia) or the socialist economies in Asia (except for China). For definitions of MDCs and developing countries see table 1.

Sources: ILO (1986); IMF (1984, sup. [8]).

TABLE 9. NORTH/SOUTH COMPARISON OF PRODUCTIVITY AND UNIT LABOR COST RATIOS

Manufacturing branch	NORTH/SOUTH PRODUCTIVITY RATIO		NORTH/SOUTH UNIT LABOR COST RATIO
	1963[a]	1980	1980
Food products	2.5	3.8	1.3
Beverages	2.1	2.4	1.3
Tobacco	4.9	8.1	1.1
Textiles	2.1	3.5	1.3
Apparel	0.8	2.3	1.2
Leather and fur	1.3	2.7	1.4
Footwear	0.8	1.9	1.4
Wood and cork	1.6	3.0	1.8
Furniture and fixtures	1.7	3.0	1.5
Paper and its products	1.6	2.7	1.5
Printing and publishing	3.0	3.4	1.3
Industrial chemicals	1.8	2.4	1.6
Other chemicals	2.4	3.0	1.2
Petroleum refineries	1.7	2.2	1.1
Petroleum and coal products	2.6	2.2	1.7
Rubber products	2.0	2.8	1.7
Plastic products	1.0	2.5	1.6
Pottery and china	2.3	3.1	1.4
Glass and its products	2.4	2.7	1.4
Other non-metal mineral products	2.8	3.1	1.3
Iron and steel	2.4	2.9	1.6
Non-ferrous metal	1.2	2.1	1.8
Metal products	2.1	2.7	1.4
Non-electrical machinery	2.6	2.7	1.3
Electrical machinery	2.0	2.7	1.5
Transport equipment	2.9	2.5	1.5
Professional and scientific equipment	1.8	3.7	1.1
Other manufactures	0.8	2.9	1.4

Note: The productivity ratio is calculated as the ratio of value added per employee in the north to value added per employee in the south. For a list of sampled north and south countries see the source.

a. The figures for value added per employee in 1963 were calculated by dividing value added per employee in 1980 by the productivity growth for the period 1963-79.

Source: UNIDO (1987).

TABLE 10. IMMIGRATION-POPULATION RATIOS, SELECTED COUNTRIES, 1950-84

Country	1950-59	1960-69	1970-79	1980-84[a]
United States	1.5	1.7	2.0	2.4
Federal Republic of Germany	9.2	12.3	11.9	8.6
United Kingdom	..	2.9	3.5	3.3
Australia	13.2	15.3	13.6	11.8
Canada	9.8	6.9	6.4	5.7
Mexico	..	1.0[b]	2.2[b]	1.8[b]
Italy	2.5	3.7	2.1	1.5
France[c]	3.2	7.9	3.9	1.3
Netherlands	4.5	5.3	6.5	4.9
Switzerland	16.1	22.7	8.7	10.8
Japan	..	0.3	0.4	0.4
Belgium	5.2	6.6	6.3	4.8
New Zealand	10.8	12.0	16.8	12.7
Sweden	3.6	4.8	5.2	3.9
Denmark	4.7	6.7	6.8	4.8
Norway	1.4	3.6	4.7[b]	4.8
Total	3.2	4.0	3.6	3.0

Note: Immigration-population ratios were calculated by dividing the total number of immigrants during the period by average population. Average population for the decade was calculated as the arithmetic average of the population at the end points of the period.

a. The ratio is adjusted for a ten-year period by multiplying the number of immigrants by two.

b. The data are adjusted to account for unreported years during the period based on closest year available.

c. Includes immigration from Algeria.

Sources: ILO (1986); OECD (1988); UN (1978, 1979, 1986).

TABLE 11. GOVERNMENT PERCEPTIONS OF INTERNATIONAL EMIGRATION AND IMMIGRATION (AS OF 1987)

1. Emigration

Country group	Emigration significant			Emigration insignificant		
	Too low	Satis-factory	Too high	Too low	Satis-factory	Total
World	6	24	35	2	103	170
Industrial countries	2	1	4	0	32	39
Developing countries	4	23	31	2	71	131

2. Immigration

Region	Immigration significant			Immigration insignificant		
	Too low	Satis-factory	Too high	Too low	Satis-factory	Total
World	2	22	34	5	107	170
Industrial countries	0	7	9	0	23	39
Developing countries	2	15	23	5	86	131

Note: Definition of areas is according to UN regional commissions. The definitions of significant or insignificant emigration and immigration reflect the subjective perceptions of the government officials who responded to the questionnaires.

Source: U.N. (1988).

TABLE 12. GOVERNMENT POLICIES ON EMIGRATION AND IMMIGRATION (AS OF 1987) (NUMBER OF RESPONDENTS)

1. Emigration

Country group	In favor of: Higher rate	Keep same rate	Cut future rate	Emigration insignificant or not desired	Total
World	8	24	37	101	170
Industrial countries	2	2	5	30	39
Developing countries	6	22	32	71	31

2. Immigration

Country group	In favor of: Higher rate	Keep same rate	Cut future rate	Immigration insignificant or not desired	Total
World	5	24	32	109	170
Industrial countries	0	3	13	23	39
Developing countries	5	21	19	86	131

Note: Definition of areas is according to UN regional commissions. All answers reflect the perceptions of the government officials who answered the questionnaire.

Source: UN (1988).

TABLE 13. DISTRIBUTION OF DIRECT FOREIGN INVESTMENT BY SOURCE, SELECTED YEARS

Source	1965[a]	1970	1975	1980	1985
Direct foreign investment as a percentage of world total					
Major industrial economies	99.8	98.0	96.6	94.9	89.0
Other industrial economies	-	1.5	2.2	3.3	9.0
Developing economies	0.2[a]	0.5	1.1	1.9	2.0
Direct foreign investment as a percentage of the world's capital formation	1.9	2.2	2.5	2.5	2.8

Note: The major industrial economies are Australia, Belgium, Canada, Federal Republic of Germany, France, Italy, Japan, Luxembourg, Netherlands, Sweden, United States, and United Kingdom. The other industrial economies are Austria, Denmark, Finland, Greece, Iceland, Ireland, New Zealand, Norway, Portugal, South Africa, Spain, and Switzerland. The data do not include socialist economies of Eastern Europe and East Asia except Hungary, Yugoslavia, and China.

a. Based on the average for 1967-69.

Sources: IMF (1984; sup. [8], 1988); UN Center on Transnational Corporations (1983a and 1988, 1983b).

TABLE 14. DISTRIBUTION OF DIRECT FOREIGN INVESTMENT BY TARGET, SELECTED YEARS (PERCENTAGE OF WORLD TOTAL)

Target	1965	1970	1975	1980	1985
Major industrial economies	66.8[a]	73.0	60.3	74.0	67.7
Other industrial economies	--	9.2	9.5	6.4	8.5
Developing economies	33.2	17.8	30.3	19.6	23.8

a. Includes other industrial economies.

For sources and definitions see table 13.

TABLE 15. INTERNATIONAL PARTICIPATION IN U.S. CAPITAL MARKETS, 1970S AND 1992

Category	1970s	1992
New York Stock Exchange		
Number of companies listed	1,567[a]	1,981
Number of foreign companies (%)	33 (2.1)	112 (5.7)
Number from industrial countries	29	100
Number from developing countries	4	12
American Stock Exchange		
Number of securities listed	1,249[b]	994
Number of foreign issues	67 (5.4)	83 (8.4)
National Automated Securities Automated Quotation System (NASDAQ)		
Number of securities listed	2,627[c]	4,708
Number of foreign issues (%)	76 (2.9)	266 (5.6)

a. 1974.
b. 1970.
c. 1976.

Source: Personal communication.

TABLE 16. INDICATORS OF FOREIGN BORROWING BY DEVELOPING COUNTRIES, 1970 AND 1990

Category	1970	1990[a]
Total external debt as a percentage of GNP		
All developing economies	16.2	40.2
Low income	9.9[b]	41.0
Except China and India	16.3	82.6
Middle Income	16.8	39.9
Lower middle income	18.0	53.3
Upper middle income	14.4	29.8
Interest payments as a percentage of exports of goods and services		
All developing economies	5.0	8.5
Low income	3.1[b]	9.3
Except China and India	2.6	11.0
Middle Income	4.7	8.3
Lower middle income	5.4	8.4
Upper middle income	3.7	8.2

a. The figures for 1990 are net of the substantial debt write-offs that took place during the 1980s.
b. Estimated.

Source: World Bank (various issues).

TABLE 17. INDICATORS OF INTERNATIONAL INTEGRATION OF FINANCIAL MARKETS, SELECTED YEARS

Category	1975	1990
Cross-border interbank liabilities [a,b]		
All countries (US $ billions)	455	5,560
Percentage of borrowing banks in industrial countries	70	75
Percentage of lending banks in industrial countries	68	75
	1970	1990
Cross-border bank credit to non-banks		
All countries (US $ billions)	54	1,708
Percentage of lending to borrowers in industrial countries	31[c]	58
Percentage of lending by banks in industrial countries	80	69
	1971	1990
Cross-border bank deposits of non-banks[a]		
All countries (US $ billions)	75	1,695
Percentage in banks located in industrial countries	81	76
Percentage by residents of industrial countries	16[c]	50

Note: The data cover only IMF members.

a. As reported by residence of borrowing banks.
b. The data for the industrial countries do not include the Cayman Islands and the Bahamas.
c. 1974.

Source: IMF (various issues).

TABLE 18. EXPORTS AS A PERCENTAGE OF GDP, SELECTED YEARS

Country group	1950	1960	1970	1980	1988
World[a]	9.4	9.9	10.7	18.4	15.2
Developed market economies	7.7	9.3	10.6	16.5	14.2
United States	3.5	4.0	4.4	8.6	6.7
EEC	13.1	15.4	17.6	23.6	22.0
Japan	7.1	9.3	9.5	12.5	9.3
Developing economies	20.7	15.1	14.5	26.8	20.5
Major petroleum exporters	-	20.9	20.4	39.1	16.7
Major manufactures exporters	-	13.3	14.0	21.6	32.8
Socialist economies in Asia	2.7	3.3	1.8	6.7	13.6

Note: For definitions of country categories see source.

a. Excluding the socialist economies of Eastern Europe.

Sources: UN (1983, 1990).

TABLE 19. CHANGE IN TRANSPORTATION COSTS BY COUNTRY GROUP, SELECTED YEARS (RATIO OF IMPORTS CIF TO IMPORTS FOB)

Country group	1950	1960	1970	1980	1990
World	1.090	1.096	1.081	1.063	1.058
Industrial economies	1.077	1.094	1.074	1.048	1.046
United States	1.072	1.086	1.065	1.048	1.044
Japan	1.200	1.200	1.200	1.088	1.090
Federal Republic of Germany	1.070	1.087	1.066	1.030	1.026
Developing economies	1.104	1.102	1.102	1.102	1.097
Africa	1.106	1.104	1.110	1.110	1.123[a]
Asia	1.058	1.076	1.076	1.096	1.088
Latin America	1.127	1.128	1.114	1.100	1.094
Oil exporters	1.108	1.106	1.116	1.129	1.109

Note: For definitions of country categories see source.

a. 1989.

Source: IMF (1991).

TABLE 20. WORLD EXPORT SHARES, SELECTED YEARS (PERCENT)

Country group	1950	1960	1970	1980	1989
Industrial market economies	61.1	68.2	71.3	63.0	70.0
United States	16.6	15.9	13.7	11.0	12.0
EEC	26.7	32.6	35.6	32.9	37.0
Japan	1.3	3.1	6.1	6.4	9.1
Developing economies	30.8	21.5	17.9	28.2	21.4
Major petroleum exporters	7.2	7.5	6.7	16.9	5.3
Major manufactures exporters	7.2	3.8	4.0	5.7	9.6
Socialist economies in Europe	6.8	10.1	9.8	7.8	6.8
Socialist economies in Asia	1.3	1.6	0.8	1.0	1.8

Note: For definitions of country categories see source.

Source: UNIDO, (1983, 1984, 1990, tables 1.1, 1.3).

TABLE 21. COMMODITY COMPOSITION OF WORLD TRADE

Commodity Group	1955	1970	1988
All food items (SITC 0+1+22+4)			
World	21.8	14.7	9.9
Developed market economies	16.5	12.0	9.3
Developing countries	36.7	26.3	13.3
Other primary products except fuel (SITC 2-22+68)			
World	20.1	13.1	7.3
Developed market economies	16.3	10.8	7.0
Developing countries	29.1	22.5	8.6
Fuels (SITC 3)			
World	11.0	9.2	9.4
Developed market economies	5.4	3.4	3.6
Developing countries	24.9	32.4	23.7
Manufactured goods (SITC 5 to 8 less 68)			
World	45.5	60.9	70.0
Developed market economies	59.5	72.0	77.4
Developing countries	9.1	18.5	53.0

Source: UNIDO: *Conference on International Trade and Development*, New York, 1976 and 1990.

TABLE 22. WORLD EXPORTS BY DESTINATION, SELECTED PERIODS (PERCENT OF TOTAL EXPORTS BY ORIGIN)

Origin	Destination	
	Developed market economies	Developing countries[a]
Developed market economies		
1958-60	69.3	27.2
1987-89	77.0	19.6
Developing countries[a]		
1958-60	72.3	23.7
1987-89	64.7	30.2

Note: The data do not include the socialist economies in Eastern Europe.

a. Including socialist economies in Asia.

Source: UNIDO (1976, 1990).

TABLE 23. WORLD INCOME INEQUALITY, 1965 AND 1990

Country group	1965	1990
World	0.69	0.75
22 industrial market economies	0.28	0.10
50 lowest-income countries (as of 1990)[a]	0.32	0.33

Note: The entries in the table are Gini coefficients for the countries in the category. Gini coefficients can have values between zero and one. An increase in the coefficient represents increased income inequality. The countries' incomes are ranked according to GNP per capita as reported in the source. The 22 industrial market economies are Australia, Austria, Canada, Finland, Israel, Japan, New Zealand, Norway, Sweden, Switzerland, USA, and all the EEC members in 1988 except Luxembourg.

a. Excludes China and India.

Source: World Bank (1992).