

Chapter X

TRANSNATIONAL CORPORATIONS AND GROWTH: AN INTEGRATED ASSESSMENT

A. The dynamics of transnational corporations and growth

The preceding chapters in Part Two established that transnational corporations (TNCs) have an impact on the factors that determine the process of economic growth in developing countries, by influencing the amount and quality of new capital formation, the transfer of hard and soft technology, the development of human resources, the expansion of trade opportunities and the long-term sustainability of growth. The analysis was based on a growth-accounting framework (briefly outlined in chapter IV), within which the impact of TNCs on each of the key determinants of growth was examined separately. Those separate contributions of TNCs stimulate economic growth. While the effect may be small for the host economy as a whole, it can be substantial in certain industries. For example, in many host countries, the contribution of TNCs to capital formation is largest in technology-intensive manufacturing industries. In all cases, prevailing conditions in the host country—including the policy environment, the level of human resources development and the capacity of domestic enterprises to benefit from the presence of TNCs—are important determinants of the impact of TNC activities on growth.

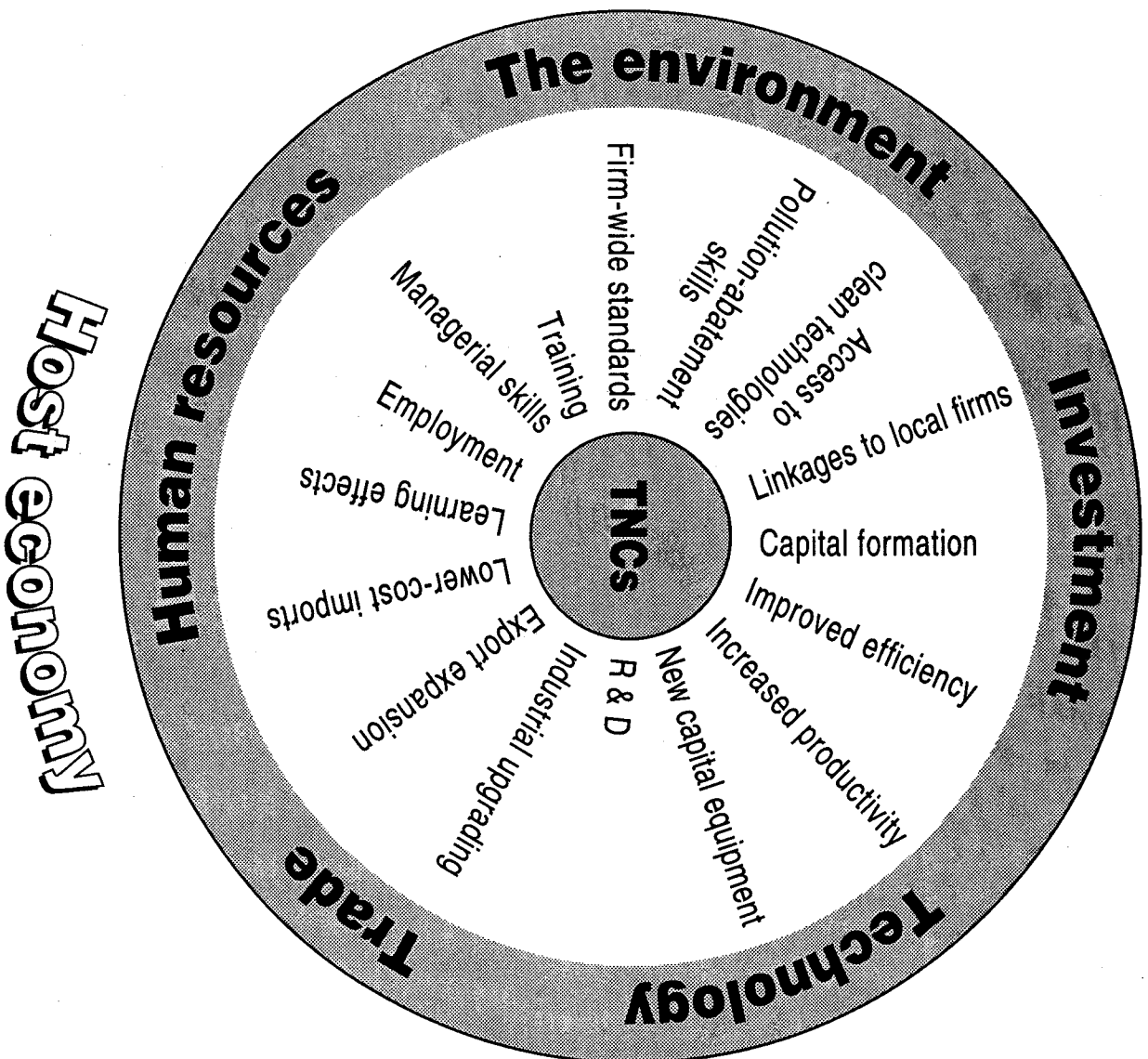
While this separate analysis of the contributions by TNCs to the individual growth determinants is important, it should be stressed that most of these determinants are interrelated. These interrelationships appear strongest between new capital formation, technology and trade. The relationship between those

channels of growth is typically interactive in that gains in one may stimulate improvements in one or more of the others; the growth stimulus is thus potentially magnified. Capital formation often takes the form of new capital equipment which frequently incorporates new technologies. Indeed, one of the most important direct impacts of TNCs is on the availability of technology, which in turn can stimulate gains in productivity, enabling firms to upgrade the technological capabilities of the host economy and to raise the quality and quantity of goods produced and exported. Exports, in turn, are associated with positive learning effects that can be translated into product and process innovations. Trade itself encourages economies of scale and specialization, improves efficiency and releases resources that can be put to more productive uses, thus stimulating further capital formation by domestic firms and foreign affiliates. This process is also helped by the fact that TNCs often bring with them production methods developed abroad, which are sources of competitive advantage in many industries. Indeed, as the creation of technology is increasingly internalized by TNCs and their networks, the scope for the technological development and growth of developing countries through means other than by some form of association with TNCs is likely to shrink. More generally, the increasing complexity of the interlinkages among the various activities undertaken by TNCs and the intangible nature of some of these activities (for example, organizational methods, informal training) imply that the possibilities to unbundle the elements of TNC contributions are becoming more limited.

An assessment of the overall contribution of TNCs to growth, therefore, needs to take into account not only the direct impact of TNCs via each individual channel, but also the existence of interrelationships between the various channels of economic growth (figure X.1). In other words, improved performance in more than one channel—investment, technology, trade and human resources—can occur simultaneously. Those interrelationships suggest that the various aspects of the activities of TNCs support each other, strengthening the overall contribution of TNCs to economic growth in host developing countries, in a manner that may not be directly evident from an assessment of their contributions to the individual determinants of growth. Thus, TNCs deliver a package of assets to a host economy, some tangible (such as new investment), others intangible (such as improved organizational practices), and those assets interact with each other in many ways. By linking together the various elements that determine growth, TNCs can contribute to a virtuous cycle of investment, technological progress, human resource development and trade which, together, stimulate economic growth. Thus, the overall impact of TNCs on the various factors determining growth may be greater than the sum of the individual effects, that is, it is likely to be synergistic.¹

In addition to the direct impact of TNCs on growth via the various interlinkages described above, interactions between TNCs and the local economy can also enhance the growth stimulus indirectly. For instance, a good deal of soft and hard technology is transferred as part of FDI. The benefits of such transfers are not necessarily limited to foreign affiliates, but may be diffused to the local economy through backward and forward linkages (for example, through subcontracting and domestic licensing), through human resource development or through demonstration effects. Indeed, the positive growth impacts of TNCs through technology transfers or capital formation would become more pronounced the deeper these linkages are. Furthermore, the presence of TNCs in host countries also has an interactive effect on unrelated domestic firms. For instance, foreign affiliates can force domestic firms (including those

Figure X.1. Transnational corporations and the growth process



Source: United Nations Department of Economic and Social Development, Transnational Corporations and Management Division.

associated with them via non-equity arrangements) to compete more actively in both the domestic and international markets, which in turn could encourage product innovation by domestic firms and lead to new investment and an upgrading of the labour force. The evidence indicates that the presence of foreign affiliates creates opportunities for domestic entrepreneurs to become suppliers, and for employees to become entrepreneurs. In addition, the potential exists for TNCs to yield beneficial externalities and spillover effects for the host economy that are not transmitted through any particular direct channel. Such externalities include, for example, learning through observation (demonstration effect) of marketing and promotional methods by domestic firms not linked to TNCs.

It is quite clear from the preceding discussions that the *quantity* of FDI undertaken by TNCs in host economies—measuring, as it does, only one component of the package of assets brought by TNCs to host countries—is a very incomplete indicator of the full range of impacts that these firms can have on growth through the direct contributions they can make to individual growth determinants, the synergistic interrelationships between these individual contributions and the interlinkages between foreign affiliates and domestic enterprises. In fact, the role of TNCs in growth has to be seen in the wider context of these firms integrating input and output production structures both within domestic economies and between domestic economies and the rest of the world. Transnational corporations mobilize goods and services produced in the domestic economy and transform them into outputs for domestic or international consumption; in the process, they often utilize various tangible and intangible inputs from abroad. In that respect, TNCs differ from domestic companies in that they have a wider choice, more options and a broader perspective regarding the location of production, the sourcing of inputs and the servicing of markets for goods and services. The role of TNCs in the growth process of host countries is, therefore, best described as one of integrating, organizing and managing various productive activities.² It is, above all, this integrating, organizing and managerial capacity of TNCs that makes them engines of economic growth within an enabling policy framework and conducive structural conditions in the host economy.

However, certain considerations should be borne in mind when making an assessment of the overall contribution of TNCs to growth in developing countries. First, this contribution is likely to vary according to the stage of development of the host country. In particular, the impact may be greater for middle- and high-income developing countries than for low-income countries at early stages of development. This is the case not only because low-income developing countries receive little attention from TNCs, including very low amounts of FDI; it is also a result of the fact that growth in low-income developing countries may depend on processes that tend to be marginal to the activities of TNCs, that is, raising the productivity of the agricultural sector, improving basic infrastructure and raising the educational and nutritional standards of the population. Those areas in which TNCs can make the greatest contribution, such as introducing modern technologies and production methods, increasing exports of manufactured goods and improving the performance of service industries, are more important in countries that have already reached a more advanced level of economic development. Not surprisingly, at very early stages of development, countries rely more heavily on official aid than on FDI to raise living standards; chapter II has shown a pattern whereby the mix of foreign capital inflows to developing countries shifts as countries develop, from a concentration of aid flows to low-income countries to a larger share of FDI as GNP rises. While TNCs can certainly make a contribution to the economic

performance of low-income countries, it is likely that their greatest impact will be in countries that can most effectively absorb the investment, technology, training and trade opportunities that TNCs offer. It is therefore probably necessary for a threshold level of domestic economic development to exist in order to benefit most from the potential for greater growth that TNCs can create.

Second, there can be circumstances in which TNC activity may not contribute to sustained growth in the long-term, although in the short term output may rise as a result of FDI. Transnational corporations are extensively involved in activities which may have adverse environmental impacts, though evidence suggests that these are not being shifted disproportionately to developing countries. Nevertheless, to the extent that TNCs are involved in natural resources (for example, mining and logging) and pollution-intensive industries (for example, chemicals), either directly or through non-equity linkages with domestic firms, their activities have implications for long-term growth. In addition, FDI that remains concentrated in enclaves with few linkages to the rest of the economy may lead to dualistic economic structures within a country, a situation that may make growth difficult to sustain in the long term. Furthermore, transfer pricing might adversely affect host countries, thus reducing the growth potential of TNCs via the trade channel. Similarly, if TNCs reduce competition through an abuse of market power, long-term growth prospects may be harmed by stifling the activities of local entrepreneurs. In this regard, it is important to look at the quality, as well as the rate, of economic growth, and to ask whether the growth path made possible through FDI is not only sustainable in the long run, but also more beneficial, from a socio-economic perspective, than other possible growth paths.

Finally, the synergistic nature of TNC activities, their concentration in a limited number of industries and the complexity of the interlinkages between the different growth channels mean that it is difficult to establish a statistical relationship between TNC activities and growth. The variable most easily quantified is FDI, as measured by balance-of-payments flows. While data may show a direct correlation between the relative importance of FDI in an economy (for example, as measured by FDI inflows as a share of domestic output) and its growth rate for a cross section of developing countries,³ or for some particular countries (box X.1), such a relationship is not always obvious for all countries. A few economies, including Hong Kong and Singapore, show consistently high shares of FDI and high growth rates. Some economies have experienced high growth with relatively low shares of inward FDI in total investment (for example, the Republic of Korea and Thailand), while still others with very high shares of FDI in total investment have experienced relatively slow growth (for example, Nigeria). In some cases, those overall relationships mask the high concentration of FDI in industries that have a disproportionately high impact on growth. Even in cases where regression analysis establishes a link between FDI and growth, caution needs to be exercised in the interpretation of the results. A positive relationship between FDI and growth does not mean that the direction of causality is necessarily from the former to the latter. In fact, several empirical studies on the determinants of FDI have found that growth in host countries is important for attracting TNCs.⁴ On the other hand, data on FDI flows do not capture the package of growth stimuli embodied in the activities of TNCs or the conditions within host economies that are most conducive to utilizing this package.

Box X.1. The relationship between foreign direct investment and growth: some empirical evidence

The Transnational Corporations and Management Division of the United Nations Department of Economic and Social Development has embarked on an empirical investigation of the impact of FDI on the growth rate of developing countries, utilizing data from the *World Investment Directory*. First, a single-equation model was developed to examine the relationship between FDI and the growth of real domestic output for a number of developing countries. As a next step, a simultaneous equation model was developed (not shown here) to capture direct effects of FDI on growth, indirect effects via linkages with capital formation, technology, human resource development and trade and the possible simultaneous relationship between growth rates and FDI. Early results of the single equation model for Taiwan Province of China, using regression analysis and data for the period 1964 to 1990, are presented in the following equation:

$$(1) \quad Q_t = 3.998 + 0.0556I_t + 1.5137F_t + 1.3430L_t + 1.1123E_t + 0.0788O_t$$

(0.31)
(2.12)
(3.50)
(2.50)
(2.13)

$$R^2 = 0.48 \quad \bar{R}^2 = 0.34 \quad SEE = 2.37 \quad D-W = 2.09 \quad N = 27$$

(The numbers in parentheses below the estimated coefficients refer to t values)

Where:

Q_t = growth of real GDP in year t;

I_t = gross domestic fixed capital formation in year t as a percentage of GDP in the previous year;

F_t = FDI in year t as a percentage of GDP in the previous year;

L_t = growth of the labour force;

E_t = growth in the percentage of the labour force with secondary education;

O_t = exports plus imports of goods and services as a percentage of GDP.

This single-equation model hypothesizes that the growth of real domestic output is a function of domestic investment, FDI, the growth of the labour force, the share of the labour force with secondary education and the openness of the economy. The equation uses annual inflows to measure FDI. The stock of FDI, the preferred proxy for TNC activity in host countries, was not utilized because such data do not exist for Taiwan Province of China (though they can be estimated as cumulative inflows), and because comparable data on the stock of fixed domestic capital were not available. Although the stock of fixed domestic capital could be estimated, such an estimate would be more imprecise than stock estimates for other variables in the equation. Thus, while the use of the stock of both domestic and foreign direct investments is theoretically appealing, it is more consistent to use flow data related to both of those variables, rather than the flow of the former and the stock of the latter.

In the single-equation model, all estimated coefficients have the expected sign and, with the exception of domestic fixed capital formation, are statistically significant at the 5 or 1 per cent levels of significance. The statistical insignificance of domestic fixed capital formation might raise doubts regarding the results obtained by this exercise, although it is not an uncommon finding in the estimation of growth equations for developing countries.¹ While there is a positive association between fixed investment and growth, the inclusion of other variables may render the estimated coefficient insignificant or negative. One possible explanation is that domestic fixed investment contains elements that do not contribute to growth or that overwhelm any positive effects of an increase in domestic investment or output. This issue deserves further investigation.

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(Box X.1, cont'd.)

The results reported here are similar to those recently obtained using a cross section sample of 69 non-oil producing developing countries by M. Blomström, R. Lipsey and M. Zejan.² The authors found a positive significant impact of FDI inflows averaged over the period 1965-1985 on real GDP per capita for middle-income developing countries. Other independent variables included in this single-equation model, such as the degree of enrollment in secondary education, were also significant and with a positive sign. In concurrence with the results reported here, the domestic investment variable was only marginally significant.

A great deal of growth in developing, as well as in developed countries, remains unexplained after the growth of capital and labour have been taken into consideration.³ Such a residual is usually attributed to improvements in education and technology. The former is included by the variable E, which is statistically significant at the 1 per cent level. While expenditures on R&D would be a good proxy for technology, such data were not available for a sufficient number of years for Taiwan Province of China, to be included as an additional explanatory variable in the equation.

The degree of openness of an economy would also be expected to be directly related to growth, since open economies are more exposed to competition and are therefore less likely to undertake inefficient investments. The simplest and most commonly used proxy for openness is the value of exports plus the value of imports of goods and services as a percentage of GDP. The equation shows that this variable is also positively related to growth and it is statistically significant.

Other versions of equation (1), not reported here, used the level of industrialization as a proxy for the shift from the primary to the secondary sector (and ultimately to services), a process that underlies economic growth. This variable had the correct sign and was statistically significant at the 5 per cent level. However, when both the industrialization and the openness variables were included in the same equation, they were both statistically insignificant, reflecting multicollinearity. Thus, while the inclusion of both variables is theoretically justified, simple regression analysis does not permit the separation of the independent effect of each on growth. However, this line of investigation merits further analysis and more sophisticated estimation procedures.

It should also be pointed out that the value of R^2 for the equation is below .50, while the adjusted R^2 is even lower. While these appear to be low, this is not an unusual phenomenon in the growth literature, especially with the inability to measure technology. The value of the Durbin-Watson statistic indicates the absence of serial correlation in the residuals, which further strengthens the results of this model. Thus, while the results obtained in this simple exercise are preliminary and refer to only one economy—and a special one at that—they provide a justifiable basis for an investigation of the relationship between FDI and growth for other host developing countries.

1 For example, Dominick Salvatore and Thomas Hatcher, "Inward oriented and outward oriented trade strategies", *Journal of Development Studies*, vol. 27, No. 3 (April 1991), pp. 7-25.

2 Magnus Blomström, Robert E. Lipsey and Mario Zejan, "A cross-country study of growth in developing countries". Paper prepared for the conference on historical perspectives on the international convergence of productivity, New York University, New York, 23-24 April 1992.

3 Such a result is common in the growth-accounting literature. See the work of Denison, in this area, for example, E. F. Denison, *Trends in American Economic Growth, 1929-1982* (Washington, D.C., The Brookings Institution, 1985).

B. International production

1. Characteristics of the international production system

The package of assets, described earlier, is delivered to host countries by some 35,000 TNCs through more than 150,000 foreign affiliates plus numerous non-equity linkages. Since FDI, by definition, involves the establishment of lasting managerial control, it creates networks of ongoing relationships between parent firms and foreign affiliates and, increasingly, among foreign affiliates. That raises the question of whether those networks, in their aggregation and their interrelationships, are the nucleus of an emerging international production system. Such an international production system would be a form of international economic integration at the production level (see chapter I), organized by firms that coordinate and integrate their cross-national operations with a view to making the most efficient use of their resources.

While international production has existed for decades, changes in its magnitude and nature can be expected to have far greater implications for growth in host countries than before.

- Concerning its magnitude, FDI flows had reached unprecedented levels by the beginning of the 1990s. But what is more important is that these flows have built up stocks of productive assets amounting, in 1990, to some \$1.7 trillion measured at book value. (Book value represents the value of an investment at the time when it was made, with adjustments for depreciations; it is typically considerably lower than market value, that is, the current value of an investment. In the case of the United States—which cannot be easily generalized because the FDI of that country is relatively mature compared to, for example, that of Japan—the book value of outward stock of FDI was \$421 billion in 1990, while the current market value is estimated between \$600 billion and \$700 billion.⁵) Those assets represent a substantial amount of productive capacity which, as discussed in chapter II, is often concentrated in key manufacturing and services industries and, overall, is accounting for an increasing share of the economic activities of countries.
- As regards its nature, international production in the past was often characterized by stand-alone affiliates, typically aimed at producing final products for host country markets. This was (and still is) particularly true in the services sector, because of the limited tradability of many services. In its goods sector, FDI in natural resources has always been largely export-oriented. As regards manufacturing, though a large part of the production of affiliates continues to be sold to domestic markets, there has been an increase in export orientation (see chapter VIII). Progress in communication and transportation technologies (outlined in chapter IV), coupled with a far-reaching liberalization of national regulations of trade as well as outward and inward FDI (see chapter III), have created the technical and regulatory conditions for greater specialization of the various parts of a transnational production system and, hence, for the emergence of an intra-firm, international division of labour. It appears that the economics of production

and the pressures of competition are leading TNCs to take advantage of these new conditions, thus reaping the benefits of country, product and process specialization. Foreign affiliates are increasingly becoming parts of networks in which they are closely linked with their parent firms and each other through intra-firm flows of trade, technology and training and through the common utilization of a host of services (for example, design, marketing, accounting, R&D, finance) available to the corporate system world-wide, precisely as part of an intra-firm division of labour (box X.2). It should be underlined that these networks not only find their expression in intra-firm trade but, perhaps even more importantly, in the intra-firm utilization of various intangible assets, all subject to a common organization and governance.

Thus, the international production system is characterized by a complex, closely knit web of interrelationships, as TNCs take an increasingly global view of investment, production, sourcing and marketing decisions and organize and manage value-adding activities in an integrated manner across national borders. The regional core network strategies of TNCs, discussed elsewhere,⁶ are the most concrete and furthest developed expressions of the emergence of an international production system. But the magnitude of the stock of FDI and the number of foreign affiliates show that, for many TNCs, their international networks are in place, even if the integration of production is still rudimentary for many of them; for these firms, the issue is therefore no longer primarily the establishment of networks, but rather their maintenance, expansion and, most importantly, the integration of the various units of the networks into single production structures. As this process continues, an international production system is emerging.

International production has so far advanced primarily in selected industries in the manufacturing sector. However, a striking new characteristic of the emerging international production system is that it is beginning to involve the services sector as well. As of now, the production of services is taking place largely within domestic borders, even though consumption has in some cases become internationalized (for instance, in the case of global financial markets). Because of the intangible nature of most services, they have to be typically produced when and where they are consumed; their transportability, and hence tradability, is therefore limited. Because of this, internationalization in this sector has taken place mainly through FDI. Non-tradability means that foreign services affiliates operate independently of one another and the parent firms, as stand-alone miniature versions of their parent firms that replicate their activities on a smaller scale for foreign markets.⁷ In this sense, the production of services has been internationalized to some extent; but as yet foreign service affiliates are not as integrated into international networks as are foreign goods-producing affiliates.

But two recent trends have begun to allow a greater integration of international services production. First, the service intensity of the goods sector is high and growing, such that industrial production, particularly of high-value and high-technology goods, is increasingly services-intensive. Second, and more importantly for international production, technological progress is increasing the tradability of services.⁸ This makes it possible to deliver services across national borders, to specialize in the production of services or their components and hence to integrate the production of services on an international basis. Advances in telecommunications technology and its fusion with computer technol-

Box X.2. Asea Brown Boveri: an international production network

There are probably only a few TNCs in the world today which could be called truly global firms, and that own, organize and manage an international production network. Among those few firms is Asea Brown Boveri (ABB), which was formed in a 1987 merger of the Swedish firm Asea with the Swiss firm Brown Boveri. Following a massive restructuring, involving investments of some \$3.6 billion in 60 newly-acquired or merged companies, ABB is now the world's leading supplier of power and railway equipment, with sales of \$29 billion and 214,000 employees in 1991.

The structure and management practices of ABB place it among the few truly global corporations operating in the world economy: it comprises 1,300 companies located throughout the world, 130 of them in developing countries; its eight corporate board members are from five different countries; it has adopted an official language (English) for major transactions; and its 5,000 profit centres report all financial information in United States dollars to a single location, to allow for cross-border analysis. The firm is organized into a matrix structure, in which businesses are responsible to both a global leader as well as a national president. Leaders of the 50 Business Areas of ABB are based throughout the world and manage their operations on a global basis, devising overall strategies as regards exports, capacity and employee development; the leader of the power transmission business, for instance, is a Swede based in Germany, managing 25 factories in 16 countries. At the same time, the 1,300 individual companies that make up the 50 Business Areas each belong to a national company, and must prove themselves competitive on a national basis. This structure, which the company's president and CEO characterizes as "multidomestic", allows ABB to compete as if it were a national company in industries where local presence is important (such as locomotives), while at the same time drawing on the corporations' global resources in such areas as core technologies, design, component manufacturing, managerial expertise and finance. The management strategy of combining the advantages of globalization (economies of scale in both production and purchasing), along with the responsiveness of a national firm (ABB has companies in 140 countries), has led to the emergence of a globally integrated production and distribution system which involves extensive cross-border flows of goods and services, people, technology and know-how.

The operations of ABB reflect many of the trends of the new world economy, in which TNCs account for an increasing share of the world's trade, technology, financial and knowledge flows; in which economic distances are being shortened by new communication and information technologies; and in which regional integration is leading to the emergence of regional TNC-controlled production networks. From very low levels in 1989, the exports of ABB have grown to \$1 billion and are expected to double in the next few years, particularly as North American and Eastern European operations achieve targeted export levels; its 1991 R&D budget totalled \$2.3 billion; it has created its own private satellite networks to communicate with affiliates in countries with poor communications infrastructure; it manages its own Business Information Center; its World Treasury Center mobilizes financial resources for its global operations; and it makes large investments in management training for its newly-acquired personnel. Economic integration in both Europe and North America has led to a restructuring of operations in both regions. In North America, the combination of the emerging free trade area, relatively low United States wages and the specialized capabilities of United States-based affiliates of ABB will make the region an important export base for the company's global distribution network. In Europe, fewer production sites will serve larger markets to meet growing competition in the unified market, and current operations are being supplanted with a newly-acquired network of manufacturing facilities in Central and Eastern Europe and the former Soviet Union, where ABB currently employs about 21,000 people (half of which are in the former German Democratic Republic). Incorporating those affiliates into the global network of ABB has led to substantial transfers of modern capital equipment (from Western European facilities of ABB), finance, technological know-how and intensive management training in Western-style techniques (reportedly the costliest component of its Eastern European investments). Its Central and Eastern European network, composed

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(Box X.2, cont'd.)

of some 41 companies and poised to grow as more firms are privatized, will not only serve the needs of local markets for infrastructure and capital goods, but will also form the basis of a regional core network, by serving as a high-volume, low-cost export base for the company's global operations. Indeed, turbine components produced by ABB affiliates in Poland and Hungary are already being exported to Western markets, and Central and Eastern Europe is due to become the centre for the company's welding and forging operations. Developing countries, where ABB employs some 34,000 employees and which account for its \$6 billion in revenues, currently serve mainly as markets for ABB exports from North America and Europe as well as sites for local-market production. ABB has targeted the Asian region, which currently accounts for about 15 per cent of revenues, for major growth in the next few years. Selected developing countries, such as Brazil, are also emerging as important export bases for the global distribution network of ABB.

In addition to cross-border flows of goods, capital equipment and training, technology and know-how are important resource flows within the ABB network. Business Areas regularly rotate personnel to share expertise. After restructuring, the firm brought 11,000 R&D employees to three centres at Vasteras, Heidelberg and Baden to encourage economies of research by pooling talent from all of its affiliates. Moreover, a corporate R&D organization regularly combines resources from several parts of the organization, to centralize efforts that promise to yield company-wide benefits. At a less formal level, ABB consolidates research data, knowledge and experiences from various affiliates to be utilized in product development throughout the firm. For example, cooperation and pooling of technology and information of Drives and Process Automation divisions led to a greenfield paper mill investment in South Carolina (United States).

Finally, flows of goods, technology, information and management are complemented by movements of capital and services within ABB. The firm's Financial Services business, offering a full range of services including finance, treasury operations and insurance, is managed as a separate profit center which competes with outside financial service providers for the financing of ABB operations. As such, its relations with ABB's industrial operations are carried out on an arms-length basis, with the goal of maximizing synergies within the organization. A commercial bid by the power plant business segment for \$136 million project in New Zealand illustrates the extent of intra-firm cooperation: ABB Project Finance raised finance for the proposal, ABB Credit arranged equipment leasing, ABB Credit B.V. procured interim financing, the World Treasury Center acted as lenders, while Sirius, another ABB company, provided credit risk insurance. In another example of cross-border, intra-firm cooperation, regarding a gas and steam turbine project in Bahrain, ABB Project Finance arranged and negotiated a financing package involving six different countries, and ABB Trading negotiated and managed required investments in local industries.

The structure of ABB and the geographical scope of its activities point are at the forefront of a relatively small number of companies whose operations may be characterized as "global". To the extent to which other companies adopt similar strategies, they lay the foundation for a global production system, integrating both industrial as well as service activities. Under such a system, countries are integrated into the international economy through the activities of TNCs, involving not only investment but also cross-border flows of goods and services, information, technology, personnel and finance.

Sources: Asea Brown Boveri, *Annual Report 1991*; "Asea Brown Boveri: power play" and "ABB in Eastern Europe: showing promise", *The Economist*, 28 May 1988, pp. 19-22, and 29 June 1991, pp. 61-62; "Asea Brown Boveri: a model for global management", *R&D Magazine*, vol. 33, No. 13 (December 1991), pp. 30-34; Roger Cohen, "The very model of efficiency", *The New York Times*, 2 March 1992, p. D1; Jonathan Kapstein and Stanley Reed, "The Euro-gospel according to Percy Barnevik", *Business Week* (23 July 1990), pp. 64-66; William Taylor, "The logic of global business: an interview with ABB's Percy Barnevik", *Harvard Business Review*, vol. 69, No. 2 (March-April 1991), pp. 90-115; Neil Wilson, "Capital markets: miracle of miracles", *The Banker*, 138 (December 1988), pp. 26-27.

ogy, as well as the rapid diffusion of those technologies to a wide number of countries, are of particular importance in this regard. The electronic linkages being built between countries increasingly allow the emergence of an international division of labour in the production of services, in a manner similar to that in the industrial sector. Thus, the international production system that is emerging is becoming more complete and pervasive, comprising both goods and services sectors.

**Box X.3. Asia: an illustration of foreign direct investment,
dynamic restructuring and growth**

Achieving sustainable growth implies that countries need to be able to adapt to changing competitive conditions at the international level as well as in their domestic economies through a process of dynamic restructuring. In this context, development may be stylized as a series of stages through which countries pass, moving to higher-value, more skill- and technology-intensive activities as they proceed from one stage to the next. For example, the growth path of many developing countries is similar, in that many began by increasing the share of the manufacturing sector in their economies and exporting labour-intensive light manufacturing goods which built on their comparative advantage in abundant, low-skilled labour. As wages rise and domestic savings accumulate, there may be pressures for a structural upgrading of the economy into more capital-intensive activities, such as chemicals and machinery. A few developing countries have entered the latter stage, and are now competitive in such industries as automobiles, business equipment and consumer electronics, and producer and consumer services. This illustrates a process of continuous restructuring of the economy into higher-productivity activities—of continually upgrading the activities in which the country has a comparative advantage. As countries move from one stage to the next, their growth rates may accelerate, as productivity of both human and physical capital increases and as rising incomes boost domestic demand.

Transnational corporations in developing countries can accelerate this process of moving up the ladder of comparative advantage, by helping to effect a reallocation of resources to higher productivity industries. Often, this is accomplished by transferring to the host country activities that may no longer be productive in the home country, but which add significantly to the marginal productivity of the host country. In other words, TNCs can facilitate the shift of factors of production to higher-productivity activities, both within and across industries.

The Asian region provides an illustration of many of the concepts outlined above. Within that region, one finds countries at different stages of the development process, with Japan in the lead, followed by the newly-industrializing economies (Hong Kong, Taiwan Province of China, the Republic of Korea and Singapore) and, finally, their neighbours, including Indonesia, Malaysia, the Philippines, Thailand and the Guangdong Province of China, many of whom have experienced very rapid growth rates in recent years. The pattern of growth of these economies is, to a large extent, a regional phenomenon, with growth being promoted through a process of structural upgrading in a complementary fashion.

International production plays a central role in this process. Foreign direct investment has come from both within and from outside the region, although in recent years intra-Asian FDI has dominated inward FDI in the region, and is likely to have the most pronounced impact on the dynamic restructuring of Asian economies.¹

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Elements of such an extended international production system are gradually emerging as a result of the strategies of TNCs. In that sense, international production can be thought of as performing a role wider than trade, that is, one of moving not only goods and services across borders, but also moving factors of production and organizational methods, skills and technologies under a unified management structure. Thus, TNCs act as integrating agents by incorporating within a single organizational structure the many linkages to the world economy that can contribute to the economic growth of host countries. In that sense, they play a crucial role as direct coordinators of international economic activity. As a result

(Box X.3, cont'd.)

In this process, Asian TNCs—including those from Japan as well as the newly-industrializing economies—transmit to other Asian countries through FDI activities in which the home country is no longer internationally competitive, but which represent large potential gains for the host country. Over the long run, development stages may be staggered in the Asian region in such a way that countries at different stages of development follow one another in the process of dynamic restructuring. Foreign direct investment can thus be seen as channelling economic growth impulses from home to host countries. To illustrate, Japan made early export-oriented investments in what are now the Asian newly-industrializing economies in labour-intensive activities in which it no longer had a comparative advantage, such as textiles and toys. Those investments, many of which were made by small and medium-sized Japanese firms, helped to expand those sectors in the host economies and assisted them in capturing large shares of world markets for light manufactures. As those countries grew, rising wage rates and trade surpluses which led their currencies to appreciate undermined their comparative advantage in labour-intensive sectors, and they themselves transferred those activities through FDI to the less-developed Asian economies, enabling the latter to begin a path of structural upgrading. At the same time, new FDI from Japan in services industries and higher-value manufacturing goods in the newly-industrializing economies are enabling the latter to re-structure into those activities. Foreign direct investment is thus acting as a channel in the region not only for trade and technology transfer, but for the transfer of sequential stages of comparative advantage.

While the above depiction is no doubt simplified, it underlines how FDI, under a particular set of conditions, can facilitate a process of dynamic restructuring. A few other important points may be drawn from the example. In many cases, Japanese FDI in the region took the form of joint ventures with local partners, thus helping create positive spillovers into the local economy, and technologies which were no longer state-of-the-art in Japan were transferred to foreign affiliates. Furthermore, TNCs have created strong trading networks both within and between countries, such that much of the trade in the region is driven by TNC networks. Host-country policies to encourage exports and local entrepreneurs were essential in helping to create the growth dynamic of intra-regional FDI; indeed, in cases where industries were protected or FDI was kept in isolated enclaves, the growth impact of FDI appears to have been constrained. Finally, deliberate host-country policies to transform their economies through re-structuring are key elements in the contribution of FDI to growth in the region.

¹ See, for instance, Terutomo Ozawa, "The dynamics of Pacific Rim industrialization: how Mexico can join the Asian flock of 'flying geese'", in Riordan Roett, ed, *Mexico's External Relations in the 1990s* (Boulder & London, Lynne Rienner, 1991); Hal Hill, "Foreign investment and East Asian economic development", *Asian Pacific Economic Literature*, vol. 4, No. 2 (September 1990), pp. 21-58; and Eric D. Ramstetter, ed., *Direct Foreign Investment in Asia's Developing Economies and Structural Change in the Asia-Pacific Region* (Boulder, Colorado, Westview Press, 1991).

of that organizational effort, the world economy is being transformed qualitatively: trading and other linkages are being complemented, if not supplanted, by linkages at the production level. In an international production system for goods and services, it is increasingly firms—transnational corporations—that play this coordinating role and that determine participation in the international division of labour, rather than arms-length transactions.

The evolving pattern of the international production system increasingly defines the conditions and potential for countries to grow. Indeed, the growth potential of developing countries will increasingly depend on their ability to participate in the process of international production, whether on an intra-regional or cross-regional basis. The active participation of TNCs in host countries, under an appropriate domestic policy framework, has become a primary means of integrating developing countries into the emerging world economy. Presently, however, the more advanced elements of international production are confined to developed countries and a small number of developing countries in selected industries.

2. Determinants of international production

At the heart of the international production system is the combination of the ownership-specific advantages of TNCs, the locational advantages of host countries and competitive pressures for TNCs to internalize a wide range of value-adding activities rather than rely on arms-length transactions. Transnational corporations possess advantages that may in part be derived from their home countries, but which are specific to the firm itself. Such advantages may be in the form of proprietary knowledge and/or technology, superior management techniques relative to rivals, established trade and distribution networks or brand names and patents. Indeed, it is these very firm-specific strengths that allow TNCs to compete effectively against local firms, which have the advantage of familiarity with and a direct presence in the domestic market. Sometimes, specific developments of the home country of TNCs influence the nature of their advantages. Japanese automobile TNCs, for instance, may be relatively advantaged in introducing new production and organizational methods geared towards high-quality output because these were pioneered in Japan; United States TNCs in the consumer products industry may have special marketing capabilities; and Italian textile firms may bring value in terms of their design capabilities—all reflections of their particular home country conditions. For their part, host countries possess locational attributes, such as natural resources, low-cost skilled labour, technical competencies, large domestic markets and policies favourable to FDI, that make it advantageous for TNCs to locate production in those countries. Together, the ownership-specific advantages of TNCs and the locational advantages of host countries interact to promote the competitive position of the investing firm and improve economic performance in the host country. In particular, TNCs often provide the host country with the ability to realize its own comparative advantage in the world economy, through an international re-allocation and integration of resources (box X.3).⁹

As an example, a country with an abundance of relatively inexpensive labour may lack the capital, both physical and managerial, with which to employ that labour in productive activities. Transnational corporations, attracted by a large labour pool, can provide the capital, know-how and export markets that

enable the country to gain from its locational advantage in low-cost labour. When such a process succeeds, TNCs contribute to a further strengthening of the country's locational advantage by providing formal and informal training which upgrades the quality of the labour force, thus expanding the potential for the host country to grow. In addition, the transfer of soft and hard technology by TNCs can enable the host country to shift its locational advantage gradually towards specialized skill-intensive and high-technology production. Alternatively, TNCs may deliver high-quality inputs to host countries that possess a strong demand for such inputs, but lack the know-how or assets to produce or import them. By supplying the host country with such inputs, TNCs can contribute towards a more efficient utilization of the host country's resources. In addition, by generating shifts in the composition of exports towards technologically advanced goods and by assisting in the development of new lines of production in host countries, TNCs allow countries to realize their comparative advantage in exports and production. Thus, combining the competitive advantage of TNCs with locational advantages of host countries increases the ability of the latter to expand their growth potential.

3. Implications for developing countries

The strategies of TNCs in the context of the emerging international production system are a key determinant of the role of developing countries in that system, and of the potential benefits countries may derive from it. Integrated international production implies that, more and more, the foreign activities of TNCs will form an integral part of the whole company's operations, rather than a discrete adjunct to its domestic operations. Increasingly, competitive conditions in one market determine the activities of foreign affiliates in all countries, as all of a firm's operations are potentially available to enhance the ability to compete on a firm-wide basis. To the extent that such globally-integrated strategies grow in importance, developing countries may gain in leverage in relation to TNCs, as each part of a firm's activities becomes a more important component of its overall strategy, and as competition among TNCs for favourable locations intensifies; at the same time, to the extent that specialization increases, each part has little value in and by itself. Other developing countries may find themselves relatively marginalized if they do not offer the locational advantages required by globally-integrated firms, such as a skilled labour force, an open trading and investment environment, a developed communications and transport infrastructure and networks of local suppliers on which TNCs can draw.

The objectives of policy makers and the strategic objectives of TNCs are often different. For example, a country may look to TNCs to provide it with export opportunities. If, however, it has a large domestic market, TNCs might be more interested in domestic sales than exporting. The experience of China in attracting FDI is instructive in that regard. Countries may also consider it desirable to develop vertically-integrated, stand-alone domestic industries, whereas—in the context of international production—TNCs may wish to locate only a discrete value-adding activity in the host country, in order to integrate it with activities of affiliates located elsewhere. In those cases, host countries will have to determine whether it is to their advantage to try and develop complementary capabilities through domestic investment, or to specialize in a segment of an internationalized industry. While these choices may not

be mutually exclusive, at least for large countries, they might be for small developing countries with limited local resources. In any event, the different perspectives of firms and Governments require that efforts are often needed to ensure that a balance acceptable to both in the longer run is found.

C. The role of host country policies

The preceding chapters emphasized the role of host country conditions, including policies, in enhancing the growth impact of TNCs. Many of those policies are not, however, FDI-specific. Clearly, an enabling environment for FDI is necessary as a minimum policy requirement for inward FDI. However, once investments are made, the most important policies from a growth perspective are likely to be in the areas of macroeconomic management, industrial, trade, technology and education policies. While an open FDI regime may be important in attracting TNCs, it is the overall policy framework of the host country and, more significantly, the interlinkages among policies which ought to be considered when seeking to strengthen the growth-promoting contribution of TNCs. In addition, policies to strengthen the locational advantages of host countries in order to attract FDI are also those which will themselves affect the potential of TNCs to affect favourably domestic growth. For example, policies to raise the quality of human capital or improve infrastructure will affect both the attractiveness of the host country to TNCs and its ability to benefit from their activities.

The interaction between those policies is instrumental in providing an enabling framework as regards the growth-promoting impact of TNCs. In particular, a well-managed macroeconomic environment is important both as a condition for deriving benefits from TNCs and for attracting FDI. Exchange rate policies, for example, are important insofar as they determine the amount of profits that will be reinvested by the affiliate and also affect the production costs perceived by TNCs wishing to invest there. Trade and industrial policies aiming to promote those industries in which a country has a comparative advantage in world markets would need to take into account not only the FDI regime, but also the potential contribution of TNCs to export promotion and technological development. It would therefore be necessary to coordinate aspects of trade, industrial and FDI-specific policies in order to not only attract the type of FDI that would be most growth-promoting for a given country, but also to enhance the contribution of TNCs that have already invested there. In that regard, trade and industrial policies will increasingly have to take into account the role of FDI in promoting growth; at the same time, FDI policies will have to consider the growth-promoting impact of TNCs via trade, technology and other channels in formulating appropriate regimes.

As a specific example of the interplay between FDI and national policy frameworks, policies designed to promote new industries through restrictive trade and FDI regimes may come under increasing pressure, given the rapidity of technological change and the rising costs of technological development (leading to a greater internalization of technologies, particularly advanced technologies, by TNCs), the entry of many countries into the international FDI market-place (for example, Central and Eastern Europe) and the deepening of global and regional production systems led by TNCs. Those factors may

induce countries to modify FDI policies in an effort to improve their economic performance through greater participation in the international economy. But the success of a modification in FDI policies in achieving the desired results may well be predicated on trade-policy reforms. The presence of TNCs may actually bolster a host country's ability to nurture domestic industries, which otherwise might not be able to withstand intense international competition, including competition from imports. From that perspective, a relaxation of protectionist policies and allowing greater inflows of FDI may together contribute to the growth of domestic industries that may not be achievable through either FDI or trade-policy reforms alone. Similarly, a closer interplay between education and technology-related policies can enhance the competitiveness of a host country by enabling it to absorb the technology generated and transferred by TNCs. Government policies aimed at improving the quality of human capital in host countries through education (for example, minimum standards of education and vocational training programmes) are key elements in the process of assimilation and development of technology.

In the past, domestic policies in developing countries did not always take into account policy interlinkages in order to adopt an integrated framework aimed at maximizing the potential contribution of TNCs to growth. However, the growing awareness of the growth-promoting potential of TNCs through their impact on trade, technology and investment, combined with a decreasing potential for unbundling each of these activities, points to the need for an integrated policy package, with policies dealing with FDI at its heart. The policy regimes of many countries would benefit from greater coordination, to ensure that the host country takes advantage of the contributions of TNCs.

The Asian region provides a useful illustration of the fact that a country's integrated policy framework is more critical than its FDI regime *per se*, and that countries with open policies may benefit from TNC participation. Several Asian countries adopted export promoting policies, macroeconomic policies that encouraged savings and domestic investment and human resource development policies that produced a skilled labour force; at the same time, however, there was great variation in the degree to which these countries allowed FDI to enter their economies (although, in recent years, most of them have opened up significantly to FDI). The interplay of these policies contributed a great deal to the dynamism of certain Asian economies, particularly in the areas of trade and investment. In many cases, the growth impact of TNCs in Asia was magnified by the presence of a dynamic local economy, which often surpassed the performance of TNCs in terms of exports and capital formation. Critical in shaping the contribution of TNCs to economic growth in the Asian region was an integrated policy framework, mainly macroeconomic, trade and overall investment policies, rather than the FDI policies *per se*.

In summary, the policies of host countries play an important role in shaping the contribution of TNCs to economic growth: they establish the enabling framework within which the contributions of TNCs can be utilized and enhanced. While TNCs can be engines of growth, it is the Governments of the host countries that lay the tracks and provide the signals which, as part of an entire system, determine both the speed with which the engines can travel and the direction in which they do so. It is therefore the interaction between Governments and TNCs, and their relations with the domestic private sector, which shape the pattern of growth and development of host countries.

Notes

¹For a state-of-the-art review of the literature on TNCs and economic development and TNCs and industrialization, as well as a collection of major writings in these areas, see S. Lall, ed., *United Nations Library on Transnational Corporations: Transnational Corporations and Economic Development* (London, Routledge, forthcoming); D. Chudnovsky, ed., *United Nations Library on Transnational Corporations: Transnational Corporations and Industrialization* (London, Routledge, forthcoming).

²For a review of a number of central issues in this respect, see G. Hedlund, ed., *United Nations Library on Transnational Corporations: Organization of Transnational Corporations* (London, Routledge, forthcoming); D. Lecraw and A. J. Morrison, eds., *Transnational Corporations and Business Strategy. United Nations Library on Transnational Corporations* (London, Routledge, forthcoming); and, A. I. Stonehill and M. H. Moffett, eds., *United Nations Library on Transnational Corporations: International Financial Management* (London, Routledge, forthcoming).

³For example, such a relationship was found by M. Blomström, R. E. Lipsey and M. Zejan, "A cross-country study of growth in developing countries", paper prepared for the conference on historical perspectives on the international convergence of productivity, New York University, New York, 23-24 April 1992. Other efforts to examine this relationship include: Gustav Papanek, "Aid, foreign private investment, savings, and growth in less developed countries", vol. 81, No. 1 (January/February 1973), pp. 120-130; Pradumna B. Rana, "Foreign direct investment and economic growth in the Asian and Pacific region", *Asian Development Review*, vol. 5, No. 1 (1987), pp. 100-115; V. Bornschier, C. Chase-Dunn and R. Robinson, "Cross national evidence of the effects of foreign investment and aid on economic growth and inequality: a survey of findings and a reanalysis", *American Journal of Sociology*, vol. 84, No. 3 (1978), pp. 651-683; Eric D. Ramstetter, ed., *Direct Foreign Investment in Asia's Developing Economies and Structural Change in the Asia-Pacific Region* (Boulder, Colorado, Westview Press, 1991); Denis O'Hearn, "TNCs, intervening mechanisms and economic growth in Ireland: a longitudinal test and extension of the Bornschier model", *World Development*, vol. 18, No. 3 (1990), pp. 417-429; Chinyere Emmanuel Egbe, "The impact of foreign private investment on the growth of GNP and investment in Nigeria" (unpublished PhD dissertation, Washington State University, 1984); Volker Bornschier, "Multinational corporations and economic growth: a gross-national test of the decapitalization thesis", *Journal of Development Economics*, vol. 7, No. 2 (1980), pp. 191-210.

⁴UNCTC, *The Determinants of Foreign Direct Investment: A Survey of the Evidence* (United Nations publication, Sales No. E.92.II.A.2); Pan-Long Tsai, "Determinants of foreign direct investment in Taiwan: an alternative approach with time-series data", *World Development*, vol. 19, No. 2/3 (1991), pp. 275-285; and Steve Chan, Cal Clark and David R. Davis, "State entrepreneurship, foreign investment, export expansion and economic growth", *Journal of Conflict Resolution*, vol. 34, No. 1 (March 1990), pp. 102-129.

⁵Russel B. Scholl, "The international investment position of the United States in 1990", *Survey of Current Business*, vol. 71, No. 6 (June 1991), pp. 23-35. Stock data have not been adjusted for the finance (except banking), insurance, and real estate industry of the Netherlands Antilles.

⁶UNCTC, *World Investment Report 1991: The Triad in Foreign Direct Investment* (United Nations publication, Sales No. E.91.II.A.12).

⁷UNCTC, *Foreign Direct Investment and Transnational Corporations in Services* (United Nations publication, Sales No. E.89.II.A.1), p. 128.

⁸Karl P. Sauvart, "The tradability of services" in World Bank and UNCTC, *The Uruguay Round: Services in the World Economy* (Washington, D.C. and New York, The World Bank and UNCTC, 1990), pp. 114-122.

⁹See also Terutomo Ozawa, "Foreign direct investment and economic development", *Transnational Corporations*, vol. 1, No. 1 (February 1992), pp. 27-65.