

Transnational Corporations and Management Division  
Department of Economic and Social Development

# **World Investment Report 1992**

## Transnational Corporations as Engines of Growth



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# Chapter IV

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## TRANSNATIONAL CORPORATIONS AND ECONOMIC GROWTH: A FRAMEWORK FOR ANALYSIS

### A. The increasing importance of transnational corporations

By most measures, transnational corporations (TNCs) play a larger role in the world economy today than they have in the past. As examined in chapters I and II, flows and stocks of FDI are larger in absolute terms and in relation to key economic indicators, such as GDP, exports and domestic capital formation, than they have been in the past for the world economy as a whole and for most host countries, both developed and developing. In addition, world-wide foreign sales of TNCs are larger than exports as a means of delivering goods and services to markets.

Those quantitative measures of TNC activities are indicators of both the growing economic importance of TNCs and their potential for shaping world development. There is also a qualitative dimension to the expansion of TNCs, which integrate within themselves the principal modes of international economic activity, namely, investment, trade in goods and services, technology transfer and financial flows. Thus, their activities can be a force for increasing the efficiency of resource allocation on a wide scale and a channel for transmitting a variety of economic impulses, such as production technology and labour skills. At the same time, the channels that transmit growth-inducing factors can also transmit growth-inhibiting factors. For example, TNCs can act monopolistically within host economies, and production techniques introduced by TNCs can have negative environmental impacts.

In both regards, the importance of TNCs extends beyond the presence of FDI in a host economy and involves a variety of means by which TNCs undertake international production, including through both equity and non-equity arrangements.<sup>1</sup>

The increasing importance of TNCs in the world economy is not only an outcome of the recent growth of FDI. In addition, changing perceptions concerning TNCs—particularly among developing countries, but also among many developed ones—ensure that their impact is more significant, regardless of cyclical swings in the amounts of FDI. Because of those changing perceptions, a fundamental shift in policy-making has occurred in that area. The principal aim is no longer to control and contain the activities of TNCs, but rather to encourage FDI (including its entry into industries previously closed to private, let alone foreign, ownership) in order to reap its benefits.

Several concurrent factors that operate in an interrelated manner on the international, regional and national levels, are behind the shift in attitudes *vis-à-vis* TNCs. On the international level, new and changing technologies, the global expansion of key industries and the ascendancy of the services sector are changing the nature of production and the ways in which developing countries participate in the international division of labour. On the regional level, emerging trends point to a concentration of world economic activity in three main regions, Asia, North America and Western Europe, with growth and integration in those regions driven by the Triad members, Japan, the United States and the European Community, respectively.<sup>2</sup> On the national level, recent years have witnessed the opening up of most of the world to private enterprise and some form of a market system, such that there are now few countries and industries into which international capital may not go. Those factors, which are examined in the following section, are defining the shape of the new world economy in the 1990s and establish a context for development that differs markedly from that of previous decades. Transnational corporations are playing a central role in those changes. An understanding of their contribution to economic growth and development, therefore, needs to take into account not only the quantitative impact of TNCs, but also their importance in shaping the emerging international economic system.

## **B. The new world economy**

### **1. The increasing importance of market forces**

The emergence of a new world economy means that the context in which developing countries grow is changing rapidly. One of the most salient features of the changing context is an expanded role for the private sector, including its role in many service industries which, traditionally, have been reserved in most countries for public ownership (for example, telecommunications, utilities and transportation). One illustration of this trend is that, over the period 1986-1988, private investment has increased its share of gross domestic product in a number of developing countries from 10 per cent to 12 per cent, while the share of public-sector investment declined slightly from 8 to 7.5 per cent.<sup>3</sup> In conjunction with the trend towards an expanded private sector, countries that had formerly adopted inward-looking development

strategies are, for a variety of reasons, adopting policies to shift to an outward orientation, by liberalizing trade, FDI and exchange control regimes, and by placing greater emphasis, generally, on a more intensive participation in the global economic system. For example, 63 developing countries have liberalized their trade-policy regimes since the beginning of the Uruguay Round, and some 30 developing and Central and Eastern European countries liberalized their FDI regimes in 1991 alone.<sup>4</sup> In part, that shift has been encouraged by the example of high growth rates in several Asian developing countries, which have become models of successful outward-oriented development in which market forces and the extensive participation in the international economy play a crucial role (even while, in many cases, state policies remain interventionist). Another factor is the debt crisis of the 1980s, which substantially narrowed the margin for state-led development strategies and led to structural adjustment programmes in many countries which, in turn, encouraged a greater role for the private sector and the adoption of outward-oriented non debt-creating policies.

The shift towards greater reliance on market forces has been most dramatic in Central and Eastern Europe, where the centrally planned economic system literally collapsed. But it has also been quite marked in Latin America, more recently in Africa and, to a certain extent, in China as well. Transnational corporations are increasingly important in implementing those changes, a role which is reinforced by a continuing low in commercial bank lending. In Latin America, for instance, there have been widespread efforts to privatize large segments of the economy that were previously state-owned, and TNCs are playing an important role in this process. Overall, some 50 developing countries and all Central and Eastern European countries have active privatization efforts.

Liberalization, privatization and fiscal reform are all expressions of the fundamental shift in policy orientations in many parts of the world. Increased competition between firms and between regions (and heightened concerns about unfair competition), focused especially on the Triad, has been one of the consequences. That development has put TNCs, as the leading international market actors, into the centre of economic development, in a world in which now virtually all countries are seeking to integrate themselves into the world economy.

## **2. Technology and the shrinking of economic space**

While those changes are redefining the ideological and regulatory context of development, changes in the nature and uses of technology are redefining the ways in which countries develop. Since the 1970s, economic growth has been increasingly associated with new technologies rather than with the use of natural resources, such as energy and minerals. The change reflects the fact that production itself has become less materials-intensive and more skill-, knowledge- and technology-intensive. Furthermore, new communication technologies are rapidly shrinking the economic distance between countries, and may be viewed as “the electronic highways of the informational age, equivalent to the role played by railway systems in the process of industrialization”.<sup>5</sup> New communication technologies are allowing for a far greater degree of economic internationalization than was previously possible. In that regard, it is interesting to note that the volume of international communications mirrors broadly international

economic relations and, indeed, current trends in FDI: the highest volume of international telephone calls is between the United States and Canada, the United States and the United Kingdom and the United States and Mexico, while the greatest growth in international telephone traffic is in the Pacific Rim, fuelled by 23 per cent annual growth in outward calls from Japan, versus 18 per cent from the United States.<sup>6</sup> With the current installed capacity of fibre-optic and satellite-communications networks, international calling volumes are doubling every three to five years, while prices of such calls are falling by about 10 per cent a year.<sup>7</sup>

In recent years, the technological capacity to process and send information has proceeded far more rapidly than the ability to adapt organizationally to the new possibilities that such technology presents. For example, the processing power of an integrated circuit has doubled every 18 months, and the transmission capacity of lightwave systems (based on fibre optics) has increased even more rapidly, doubling every year.<sup>8</sup> By the late 1990s, it may be possible to combine the computing of data with photonics, such that computers will be powered by light waves, leading to a new generation of computers that would be far more powerful than that of today.<sup>9</sup>

Although the economic effects of such changes are only beginning to be felt, there are signs that new technologies, particularly information technologies, are leading to a fundamental change in the way in which goods are being produced and services are delivered (and, in fact, *what* goods and services are being produced and delivered), and the organization of production, both within and between countries.<sup>10</sup> In fact, as discussed in chapter X, elements of a new global production system are emerging. Again, TNCs are at the centre of the developments, as far as the generation, application and transfer of the new technologies are concerned.

The relationship between TNCs and technological change is a dual one: TNCs are key actors in the development of technology, yet, at the same time, they are greatly influenced by it. In fact, technological developments are a major factor behind the growing importance of TNCs and their increasingly global strategies, which are often motivated by the need to gain control over the development and use of new technologies. Such strategies imply that a rising share of technology flows world-wide are being generated by TNCs, and that the firms are increasingly important vehicles for the transfer of technology to host countries. That trend, combined with the ever-increasing pace of technological developments along with the rising costs associated with such developments, implies that the scope for countries—both developing and developed—to create a purely indigenous technological base may narrow. Instead, countries may need to rely more on inward and outward FDI in order to gain access to technologies that are critical to their competitiveness. The need is underscored by the fact that licensing may no longer be as effective as in the past for acquiring many technologies, not only because obsolescence occurs more quickly than in the past, but also because effective use requires more training, both initial and ongoing, of human resources. To the extent that TNCs do not transfer technology to indigenous firms, the trend may increase the vulnerability of countries to the loss of technological competence, if such competence is gained only through the presence of large firms over which countries have limited control and which may shift their activities elsewhere. Thus, while technological developments are offering new opportu-

nities for developing countries with adequate infrastructure and human resources to absorb them, the mechanisms through which such technologies are transmitted are converging on TNCs.

The question of access to technology via TNCs is further complicated by the new organizational structures that are emerging in the international economy, built by firms seeking to access and obtain the maximum benefit from new technological developments. Increasingly, inter-firm networks are employed by competing firms in an industry, whereby firms in a network share the information as well as the costs associated with innovation. Strategic alliances, joint ventures and research consortia are all expressions of such inter-firm networks. During the 1980s, strategic partnering accelerated greatly in such high-technology industries as bio-technology, information technology and new materials.<sup>11</sup> A number of changes in the nature of competition in high-technology industries—such as the shortening of product life cycles and the increasing complexity and intersectoral nature of new technologies—are behind the acceleration of inter-firm networks in the 1980s, as advances in information and communication technologies (that are shrinking economic distance) make such networks more feasible. From the perspective of firms, key motivations for joining alliances include the need to reduce uncertainty regarding which technology will emerge as the future industry standard, the desire to share complementary strengths in R&D and pool the costs associated with such activity and the aim to diversify into new lines of business and/or enter new markets. Such multi-firm networks lower the costs of accessing and utilizing new technology for member firms, while the costs for non-members may be raised considerably.

In addition to technology-sharing networks, powerful transnational computer-communication networks owned by single firms or groups of firms are becoming more important, with some TNCs setting up central data-processing centres for an entire continent, with high-speed links connecting them to national offices.<sup>12</sup> In some industries (for example, banking, insurance, hotels, airlines), such electronic networks are becoming the basis for international transactions, and access to them is, therefore, a crucial matter.

While it is difficult to measure the extent of those phenomena, all evidence indicates that both technology-pooling organizational networks and electronic-data networks are located almost exclusively in the Triad. Indeed, over the decade of the 1980s some 95 per cent of all strategic technology alliances were between firms from developed countries. Furthermore, those alliances that did include developing-country partners (most of which were from newly industrializing economies) did not focus as strongly on “core technologies” (including information technologies) as did alliances between firms from developed countries. Overall, 50 per cent of strategic technology alliances among developed-country firms had a strong R&D orientation, versus only 13 per cent of alliances involving firms from developing countries.<sup>13</sup> Given the importance of technology in growth, access to both inter- and intra-firm networks, and the benefits resulting from them, is an issue likely to receive more attention in the years ahead.

### 3. The globalization of industries and firms

Partly because of greater competition associated with the expanded role for the private sector, and partly because of the impact of new technologies, many firms, markets and entire industries have become global in nature in that value-adding activities occur in numerous countries, both developed and developing, and both within and across regions. In many cases, deregulation and macro-economic shifts have facilitated the trend towards globalization. While finance is an example of a globalized market, the automobile and consumer-electronics industries are examples of globalized industries, in which TNCs integrate, coordinate and control cross-border value-adding activities. One of the possible implications of globalization is that the nation-state is diminishing in importance as the key arena for economic activity.

The globalization of industry means that, to a large extent, the way in which countries grow and develop comparative advantage is changing considerably. As a result of globalization, countries may become specialized locations for one segment of an industry (engines in automobiles, semiconductors in electronics, data entry in insurance, for example) and may become significant players in that industry in the process. In some cases, countries in a given region develop a comparative advantage in an industry concurrently, with growing intraregional, intra-industry trade as a result. Sources of comparative advantage—capital, know-how, experience and technology, for example—are thus transferred across borders in greater quantities, as more and more countries participate jointly in various stages of the value-adding process of an industry. In other words, globalization means that the boundaries that define an industry are increasingly being drawn across countries rather than within them. The implication of the trend is that, in many instances, strategies to develop independent indigenous industries may no longer be appropriate for developing a dynamic comparative advantage, and that the participation in global industries may be a necessary ingredient for the development of a competitive economy.

The intra-industry, cross-border flows of goods, services and technology that characterize a global industry are, to a large extent, channelled by TNCs. Indeed, they are the driving force behind the globalization of industries, although there is a distinction between global industries and global firms. Such firms control a growing share not only of world investment and output, but also of world trade and technology flows. Among other things, the existence of global firms means that competition in certain industries is occurring less between countries than between firms that compete simultaneously in a number of countries. It may now be possible to describe some corporations as stateless, in the sense that their management, organizational structure and value-adding activities are no longer governed by any single country.

Given those developments, the globalization strategies of TNCs are likely to change the ways in which FDI affects the growth of host developing countries. Until recently, most FDI in developing countries could be characterized as being either resource-seeking, market-seeking (particularly if policies favoured protected local industry) or export-oriented, mainly to take advantage of cheap abundant labour. In each of those cases, the contribution of FDI to economic growth was limited by the comparative advantage of the host country in that particular activity; if wages rose, for instance, investments with low fixed costs might be shifted to lower-cost export platforms. Globalization strategies, however, are

blurring the boundaries among those types of investment, particularly the last two: investments in developing countries by TNCs are increasingly both market-seeking and export-oriented. Furthermore, cheap labour is frequently not the primary consideration of global corporations that operate in high-technology industries; consequently, rising wages may alter, but do not necessarily lessen, the locational advantages of host countries. A number of developing countries that began with the primary advantage of cheap labour have succeeded in upgrading the technological competence of their work force, with the result that they continue to attract TNCs even after their relative wage advantage has deteriorated. In other words, the globalization of manufacturing firms, in which value-adding activities are dispersed geographically and integrated within a single firm, is leading to a situation in which FDI may become a driver of dynamic comparative advantage, as TNCs upgrade their overseas affiliates from simple assembly-type operations to high-quality, high value-added manufacturing sites that are integrated into a network of overseas affiliates. Foreign direct investment in manufacturing, then, may become an integral part of the growth process for countries included in the globalization strategies of TNCs.

Those strategies and their impacts may not apply to the same extent to TNCs operating in services industries. As most services cannot be traded, TNCs cannot rationalize their operations across countries to the same extent as in manufacturing. In most cases, TNCs in services have to establish affiliates that largely reproduce in host economies the factor proportions used at home. Intra-firm trade in services is typically lower than in manufacturing, while a given amount of FDI in services will represent a greater transfer of soft technology and skills than in manufacturing. However, as tradability in services increases, TNC activities in that sector are likely to become increasingly similar to TNC activities in manufacturing. The developments observed in goods markets, described above, are beginning to emerge in services.

#### **4. The emerging services world economy**

The new world economy is increasingly a services economy, and it is beginning to be recognized as such. Services have come to be, in terms of shares of GDP and employment, the largest sector in most economies and the dominant sector in all developed economies. A substantial part of the output (about half in developing countries) of the services sector consists of intermediate or producer services used as inputs in the production of goods and other services. The services intensity of goods is high and growing, as the rising component of value-added in the production of goods and, especially, high-technology goods comes from services activities, regardless of whether they are purchased from outsiders or undertaken in-house. For example, almost 80 per cent of the cost of a computer is attributable to services activities.

The growing importance of services in production has been mirrored in FDI and in the activities of TNCs. Some 50 per cent of the world stock of FDI and 50 to 55 per cent of annual flows are in services. Only 10 per cent of services production is traded internationally, a reflection of the fact that many services are not tradable or their tradability is limited. Technological changes in computers and telecommunications are increasing the tradability of services, although the major beneficiaries to date have been TNCs that use services internally to organize, expand and manage their global operations. As services become more tradable, their role in shaping the new world economy is likely to grow in importance.



## 5. The regionalization of the world economy and the emergence of the Triad

The regionalization of the world economy is, somewhat paradoxically, a corollary to increasing globalization; it is also re-shaping the context in which developing countries grow.<sup>14</sup> Globalization has not produced a world in which nations interact with others equally, regardless of their location; rather, economic activity, even as it becomes more dispersed, is increasingly being concentrated in three major regions centred on the the Triad members Japan, the United States and the European Community; they represent the core economies in each regions, and act as principal sources of technology, capital and trade for surrounding countries. As shown in chapter I, a noticeable trend in recent years has been the clustering of developing countries around each pole of the Triad, in which countries in a region are dominated by investment from a Triad member in that region.

Transnational corporations are playing a much greater role in that phase of regionalization than they have in past periods (as, for example, in early integration efforts in the European Community). Industrial TNCs are implementing regional core-network strategies centred in a Triad member, in the framework of which they establish affiliates in a cluster of countries (both developed and developing) in a region, and integrate their activities through intra-firm merchandise trade.<sup>15</sup> The networks are often supplemented by increased FDI in services from the same home country, as services TNCs follow their industrial clients abroad. Such networks are an outcome of, as well as a factor behind, the increasing regionalization of the world economy and the clustering effect described above. Current trends in national policies, technology and international competition are likely to facilitate the continued growth of regional core networks.

One feature of the new world economy is thus a certain degree of convergence of policy regimes within regions; a key issue in this regard is how regional policy regimes will be constructed to reflect the interests of both home and host countries. Furthermore, the creation of regional policies that may discriminate against outsiders could, in the future, contradict the trend towards the globalization of those economic activities in which FDI flows are increasing *between* regions. Another issue in this regard is whether regional groupings improve FDI flows to countries that do not belong to them, or serve to divert FDI internally towards the regional group. Developing countries have a particular stake in this question. Regionalization implies that, in the 1990s, selected developing countries are likely to forge their primary economic linkages with the Triad member in their region. Regionalization also implies that developing countries that are not linked to a Triad member through FDI may become increasingly marginalized, and their growth prospects may become correspondingly constrained.

### C. Economic growth and its elements

The potential that TNCs possess for contributing to growth and development is being increasingly recognized. Among analysts, FDI is being integrated into theories of economic growth and international expansion, and there is a "gains-from-FDI" approach being developed that parallels in many respects the

long-standing “gains-from-trade” paradigm.<sup>16</sup> In policy circles, there has been a clear shift towards greater openness of national economies to inward FDI and the activities of TNCs. The shift has been particularly true in many developing countries, where a marked liberalisation of laws and regulations towards TNCs has been under way for the past decade, with a growing number of countries seeking to attract FDI.<sup>17</sup> The experiences of the newly industrializing economies of South and South-East Asia, which have achieved high rates of growth with substantial involvement of TNCs, have raised awareness of the link between TNCs and economic growth.

That link has assumed increasing importance given the experiences of the 1970s and 1980s. Many developing countries borrowed heavily in international markets in the 1970s, in part in an attempt to stimulate economic growth without having to rely upon foreign-controlled investment. But high debt burdens in the 1980s contributed to retrenchment and slow growth, and many countries suffered severe setbacks to their long-term economic development prospects. Given the growing importance of TNCs in the new world economy, it becomes necessary to evaluate the contribution that TNCs can make to reviving and accelerating economic growth in developing countries.

Economic growth is usually taken to be a sustained increase in the national output of goods and services. Economic growth can be measured using different indices. One widely-used measure is increases in per capita GNP or GDP. Increases in potential production is another measure, which may be greater than actual output to the extent that resources remain underutilized. Measures of sustainable growth are being developed to capture effects of economic activities on the natural environment. Throughout the present Report, the concept of economic growth is used in a general sense, and is best described as increases in a nation’s aggregate output over an extended period of time.

Economic growth is a complex process, which is an outcome of the interrelationship between a number of factors, many economic, others political and social. The classical political-economy tradition of the nineteenth century emphasized the importance of expanding the quantity of the basic factors of production: capital, land (including natural resources) and labour. Classical political economy also emphasized the role of expanding markets in improving efficiency and productivity within an economy. The Keynesian revolution of the twentieth century brought to the fore the role of demand and the multiplier effects from increases in investment, government purchases and exports.

More recently, research on aggregate production functions by economists such as Robert Solow and Edward Denison has shown the important contribution of technical change to economic growth, over and above the contribution from expanding quantities of productive factors, and the role that can be played by elements such as improvements in the organization of production and exchange.<sup>18</sup> The growth accounting framework introduced by Solow and Denison, whereby the various elements contributing to growth in an economy are identified and measured, has informed a generation of research on that issue, including the work presented in the present volume.

Even more recently, economists have emphasized the role of qualitative improvements in the labour force of an economy, improvements that come about from better health, more education and greater access to training. Investment in human resource development has become an important component of

growth and development strategies for both developed and developing economies. Furthermore, consensus is now emerging that environmental protection is also a necessary component of sustainable economic growth. The relationship between the natural environment and the magnitude and quality of growth is only beginning to be understood; despite the newness, any attempt to describe and analyse economic growth needs to take into account its impact on the environment and its implications for the sustainability of a national growth path. An understanding of what drives the growth process is thus a necessary first step in promoting sustainable economic development.

Economic growth can occur in a variety of ways and be driven by different features of an economy. Growth may be stimulated by investment that augments and improves the productivity of national physical resources. Growth can be driven by innovation and technological change, which not only improve the productivity of existing activities, but also create competitive advantages in new ones. The development of labour skills, or investment in human resources, has grown in importance as a source of economic growth. International trade can promote growth by allowing countries to exploit their existing comparative advantages and develop new ones, encouraging a faster and more efficient utilization of domestic resources and enabling the country to reap the benefits of economies of specialization and participation in the international division of labour.

At different points in the history of a country, one of those elements may be the principal engine of national growth; for example, a growth spurt may initially be primarily factor-based and driven by trade, while later, technology and innovation may become the principal means of economic expansion. In most cases, however, the process is not linear, and countries often exhibit characteristics of several stages within a single economy. Furthermore, the elements underlying growth are interdependent, and advances in one can fuel advances in another. Technological progress, for example, can boost both the productivity of a country as well as its trade performance. Similarly, poor performance in one area may have negative spillover effects on another; for example, inadequate investment in human resources may harm the future ability of a country to grow through innovation and technological progress.

#### **D. A framework for the analysis of transnational corporations and growth**

Transnational corporations are often thought of as responding to economic growth as, for a variety of reasons, they are induced to invest in economies with large, growing markets and with a sufficiently high base of technology and labour skills. Foreign direct investment by TNCs, however, may also be thought of as a determinant of growth. The new world economy that is emerging in the 1990s constitutes an environment in which the potential for TNCs to affect economic growth has increased considerably, in light of the expanding role of the TNC as an integrating agent. A new look is needed at how the global activities of TNCs are likely to affect growth and development in the coming years.

The present Report analyses how TNCs affect economic growth in host developing countries. The analysis looks separately at the most important elements that contribute to growth: physical capital

formation, technology and human resource development, which are the traditional elements that affect growth through a production framework; trade, which affects growth by expanding markets for both outputs and inputs; and the environment, which has become part of a broader analysis of economic growth. In each case, the Report investigates how TNCs affect growth through that element.

Chapter V analyses the contribution of TNCs to physical capital formation in host developing countries. Investment is one of the principal engines of economic growth, and FDI may have similar growth effects, to the extent that FDI adds to the quantity of the existing capital stock. Thus, viewed as one type of investment, FDI may directly affect host-country growth. In addition, the activities of TNCs in host economies can affect the pace of domestic investment and can affect, either positively or negatively, the efficiency of domestically-owned capital.

The presence of TNCs in host economies may be more critical than the direct impact of FDI, since these firms create channels through which economic impulses can be transmitted. One of the impulses is technology, which is assuming an increasing role in the new world economy. The contribution of TNCs to economic growth through technology is analysed in chapter VI, where the role of TNCs as generators of technology and their activities as international disseminators of technology are evaluated in terms of their contribution to the technological development of host developing countries.

Chapter VII considers the contribution of TNCs to growth in host developing countries through their effect on the quality of human resources, the development of which covers a variety of specific areas, including health and nutrition, general education and worker training. The importance of TNCs in each of these areas in host developing countries may vary widely, but human resource development as a channel for stimulating growth is growing in importance. Chapter VII assesses the contribution that TNCs make to the process of economic growth via human resource development.

International trade makes a contribution to economic growth that differs from that of capital, technology and human resource development. Trade does not directly add to growth. Instead, wider markets can stimulate demand and improve resource allocation within an economy. International trade has long been thought of as a major integrating element in the world economy, but as the world economy takes on new characteristics, the many contributions of TNCs to global integration, including through trade, assume greater importance. Chapter VIII examines how TNCs affect growth in developing countries through their effect on international trade.

Broadening the analysis of growth to include sustainable growth raises new issues with respect to the role of TNCs in stimulating economic growth. Chapter IX discusses how TNCs can affect sustainable economic growth in developing countries and how that contribution might be improved over time.

Transnational corporations are likely to have a stronger impact upon growth through some of those elements—and their components—than through others; in some instances the role of TNCs will be small. All are included in the analysis because all are potentially important contributors to growth in developing countries. In addition, the analysis identifies both potentially negative, as well as positive, effects of TNCs on economic growth in host developing countries. Chapter X concludes the analysis by providing an

integrated assessment of the overall contribution made by TNCs to economic growth in host developing countries in the context of the new world economy.

## Notes

<sup>1</sup>John H. Dunning, "Non-equity forms of foreign economic involvement and the theory of international production", in John H. Dunning, *Explaining International Production* (London, Unwin Hyman, 1988), pp. 169-197.

<sup>2</sup>UNCTC, *World Investment Report 1991: The Triad in Foreign Direct Investment* (United Nations publication, Sales No.E.91.II.A.12).

<sup>3</sup>The figures are from a study of 27 developing countries by the International Finance Corporation, reported in "Developing nations increase reliance on private sector", *Financial Times*, 11 September 1990.

<sup>4</sup>See, respectively, GATT, *Press Release*, 12 March 1992, and chapter III. There are even signs that a more open environment for the movement of skilled labour is emerging. As far as unskilled labour is concerned, however, and in spite of—or because of—mounting migration pressures between developing countries, between North and South and between East and West, the trend appears to be towards tighter restrictions, leading to a noticeable asymmetry in the treatment of international factor flows.

<sup>5</sup>Manuel Castells and Jeffrey Henderson, "Techno-economic restructuring, socio-political processes and spatial transformation: a global perspective", in Jeffrey Henderson and Manuel Castells, eds., *Global Restructuring and Territorial Development* (Beverly Hills, California, Sage Publishers, 1987), pp. 1-17.

<sup>6</sup>International Institute of Communications, "Global telecommunications traffic report, 1991", cited in *Network World*, vol. 8, No. 39 (30 September 1991), pp. 21-22.

<sup>7</sup>*Network World*, op. cit.

<sup>8</sup>Eric E. Sumner, "Telecommunications technology in the 1990s", *Telecommunications*, vol. 25, No. 1 (January 1989), pp. 37-38.

<sup>9</sup>For a discussion of technological developments in computing, see H.L. Capron, *Computers, Tools for an Information Age* (Reading, Massachusetts, Addison Wesley, 1990).

<sup>10</sup>For an elaboration, see Karl P. Sauvart, *International Transactions in Services: The Politics of Transborder Data Flows* (Boulder, Colorado, Westview Press, 1986).

<sup>11</sup>Luc Soete, "National support policies for strategic industries: the international implications", in OECD, *Strategic Industries in a Global Economy: Policy Issues for the 1990s* (Paris, OECD, 1991), pp. 51-80.

<sup>12</sup>Monica Horton, "Private networks: backbone of the worldwide corporate structure", *Financial Times*, 7 October 1991.

<sup>13</sup>For a discussion of the regionalization of the world economy, see Allen J. Morrison and Kendall Roth, "The regional solution: an alternative to globalization", *Transnational Corporations*, vol. 1, No. 2 (forthcoming).

<sup>14</sup>"Core technologies" were found to be involved in 74 per cent of the alliances among firms from developed countries versus only 54 per cent among involving firms from the newly industrialized economies and 23 per cent involving other developing-country firms. See Christopher Freeman and John Hagedoorn, "Globalization of technology" (Maastricht, University of Limburg, MERIT, 1992), mimeo.

<sup>15</sup>See UNCTC, *World Investment Report 1991*, op. cit., pp. 41-53, for an elaboration of regional core networks.

<sup>16</sup>Edward M. Graham and Paul Krugman, *Foreign Direct Investment in the United States* (Washington, D. C., Institute for International Economics, 1991), second edition.

<sup>17</sup>UNCTC, *Government Policies and Foreign Direct Investment*, UNCTC Current Studies Series A, No. 17 (United Nations publication, Sales No. E.91.II.A.20).

<sup>18</sup>Robert M. Solow, "Technical change and the aggregate production function," *Review of Economics and Statistics*, vol. 39, No. 3 (August 1957), pp. 313-320; and Edward F. Denison, *Trends in American Economic Growth, 1929-1982* (Washington, D. C., The Brookings Institution, 1985).