CHAPTER III

SECTORAL TRENDS

A. Overall trends

The rapid growth of foreign direct investment (FDI) has been accompanied by big changes in its sectoral composition (table III.1). During the 1950s, FDI was concentrated in the primary sector and resource-based manufacturing; today, it is mainly in services and in technology-intensive manufacturing. The shift towards services accelerated during the 1980s. They represented a quarter of the world stock of FDI at the beginning of the 1970s; 20 years later, their share was close to 50 per cent, and they were accounting for 55 to 60 per cent of annual flows.

This growth in services should not be allowed to obscure the strength of FDI in other sectors. In manufacturing, both the outward and inward stock of FDI in developed countries grew significantly during the second half of the 1980s. Moreover, in the early 1990s it was still manufacturing that had the largest inward stock of FDI in the main developing countries. As for the primary sector, it showed the fastest growth in the inward stock of FDI in developed countries during the 1980s (table III.1).

1. Explaining sectoral shifts

Shifts in the pattern of both inward and outward FDI broadly reflect structural changes in the nature of economic activity (Ozawa, 1992), with the primary sector declining in relative terms while services increase. However, the main home and host countries became predominantly service economies some time ago, whereas the surge of services FDI is relatively recent. Clearly, the FDI changes happened with a lag.

The nature of that lag reflects the different sectoral roles of trade and FDI as conduits of international integration. Where goods are concerned, by and large trade has preceded FDI as the main way of delivering them to foreign markets. In the case of services, this sequence was not really feasible, because so many of them are non-tradable. As a result, FDI was the only means to participate in international service transactions. But in many important service industries, and in both developed and developing countries, FDI was initially prohibited for strategic, political or cultural reasons. Consequently, the rise of FDI in services had to wait for the liberalization of major service industries to catch up with the domestic process of structural change.

In general, the pace and sequence of liberalization has depended on the size of the economy, the speed of technological and business change at the firm, industry and national levels, and political circumstances. With services, liberalization has followed distinct stages. Banking and other financial services have, historically, been the most international services and the earliest targets of liberalization. Over the post-war period, the growth of FDI in trade-related services has gradually caught up with the expansion of world trade. Now, with the liberalization of producer services, FDI is beginning to respond to the broader needs of transnational corporations (TNCs) competing in a global market-place.

Table III.1. Sectoral distribution of foreign-direct-investment stock for the largest developed home countries and the largest developed and developing host countries, 1970-1990
(Billions of dollars and percentage)

Group of countries and sectors	1970	1975	1980	1985	1990	1971-1975	1976-1980	1981-1985	1986-1990	1981-1990	1970	1975	1980	1985	1990
	Billions of dollars					Average annual growth rate in per cent					Share in percentage				
A. Outward stock															
Developed countries[a]															
Primary	29	58	88	115	160	14.0	8.7	5.5	6.8	6.2	22.7	25.3	18.5	18.5	11.2
Secondary	58	103	208	240	556	11.7	15.1	2.9	18.3	10.3	45.2	45.0	43.8	38.7	38.7
Tertiary	41	68	179	265	720	10.4	21.4	8.2	22.1	14.9	31.4	27.7	37.7	42.8	50.1
Total	129	229	475	620	1 436	11.7	15.7	5.5	18.3	11.7	100.0	100.0	100.0	100.0	100.0
B. Inward stock															
Developed countries[b]															
Primary	12	17	18	39	94	4.7	5.9	16.7	19.2	18.0	16.2	12.1	6.7	9.2	9.1
Secondary	44	79	148	195	439	10.7	13.4	5.7	17.6	11.5	60.2	56.5	55.2	46.2	42.5
Tertiary	17	44	102	188	499	16.5	18.3	13.0	21.6	17.2	23.7	31.4	38.1	44.5	48.4
Total	73	140	268	422	1 032	11.3	13.9	9.5	19.6	14.4	100.0	100.0	100.0	100.0	100.0
Developing countries/ economies[c]															
Primary	..	7	17	31	46	..	19.4	12.8	8.2	10.5	..	20.6	22.7	24.0	21.9
Secondary	..	19	41	64	102	..	16.6	9.3	9.8	9.5	..	55.9	54.6	49.6	48.6
Tertiary	..	8	17	34	62	..	16.3	14.9	12.8	13.8	..	23.5	22.7	26.4	29.5
Total	..	34	75	129	210	..	17.1	11.4	10.2	10.8	..	100.0	100.0	100.0	100.0

Source: UNCTAD, Programme on Transnational Corporations, foreign-direct-investment database.

a Australia, Canada, France, Federal Republic of Germany, Italy, Japan, Netherlands, United Kingdom and the United States; together these countries accounted for almost 90 per cent of outward FDI stock in 1990. 1970 and 1971-1975 growth data exclude Australia and France.

b Australia, Canada, France, Federal Republic of Germany, Italy, Japan, Netherlands, Spain, United Kingdom and the United States; together these countries accounted for approximately 72 per cent of total inward FDI stock in 1990. 1970 and 1971-1975 growth data exclude Australia, France and Spain.

c Argentina, Brazil, Chile, China, Colombia, Hong Kong, Indonesia, Malaysia, Mexico, Nigeria, Philippines, Republic of Korea, Singapore, Taiwan Province of China, Thailand and Venezuela; together these countries accounted for 68 per cent of total inward FDI in developing countries.

In addition to liberalization, technological change has become an increasingly important influence on FDI across sectors (and also within sectors). The outstanding development in recent decades has been the widespread application of micro-electronics-based technologies. These new technologies have been accompanied by innovations in the organization and management of production, which encourage closer cooperation between companies and customers and place a premium on the flexibility of firms and the quality of products. By the very nature of those technologies, TNCs have been well placed to benefit from their wider application.

The new technological paradigm, based on information processing and dissemination, has been particularly suited to manufacturing and services. Computer technology was initially adopted in mature manufacturing industries in response to, among other things, the competitive pressures of freer trade. But it spread quickly to services, and made possible the creation of new activities.[1] A prominent example is telecommunication services, which were long based on electro-mechanical technology, but have been transformed by computers, micro-electronics, fibre optics and satellites into a modern service industry. Similar changes have happened in financial services, advertising, design, retailing and tourism.

Information technology has therefore been central to a new form of dynamism in economic life. It has ensured that all activities can be based on more and better knowledge. It has created new markets and made other markets more accessible. It has thereby increased competitive pressures in most types of economic activity. Such competition spurs further technological change to produce information more cheaply and disseminate it more rapidly.

2. The sectoral dimensions of the activities of transnational corporations

The sectoral composition of FDI is only one measure of the economic influence of TNCs. The size of individual TNCs, their job-creating capacities, their ownership structure, their contribution to trade and technology transfer—all these can and do vary from one sector to another.

- The size of individual TNCs reflects several influences that vary between sectors. Transnational corporations in the primary sector are still among the largest of all: taking all resource-based activities (the primary sector plus food, drink, tobacco and paper), they account for one quarter of the largest 100 TNCs. By contrast, TNCs in services are noticeable by their absence from that list (see table I.10).[2] The smaller size of services-sector TNCs indicates the limited scale economies in many business services and the more restrictive FDI regulations in many capital-intensive services.
- On its own, size does not automatically translate into jobs. For firms from the primary sector, their weight among the top 100 TNCs is significantly reduced when measured by employment—which simply reflects their capital intensity. Also, despite the labour-intensive nature of many service companies, FDI in services does not create more employment than FDI in other sectors. Rather, the capital- and asset-intensity of FDI in services is comparable to industrial affiliates (table III.2). However, service affiliates do have a skill level closer to that of their parents and, on average, higher than affiliates in either the manufacturing or primary sectors, although this reflects their larger presence in developed economies.

Table III.2. Characteristics of United States transnational corporations, by sector, 1982 and 1989

Variable	1982			1989		
	Services	*Manufacturing*	*Primary*	*Services*	*Manufacturing*	*Primary*
R&D intensity						
1. R&D expenditures as percentage of sales						
Parents[a]	0.53	3.01	0.64	0.47	3.33	0.72
Affiliates[b]	0.10	1.15	0.15	0.31	1.12	0.15
In developed countries	0.14	1.31	0.20	0.36	1.27	0.11
In developing countries[c]	0.02	0.46	0.02	0.05	0.30	0.32
2. R&D employment as percentage of total employment						
Parents[a]	0.78	4.91	2.30	0.75	5.46	3.24
Affiliates[b]	0.76	2.27	0.68	0.83	2.42	0.62
Skill level (Compensation per employee, thousands of dollars)						
Parents[a]	24.2	29.8	36.0	30.6	38.9	47.1
Affiliates[b]	18.8	16.9	22.4	27.1	25.2	24.8
In developed countries[d]	19.1	20.6	31.0	29.6	33.3	42.3
In developing countries[c]	15.0	8.7	16.6	13.8	9.5	20.7
Capital intensity						
1. Physical capital intensity[e] (thousands of dollars)						
Parents[f]	52	30	191	62	47	337
Affiliates[b]						
By industry of parent	21	20	173	26	31	398
By industry of affiliates	26	20	143	30	31	258
2. Assets per employee						
Parents[f]	192	97	385	316	186	757
Affiliates[b]	215	57	300	371	114	428
In developed countries[d]	173	65	532	349	147	884
In developing countries[c]	348	39	142	485	52	190
Trade (Percentage of sales)						
Parents[a]						
Total exports	4.3	10.3	2.1	2.8	11.6	2.6
Exports to affiliates	0.4	3.9	0.6	0.4	5.3	0.8
Imports from affiliates	0.5	2.6	2.4	0.4	4.2	2.2
Affiliates[b]						
Total exports[g]	30.6	33.9	32.7	27.2	37.8	25.5
Exports to parents						
Sales to United States parents	5.6	8.3	15.9	5.4	12.2	8.4
United States imports[h]						
Industry of affiliate	2.0	8.4	6.3	1.6	11.2	7.0
Industry of parent	2.7	6.8	4.7	2.8	9.0	3.8
Imports from parents						
Industry of affiliate	4.7	10.7	0.6	6.9	11.3	0.8
Industry of parent	2.5	10.9	0.9	2.5	12.0	1.4

Source: United States Department of Commerce, 1985, 1992a.

a Non-bank United States parent firms with non-bank affiliates.
b Majority-owned non-bank affiliates of non-bank United States parent firms.
c 1989 developing country data include Israel, New Zealand and South Africa.
d 1989 developed country data include non-allocated international transactions.
e Net property, plant and equipment per employee.
f Non-bank United States parent firms with majority-owned nonbank affiliates.
g Sales to the United States and countries other than home country.
h United States imports shipped by affiliates to United States parent firms.

- Also in terms of their ownership structure, TNCs vary from sector to sector. Those operating with natural resources have traditionally been involved in international joint ventures and strategic alliances. More recently, in manufacturing and services, new types of non-equity relations have evolved. Manufacturers have been drawn to subcontracting, networking and international research-and-development consortia, while service companies are active in franchising, financial consortia, management contracts and professional partnerships. Those developments reflect not only the rising costs of research and development and the risks associated with shorter product cycles, but also the increasing importance of non-tangible assets that can be supplied without foreign equity capital.
- The nature of TNC linkages with the global economy also differs across sectors. As goods are tradable and many services are not, service companies and their foreign affiliates are not big exporters. Moreover, both primary sector and manufacturing activities are better suited to developing an intra-firm division of labour. Service firms can build transnational networks among their affiliates, but they cannot split their activities in the same way as their industrial counterparts do. Consequently, intra-firm trade in the services sector is considerably lower than in manufacturing. However, the lower tradability of many services means that a given amount of FDI in services involves a greater use of soft technology and skills than the same amount of FDI in manufacturing or the primary sector.

  When affiliates in the different sectors are compared with their parent companies, it is the service affiliates that are most like their parent firms in terms of skill profile, research-and-development expenditures and asset-intensity (table III.2). In other words, service affiliates are more like miniature versions of their parent firms rather than specialized elements in a world-wide production network; they are more complete and free standing than manufacturing affiliates.

B. The primary sector

1. Introduction

Primary activities can be divided into renewable resources (agriculture, fishing and forestry) and non-renewable (mining and quarrying and petroleum). Of the two, non-renewable resources dominate FDI.[3]

For historical, technical and financial reasons, FDI has featured disproportionately in the development of the primary sector. Few firms in developing countries have the resources and know-how to conduct large-scale exploration or exploit the commercial potential of deposits.[4] Consequently, although geography is still the main determinant of FDI in this sector, the sensitive issues of control and the depletion of finite resources, combined with the size and visibility of TNCs, imply that bargaining between foreign investors and national Governments will strongly influence the scale and scope of FDI (McKern, 1993).

During the 1950s, investment was dominated by a small group of large and experienced TNCs, predominantly of Anglo-Saxon origin. This pattern has been changing, however, not least because many developing countries have sought to capture more of the expected economic rents from their natural resources, including through

nationalizations (Kennedy, 1992). The most visible changes occurred in the petroleum industry, where expropriations by OPEC nations significantly reduced the TNC role in production.[5] However, similar developments occurred in many areas of mineral extraction (UNCTC, 1983, pp. 205-209), creating some of the world's largest mineral companies (Ericsson and Tegen, 1993, p. 5). At the same time, new firms from resource-dependent developed economies (notably Germany and Japan) entered into the development of natural resources.

Contrary to predictions of increasing scarcity, the price of many primary resources has fallen sharply in real (and often nominal) terms (TCMD, 1992a, p. 133). Each extra dollar of GNP needs a smaller amount of raw materials, a trend that has caused difficulty for many developing countries. None the less, comparative advantage dictates that resource-rich countries will still have to develop their primary sector, both as a source of fiscal revenue and foreign exchange and as the starting point for sustainable growth and development (box III.1).

Box. III.1. Resource-led growth and foreign direct investment: the example of Botswana

Africa has long been particularly dependent on FDI for the development of its natural resources.[a] One country that has managed this relationship successfully is Botswana. At independence in 1966, it was one of the world's poorest countries. Since then, it has been one of the world's fastest growing economies, with annual growth averaging 14 per cent during the period 1965-1980 and 11 per cent during the period 1980-1990. Employment growth in the formal sector has been equally impressive, averaging 10 per cent a year since 1972. By 1990, with a per capita income of $2,040, Botswana was comfortably a middle-income economy.

The country's success has been based almost exclusively on the expansion of mining and quarrying. Their share of GDP rose from only 1 per cent in the early 1970s to over 50 per cent in 1988-1989. Government revenues from mineral taxes and royalties have risen steadily, to over 50 per cent of the total. Although the country contains deposits of gold, copper, coal and soda-ash, it is diamonds that have predominated;[b] they accounted for well over three quarters of total exports during the 1980s.

With limited domestic resources and mining know-how, the Government of Botswana had to attract FDI. Circumstances ensured that capital, entrepreneurship and technology would come from South Africa, and from one TNC in particular: De Beers of South Africa. From the opening of the first mine in 1971, all Botswana diamond mines have been owned by Debswana, a 50:50 venture between De Beers and the government. A similar equity arrangement was devised for sorting; marketing is exclusively controlled by De Beer's Central Selling Organization. In addition, import licences have been freely available and exchange controls are liberal. As a result, inward FDI has risen from 8 per cent of GDP in 1971 to 30 per cent in 1980, falling back to 17 per cent in 1989.

Stable internal politics and good governance have also done much to ensure that the local economy has benefited from FDI:

- Diamond contracts were renegotiated after the second mine was developed. The aim was to increase Government revenues, but also to continue longer-term contractual agreements with De Beers and ensure a degree of price stability (Lewis, 1988, p. 1592).
- The Government has based its fiscal policy on longer-term expectations of mineral taxes and royalties.
- Botswana has avoided direct state investment in the mining industry, and has been able to ensure that a rising share of government expenditures has gone to improving human capital through better health-care provision and expanded educational opportunities. Those trends are forecast to continue in the most recent development plan (Harvey, 1991).

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2. Recent trends

The share of the primary sector in the total outward stock of leading developed countries declined during the 1980s, from 18 per cent in 1980 to 11 per cent in 1990.[6] The dominance of the four leading developed countries—Japan, the Netherlands, the United Kingdom and the United States—increased slightly, and more noticeably in the case of the United Kingdom, which became the leading home country. But a more interesting development in the 1980s was the rapid growth of the primary sector's inflows of FDI into developed countries. Although its inward stock in 1990 was considerably smaller than that of manufacturing and services, during the 1980s it outgrew both (see table III.1). Moreover, because it grew considerably faster than the inward stock in developing countries, the developed countries' share of the primary sector's stock of inward FDI rose from 52 per cent in 1980 to 67 per cent in 1990. Consequently, whereas the primary sector's share of the total stock of FDI remained unchanged in developing countries, in developed countries it actually rose from 7 per cent to 9 per cent;[7] reversing the declining trend in the 1970s (see table III.1).

This unexpected shift was driven by particularly rapid growth in the developed countries' inward stock of petroleum during the first half of the 1980s (40 per cent) and in mining and quarrying in the second half

(Box III.1, cont'd.)

- Externally, Botswana's status as a small open economy, heavily dependent upon imports, has led it to build up foreign reserves when export earnings were strong for use when revenues fell. Combined with an effective monetary policy to curb inflation, this has ensured a relatively stable exchange rate. Botswana has therefore been able to avoid the potentially varying effect that large and fluctuating export earnings would have on the rest of the economy—the so-called "Dutch disease" (Hill, 1992).[c]

Despite Botswana's success, doubts about resource-led development remain. The future of the economy continues to depend on prospects in the world diamond market. The Central Bank of Botswana anticipates slower growth in the 1990s as diamond prices fall. It has stressed the need to diversify output—particularly in favour of manufacturing, which has had a declining share in GDP (though its employment total has increased). Moreover, the economy is still handicapped by poor infrastructure, lack of skilled manpower and the small domestic market; and political developments in South Africa add to the uncertainty of the region.

In recent years, Botswana has tried to diversify the range of activities based on diamonds: cutting and polishing have both involved large amounts of FDI, with the single biggest investment coming from a United States company, Lazare Kaplan International, and including a minority government holding (15 per cent). Elsewhere in the primary sector, diversification has been achieved through a soda-ash project which began operating in 1991. Much of the capital has been provided by three South African corporations. However, not much FDI has yet been attracted to manufacturing or services; their combined share has remained at only around 7 per cent of total inward stock during the 1980s. Botswana's next challenge is to transfer its experience in managing the development of its primary sector to organizing the expansion of the rest of the economy.

a Cantwell (1991a), table 9.5, estimated that, in 1982, the share of FDI stock in the primary sector in Africa was in excess of 50 per cent, compared to 12 per cent for Asia and Pacific and 20 per cent for Latin America and the Caribbean.

b Botswana is the third largest producer of diamonds in volume terms (after Zaire and Australia) and the largest in value terms (Blomström and Norberg, 1990, pp. 15-16).

c The monopolized nature of the world diamond market has added to price stability. Moreover, external stability has also derived from Botswana's membership in the Southern African Custom Union (Blomström and Norberg, 1990, pp. 39 and 42-43).

(23 per cent). It is clear that TNCs were still, in part, reacting against the policies of nationalization pursued by the Governments of many developing countries in the 1970s, and were putting more weight on the stability and credibility of the host Governments countries. However, FDI flows have also been directly influenced by purely economic factors, including the scale of investment, changes in technology, financial expectations and market prospects. Moreover, TNCs have continued to move into higher-value added transportation, processing and marketing activities. All these developments have biased FDI flows towards developed countries.

Expectations of higher oil prices stimulated investment in the first half of the 1980s. Some developed countries were the main beneficiaries (primarily the United Kingdom, Norway and also the United States); so too were a few developing countries, such as Indonesia, Malaysia, the Philippines and Thailand.[8] Companies also responded to the rising costs and greater risks of oil exploration by increasing their cross-border mergers and acquisitions during the late 1970s and the first half of the 1980s, particularly in the United States, and involving, primarily, Western European TNCs (UNCTC, 1988a, pp. 62-65). Some oil companies, notably British Petroleum, also acquired mining companies in an attempt to diversify production. Under similar market pressures, horizontal and vertical integration has also taken place among mining companies and many spent money to boost productivity (Ericsson and Tegen, 1993, p. 6).

In the primary sector, low equity forms of FDI have been commonplace. This has been particularly true of late arrivals, such as German and Japanese TNCs (Ozawa, 1982). Significantly, Japan is still alone among the developed countries in having most of its primary sector investment stock located in developing countries. During the 1980s, however, Japanese companies in the primary sector also participated in new ventures through equity rather than just through long-term contracts, and particularly during the second half of the 1980s, built a stronger presence in developed countries (Ericsson and Tegen, 1993, p. 7).

Although technological advances have been less pronounced than in other sectors, some new technologies developed in response to declining mineral prices have increased FDI including to developing countries. In gold mining, new technologies have encouraged the entry of smaller producers, and in copper mining, new extraction methods have made the development of low-cost ore deposits, in such countries as Chile and Mexico, more attractive.

3. Prospects

Although predictions must come with the usual qualifications and caveats, three factors are likely to affect FDI in the primary sector during the 1990s. First, the FDI associated with the mergers and acquisitions of petroleum and mining companies is being replaced by a retreat to core business activities; even by the mid-1980s petroleum companies were abandoning their mining investments.[9] This will result in a reduction in FDI flows to developed countries, because it is the developing countries (and the Commonwealth of Independent States) which will offer the best opportunities for privatization and new activity. Examples include Algeria's recent production-sharing agreements in the Hassi Messaoud fields, the intention of the Government of Argentina to privatize its oil industry and Peru's privatizations in copper and iron-ore mining; and these are likely to be repeated in other countries.[10] Given the trend to privatization and the scarcity of domestic capital in many developing countries,

the share of mineral production controlled by TNCs is likely to increase. However, many of the most successful mining companies remain state controlled and, even if privatization accelerates, the State will retain a significant role in the industry (Ericsson and Tegen, 1993, pp. 6-7).

Second, and more importantly, prospects for FDI in the oil industry will depend critically on conditions in world energy markets.[11] The declining influence of OPEC should be set against the fact that most experts believe world demand for oil and gas will grow during the 1990s. Capacity constraints in the more mature fields will almost certainly require the opening of new fields. Already, in their search for oil and gas, the big TNCs are moving away from the North Sea and North America (where production costs are high) into more uncertain regions in Asia, Latin America and Eastern Europe. Undoubtedly, the attractiveness of these regions for inward FDI will improve as privatization gathers pace, liberalization is extended and contractual rights are firmed up. However, given the preference of oil investors for regions with proved reserves, production, including through FDI, is likely to expand in the OPEC countries.[12]

Similar movements, also driven by cost considerations, can be expected in mining. Prices there seem set to continue their secular decline of the past two decades. In addition, further expansion to ensure profitable operations will attract FDI back to the most promising areas, which include many developing countries. South African mining companies are set to expand into the underexplored countries of southern Africa, such as Angola, Mozambique and Namibia, where they might face increasing competition from Australian companies. And the dominance of United States TNCs in Latin America is likely to be challenged by European firms.

Thirdly, the opening up of the former socialist countries to FDI is likely to provide significant opportunities, particularly in mining and petroleum. Developing the Russian oil industry could involve, according to one estimate, $70 billion of FDI (box III.2).[13] Given the political and economic instability of the region, the poorly defined legal regimes and the longer-term horizon required for much FDI in this sector, TNCs have so far responded cautiously to the opportunities. Moreover, foreign ownership remains a sensitive issue, adding to investor uncertainty.

In many regions of the former Soviet Union, however, only the top geological layer has been explored and many experts believe there is a high probability of discovering large new fields. As the major oil companies prefer to explore areas with known potential, the attraction of the former Soviet Union once the investment climate is clearer, may very well result in some developing countries seeing declines in oil FDI.

C. The secondary sector

1. Introduction

Despite a relative decline in the 1980s, manufacturing still accounted for almost 40 per cent of outward FDI from developed countries in 1990. Within the sector, three notable changes took place during the 1980s:

- In both inward and outward FDI, a move to capital- and technology-intensive industries, and away from resource- and labour-intensive activities.
- New forms of investment have evolved, particularly low-equity and non-equity arrangements and strategic alliances among TNCs from different countries.
- The emergence of corporate networks, often taking a markedly regional form.

Each of these developments is considered in more detail below.

2. Recent trends

(a) More capital- and technology-intensive manufacturing

This category of manufacturing increased its share of the sector's outward FDI from 46 per cent in 1980 to 51 per cent in 1990 (table III.3).[14] However, the significance of this change is more readily discernable in inward FDI. The five largest industries for inward manufacturing FDI since the mid-1970s have been chemicals, food, beverages and tobacco, electrical equipment, metals and mechanical equipment. These contain a mixture of technologies and of capital intensities. None the less, the overall pattern was clear (albeit with noticeable regional differences).

Box III.2. Prospects for foreign direct investment in the oil industry in the former Soviet Union

During the 1970s and 1980s the Soviet Union became the world's largest oil producer, with output peaking at 12.8 million barrels per day in 1988. However, investment has plummeted since 1989, and output has fallen sharply.[a] With estimated potential production of 20m barrels a day (only slightly less than the current output of OPEC), there is a strong case for FDI to play a part in reviving and modernizing oil production in the former Soviet Union. One recent estimate suggests that oil companies would spend up to $70 billion developing the industry.[b]

To date, FDI has been hindered by various obstacles. In the first place, the scale of the task now seems larger than originally thought. The inherent risk of oil development is magnified in the former Soviet Union by widespread fragmentation of the infrastructural network, the lack of managerial skills and environmental obstacles. Longer-term commitments have been further hampered by the slow pace of legislative and political reform.[c]

Moreover, the structure of the post-Soviet industry is only just beginning to take shape. Legislation in November 1992 created three regionally based companies—Lukoil, Yukos and Surgutneftegaz—involved in all stages of production. Although these vertically integrated companies will be mainly privately owned, the Government intends to keep some control over the equity, and will not allow the pipeline systems to be privatized. The extent of foreign participation (if any) remains uncertain and many officials continue to favour non-equity involvement. To date, the actual amounts of FDI in the oil industry in the former Soviet Union have been very small.[d]

Despite these difficulties, prospects for FDI have been improving, as the problems of restructuring become more apparent and the authorities recognize the potential contribution that TNCs would make. The smaller countries of the former Soviet Union have been particularly accommodating. In the race to attract western investment, Kazakhstan has some of the largest deals pending. It has persuaded foreign investors of its fiscal and legal credibility, offers light oil-industry taxes and has achieved some political stability.

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In the developed countries, the largest share of FDI still goes to natural-resource and labour-intensive industries. However, this share has fallen steadily since the mid-1970s and more rapidly during the second half of the 1980s (figure III.1) Inward FDI in the capital- and technology- intensive industries grew fastest in 1975-1980 at more than 21 per cent a year, compared with 17 per cent for the natural-resource and labour-intensive industries. The share of the former in manufacturing's inward stock of FDI increased correspondingly, from 27 per cent to more than 38 per cent; by 1990 it stood at 40 per cent. Between 1980 and 1990, the share of capital- and technology-intensive industries in FDI rose faster in developing than developed countries; in particular, the electrical equipment industry is considerably more important in developing countries, accounting for more than 12 per cent of their inward stock of manufacturing FDI in 1990, compared with only 7 per cent in developed countries.

The category of capital- and technology-intensive industries is particularly significant in the newly industrialized economies, such as Hong Kong, the Republic of Korea, Singapore, Taiwan Province of China and Thailand (figure III.1). In the newly industrialized economies, inward FDI in manufacturing grew at 16 per cent annually in 1975-1990, compared with 9 per cent for other developing countries; and the capital- and technology-intensive industries grew at 18 per cent annually, compared with 14 per cent for natural-resource- and labour-intensive industries. By comparison, in developing countries other than the Asian newly industrialized economies, inward FDI grew at roughly the same rate in both categories.

The gradual move of FDI away from labour-intensive, low-cost, low-skill manufacturing and towards more capital-, knowledge- and skill-intensive industries reflects the spread of new technologies, especially those

(Box III.2, cont'd.)

Elf was involved in the earliest deals (after lengthy negotiations) and Chevron is negotiating to invest $10 billion to develop the Tenzig and Korolev fields, with estimated recoverable reserves of 6 billion and 9 billion barrels. Further deals are expected on the Caspian Sea. Uzbekistan recently reached agreement with the Stan Cornelius Consortium (a group of United States investors) to develop its Mingbulak field, which has estimated reserves of 800 million barrels; and the autonomous region of Komi has recently concluded deals with Conoco, Total and Occidental Petroleum.

To date most involvement has been through joint ventures with local producers. In many cases, and in light of the scale and risks involved, TNCs have formed collaborative ventures. For example, the 3M group consisting of Marathon Oil, McDermott and Japan's Mitsui has been instrumental in studying the Sakhlin Island fields, and Phibro Energy and Anglo Suisse have collaborated with local producers to pump Siberian crude oil. However, in many of these cases further expansion will require cooperative agreements at the Government level.

a Investment declined by one third between 1989 and 1991; see "West needed to plug leaks in former Soviet oil sector", *Financial Times*, 24 July 1992, p. 32. Recent estimates by Russian officials do not anticipate output from their fields—which hold 90 per cent of proved reserves in the former Soviet Union—to exceed 1992 levels until well into the next century. See "Russian energy projections", *Eastern European Markets*, 19 February 1993, 13.

b Ann Imse,"American know-how and Russian oil", *The New York Times Magazine*, 7 March 1993.

c Territorial disputes are pervasive, such as in Azerbaijan, which has deals pending with Amoco to develop fields in the Caspian Sea. Also the development of the large Sakhalin field has been delayed by a dispute with Japan over the Kurile Islands.

d According to a recent study, less than one per cent of the assets of the Russian oil sector at the beginning of 1992 could be attributed to foreign firms; see "Russia's cold shoulder", *The Economist*, 13 March 1993.

involving electronics and informatics. These technologies have reduced the labour content of production and increased the knowledge component.[15] Furthermore, an expanding range of smaller manufactured products and lighter materials has increased the opportunities for FDI, because transportation costs have fallen. However, the increasing popularity of a "best practice" approach has worked to increase the concentration of FDI. Computer-aided-manufacturing and computer-aided-design, plus just-in-time production, are steering TNCs to locate in developed countries and those developing countries (such as the Asian newly industrialized economies) which have built up their human skills and physical infrastructure.

The trend to knowledge- and skill-intensive manufacturing takes place not only among broadly classified industries, but also within the same industries. As the competitive advantages of firms come to depend on their ability to innovate, FDI in certain research-intensive industries (such as pharmaceuticals, computer and office equipment, special industry machinery and electronic components and accessories) has grown faster than that in less research-intensive manufacturing. That is clearly revealed in the United States inward and outward data for 1982-1991 (table III.4).

Table III.3. Industrial distribution of foreign-direct-investment stock in the manufacturing sector for the nine largest home countries, by group of industries, 1975-1990[a]

(Billions of dollars and percentage)

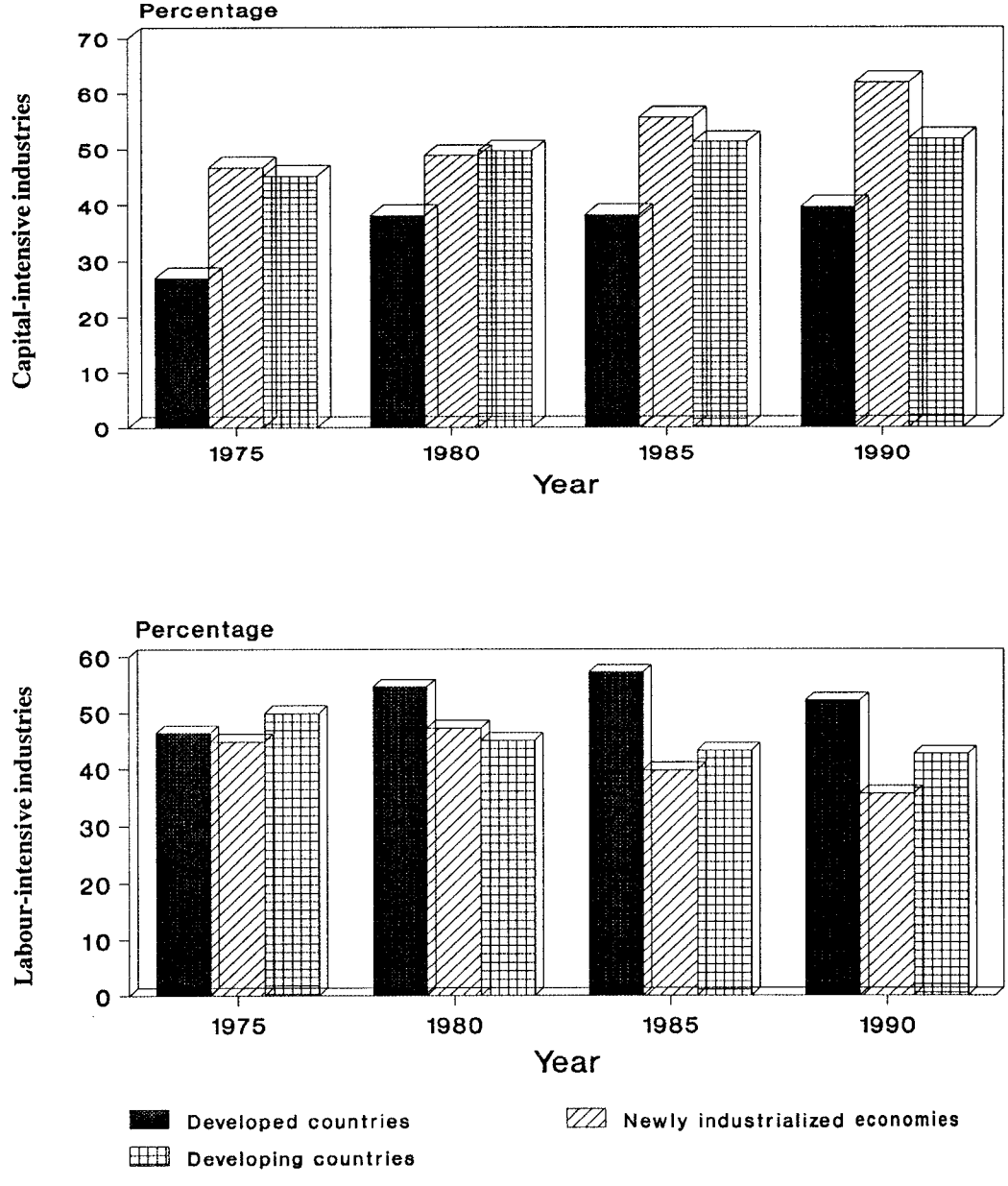
Sector/industry	*Amount (Billions of dollars)*				*Share (Percentage)*			
	1975	*1980*	*1985*	*1990*	*1975*	*1980*	*1985*	*1990*
Natural-resource and labour-intensive industries	32.1	97.6	103.6	214.0	31.1	46.9	43.2	38.5
Food, beverages and tobacco	12.6	25.2	26.1	67.8	12.2	12.1	10.9	12.2
Textiles, leather and clothing	1.3	5.5	4.4	8.7	1.3	2.6	1.8	1.6
Paper	2.6	8.8	11.4	37.0	2.5	4.2	4.8	6.7
Coal and petroleum	1.3	23.3	22.0	24.5	1.3	11.2	9.2	4.4
Rubber	0.1	4.7	4.0	9.0	0.1	2.3	1.7	1.6
Non-metallic minerals	0.2	3.2	8.5	7.0	0.2	1.5	3.5	1.3
Metals	14.0	26.9	27.2	60.0	13.6	12.9	11.3	10.8
Capital- and technology-intensive industries	51.2	95.5	115.4	284.6	49.6	45.9	48.1	51.2
Chemicals	18.8	40.2	48.2	112.3	18.2	19.3	20.1	20.2
Mechanical equipment	18.2	22.0	26.6	56.8	17.6	10.6	11.1	10.2
Electrical equipment	3.6	15.0	19.9	62.4	3.5	7.2	8.3	11.2
Motor vehicles	10.2	16.6	16.5	40.1	9.9	8.0	6.9	7.2
Other transport equipment	0.4	1.7	4.2	13.0	0.4	0.8	1.7	2.3
Other manufacturing	19.2	14.8	20.9	55.8	18.6	7.1	8.7	10.0
Total[b]	103.2	207.9	239.9	555.6	100.0	100.0	100.0	100.0

Source: UNCTAD, Programme on Transnational Corporations, based on TCMD, 1993c.

a Australia, Canada, France, Federal Republic of Germany, Italy, Japan, Netherlands, United Kingdom and the United States. These countries accounted for 90 per cent of the world-wide outward FDI stock in 1990.

b Total may not add up because of unallocated industries.

Figure III.1. Distribution of the inward foreign-direct-investment stock in the manufacturing sector, by groups of industries and countries, 1975-1990
(Percentage share)



Source: UNCTAD, Programme on Transnational Corporations, based on UNCTAD, 1993c, 1993d; UNCTC, 1992b; TCMD, 1993c.

This upgrading can also be seen in the Asian newly industrialized economies, particularly Taiwan Province of China and the Republic of Korea. In the 1970s and 1980s, they were assembly sites for the intermediate products of TNCs from Japan and the United States. Now they have advanced to the full-production stage in semiconductors, consumer electronics, computers, computerized design and manufacturing, often as a result of the activities of TNCs.[16] Similar upgrading seems to be occurring in other developing countries of South-East Asia, from the assembly of simple consumer electronics, such as transistor radios and television sets, to more complex electronic products, such as television monitors, videocassette recorders and computers and semiconductors.[17]

The presence of strong domestic industries based on indigenous research capacities enables firms to extend their outward FDI more rapidly, because it offers an attractive location for their international research and production. This explains the growing intra-industry nature of FDI witnessed in the United States and other developed countries (Cantwell, 1991b).

Table III.4. Growth of inward and outward foreign-direct-investment stock in research-intensive manufacturing industries for the United States, 1982-1991
(Millions of dollars and percentage)

Industry/activity	*Growth rate (Percentage)* *1982-1991*	*Value (Millions of dollars)* *1991*
A. Inward stock		
Chemicals	14.6	49 133
Industrial chemicals and synthetics	12.4	27 611
Pharmaceuticals	24.7	13 125
Machinery, except electrical	12.8	10 450
Computer and office equipment	17.4	2 907
Special industry machinery	15.8	1 795
Electric and electronic equipment	14.5	17 188
Electronic components and accessories	7.8	4 327
B. Outward stock		
Chemicals	9.2	40 229
Industrial chemicals and synthetics	8.8	18 734
Pharmaceuticals	13.0	10 902
Machinery, except electrical	8.9	29 781
Computer and office equipment	11.9	20 649
Special industry machinery	7.1	931
Electric and electronic equipment	8.6	15 334
Electronic components and accessories	15.7	7 678

Sources: UNCTAD, Programme on Transnational Corporations, based on United States Department of Commerce, *Survey of Current Business* (Washington, D.C., Government Printing Office), various issues.

(b) New forms of transnational investment

Not all TNC activity takes the form of establishing wholly- and majority-owned affiliates. Particularly in developing countries, TNCs are favouring joint ventures (with equity participation coming in the form of capitalization of technology or other intangible assets) or non-equity forms. The latter includes licensing agreements, original-equipment-manufacturing arrangements, subcontracting and turnkey contracts, all of which allow firms to maintain control without the risks associated with direct investment.

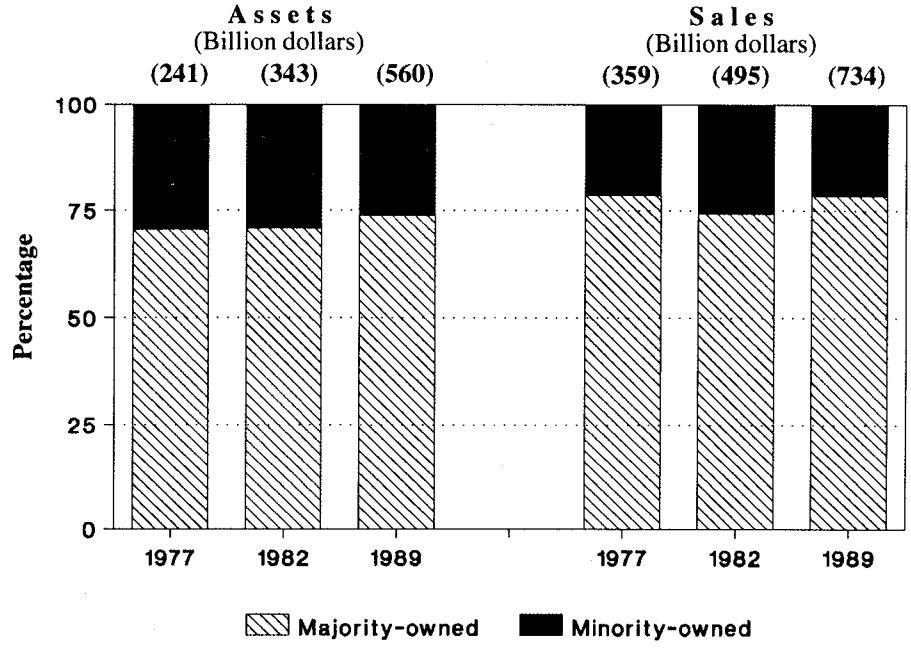
Some of those arrangements were known and widely used at a time when TNCs were not very popular and their activities were restricted. Yet, they seem to have maintained their share of manufacturing FDI, to judge by United States figures (figure III.2). This suggests that the reasons for using them have changed. To take an example from manufacturing in developing countries, non-equity links are increasingly common in the international

sourcing of components. Many of these forms of FDI establish close and longer-term relationships with domestic firms, often to the point of quasi-integration. They seem particularly suited to small and medium-size TNCs from developing countries, in such industries as consumer electronics, textiles and clothing, and footwear.

Minority joint ventures and licensing with TNCs have also been prominent in the automotive-assembly industry of developing countries (including several North African, ASEAN and Latin American countries, the Islamic Republic of Iran and Nigeria), particularly because of government restrictions on foreign ownership. In the mid-1980s, almost 3 million vehicles were produced or assembled in 47 developing countries, of which 47 per cent were under non-equity arrangements and 53 per cent under equity FDI (UNCTC, 1988a). Process industries, such as chemicals and petroleum, have also been successfully established in many developing countries through turnkey and engineering contracts (Oman, 1984).

Because manufacturing in the developed countries is often in the innovation phase, TNCs are more likely to retain control through wholly- or majority-owned affiliates. However, non-equity arrangements are also increasingly motivated by similar influences. Increasingly, they involve strategic alliances in high-technology industries (and even in mature industries that seek technological infusion). Their main motive is to share the risks of new research and the costs of developing new products, and to get quicker access to rapidly changing technologies. More importantly, strategic alliances bring technological cross-fertilization, as technologies origi-

Figure III.2. Majority- and minority-owned manufacturing affiliates of the United States transnational corporations, by assets and sales, 1977, 1982 and 1989



Source: UNCTAD, Programme on Transnational Corporations, based on United States Department of Commerce, 1981, 1985 and 1992a.

originally developed for one industry are increasingly applicable to others. These agreements have been boosted by the need not to break anti-monopoly laws (as in the United States), as well as to consolidate manufacturing production and to gain competitive advantages in regional markets (Gross, 1989).[18] In some cases, they have been promoted directly, to support collective efforts in research, development and manufacturing (as in the European Community). Some of these cooperation agreements may involve equity participation, but they stop short of outright mergers or acquisitions.

The adoption of new technologies and organizational methods in manufacturing have altered the sourcing and locational patterns of TNCs in favour of quality, reliability and proximity to the site of final manufacture. Technological changes have extended the life of a number of sunset industries in developed economies, by reducing labour costs and improving supplies through more integrated management strategies. Although TNCs in the consumer electronics and motor industries still engage in outsourcing (particularly of materials or standardized parts and components), increasingly they prefer to establish either joint ventures or other forms of cooperative relations with their suppliers (Dunning, 1988; Tolentino, 1993). These changes clearly work against those developing countries whose comparative advantage lies in labour-intensive assembly operations, which are farther away from developed country markets and which do not have large internal markets of their own. Moreover, the more technologically complex forms of production by TNCs take place in developing countries too, the establishment of wholly- or majority-owned affiliates will matter more.

(c) The growth of corporate networks

With the spread of non-equity and collaborative arrangements, the shape of TNC networks has changed considerably (Dunning, 1985). The links between parent firms and their foreign affiliates, and between foreign affiliates at different stages of the value-added chain and in different locations, have become closer and more complex, leading to increasing interdependence between firms and countries (see chapters V to VII).[19]

The integration of production has often happened on a regional basis. That trend has been enhanced by the development of regional arrangements, such as the formation of the Single European Market and NAFTA, and the gradual emergence of a trade bloc in Asia. The expanded opportunities inherent in such arrangements have led many manufacturing TNCs to organize much of their activity on a regional scale. Another factor contributing to regional integration is the emergence of TNCs from developing countries, which tend to be a growing source of FDI in other developing countries (TCMD, 1993c). Because many of them are still in their infancy, they are establishing minority-owned affiliates to a greater extent than TNCs from the developed countries.[20]

3. Prospects

The trends in manufacturing FDI are likely to strengthen over time. In the first place, many developing countries (and the transition economies of Central and Eastern Europe) will probably move towards greater capital- and technology-intensity. Some countries are already pursuing policies to upgrade their economies and to attract TNCs in the newer growth industries. Malaysia is an excellent case in point (see chapter II): its recent change in policy is directed to attract FDI into higher-end electronics (Astbury, 1991).

Secondly, the move to regionally integrated strategies of TNCs will gather pace if Europe, North America and Asia do indeed set up trade blocs. Corporate strategies of globalization through regionalization are still at an early stage, but will become increasingly significant. Two of the most likely changes relate to the role of Japan in Asia and the role of the United States in Latin America, initially in Mexico. Japan is likely to strengthen its position as the largest source of FDI in an increasing number of Asian countries, particularly in manufacturing.[21] Asia offers a horizontal division of labour, allowing factories in Japan to specialize in manufacturing high-end products while relying on a steady supply of goods from their foreign affiliates and local companies in Asia. Similar developments are likely to affect Mexico in relation to North American TNCs.

Thirdly, TNCs will probably expand the range of ways they enter foreign markets, so their networks will become increasingly widespread and complex. However, much will depend on the stability of the host economy, and the adoption of an appropriate policy framework, including measures to improve physical infrastructure and increased training (Konopacki, 1992).[22]

Lastly, as developing countries get richer, more of their firms are expected to become TNCs, and their existing TNCs will increase the scale and complexity of their overseas manufacturing (TCMD, 1993b; Tolentino, 1993). Indeed, a two-tier pattern of cross-border FDI in manufacturing is already taking place in Asia: from Japan into the Asian newly industrializing economies, and from all of them to China, Indonesia, Malaysia, the Philippines and Thailand (Lall, 1991; Levin, 1991). However, some of these firms, particularly from Taiwan Province of China, are getting into developed country markets through higher-value electronics such as computers and petrochemicals.[23]

D. The tertiary sector

1. Recent trends

Although services have grown rapidly in the outward and inward FDI of most developed countries and in the inward FDI of many developing countries, their strongest growth has been in the Triad countries. This has changed their position in world-wide FDI (see annex tables). In the case of the United States, it has been services are primarily responsible for making that country the largest host to FDI. Japan owes its remarkable rise among home countries to an explosion of investment in financial, trading and transportation services, as well as real estate. Similarly, the emergence of the European Community as a major FDI Triad partner is largely owing to the expansion of services within the European Community (in response to the creation of the single market) as well as in the United States (in part owing to the strength of European currencies).

The rapid growth of FDI in services has come not only from transnational service corporations (TSCs), but also from substantial investment in service activities by transnational industrial corporations. Other factors have also played a role: the establishment of holding companies and regional headquarters, investment in real estate, and the setting up of financial affiliates in tax havens and of transportation affiliates in countries offering flags of convenience.

The share of TSCs in the services stock of FDI differs among the four major home countries. In Germany and the United Kingdom, TSCs have been the dominant force; their share has been high—over 80 per cent—and rising. In the United States, by contrast, TSCs account for less then half of FDI in services and their share has declined (table III.5). Japan falls in between; affiliates of services parents account for two thirds of all affiliates in services.

Within the services sector, finance- and trade-related activities account for two thirds of the FDI stock for developed countries and the majority of the stock in many host developing countries. This is not surprising, given that financial TNCs (banks, insurance companies) and trading companies (for example, Japanese *sogo shosha*) are among the most prominent TSCs, that manufacturing and petroleum companies have invested heavily in wholesale and marketing affiliates and that all kinds of TNCs tend to establish their own finance-related foreign affiliates.[24] In addition, other service industries in which TNCs are prominent are either small (such as advertising), or rely heavily on non-equity forms of investment (such as the hotel and restaurant industry), or both (accounting and business consultancy). There are, however, some exceptions, such as real estate (relatively large in inward FDI into France and the United States and in outward FDI from Japan) and construction (sizeable in some host developing countries). Most importantly, in those capital-intensive service industries—telecom-

Table III.5. Sources of services foreign direct investment in the four largest home countries, 1976-1990[a]

(Number and percentage)

Item	*United States*[b]			*Federal Republic of Germany*[c]			*Japan*[d]			*United Kingdom*	
	1977	*1982*	*1989*	*1976*	*1984*	*1990*	*1977*	*1984*	*1990*	*1981*[e]	*1987*
Number of TNCs:											
Total	3 540	2 245	2 272	2 589	3 910	4 917	1 223	1 488	1 616	..	..
Services	1 204	925	901	1 097	1 841	2 523	409	541	575	..	..
Number of foreign affiliates:											
Total	24 666	18 339	18 899	9 059	14 657	19 352	3 589	4 937	7 986	..	..
Controlled by service parents	7 317	5 212	5 318	..	..		1 538	1 916	2 965	..	..
In services	13 595	10 339	10 562	5 267	9 429	13 201	1 586	2 671	4 384	..	..
Stock of FDI as percentage of total FDI stocks:											
Controlled by service TNCs	21	19	22	29	32	46	..	..	..	24	33
In services	41	38	49	42	47	56	38	52[f]	67	34	39

Source: UNCTAD, Programme on Transnational Corporations, based on official sources.

a These countries account for 80 to 85 per cent of the FDI stock in services of the largest ten home countries.

b Services include holding companies. The substantial decline in the total number of United States TNCs and their affiliates is most likely a result of changed reporting procedures. The cut-off point below which full data for foreign affiliates do not have to be reported was increased from $500,000 in 1977 to $3 million in 1982 and in 1989.

c Excluding individuals. Services include holding companies.

d Does not include banks and insurance companies.

e Does not include oil, banking and insurance.

f 1985.

munications, various kinds of transportation and public utilities—which could rival finance and trading, FDI has so far been restricted in most countries.

2. New areas for foreign direct investment in services

These old restrictions are starting to change, which in time will alter the pattern of FDI. Already, some capital-intensive service industries are opening up to FDI.

(a) Air transportation

This is one of the most rapidly changing industries in terms of FDI, with a surge of equity investments taking place since the second half of the 1980s (table III.6). However, most countries continue to restrict FDI to minority equity holdings. The most active investors are airlines from Western Europe, pursuing different geographical strategies. For example, Air France has expanded its equity links to other airlines primarily in Europe, Iberia Airlines has done so in Latin America, while the expansion of British Airways has shown the most global reach.

Although a few United States airlines have bought equity stakes in foreign airlines, more often they have been the target of others; as a result of which the United States has become the major host country. Latin American and Central and Eastern European countries have attracted FDI through privatization.[25]

In addition to minority equity holdings, there has been a proliferation of strategic alliances among major airlines from both developed and developing countries. Most of these alliances have eschewed ownership, though the case of Delta Air Lines, Swissair and Singapore Airlines has involved cross-share-holdings of up to 5 per cent. One quite common form of alliance is the linking of airline computer-reservation systems, which are an important marketing tool and can capture travelers by directing them to partner airlines.[26] One example is the current merger between the European COVIA-APOLLO and the United States GALLILEO computer-reservation systems. If approved by the United States and European regulatory bodies, it would establish the first reservation network between European and United States airlines with a global scope (see box VI.4).[27] Other non-equity arrangements common in air transportation include technical cooperation and service contracts, especially between airlines from developed and developing countries.

Deregulation has been a big influence on the way the airline industry has opened up to FDI. It began in the United States in the late 1970s, but did not initially affect FDI. Foreign airlines were not allowed to hold more than 25 per cent of the equity of a domestic airline, and any acquisition was subject to approval by the United States Department of Transportation. The surge of FDI occurred only after policy changes began to extend to international traffic as a result of:

- The intention of the European Community to deregulate and liberalize intra-EC traffic within the Single Market programme, followed by the first steps to achieve this goal;
- Further liberalization of United States air-transport services in 1991. The aim was to attract FDI to an industry financially exhausted after years of competition. The ceiling on foreign equity in domestic

Table III.6. Foreign direct investment in the airline industry, 1987-1993

Year	Foreign investor	Home country	Recipient company	Host country	Share of equity	
					Millions of dollars	Per-centage
1993	Aeromexico	Mexico	Aeroperu	Peru	54	70
	Air Canada	Canada	Continental Airlines	United States	235	27.5
	Air Lanka[a]	Sri Lanka	Vada-Bosnaair	Macedonia	..	..
	Baltic International[a]	United States	Baltic International Airlines	Latvia	..	..
	British Airways	United Kingdom	USAir	United States	300	24
	Sun Air[a]	Denmark	Blue Sky	Poland	..	..
	Viennair[a]	Austria	Danube Air	Hungary	..	..
1992	Air France	France	Czechoslovak Airlines[b]	Czechoslovakia	30	19.1
			Sabena World Airlines	Belgium	178	37.5
	Alitalia[c]	Italy	Malev Hungarian Airlines	Hungary	77	30
	American Airlines[a]	United States	Canadian Airlines International	Canada	192	33.3
	Austrian Airlines	Austria	Albanian Airlines	Albania	..	..
	British Airways	United Kingdom	Deutsche BA[d]	Germany	..	49
			Qantas Airways	Australia	450	25
			Touraine Air Transport	France	25	49
			Trans World Airlines[a]	United States	..	..
	Iberia Lineas Aereas de Espana[e]	Spain	Aerolinas Argentinas	Argentina	..	30
			Ladeco Linea Aerea del Cobre	Chile	..	35
			Lan-Chile	Chile	..	30
			Viasa Internacional de Aviacíon	Venezuela	145	45
	Korean Air[a]	Republic of Korea	Pakistan International Airlines	Pakistan	..	..
	Lufthansa German Airlines	Germany	Luxair	Luxembourg	..	13
	T. Roche	France	Ada Air	Albania	..	..
	Xabre Group[f]		Mexicana	Mexico	..	48
1991	El Al Airline	Israel	North American Airlines	United States	..	24.9
	Japan Airlines	Japan	Air New Zealand	New Zealand	..	8
	Singapore Airlines	Singapore	Swissair	Switzerland	..	3
	Swissair	Switzerland	Singapore Airlines	Singapore	..	1
1990	British Airways	United Kingdom	Air Russia[g]	Russia	32.5	31
	China International Trust and Investment Corporation	People's Republic of China	Dragonair	Hong Kong	..	38
	Crossair	Switzerland	Tatra Air	Czechoslovakia	..	..
	Delta Air Lines	United States	Swissair	Switzerland	..	5
	Swissair	Switzerland	Delta Air Lines	United States	..	5
	Taca International Airlines	El Salvador	Aviateca	Guatemala	..	30
			Lacsa	Costa Rica	..	10
			Nica	Nicaragua	..	49
			Sahsa	Honduras	..	40
1989	Air France	France	Austrian Airlines	Austria	..	2
			Euskal Air	Spain	..	20
	Delta Air Lines	United States	Singapore Airlines	Singapore	..	3

/.....

(Table III.6, cont'd.)

Year	Foreign investor	Home country	Recipient company	Host country	Share of equity	
					Millions of dollars	Per-centage
1989 (cont'd.)	Finnair	Finland	Scandinavian Airline Systems	Sweden, Norway, Denmark	..	5
	Japan Airlines	Japan	Hawaiian Airlines	United States	..	20
	KLM Royal Dutch Airlines[h]	Netherlands	Northwest Airlines	United States	400	20
	Lufthansa German Airlines	Germany	Austrian Airlines	Austria	..	10
			Sunexpress	Turkey	..	40
	Sabena World Airlines	Belgium	Universaire	Italy	..	49
	Singapore Airlines	Singapore	Delta Air Lines	United States	..	5
	Scandinavian Airline Systems	Sweden, Norway, Denmark	Lan-Chile	Chile	..	30
			Finnair	Finland		5
1988	American Airlines	United States	Air New Zealand	New Zealand	..	8
	All Nippon Airways	Japan	Austrian Airlines	Austria	..	10
	Ansett Australia	Australia	Ladeco Linea Aerea del Cobre	Chile	..	25
	Qantas Airways	Australia	Air New Zealand	New Zealand	..	20
	Scandinavian Airline Systems	Sweden, Norway, Denmark	British Midland Airways	United Kingdom	..	49
			Continental Airlines	United States	..	17
	Swissair	Switzerland	Austrian Airlines	Austria	..	10
1987	Ansett Australia	Australia	America West Airlines	United States	..	20
	KLM Royal Dutch Airlines	Netherlands	Air UK	United Kingdom	..	15

Sources: UNCTAD, Programme on Transnational Corporations, based on various reports.

a Case is pending; the year indicates the opening of negotiations.
b In addition, the European Bank for Reconstruction and Development invested $30 million and holds an equity share of 19.1 per cent.
c Additional 5 per cent bought by SIMEST, a recently created Italian state agency to promote investment abroad.
d Deutsche BA was set up by British Airways and three German banks.
e Iberia is also considering investing in the state-owned airlines of Costa Rica, Dominican Republic, Ecuador, Paraguay, Peru and Uruguay (see *The Economist*, 29 February 1992).
f Grubo Xabre is part of the Falcon group, a multinational consortium including individual investors and the Chase Manhattan Bank.
g Air Russia is a joint venture between British Airways and Aeroflot.
h KLM owns 20 per cent of the common stock and 10.5 per cent of the voting stock in Northwest Airline's parent, the Wings Holdings Inc.

airlines was raised to 49 per cent, with the limit on the voting stock of a foreign investor remaining at 25 per cent;[28]

- Negotiations to liberalize services within the Uruguay Round, and the possibility that a General Agreement on Trade in Services would cover air transportation;

- The growing interest of some countries in liberalizing (if not abolishing) bilateral air-service agreements that guarantee market shares and revenues. Changes in that direction have already been concluded between the United States and the Netherlands; it provides airlines of both countries with unlimited access to each other's airports. Other similar negotiations are taking place.

These regulatory changes are starting to create more intensive competition for market share. The recent FDI agreements with certain United States airlines, some of which are still being negotiated or are awaiting approval, need to be seen in this light. Furthermore, competition within the European Community may lead to the privatization of some state-owned carriers, thus increasing the potential for FDI from within and outside the Community.[29] Many other countries, especially in developing regions and in Central and Eastern Europe, need more efficient air-transport services, so they are seeking investments and know-how that TNCs from developed countries can provide.

(b) Telecommunications

Telecommunications companies are among the largest in nearly all countries, but the industry has historically been so closed to FDI that most countries have not even singled it out in their FDI statistics. Recently, however, because of technological and regulatory changes as well as privatization, telecommunications has been transformed. Its restructuring has led to the opening up of several regions and market segments to FDI, as well as to the emergence of TNCs (and the potential for a wide-ranging globalization of the industry).

Technological change—the birth of telematics as a result of the marriage between computer and communications technology—has been a major factor behind the industry's restructuring. It has broadly expanded the range of applications of telecommunication services, and moved the industry to the centre of national attention. The availability, price and quality of telecommunications services affect so many economic activities that pressure on governments to improve those services has vastly increased. In addition, some new technologies have been decentralizing in nature (for example, satellite transmissions, cellular phones), and have therefore deprived more and more the industry of its natural monopoly status—and governments of their ability to keep the whole industry under control.

The privatization of telecommunications monopolies in developing countries, especially in Latin American countries such as Argentina, Chile, Mexico and Venezuela, has been accompanied by the liberalization of FDI rules. As a result, telecommunications TNCs from France, Italy, Spain and the United States have acquired stakes in firms in those countries.[30] As the privatization trend continues, it will bring FDI to the indebted, capital-poor countries of Africa, Central and Eastern Europe and Latin America, which need both capital and know-how to modernize their telecommunications infrastructure.[31]

Among developed countries a group of large public and private telecommunication companies are increasingly competing with each other in markets for new services. The most important single group of services at stake, where competition is most intense, are those involving the management and operation of the international communication networks of TNCs headquartered in the Triad region, where 75 per cent of the world telecommunication activity is concentrated.[32] Competition for a share of this market explains the increasing intensity of cross-border acquisitions and alliances among the big companies (table III.7), and offers the greatest potential

for globalization; projections to the end of the century suggest that there will be five or six global telecommunication companies carrying voice as well as data, and serving households as well as offices.[33]

For the time being, however, global networks owned and operated by TNCs are the exception rather than the rule. This is partly because in many countries it is not yet possible for TNCs to own and operate the necessary physical assets and/or to have access to the necessary international telecommunication traffic rights. Another reason is that the creation of truly global super carriers providing the whole range of modern telecommunication services is hugely expensive. In terms of both capital outlays and risk, it is still beyond the finances and capabilities of even the largest firms.[34] The big companies have therefore begun to build alliances coordinating their services across separate telecommunication regimes. They are establishing global networking as a substitute for global networks.[35]

Table III.7. Telecommunications: cross-border acquisitions of companies,1985-1990
(Number and millions of dollars)

Year	*Number of acquisitions*	*Value (Millions of dollars)*
1985	5	399
1986	7	132
1987	7	63
1988	11	117
1989	50	2 694
1990	67	16 539[a]

Source: *Financial Times Survey, World Telecommunications*, 7 October 1991.

a The high value in 1990 is owing to privatizations that occurred in that year ($9.9 billion). Investment by foreign companies in the United States represented only 2.8 per cent of the value of cross-border deals in 1990.

In addition to telecommunication services for TNCs, a vast range of new, specialized services and markets is opening up to competition and FDI. They include cellular communication, private data transmissions, cable television, satellite-based data transmission, paging-services systems and new long-distance networks linking cities. These are attractive areas for TNCs, because they offer opportunities for rapid growth, as well as the possibility to exploit technological advantages, not only through risky capital investment, but also through non-equity arrangements such as licensing and franchising.[36]

As with the airline industry, the same factors that generated the initial impetus for FDI in telecommunications will not only continue, but are likely to intensify. This will keep the telecommunications industry in the forefront of FDI activities in the services sector. It is notable that, in the United States, where overall outward FDI has been decelerating, the outward stock of FDI in telecommunications increased nearly eightfold between 1989 and 1991, from $560 million to $4.4 billion.

3. Prospects

The internationalization of service industries through FDI is still in its early phases, and its growth will be maintained or even increased during the 1990s (UNCTC, 1991a, pp. 21-22). One reason is that demand for modern services, supplied mostly by TNCs, is growing rapidly everywhere. In addition, the countries of Central and Eastern Europe will need to make full use of such services as banking, insurance, telecommunications, accounting, and legal services in their transition to a market economy. Secondly, the liberalization of FDI in services is

relatively recent, but it is spreading to more countries and more industries, including capital-intensive infrastructure services, such as telecommunications, transportation and public utilities, in which private ownership (local or foreign) was previously not allowed. Opening those industries to FDI, mostly through joint ventures, has been closely related to privatization. Furthermore, TSCs as a group are much less transnationalized than industrial firms, suggesting there is still considerable potential for rapid growth in services FDI.

Although there is little doubt that those and other factors will lead to more transnationalization of services in the near term, technological developments may, in the longer run, alter the ways in which services are delivered to foreign markets. The limited tradability of many services has been a big reason for the rapid growth of FDI. The convergence of computer and telecommunication technologies eases this constraint considerably, because transborder flows of data permit instantaneous, long-distance, interactive transactions (Sauvant, 1990). By collapsing time and space, they make it possible for certain services to be produced in one place and consumed in another. The result is an increased transportability (and therefore tradability) of some services, especially information-intensive services, which may reduce the need for FDI. Or it may prompt TSCs to split their production processes into parts and, like manufacturing companies, allocate labour-intensive operations to foreign affiliates to take advantage of lower wages and other costs. That kind of development would result in both increased FDI and intra-firm trade in services.

E. Conclusions

Governments of host countries, including those of developing countries, increasingly recognize the potential contribution of TNCs to economic development, so they are pursuing policies to attract FDI. In doing so, they should keep in mind the structural changes described in this chapter.

- As the competitive advantage of resource-intensive, low-cost, low-skill activities declines, countries must be able to attract higher value-added FDI. If they fail to do so, they will pay the price in terms of slower economic growth. Although host developing countries, whose main locational advantages are based on low-cost and low-skilled labour, should continue to attract all kinds of FDI, their Governments must place increasing importance on higher value-added FDI to help upgrade existing industries, create new industries and encourage the entry of new firms. This will require, among other things, investments to raise the level of local skills, improve infrastructure and increase the supply of certain producer services. In addition, given the small size of many developing country markets and the increasing importance of regionally-based TNC strategies, governments of host countries need to participate in regional integration schemes so as to take full advantage of the potential contribution of TNCs. Many developing countries should also pay closer attention to the needs of smaller TNCs, particularly those from other developing countries.
- Policies designed to attract FDI must take into account that TNCs deliver a *package* of tangible and intangible assets. These include technological and managerial capabilities, access to distribution networks, responsiveness to changing demand patterns, training and capital; in this package, the capital component—traditionally seen as the principal benefit of FDI—is of diminishing significance

(TCMD, 1992a). Non-equity linkages with TNCs, ranging from subcontracting through franchising to licensing, therefore provide host countries with many of the same tangible and intangible assets. Removing legal obstacles to non-equity arrangements, ensuring adequate information and producing a suitably qualified labour force are all, at least in part, government responsibilities.

- Whether involving equity or non-equity links, policies to attract FDI must reflect the sectoral changes discussed in this chapter. Foreign direct investment will continue to be of importance for the development of the primary sector. Indeed, after a period of troubled relations, many Governments in developing countries are now willing to cooperate with TNCs in large natural resource projects (UNCTC, 1988a, pp. 321-326; Wälde, 1991). In manufacturing, attracting higher value-added FDI will be an integral component of upgrading production towards capital- and technology-intensive activities. As for services, any failure to appreciate their growing role in FDI would leave countries competing for less than half the annual flows of FDI and missing its fastest growing bit. Moreover, obtaining the range of skills provided by service TNCs will be essential for attracting FDI to other sectors of the economy.

As the growth of services has been increasingly propelled by soft technologies (especially those related to information technologies), the process of technology transfer has also shifted from harder to softer technologies, in which the contribution of TNCs is crucial. The recent emphasis on intellectual property rights to stimulate technology transfer is appropriate for some industries, but it should not obscure the fact that the informal knowledge associated with the application of new technologies often matters more (TCMD, 1993b). In fact, because formal and informal knowledge is complementary and increasingly difficult to separate, intellectual property rights alone are unlikely to create the right environment to transfer technology through TNCs (David, 1992). Governments need to devise new incentives and suitable training schemes (including with TNCs) to facilitate the diffusion of know-how (see box XI.4).

Technology is perhaps the most powerful stimulus to economic growth. Countries able to upgrade their economic structures and technological capacities in line with the needs of TNCs will therefore be better placed to participate in the international division of labour. However, devising appropriate policies is complicated by the nature of new technologies. They are redefining (and in many cases blurring) the traditional lines that divide sectors. Policies aimed at sectoral transformation are being increasingly outdated by the clustering of technology-related, cross-sectoral activities involving inter-firm alliances of TNCs.

The pace of structural change, however, has been forced not only by new technologies, but also by the opening of markets to competitive pressures. In that respect, privatization has been particularly significant, not just because it offers an immediate investment opportunity for TNCs, but also because it is a symbol of market-friendly reforms. Although the number of privatization measures has risen steadily over the past decade, they have been uneven at the sectoral level, with the primary and services sectors lagging behind the secondary sector. Consequently, the potential for further privatization (and hence FDI) in those sectors is significant: witness the large privatization in telecommunications and air transportation, both capital-intensive service industries, that is now taking place.

Privatization, however, should not be seen as an all-purpose panacea. On its own, it will not solve such problems as limited competition in some markets, the widespread presence of externalities and the need for

longer-term planning, particularly in industries with large capital requirements or characterized by a natural monopoly. In addition, as experience with privatization accumulates, it may be the case that the managerial, technological and entrepreneurial capabilities required to enhance competitiveness do not automatically follow a switch in ownership. Consequently, privatization measures, particularly in service industries, may increasingly be only part of wider policy objectives, including the appropriate forms of regulating such activities.[37] Indeed, privatization may sometimes be a less effective way to attract FDI than a joint venture or another linkage between state-owned and foreign companies. This is particularly so in countries where the political risks attached to privatization outweigh any potential economic benefits, or in countries, such as those in transition from central planning, which still cannot make markets work effectively (Murrell, 1992; Kennedy, 1992).

Liberalization, too, has increased market access by reducing tariff barriers and restrictions on investment. The impact of these measures, however, has been uneven at the sectoral level. Because manufacturing has a longer history of adapting to competition, it has often appeared as the easiest target of reforms. In spite of the widening scope of liberalization of services FDI, they are still relatively closed compared with manufacturing. This is certainly true of large domestic service industries, such as health care, education, broadcasting, and rail and road transportation; and even in the two industries where liberalization is beginning to take hold, telecommunications and air transportation, most countries are proceeding cautiously. Governments need to make further efforts to measure and evaluate the performance of service firms, and define the roles of the market and of the State.

In some areas, indeed, Governments will need to strengthen their regulatory role. One example, which will grow in prominence over the coming decade, is the environment. Multilateral and bilateral measures have placed restrictions on trade in tropical timber, and environmental concerns have been written into development finance agreements.[38] Although tighter national environmental legislation and international initiatives such as *Agenda 21* (see chapter I) will encourage all TNCs to improve their environmental practices still further, it will affect different industries in different ways. Environmental laws have already caused a decline in oil, mineral and timber exploration in North America and Australia,[39] and TNCs are anticipating higher energy taxes in developed countries. More contentious still will be the conflicting pressure on TNCs from environmental interest groups at home and from host countries in the developing world. The likely problems are already visible in the NAFTA negotiations. Because FDI in pollution-intensive industries (such as chemicals and paper and pulp) in Mexico may rise, the enforcement of environmental standards has become a sensitive issue in the supplemental agreement.[40]

* * * * *

The contribution that TNCs can make as agents of growth, structural change and international integration has made FDI a coveted tool of economic development. As developing countries have reduced their own protectionism, they have removed the purely defensive rationale for FDI. As a result, the locational options of TNCs have expanded right across the value chain, and the antagonistic relations between host countries and TNCs have been replaced by a new spirit of cooperation.

Still, it must be recognized that FDI is not a substitute for domestic-led growth. However, government policies in pursuit of growth must also incorporate the sectoral changes discussed above. Upgrading production to include more technology- and skill-intensive activities and ensuring an efficient services sector will require considerable investments in physical infrastructure and training, along with measures to stimulate entrepreneurship. These initiatives can best be pursued through an integrated policy regime which, in addition to domestic macroeconomic stabilization, includes trade and technology policies (see chapter XI).

Notes

1 Technological convergence and the greater ease of transferring technology and skills initially mastered in industrial activities may explain, in part, the high frequency of cross-sectoral investment in the services sector, that is, by TNCs from other sectors.

2 Table I.10 excludes banking corporations.

3 However, growth opportunities in some renewable resources will undoubtedly require significant amounts of FDI, as has already happened in the case of Chilean agribusiness; see "Exports add savour to Chile's fruit cocktail", *Financial Times*, 18 November 1992.

4 However a number of resource-poor newly industrializing countries in Latin America and Asia have accumulated the technological expertise to invest abroad for this purpose, see TCMD, 1993b, p. 13; and Ericsson and Tegen (1993).

5 In petroleum, between 1970 and 1979, the share of total crude oil production taken by TNCs declined from 94 per cent to 45 per cent (UNCTC, 1983, p. 197).

6 It is probably true that, with the possible exception of petroleum, the real value of the stock of outward FDI was lower at the end of the decade than at the beginning.

7 Reversing the declining trend in the 1970s, see table III.1.

8 Indicatively, in Malaysia, the Philippines and Thailand, the stock of inward FDI fell during the second half of the decade.

9 The problems of diversification are typified by the case of British Petroleum; see "BP after Horton", *The Economist*, 4 July 1992, p. 59; Ericsson and Tegen (1993), p. 6.

10 Constitutional restrictions on foreign ownership in mining and petroleum remain in a large number of developing countries, including Brazil, India, Mexico and the Philippines. However, Wälde (1991, p. 108), noted a number of cases of renegotiation involving significantly reduced Government equity stakes.

11 "Oil and gas industry", Financial Times Survey, *Financial Times*, 18 December 1991.

12 *Financial Times*, op. cit.

13 Not only is the former Soviet Union the world's leading oil producer, but the country ranks first or second in aluminum, copper, lead zinc, nickel and iron ore and is the third largest gold producer behind South Africa and the United States. As in the oil industry, state sector involvement may persist longer than expected. However, capital constraints and the desperate need for environmental clean-up will ensure a growing TNC presence, particularly by European and Asian TNCs (Ericsson and Tegen, 1993, p. 7).

14 The resource-based manufacturing industries are coal and petroleum, food, beverages and tobacco, metals, non-metallic minerals, paper, rubber and textiles, leather and clothing. The more capital- and technology-intensive manufacturing industries are chemicals, electrical equipment, mechanical equipment, motor vehicles and other transport equipment.

15 Increased capital formation in the most advanced forms of technologies has been estimated to account for 25 per cent of the productivity growth in manufacturing industries in the late 1980s (Steindel, 1992).

16 Hobday (1992); Balk (1991); Saghafi and Davidson (1989); Henderson (1989). Significantly, the activities of Japanese TNCs in South East Asia are now including research-and-development functions; see "corporate Japan in Asia," *Tokyo Business Today*, 60 (January 1992), pp. 22-26.

17 For example, Malaysia has become the world's largest exporter and the third largest producer (after Japan and the United States) of electronics and semiconductors, fueled by the activities of TNCs from Japan and, more recently, Hong Kong and Taiwan Province of China that seek lower operating costs. See Thuermer (1992) and Carl Goldstein, "Chips of change: electronics transforms the face of Malaysia's industry", *Far Eastern Economic Review*, vol. 145, No. 36 (September), pp. 98-99. In China, Hewlett-Packard (which has become the largest foreign-owned high-technology joint venture) is playing an important role in technology transfer through industrial upgrading. See Carl Goldstein, "Logging on to Asia: Persistence pays off for Hewlett-Packard", *Far Eastern Economic Review*, vol. 155, No. 17 (April), p.63.

18 See also Steward Toy, et al., "The battle for Europe, "*Business Week*, 3216 (June), pp. 44-52.

19 Indeed, recent objectives for overseas expansion by Japanese firms are closely related to locating at sites of consumption and developing marketing outlets for locally produced goods (Otaki, 1992). Similar objectives propel TNCs from the United States that are beginning to look beyond low-cost manufacturing and are attempting to tap into local, growing markets (Van Oldenborgh, 1992). Over half of 3,332 Japanese firms that had invested in a total of 13,522 foreign affiliates in 1991 cited this objective, according to a Toyo Keizai survey; see Otaki (1992), and "Corporate Japan in Asia," *Tokyo Business Today*, 60 (January 1992), pp. 22-26.

20 In fact, 20 per cent of the total number of outward affiliates of Korean TNCs and more than 26 per cent of their outward FDI stock in 1988 was in the form of minority-owned FDI. Similar trends are observed for Malaysian TNCs in terms of share of the number of outward affiliates. The importance of minority-owned foreign affiliates is most important in the case of Singapore TNCs: they accounted almost two-thirds of the total number of their outward affiliates in 1989 (TCMD, 1992a).

21 Louise de Rosario, "Drop in the bucket: Japan likely to continue pouring money into Asia", *Far Eastern Economic Review*, vol. 150, No. 51 (September), pp. 98-99; and Doi Guat Tin, E. P. Patanne and Jose Marte Abueg, "Economic Report: Philippines," *Asian Business*, vol. 27, no. 1 (January), pp. 36-48.

22 See also Doug Tsurnoka, "Fabricated future—rising costs could threaten Malaysia's chip industry", *Far Eastern Economic Review*, vol. 150, no. 20 (November), pp. 64-66.

23 Paul Handley, Doug Tsuruoka and Adam Schwarz, "Money bags move in: Taiwanese investors flock to low-wage neighbors", *Far Eastern Economic Review*, vol. 148, No. 16 (April), pp. 87-88; Jonathan Moore, "The upstart taipans; cash rich Taiwanese scour Asia for opportunities", *Far Eastern Economic Review*, vol. 148, No. 16 (April), pp. 84-87; Carl Goldstein, "Taiwan's PC gample: computer firms cosy up to China", *Far Eastern Economic Review*, vol. 155, No. 38 (September), pp. 87-88. Other significant areas of Third World TNC activity in developed countries are not geared to the manufacture of a product *per se*, but towards the acquisition of high-technology manufacturing capabilities and experience in specific manufacturing industries (Feinerman, 1991).

24 For more detail on this, see UNCTC (1988a) and UNCTC publications on services.

25 See also Rapp and Vellas (1988).

26 See also "Tangled — A survey of the airline industry", *The Economist*, 12 June 1993, pp. 20-21.

27 North-American partners are United Airlines, USAir and Air Canada, while European airlines involved are British Airways, KLM, Swissair, Alitalia, Air Lingus, Olympic Airways, TAP Air Portugal and Austrian Airlines.

28 See *The New York Times*, 24 January 1991; see also Donoghue and Nelms (1993); Flint (1993) and Kasper (1988).

29 See also Daoust (1992); Gialloreto (1992) and Crumley (1992).

30 See *Business Week*, 6 April 1992, p. 86.

31 See *Financial Times*, 7 October 1991 and 15 October 1992; *New York Times*, 10 October 1992.

32 Ibid.

33 See *The Economist: Telecommunications Survey*, 5 October 1991, p. 25.

34 See *Financial Times*, 15 October 1992, p. 3.

35 See *The Economist*, 5 October 1991, op. cit.

36 See *The Wall Street Journal*, 4 October 1991.

37 This has begun in the United Kingdom, which has most fully embraced the privatization concept among developed countries; see "Return to familiar ground", *Financial Times*, 24 March 1993.

38 See "For the chop", *The Economist*, 30 January 1993, p. 61; Wälde (1991).

39 See "In the doldrums", *The Economist*, 18 April 1992, p. 75.

40 See "Negligent neighbours", *Financial Times*, Survey of the North American Free Trade Agreement, 12 May 1993, p. 30.