
PART ONE

TRENDS

CHAPTER I

GLOBAL TRENDS

A. Overall trends

1. Trends

Foreign-direct-investment (FDI) flows set a new record in 1996, as transnational corporations (TNCs) responded to economic growth and continued liberalization in much of the world by further expanding their operations abroad. Inflows increased by 10 per cent, to \$349 billion, while outflows rose 2 per cent, to \$347 billion. Increases in FDI inflows exceeded the growth in the nominal value of world gross domestic product and international trade, which expanded by 6.6 per cent and 4.5 per cent in 1996, respectively (table I.1).

Flows into 54 countries and outflows from 20 countries set new records during the year (annex tables B.1 and 2). Many countries with large FDI inflows also had large outflows. That suggests that the factors that make a country attractive to FDI are linked to the conditions and competitive advantages which encourage firms based in that country to expand by investing abroad. But while more countries are becoming significant hosts as well as homes to FDI -- and the size of investment flows of some of these countries in both directions is converging (figure I.1) -- many others remain marginalized in the competition for FDI.

The stock of FDI reached about \$3.2 trillion in 1996, rising from \$2 trillion in 1993 and \$1 trillion in 1987. Sales and assets of TNCs are growing faster than world GDP, exports and gross fixed capital formation. About 44,000 TNCs with almost 280,000 foreign affiliates are active today (table I.2). The growth of their international production reflects rapid changes in their corporate structure and is being pursued through a wide variety of equity and non-equity link-ups and investment channels.

Reinvested earnings, which had been negative in the early 1990s, accounted for about a tenth of total FDI inflows in 1995, the latest year for which data are available (figure I.2). Their recovery was partly due to stronger economic growth in many parts of the world. But it is also

Table I.1. Selected indicators of FDI and international production, 1986-1996
(Billions of dollars and percentage)

Item	Value at current prices (Billion dollars)		1986-1990	Annual growth rate (Per cent)		
	1995	1996		1991-1996	1995	1996
FDI inflows	317	349	24.4	17.1	32.6	10.3
FDI outflows	339	347	27.0	11.8	34.9	2.4
FDI inward stock	2 866	3 233	18.7	11.7	18.2	12.8
FDI outward stock	2 811	3 178	19.8	11.1	15.1	13.1
Cross-border mergers and acquisitions ^a	141	163	21.0 ^b	27.1	28.8	15.5
Sales of foreign affiliates	5 933 ^c	6 412 ^d	17.3	4.0 ^e	12.5 ^c	8.1 ^d
Gross product of foreign affiliates	1 363 ^c	1 557 ^d	19.1	3.3 ^e	- 2.9 ^c	14.2 ^d
Total assets of foreign affiliates	7 091 ^c	8 343 ^d	19.9	11.2 ^e	13.1 ^c	17.7 ^d
<i>Memorandum:</i>						
GDP at factor cost	28 264	30 142	10.7	6.4	9.5	6.6
Gross fixed capital formation	6 088	..	10.7	4.5 ^f	12.4	..
Royalties and fees receipts	48	..	21.9	12.0 ^f	16.4	..
Exports of goods and non-factor services	5 848	6 111	14.3	7.4	16.2	4.5

Source: UNCTAD, based on FDI/TNC database and UNCTAD.

^a Majority-held investments only.

^b 1987-1990.

^c 1993.

^d 1994.

^e 1991-1994.

^f 1991-1995.

Note: not included in this table are the value of worldwide sales by foreign affiliates associated with their parent firms through non-equity relationships and the sales of the parent firms themselves.

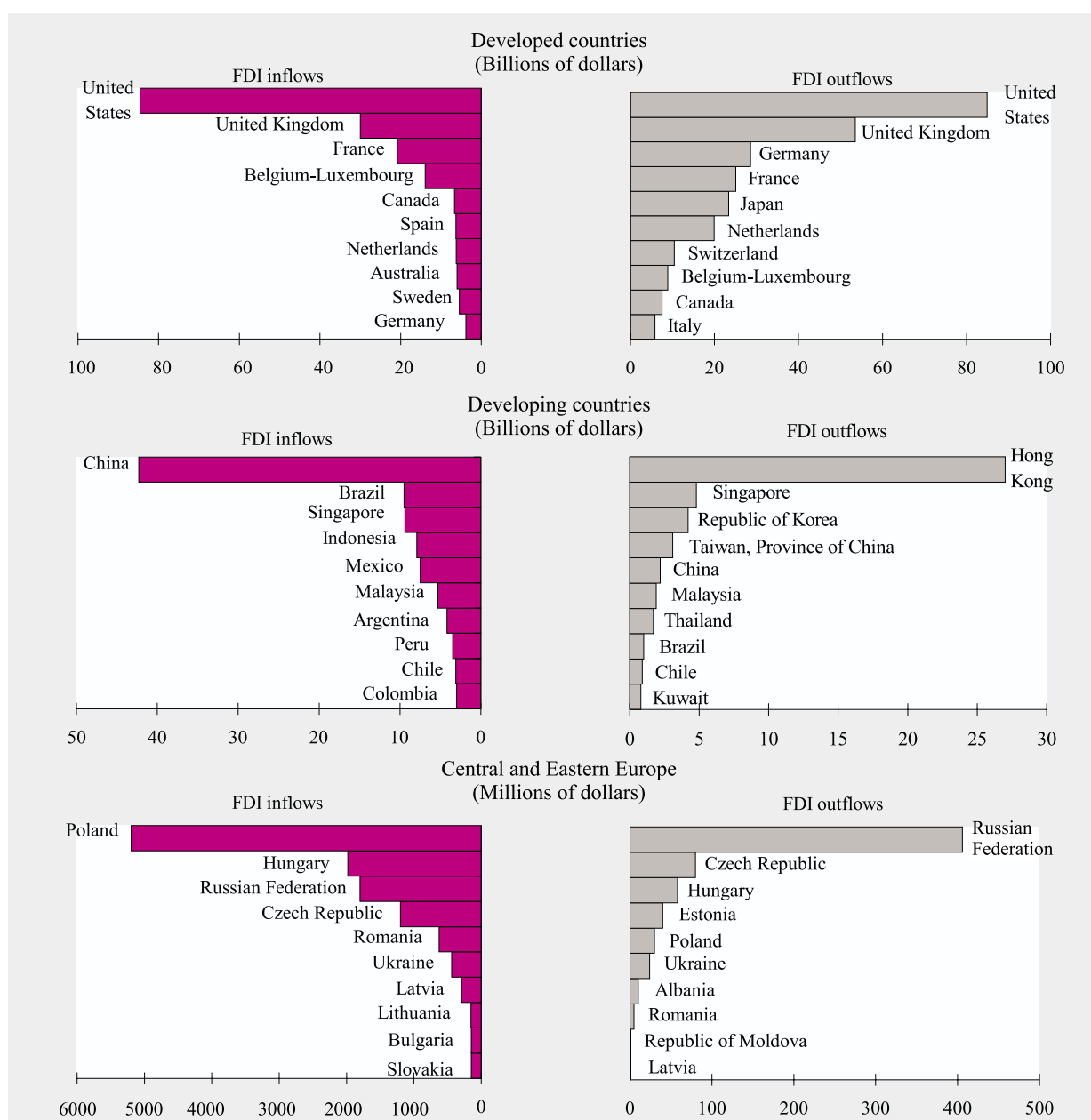
attributable to improved returns on investments made in earlier years, as these became more profitable. The importance of equity in total FDI flows has also increased recently, partly as a consequence of the growing role played by mergers and acquisitions. As a percentage of the total value of FDI flows in 1996, these (including minority-held investments) accounted for 78 per cent.

Both reinvested earnings and equity capital are sensitive to the economic environment of host countries, while intra-company loans are affected by business conditions in both home and host countries. Low interest rates during 1995-1996, compared with interest rates during the FDI recession of the early 1990s (annex table A.1), may have induced TNCs to borrow more funds for investing abroad. On the demand side, particularly in developing countries, a shortage of savings to finance investments implies that these countries have to rely on foreign funds -- including FDI -- to finance that gap.

Other notable FDI trends in 1996 for each region include (for details, see chapter II):

- *Developed countries* invested \$295 billion abroad and received \$208 billion in 1996, compared to \$291 billion and \$205 billion, respectively, in 1995. The United States absorbed one of every four dollars spent on FDI in the world, and was by far the largest investor abroad, followed by the United Kingdom, Germany, France and Japan (figure I.1). The European Union remained the largest host and home region, accounting for a half of FDI inflows to developed countries.

Figure I.1. Top ten largest host and home countries for FDI, among developed countries, developing countries and Central and Eastern Europe, 1996



Source: UNCTAD, based on UNCTAD FDI/TNC database.

- Developing countries* invested \$51 billion abroad and received \$129 billion in 1996, compared to \$47 billion and \$96 billion, respectively, in 1995. Their share of total world outflows rose to 15 per cent that year, almost the same share as in 1995, while their share of inflows grew to 37 per cent, from 30 per cent the previous year. China was again the largest host country after the United States, while Hong Kong¹ had the largest investment outflow and outward FDI stock of any developing economy.

Table I.2. Number of parent corporations and foreign affiliates, by area and country, latest available year
(Number)

Area/economy	Year	Parent corporations based in country	Foreign affiliates located in economy ^a
Developed countries		36380^b	93628
Western Europe		26161	61902
European Union		22111^b	54862
Austria	1994	877	2205
Belgium	1996	152	2000 ^c
Denmark	1992	800	1289 ^d
Finland	1996	1200	1200
France	1995	2126	8682
Germany	1994	7292 ^e	11581 ^f
Greece	1991	..	798
Ireland	1995	80	1050
Italy	1995	966	1630
Netherlands	1993	1608 ^g	2259 ^g
Portugal	1996	1657	6671
Spain	1995	236	6232 ^h
Sweden	1996	3650	5371
United Kingdom ⁱ	1992	1467 ^j	3894 ^k
Other Western Europe		4050^b	7040
Iceland	1995	50	40
Norway	1994	1000	
Switzerland	1985	3000	4000
Japan ^m		1995 3967	^l 3405
United States	1994	3470 ⁿ	18608 ^o
Other developed	2782	9713	
Australia	1996	875 ^p	2961 ^p
Canada	1995	1691	4583
New Zealand	1996	216	2169
South Africa	1978	..	1884
Developing countries		7932^b	129771
Africa		30	134
Swaziland	1996	30	134
Latin America and the Caribbean		1099^b	24267
Bolivia	1996	..	257
Brazil	1994	797	9698
Chile	1995	..	2028 ^q
Colombia	1995	302	2220
El Salvador	1990	..	225
Guatemala	1985	..	287
Mexico	1993	..	8420
Paraguay	1995	..	109
Peru	1996	..	922
Uruguay	1994	..	101
Developing Europe		112	3900
Former Yugoslavia	1991	112	3900
South, East and South-East Asia		6242^b	99522
China	1993	379 ^r	45000
Hong Kong, China	1996	500 ^d	4604
India	1991	187	926 ^{gs}
Indonesia	1995	313 ^t	3472 ^u
Korea, Republic of	1996	4806	3878
Pakistan	1993	57	758
Philippines	1995	..	14802 ^v
Singapore	1994	..	19160
Sri Lanka ^w	1995	..	139

/...

(Table I.2, cont'd)

Area/economy	Year	Parent corporations based in country	Foreign affiliates located in economy ^a
Taiwan Province of China	1990	..	5733
Thailand	1992	..	1050
West Asia		449^b	1948
Oman	1995	92 ^u	351 ^u
Saudi Arabia	1989	..	1461
Turkey	1995	357	136
Central and Eastern Europe		196^b	53260^b
Albania	1994	..	118
Belarus	1994	..	393
Bulgaria	1994	26	918
Czech Republic	1995	..	20337
Czech and Slovak Federal Republic	1994	26	..
Estonia	1994	..	1856
Hungary	1994	66	15205
Poland	1994	58	4126
Romania	1994	20	..
Russian Federation	1994	..	7793
Ukraine	1994	..	2514
World		44508	276659

Source: UNCTAD.

a Represents the number of foreign affiliates in the economy shown, as defined by it (see section on definitions and sources in the annex).

b Total does not include countries for which data are not available.

c Estimated by Banque Nationale de Belgique.

d 1991.

e Does not include holding companies abroad that are dependent on German-owned capital and which, in turn, hold participating interests of more than 20 per cent abroad (indirect German participating interests).

f Does not include the number of foreign-owned holding companies in Germany which, in turn, hold participating interests in Germany (indirect foreign participating interests).

g 1989.

h 1992.

i Data on the number of parent companies based in the United Kingdom, and the number of foreign affiliates in the United Kingdom are based on the register of companies held for inquiries on the United Kingdom FDI abroad, and FDI into the United Kingdom conducted by the Central Statistical Office. On that basis, the numbers are probably understated because of the lags in identifying investment in greenfield sites and because some companies with small presence in the United Kingdom and abroad have not yet been identified.

j Represents a total of 24 bank parent companies and 1,443 non-bank parent companies in 1991.

k Represents 518 foreign affiliates in banking in 1992 and 3,376 non-bank foreign affiliates in 1991.

l The number of parent companies not including finance, insurance and real estate industries in March 1995 (3,695) plus the number of parent companies in finance, insurance and real estate industries in December 1992 (272).

m The number of foreign affiliates not including finance, insurance and real estate industries in March 1995 (3,121) plus the number of foreign affiliates, insurance and real estate industries in November 1995 (284).

n Represents a total of 2,658 non-bank parent companies in 1994 and 89 bank parent companies in 1989 with at least one foreign affiliate whose asset, sales or net income exceeded \$3 million, and 723 non-bank and bank parent companies in 1989 whose affiliate(s) had assets, sales and net income under \$3 million.

o Represents a total of 12,523 bank and non-bank affiliates in 1994 whose assets, sales or net income exceeded \$1 million, and 5,551 bank and non-bank affiliates in 1992 with assets, sales and net income under \$1 million, and 534 United States affiliates that are depository institutions. Each affiliate represents a fully consolidated United States business enterprise, which may consist of a number of individual companies.

p As of June 1996.

q Number of foreign companies registered under DL600.

r 1989.

s 1988.

t As of October 1993.

u As of May 1995.

v This number covers all firms with foreign equity, i.e., equity ownership by non-resident corporations and/or non-resident individuals, registered with the Securities Exchange Commission from 1989 to 1995.

w Data are for the number of investment projects.

Note: the data can vary significantly from preceding years, as data become available for countries that had not been covered before, as definitions change, or as older data are updated.

Figure I.2. Components of FDI inflows, 1980-1995
(Percentage)



Source: UNCTAD, based on UNCTAD FDI/TNC database.

- *South, East and South-East Asia* and *Latin America* attained record FDI inflows, with a number of countries breaking past records in 1996.² Better economic performance and continued liberalization -- factors that have characterized Asian economies for some time -- helped to increase investment flows to Latin America. Flows to South, East and South-East Asia increased by 25 per cent, to more than \$80 billion, while those to Latin America were nearly \$39 billion in 1996, about \$13 billion more than in 1995.
- *Africa* attracted little FDI in 1996, though more than in 1995. Investment flows as a

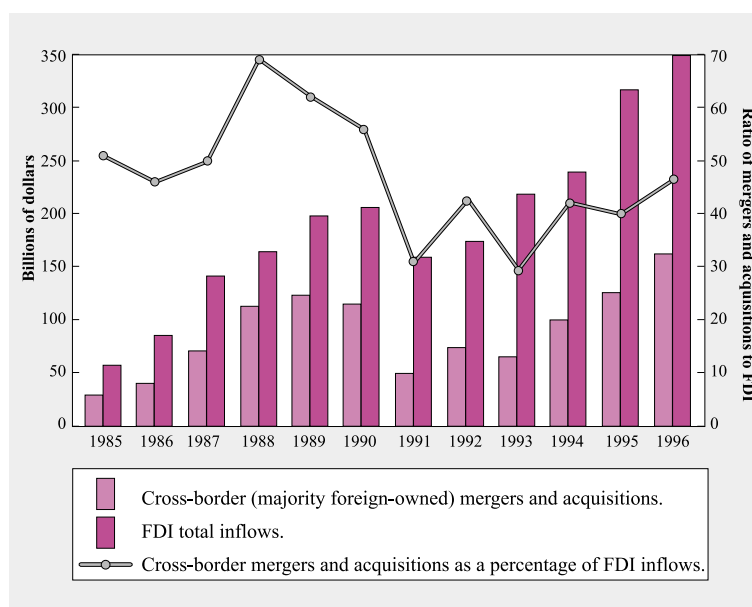
percentage of gross fixed capital formation reached around 7 per cent in 1995, approaching the level in South, East and South-East Asia and surpassing that of Western Europe (annex table B.5).

- After divestments in 1995 (-\$763 million) due to large capital withdrawals from Saudi Arabia, flows into *West Asia* turned positive in 1996 (\$1.9 billion). Flows to the non-oil sector in oil producing countries and non-oil producing countries are increasing in relative importance.
- Flows into *Central and Eastern Europe* declined in 1996, after more than doubling in value in 1995.
- The *least developed countries* received a mere 0.5 per cent of world FDI flows in 1996.

In all regions of the world, but especially in the United States and Western Europe, mergers and acquisitions played an important role in driving FDI. Cross-border mergers and acquisitions rose during the past six years, to a record \$275 billion (including some minority-held transactions classified as portfolio investments) in 1996, an increase of 16 per cent over the 1995 level (\$237 billion) (annex tables B.7-9).³ If only majority-held transactions are considered, the 1996 figure would be \$163 billion, or 47 per cent of global FDI inflows, compared to \$140 billion and 44 per cent, respectively, in 1995 (figure I.3). In 1996, there were 45 deals worth more than \$1 billion (annex table A.2), compared to 35 deals in 1995 (UNCTAD, 1996a, table I.5), almost all between developed-country firms. Transnational corporations based in the United States and the United Kingdom were the biggest players, accounting for 40 per cent of the value of purchases in majority-held mergers and acquisitions and 57 per cent of sales in 1996.⁴

In contrast to the 1950s and 1960s, when greenfield FDI was the most popular mode of market entry, cross-border mergers and acquisitions have been used increasingly as a major means of entering foreign markets since the mid-1980s (UNCTAD, 1996a, pp.7-14). In the case of the United States, greenfield investments accounted for 55 per cent of all outward FDI projects during 1990-1994 (Mataloni and Fahim-Nader, 1996), compared to 62 per cent during 1951-1960 (Curhan, Davidson and Suri, 1977, p. 21). On the inward FDI side, the share of expenditures associated with acquisitions in total investment expenditures in the United States has also been increasing, especially since 1991 (figure I.4). Though Japanese TNCs still prefer greenfield

Figure I.3. Relationship between cross-border mergers and acquisitions and FDI, 1985-1996
(Billions of dollars and percentage)



Source: UNCTAD, based on data obtained from KPMG for 1987-1996 and IFR Securities Data Company (London and New York) for 1985-1986.

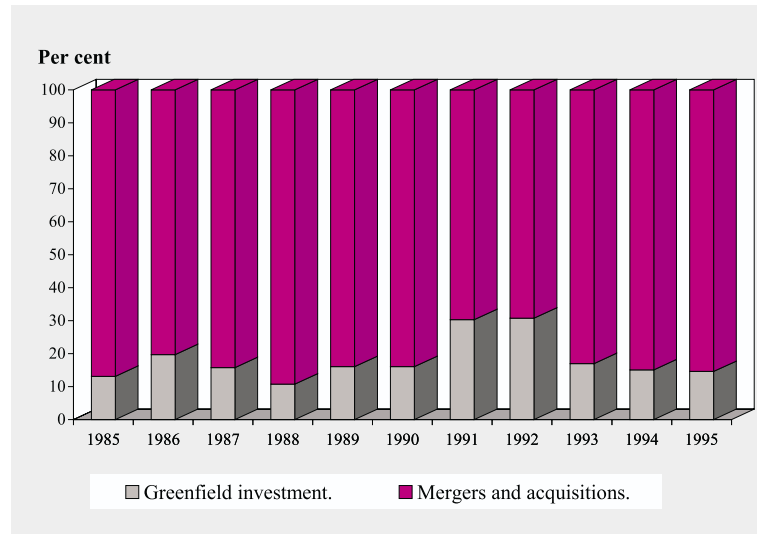
investments as their mode of entry,⁵ even they have been shifting recently to mergers and acquisitions (JETRO, 1997).

(a) Characteristics of foreign-direct-investment booms

The level of FDI flows in the past few years suggests that the world is in the midst of another FDI boom, with a boom defined as beginning the year in which, after a decline in FDI flows, they have fully recovered to the previous level (figure I.5 and annex table A.3). However, this boom differs from the two previous ones in several respects:

- **The 1979-1981 FDI boom.** This short-lived boom, after the second oil crisis at the end of the 1970s, was led by major oil producing countries on the inward side. Saudi Arabia was the second largest FDI recipient after the United States during that period. The boom of FDI outflows was led by the Netherlands, the United Kingdom and the United States, home countries to the major petroleum TNCs. However, volumes of FDI were small and accounted for only 2 per cent of worldwide gross domestic capital formation (less than half the size of the 1995 share).
- **The 1986-1990 FDI boom.** Many countries emerged as important sources of FDI, most notably Japan, which became the largest outward investor. Investment flows were influenced by heightened protectionist pressures, but also by the beginning of widespread FDI liberalization, rapid economic growth in developing countries and the development and adoption of information and telecommunication technologies by firms. These technologies enable firms better to coordinate far-flung international production activities, manage foreign affiliates and conduct international transactions. The 1986-1990 FDI boom was a developed-country phenomenon: FDI flows into these countries grew faster than to developing countries

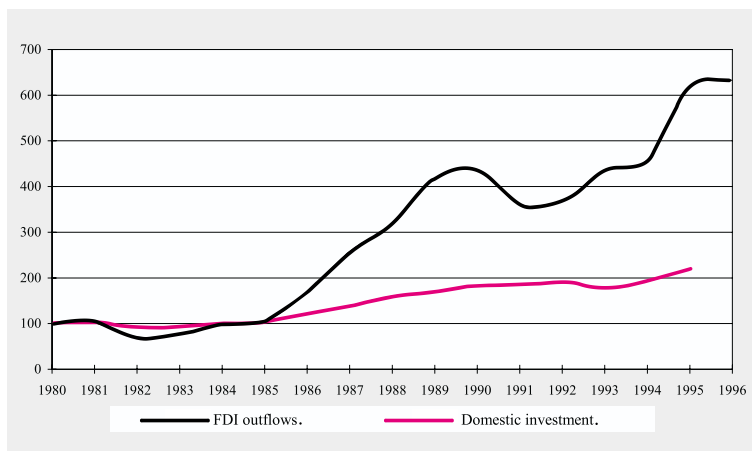
Figure I.4. Greenfield investment and mergers and acquisitions in the United States inward FDI^a, 1985-1995



Source: UNCTAD, based on United States, Department of Commerce (various issues).

^a Investment outlays.

Figure I.5. FDI inflows and outflows, 1970-1996



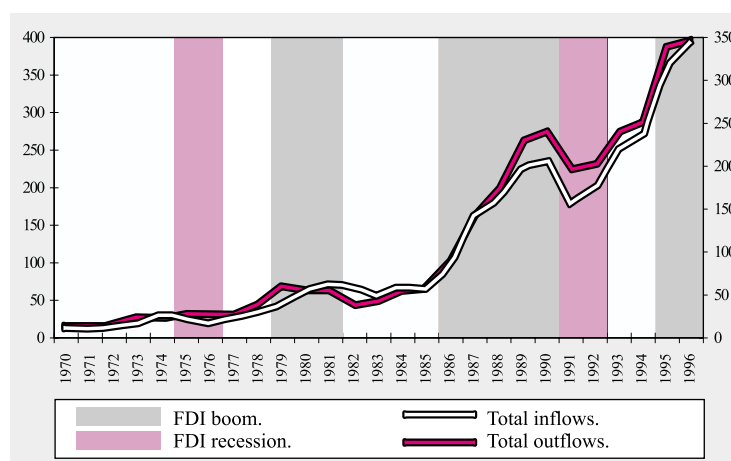
Source: UNCTAD, FDI/TNC database.

(annex table A.3). Mergers and acquisitions were a major mode of investing. Among the developing countries, China began to emerge as a large recipient for FDI flows.

- The current FDI boom (since 1995).* Although a number of countries have registered record levels thus far, much of the global FDI inflow increase is attributable to only two countries, China and the United States. Together, they absorbed about one-third of global FDI inflows during 1995-1996. The United States and the United Kingdom drove the increase in outflows, together accounting for 40 per cent of global outflows during this period. The geographical distribution of FDI flows may become more balanced before this boom is over. Indeed, there are already signs that other countries (France, Germany and a number of developing countries on the outflow side, and Latin American countries on the inflow side) are becoming more active as home and host countries.

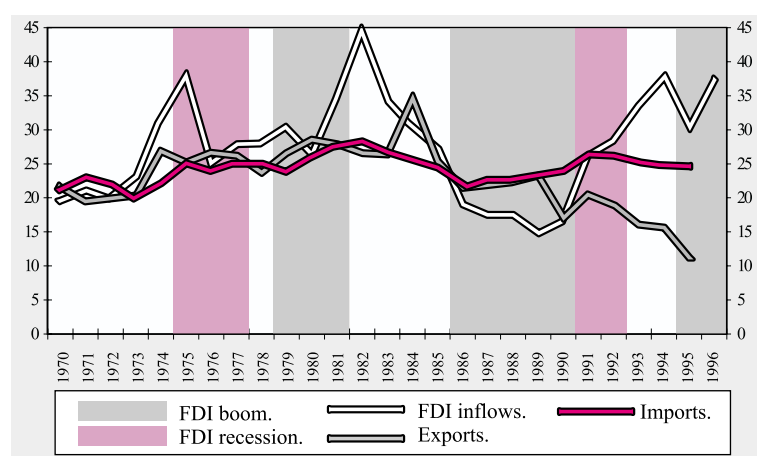
These FDI booms do not necessarily parallel the growth of domestic investment (figure I.6). In addition, the importance of developing countries as recipients of FDI inflows during these FDI booms has varied. The share of developing countries in global FDI inflows has been increasing since 1990, reaching 37 per cent in 1996. But that is no higher than

Figure I.6. Growth of domestic and foreign direct investment, 1980-1996
(Index, 1980=100)



Source: UNCTAD, FDI/TNC database.

Figure I.7. Share of developing countries in FDI inflows, exports and imports, 1970-1996
(Per cent)



Source: UNCTAD, FDI/TNC database.

shares at the beginning of the 1980s (figure I.7). Qualitatively, however, the recent developing-country shares reflect a variety of locational advantages. In the early 1980s, by contrast, their equally high shares were mainly the outcome of sudden increases in flows to a few oil producing economies.

During previous FDI recessions and booms, the developing-country share of global inflows has not moved consistently in the same direction (figure I.7). During the FDI recession of 1975-1977, for

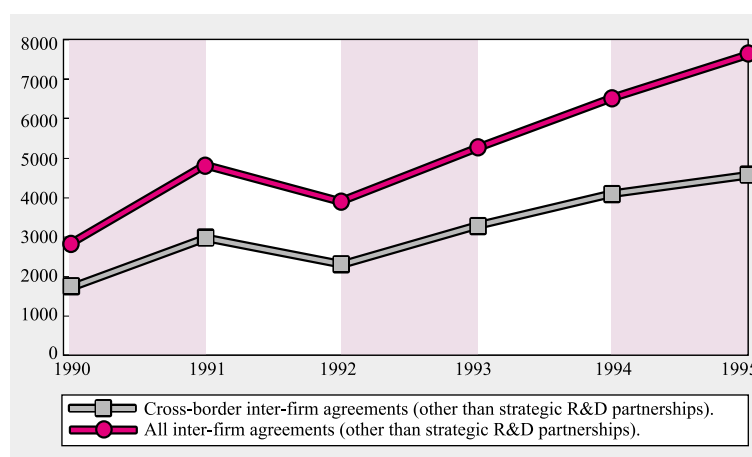
example, their share in global inflows fell. Firms shifted their investments to developed countries at that time because they wanted to use their limited FDI funds to support their affiliates there during that period of deep recession. During the most recent FDI recession (1991-1993), however, TNCs invested heavily in East and South-East Asia, the most dynamic host region, boosting the developing-country share of global FDI inflows even at the time of recession. During the FDI boom of 1986-1990, the developing-country share of FDI inflows fell because most FDI took place through mergers and acquisitions by TNCs based in developed countries and such investment was directed to developed countries. In contrast, during the FDI boom of 1979-1981, TNCs invested heavily in developing countries -- mostly in oil producing economies -- which offered investment opportunities not taken up by domestic firms. Many TNCs escaped the effects of the second oil crisis and invested abroad. Although the recent high shares of developing countries in FDI inflows do not set new records, the composition of the major FDI recipients among developing countries has changed dramatically, with oil producing countries no longer being important hosts. These countries accounted for a half of FDI flows to developing countries during 1979-1981, compared to one-fifth during 1995-1996.

(b) Cross-border inter-firm agreements and cross-border strategic research-and- development partnerships

Cross-border agreements between firms based in different countries have become increasingly important complements to traditional FDI activities, with the range of such agreements growing ever wider. They include arrangements involving joint ventures, licensing, subcontracting, franchising, marketing, manufacturing, research-and-development (R&D) and exploration agreements. These agreements may be equity-based (e.g., joint ventures), or may entail no equity participation (e.g., franchising). The number of these agreements (apart from strategic R&D partnerships, discussed separately) concluded annually increased from 1,760 in 1990 to 4,600 in 1995 (figure I.8). Their share of all inter-firm agreements -- including those between firms based in the same country -- remained stable (on average) at about 61 per cent between the periods 1990-1991 and 1994-1995. This rapid growth in the number suggests that TNCs have increasingly used such arrangements instead of, as well as in addition to, FDI to undertake international production.

Most cross-border inter-firm agreements concluded during the period 1990-1995 involved firms from the Triad members: European Union firms participated in 40 per cent of them, Japanese firms in 38 per cent and United States firms in 80 per cent.⁶ Developing countries are becoming increasingly involved in such agreements, especially in those that are equity-based. The number of new cross-border inter-firm agreements with developing-country participation increased

Figure I.8. Number of cross-border inter-firm agreements^a and number of all inter-firm agreements,^a 1990-1995
(Number)



Source: UNCTAD, based on IFR Securities Data Company, London and New York; and Hagedoorn, 1996.

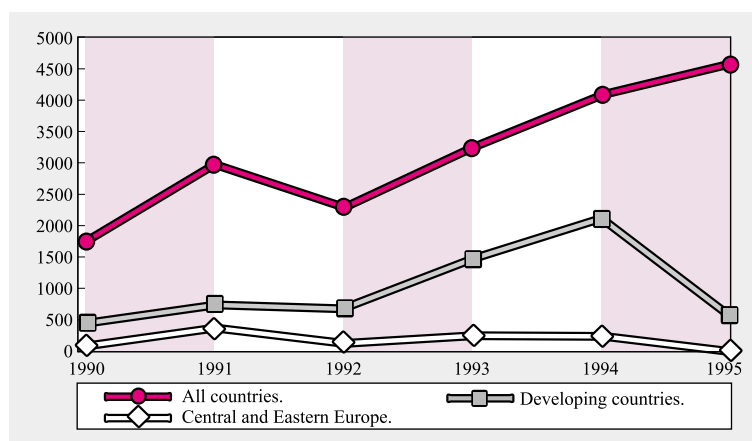
^a Other than strategic R&D partnerships.

from around 440 in 1990 to some 2,120 in 1994 (but appears to have fallen to around 560 in 1995) (figure I.9). Their share of the total number of cross-border inter-firm agreements increased (on average) from 27 per cent during 1990-1992 to 35 per cent during 1993-1995. (In contrast, the corresponding share of Central and Eastern European participation was halved between the same periods.)

Throughout the 1980s, the environment of technological innovation evolved drastically, from being reasonably predictable and stable to being more dynamic and variable. Several factors accounted for this change. In many industries, it became ever harder for individual firms to go on making the R&D and capital investments required to stay competitive. Firms faced demands for ever more competing capital-hungry projects and had to choose between them. Intangibles, such as know-how and innovation capacity -- also known as created assets (Dunning, 1995) and critical competencies (Mytelka, 1994) -- were recognized as crucial for improved efficiency in new product development. Inter-firm competition, moreover, was becoming increasingly globalized, as markets and international production systems were integrated regionally or globally. These factors led firms, initially, to turn to mergers and acquisitions as a means of creating the critical mass of resources needed to remain competitive.⁷ However, mergers and acquisitions proved insufficiently flexible to cope with changing patterns of demand and decreased product life cycles which resulted from faster technological innovation and shorter product development times, as well as from the use of flexible manufacturing techniques. The difficulty for traditional types of inter-firm arrangements to address fully the challenges posed by these developments engendered heightened economic uncertainty in firms.

These developments prompted firms to seek new ways to identify and appropriate developments in critical technologies (Mytelka and Delapierre, 1996; Safarian, 1993), sometimes prompted and sponsored by governments (Fransman, 1990; Mytelka, 1991; Lawton, 1997; Spencer, 1997). Many firms therefore turned to strategic partnerships to achieve objectives that they had once sought to achieve exclusively through FDI. These advantages included concentrating on critical competences (Hagedoorn, 1996), obtaining ownership and internalization advantages and exploiting host-country locational advantages. Strategic partnerships provide access to complementary technologies, reduce costs and risks and create synergies and spillovers. In advanced-technology industries, the aims of such partnerships typically include greater technological synergies, faster innovation, accessing tangible and intangible resources and reducing the costs and risks associated with R&D. For firms from developing countries, strategic partnerships provide an opportunity to strengthen technological capabilities and move more rapidly towards higher value-added products. For small and medium-sized enterprises, partnerships are an important means of overcoming size disadvantages in R&D, as well as in accessing markets and sometimes production.

Figure I.9. Cross-border inter-firm agreements (excluding strategic R&D partnerships), 1990-1995
(Number)



Source: UNCTAD, based on IFR Securities Data Company, London and New York.

Three principal characteristics distinguish strategic partnerships from more traditional types of inter-firm agreements (figure I.10):

- they are two-way relationships based on the joint creation and sharing of knowledge for such purposes as the development of new technologies, production processes and distribution techniques;
- they tend to be contractual in nature, with little or no equity involvement by the participants; and
- they are part of the long-term planning horizon of firms.

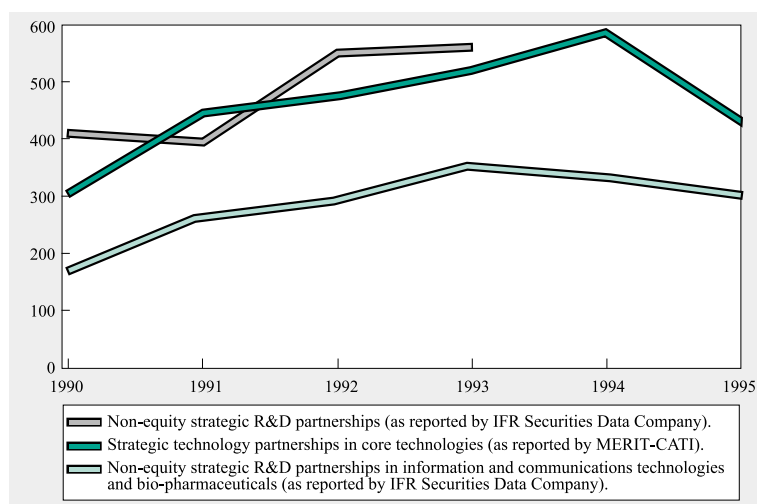
Figure I.10. Inter-firm agreements and strategic R&D partnerships

	R&D	Production	Distribution
<i>upstream</i>			<i>downstream</i>
Inter-firm agreements <i>"One-way substitutable members"</i>	Licensing Cross-licensing Early efforts to commercialize public-sector R&D	Subcontracting Original equipment manufacturer (OEM) Acquisition Joint ventures	Franchising
Strategic partnerships <i>"Knowledge production and sharing between partners"</i>	R&D consortia Customer-supplier networks Inter-firm technological collaboration University/industry partnerships	Co-production Use of common components Modularization Joint ventures	Joint marketing System-products Standardization of interfaces

Source: adapted from Mytelka (1993, p. 109).

The number of cross-border strategic R&D partnerships (technology partnerships in core technologies, e.g., biotechnology, new materials and information technologies) increased from nearly 280 in 1991 to 430 in 1993 (Hagedoorn, 1996, p. 602) (figure I.11).⁸ The upward trend continued in 1994, but seemed to have faltered in 1995.⁹ The reasons for this decline in 1995 are not clear. It may simply reflect a broader tendency towards consolidation and the refocusing of

Figure I.11. Number of cross-border strategic R&D partnerships, 1990-1995
(Number)



Source: UNCTAD, based on IFR Securities Data Company, London and New York; and Hagedoorn, 1996.

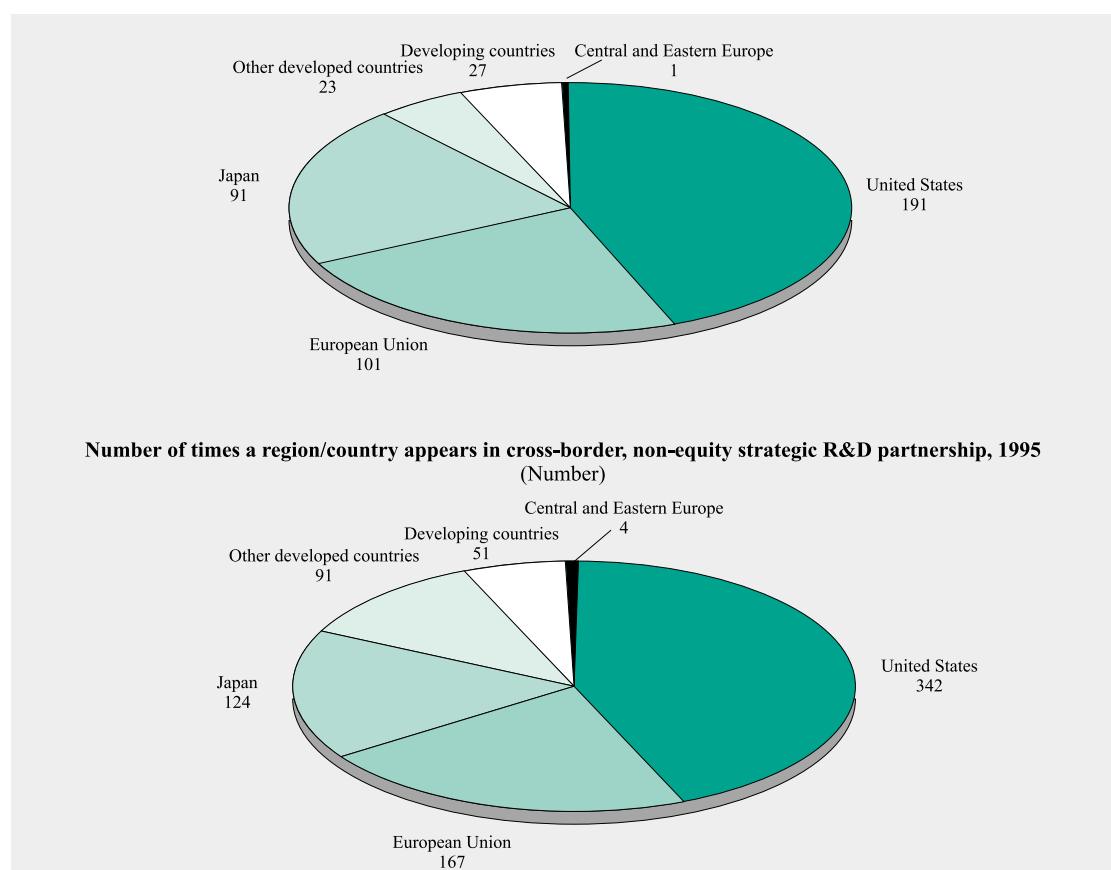
activities on core businesses. However, the explanation may also be that firms have their hands full managing the complex partner networks in which they are already engaged and are reluctant, at least temporarily, to expand them further. Accelerated mergers and acquisitions or membership in competing alliances might also have reduced the number of available partners.

Most cross-border, non-equity strategic R&D partnerships have been between firms from developed countries. In 1995, out of the total number of such agreements for which the countries of the participating firms are known, 86 per cent had

at least one United States partner, 42 per cent had at least one European Union partner and 31 per cent had at least one Japanese partner (figure I.12). However, developing-country firms are also becoming more involved in these partnerships (box I.1): the participation of developing countries in the total number increased from 3 per cent in 1989 to 13 per cent in 1995 (figure I.12). This suggests that some developing-country firms have attained enough sophistication and have deepened their technological capacity sufficiently to partner with developed country firms.

Strategic partnerships may also develop into market-spanning knowledge-based networks (Mytelka, 1994) that can lead to the creation of *de facto* industry standards. To the extent that such networks supplant the role once played by a stable market leader in industrial development, their ability to shape product markets and set technological standards carries with it a potential to erect new entry barriers (Mytelka, 1997a). This may have implications for national, regional and global market structures, as well as worldwide market contestability (see chapter IV). Hence, the development of knowledge-based networks needs to be taken into consideration in the design and development of national and international competition policies.

Figure I.12. Number of times a region/country appears in cross-border, non-equity strategic R&D partnerships, 1990
(Number)



Source: UNCTAD, based on IFR Securities Data Company, London and New York.

Note: the number of partnerships for which the regional or country participation breakdown is available is 222 for 1990 and 398 for 1995. The total number of such agreements was 304 for 1990 and 432 for 1995.

Box I.1. The Computel-Boston Technology strategic partnership

Computel (Brazil) is a software company specialized in voice processing, i.e., voice-mail and voice recognition. In 1994, it had about 80 employees, most of whom were engineers and software analysts, and a turnover of some \$30 million. As a small firm in Latin America, Computel found it difficult to keep up as the pace of innovation accelerated in the late 1980s. Its voicemail systems were sold mainly to foreign-based TNCs, such as NEC, Equitel/Siemens, Ericsson and Alcatel, for use as add-ons to their PABX (a telephone switching system). But Computel's volume of output was not generating the revenues needed to support the growing amount of R&D required if the firm were to remain competitive. Moreover, penetrating foreign markets for a small largely unknown company was difficult. Computel worked its way around these problems through a strategic partnership with Boston Technology (United States) that includes both a technology and a marketing partnership. As part of that partnership, Computel and Boston Technology share technical information. By using a mix of locally developed and imported technology, Computel is now able to develop new products that interface with those of Boston Technology. This has made possible a marketing partnership in voicemail platforms. Computel sells Boston Technology's large platforms in Brazil and Boston Technology sells Computel's small platforms in the United States and abroad.

Source. UNCTAD, based on company interviews (conducted in 1995).

2. International production

All indicators of the size of international production -- worldwide FDI stock, gross product, sales and exports (including intra-firm exports) of foreign affiliates -- have to be estimated and should be treated with caution. The most recent year for which data are available for such indicators is 1994 (except for FDI stock).

- **Stock.** Between 1982 and 1994, worldwide FDI stock increased fourfold, and doubled as a percentage of world GDP (annex table B.6). The developing countries' share of the worldwide FDI inward stock increased over the past ten years, to reach 28 per cent by 1996. The investment stock in South, East and South-East Asia surpassed that in Latin America in 1988 and, since then, the disparity has widened. The United States' share of world outward stock declined from more than 40 per cent in 1982 to one-quarter in 1996. Developing countries increased their share from 3 per cent to 9 per cent between 1982 and 1996.
- **Gross product (value added) of foreign affiliates.** According to this value-added measure, foreign affiliate output accounted for 5 per cent of world GDP in 1982, 7 per cent in 1990 and 6 per cent in 1994 (the latest available year) (annex table A.4). Between 1982 and 1994, the gross product of foreign affiliates almost tripled. One dollar of FDI stock generates value added worth 64 cents.¹⁰ In small economies in Africa and developing Oceania, the value added generated by TNCs, though small, is significant compared with the size of the economy. In general, foreign affiliates have contributed more in terms of the share of their value added in the GDP of developing countries than that of developed countries. This trend continued in the 1990s.
- **Sales of foreign affiliates.** Firms rely increasingly on sales from international production, rather than on exports, to service foreign markets (table I.3). Sales of foreign affiliates increased by 8 per cent annually between 1982 and 1994 (table I.3). In each developed

region, sales by foreign affiliates outweigh exports, but in developing regions, as expected, exports are still the dominant mode of servicing foreign markets. Foreign affiliates in North America and non-European Union member states, such as Switzerland, serve foreign markets through international production more than foreign affiliates in other regions. Sales of foreign affiliates in South, East and South-East Asia were higher than those in Latin America in the 1990s. During the past decade, sales by TNCs based in developing Asia have been rising. Sales of foreign affiliates are also increasing rapidly relative to imports. In Latin America (as well as in developing Oceania) sales of foreign affiliates are more than twice as large as imports (table I.3). By the mid-1990s, sales of foreign affiliates were higher than imports of South, East and South-East Asia.

- **Exports of foreign affiliates.** Although exports of foreign affiliates more than doubled between 1982 and 1994, exports' share of total sales of foreign affiliates declined from 31 per cent to 28 per cent between those years (annex table A.5). This suggests that FDI has become somewhat more domestic-market oriented, which partly reflects the fact that it

Table I.3. Sales of foreign affiliates^a and their ratios to exports and imports of goods and non-factor services, by region, 1982 and 1994

(Billions of dollars and ratios)

Region	Sales of foreign affiliates in the region (A)		Sales of affiliates abroad attributed to the region's TNCs (B)		Sales of affiliates abroad (B) as a percentage of exports of goods and non-factor services		Sales of foreign affiliates (A) as percentage of imports of goods and non-factor services	
	1982	1994	1982	1994	1982	1994	1982	1994
Developed countries	1 770	4 528	2 351	5 929	1.61	1.65	1.19	1.28
Western Europe	787	2 513	1 063	3 163	1.21	1.50	0.88	1.22
European Union	719	2 338	970	2 821	1.19	1.42	0.86	1.21
Other Western Europe	68	175	93	342	1.53	2.40	1.18	1.42
North America	777	1 616	1 106	1 871	3.06	2.07	2.10	1.63
Other developed countries	206	398	182	896	0.83	1.59	0.93	0.83
Developing countries	656	1 832	75	479	0.10	0.38	1.05	1.47
Africa	66	132	10	38	0.13	0.44	0.66	1.22
Latin America and the Caribbean	257	666	24	55	0.07	0.29	2.50	2.87
Developing Europe	2	3	..	..	..	..	0.10	0.22
Asia	326	1 022	41	386	0.12	0.40	0.85	1.14
West Asia	133	150	6	23	0.04	0.15	0.85	0.93
Central Asia	..	2	..	..	..	..	..	..
South, East and South-East Asia	193	871	35	363	0.19	0.45	0.85	1.18
The Pacific	5	8	-	-	0.08	0.06	1.93	1.86
Central and Eastern Europe	0.5	52	-	4	0.01	0.02	0.01	0.34
<i>World</i>	2 426	6 412	2 426	6 412	1.05	1.35	1.12	1.30

Source: UNCTAD.

^a Worldwide sales are estimated by extrapolating the worldwide sales of foreign affiliates of TNCs from Germany, Japan and the United States for 1982 and France, Germany, Italy, Japan and the United States for 1994 (for France, 1992 data) on the basis of the shares of these countries in the worldwide inward FDI stock. Regional sales are estimated by applying the share of each region in the worldwide inward stock to the estimated worldwide sales. Sales attributed to the region's TNCs are estimated by applying the share of each region in the worldwide outward stock to the estimated worldwide sales.

has increasingly flowed into the services sector. At the same time, the share of exports directed to affiliated firms (parent firms and other foreign affiliates) in total exports of foreign affiliates increased. Complex integration strategies pursued by TNCs and the proliferation and deepening of regional integration schemes have facilitated trade among affiliates of the same TNC system. More than a half of foreign affiliate exports of Japanese and United States TNCs are conducted on an intra-firm basis (Japan, MITI, 1994; and United States, Department of Commerce, 1997). More than 40 per cent of the exports by parent firms of these TNCs are shipped to their foreign affiliates.¹¹ All in all, around one-third of world trade takes place within transnational corporate networks (UNCTAD, 1995a). The ratio of non-arm's-length transactions to those of an arm's-length nature increased from 1.6 in 1982 to 1.9 in 1994.¹² This implies that about two-thirds of international transactions are associated with the international production of TNCs. In the case of the United States, arm's-length transactions accounted only for one-fifth of all transactions (UNCTAD, 1995a, p. 39) in 1992, rising from 14 per cent in 1982. For Japan, intra-firm transactions associated with international production relative to arm's-length transactions (4.7 times as large as arm's-length trade in 1994) have become even more important than in the United States (3.5 times as large as arm's-length trade in 1994). A decade earlier, Japan's share of intra-firm transactions was less than twice as large as arm's-length trade, and considerably lower than the share for the United States.

3. Recent changes in regulatory frameworks

Liberalization continues to facilitate FDI growth. In 1996, 98 liberalizing changes were made in the regulatory FDI frameworks of 65 countries (10 developed and 55 developing countries), comparable to the number of changes recorded in each of the previous three years (table I.4). In developing countries, these changes included the opening of industries previously closed to FDI, the streamlining or abolition of approval procedures, the provision of incentives and the establishment of specialized liberalization schemes. While incentives introduced by developing countries in 1996 were more targeted towards regional development, they were also rationalized and reduced in number. As a result, the share of changes aimed at reducing incentives accounted for 7 per cent of the total number of regulatory changes in 1996 (figure I.13), higher than in 1995 (5 per cent). In developed countries, the major legislative activity involved the introduction of more liberal operational conditions and the revision of intellectual property frameworks. Numerous special economic zones and special regional packages were introduced in 1996, both in developed and developing countries.

Table I.4. Regulatory changes, 1991-1996
(Number)

Item	1991	1992	1993	1994	1995	1996
Number of countries that introduced changes in their investment regimes	35	43	57	49	64	65
Number of regimes	82	79	102	110	112	114
Of which:						
In the direction of liberalization or promoting ^a	80	79	101	108	106	98
In the direction of control ^b	2	-	1	2	6	16

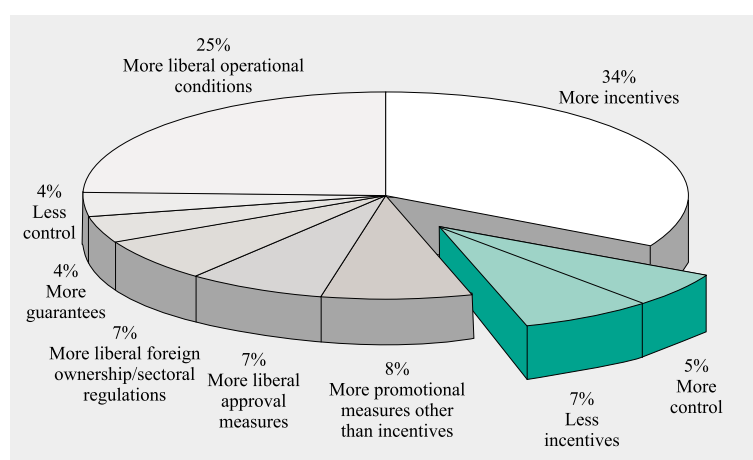
Source: UNCTAD, based on national sources.

^a Including measures aimed at strengthening market supervision, as well as incentives.

^b Including measures aimed at reducing incentives.

The desire of governments to facilitate FDI flows is also reflected in a dramatic increase in the number of bilateral investment treaties (BITs) for the protection and promotion of investment during the 1990s. As of 1 January 1997, there was a total of 1,330 such treaties in the world, involving 162 countries (annex table B.10), compared with less than 400 at the beginning of the 1990s. More than two-thirds of these treaties came into existence during the 1990s, around 180 in 1996 alone -- a rate of almost one every other day.

Figure I.13. Types of changes in FDI laws and regulations, 1996^a



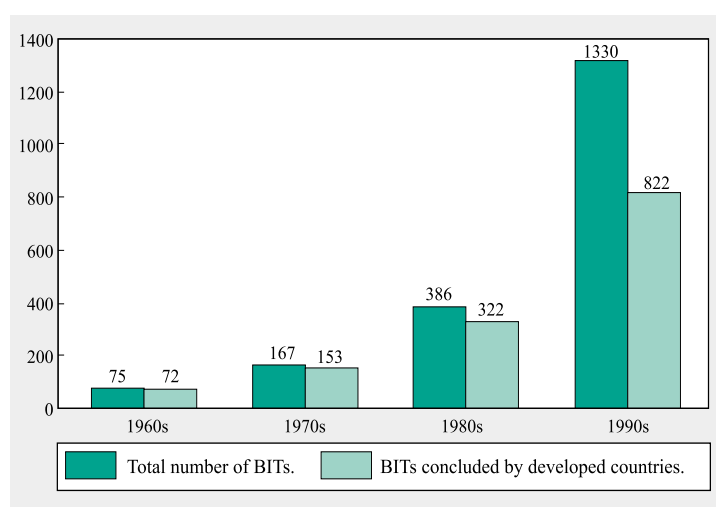
Source: UNCTAD.

^a There were 138 changes in 114 measures that were implemented in 65 countries.

The pattern of BITs has changed considerably. Historically, virtually all BITs had one developed country as a partner, and such countries accounted for 83 per cent of all BITs at the end of the 1980s. But, by 1996, only 822 BITs, or 62 per cent of the worldwide total, involved developed countries (figure I.14).

The countries of Central and Eastern Europe have adopted this treaty practice energetically since the late 1980s, concluding many such treaties among themselves, as well as with developed and developing countries. Indeed, Romania has 82 BITs, more than any other non-OECD country. Of some 530 BITs concluded by countries of this region by 1996, 16 per cent were with one another, and 39 per cent with developing countries. The trend reflects a readiness to protect FDI and to fill a gap in investment protection legislation while reforms of national laws are being undertaken.

Figure I.14. Growth of BITs, 1959-1996 (Cumulative)



Source: UNCTAD, BITs database.

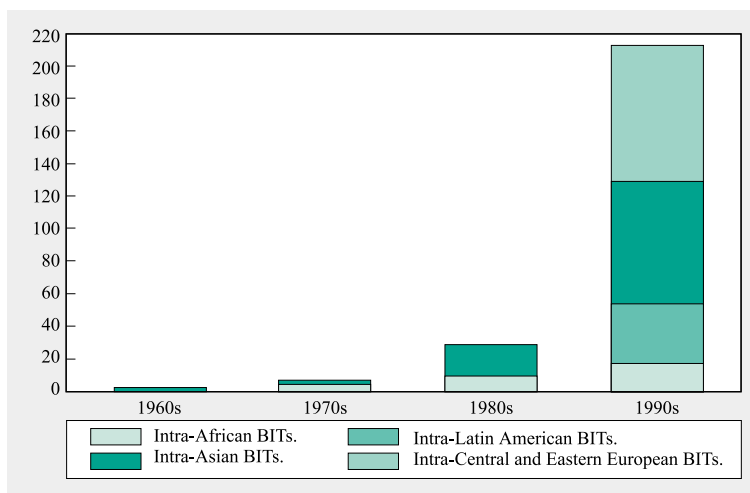
Developing countries, too, began to conclude BITs with one another, increasingly with other developing countries in the same region (figure I.15). To date, 16 per cent of all BITs are among developing countries, up from 11 per cent at the end of the 1980s. In 1996 alone, nearly one-third of all BITs concluded were between developing countries, led by China, Chile, Algeria and the Republic of Korea. This development reflects the emergence of firms from developing countries as outward investors. Thus, developing countries accounted for 15 per cent of world FDI outflows in 1996, compared with only 3 per cent in 1980. In Asia, for

example, some 40 per cent of all FDI flows into the developing countries in the region originate in other Asian developing countries.

Among developing countries, China has concluded the most treaties, followed by the Republic of Korea, Argentina and Egypt. African countries recently concluded BITs at a slower pace than in previous decades. To date, they have concluded 267 BITs, with 45 African developing countries having at least one treaty. Developing countries in Latin America and the Caribbean have been actively adopting this treaty practice only recently. By 1996, 31 countries in that region had concluded one or more BITs, totalling 261, of which 37 are between countries in the region.

There has also been a sharp rise in the number of BITs concluded by Asian and Pacific countries in the 1990s. Currently, 33 countries in that region have concluded a total of 491 BITs (compared with 146 by the end of the 1980s), with the number of intra-regional BITs increasing to 75.

Figure I.15. Growth of intra-regional BITs in developing countries and economies in transition, 1960s through 1990s^a
(Cumulative number)



Source: UNCTAD, BITs database.

^a Up to 1996.

4. Trends in technology flows

Global payments of fees and royalties for technology quadrupled to an estimated \$48 billion between 1983 and 1995.¹³ If data for the United States and Germany are indicative, some four-fifths of these payments take place between parent firms and their foreign affiliates (table I.5). This phenomenon underscores the close relationship between FDI and intangible technology flows, as well as the strong proprietary asset base of FDI.

But technology flows also take place independently of FDI. This is reflected in the payments for intellectual property rights and related specialized services and the growing strategic partnerships between unaffiliated firms. Thus, although much of the trade in technology takes place between affiliated companies in different countries, there has also been a significant increase in technology flows and linkages between unaffiliated firms. For the United States there has been an increase of 175 per cent in United States-sourced technology flows among unaffiliated firms between 1986 and 1995 (United States, Department of Commerce, 1996a). In Japan, while royalty and fee receipts for technology and technical services take place largely on an intra-firm basis -- from foreign affiliates to parent firms -- payments for technology for patents are made mostly to unaffiliated foreign companies in the United States and Europe (Japan, Bank of Japan, 1996; and Japan, MITI, 1989 and 1994). Technology flows through unaffiliated companies are also important for some developing countries, such as India, the Republic of Korea and Malaysia, in which large national firms have entered into arm's-length technology agreements with foreign firms (Singh, 1991).

Table I.5. Receipts and payments of technology-related flows in selected developed countries, 1995
(Millions of dollars)

Item	France	Japan		Germany		United Kingdom	United States	
		Total	Intra-firm	Total	Intra-firm		Total	Intra-firm
<i>Receipts</i>								
Royalties (patents and licence fees)	2 216	6 026	2 366 ^a	2 780	2174	5 271	26 953	21619
Technical services	6 355	..	..	3 641	..	..	..	..
R&D expenditures	..	..	..	3 490	..	..	..	..
Total	8 571	6 026	2 366 ^a	9 911	2174	5 271	26 953	21619
<i>Payments</i>								
Royalties (patents and licence fees)	2 837	9 442	..	5 444	3581	3 997	6 312	5148
Technical services	4 902	..	..	4 220	..	..	..	..
R&D expenditures	..	..	..	2 998	..	..	..	..
Total	7 739	9 442	..	12 662	3581	3 997	6 312	5148

Source: UNCTAD, based on France, Banque de France, 1996; Japan, Bank of Japan, 1996 and MITI, 1994; Deutsche Bundesbank, 1996; United Kingdom, Central Statistical Office, 1996; and United States, Department of Commerce, 1996a.

^a 1992 (fiscal year).

Salient features of recent technology flows include:

- *The dominance of United States firms in royalty and fees receipts.* In 1995, United States firms received an estimated \$27 billion in royalties and licence fees (table I.5), accounting for 56 per cent of total global receipts, compared with \$6 billion and 50 per cent in 1983 (IMF, 1996b).
- *A high degree of concentration of royalty and fees receipts among a few developed countries.* Technology exchanges in terms of patents, royalties and licence fees between the United States on the one hand, and Japan, Germany, United Kingdom, France and the Netherlands on the other hand, have been large and increasing. Some 20 per cent of United States firms' 1995 receipts were accounted for by transfers from Japanese firms alone. Germany, the United Kingdom, France and the Netherlands together accounted for another 33 per cent (United States, Department of Commerce, 1996a). In most countries other than the United States, increases in technology receipts have not been enough to offset payments. Technology transactions of German firms have been mostly with companies in developed countries, although there has also been a substantial increase in affiliate and non-affiliate licensing to certain developing countries (Deutsche Bundesbank, 1996). For French firms, transactions with developing countries in the form of non-affiliate licensing and technological services have been increasing steadily since the 1980s (France, Ministère de l'Économie et du Budget, various issues). Outflows of technology from Japan, often accompanying FDI, have tended to concentrate on the United States and certain Western European countries, as well as in the newly industrializing economies of South-East Asia (Japan, Bank of Japan, 1996).
- *Small technology flows to developing countries.* While most regulatory measures as regards foreign technology agreements have been liberalized substantially, the boom in FDI flows to developing countries has not always been accompanied by a boom in technology

flows. In China, technology payments did not increase in line with FDI inflows during the mid-1990s. This can be partly explained by the gap between when an investment takes place and when payments for technology are made (although it is also possible that foreign affiliates do not always pay fully for the technology they receive or that perhaps they are not always permitted to do so). In the Republic of Korea, Singapore and Taiwan Province of China, however, technology imports and technology payments have tended to be high. This reflects the fact that technology flows are concentrated in high-technology industries, such as micro-electronics or new materials. In developing countries, royalty payments for manufacturing technology generally reach their peak only 3-4 years after the initial investment has taken place. Thus, higher technology payments associated with the large investment flows to developing countries in the 1990s are likely to materialize only in the second half of the 1990s. In the case of royalties for patents that can be absorbed rapidly in new products and processes, as is often the case for patent-related transactions among developed-country firms, the time gap between the initial investments and payments receipts for technology may be much smaller.

- *Differences in the pattern of technology flows between developed and developing countries.* A high proportion of technology payments by, for example, Japanese and Western European companies relates to royalties for the use of patents. In few cases are royalties paid for unpatented know-how. These payments cover a wide range: from biotechnology, new materials and information technologies, to industrial automation, software, telecommunications, space and aeronautics. They also cover new patents in chemicals, food and beverages, machinery and equipment. In the case of developing countries, technology flows are directed to high-technology industries, mainly in the Asian newly industrializing economies, Brazil and Mexico. By contrast, much of technology flows to other developing countries, including China and India, relates to industrial know-how.

In sum, the liberalization of regulatory policies on foreign technology agreements has not been sufficient to bridge the technology gap between developed and developing countries. Whether the implementation of the Uruguay Round Agreement on trade-related intellectual property rights would lead to increased technology flows to developing countries is still unclear (UNCTAD, 1996b). The evidence for developed countries so far suggests that, while stronger intellectual property rights are important for FDI in some industries (e.g., pharmaceuticals) and can influence the speed of investment and technology flows, their effects on FDI often depend on such factors as the size of the domestic market, the structure of production factors, technological infrastructure and the macroeconomic policy environment.

B. Estimating actual investment in foreign affiliates

Estimating actual annual investment abroad by TNCs has two dimensions: calculating the “real” value of FDI by adjusting for inflation and foreign exchange fluctuations; and estimating the size of investment that is not reflected in FDI data as reported in the balance of payments. The growing importance of FDI in international economic transactions, as well as in recipient economies, makes it important to get a picture that reflects these variables.¹⁴ In the absence of valuation adjustments, for example, exchange-rate fluctuations can alter the value of FDI flows expressed in a particular currency. Likewise, the capital side of international production will be underestimated, unless the data reflect the value of all the capital involved, regardless of its origin, because foreign affiliates can be -- and are -- financed from sources other than funds from direct investors themselves (FDI).

1. Estimating “real” FDI

Expressing nominal FDI in real terms involves adjustments for both exchange-rate fluctuations and changes in price levels in countries that are host as well as home to TNCs. Estimating FDI (and other financial flows) in real terms is made difficult by various statistical and methodological problems:¹⁵

- There are no price and quantity elements in FDI required to construct price indices.
- Since inward and outward FDI involve a variety of different currencies, an index capturing fluctuations between them is difficult to devise.
- Because FDI includes, by definition, funds from at least two countries, at least two different price deflators should be considered.
- Some FDI is used to acquire investments in intangible or financial assets, the value of which is difficult to measure.

All these complexities and difficulties make it difficult to construct a price index for FDI that addresses both exchange-rate and price fluctuations.

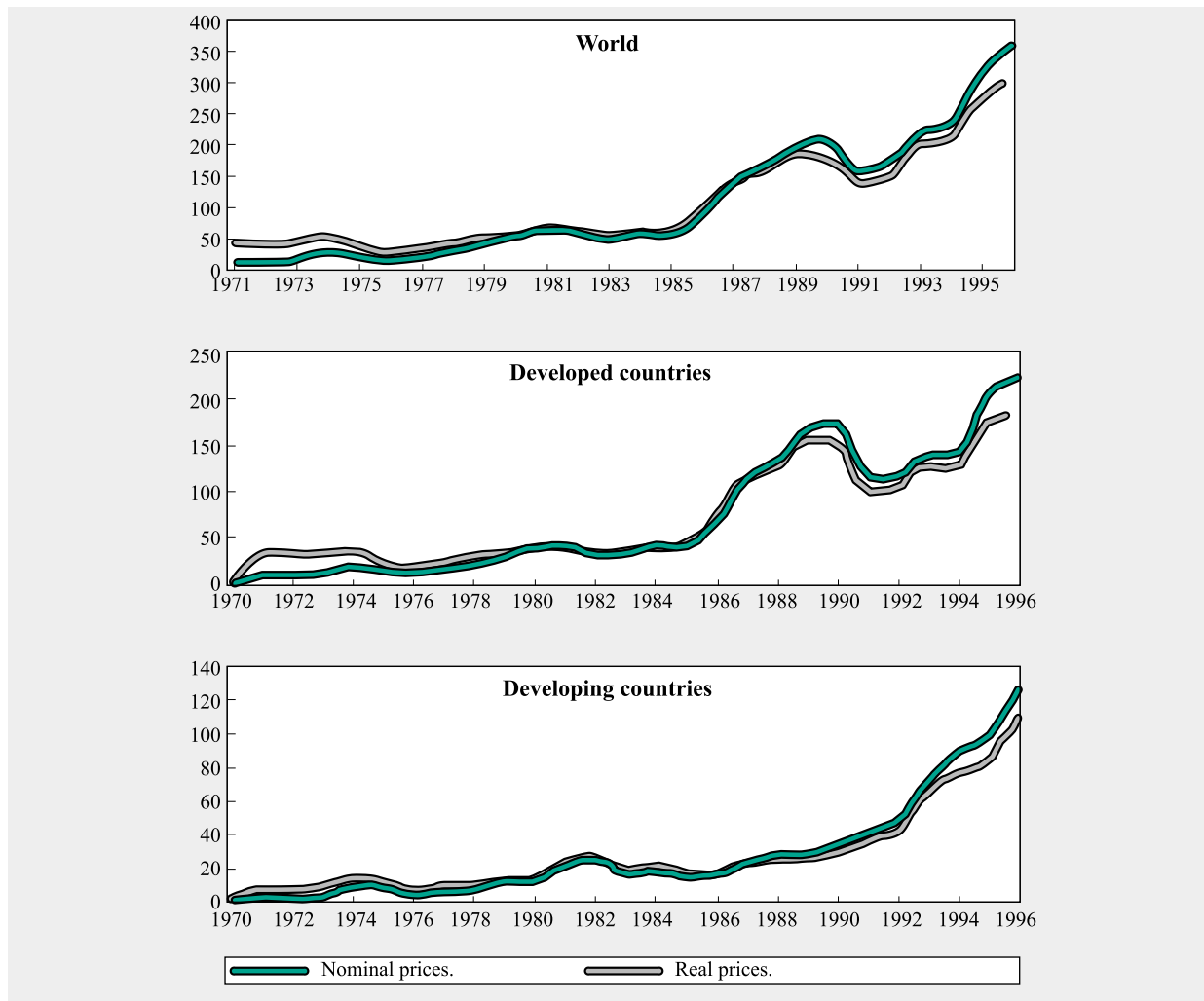
What, then, is the most appropriate index to be used? Since inward FDI takes place in a host country, one candidate is the investment deflator (the implicit price index of capital formation in that country’s national accounts). However, since FDI is also a cross-border flow, discounting nominal FDI by the investment deflator may result in an overestimation because the exchange rate used to convert foreign-currency denominated FDI into local currency may already reflect the inflation rate of the host country concerned. If either the investment deflator or the GDP deflator is applied to FDI inflows received by some Latin American countries during the period of hyper-inflation, the revalued FDI flows turn out to have unrealistically high levels.¹⁶

Export- and import-price indexes incorporate, by definition, fluctuations in exchange rates, as well as price changes of the selected goods and services used to construct them. Unlike investment or GDP deflators, these price indexes can avoid overvaluing FDI flows in the case of hyperinflation. However, these indices cover only goods and services -- not assets, which is what TNCs purchase when they invest in a country.

Bearing all these problems in mind, revaluing nominal FDI inflows using a different import-price index of each country and 1987 as the base year makes inflows larger than their nominal level prior to 1990 and smaller after 1990 (figure I.16).¹⁷ Expressed in real terms, FDI flows declined in 1972 and 1990 (and also during 1975-1976, 1982-1983 and 1991). In nominal terms, FDI inflows declined in 1985, but not in real terms. In general, growth rates of real FDI flows are more moderate than those of nominal FDI flows (annex table A.6). Not surprisingly, real FDI flows during the 1970s and early 1980s did not grow as much as nominal flows, or as real flows during the late 1980s. This supports the general view that FDI has grown rapidly only since the mid-1980s. The real value of global FDI inflows in 1996 was only twice as large as the 1987 level, compared with 2.5 times if FDI is expressed in nominal terms. The distribution of FDI inflows between developed and developing countries does not show remarkable differences between real and nominal FDI flows. The relative importance of developing countries remains the same when FDI inflows are expressed in real terms.

Revaluing FDI stocks in real terms is even more complicated. Data on FDI stocks collected by countries are, in most cases, unadjusted book values. They reflect the prices of assets etc., at the time when the investment was made. Before making any attempt to estimate constant-price

Figure I.16. FDI inflows in nominal and real prices,^a 1971-1996
(Billions of dollars)



Source: UNCTAD, FDI/TNC database.

^a Deflated by the unit value index of imports, with 1987 as the base year.

FDI stock, it is therefore necessary to adjust book values to current-period prices. Australia and the United States have to date estimated FDI stocks in current prices. The United States Department of Commerce has revalued historical-cost (valued in the prices at the time of acquisition) FDI positions on the basis of current costs and market values.¹⁸ This estimation, however, does not show FDI stocks in real prices, but only reflects current-period prices of direct investment positions.

In the absence of a method of estimating real FDI stocks, the accumulation of real FDI flows is used here as a proxy. One way of doing this is to revalue changes in FDI stocks between consecutive years by a market-value index (e.g., a share-price index) and then to adjust these values using constant exchange rates (Gray and Rugman, 1994). The revalued FDI stock is an accumulation of adjusted flows. Another way is to cumulate real FDI flows adjusted by the import-price index as calculated

above. Cumulating real FDI flows for the period 1970-1996 gives rise to a real FDI stock valued at \$2.8 trillion in 1996, only 0.1 per cent lower than the value of the FDI stock calculated by cumulating nominal FDI flows. Neither method, however, takes into account the components of changes in the FDI stock, such as gross investments, retirements and depreciation (Bellak and Cantwell, 1996). Both methods of estimation give only rough approximations of the size of real FDI stocks.

2. The financing of investment in foreign affiliates

International production -- the location of value-added activities in a foreign country under the governance of TNCs -- comprises an integrated package of capital, technology, skills, managerial practices, trade links etc. that TNCs control when they produce abroad. This section attempts to estimate the *actual size* of annual investment abroad by TNCs -- the capital component of international production -- bearing in mind that this is only one element of international production and by itself does not denote the importance of that production in the world economy.

As discussed in the previous section, FDI data -- the commonly used measure of direct investment abroad by TNCs -- suffer from valuation and other data-related problems. They also do not reflect the actual size of investment in foreign affiliates from other, fundamental, perspectives. Specifically, they include funds involving only a TNC (parent firm and foreign affiliates) and exclude funds for investment raised outside the TNC. Given the many external sources of funds available to TNCs, funds used in direct investment projects that have been raised outside a TNC are likely to be quite significant. All this has considerable implications when assessing the importance of the capital component of international production in relation to domestic investment or other economic variables.

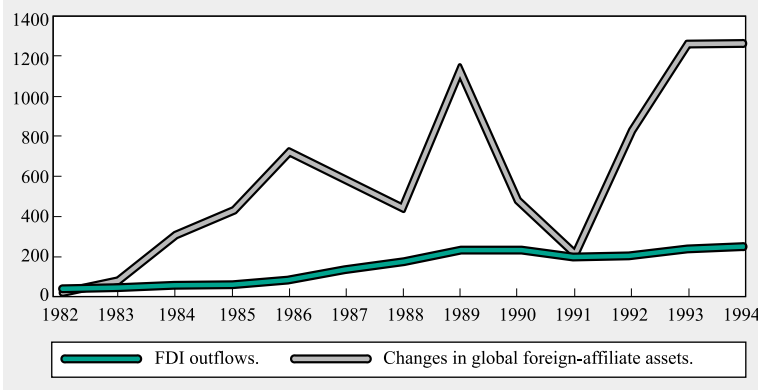
Direct investment abroad, as currently measured by FDI data, is estimated on the basis of financial transactions between parent firms and their foreign affiliates in the form of equity or loans, or earnings of affiliates that are not repatriated. Specifically, it comprises equity capital that includes capitalized investment "in kind" (e.g., capital goods), intra-firm loans (loans from parent firms to foreign affiliates or from foreign affiliates to parent firms) and reinvested earnings of foreign affiliates (earnings that are retained and not repatriated, usually, but not necessarily, invested in direct investment projects in the host country). But foreign affiliates can be financed from other sources as well. Among these are: loans obtained by parent firms or foreign affiliates from commercial financial institutions in host or third countries; funds raised by parent firms or foreign affiliates in host or third country capital markets; and loans received by foreign affiliates from home country financial institutions.

The importance of funds raised from these sources is apparent from an examination of how the total assets of majority-owned (non-bank) foreign affiliates of United States-based TNCs are financed (annex table A.7). In 1994, the latest year for which a complete breakdown is available, parent firms financed slightly more than one-third of the value of the total assets of their foreign affiliates. (That share includes the parent firms' share of their affiliates retained earnings.) Most of these assets were financed by debt instruments: around 30 per cent of the assets was financed by financial institutions located in the country of the foreign affiliate. Retained earnings of foreign affiliates (including the share of owners other than the parent firm) financed 15 per cent of these assets.

This suggests that the value of capital that TNCs mobilize and control abroad annually in direct investment projects can be approximated by looking at year-to-year changes in total assets of foreign affiliates. The value of these assets reflects funds from sources other than the

TNC itself, and as such it gives a more accurate picture of the size of annual investment abroad by TNCs. Changes in worldwide foreign-affiliate assets, estimated on the basis of United States and German data, indicate that annual investment abroad by TNCs are, in some years, considerably above the levels indicated by FDI flows alone (figure I.17). This confirms the picture that emerges from the financial composition of total assets of United States affiliates abroad, namely, that sources of funds other than the TNC itself (parent firm and foreign affiliates) finance nearly two-thirds of foreign-affiliate total assets (annex table A.7).¹⁹

Figure I.17. World FDI outflows and changes in global foreign-affiliate assets,^a 1982-1994
(Billions of dollars)

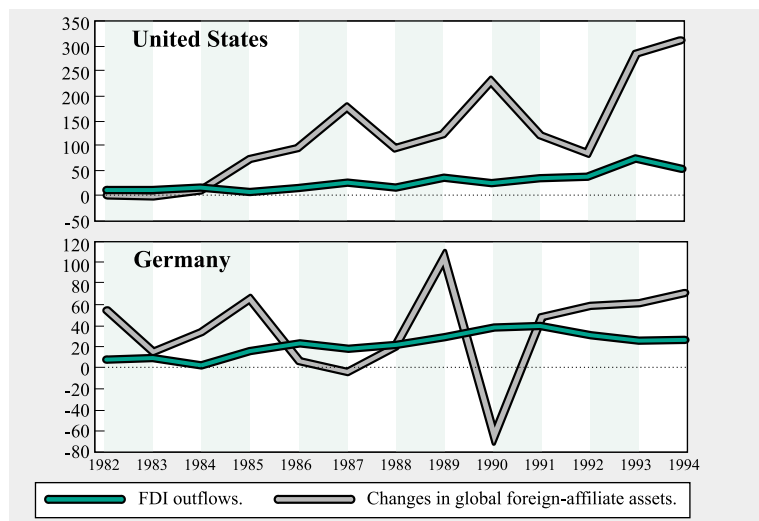


Source: UNCTAD, FDI/TNC database and UNCTAD estimates.

^a Between consecutive years. Global assets are estimated by applying the share of world FDI stock accounted for by Germany and the United States to the foreign-affiliate assets of TNCs based in these countries. The data are for non-bank foreign affiliates only.

For the United States alone, the value of changes in majority-owned (non-bank) foreign-

Figure I.18. United States and German FDI outflows and changes in foreign-affiliate assets^a between consecutive years, 1982-1994
(Millions of national currency)



Source: UNCTAD, based on United States, Department of Commerce, *U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and their Foreign Affiliates* (Washington, D.C.: USGPO), various issues; and Deutsche Bundesbank, *Kapitalverflechtung mit dem Ausland* (Frankfurt am Main: Deutsche Bundesbank), various issues.

^a Non-bank foreign affiliates only.

^b Data include assets of credit institutions until 1988.

affiliate total assets between consecutive years is considerably higher (and fluctuates more) than the value of FDI outflows (figure I.18). The change in the value of foreign-affiliate assets between 1992 and 1993, for example, was around \$290 billion, almost four times the level of the 1993 FDI outflow. The same ratio applies to Germany, where FDI outflows are considerably smaller than the value of changes in foreign-affiliate assets (figure I.18).

The value of changes in global foreign-affiliate assets between consecutive years, a proxy for the annual value of global investment abroad regardless of how it is financed, suggests that the actual size of investment in foreign affiliates is considerably higher than the size of FDI outflows. This is corroborated further by looking at country-level information on the actual size of funds obtained by

TNCs from various sources for financing their foreign affiliates. (With the exception of limited information available for the United States and Japan, no other country provides such data.) As an illustration for the United States, if all means of financing foreign affiliates are taken into account, the size of investment abroad in 1994 would be more than \$200 billion, around four times higher than the size of FDI outflows (\$51 billion) reported in that year (table I.6). (Virtually the same ratio applies to inward FDI in the United States: the reported inflows of \$50 billion in 1994 compare with \$170 billion of the estimated actual size (United States, Department of Commerce, 1996b).) Interestingly, the value of funds raised in host countries (e.g., loans from commercial banks) is slightly more than the size of all FDI outflows, while the value of funds raised in countries other than the home or host, is more than twice as high as the level of all FDI outflows. This underlines the importance of sources other than those captured by FDI data.

Table I.6. Financing direct investment abroad by United States and Japanese TNCs, 1994 and 1992
(Millions of dollars)

	United States, 1994	Japan, 1992 ^a
Transnational corporations	51 007 ^b	16 925
Equity outflows	12 666	17 166
Reinvested earnings	31 730	..
Intra-firm loans	6 611	- 238
Other home-country sources	-22 808 ^c	4 088 ^d
Host-country sources	59 394 ^c	3 041 ^e
Sources in other countries	117 647 ^c	43 222 ^f
Total	205 240	67 276

Sources: UNCTAD, based on United States, Department of Commerce, 1997; Japan, MITI, 1994; and UNCTAD, FDI/TNC database.

^a Fiscal year.

^b "In kind" capital contributions of parent firms to their affiliates and conversions of intra-company debt to equity are included in the equity component of FDI. Excluding the finance industry of the Netherlands Antilles.

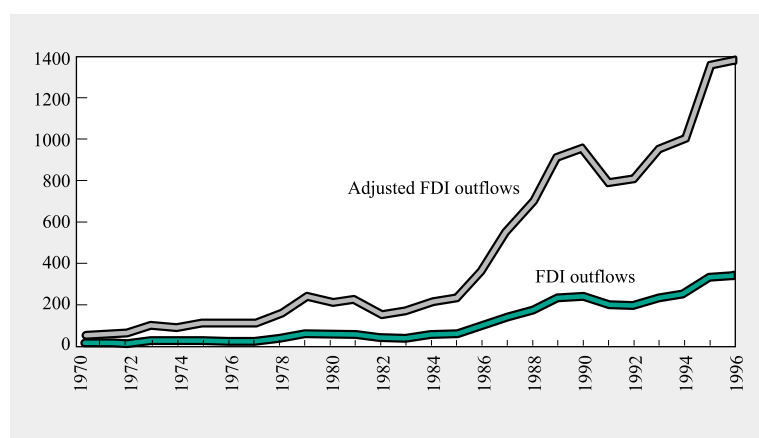
^c Calculated as changes in financial position of foreign affiliates between consecutive years. The data are for majority-owned non-bank foreign affiliates only. Therefore, the data are not strictly comparable to those in the first four lines which are based on all foreign affiliates.

^d Long-term loans from non-Japanese parent firms.

^e Long-term loans from local banks and affiliates of Japanese banks in host country.

^f Debentures and corporate bonds in home, host or other country plus long-term loans in other countries.

Figure I.19. Actual flows of investment abroad by TNCs, 1970-1996
(Billions of dollars)



Source: UNCTAD, FDI/TNC database.

Likewise, the capital mobilized by Japanese TNCs for their foreign affiliates in 1994, at around \$67 billion, is about four times bigger than the FDI outflow figure suggests. Although the country of origin of sources of investment is less clear cut than for the United States, funds raised in host countries are nearly twice as large as the value of FDI outflows. Sources of funds other than those in the home and host country are also significant, although for Japan their value might be misleading in that they include funds sourced in the home or host country.

The ratio of annual investment in foreign affiliates, using all capital sources of FDI outflows for both Japan and the United States, to FDI flows as reported in balance of payments, has been stable over time, at approximately 4 to 1. On the assumption that this ratio applies to all countries, the actual value of investment made by TNCs abroad -- the capital component of international production -- can, therefore, be estimated to be in the neighbourhood of \$1.4 trillion in 1996 (figure I.19). This estimate is in line with the earlier estimate calculated on the basis of changes in total foreign-affiliate assets between consecutive years (figure I.17).

Although estimates of the size of actual investment in foreign affiliates, regardless of how it is being financed, suffer from various drawbacks (e.g., valuation issues in the case of foreign-affiliate assets; the recognition that developing-country TNCs may rely more on their parent firms for capital than on sources located in the host country or other countries), they point to the fact that the level of investment in foreign affiliates by TNCs is significantly higher than that reflected by FDI outflow data alone. This implies that foreign investment by TNCs is more important in today's world economy than that shown by the various conventional indicators (see section A.1).

C. The largest transnational corporations

1. Highlights of the world's top 100 and the top 50 developing-country transnational corporations

For the fifth consecutive year, Royal Dutch Shell (United Kingdom/Netherlands) topped the list of the largest 100 TNCs worldwide ranked by foreign assets (table I.7).²⁰ Daewoo Corporation (Republic of Korea) led the largest 50 TNCs originating from developing countries for the second consecutive year (table I.8). The largest TNCs control the bulk of FDI stock in many major home countries: in most of the countries for which data are available, the top 25 outward investors control over a half of the outward FDI stock (table I.9). For smaller home countries the share controlled by the top 50 TNCs may be over 70 per cent.

For the first time, the list of the top 100 TNCs includes two TNCs from developing countries -- Daewoo Corporation, a diversified firm with activities in many industries, and Petroleos de Venezuela S.A., a state-owned petroleum firm. Their rank in the top 100 TNCs list was 52 and 88, respectively. On average, a member of the top 100 club is about 10 times larger, in terms of total assets, than a member of the top 50 club.

- *Foreign assets.* Total foreign assets of the top 100 TNCs amounted to \$1.7 trillion in 1995, compared to \$79 billion total foreign assets of the top 50 TNCs based in developing countries. Between 1993 and 1995,²¹ foreign assets of the top 100 TNCs increased by 30 per cent; the corresponding increase for the top 50 developing-country TNCs was 280 per cent.²² The ratio of foreign to total assets increased from 0.34 in 1993 to 0.41 in 1995 (the corresponding share for the top 50 developing-country TNCs rose from 0.1 to 0.17), highlighting the continuous trend towards increased transnationality (table I.10).
- *Foreign sales.* Total foreign sales of the top 100 TNCs amounted to \$2 trillion in 1995 (foreign sales of the top 50 developing-country TNCs were \$120 billion). Foreign sales of the top 100 TNCs increased by 26 per cent between 1993 and 1995. The ratio of foreign-to-total sales increased from 0.43 in 1993 to 0.48 in 1995 and from 0.21 to 0.34 for

Table I.7. The top 100 TNCs ranked by foreign assets, 1995
(Billions of dollars and number of employees)

Ranking by: For. assets	Index ^a	Corporation	Economy	Industry ^b	Assets		Sales		Employment		Index ^a
					Foreign	Total	Foreign	Total	Foreign	Total	
1	17	Shell, Royal Dutch ^c	United Kingdom/Netherlands	Oil, gas, coal and rel. services	79.7	117.6	80.6	109.9	81000	104000	73.0
2	83	Ford Motor Company	United States	Automotive	69.2	238.5	41.9	137.1	103334 ^e	346990	29.8
3	87	General Electric Company	United States	Electronics	69.2	228.0	17.1	70.0	72000	222000	29.1
4	22	Exxon Corporation	United States	Oil, gas, coal and rel. services	66.7	91.3	96.9	121.8	44000	82000	68.8
5	86	General Motors	United States	Automotive	54.1	217.1	47.8	163.9	252699	745000	29.3
6	27	Volkswagen AG	Germany	Automotive	49.8	58.7	37.4	61.5	114000	257000	63.4
7	43	IBM	United States	Computers	41.7	80.3	45.1	71.9	112944	225347	54.9
8	78	Toyota Motor Corporation	Japan	Automotive	36.0	118.2	50.4	111.7	33796	146855	32.9
9	1	Nestlé SA	Switzerland	Food	33.2	38.2	47.8	48.7	213637	220172	94.0
10	71	Mitsubishi Corporation	Japan	Diversified	... ^d	79.3	51.0	124.9	3859	9241	39.5
11	18	Bayer AG	Germany	Chemicals	28.1	31.3	19.7	31.1	78000	142900	69.3
12	6	ABB Asea Brown Boveri Ltd.	Switzerland	Electrical equipment	27.2	32.1	29.4	33.7	196937	209637	88.6
13	66	Nissan Motor Co., Ltd.	Japan	Automotive	26.9	63.0	24.9	56.3	60795 ^e	139856	43.5
14	40	Elf Aquitaine SA	France	Oil, gas, coal and rel. services	26.9	49.4	27.8	42.5	40650	85500	55.8
15	32	Mobil Corporation	United States	Oil, gas, coal and rel. services	26.0	42.1	48.4	73.4	26300	50400	60.0
16	70	Daimler-Benz AG	Germany	Automotive	26.0	66.3	45.6	72.1	68907	310993	41.5
17	8	Unilever ^f	United Kingdom/Netherlands	Food	25.8	30.1	42.7	49.7	276000	307000	87.1
18	9	Philips Electronics N.V.	Netherlands	Electronics	25.2	32.7	38.4	40.1	221000	265100	85.4
19	10	Roche Holding AG	Switzerland	Pharmaceuticals	24.5	30.9	12.0	12.5	40422	50497	85.1
20	54	Fiat Spa	Italy	Automotive	24.4	59.1	26.3	40.6	95930	248180	48.2
21	59	Siemens AG	Germany	Electronics	24.0	57.7	35.5	62.0	162000	373000	47.4
22	33	Sony Corporation	Japan	Electronics	22.7	51.2	30.3	43.3	90000	151000	59.1
23	30	Alcatel Alsthom	France	Electronics	22.7	51.2	24.2	32.1	117400	191830	60.3
24	53	Hoechst	Germany	Chemicals	21.9	36.7	13.4	36.3	100035 ^e	161618	48.3
25	68	Renault SA	France	Automotive	21.2	44.6	19.1	36.8	40066	139950	42.7
26	62	Philip Morris	United States	Food/tobacco/beverages	19.5	53.8	27.7	66.1	88201	151000	45.5
27	24	British Petroleum	United Kingdom	Oil, gas, coal and rel. services	19.3	28.9	34.8	57.0	41350	58150	66.3
28	67	Du Pont (E.I.) De Nemours	United States	Chemicals	17.8	37.3	20.6	42.2	35000	105000	43.3
29	36	BASF AG	Germany	Chemicals	17.6	29.3	23.5	32.3	42850	106565	57.7
30	4	Seagram Company Ltd.	Canada	Beverages	17.5	21.4	9.5	9.7	14447 ^e	16100	89.7
31	23	B.A.T. Industries Plc	United Kingdom	Tobacco	17.5	55.1	29.3	36.3	155162	170412	67.9
32	79	Mitsui & Co., Ltd.	Japan	Diversified	16.6	68.5	66.6	163.3	3696 ^e	11378	32.5
33	28	Rhone-Poulenc SA	France	Chemicals/pharmaceuticals	16.1	27.6	12.4	17.0	47009	82556	62.8
34	38	BMW	Germany	Automotive	15.6	28.5	22.5	32.2	52416 ^e	115763	56.7
35	46	Honda Motor Co., Ltd.	Japan	Automotive	15.5	33.7	23.5	39.6	50937 ^e	96800	52.6
36	92	Itochu Corporation	Japan	Trading	15.1	72.0	45.1	186.6	2649	9994	23.9
37	29	TOTAL SA	France	Oil, gas, coal and rel. services	15.0	28.4	19.6	27.2	30215	53536	60.5
38	34	Ciba-Geigy AG	Switzerland	Chemicals	14.9	26.5	7.5	17.5	63674	84077	58.2
39	81	Nissho Iwai Corporation	Japan	Trading	... ^d	47.2	29.5	89.1	2103 ^e	6684	31.5

/...

(Table I.7, cont'd)

Ranking by: For. assets	Index ^a	Corporation	Economy	Industry ^b	Assets		Sales		Employment		Index ^a
					Foreign	Total	Foreign	Total	Foreign	Total	
40	95	Hitachi, Ltd.	Japan	Electronics	14.7	102.7	20.5	94.7	80000	331673	20.0
41	16	News Corporation Ltd.	Australia	Media	14.5	24.1	9.0	10.3	22062 ^e	30000	73.5
42	89	ENI Group	Italy	Oil, gas, coal and rel. services	...	55.9	12.4	37.3	15713 ^e	86422	25.6
43	76	Chevron Corporation	United States	Oil, gas, coal and rel. services	13.8	34.3	11.9	36.3	12434	43019	34.0
44	39	Dow Chemical Company	United States	Chemicals	13.5	23.6	11.2	20.2	22185	39500	56.2
45	91	Marubeni Corporation	Japan	Trading	13.4	71.0	42.8	144.9	2307 ^e	9533	24.2
46	51	Hewlett-Packard Company	United States	Computers	13.0	24.4	17.6	31.5	42049	102300	50.0
47	61	Texaco Incorporated	United States	Oil, gas, coal and rel. services	12.2	24.9	18.2	35.6	10460	28247	45.8
48	98	AT&T Corp.	United States	Telecommunications	12.1	62.7	8.7	51.4	54371 ^e	300000	18.1
49	48	Procter & Gamble Company	United States	Diversified	12.1	28.1	16.8	33.4	62000	99200	51.9
50	45	Robert Bosch GmbH	Germany	Automotive	...	19.9	14.0	25.0	66000	158372	52.7
51	85	Sumitomo Corporation	Japan	Trading	12.0	50.7	58.4	152.5	...	11200 ^e	29.5
52	56	Daewoo Corporation	Republic of Korea	Diversified	11.9	28.9	8.2	26.0	28100	39920	47.7
53	21	Saint-gobain SA	France	Construction	11.7	18.6	9.6	13.5	67064	89852	69.7
54	3	Holderbank Financiere	Switzerland	Construction	11.5	12.5	6.5	7.0	40473	43923	92.1
55	14	Cable and Wireless Plc	United Kingdom	Telecommunication	11.2	13.8	5.9	8.5	30466	39636	75.6
56	77	Matsushita Electric	Japan	Electronics	11.1	75.6	28.9	64.1	107530	265538	33.5
57	69	Hanson Plc	United Kingdom	Construction	11.1	37.4	8.5	15.8	27034 ^e	65000	41.6
58	7	Electrolux AB	Sweden	Electronics	10.7	12.4	15.0	16.3	97351	112300	88.3
59	15	Volvo AB	Sweden	Automotive	10.7	20.7	21.8	25.6	67129	79050	73.8
60	55	Xerox Corporation	United States	Machinery and equipment	10.4	26.0	9.2	16.6	40717 ^e	85200	47.8
61	65	BCE Inc.	Canada	Telecommunications	10.2	28.4	10.7	18.1	46000	121000	44.4
62	82	Mitsubishi Motors Corp.	Japan	Automotive	10.2	27.7	7.8	33.0	8587 ^e	28383	30.3
63	74	International Paper	United States	Paper	10.1	24.0	5.5	19.8	30068	81500	35.6
64	2	Thomson Corporation	Canada	Publishing and printing	9.6	10.0	6.7	7.2	40000	44400	93.3
65	19	Grand Metropolitan Plc	United Kingdom	Food/beverages	9.5	17.5	11.4	12.6	45978 ^e	63533	72.4
66	90	Amoco Corporation	United States	Oil, gas, coal and rel. services	9.1	29.8	6.7	31.0	8872	42689	24.3
67	35	Michelin	France	Mechanical rubber goods	8.7	14.2	10.9	13.2	35091 ^e	114397	58.1
68	94	Nippon Steel Corporation	Japan	Metal	...	42.0	5.6	27.5	8203 ^e	27583	23.5
69	13	Glaxo Wellcome Plc	United Kingdom	Pharmaceuticals	8.4	13.2	11.1	12.1	40392	54359	76.5
70	88	Fujitsu Limited	Japan	Electronics	8.4	40.3	10.3	35.1	50000	165000	24.9
71	42	McDonald's Corporation	United States	Recreation	8.2	15.4	5.3	9.8	125000 ^e	212000	55.5
72	57	Motorola, Inc.	United States	Electronics	8.3	22.8	17.0	27.0	63200	142000	47.9
73	50	Johnson & Johnson	United States	Chemicals/pharmaceuticals	8.2	17.9	9.7	18.8	44300	82300	50.3
74	5	Solvay SA	Belgium	Chemicals	...	8.9	8.8	9.3	36608	38616	89.6
75	52	Canon Electronics Inc.	Japan	Computers	8.0	23.9	14.1	21.0	35101	72280	49.6
76	26	BTR Plc	United Kingdom	Chemicals	7.9	15.3	11.0	14.0	81329 ^e	125065	65.0
77	80	BHP	Australia	Metals	7.8	21.8	4.4	12.7	12900	48500	32.3
78	12	Northern Telecom Ltd.	Canada	Telecommunication	7.7	9.4	9.2	10.7	42689	63715	78.4
79	84	Pepsico, Inc.	United States	Diversified	7.7	25.4	8.7	30.4	142008 ^e	480000	29.6
80	31	Coca-Cola Company	United States	Beverages	7.5	15.0	12.7	18.0	19238 ^e	32000	60.1

...

(Table I.7, cont'd)

Ranking by: For. assets	Index ^a	Corporation	Economy	Industry ^b	Assets		Sales		Employment		Index ^a
					Foreign	Total	Foreign	Total	Foreign	Total	
81	47	Ritz Cra [®]	United Kingdom/ Australia	Mining	7.3	15.8	4.7	9.3	31616	51492	52.5
82	20	Petrofina SA	Belgium	Oil, gas, coal and rel. services	7.3	11.5	15.0	18.7	9262	13653	70.4
83	73	Mannesmann AG	Germany	Metals	7.2	15.8	7.6	22.3	42000	122684	37.9
84	58	Carrefour SA	France	Trading	7.2	13.1	11.2	29.5	51200	102900	47.6
85	11	SCA	Sweden	Paper	7.2	10.2	8.3	9.1	27165	34857	79.7
86	25	Pharmacia & Upjohn, Inc.	United States	Pharmaceuticals	7.2	11.5	4.7	6.9	22893 ^e	35000	65.4
87	100	Chrysler Corporation	United States	Automotive	7.0	53.3	5.9	53.2	25000	126000	14.7
88	64	Petroleos De Venezuela	Venezuela	Diversified/trading	6.8	40.5	24.5	26.0	13420	60007	44.4
89	63	Groupe Danone SA	France	Food	6.7	19.0	8.6	16.2	32770 ^e	73823	44.4
90	49	Sara Lee Corporation	United States	Food	6.7	12.4	7.1	17.7	91439	149085	51.7
91	72	American Home Products	United States	Pharmaceuticals	6.6	21.4	5.4	13.4	23196	64712	35.8
92	96	Toshiba Corporation	Japan	Electronics	6.5	51.8	12.7	47.7	36437 ^e	186000	19.6
93	97	NEC Corporation	Japan	Electronics	6.3	43.8	11.3	41.1	21059	152719	18.6
94	41	Thomson SA	France	Electronics	6.3	17.9	10.7	14.4	55215	96000	55.6
95	99	GTE Corporation	United States	Telecommunication	6.2	37.0	2.6	20.0	15751 ^e	106000	14.9
96	93	Atlantic Richfield	United States	Oil, gas, coal and rel. services	6.2	24.0	3.4	15.8	5168 ^e	22000	23.5
97	37	ICI	United Kingdom	Chemicals	6.1	14.7	9.5	15.9	45900	64800	57.4
98	60	United Technologies	United States	Aerospace	6.0	16.0	10.3	22.8	99700	170600	47.0
99	75	RJR Nabisco Holdings Corp.	United States	Food and tobacco	5.8	31.5	4.7	16.0	42066	76000	34.4
100	44	Pechiney SA	France	Metals	5.8	11.4	8.6	13.8	17979	37214	59.9

Source: UNCTAD, in cooperation with Erasmus University.

- a The index of transnationality is calculated as the average of ratios of foreign assets to total assets, foreign sales to total sales and foreign employment to total employment.
- b Industry classification for companies follows the United States Standard Industrial Classification as used by the United States Security Exchange Commission (SEC).
- c Foreign sales are outside Europe whereas foreign employment figures are outside United Kingdom and the Netherlands.
- d Data on foreign assets are either suppressed to avoid disclosure or they are not available. In case of non-availability, they are estimated on the basis of the ratio of foreign to total sales, foreign to total employment and similar ratios for the transnationality index.
- e Data on foreign employment are either suppressed to avoid disclosure or they are not available. In case of non-availability, they are estimated on the basis of the ratio of foreign to total sales, foreign to total assets and similar ratios for the transnationality index.
- f Foreign assets, sales and employment figures are outside the United Kingdom and the Netherlands.
- g Foreign assets, sales and employment figures are outside the United Kingdom and Australia.

Table I.8. The top 50 TNCs based in developing economies ranked by foreign assets, 1995
(Millions of dollars and number of employees)

Ranking by: For. assets	Index ^a	Corporation	Economy	Industry ^b	Assets		Sales		Employment		Index ^a
					Foreign	Total	Foreign	Total	Foreign	Total	
1	9	Daewoo Corporation ^c	Republic of Korea	Diversified/trading	11946.0	28898.0	8202.0	26044.0	28140	38920	48.4
2	12	Petroleos de Venezuela SA	Venezuela	Oil, gas, coal and rel. services	6796.0	40502.0	24488.0	26041.0	13420	60007	44.4
3	8	Cemex SA	Mexico	Construction	4226.7	8407.9	1435.2	2575.8	7300	17212	49.5
4	2	First Pacific Company Ltd.	Hong Kong, China	Electronics Parts	3779.2	6821.2	4694.3	5249.7	33467	45911	72.6
5	13	LG Electronics, Ltd.	Republic of Korea ^d	Electronics	^e 15084.8	7100.0	12199.9	14113	34961	40.4	40.4
6	7	Jardine Matheson Holdings Ltd.	Bermuda	Diversified	3092.6	11582.7	7417.3	10636.0	140000 ^g	200000	55.5
7	14	Hutchison Whampoa Limited	Hong Kong, China	Diversified/retailer	2900.0 ^e	11699.0	1632.2	4531.0	16115	29137	38.7
8	23	YPF Sociedad Anonima	Argentina	Oil, gas, coal and rel. services	2551.0	11572.0	1960.0	4970.0	2275	9256	28.7
9	44	China State Construction Engineering Corp.	China	Diversified/construction	2379.4	^h 1103.9	^h 1103.9	^h 36085.0	^h 2083	^h 25298	13.4
10	35	Sunkyoung Group	Republic of Korea	Energy/trading/chemicals	2258.0	27729.0	8635.0	36085.0	2083	25298	13.4
11	17	Cathay Pacific Airways Limited	Hong Kong, China	Transportation	2133.0	6267.0	1898.0	3904.0	3877	14744	36.3
12	34	Samsung Electronics Co., Ltd.	Republic of Korea ^d	Electronics	^e 21894.6	4807.3 ^f	4807.3 ^f	24083.2	9177 ^g	71440	14.2
13	45	China Chemicals, Imp. & Exp., Corp.	China	Diversified/trading	2016.5 ^h	8317.6	^h 1274.0	23456.5	23	46226	3.8
14	42	Petroleo Brasileiro S/A - Petrobras	Brazil	Oil, gas, coal and rel. services	1881.5	31699.8	66.2	2840.2	1625	10966	14.8
15	32	Singapore Telecommunications Ltd.	Singapore	Utilities	1546.2	5661.7	66.2	2840.2	1625	10966	14.8
16	16	Hyundai Corporation	Republic of Korea ^d	Diversified/machinery	1485.2	11480.0	2432.7	15130.7	923	44736	10.4
17	38	Companhia Vale Do Rio Doce	Brazil	Mining	1471.0	14564.0	1407.0	5214.0	90	15573	12.6
18	19	Grupo Televisa S.A. De C.V.	Mexico	Media	1385.0	3215.0	280.0	1149.0	6981 ^g	20700	33.7
19	18	New World Development Co. Limited	Hong Kong, China	Diversified/construction	1160.7	12395.6	470.9	2159.3	33550	45000	35.2
20	11	Citic Pacific Ltd.	Hong Kong, China	Diversified/trading/automotive	1069.6	5093.5	693.7	1401.1	7900	11500	46.4
21	1	Panamerican Beverages Inc.	Mexico	Beverages	1003.6	1372.1	1236.3	1608.3	21001 ^g	28000	75.0
22	3	Gruma S.A. De C.V.	Mexico	Food	992.5	1095.5	537.7	995.1	9834 ^g	13598	72.3
23	10	Dairy Farm International Holdings Ltd.	Hong Kong, China	Retailing	965.8	2934.8	3979.5	6235.5	24956	51600	48.4
24	36	Companhia Cervejaria Brahma	Brazil	Beverages	962.8	3310.2	173.2	2304.7	541.0	8467.0	56.7
25	6	Fraser & Neave Limited	Singapore	Beverages	957.0	3199.0	1066.0	1809.0	8190	10064	56.7
26	21	Acer Group	Taiwan Province of China	Electronics	^e 3645.0	2493.6 ^f	2493.6 ^f	5825.0	4324 ^g	15352	31.7
27	29	Keppel Corporation Limited	Singapore	Diversified	^e 11217.7	269.7	269.7	1701.6	3420 ^g	13128	16.5
28	30	San Miguel Corporation	Philippines	Beverages	840.7	3328.4	324.5 ^f	2953.0	3536	31485	15.9
29	5	Guangdong Investment Limited	Hong Kong, China	Miscellaneous	839.6	1519.7	642.3	1059.1	6008	7434	65.6
30	33	South African Breweries Limited	South Africa	Beverages	819.0	5062.0	1127.0	7663.0	12983	110100	14.2
31	20	Tatung Co.	Taiwan Province of China	Electrical	813.0 ^e	2929.2	1083.0 ^f	3099.9	9543 ^g	27254	32.6
32	26	Sime Darby Berhad	Malaysia	Diversified	755.9	10631.8	2169.8	4320.5	6900	28635	27.1
33	46	China Metals and Minerals	China	Diversified/trading	754.0	^h 2390.3	^h 2390.3	^h 2850.0	^h 8425	^h 14619	0.0
34	15	Dong-ah Construction Ind. Co.	Republic of Korea ^d	Construction	738.0	4256.0	1065.0	2850.0	8425	14619	37.4
35	27	Genting Berhad	Malaysia	Hotels and motels	691.5	2282.9	61.5	982.3	61.5	982.3	18.3

/...

(Table I.8, cont'd)

Ranking by: For assets Index ^a	Corporation	Economy	Industry ^b	Assets		Sales		Employment		
				Foreign	Total	Foreign	Total	Foreign	Total	Index ^a
36	China Harbours Engineering Group	China	Diversified/construction	596.0	h	442.5	h	h	0.0	
37	Wing on Company International Limited	Hong Kong, China	Retailers	576.0	1344.0	40.0	366.0	1435	4006	
38	Barlow Limited	South Africa	Diversified	567.1	2320.5	1525.4	4369.0	7711	30660	
39	China Shougang Group	China	Diversified/metals	468.7	h	1127.0	h	h	h	
40	China Cereals, Oils, Food Import and Export	China	Diversified/trading	467.3	h	6230.0	h	h	h	
41	Sadia Concordia S/A Industria	Brazil	Food	445.0	1784.0	397.0	2904.0	135	32767	
42	Creative Technology Ltd.	Singapore	Electronics	405.0	661.2	1175.0	1202.0	2048	4185	
43	Vitro Sociedad Anonima	Mexico	Miscellaneous	385.0	3129.0	393.0	1878.0	3703	31001	
44	Empresas CMPC S.A.	Chile	Pulp and paper	384.0	3110.0	260.0	1292.0	1919	10731	
45	Chinese Petroleum	Taiwan Province of China	Oil, gas, coal and rel. services	e	15406.0	248.0 ^f	11765.5	g	3651	
46	Grupo Celanese SA	Mexico	Chemicals	343.6	1056.3	559.4	1369.1	2607 ^g	7104	
47	Formosa Plastic Group	Taiwan Province of China	Chemicals	e	2325.6	241.0 ^f	1650.0	g	3449	
48	Hongkong and Shanghai Hotels Ltd.	Hong Kong, China	Hotel/transportation	319.0	2712.0	55.1	297.0	3014	5772	
49	China Foreign Trade Transportation Corp.	China	Diversified/transportation	312.6	h	318.6	h	h	h	
50	Ssangyong Cement Industrial Co., Ltd.	Republic of Korea ^d	Construction	307.3	4001.0	207.6	4170.0	658	4488	

Source: UNCTAD, in cooperation with Erasmus Univesity.

- ^a The index of transnationality is calculated as the average of ratios of foreign assets to total assets, foreign sales to total sales and foreign employment to total employment.
- ^b Industry classification for companies follows the United States Standard Industrial Classification which is used by the United States Stock Exchange Commission (SEC).
- ^c Consolidated data are provided which include data for Daewoo Electronics and Daewoo Heavy Industries, amongst others.
- ^d The accounting standards of the Republic of Korea do not require the publication of consolidated financial statements including for both domestic and foreign affiliates. The figures here are estimates of consolidated financial statements as provided by the companies in response to a survey by UNCTAD.
- ^e Data on foreign assets are either suppressed to avoid disclosure or they are not available. In case of non-availability, they are estimated on the basis of the ratio of foreign to total sales, foreign to total employment and similar ratios for the transnationality index.
- ^f Data on foreign sales are either suppressed to avoid disclosure or they are not available. In case of non-availability, they are estimated on the basis of the ratio of foreign to total assets, foreign to total employment and similar ratios for the transnationality index.
- ^g Data on foreign employment are either suppressed to avoid disclosure or they are not available. In case of non-availability, they are estimated on the basis of the ratio of foreign to total sales, foreign to total assets and similar ratios for the transnationality index.
- ^h No data available.
- ⁱ Within the context of this list South Africa is treated as a developing country. Data for some important South African mining companies were not available.

the top 50 developing-country TNCs. The top foreign sellers in both lists are TNCs operating in the petroleum industry.

- **Foreign employment.** Total foreign employment of the top 100 TNCs amounted to some 5,800,000 in 1995 and 470,000 for the top 50 developing-country TNCs.²³ For the top 100 TNCs, the increase in foreign employment between 1993 and 1995 was 4 per cent, while total employment

decreased by 4 per cent. The ratio of foreign to total employment therefore increased slightly from 0.44 in 1993 to 0.48 in 1995.²⁴ Firms in the electronics industry are by far the largest employers abroad, accounting for around 24 per cent of all foreign employment of the top 100 TNCs (and, correspondingly, 16 per cent for the top 50 developing-country TNCs).

- **Trends by country of origin.** The list of the top 100 TNCs is dominated by a few countries in the European Union, the United States and Japan: 88 per cent of the foreign assets and 87 of the listed companies are accounted for by these countries (table I.11). Although the number of entries of TNCs based in the European Union, Japan and the United States has not changed much over the past five years, the country composition of the list has changed: while the number of the United States TNCs has remained almost the same,

the number of Japanese TNCs increased and that of the European Union TNCs declined. The list of the top 50 developing-country TNCs is dominated by the Republic of Korea, Hong Kong, China, Mexico and increasingly China. Some two-thirds of the foreign assets and 28 of the listed companies are accounted for by TNCs from these economies.

- **Trends by industry.** Petroleum and mining as well as electronics were among the largest industries in terms of foreign assets and sales in each of the lists (table I.12).²⁵

Table I.9. The share of top TNCs in outward FDI stock, selected countries, 1995
(Percentage)

Country	Top 5	Top 10	Top 15	Top 25	Top 50
Australia ^a	45.0	57.0	66.0	80.0	96.0
Austria	10.0	17.3	22.2	30.5	44.0
Canada	22.6	33.5	40.1	50.1	64.4
Finland	33.0	47.0	56.0	69.0	84.0
France	14.0	23.0	31.0	42.0	59.0
Germany	17.5	29.3	35.0	41.8	51.5
Norway	63.8	75.2	81.1	86.8	92.9
Sweden	23.0	37.0	48.0	59.0	76.0
United Kingdom	28.0	40.0	47.0	57.0	71.0
United States ^b	19.0	33.0	42.0	51.0	63.0

Source: UNCTAD, based on data provided by national central banks and statistical offices.

^a 1996.

^b Preliminary estimate on the basis of 1994 data and foreign-affiliate assets.

Table I.10. Transnationality index, by industry, 1993 and 1995
(Percentage)

Industry	Top 100 TNCs		Top 50 developing-country TNCs	
	1993	1995	1993	1995
All industries	47	51	19	32
Petroleum and mining	54	50	3	18
Food and beverages	61	61	16	37
Construction	72	68	23	28
Metals	45	38	5	-
Chemicals and pharmaceuticals	41	59	-	20
Automotive	60	44	-	-
Electronics	42	49	28	44

Source: UNCTAD, in cooperation with Erasmus University.

Three TNCs of each industrial sector feature among the top 5 firms in both lists. Automotives, as well as pharmaceuticals and chemicals, feature prominently, but more so in the list of the top 100 TNCs than in the list of the top 50 developing-country TNCs (table I.12).

Table I.11. Geographical concentration of TNCs by foreign assets, foreign sales, foreign employment and number of entries
(Percentage of total and number)

Top 100 TNCs				
Region/economy	Foreign assets	Foreign sales	Foreign employment	Number of entries
European Union	37	38	46	39
France	9	8	9	11
Germany	12	11	12	9
Netherlands	8	8	10	3
United Kingdom	12	12	15	11
Japan	16	26	10	18
United States	33	27	30	30
Top 50 developing-country TNCs				
Region/economy	Foreign assets	Foreign sales	Foreign employment	Number of entries
<i>South, East and South-East Asia</i>	65	63	50	34
<i>of which:</i>				
Singapore	5	2	3	4
Republic of Korea	28	27	14	7
China	9	17	-	7
Taiwan Province of China	3	3	3	4
Hong Kong, China	17	12	28	9
<i>Latin America</i>	29	29	-	15
<i>of which:</i>				
Brazil	6	3	-	4
Mexico	11	4	-	5
<i>Memorandum:</i>				
ASEAN	8	4	6	7

Source: UNCTAD, in cooperation with Erasmus University.

Table I.12. Distribution of foreign assets, foreign sales and foreign employment of the top 100 TNCs and the top 50 developing-country TNCs, by industry, 1995
(Percentage)

Industry	Foreign assets		Foreign sales		Foreign employment	
	Top 100	Top 50	Top 100	Top 50	Top 100	Top 50
Petroleum and mining	18	19	20	32	6	4
Food and beverages	8	8	9	4	16	12
Construction	2	10	1	4	2	11
Metals	2	1	1	3	1	-
Chemicals and pharmaceuticals	13	4	10	8	14	1
Automotive	21	1	17	1	17	2
Electronics	16	15	15	19	24	16

Source: UNCTAD, in cooperation with Erasmus University.

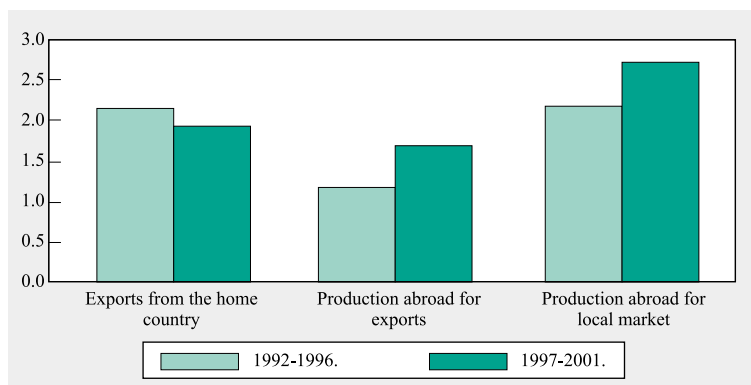
- **Transnationality.** Transnational corporations originating from small countries tend to be more transnationalized -- on the basis of a combined index of the ratios of foreign assets, foreign sales and foreign employment to the respective totals -- than TNCs from large countries. Nestlé SA (Switzerland) in food topped the list of the top 100 TNCs, and Panamerican Beverages Inc. (Mexico) topped the list of the 50 top developing-country TNCs on the basis of the transnationalization index. Firms in the list of the top 50 developing-country TNCs operating in the food industry have exhibited the biggest increase in transnationalization compared with other industries in both lists: from 16 per cent in 1993 to 37 per cent in 1995 (table I.10).²⁶

2. Future trends

The unprecedented increase in FDI flows makes it important for recipient countries to have as clear an understanding as possible of the likely pattern of future flows and the factors that determine where such investments will be made. A number of useful pointers are provided by a survey of TNC managers, undertaken in 1996 (UNCTAD, Invest in France Mission and Arthur Andersen, in collaboration with DATAR, 1997). The results suggest the following medium-term trends:

- **A rapid rise in the proportion of total sales generated from production abroad.** While only 28 per cent of the respondents derived an average of more than 60 per cent of revenues from foreign sales during the past five years, 53 per cent expect to do so in the year 2001.
- **A rapid rise in the proportion of production carried out abroad.** The survey points to further increases between now and 2001, while home-country exports are expected to remain constant overall (figure I.20).
- **A greater reliance on mergers, acquisitions, alliances and joint ventures as vehicles for international expansion** (figure I.21). The particularly rapid growth expected for international joint ventures -- in particular asset-augmenting joint ventures (Dunning, 1995) -- reflects TNCs' desire to share risks and costs, and the need for complementary partners when entering new countries (e.g., China), or developing new products requiring expertise in several different areas. Similar considerations apply to strategic alliances, inter-firm agreements and corporate partnering. Further corporate

Figure I.20. Future trends: significance of exports and production abroad, 1992-1996 and 1997-2001 (Number)



Source: UNCTAD, Invest in France Mission and Arthur Andersen, in collaboration with DATAR (1997).

Note: average of responses, where 0=not used and 4=very frequently used.

restructuring is expected to spur a continued growth of mergers and acquisitions in developed countries.

- **Continued emphasis on developing countries.**

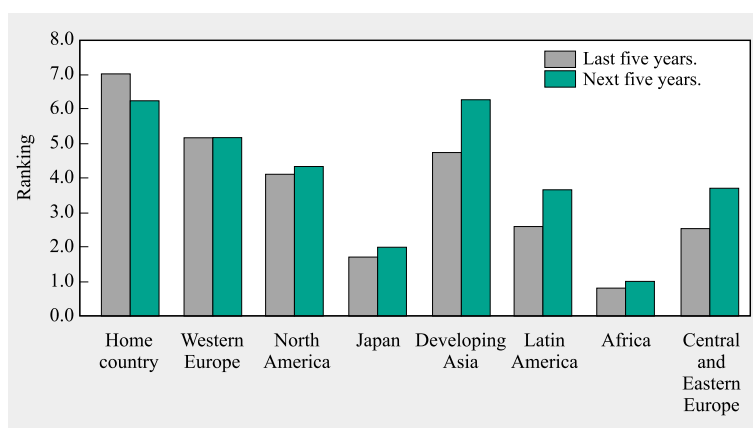
The survey points to a marked shift in priorities favouring international markets at the expense of domestic markets, with developing economies likely to be the main beneficiaries (figure I.22). Most

respondents indicated that an increasing amount of investment would be directed to developing Asia and, to a lesser extent, Latin America and Central and Eastern Europe, while there would be little change in the level of priority attached for investment in Western Europe and North America.²⁷

- **Market access remains the most important motive for the choice of location.** On average, the survey respondents placed almost twice as much weight on production for local markets as on labour cost-driven relocation. Not surprisingly, this preference is

particularly marked in the services sector. Market access is rated a higher priority, on average, than access to resources, especially low-cost labour.²⁸ Market size and growth and earnings prospects are identified as the top criteria followed by factors relating to the overall business environment. These include political and social stability, the legal framework, quality of the workforce and infrastructure, and local availability of goods and services.

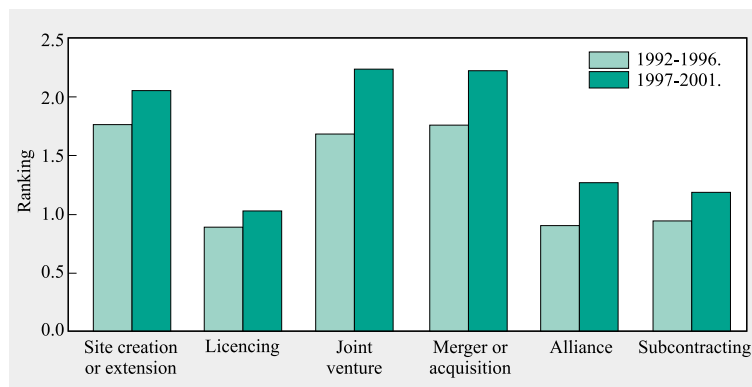
Figure I.22. Future trends: investment priorities, by area of location, 1992-1996 and 1997-2001
(Number)



Source: UNCTAD, Invest in France Mission and Arthur Andersen, in collaboration with DATAR (1997).

Note: average of responses, where 0=not used and 4=very frequently used.

Figure I.21. Future trends: main forms of investing abroad, 1992-1996 and 1997-2001
(Number)

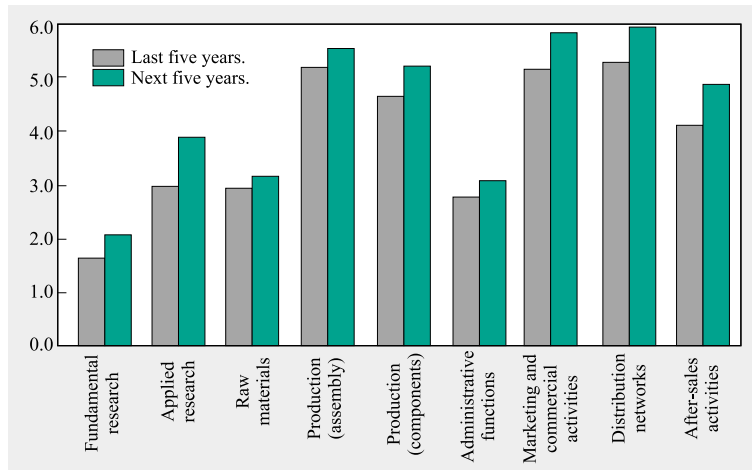


Source: UNCTAD, Invest in France Mission and Arthur Andersen, in collaboration with DATAR (1997).

Note: average of responses, where 0=not used and 4=very frequently used.

- **All corporate functions will experience greater internationalization,** although beginning from different levels (figure I.23).

Figure I.23. Future trends: internationalization efforts, by function, 1992-1996 and 1997-2001 (Number)



Source: UNCTAD, Invest in France Mission and Arthur Andersen, in collaboration with DATAR (1997).

Note: average of responses, where 0=not used and 4=very frequently used.

The survey findings show that significant impetus for FDI growth exists in practically all industries. However, there are important differences between groups of industries:

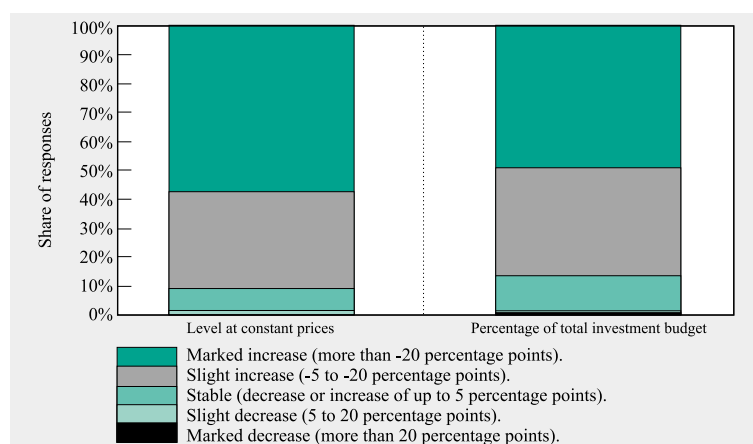
- Industries in which internationalization is still limited, but practically all the factors favouring a surge in FDI inflows are present: a shift in demand patterns favouring developing countries; massive corporate restructuring in developed countries; swift changes in technology and organizational approaches; and removal of FDI barriers allowing rapid international expansion. This category includes such industries as public utilities, especially telecommunications, and some non-financial services, such as media and retailing.
- Industries in which there are powerful factors favouring FDI growth, but internationalization has already progressed to a point at which the scope for further expansion is limited. These industries span all forms of manufacturing,²⁹ including those involving advanced technology.
- Industries in which obstacles to internationalization remain (e.g., in the form of regulatory constraints, such as in health care) and industries in which attempted international expansion has led so far to disappointing results.

The survey responses point to a general rise in FDI flows over the next five years, with outflows from the four main source regions increasing rapidly, and more so in the case of the newly industrializing Asian economies (figure I.24): fifty per cent of all respondents expect to increase FDI by over 20 per cent up to the year 2001, while 49 per cent consider that FDI will rise by over 20 percentage points as a proportion of their investment budgets. Sixty-nine per cent of companies in the sample based in the latter plan a considerable increase in investment abroad, compared with 57 per cent in Europe, 54 per cent in the United States and 48 per cent in Japan. For Asian TNCs, increased FDI is partly a response to a rise in domestic costs. High domestic costs are also a factor in Europe, as are expected Europe-wide restructurings in a number of

- ***The scope for internationalization and the scale of FDI remain positively correlated with the size of the company,*** although smaller firms will be stepping up investments abroad. European and United States companies with sales below \$1 billion plan to increase the proportion of foreign sales and foreign production. However, size still remains a key determinant of transnationalization.

- ***Dramatic increases in FDI in infrastructure, distribution, non-financial services and automobiles,*** but slower growth in financial services and real estate.

Figure I.24. Future trends: expected increases in FDI flows, 1996-2001
(Percentage)



Source: UNCTAD, Invest in France Mission and Arthur Andersen, in collaboration with DATAR (1997).

major industries and the desire to expand in developing Asian markets. Foreign expansion by United States firms will be driven by renewed competitiveness and sound finances, as well as the desire to increase the contribution of sales abroad.

Notes

- 1 Hong Kong became a Special Administrative Region of the People's Republic of China, on 1 July 1997, hereinafter referred to in this *Report* as Hong Kong, China.
- 2 Countries that attained a record high in FDI inflows in 1996 were: Cambodia, China, India, Indonesia, Republic of Korea, Lao People's Democratic Republic, Malaysia, Maldives, Pakistan, Singapore and Viet Nam in South, East and South-East Asia, and Argentina, Bolivia, Brazil, Chile, Colombia, Paraguay and Peru in Latin America.
- 3 Data reported by KPMG.
- 4 Ross Tieman, "Business draw \$38.5bn from overseas buyers", *Financial Times*, 20 January 1997.
- 5 Shown by the share of FDI projects accounted for by mergers and acquisitions, which has remained stable, at about 12 per cent between 1986 and 1992 (Japan, MITI, 1989 and 1994).
- 6 Data provided by IFR Securities Data Company, London and New York.
- 7 Some mergers and acquisitions were formed to exploit short-term commercial opportunities, while strategic partnerships have longer-term goals in view.
- 8 According to data collected by MERIT-CATI at the University of Maastricht (Netherlands). This trend is corroborated by data provided by the IFR Securities Data Company on the number of cross-border, non-equity strategic R&D partnerships, the type of partnership that comes nearest to the definition of strategic technology partnerships used by MERIT-CATI. The number of cross-border *equity* strategic R&D partnerships increased from 66 in 1990 to 228 in 1995 (IFR Securities Data Company, London and New York).
- 9 According to data provided by IFR Securities Data Company, London and New York. No data are presently available after 1993 from MERIT-CATI to corroborate this finding.
- 10 This figure is calculated as the value of gross product (value added) of United States affiliates divided by the United States FDI stock (United States, Department of Commerce, 1997).
- 11 For example, 42 per cent of exports by United States parent firms in 1994 and 43 per cent of exports by Japanese parent firms in fiscal year 1992 were directed to their foreign affiliates (United States, Department of Commerce, 1997 and Japan, MITI, 1994).

- 12 Non-arm's-length transactions refer to transactions associated with the international production within TNC systems (here, total sales of foreign affiliates and total intra-firm exports (exports to affiliated firms abroad) of parent firms) and arm's-length transactions refer to external trade only.
- 13 Besides royalties and fees for technology, there are a number of service transactions, several of which are closely related to technology functions and are of an intangible nature, such as research and development, training and management services. However, such data are often aggregated and not separately available for foreign affiliates and unaffiliated companies.
- 14 The growth rates of FDI inflows adjusted only for foreign-exchange changes by expressing them in SDRs, a basket of major countries' exchange rates, compared with the growth rates of nominal FDI inflows (in dollars) are as follows:

Item	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Nominal FDI inflows (dollars)	32	17	-9	-14	20	-4	50	64	17	20	4	-23	10	25	9	34	14
FDI inflows adjusted for foreign-exchange fluctuations (SDRs)	31	29	-3	-12	25	-3	30	49	12	26	-2	-23	6	27	7	25	15

Source: UNCTAD, FDI/TNC database and IMF, *International Financial Statistics*, various issues.

- 15 The World Bank has estimated real global FDI flows by deflating them with the world's import price index (World Bank, 1993, p.51).
- 16 For example, in Brazil, the implicit deflator for gross domestic investment was 0.003 in 1970, 0.011 in 1975 and 308,756 in 1990, with 1987 as the base year (100).
- 17 A caveat needs to be made, namely that not all FDI flows entail the purchase of assets whose real values fluctuate in tandem with prices of imported goods.
- 18 The current-cost method revalues a direct investment position by re-estimating the net stock of direct investment capital (tangible assets on the asset side of the balance sheet) at its current cost, while the market-value method revalues a direct investment position by re-estimating the owners' equity portion of the direct investment position at market value using indexes of stock-market prices. See, Landefeld and Lawson, 1991.
- 19 Strictly speaking, this share is underestimated because parent firms have a claim on only a part of assets of foreign affiliates, perhaps somewhere in the range of 25-30 per cent. In 1994, if the parent financing can be measured by taking the direct investment position as a percentage of total affiliates assets, parent firms financed 26 per cent of affiliate assets (\$621 billion/\$2,360 billion) (United States, Department of Commerce, 1997a).
- 20 Industrial and service TNCs other than financial services (banking, insurance etc.).
- 21 The first year for which data are available for the top 50.
- 22 This percentage increase may be biased upwards reflecting a more complete list of developing-country TNCs in 1995.
- 23 Foreign employment data on Chinese TNCs are not available and therefore not included in the total.
- 24 For the top 50 developing-country TNCs a similar calculation could not be undertaken because of insufficient data.
- 25 Firms that cannot be associated predominantly with a single industry are classified as "diversified". This category appears more frequently in the list of the top 50 developing-country TNCs than in the list of the top 100 TNCs.
- 26 Electronic sector TNCs in the top 50 TNCs outpaced their competitors in the top 100 TNCs considerably in terms of transnationality increases.
- 27 These conclusions are in accordance with those of a similar survey of the top 100 TNCs worldwide (UNCTAD, 1996a).
- 28 Similar conclusions emerge from other studies on the same subject. See in particular UNCTC (1992a) for a review of the literature on factors influencing FDI, and Jun and Singh (1996).
- 29 With the exceptions of automobiles and consumer goods, where investment can be expected to rise rapidly.