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**Working Group on the Relationship
between Trade and Investment**

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IMPLICATIONS OF THE RELATIONSHIP BETWEEN TRADE AND INVESTMENT FOR DEVELOPMENT AND ECONOMIC GROWTH

Work Undertaken in Other Intergovernmental Organizations

Addendum

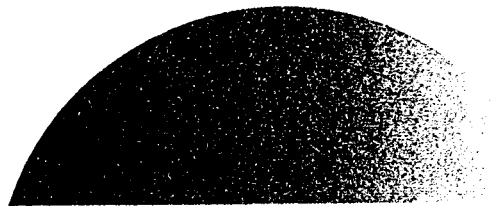
At its meeting of 2 and 3 June 1997, the Working Group requested the WTO Secretariat to prepare a paper which would present the results of work undertaken in other intergovernmental organizations on the subjects covered by Item I of the Checklist of Issues Suggested for Study (WT/WGTI/M/1, paragraph 11). Pursuant to this request, the Secretariat invited UNCTAD and other intergovernmental organizations working in this area to provide a summary description of work carried out on these subjects.

This addendum reproduces the contribution from the World Bank. It consists of (I) relevant sections of the recent report on *Global Economic Prospects and the Developing Countries*; (II) a summary of a recent report by the International Finance Corporation (IFC) on *Foreign Direct Investment*; and (III) an inventory of analytical work on trade, investment and development.

I. EXTRACTS FROM "GLOBAL ECONOMIC PROSPECTS AND THE DEVELOPING COUNTRIES"

1997

Global
Economic
Prospects
AND THE
Developing
Countries



The World Bank
Washington, D.C.

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Developing countries and the globalization of production

An important trend in the world economy today is the globalization of production in developing countries. Global production is defined here as cross-border production by multinational enterprises and their networks of affiliates, subcontractors, and partners.¹ Production by multinational enterprises at home and abroad accounts for a fifth of world GDP, intrafirm trade by multinationals accounts for a third of world trade, and their parent firms account for much of world research and development.

- Worldwide reductions in policy barriers to international trade and investment and continuing declines in international transport and communications costs are making markets everywhere more contestable, increasing competitive pressures on firms. But the same forces also stimulate and facilitate firms' efforts to improve efficiency and gain access to new markets by reorganizing production processes on a global basis. Since the mid-1980s average import tariffs in developing countries and international transport and communications costs have both dropped by roughly a third. Perhaps even more fundamentally, the increasing importance of knowledge and other specialized, intangible assets in modern production and distribution also contributes to the expansion of cross-border production by multinationals and their partners.
- Global production networks are increasing the integration of developing countries into world markets. The share of world output produced by multinational affiliates is rising. In the 1990s the increase in developing countries has been especially marked, amounting to 2.5 percentage points of GDP. Production by multinational affiliates is increasingly oriented toward world export markets, and trade within multinationals is rising as a share of world trade. Firms are taking advantage of falling policy barriers and transport costs to disaggregate production processes, especially in manufacturing, into stages that are outsourced to different countries according to

their comparative advantage. This slicing up of the value chain is widening opportunities for developing countries to participate in international specialization and gains from trade.

- The benefits of global production for developing countries are potentially large. In many countries multinational operations have a substantial direct, positive impact on the growth of trade, output, and employment. In addition, a defining characteristic of multinational firms is their ownership of specialized intangible assets related to technological and management know-how, assets that create a basis for indirect, or spillover, benefits. These benefits include diffusion of management and labor skills, better information about world markets, introduction of new ideas and technologies, and, generally, a faster pace in catching up with best practices in the world economy. These effects can be especially important in the services sector. Thus, from China to Hungary and from India to Mexico, global production networks both help integrate developing countries into world markets and act as conduits of information and knowledge.
- The challenge for policymakers in developing countries is to establish conditions that help attract more global production and realize more of its benefits. These include political and macro-economic stability, open trade and investment regimes, improvements in transport and communications infrastructure, adequate protection of property rights, and a predictable institutional environment without excessive red tape. An important condition for enhancing the benefits of global production is ensuring a high degree of competition in host country markets. Open international trade and investment policies and well-designed domestic competition and regulatory policies can contribute to maintaining high levels of competition in both goods and services industries.

What drives global production?

The growing importance of global production in world output is underpinned by several factors. These include widespread liberalization of international trade and investment policies in both industrial and developing countries, improvements in transportation and communications technologies, and the growing importance of knowledge and other specialized intangible assets in production and marketing.

Liberalization of trade and investment policies

World trade and investment barriers fell rapidly in the 1980s and early 1990s. Industrial country tariffs on industrial products were reduced in successive rounds of the GATT to 6-7 percent by the early 1990s and under the Uruguay Round will fall to under 4 percent. Average tariffs will be even lower when regional trading arrangements such as the European Union and the North American Free Trade Agreement (NAFTA) are accounted for. The coverage of industrial country nontariff measures on developing country exports is expected to drop from 18 percent to 4 percent. Restrictions on cross-border investment are falling, and the focus of trade liberalization is moving on to reducing "behind-the-border" barriers to international trade and investment through such measures as the Uruguay Round's General Agreement on Trade in Services and agreement on Trade-Related Investment Measures and the EC '92 initiative of the European Union. Competition policies to deter restrictive business practices were strengthened in the European Union, while in the United States regulatory reforms aimed to enhance competition in several service and utility sectors (OECD 1996b; UNCTAD 1994d; Lawrence 1996; Low and Yeats 1994).

In developing countries the swing to greater reliance on markets and competition was even more evident. Average most-favored-nation import tariffs in developing countries fell from about 34 percent to 24 percent between 1984-87 and 1991-93 and are slated to fall to about 14 percent under the Uruguay Round. Nontariff barriers fell even more in most countries. Brazil and Mexico, for example, reduced mean import tariffs from 35-50 percent to 14-15 percent, and nontariff barriers from 12-40 to 1-2 percent. Barriers to foreign investment also came down swiftly. Indonesia and India, for example, now have far fewer sectors closed to foreign investment and have progressively dismantled restrictions on foreign ownership and divestiture. Regional agreements (Association of Southeast Asian Nations [ASEAN], Asia-Pacific Economic Cooperation [APEC], EU Association Agreements, Mercosur, and NAFTA among them) also contributed to lower trade and investment barriers in developing countries.

Falling transport and communications costs

Lower trade and investment barriers are increasing the contestability of markets by foreign firms while also spurring and facilitating cost reduction through reorganization of production processes on an international basis according to the comparative cost advantages of different locations. These trends are magnified by reductions in cost and improvements in the quality of transport and communications services. Lower transport costs have extended the reach of global production to labor-intensive manufacturing, allowing the dispersion of production stages over longer distances even for low value added products (box 2-1). Communications improvements have extended the scope of global production to more technologically complex, information-intensive, and time-sensitive products and services by allowing better information flows and improved monitoring and coordination of production and distribution in distant locations. Examples are the manufacture of electronics parts for just-in-time production, overnight electronic data processing, and the manufac-

Box 2-1 Transport, foreign know-how, and Colombian cut flower exports

Colombia is now the world's second largest exporter of cut flowers, accounting for about 10 percent of the world export market and directly employing about 70,000 workers in 1990, with another 50,000 in ancillary packaging and transport. Most exports are to the United States. Cut flower production in the United States began to relocate from the eastern to the western and southern states from as early as the 1950s and 1960s, and then, from the mid-1970s, to Colombia. In both cases air transportation freed cut flower production from areas close to consumers but with high land and labor costs. Two factors were key to Colombia's success. First, investment by Floramerica, a U.S. firm, supplied marketing and other know-how to get the cut flower industry started. The demonstration effects and diffusion of know-how from Floramerica led to rapid growth of locally-owned Colombian firms that hired Floramerica staff and followed its production and marketing methods. Second, critical transport and regulatory bottlenecks were removed. Many early shipments had been destroyed by delays in being loaded onto planes or inspected by Colombian customs. Neither the dominant airline nor customs was particularly responsive to these problems. A weak handling and distribution system at the entry point in the United States was another problem. Floramerica encouraged other airlines to enter and compete for the business, while a growers association established an efficient handling and distribution center in Miami.

Source: Mendez 1991.

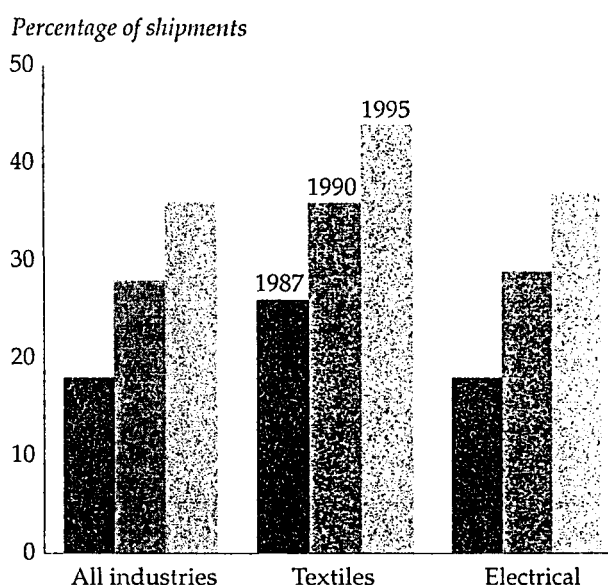
ture of apparel and footwear in a world of designs and fashions that last only a season.

Key cost and quality improvements in transport and communications, and some of their major consequences, include the following:

- A decline in sea freight unit costs in real terms of almost 70 percent between the start of the 1980s and 1996. This decline was about equal to the fall in ocean freight costs for the United States in 1880–1910, another period of mounting global integration, but occurred in half the time. Air freight costs have fallen by 3–4 percent a year in real terms over a long period, as a result of technological advances, longer average trips, greater competition, and economies of scale (Peters 1993a; Lloyds *Shipping Economist*; North 1958; ICAO 1992).
- A fall in the per-minute cost of international phone calls in the 1990s in real terms of about 4 percent a year in developing countries and about 2 percent in industrial countries (ITU 1996a).
- An increase in the proportion of sea freight cargo carried in containers to about 80 percent from less than 20 percent in 1970, allowing better tracking of cargo, more efficient and reliable port services, and greater ease in switching to other modes of transportation (Pearson 1992).
- Increased use of electronic data interchange by airlines and specialized air-freight delivery firms to cut delivery times and improve tracking of cargo. These quality improvements are being pushed by and reinforce the adoption of just-in-time production and inventory management techniques.
- In telecommunications, gains in carrying capacity from optical fiber and satellite networks, making possible the low-cost transfer of vast amounts of data and creating new markets, such as computer software exports from India.
- Better control over costly inventories, more use of just-in-time concepts in purchasing and distribution, and shorter order cycles as widespread trends in virtually all markets. A U.S. toy manufacturer sets up a purchase contract with a firm in Hong Kong (China), which establishes a joint venture to manufacture labor-intensive toys elsewhere in China, using plastics shipped from Malaysia, and ships the finished product to the United States—all using just-in-time processes. Just-in-time purchases now account for almost half of all purchases in textiles, compared with a quarter in 1987 (figure 2-1). Order cycles in the U.S. electrical and electronics industry have been shaved from some five months in 1980 to seven weeks in 1990 to close to two weeks today (Peters 1996; Schwabe and Kimberly 1995).

Just-in-time purchases account for a rising share of purchases

Figure 2-1 Application of just-in-time methods in purchasing in North America and Europe, 1987, 1990, and 1995



Source: Peters 1996.

Deregulation, lower entry barriers, and increased competition have been key factors in transport and communications improvements—in many cases playing a bigger role than technological advances alone. For example, the major factors behind the reduction of international sea freight rates in recent years were greater competition and deregulation that forced out-flagging, labor cost savings, greater energy efficiency, and reduction of capital costs through extended use of ships. In Brazil the removal of freight reservation led to a dramatic reduction in sea freight costs to Europe. Deregulation and heightened competition have been a major source of cost reductions in both air cargo and telecommunications markets (Peters 1993a; ICAO 1992; ITU 1996a).

Growing importance of knowledge and other intangible assets in world production

While policy liberalization and falling transport and communications costs increase competition in domestic and foreign markets, not all these trends necessarily imply more cross-border production by multinationals. For example, while falling trade and transport barriers encourage greater subdivision of production processes across countries according to

comparative advantage, this subdivision could occur through arm's length trade between independent firms in some industries. But that is less likely in the kind of technologically sophisticated and differentiated products that are becoming steadily more important in world demand, output, and trade. For such products the competitive strength of firms tends to lie in the possession of highly specialized, intangible assets, such as knowledge about how to produce cheaper or better-quality products at given input prices, ability to innovate, special skills in design, styling, promotion, marketing, or sales, or possession of a trademark or brand with a strong customer following. For a variety of reasons firms tend to find it easier and more profitable to use these intangible assets, usually developed over many years, in-house, rather than selling or licensing them to other firms at arm's length.² In these circumstances a firm may find that the best way to exploit the locational advantages of production in a foreign country is to establish a foreign affiliate that retains access to the firm's specialized assets—in short, become a multinational.

The increasing importance of knowledge capital in world production is evident from a number of trends. The real measured stock of intangible capital in the United States in the form of formal education, training, and research and development (R&D), among other items, equaled its physical capital stock by the mid-1970s and exceeded it by 15 percent in 1990 (Abramovitz and David 1996). Investment in information technology overtook other capital expenditures in the United States in the 1990s, and there is little reason to think that these trends are not reflected in most industrial and some developing countries. Several studies document the growth in the share of knowledge- or information-producing industries in output and employment in all OECD countries. Business expenditure on R&D as a share of GDP in the OECD continues to rise (figure 2-2). In most OECD countries studied, the technology intensity of production, accounting for both direct and indirect (or embodied) technology, increased significantly between the 1970s and early 1990s, with especially marked increases for Japan and Germany (OECD 1997).³

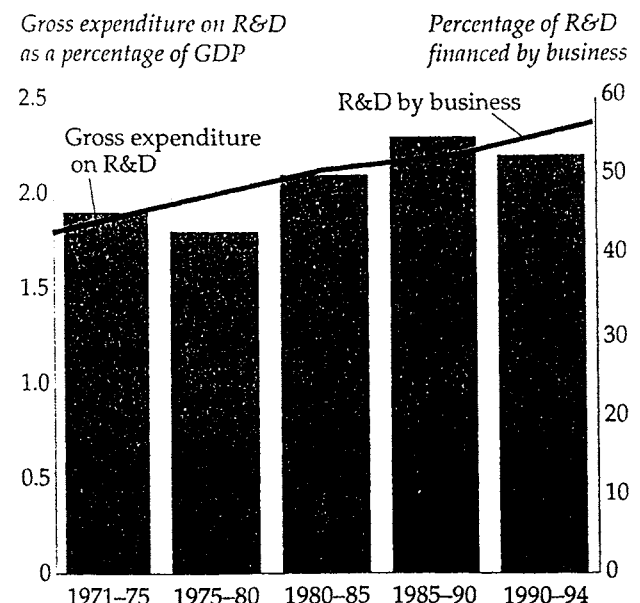
Modern theories of the multinational enterprise view it as essentially an institutional device that allows intangible assets, such as knowledge, which are not otherwise easily transferred, to be deployed in a number of countries so as to undertake production with complementary local factors of production. Thus it is not surprising that multinationals undertake most of the world's private R&D expenditure. The parent firms of U.S. multinationals undertook 58 percent of all R&D performed in the United States in 1989, public or private. R&D spending in turn is

found to be a robust predictor of foreign direct investment (FDI) by a firm or industry (figure 2-3).⁴ Technology transfer by multinationals takes place principally to their own affiliates: more than 80 percent of registered receipts for technology sales (royalties, licenses, and patent rights) by U.S. multinationals were from their foreign affiliates; the share is 90 percent for Germany and more than 60 percent for Japan. Technology transfer is also embodied in goods, and intrafirm trade between multinationals and their affiliates accounts for large shares of high-tech exports and imports. The growing importance of knowledge and other intangible assets in production therefore suggests an important underlying reason for the growth of global production.

Developing country firms also seek to upgrade production and marketing technologies to remain competitive in domestic and world export markets. A clothing manufacturer in Bangladesh or the Czech Republic is not immune to the impact of more advanced production and marketing methods in the world garment industry. Indeed, in sectors where economies of scale in R&D, marketing, and global brand-name development are most significant, participation by developing country firms in global production networks through joint ventures and other alliances with multinationals may be a precondition

Business R&D spending continues to rise

Figure 2-2 Research and development expenditures in OECD countries



Source: OECD 1997.

for entry and participation in world markets. Case studies suggest that even large developing countries, such as India, represent too small a part of the world market for, say, autos to support the R&D outlays required to stay abreast of technology. Participation in the world car market, or even in basic automotive components, may require collaboration with foreign principals providing access to technology and marketing channels. Similarly, participation in the world athletic footwear market may require marketing and production alliances with companies that have global brand recognition (Gereffi and Korzeniewicz 1994).

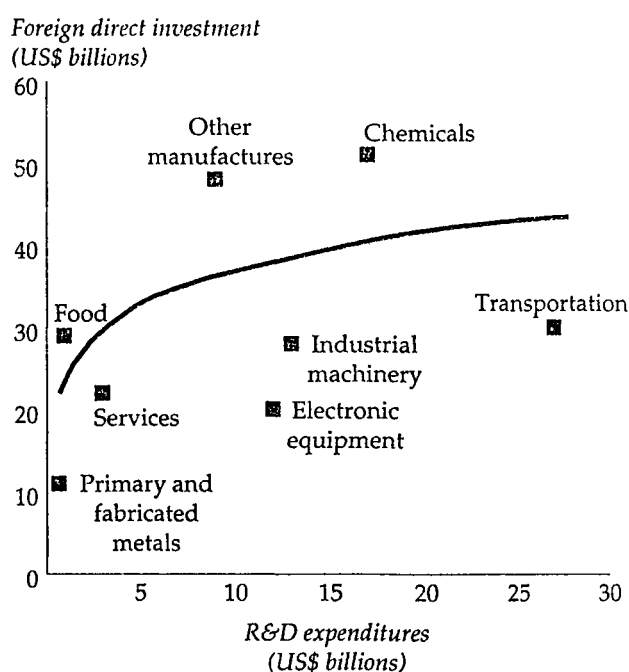
Growth in global production

Growth in cross-border production by multinational enterprises and their networks of associated firms—global production for short—is deepening the economic integration of countries. This section reviews and presents evidence on key aspects of the rise in global production:

- New estimates of the rising share of world and developing country output produced by multinationals and their affiliates.

*R&D spending is a good predictor
of foreign direct investment*

Figure 2-3 U.S. foreign direct investment and research and development expenditures, 1994



Source: U.S. Bureau of Economic Analysis data.

- The greater outward orientation of multinational affiliates and the increasing importance of intrafirm trade in world trade: rather than aiming to primarily serve protected domestic markets, global production is increasingly integrating host countries into the world economy.
- The increasing role of international outsourcing.

There is no systematic or standard source of data on global production. Rather, information must be pieced together from many sources, such as surveys or censuses in a handful of industrial countries covering production by home firms in foreign markets, data collected in a few host countries on production or sales by foreign firms in home markets, balance-of-payments data on capital flows, and commodity-specific international trade data. The result should be seen as a series of snapshots that attempt to highlight important aspects of the phenomenon of global production rather than as a comprehensive picture of the whole.

Rising share of global production in world output

Cross-border production by multinational affiliates constitutes an increasing share of world output. Recent estimates of the value added output of multinational affiliates abroad (that is, excluding the output of parent firms in their home countries) as a share of world GDP⁵ show a rise of 2 percentage points over twenty years to reach 6.4 percent in 1990. An acceleration in the 1990s resulted in a 7.5 percent share by 1995 (table 2-1). (Multinational production at home and abroad in 1990 is estimated at about 22 percent of world GDP.)

In the 1990s the most rapid increase in global production occurred in developing countries

Table 2-1 Share of multinational affiliates in world output, selected years, 1970–95
(Percent)

Year	Share in world output			Share in developing country GDP
	GDP	Manufacturing	Services	
1970	4.5	—	—	—
1977	5.4	11.5	2.3	—
1982	5.8	12.7	2.5	4.4 ^a
1988	6.3	15.6 ^b	3.1 ^b	—
1990	6.4	16.5	3.4	3.9
1992	6.2	17.6	3.7	4.3
1995	7.5	—	—	6.3

— Not available.

a. 1983.

b. 1989.

Source: Lipsey 1997; Lipsey, Blomstrom, and Ramstetter 1995.

At present some 60 percent of multinational affiliate output is concentrated in manufacturing (accounting for about a fifth of world manufacturing output). But affiliate output in 1990 was only 3–4 percent of services, which account for more than 60 percent of global output. Services include government, however, as well as transport, communications, utilities, and finance, where until recently foreign investment was frequently excluded, even in industrial countries. But with the worldwide deregulation and opening of services in recent years, future increases in global production may be highest in this sector. Global production is also negligible in agriculture, which represents about 5 percent of world output (though undoubtedly more significant in related manufacturing and service sectors, such as agricultural processing, farm machinery, fertilizers, pesticides, storage, packaging, transportation, distribution, and marketing).

The geographical distribution of multinational affiliate production has also been uneven. Until recently it was much more extensive in industrial than developing or transition economies, few of which had adopted outward-oriented policies before the late 1980s. The share of multinational affiliate output in developing country output in 1990 was only just over half the share in industrial countries, after falling in the 1980s, the decade of the debt crisis (see table 2-1). The boom in FDI to developing countries in the first half of the 1990s contributed to a reversal of this trend, however: affiliate output increased almost 2.5 percentage points of GDP in 1990–95, bringing its share nearer the world average (see table 2-1).

Data inadequacies prevent a more detailed calculation of the distribution of affiliate production across developing countries. But some indication is provided by data on FDI, an indirect indicator showing financial flows associated with establishing production capacity in foreign countries. Such data are available in greater detail than other sources of information on multinational operations. Over the past twenty-five years FDI flows to both industrial and developing countries have followed a rising though highly cyclical trend (figure 2-4). Flows to developing countries in particular showed an unprecedented surge in the 1990s. As a share of gross domestic investment, FDI flows to developing countries averaged more than 5 percent in 1990–95, up from less than 1 percent in the 1970s and less than 2 percent in the 1980s.

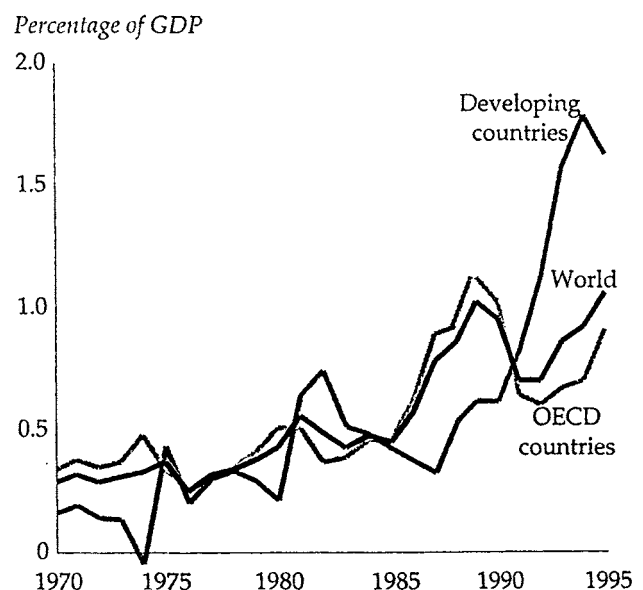
As discussed in *Global Economic Prospects 1996*, FDI flows suggest large disparities in the participation of developing countries and regions in global production. Nine countries accounted for almost 90 percent of the increase in FDI flows to developing countries in 1990–95. Many developing countries, however, saw a significant increase in FDI inflows,

especially relative to GDP, even though their shares in total inflows were small. The simple average of FDI to GDP ratios for low- and middle-income countries (LMICs) doubled between 1990 and 1994 (table 2-2). This ratio rose in every region except East Asia, where it was already high. Dispersion of FDI to GDP ratios fell in the first half of the 1990s, as shown by lower coefficients of variation for all LMICs and most regions. The spread of global production capacity—as revealed by analysis of FDI—appears to be broadening.

Global production can be viewed more broadly than in terms of affiliates established through FDI and controlled by parent firms. Multinationals participate in an array of collaborative ventures with host country firms or affiliates of other multinationals, including joint ventures, equity participation, marketing tie-ups, and subcontracting and component supply arrangements involving close coordination between the parties. Joint ventures and other forms of collaboration are important because they combine the differing strengths of domestic and foreign partners (Caves 1996). The more unique, firm-specific, and proprietary the assets deployed in production, however, the more likely they are to be retained in a majority-owned or -controlled affiliate. Systematic data on collaborative ventures between firms are even more limited than are data on multinational affiliates. The range of cross-border corporate alliances that may be formed is wide, however

FDI flows are rising but highly cyclical

Figure 2-4 Foreign direct investment in different parts of the world, 1970–95



Source: IMF and World Bank data.

The average FDI to GDP ratio in developing countries has doubled since 1990

Table 2-2 Distribution of FDI in developing countries, 1990 and 1994

Country group or region	1990			1994		
	US\$ billions	Percentage of GDP ^a	Coefficient of variation	US\$ billions	Percentage of GDP ^a	Coefficient of variation
Low- and middle-income countries	27.7	0.85 (0.45)	2.68	84.8	1.80 (0.99)	1.92
East Asia	10.9	2.80 (2.02)	0.81	44.1	2.64 (1.84)	0.98
South Asia	0.3	0.26 (0.21)	1.17	1.9	0.68 (0.62)	0.87
Latin America and the Caribbean	7.6	0.26 (0.93)	12.57	24.5	2.50 (1.78)	2.18
Sub-Saharan Africa	0.9	0.93 (0.14)	2.13	3.4	1.55 (0.23)	1.87
Middle East and North Africa	2.9	0.49 (0.62)	2.23	2.8	0.84 (0.42)	1.43
Europe and Central Asia	4.6	0.94 (0.45)	1.40	8.1	1.80 (1.46)	0.63
Middle-income countries	21.8	0.91 (0.93)	2.89	44.5	1.80 (1.20)	1.89
Low-income countries (excl. China)	2.0	0.76 (0.08)	2.23	5.8	1.67 (0.41)	2.12

a. Simple averages. Median values are in parentheses.

Source: IMF data; World Bank data and staff estimates.

(figure 2-5). Such growing cross-border alliances are evident in many sectors, including clothing, chemicals, construction, electronics, footwear, semi-conductors, and telecommunications (OECD 1994; Zampetti 1994; Cowhey and Aronson 1993; Gereffi and Korzeniewicz 1994).

Increasing international trade orientation of global production

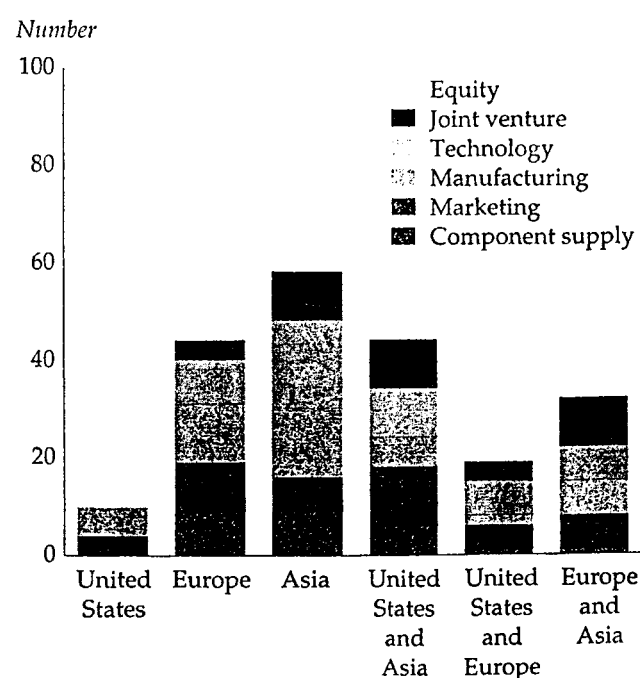
There is some evidence that overseas production by multinational affiliates is becoming more oriented toward exports rather than the domestic market of the host country. This is especially evident in technologically complex products. In addition, intrafirm international trade (that is, trade within multinationals, between parents and affiliates or between different affiliates of the same parent) appears to be gaining ground relative to overall world trade. Both these trends suggest that multinational firms can serve as important conduits to international markets for developing countries. Since a large part of world trade is intrafirm or, in services, occurs principally through the presence of a foreign firm in the local market, it is evident that restrictions on foreign investment will hurt international trade as well. So efforts to liberalize trade also need to consider the liberalization of investment codes.⁶

The share of exports in sales of U.S. majority-owned foreign affiliates has more than doubled, from less than 20 percent in 1966 to more than 40 percent in 1993.⁷ The rise has been largest for foreign affiliates in developing countries, where barriers to trade were previously the highest and have since fallen the most in relative terms (figure 2-6). Regional and country

variations in trade barriers and economic policy also affect the picture. The greater inward orientation of Latin America and India until recently provided foreign affiliates with strong incentives to orient sales to the domestic market, while in more outward-oriented

Cross-border corporate alliances take many forms

Figure 2-5 Automotive corporate alliances within and between different regions, 1992

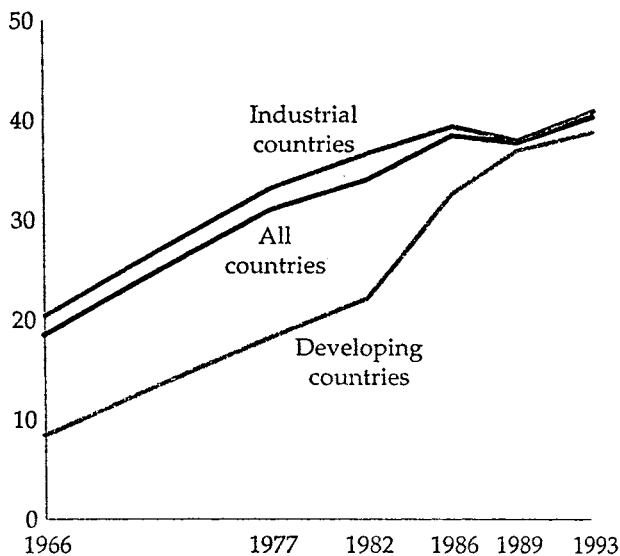


Source: O'Brien and Karmokolias 1994.

U.S. foreign affiliates double their export to sales ratios

Figure 2-6 Exports of U.S. majority-owned foreign affiliates in manufacturing, 1966–93

Percentage of total sales



Source: U.S. Bureau of Economic Analysis data.

East Asia the propensity to export was high and rising (figure 2-7). The most striking increases in export to sales ratios were for technologically sophisticated sectors such as machinery, office and computing machines, electric and electronic equipment, and transportation.

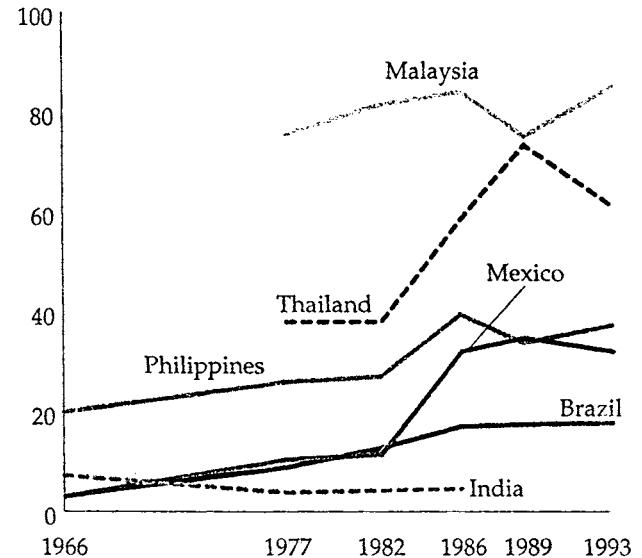
Trends for Japanese manufacturing foreign affiliates are similar, but export propensities vary more by region, being much higher for affiliates in Asia and in Europe than for those operating in the United States. The relocation of labor-intensive manufacturing by firms from the Republic of Korea, Taiwan (China), Hong Kong (China), and Singapore to their affiliates in China, Indonesia, the Philippines, and Thailand also contributed to the large increase in intraregional trade in East Asia over the last decade.

Intrafirm trade has also risen as a share of international trade in many industrial countries in recent years (figure 2-8). In the United States the industries with the highest levels of intrafirm exports relative to total industry exports in 1993 were those with high research and development and significant firm-level economies of scale: machinery (84 percent), office and computing machines (94 percent), electronic components (85 percent), and transportation (87 percent). Trade with affiliates is highest in industries that use specialized knowledge (OECD 1996a; UNCTAD 1996).

In the 1980s export shares of U.S. foreign affiliates rose most in traditionally outward-oriented regions

Figure 2-7 Exports from U.S. majority-owned foreign affiliates in selected host countries, 1966–93

Percentage of total sales

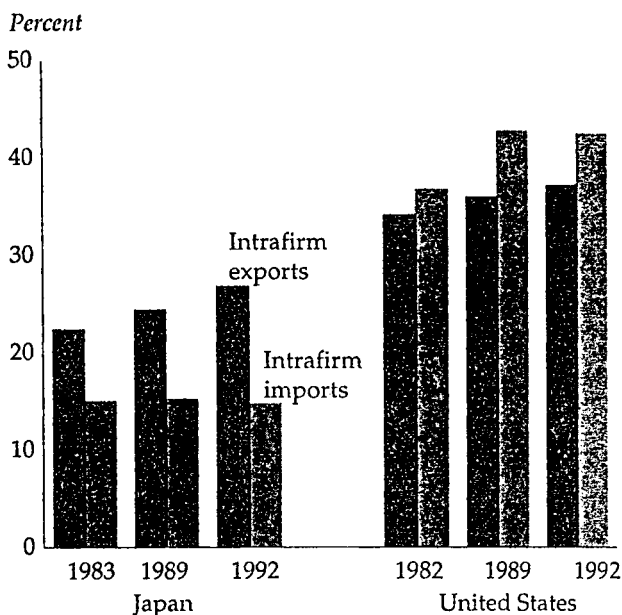


Source: U.S. Bureau of Economic Analysis data.

Growing international outsourcing

Falling trade and transport barriers tend to encourage firms to separate production processes (especially in manufacturing) into stages that can be outsourced to different countries according to their comparative advantage. This trend can significantly broaden the opportunities for international trade available to developing countries (box 2-2).

A more systematic source of evidence is the growing importance of trade in parts and components in the machinery and transport equipment sector (SITC 7).⁸ This trend reflects both the import of components from low-cost production locations abroad and their export to overseas assembly or processing locations. Machinery and transport equipment is the fastest-growing segment of world trade, containing such technologically dynamic sectors as computers, telecommunications equipment, and other electronic products and parts. It accounts for roughly 50 percent of world trade in manufactures. The OECD countries (excluding recent members such as the Republic of Korea and Mexico) exported \$440 billion of machinery and transport equipment components in 1995—about 30 percent of all shipments in this sector, up from 26 percent in 1978. The United States has had the highest proportion of components

*Intrafirm trade is on the rise***Figure 2-8 International intrafirm trade's share in total country trade, 1982-83, 1989, and 1992**

Note: Data for Japan exclude firms engaged in commerce.

Source: UNCTAD 1996.

exports in the past twenty years, while Japan has experienced the most dramatic increase since 1978 (figure 2-9). These trade data do not differentiate between intrafirm trade (or trade between closely associated firms) and arm's length trade. However, it is precisely in the technologically sophisticated machinery and transport equipment sector that intrafirm trade is found to make up the highest proportion of overall trade.

Some present (or former) developing countries have been among the fastest-growing destinations for OECD components exports. Exports to the ten largest developing country importers totaled \$81 billion in 1995, or 18 percent of all components exports, up from 10 percent in 1978. The bulk of component exports went to East Asian countries, including China, which has experienced the most rapid increase since 1978 and was also the single largest East Asian destination in 1995 (figure 2-10). Newly industrializing economies and developing countries exported about \$100 billion of these products in 1995. Although data limitations do not allow the tracking of trends in developing countries' exports of these products over the 1980s, available information indicates they were of major importance by the beginning of the 1990s. Components exports from Singapore

Box 2-2 Case studies in international outsourcing

- An early example is the 1965 pact that removed most restrictions on cross-border trade in automobiles between Canada and the United States. The result was a dramatic increase in specialization in auto production in both countries: in just four years the proportion of Canadian vehicle production exported to the United States increased from 7 percent to 60 percent, while U.S.-Canada trade in vehicles, engines, and parts increased from 4 percent to 15 percent of U.S. output. Today 60 percent of U.S. automotive exports to Canada are parts and engines, while 75 percent of imports are vehicles.
- As a result of the offshore assembly pact between Mexico and the United States, *maquiladora* cross-border assembly operations of U.S. companies in Mexico expanded dramatically. They accounted for \$23 billion—almost half—of Mexican exports to the United States in 1994.
- In 1977 about 6 percent of China's exports and less than 1 percent of its imports passed through Hong Kong. By 1990, a little over ten years after China's opening up, 36 percent of its exports and 25 percent of its imports were routed through Hong Kong. About 80 percent of Hong Kong's re-exports from China were the result of outward-processing arrangements in which Hong Kong firms placed orders with Chinese firms to manufacture or assemble products, provided them with designs and key components, and finally exported the finished products to international markets.
- To reduce costs following the rise of the yen after 1985, many of Japan's major electronics manufacturers outsourced assembly and other final stages of production to Asian countries. Japan's exports of electronic components more than doubled in yen terms between 1985 and 1994, while its exports of finished equipment fell 30 percent. Offshore production of color televisions by Japanese companies tripled in the same period, surpassing domestic production as early as 1988. Offshore videocassette recorder output rose by a factor of ten over the same period and exceeded home production in 1994.

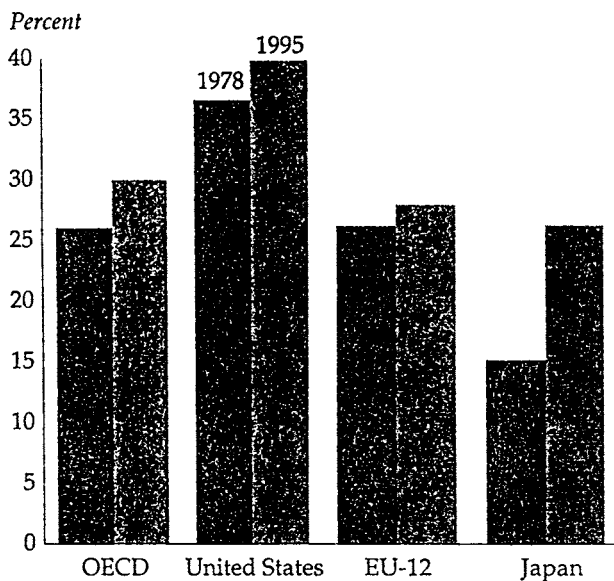
Source: Yi 1996.

exceeded \$20 billion, while Taiwan (China), the Republic of Korea, Malaysia, and Mexico all had exports in excess of \$10 billion each. These trends signal the increasing interdependence of production sharing operations in the machinery and transport sectors—in which industries in one country become increasingly reliant on suppliers in another for essential manufacturing inputs.

The trend toward outsourcing is also seen in the growth of offshore purchases as a proportion of total

Components are rising as a share of exports

Figure 2-9 Components share of OECD machinery and transport equipment exports to world, 1978 and 1995



Source: Yeats 1997.

purchases of inputs by industrial country firms. A World Bank survey of 628 North American and 240 European industrial groups or firms found that their offshore outsourcing rose about 30 percent between 1987 and 1995 in response to growing cost competition and restructuring of businesses.

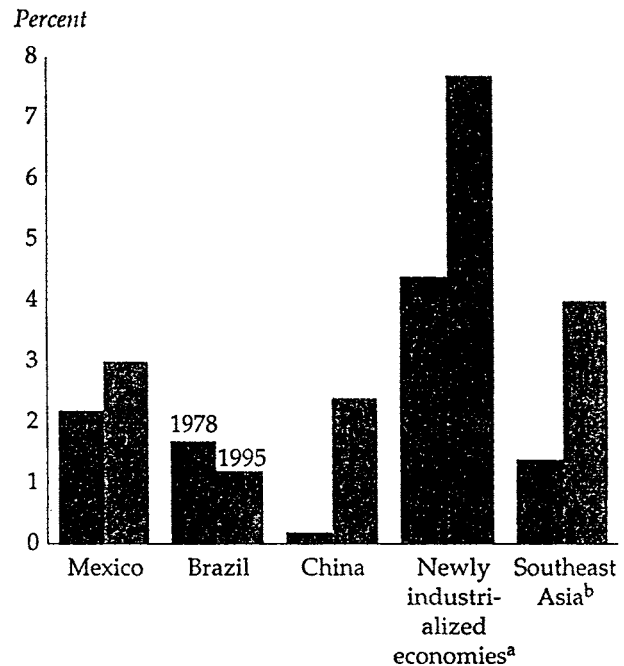
As much as 12 percent of total nonenergy purchases by U. S. manufacturing firms were offshore by 1990, compared with less than half that level in the early 1970s (table 2-3). The average figure masks wide variation among sectors. In sectors where production can be broken into self-contained stages that are relatively easy to transport and that vary considerably in their use of different types of labor skill (footwear, electronics, instruments, and toys, for instance), the share of outsourcing in purchases is much higher—about 18–22 percent.⁹

Impact of global production in developing countries

The direct impact of multinational operations on trade, capital formation, and production in many developing countries became significant in the 1990s. In principle countries can now participate in global production by mastering a slice of the value added chain in a given industry rather than waiting to mas-

Developing countries' share of components exports has surged

Figure 2-10 Components exports to developing countries as share of total machinery and transport equipment components exports, 1978 and 1995



a. Hong Kong (China), Republic of Korea, Singapore, and Taiwan (China).

b. Indonesia, Malaysia, and Thailand.

Source: Yeats 1997.

ter all the different stages, resulting in a wider range of options for production and trade. Multinational firms tend to differ markedly from local firms in their technologies, management quality, and knowledge about and access to foreign markets, features often reflected in a higher level of productivity. Such differences and the growing dimensions of global production create the potential for indirect, or spillover, benefits, which strengthen the general know-how and skills of local residents and firms.

Direct effects of global production

The direct effects of global production on economic activity in a developing country can be substantial, even in a country as large as China. Here foreign-invested firms generate from a quarter to a third of all investment and exports and 10–15 percent of industrial production and taxes (table 2-4).

FDI was 5–6 percent of aggregate investment in developing countries in the early 1990s, well above

U.S. offshore purchases are increasing

Table 2-3 Offshore outsourcing by the United States in selected years

Year	Imported inputs	
	Value (US\$ billions)	As percentage of nonenergy purchases
1972	48.8	5.3
1979	143.7	7.7
1987	356.0	11.5
1990	407.0	11.6

Source: Feenstra and Hanson 1996.

the 1–2 percent of the previous fifteen years. It has sometimes been argued that FDI will tend to substitute for domestic investment, so that, in extreme cases, the host country's capital stock does not change. Recent work shows that such offset effects may not be particularly significant. One study concluded that FDI inflows and outflows tended to raise or lower overall investment dollar for dollar; that is, without any offset in domestic investment (Feldstein 1994). Indeed, in a cross-country analysis of growth and investment, Borenstein, De Gregorio, and Lee (1995) find that FDI inflows to developing countries are associated with larger increases in overall investment, suggesting that FDI crowds in domestic investment. They estimate that a dollar of FDI in developing countries is associated with \$0.50–\$1.30 of additional domestic investment.¹⁰ In an undistorted policy regime inflows of foreign capital will also tend to move into labor-intensive sectors, where many developing countries' comparative advantage lies, having a further positive effect on employment and wages.

Because of access to superior know-how and other intangible assets, multinational affiliates tend to have a higher level of productivity than local firms. In Venezuela, for example, foreign-invested firms were more productive, paid higher wages, and conducted more international trade than local firms (table 2-5).

Indirect benefits or spillovers

Spillovers refer to benefits arising from the presence of multinationals that are not fully captured by them in their market transactions with customers and suppliers. Such benefits can arise when multinationals lead to diffusion of information about the existence and profitability of new technologies, production methods, management and marketing techniques, or export market opportunities. Some important channels:

- *Labor market spillovers.* Training of local employees is important because new skills are transferable as managers and employees move—as studies in Kenya, Hong Kong (China), the Philippines, and Latin America show.¹¹
- *Market access and demonstration effects.* Foreign firms, with their greater knowledge of world markets and access to international marketing channels, tend to be more involved in international trade. In one study multinational affiliates in Mexico were twice as likely to export as local firms. But, more important, multinational exports in a particular industry and region in Mexico significantly increased the probability of exports by local firms. Studies of the development of exports in Hong Kong and Taiwan (China) in the 1960s have also argued for strong demonstration effects from the operations of multinationals.¹²
- *Supplier spillovers.* Foreign firms collaborate with local suppliers, and spillover benefits occur as these suppliers use their improved capabilities

Direct effects of global production can be substantial

Table 2-4 Effects of FDI in China, 1991–95

Item	1991	1992	1993	1994	1995
Actual FDI flows (US\$ billions)	4.4	11.2	27.5	33.8	37.5
Average amount per project (US\$ millions)	0.9	1.2	1.3	1.8	2.5
FDI as a ratio to gross domestic investment (percent)	4.5	8.0	13.6	18.3	25.0
Volume of exports by foreign affiliates (US\$ billions)	12.1	17.4	25.2	34.7	—
Share of foreign affiliates in exports (percent)	17.0	20.4	27.5	28.7	31.3
Share of foreign affiliates in industrial output (percent)	5.0	6.0	9.0	11.0	13.0
Number of employees in FDI projects (millions)	4.8	6.0	10.0	14.0	16.0
Tax contribution as share of total (percent)	—	4.1	—	—	10.0

— Not available.

Source: UNCTAD 1996; World Bank data.

Foreign-invested firms tend to have higher productivity

Table 2-5 Performance characteristics of foreign-invested and domestic firms in Venezuelan manufacturing, 1976-89
(Ratio of foreign firm performance to domestic firm performance)

Sector	Output per worker	Real wages	Exports as percentage of sales	Imported inputs as percentage of sales	Net exports as percentage of sales	Total factor productivity differential ^a
All sectors	1.7	1.6	8.4	2.9	6.9	8.5
Machinery, metal products	1.7	1.4	10.9	3.2	-10.3	7.7
Textiles, apparel, leather	1.4	1.2	3.5	1.6	-0.2	9.9
Chemicals	1.4	1.4	3.5	1.6	-7.1	—
Food, beverages	2.0	2.0	0.7	4.4	10.2	9.1
Basic metals	1.6	1.3	8.3	2.6	18.8	0.0

— Not available.

a. Percentage difference between foreign and domestic firms.

Source: Aitken and Harrison 1994.

to supply other customers (box 2-3). A survey by the International Labour Organization indicates the importance of such subcontracting by multinational affiliates. Of particular interest was the prevalence of more or less intensive consultation and support between multinationals and their domestic subcontractors, especially in product design, blueprints, technical support, production process planning, and, above all, quality control. Some 70-100 percent of multinational affiliates reported providing this kind of technical support and quality control assistance to suppliers (Halbach 1989). Among formal studies Wolff and Nadiri (1993) find a significant positive association between technological progress in U.S. manufacturing industries and that in sectors that supply them.

Indirect evidence of the benefits of international firms is provided by cross-country studies of aggregate growth. These typically find aggregate FDI to be significantly associated with higher per capita GDP growth, although they do not establish the causality between more FDI and faster growth. In a cross-country growth study of both industrial and developing countries conducted for this report (Wacziarg 1997), each percentage point share of FDI in GDP was found to be associated with 0.3-0.4 percentage point higher per capita GDP growth. This estimate is consistent with the findings of other studies.¹³

Evidence of the effects of foreign firms on the rest of the economy also comes from microeconomic studies using plant data. Blomstrom and Wolff (1989) find evidence of intra-industry spillovers in Mexico, while Haddad and Harrison (1993) find that local Moroccan firms tend to be nearer best-practice productivity lev-

els in sectors with more foreign investment. A recent study finds subcontracting relations and joint ventures to have been an especially potent source of productivity spillovers in the Czech Republic (box 2-4). Aitken and Harrison (1994) find a negative association with multinational presence in Venezuela, however, possibly as competition from foreign firms forces local firms to forgo scale economies. These mixed results are not unexpected, only in part because of the statistical difficulties in capturing the subtle effects involved. Foreign firms have a direct interest in pre-

Box 2-3 Technological spillovers in the sewing machine industry in Taiwan (China)

An important early case study of links between multinationals and their local suppliers is provided by Taiwan, China. In 1963 the Singer company was allowed to set up a subsidiary to produce sewing machines, overriding strong opposition from the domestic industry, whose output was small in scale and poor in quality. The Singer subsidiary grew rapidly, particularly in the export market. It also steadily increased local purchases and conducted an extensive program of training and technical support for its parts suppliers in production techniques, measurement, inspection, quality control, and management. Far from being hurt by the arrival of Singer, local sewing machine assembly firms benefited greatly from the improvement in the competence of the local parts supply industry. While Singer's exports increased by a factor of around eight in 1966-76, the exports of the industry as a whole rose by a factor of more than twenty.

Source: Schive 1990.

venting spillovers of proprietary technology to competing firms in the same industry. But the extent of spillovers is also likely to depend on economic policies prevailing in host countries.

Potential and benefits of global production in services

Services play a crucial role in the world economy, contributing an estimated 63 percent of world output in 1995. Differences in service sector efficiency often lie at the heart of differences in standards of living between countries (box 2-5).

Two characteristics have tended to set the service sector apart and cut it off from foreign channels of competition and productivity gains. First, many services are not easily traded internationally because they are intangible, cannot be stored, or require immediate use or close contact between producers and consumers. Although technological change is making more services tradable over time (a process described in *Global Economic Prospects* 1995), the share of services in world trade—about 20 percent in 1995—remains far below its share in world GDP. This is also why the provision of services by foreign suppliers often entails direct investment rather than cross-border trade.¹⁴ Second, foreign enterprises have often been excluded from or tightly controlled in providing services. From the mid-1980s, however, policy reforms to open up the service sectors to foreign investment have contributed to faster growth in FDI in this sector than in any other sector in both high-income and developing countries. Policies to privatize and increase competition in key service sectors such as transport, telecommunications, utilities, and finance have been especially important.

Does liberalization of investment barriers induce much growth in FDI in services? A look at the EU, whose members have made far-reaching service liberalization commitments with each other, suggests that the answer is yes. The EU became the single most important destination for services FDI in the second half of the 1980s. The share of services in total FDI inflows into the EU rose to 60–65 percent (compared with half that share in outflows of FDI from the EU). Furthermore, within the EU, it is FDI rather than trade that is the preferred way of contesting markets (Hoekman 1997).

What are the main benefits of global production in services?

- Liberalization of trade and investment regimes in infrastructure services can bring large efficiency gains. More competition in the provision of port services in Veracruz, Mexico reduced their cost by some 30 percent in one year, while container turnover went up almost 50 percent. Labor productivity at Aeromexico and Mexicana airlines

increased 50–100 percent following privatization and participation by foreign equity. Privatization and associated inward FDI in Argentina's telecommunications industry in the early 1990s resulted in significant improvements in the quantity and quality of services (Hoekman and Primo Braga 1997).

- The high skill level needed in many service sectors and the invariably high local labor content suggest that transfer and diffusion of knowledge and know-how may be a vital aspect of the gains from FDI in services. Case studies for the insurance and hotel industries reveal that multinationals engage in substantial in-house training of local personnel (UNCTAD 1994d).
- Although more hamstrung than manufacturing, service firms also build global production networks. Communications technology increasingly

Box 2-4 Global production and technological catch-up in the Czech Republic

A recent study finds that subcontracting and joint ventures with Western firms make a significant contribution to productivity gains by local firms in the Czech Republic.

An analysis of 706 firms that account for 64 percent of manufacturing output in the Czech Republic suggests that growth in these firms' total factor productivity in 1992–95—more than 4 percent a year—was higher than in any other Central and Eastern European country for which enterprise data are available. What were the sources of rapid productivity gains in the Czech Republic? The study suggests that:

- Firm productivity growth appears to have been driven by privatization, greater financial market discipline, and initial conditions such as the size of the firm and the sector it operated in.
- Foreign investment and trade associated with multinationals were other important factors. Joint ventures with foreign firms had a larger and more significant association with productivity growth than even privatization. Imports of intermediate inputs from OECD countries were also significant—but only for imports that were part of subcontracting arrangements with Western firms, not for arm's length imports.
- Simple equity flows (FDI that is not a joint venture) showed no significant correlation with growth in total factor productivity, perhaps because such flows are very recent. Finally, a large fraction of gains in total factor productivity remains statistically unexplained, which may be due to unobserved managerial effects too subtle to capture.

Source: Djankov and Hoekman 1997.

Box 2-5 Differences in services productivity

The productivity of capital invested in the telecommunications sector in Germany and Japan is less than half that in the United States. The reasons? State ownership, poor incentives, and less competition. This may help explain why, despite similar per capita incomes, the United States has 60 telephone lines for every 100 people compared with 48 in Japan and Germany (McKinsey Global Institute 1996).

The number of telephones per person worldwide varies enormously, from nearly 70 per 100 in Sweden (the world's highest) to 0.09 in the Democratic Republic of Congo, formerly Zaire (the world's lowest). Differences in per capita incomes explain less than half the differences in telephone density. A cross-country econometric study points to the low productivity in services typical of most state-owned monopolies, high prices to consumers (if they can get a phone), demand-insensitive supply of services, and poor management and employee skills (Bowles 1995). The waiting time for a telephone in Bangladesh, Ghana, or Haiti is ten years or more (ITU 1996a). On the demand side, relative openness to trade also appears to play an important role. This may help to explain why Brazil has 7 telephone lines per 100 people

compared with 11 for Chile and 15 for Malaysia; and why Argentina has 14 lines per 100 people compared with 40 for the Republic of Korea—despite similar per capita incomes.

Other examples of how productivity in services matters:

- Singapore serves as a maritime hub for Asia. Underlying this position is the efficiency of its port, which has the world's fastest ship turnaround times and is the busiest in the world, serving more than 700 shipping lines from eighty countries.
- Just outside Taipei is an automated warehouse and distribution center run by a private company (Contract Distribution Services), which handles all aspects of logistics for imported sea freight consignments. It can receive, load, and deliver an order within twenty-four hours.
- Hong Kong Air Cargo Terminal Limited handles air cargo for sixty-plus international airlines. It serves 280 flights and 3,500 tons of cargo a day. Its mishandling rate is 1 in 6,500, far superior to the 1 in 20 rate for most airlines. The company's dwell time is nineteen hours for exports, one of the best in the world.

Source: Hanna, Boyson, and Gunaratne 1996; Reinfeld 1994.

allows service firms to split and disperse parts of service production to foreign affiliates or outsource labor-intensive activities, such as data entry in the Caribbean or software writing in India, generating substantial employment benefits in supplier countries. These spin-offs can generate other benefits, for example, the increased use of computers in Indian businesses.

- Services provide critical linkages in an economy. The most obvious examples are transportation and telecommunications, but business services (such as finance, insurance, and accounting) also allow other industries (both goods and service producing) to operate more efficiently.¹⁵

Policy implications

Global production is generating important benefits for many developing countries. That raises two broad policy issues. First, for countries that already participate in global production, what policies might increase the benefits they draw from it? Second, for those developing countries that are not attracting much global investment, what policies might improve flows?

Enhancing the benefits of global production

Policies that enhance competition force firms to seek improvements in efficiency and are also likely to be

helpful in maximizing the benefits countries derive from global production. More open trade and investment frameworks are among the best channels for introducing such competitive pressures in traded sectors. In nontraded services sectors encouragement of foreign investment and well-designed regulatory policies to enhance competition need special emphasis.

Some recent studies provide evidence that more competition in host country markets increases the pressures and incentives for multinationals to transfer more and better-quality technology to affiliates. In Mexico, for example, affiliate technology imports (as measured by payments per employee for patents, royalties, and trademarks) were significantly associated with various measures of competition in the host country's market (Blomstrom, Kokko, and Zejan 1992). The effect was found to be much stronger in consumer goods, where it is arguably easier for local firms to compete because the technology level they need to reach is lower. This finding runs against policies in some developing countries to restrict FDI to high-tech industries—where, it is argued, “we have more to learn”—because multinationals will, in any case, face less competitive pressure to transfer their best technologies to affiliates in these sectors.

Kokko and Blomstrom (1995) replicate some of these findings for technology imports by U.S. majority-owned foreign affiliates in thirty-three host countries. In addition, they find that U.S. foreign affil-

iates' technology imports have no association with formal technology transfer requirements in host countries, such as using the most advanced technology available, performing R&D locally, providing access to parent patents, or transferring skills to local staff. They have a significant negative association with various other formal performance requirements, such as minimum local content and employment rules and import restrictions. Indeed, as more and more developing countries open up and compete to attract FDI, onerous performance requirements are more likely to drive away than to attract investors.

Measures to increase competition could include reducing regulations, obstructions, and red tape that serve as barriers to entry into sectors and markets. They could include eliminating of major distortions in labor, capital, land, and other factor markets that raise costs and increase risks for firms (such as restrictions preventing firms from reducing workforces when needed). They should certainly include reducing trade barriers and maintaining a transparent and open FDI regime, so that, rather than one or two politically well-connected multinationals carving out protected monopolistic enclaves, there are multiple firms facing serious competition both from direct imports and from other multinationals. Balasubramaniam, Salisu, and Sapsford (1996) provide evidence that the growth impact of FDI increases with the openness of the trade regime. Developing countries with more open trade policies tend to have a closer positive association between the presence of foreign firms (proxied by FDI to GDP ratios) and total factor productivity growth, countries with closed trade regimes, where the effect is weaker (and sometimes negative; figure 2-11). Developing countries with more open trade regimes also tend to have a higher positive correlation between FDI to GDP ratios and the share of high-technology products in exports (figure 2-12).¹⁶

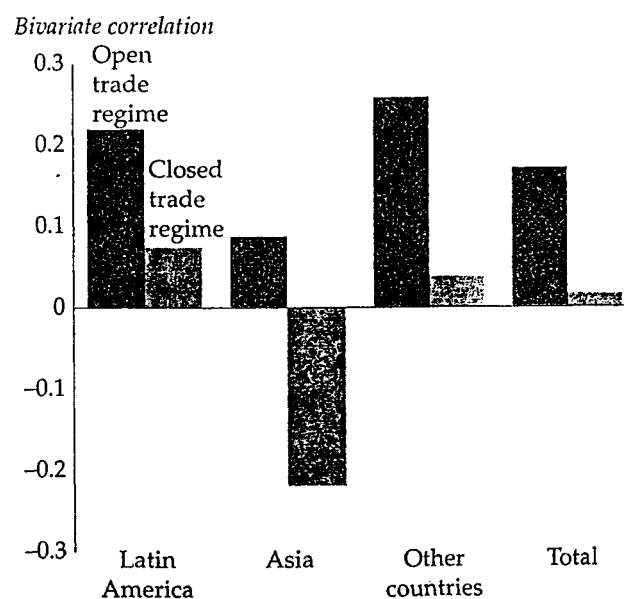
With respect to the absorptive capacity of host countries, Borensztein, De Gregorio, and Lee (1995) find that FDI has a positive effect on growth once countries have a minimum level of education. For the average level of secondary schooling in the sample (about 0.9 year), they find every percentage point of FDI to GDP to be associated with around 0.5 percent faster growth. Many policies aimed at increasing the degree of competition in host countries would also tend to increase absorptive capacity. For example, flexible labor markets could stimulate spillovers by both encouraging multinationals to adopt more labor-intensive methods and allowing more mobility of workers between foreign and local firms. Low regulatory and bureaucratic overhead costs would help local firms compete for multinational subcontracts and so expand the scope for supplier linkages.

Increasing competition in service sectors

While the importance of competition in services is increasingly accepted, implementation has tended to lag. For example, commitments by developing countries to liberalize services under the World Trade Organization's recent General Agreement on Trade in Services were relatively limited. The share of commitments by developing countries that retained no restrictions on either market access or national treatment was about 7 percent of the maximum possible. The share for high-income countries was 25 percent. (Hoekman 1996). Given the substantial potential gains from liberalization of FDI and trade in services, why do many countries choose to maintain protection in services? The principal factors seem to be a desire to protect employees in overstaffed, state-owned enterprises, fears of unemployment from computerization in labor-intensive service sectors (banking, public services), and concerns about the impact on small businesses (for example, the impact of foreign wholesale dis-

The growth impact of FDI increases with openness . . .

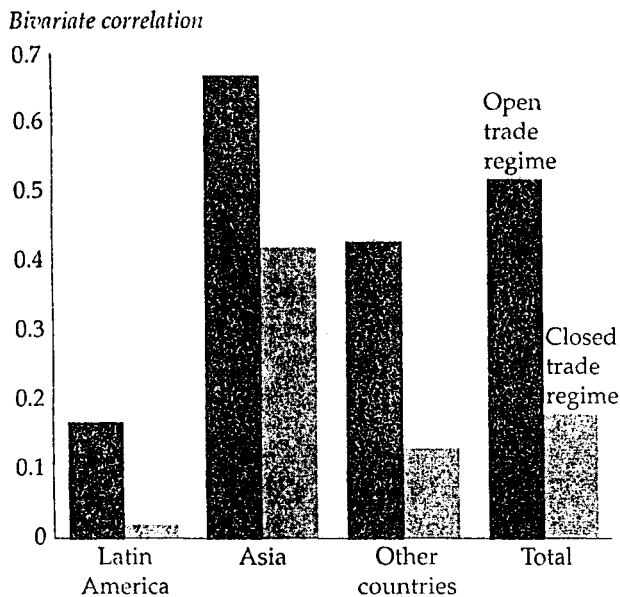
Figure 2-11 Correlation between foreign direct investment and total factor productivity growth, 1975-90



Note: Sample includes sixty-nine countries. Figure shows bivariate correlation between the foreign direct investment to GDP ratio (quinquennially averaged for 1971-75, 1976-80, 1981-85, and 1986-90) and total factor productivity growth (five-year averages ending in 1975, 1980, 1985, and 1990).
Source: IMF data; Coe, Helpman, and Hoffmeister 1995; Sachs and Warner 1995; World Bank data and staff estimates.

... as does the positive association of FDI and high-tech exports

Figure 2-12 Correlation between foreign direct investment and the share of high-tech exports, 1975–90



Note: Sample includes fifty countries. Figure shows bivariate correlation between foreign direct investment and the share of high-technology exports in total exports.
Source: IMF data; Sachs and Warner 1995; World Bank data and staff estimates.

tributors on small retailers in Indonesia). Issues of labor market adjustment are prominent (see chapter 3). However, in most cases of liberalization of services in developing countries, the eventual benefits from faster growth are likely to outweigh possible short-run negative effects.

One reason why liberalization in services may be slower is the need to establish an adequate regulatory framework (World Bank 1997). Privatization of state monopolies and entry by private providers in infrastructure sectors that are nontraded and have natural monopoly characteristics present difficult institutional challenges. In such cases the absence of an efficient regulatory framework that ensures adequate competition means there is no guarantee that privatized services will necessarily be more efficient than publicly delivered services. For example, in Indonesia the price of electricity from new private power plants was driven down to about \$0.06 per kilowatt-hour from \$0.09 only after competition was improved through competitive bidding and clearer allocation of risk.

Improving the climate for global production

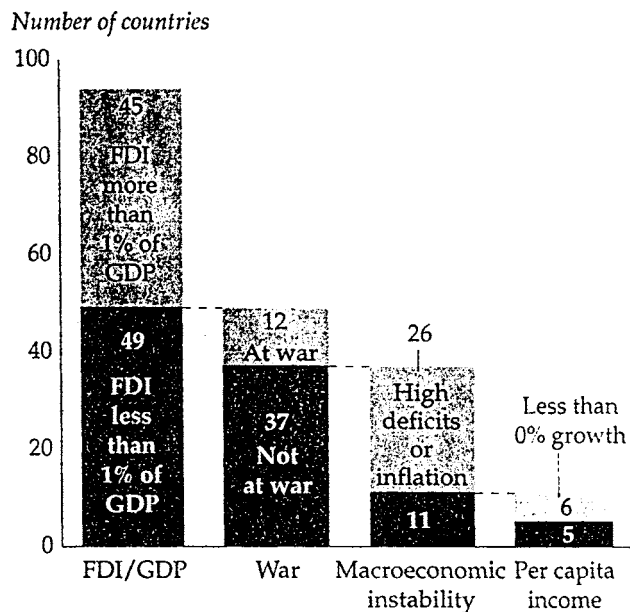
More than half of all developing countries do not participate to a significant extent in global production. Most are in Sub-Saharan Africa, South Asia, and the Middle East and North Africa. In 1994 only a quarter or so of the countries in these regions had FDI inflows above 1 percent of GDP, not much better than the proportion of countries in the 1970s. Factors that appear to be relevant in explaining FDI flows to countries that receive a relatively high level of FDI do not work well for countries that receive less (Singh and Jun 1995). Countries that receive little FDI do have some common features, however (figure 2-13). Of forty-nine developing countries receiving FDI of less than 1 percent of GDP in 1990–94, around a quarter suffered war or intense civil strife—conditions that largely preclude receipt of significant FDI. Of the remainder, some three-quarters were afflicted by serious macroeconomic instability, defined as budget deficits averaging more than 5 percent of GDP or inflation of 50 percent a year. Others saw negative output growth over the period covered by the analysis. One or more of these conditions affected four-fifths of countries receiving little FDI.¹⁷

Among these countries the building blocks for more FDI are therefore much the same as for economic activity in general—peace, basic macroeconomic stability, and institutional credibility (World Bank 1997). Encouragingly, some Sub-Saharan African countries that have made progress on some of these problems are starting to attract FDI inflows (box 2-6). Given these preconditions, what other factors are important to attract more FDI? The literature on the determinants of FDI inflows is vast and often inconclusive. No attempt is made to summarize it here.¹⁸ Rather, taking these preconditions as given, some common features of countries participating in global production are noted.

- *Attractiveness as a base for exports to world markets will gain in importance.* The size of the domestic market has typically been found to be among the more important determinants of FDI. Newer findings suggest that a country's attractiveness as a base for exporting to world markets is gaining in importance, a trend consistent with the declines in trade barriers and transport costs described earlier (Lucas 1993; Singh and Jun 1996). This finding is encouraging for small economies—Hong Kong (China) and Singapore have shown that smallness need not be a handicap in drawing foreign investment.
- *Openness to trade is important.* More open economies get more FDI (Edwards 1990; Balasubramanyam and Salisu 1991). Using panel data on U.S. multinational affiliates in

Some characteristics discourage foreign direct investment

Figure 2-13 Developing countries and foreign direct investment: factors associated with low FDI to GDP ratios, 1990–94



Source: World Bank data and staff estimates.

developing countries in 1977–94, Slaughter (1997) finds that direct measures of global production such as affiliate employment, assets, and capital stock were consistently greater in more open economies.

- *Private provision of basic infrastructure is growing in importance.* The quality of infrastructure is an important consideration for global manufacturing and marketing systems that are reliant on just-in-time processes, total quality management, and flexible manufacturing systems (Wheeler and Mody 1992). Improvements in the transport and logistics infrastructure—roads, telecommunications, ports, customs management—play a vital role. Deregulation to allow entry by private (including foreign) providers in a competitive environment will be important in achieving such improvements. Port deregulation in Argentina shows the large gains that are possible (figure 2-14; World Bank 1996a). The price of a telephone call from Chile to the United States in 1996 was one fourth and one seventh, respectively, of the price of calls from Brazil and Argentina (Petrazzini 1997).
- *The effect of special tax advantages can be overestimated.* Studies have consistently suggested

Box 2-6 Is Sub-Saharan Africa starting to re-attract foreign investors?

Many countries in Africa have improved their economic policies in recent years. Most have undertaken some degree of macroeconomic stabilization and structural adjustment (see chapter 1). Most have eased restrictions on FDI and liberalized foreign currency markets. Some countries also provide fiscal incentives—lower corporate taxes, tax holidays, and import duty exemptions (for example, in labor-intensive manufacturing in Lesotho and export processing zones in Mauritius). Most are members or signatories to multilateral investment conventions, such as the Multilateral Investment Guarantee Agency, the International Center for Settlement of Investment Disputes, the New York Convention on Recognition and Enforcement of Foreign Arbitration Awards, and the Convention on Protection of Industrial Property.

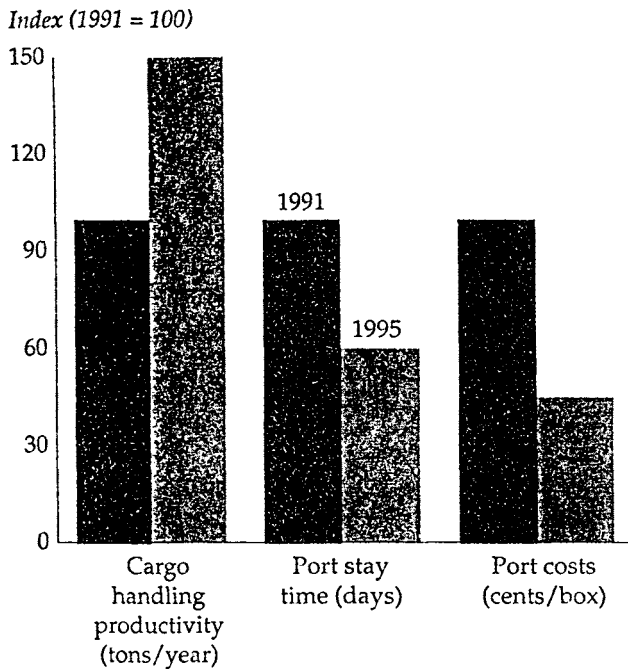
Annual FDI inflows doubled from about \$1.5 billion in 1984–89 to about \$3 billion in 1994–95. But the share of Africa in flows to all developing countries still dropped from about 6 percent to 3 percent. Almost two-thirds of inflows were accounted for by one oil exporter, Nigeria. In one recent study (using panel data for 1980–95 on thirty-one Sub-Saharan countries) the explanation for low flows of FDI to Africa appeared to lie in three factors—low GDP growth, low trade openness, and high variability of real effective exchange rates (Bhattacharya, Montiel, and Sharma 1996).

Nevertheless, more Sub-Saharan African countries are starting to attract FDI, even if it is still concentrated in natural resources. Countries as diverse as Angola, Ghana, Lesotho, Mozambique, Namibia, Tanzania, and Uganda saw substantial increases in FDI. Two groups of African countries did poorly in attracting FDI in 1980–95: the CFA countries before their exchange rate adjustment in 1994, and countries bedeviled by civil conflict or negative economic growth. Another study stresses five actions as important in enhancing FDI potential in Africa: reduce bureaucratic procedures and assure property rights and transparency; treat foreign and domestic investors equally; expand privatization, especially in infrastructure; establish efficient business tax systems with low rates; and ease access to foreign exchange and expatriate employment and reattract skilled labor (UNCTAD 1995; Pearce, Islam, and Sauvant 1996).

that special tax and other fiscal incentives have little influence on FDI, though harmonization of corporate tax systems to best-practice standards is important.¹⁹ Indeed, it is possible that beggar-neighbor competition between countries to attract more FDI by offering larger tax breaks could lead to suboptimal outcomes for all countries. To guard against such adverse outcomes (or where there are concerns about issues such

Port deregulation yields big gains

Figure 2-14 Effects of deregulation on port costs and performance in Buenos Aires, Argentina, 1991 and 1995



Source: World Bank 1996a.

as the impact of transfer pricing on tax revenues), policymakers may wish to consider the possibility of greater international coordination in setting national policies and standards (Graham 1996).

Conclusion

Several trends in the world today are contributing to the expansion of cross-border production by multinational enterprises and their networks of closely associated firms. These include the liberalization of economic policies in most countries, continued reductions in the cost of transport and communications, and the growing importance of knowledge and other intangible assets in modern production and distribution. The expansion of global production provides developing countries with opportunities to enhance the benefits they draw from greater integration with the world economy. The "slicing up of the value chain" by multinationals in their global production networks broadens opportunities for developing countries to participate in international specialization and other gains from trade. And the presence of these firms improves the scope for a

readier diffusion in developing countries of international information, know-how, and best practices. Maintenance of a high level of competition between firms is likely to be an important precondition for making the most of the potential benefits of global production. Other important conditions for both attracting foreign investment and enhancing its benefits include a stable political and macroeconomic climate, open trade and investment policies, adequate transport and communications infrastructure, and the maintenance of a predictable and effective institutional environment.

Notes

1. The simplest definition of the multinational enterprise is a firm with plants in more than one country.

2. The nature of the informational and other market failures that hamper arm's length transfers of intangible proprietary assets are discussed in Caves (1996). For example, firm A cannot tell firm B about the nature of a piece of knowledge it wishes to sell firm B because it fears losing the secret, while firm B does not want to buy sight unseen for fear of being hoodwinked.

3. Studies of information industry output are summarized in Foray and Lundvall 1996. See also World Bank 1996b.

4. See, for example, Caves 1996; Graham 1996; Blomstrom and Kokko 1997.

5. These estimates are based on data on value added or sales by foreign affiliates of multinationals based in Germany, Japan, Sweden, and the United States, the only home countries publishing such data. Data sources and estimation methods are described in Lipsey (1997) and Lipsey, Blomstrom, and Ramstetter (1995).

6. Links between trade and foreign investment and their implications for policy are discussed in WTO (1996).

7. The most detailed data on multinational activities are widely recognized to be those on U.S. multinational enterprises maintained by the U.S. Bureau of Economic Analysis. On many specialized questions, therefore, analysis in this area is often restricted to consideration of U.S. multinationals alone.

8. Changes in the Standard International Trade Classification (SITC) system (Revision 2) differentiate trade in components and parts from trade in finished goods for the machinery and transportation equipment (SITC 7) group. This differentiation is not available, at least to the same extent, in other major categories of international trade.

9. Peters 1996; Feenstra and Hanson 1996; Slaughter 1995; Yeats 1997.

10. Although, like other forms of external finance, FDI inflows need to be serviced with a stream of payments to foreign residents, these dividends are paid on a sustainable basis out of additional output and foreign exchange earned by the enterprise. In addition, there is evidence that FDI

inflows provide a more stable form of external financing than portfolio or some other types of flows (Chuhan, Perez-Quiros, and Popper 1996).

11. Gerschenberg 1987; Katz 1987; Chen 1983.

12. Aitken, Hanson, and Harrison 1994, on Mexico; Reidel 1975 on East Asian newly industrialized economies.

13. Blomstrom, Lipsey, and Zejan (1992) find that a 1 percent increase in the FDI to GDP ratio is associated with a 0.3 percentage point increase in per capita growth, though, interestingly, they find that this effect is significant only for the half of sample developing countries with higher incomes.

14. The importance of services in the process of global integration is perhaps best exemplified by the extent to which they are embodied in merchandise exports and imports. For high-income countries services (including both externally purchased and in-house services) account for 60–80 percent of the value of merchandise exports. For low-income economies the figure is only 20 percent (François and Reinert 1996).

15. Indeed, input-output analysis reveals that the dependence of the manufacturing sector on service inputs increases with per capita income. The relative importance of producer services in high-income countries is three times higher on average than in low-income countries (Park and Chan 1989).

16. High-technology exports are the share of differentiated and science-based goods in manufacturing exports. The classification is based on Lall (1996) and OECD (1987).

17. The median budget deficit for the whole sample was around 4 percent of GDP. The median for countries with significant FDI flows was less than 2 percent, while that for the low-FDI group was nearly 8 percent. The mean inflation rate for the whole sample was about 14 percent. Only three countries had inflation rates exceeding the 50 percent cutoff in the low-FDI sample. Differences in relative openness (using the openness index in Sachs and Warner 1996) were not significant in distinguishing low- from high-FDI countries.

18. See Dunning 1993, Caves 1996, or Pearce, Islam, and Sauvart 1992 for surveys.

19. See, for example, Root and Ahmed 1979; Lim 1983; Contractor 1991; Li and Guisinger 1992; Head, Ries, and Swenson 1994; Shah and Slemrod 1991; Koehlin 1993.

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II. IFC REPORT ON FOREIGN DIRECT INVESTMENT

EXECUTIVE SUMMARY

Foreign investment in the form of loans or equity is an important source of capital for growth in developing countries. Equity investments can be either indirect (portfolio) or direct, known as foreign direct investment (FDI). FDI does much more than provide developing countries with financing for their growth. It brings them new technologies, management techniques, and market access as well. FDI may be stimulated by exploitation of proprietary technology or natural resources or by access to markets.

The role of FDI in developing countries

Foreign direct investment in developing countries has a long history. It has fluctuated over time, as investors have responded to changes in the environment for investment, including government policies toward foreign direct investment and the broader economic policy framework. Hence, trends in FDI have reflected changes in policy stances by developing countries, from import substitution in the 1950s and 1960s through natural resource-led development in the 1970s, structural adjustment and transition to market economies in the 1980s, and an increased role for the private sector in the 1990s.

FDI in developing countries has flowed mainly into manufacturing and processing industries. It has traditionally been concentrated in a small group of countries, which partly reflects the size of their economies and partly their attractiveness as a location for FDI. In the past, attractiveness has been closely linked to possession of natural resources or a large domestic market. With the shift toward globalized production and trade, competitiveness as a location for investment and exporting has become the main determinant of attractiveness.

The largest developing country host for FDI is China, but Eastern Europe has emerged as an important new location for FDI. FDI has also reached the poorest countries. Although the actual amounts invested are generally low, reflecting the small size of their economies, FDI flows relative to GDP in poorer countries are as high as in richer countries. Countries in South Asia and Sub-Saharan Africa, however, lag behind in the volume of FDI flows relative to GDP.

For a long time, FDI came almost exclusively from the major industrial countries. Recently, the sources of FDI in developing countries have widened, and many developing countries have emerged as sources in their own right, particularly for their own regions. Regional links are also important for FDI from developed economies.

Recent trends toward globalization of production and consumption patterns have led to a sharp increase in global FDI. At the same time, trade and investment liberalization has brought more developing countries into the globalized economy. This has led to a dramatic surge in FDI flows to developing countries, which increased fivefold from 1990 to 1995, and exceeded \$100 billion in 1996. This increase went mainly to 12 large developing countries, in part reflecting their economic size. Thus, China alone received \$167 billion between 1990 and 1996 (1996 prices). Already a significant part of the economy in many developing countries, FDI is likely to continue at high levels for the foreseeable future.

Policies have also played a role in this increase. India, the next largest developing country after China (measured by population), received only 0.2% of GDP in FDI inflows, compared to China's 5.4% of GDP. Since both are populous, low-income countries, differences in population or income level do not explain this disparity. Prior to 1982, India had received more FDI in relation to GDP

than China. What changed was China's policy stance toward foreign investors. After years of strictly regulating FDI, China began to see that it could make a welcome contribution to modernization and integration into the world economy. This was reflected in a changing policy framework, to which foreign investors responded quickly. Since 1992, however, India's steps toward economic liberalization have also had a positive impact on FDI flows and are indicative of its future potential.

FDI is not just attracted to the economic giants, with large domestic markets. Countries of all sizes at different stages of development from all over the world have attracted FDI worth more than 5% of GDP, including Czech Republic and Malaysia. What they had in common was an evolving policy framework that was attractive to foreign investors.

Promoting FDI through policy advice

IFC was established to promote private investment in developing countries, including FDI. It was one of many international initiatives that promoted FDI, including bilateral trade agreements, bilateral and multilateral financial institutions, and investment promotion programmes.

Together with other members of the World Bank Group, IFC set up the Foreign Investment Advisory Service (FIAS) in 1985 to advise developing countries on policies to promote FDI. Since then, it has assisted more than 100 countries in various ways. Its advice takes many forms, from diagnostic studies giving an overview of constraints to FDI, to investment policy studies giving specific solutions for specific issues or sectors or for building institutions to accompany policy change and promotional strategies. Dialogue on the policy framework for FDI also occurs in the context of other IFC advisory work and project financing.

Getting the policy environment right

Many factors influence the flow of foreign direct investment to developing countries, but the most obvious one is often overlooked: namely, the willingness of developing countries to allow it. Historically, many countries have placed onerous limitations on the scope for FDI, even when seeking to promote it. Inevitably, this has acted as a deterrent.

Restrictions on inflows of FDI have taken many forms, including limits on entry to certain sectors, complex approval mechanisms, high taxes and complex incentive regimes, restrictions on share of foreign ownership, and restrictions on use of land and expatriate labour. Restrictions have been imposed for many reasons, including concerns over excessive foreign influence and loss of national wealth, desire to promote indigenous entrepreneurship and workers, and desire to achieve transfer of technology and management techniques. Only fairly recently have a number of developing countries reduced their restrictions.

Wider policies also matter. A liberal trade and payments regime encourages FDI. Often, imports lead to investment and production for the world market. Liberal payments systems allow foreign investors to take advantage of these opportunities. A number of other administrative barriers, often long unrecognized, have deterred FDI. Important barriers include the exclusion of foreign investors from land ownership, restrictions on the use of expatriate labour, and requirements for sundry permits and approvals.

A large state role in the economy can also deter FDI, whether through price controls, methods of capturing rents from natural resource exploitation and monopolies, or through the presence of a large state enterprise sector. Privatization methods can have a large direct impact on FDI inflows, as can the structure of direct sales and the sales process. Privatization can have positive indirect effects on FDI, too. Although very high effective tax rates can deter FDI (and some investments are particularly

sensitive to tax rates), selective incentives can be both costly and ineffective in attracting FDI. Attempts to foster domestic linkages with foreign enterprises have generally been counter-productive, too.

Finally, getting policies right may not be enough; active investment promotion may be required as well, unless the domestic market is sufficiently attractive to FDI. Effective promotion involves image building, investment generation and investor servicing to influence investment decisions. Needless to say, promotion without good policies will not work.

Promoting FDI through project financing

IFC has invested in developing countries in every part of the world since 1958, in more than 500 companies that have foreign investors. IFC's investments have been spread broadly among countries, even the poorest countries. The Corporation has been an early investor in new and risky locations for FDI and has worked with investors from many different countries supporting FDI in a wide range of sectors. Sometimes, even the largest multinationals have found benefits in cofinancing with IFC, and developing country governments have often welcomed IFC's presence in a venture.

IFC's projects have been largely successful and profitable, despite sometimes difficult investment conditions. Two thirds of the projects financed have been foreign sponsored, and nearly two thirds of them have been structured as joint ventures with local partners. In these, the foreign sponsor is usually responsible for day-to-day management or technical support. A fifth of the projects have local sponsors, who bring in foreign partners to provide access to technology, management expertise, or marketing support. Projects with equal stakes between foreign and local partners have done relatively poorly.

Until the 1980s, most IFC foreign direct investment projects took place in highly regulated economies, which influenced the relative attractiveness of production for domestic and export markets. As a result, few FDI projects were based on international competitive advantage. Instead, they were oriented toward producing for protected domestic markets or exploitation of developing countries' natural resources. There were no investments in non-tradables such as infrastructure. The policy environment also influenced the ownership structure of projects, with few wholly foreign-owned ventures. These patterns are reflected in the types of product and the country locations and affect the pattern of project performance. Projects have done better in open than in protected markets and better still with contractual marketing arrangements.

Since 1980, a marked shift has occurred in the composition of IFC's foreign direct investment portfolio, one that has accelerated in the 1990s. Projects are increasingly based on production for global markets or provision of non-tradables, and reliance on contractual marketing arrangements has grown. Foreign control has increased, with more projects majority-owned by foreign investors, and more wholly foreign-owned projects. Privatization has brought foreign investors into many previously local enterprises. This is reflected in the changing country composition of the portfolio, the changing sectoral composition, and the improved performance of the more recent portfolio.

Getting project structures right

The structure of IFC's foreign direct investment projects reflects the policy constraints under which they were formed, with most taking the form of joint ventures. Though a common form of business organization, joint ventures are inherently fragile. Forced partnerships are more difficult to implement, particularly when they are with public enterprises, and equal partnerships have been problematic.

Limits on foreign ownership have impeded effective project structures, too. They have sometimes had the effect of reducing sponsor commitment to meet additional costs or to resolve management

problems. They have also encouraged foreign sponsors to find alternative means to profit from the venture. FDI project structures are also affected by restrictions on capital transfers. FDI projects have been vulnerable to delays and cost overruns, including those generated by extensive government regulation. Close regulation of FDI projects reduces their flexibility to respond to developments.

With careful project design, however, joint ventures can be implemented successfully. It is important to ensure appropriate management arrangements through, for example, a management contract; clear financing arrangements; and careful handling of each partner's interests as a contractor with the enterprise or as a holder of related assets.

Getting more from FDI

Governments have been eager to maximize the benefits from FDI and minimize harmful side effects. Restrictive economic policies have reduced the benefits and increased the costs of FDI through deadweight costs of regulation, economic costs of protection, inefficient project structures, encouragement of the use of transfer pricing to repatriate profits, and fiscal losses from tax incentives. Recently, countries that have liberalized have benefited more from FDI. This process is expected to be sustained without major reversals, as more and more countries see the benefits of more liberal policies toward FDI.

Global integration will continue to drive FDI flows, wherever the economic environment is open to it. Globalization will increasingly blur the distinction between foreign- and domestically-owned enterprises, and between developed and developing countries. Countries that are open to foreign investment stand to share in the rising global prosperity that globalization brings.

Nevertheless, to create an enabling environment for FDI, a large unfinished agenda of policy reform remains. Some of the countries that have made progress in reducing restrictions, including some already receiving large amounts of FDI, still have some way to go toward providing a fully open environment for FDI. Many more countries have only begun to re-examine their policies toward FDI or the impact of their general economic policies on FDI flows. Yet these countries have not missed their chance to participate in global FDI flows. The rapid increase in FDI volumes in recent years has shown that this is not a zero sum game. As more countries open up to FDI, global integration will increase, leading to an increase in overall FDI flows. The challenge for the future is therefore to open more economies and sectors to foreign direct investment, thereby bringing opportunities for economic development to a larger part of the developing world.

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