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Chapter 4

Global webs – transnational companies and global production networks.

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This chapter briefly outlines selected approaches to studying the role of TNCs and supranational production networks in developing countries. The chapter begins with a few observations on the role of TNCs in the world economy. It then raises some general issues concerning the impact of TNC activities upon developing countries. The third section turns attention to how lead agencies (incl. TNCs) organise and co-ordinate their activities within regional and global networks that often reach beyond the entities owned by the lead agency. The section concerned reviews network approaches and especially global commodity chain approaches. The fourth section of the chapter addresses the link between integration in global production networks/chains and industrial upgrading. The fifth section discusses issues related possible local enterprise initiatives. The final section deals briefly with host government policies towards TNCs and production network integration. It is not the intention in the last two sections to analyse in greater detail the problems of enterprises strategy and host government regulation. Some of the issues involved, however, are noted as a backdrop to our case studies.

TNCs in the World Economy

There are many good reasons for taking a closer look at the role of TNCs in economic development. Most important is the fact that the internationalisation of capital has taken place overwhelmingly through these corporations and with them as the chief actors. At the same time, the TNCs have grown rapidly in size, taking command over continuously increasing shares of world investment, production, trade, and services. Hence, they have become some of the most important actors in the world economy today.

There is considerable disagreement on how to define a TNC. In the statistics published by UNCTAD any company with a foreign affiliate is included among the TNCs. Other definitions require that a significant proportion of company activities are located outside the home country. Some demand that the foreign activities amount to 50 per cent or more of the corporation's total turnover. Others place more emphasis on how the corporation is organised. Common to many definitions is an emphasis on foreign direct investment. According to Peter Dicken, however, this is a too narrow conception. Because the FDI data are based on ownership of assets they do not capture the increasingly intricate ways in which firms engage in international operations through various kinds of collaborative ventures and through the different ways in which they coordinate and control production and transactions. Dicken therefore has proposed a broader definition of a TNC as "a firm which has the power to coordinate and control operations in more than one country, even if it does not own them" (Dicken, 1998: 177).

The precise definition is not crucial here. We are mainly interested in relatively large corporations with extensive activities in several developing countries. These are the firms that can significantly influence decision-makers, industrial development and environment management.

UNCTAD has, for a number of years, reviewed the activities of TNCs and their role in the global economy in general as well as in the developing countries' economic and social development in particular (for the most recent reviews, cf. UNCTAD, 2001; 2002). From the several reports prepared by this institution it may be appreciated, *inter alia*, that international trade between the industrialised countries and the developing countries has increasingly been taken over by the TNCs. It is difficult to ascertain the exact proportions, but it is estimated that more than half of the developing

countries' exports to the OECD countries are controlled - directly or indirectly - by around 500 large corporations.

Similarly, TNCs have a strong presence in most of the developing countries. How large a proportion of the total production in these countries they control is not known? Dissimilarities obviously exist between countries, but the foreign-controlled part of industry is probably nowhere less than 10 per cent, the typical percentage lying above 30. Moreover, TNC control is often more prevalent in the most dynamic and expanding sectors and with regard to products of great strategic importance for accumulation, growth, and export of manufactured goods.

The conditions that affect the location of TNC activities have changed markedly since the late 1980s. This is particularly so with respect to the factors driving FDI location. The main traditional factors - such as large markets, access to natural resources, and access to low-cost unskilled or semi-skilled labour - remain relevant, but their importance has diminished. Primary industries account for a shrinking share of global industrial activity, and natural resources are less important than before in attracting FDI. The location of TNC activity instead increasingly reflects three developments: policy liberalisation, technological progress, and increasing competition (UNCTAD, 2001: 12 ff.).

Trade and investment liberalisation allows TNCs to specialise more and search for competitive locations in a larger number of countries. The corporations have greater freedom to choose locations and the activities they transfer as a result of policy changes in most developing countries. Between 1991 and 2001, a total of 1,393 regulatory changes were introduced in national FDI regimes (chiefly in developing countries). Around 95 per cent of these regulatory changes were in the direction of creating more favourable environments for FDI.[9] In 2001, the Asian and Pacific Region accounted for 43 per cent of the liberal changes in FDI regimes. (UNCTAD, 2002: 7).

With respect to technological progress a particularly important change is that new information and communication technologies allow TNCs to manage widely dispersed international operations more efficiently. At the same time, high-technology activities

[9] More guarantees, more liberal entry and operational conditions, more sectoral liberalisation and more promotion (including incentives).

previously not allocated to developing countries can now be placed there because labour-intensive processes within those activities can be economically separated and managed over long distances.

New organisational methods, aided by the new technologies, allow a more efficient management of international operations and encourage greater relocation of functions. While undertaking these relocations TNCs search for 'created assets' across the globe, including adequate infrastructure, supporting institutions and industrial clusters (UNCTAD, 2001: 13. Cf. also UNIDO, 2002). This has not benefited poor and least industrialised countries who cannot meet the requirements for attracting FDI - and even less so than previously.

As a result of the changes referred to, the pattern of international industrial development has changed significantly. Earlier internationalisation of industrial capital - in the 1970s - can be characterised as a re-location of certain production processes to other countries, including developing countries. Contemporary internationalisation is a much more profound re-organisation of manufacturing, trade, and services within regionally and even globally encompassing systems. The actors are no longer national companies that re-locate limited and specialised parts of their production processes under pressure, but more globally oriented mega-corporations who organise their entire production and sales with the aim of being able to operate world-wide. They may continue to have profit centres in their original home country, but they are likely to primarily pursue growth maximisation across national frontiers and with a global perspective.

The rapid growth of global financial markets since the late 1970s, facilitated by national deregulation of financial transactions in OECD countries and by new information technologies, has provided basic preconditions for more encompassing internationalisation in the sense outlined above. Nevertheless, according to Charles Oman, changes in the 1990s are more usefully understood as driven by the strategies and behaviour of TNCs, particularly those who have adopted so-called 'flexible' production and inter-firm networking strategies (Oman, 1994).

To understand the behaviour of these corporations, it is not sufficient to consider low labour costs or other factors separately, because their strategies are much more complex in the sense that they, at one and the same time, take several factors into

consideration. Thus, the most recent theories have also noted that the massive international flows of capital that could be observed since the end of the 1980s, have primarily occurred within and between the three centres of gravity in the world economy, driven by the USA, Japan, and the European Union (cf. Ch. 2). At the same time, investments in the Third World have been concentrated - not primarily in low-wage areas - but on the contrary in countries like Brazil, Argentina, Mexico, Singapore, South Korea, Thailand, and others with a relatively high level of wages in a Third World context - with China as an important exception, though.

Access to cheap labour can thus no longer explain much of the movement of productive capital. Two main reasons are given for that in the literature. One is the overall decline in the share of low-skilled labour costs in total production costs in several globally competitive industries. The other is the increased importance of physical proximity both between producers and their customers and between producers and their suppliers of parts, components, and services.

As a result, the trend that could be noted concerning the 1970s, whereby a growing number of companies based in OECD countries shifted some of their production to low-wage areas, has now been replaced by regional sourcing and production networks. As noted by Oman, production to serve the North American market that can still benefit from re-locating to low-wages sites is more likely to move to lower-wage areas within the USA or to Mexico than to South America or Asia, compared to previous periods. Similarly, production to serve the European market that moves to low-wage countries is more likely than before to re-locate to Southern or Eastern Europe, rather than to Asia or Latin America.

In this manner, the process of internationalisation is associated with a process of regionalisation that poses challenges to distant, off-shore production platforms. Oman adds to this the observation that these tendencies occur exactly at a time, when several poor countries have started pursuing export-oriented industrialisation strategies based on the expectation that they, like the Far Eastern countries during an earlier period, can attract investment from OECD countries.

Other factors, however, may still attract foreign direct investments to developing countries far away from the home countries of the corporations. It can be the search for new markets, as in China and the rest of East Asia; or the access to a qualified

workforce that can handle more complex work processes, as in the case of soft-ware production in India; or the wish to enter into partnership with technology-leading companies operating in other regions. But the point is that the explanations must be adjusted to the decisive changes that have occurred in the nature of capitalist production patterns towards more technology-intensive and knowledge-based manufacturing and services within international frameworks (cf. UNCTAD, 2001. For comprehensive reviews of theories, cf. Dunning, 1993).

Having noted the importance of TNCs as actors in the global economy, we shall now turn to the developmental impact of TNCs in Third World countries.

Impact of TNCs upon Developing Countries - Some General Issues

The observations that TNCs exercise considerable control through intra-firm transactions as well as through commodity chains and other networks have prompted some development researchers and decision makers in the Third World to take the position that TNCs should be completely rejected. However, most theorists today regard this as a rather naïve and impossible approach to the problem. Instead, they propose to deal with the interrelations between developing countries and TNCs in terms of a real dilemma. On the one hand, the developing countries may need the corporations. On the other, they have a long list of 'bad' experiences with them.

The developing countries can benefit from TNC participation in industrial development in a direct or indirect manner. Among the *direct* benefits, the following are normally mentioned. The corporations can provide large, and much needed, financial resources for industrial investment. Not only do the TNCs in general generate substantial financial resources internally; they also have privileged access to international capital markets and financial institutions. Secondly, FDI tend to be more stable in difficult periods compared to other forms of capital inflows, and in contrast with foreign loans where interest payment is fixed, dividends to investors are conditional of the level of earnings. Thirdly TNCs can offer sophisticated technology, know-how, and management skills not readily available from other sources. Fourthly, they command access to superior distribution and marketing networks suitable for increasing Third World exports. Fifth, TNC operations can create

employment. Finally, they may contribute to diversifying and 'deepening' the industrial structure through the activities of its affiliates.

The *indirect benefits* from TNCs refer to their wider impact on domestic enterprises. These so-called 'spillover effects' can take place 'when the entry or presence of MNC affiliates lead to productivity or efficiency benefits for the host country's local firms, and when the MNCs are not able to internalize the full value of these benefits' (Blomström and Kokko 2001, 440). Such spillovers can occur through four main channels: the so-called 'demonstration effect', 'the competition effect', training of local employees of TNC affiliates and finally through linkages between TNCs and local firms. The demonstration effect occurs when domestic firms copy some technology used by TNC affiliates. The competition effect takes place (in cases of arm's length relations between TNCs and domestic firms) when fiercer competition forces domestic firms either to use existing technology and resources more efficiently or forces them to upgrade technologies and product quality. The third channel refers to cases where former personnel of TNC affiliates take with them knowledge that is subsequently used in existing domestic firms or used as a platform for setting up their own business. Finally, spillovers take place when local suppliers through backward linkages or local customers through forward linkages benefit from TNC affiliate's superior knowledge of process- or product technologies or markets. Spillovers through backward linkages can either be the result of collaboration between affiliates and local firms or can be 'forced' upon local firms because they have to meet the higher standards of quality, reliability and speed of delivery of the TNCs.[10] Econometric studies tend to show that inbound FDI/foreign firms have positive spillovers on domestic firms (te Velde 2003, 168-170, Blomström and Kokko 1998, Blomström and Kokko 2001).

In short, when combining the direct effects of on capital formation, employment etc. with the indirect effects of technology transfer and spillovers to local firms TNCs may indeed offer sizeable benefits to Third World host countries. However, there may also be considerable negative effects. Several scholars have, over the years, shown how many corporations - in many other countries - have

[10] We will deal with this latter channel in the sections on global commodity chains/global production networks.

structured their activities in such a way that the net *direct* impact has been modest, or even negative, for the host countries (e.g. Lall and Streeten, 1977; Kumar, 1994; Dicken 1998; Degnbol-Martinussen, 2001: 119 ff.).

Regarding the provision of capital for investment, for instance, TNCs may - despite their command over very considerable financial resources and easy access to borrowing in the international market - transfer to most host countries only modest amounts of capital. Instead of financing new activities themselves, the corporations may prefer to raise most of the investment capital in the host countries' capital markets which in turn may sometimes crowd out national industrialists by pre-empting scarce local capital resources. In addition, foreign investment may be used to acquire shares in existing undertakings rather than to promote industrial expansion and competition. Moreover, even where capital inflow occurs, there will, eventually, be a reverse flow as the foreign owned firms remit earnings and profits back to their parent companies. This reverse flow may exceed the inflow of capital. In practice, most TNCs have repatriated large profits to their parent companies, either openly by means of dividend remittances and technical payments or more concealed by means of transfer pricing (Dicken, 1998: 247-48). Similar reservations can be made in relation other potential benefits (ibid. 245 ff.; Lall 2002)

Regarding the *indirect* and wider *spillover effects*, there are certain reservations, too. First, spillovers seem to be concentrated in middle income countries. Second, spillovers often fail to appear when there is a large productivity or technology gap between affiliates and domestic firms i.e. when best practice technology do not lie within the capability of the latter. Third, there are more spillovers in import substitution industries than in export-oriented industries. Fourth, spillovers are not found in cases where TNCs operate as 'enclaves' with little similarity with and/or interaction domestic enterprises. Fifth, some studies show that there may be negative impacts because foreign firms: shift from domestic inputs to glocal inputs; forces local firms out of business; bring with them their usual suppliers; or hire away higher-quality labour from local enterprises through higher wages (te Velde 2003, 168-170, Blomström and Kokko 1998, Blomström and Kokko 2001). Finally, most spillover studies actually show that the spillovers from TNCs vary: according to industries; according to strategy and attributes of

TNCs; according to the absorptive capacity/technological capability of the domestic firms and according to home country characteristics (including level of development).

Both quantitative and qualitative studies on TNC impact tend to agree that there is an important role for both enterprise strategy and state policy to play. Before turning to the strategy/policy issue, we will in the following sections look in greater detail at how TNCs and other lead firms organise new patterns of production within global (regional) networks. The following section deals approaches this topic from different perspectives.

Global and Regional Production Networks

Recent changes in the global economy and the emergence of 'new rules of the game' concerning trans-border transactions have combined to prompt TNCs to reorganise many of their activities. Large globally operating integrated firms have spun off a range of segments of their vertical enterprises and have functionally specialised in their 'core competences'. In many cases, they have tended to focus on knowledge-intensive functions such as design, R&D, managerial services, marketing and branding (UNCTAD 2002:123). As a consequence, the transnational companies are in the process of transforming themselves from 'multinational corporations' with stand-alone subsidiaries around the world to becoming 'global flagships' that co-ordinate and link together their own affiliates and joint ventures as well as their subcontractors, suppliers, alliance partners and service providers into global (and regional) production networks (Ernst and Kim 2002). While the intra-firm aspects of these networks are addressed in the traditional TNC literature, the inter-firm links are in focus in Global Value Chain (GVC) and the Global Production Network (GPN) studies.

The Global Commodity Chain (GCC) approach of Gary Gereffi is a major contribution to global value chain analysis. Gereffi argues that there has been a shift from producer-driven GCC to buyer-driven GCC. The former refers to chains in which large, integrated transnational corporations plays the central role in co-ordinating production networks. These corporations are mostly found in capital-intensive industries and they obtain their profits from exploiting economies of scale and technological advantages. Moreover, such TNCs control at the point of production and they exert control over

backward linkages to their raw material and component producers as well as over forward linkages into distribution and retailing.

In contrast, buyer-driven GCC are typically found in labour-intensive consumer goods industries in which 'large retailers, branded marketers, and branded manufacturers' play the leading role in setting up globally dispersed production networks'. Lead agencies in buyer-driven commodity chains base their profits on high value activities such as product development, marketing and financial services. In contrast to the vertical network structure in the producer-driven networks, they run a more horizontal network in which their main leverage is placed at the retail end of the chain and stems from a combination of strong branding and global sourcing capabilities (Gereffi 1995, Gereffi 1996, Gereffi 1999).

The GCC approach widens the analysis of economic 'globalisation'. It highlights a broader range of transnational actors and inter-firm aspects of global industrial restructuring. However, there also appear to be some limitations in the GCC approach. First, it is not always clear what should be considered as a chain because it is not clear whether each commodity or each lead agency has a separate chain, i.e. chain length and chain breadth are not well specified (Raikes et al. 2000: 400-01; Sturgeon 2001: 10-11). Second, producer-driven/buyer-driven dichotomy appears to be a simplistic and crude representation of the variety of modes of governance. There may be more 'drivers' along the chain; there may be different degree of 'driveness' in different chains; there may be a tendency for all commodity chains to shift from being producer-driven to becoming buyer-driven; and there may be other categories of chains such as those related to e-commerce operations (Raikes et al 2000; Dicken et al 2001: 99, Gereffi et al 2001, Gereffi 2001). Third, the institutional framework of GCC has so far been weekly developed. The GCC approach is de-contextualised, failing to take into account that 'the sorts of firms that dominate GCCs often follow different strategies and develop different roles within them because of their idiosyncratic histories and institutional contexts' (Whitley 1996: 419). By giving priority to inter- and intra-sectoral variations in the cross-national forms of economic organisation and control, the GCC approach is not well equipped to analyse how the local, national and regional institutional context structure enterprise strategies, often resulting in diverse patterns of cross-national investments and co-ordination. Moreover, by privileging the global scale, GCC scholars

tend to marginalise the important role played by regional production networks (Dicken et al 2001, Sturgeon 2001). Finally, the approach tends to downgrade the role played by the local or national state in affecting change in the global economy and even in setting important parameters for the chain governance.[11]

More recent contributions to the GVC and GPN literature takes some or all these critiques into account. Henderson et al. (2002) develop *global production network* approach that allows for a more diverse form of 'drivenness' and that are sensitive to different organisational forms and practices in the national production systems and in the political systems. They consider all GPNs as being multi-scalar networks (from the local to the national and global and back again). In contrast to the linear process of activities analysed in the GCC, they further study networks in which 'the flows of materials, semi-finished products, design, production, financial and marketing services are organised vertically, horizontally and diagonally in complex and dynamic configurations' (ibid. 444). Their analytical framework is particularly concerned with the social processes and national institutional influences involved in value creation, value enhancement and value capturing. They study the corporate, institutional and collective power involved in GPNs. Finally, they are interested in both the way various GPN firms are anchored in different places (territorial embeddedness) as well as in connections between network members irrespective of origin and link to particular places (network embeddedness).

In order to mitigate the strong emphasis on buyer-driven networks and with the aim of loosening the producer-buyer dichotomy, GVC scholars have developed the governance concept further. According to, Sturgeon[12] one must distinguish between *three main types governance style* - authority production networks, relational production networks and modular production networks (Sturgeon 2000, 2002). Authority production networks are governed by the authority of lead firms and encompasses both the classical intra-network found in the integrated firm and the hierarchical,

[11] The institutional context is mentioned as one of four characteristics of a commodity chain. Gereffi actually gave the institutional context a significant place in his analysis in some early texts (see e.g. Gereffi 1995) and in recent writings he stresses that institutional environment - at the global, macro-regional, national and local level - should be studied seperately as a supplement to the GCC analysis (see e.g. Bair and Gereffi 2003).

[12] A somewhat similar typology has been developed by Humphrey and Schmitz (2000, 2001).

captive networks found in e.g. 'lean production system' in Japan. Relational production networks are based on 'thickly relational' interactions between firms. Both the 'self-reliant networks' found in Germany and the 'egalitarian co-operative network' found in Italy belong to this group, as does ethnic production networks found en e.g. Asia. The modular production network is a new American network model that relies on 'thinly relational' inter-firm linkages[13]. The model combines a de-verticalised lead firm that focus on design and marketing with turn-key supplier/full-package firms that manufacture for the lead firm (and other similar customers). The suppliers specify their own processes, organises their own input and get little support from customer firms. The relationship between the lead firm and supplier is highly formalised, relies on general standards and network actors try to limit mutual dependence, which in turn allows for a high degree of both geographical and customer flexibility ('competitive switching'). According to Sturgeon, such a modular production network may be highly viable in an economy that is becomes increasing globally organised, while captive network networks and relational networks may become 'geographically and technologically' isolated (Sturgeon 2002, 488). In Asia one should expect that 'Dragon TNCs' become marginalised or regional networks to be transformed into more modul production network types of organisation. A further issue of how network governance affects upgrading of local suppliers. This is a main issue in more case-studies in part II, and we will therefore turn to that issue now.

Upgrading through global commodity chains and production networks

While investment-based, producer-driven production commodity chains run by TNCs may have a limited developmental impact, Gereffi argues that local producers have good prospects for benefiting from trade-based, buyer-driven commodity chains. Based on his studies of the garment commodity chain, Gereffi have identified two ways in which the buyer-driven mode of governance improve the ability of local enterprises to move technologically complex or more profitable niches in the chain (Gereffi 1999 and 2001). First, by entering into buyer-seller relationships local firms can get information on and learn about quality requirements, lead

[13] Cf. The section on corporate systems in chapter 2.

time, more effective production processes etc.. In contrast to producer-driven networks in which suppliers are involved in simple assembly of imported inputs, retailers and marketers need suppliers with ability to make finished products and by themselves organise their own supplier network - i.e. being full-package turnkey-supplier, OEM) companies. Second, local upgrading takes place due to what Gereffi calls 'organisational succession'. Local producers start by producing simple and standardised products for buyers that serve the low end of the market but later turn to manufacturing more advanced products to 'higher status' buyers. 'This succession of foreign buyers thus permitted manufacturers to upgrade their facilities as they met buyer demands for more sophisticated products' (Gereffi 1999, 53). According to Gereffi, then, a particular type of lead firms is seen as the main drivers of local upgrading. He even go so far as stating that 'participation in global commodity chains is a necessary step for industrial upgrading, because it puts firms and economies on potentially dynamic learning curves' (ibid. 39).

Gereffi's optimistic scenario appears to be somewhat one-sided and raises many issues (Schmitz and Nadvi 1999, Humphrey and Schmitz 2000, Gibbon 2001).[14] Firstly, one may ask whether upgrading can be considered as a passive process or one that requires active efforts by the local firms and even joint action of local firms. Secondly, we may ask whether and when chain governance undermines or constrains local upgrading. Support for process upgrading may differ between reciprocal, quality-driven supplier relations on the one hand and asymmetric price-driven relations on the other hand. Product upgrading may be in conflict with current buyers and this may block 'organisational succession'. Similarly, some chains discourage or obstruct functional upgrading which involves design, marketing and branding. Thirdly, buyers may support upgrading of a few local producers while many are marginalised or even excluded from the chain. Palpacuer and Parisotto stress that the new 'permeable networks' that consists of selected first-tier partners surrounded by a group of mobile second-

[14] Gereffi has in recent writings stressed that first that 'sequences of export roles are contingent, not invariant, features of industrial upgrading' and that 'the upgrading process of firms in terms of shifts along or between commodity chains is an important, but not a sufficient, condition for ensuring positive developmental outcomes'. Concerning the latter he suggests that one must examine 'how particular places become integrated into such chains, and how this process is mediated by the institutional and politico-economic characteristics in which firms and workers are embedded'.(Gereffi 2003, 149-50)

tier suppliers. 'Second-tier positions typically involve low-skilled, low value activities that are relatively easy to enter, such as contract manufacturing based on manual assembly, but provide a weak basis for learning and growth. Second-tier suppliers compete mainly on costs and lack the organizational capabilities needed to meet lead firm's standards in terms of volume, quality, flexibility and reliability. As a result, they fail to create and retain enough value to propel cumulative investment' (Palpacuer and Parisotto 2003, 106). In continuation of the first three points, we may fourthly ask about the role of local governance and public agencies in relation to upgrading

Issues for Developing Country Enterprises

Thus, neither TNC presence nor access to global value chains more broadly appear to be a panacea for economic growth and upgrading. TNCs may advance local economic growth but they may also serve their own global interests rather than the dynamic comparative advantages of the host country. Similarly, by acting as demanding customers global buyers may effect the level of quality and innovation among their local suppliers but local producers may also be locked-into the low value-added parts of a global value chain or even be squeezed out of markets. The core question is therefore under what conditions developing country enterprises can take advantage of their links to lead firms.

Apart from the nature of the TNC/cross-border chains (entry barriers, the power of lead firms etc.), the likely outcome depends on the one hand on the strength, strategic intent and flexibility of enterprises, and on the other hand on the policy environment. In this section we are concerned with the former, while the latter is taken up in the subsequent section.

In a developing country context many enterprises are so weak that they will neither be able to adjust to the the new TRIPs and TRIMs regulations (chapter 5), nor to live up to the required levels of 'price, quality and delivery' in a globalised economy. This is the case for many micro- and small scale enterprises but they may survive in 'informel sector' and 'local niche' segments of the market. This may also be the case for mixed-size enterprises that has grown under import-substitution regime but which now faces a strong challenge during the transition to open economies, i.e. strong competition 'from below' (from low-price, low-quality producers) as well as 'from

above' (from established manufacturers with well-known brand-names)[15]. Finally, this may be the case for local firms that have been involved in simple labour-intensive export platform manufacturing as part of en export-led industrialisation strategy. The two latter groups are increasingly placed in an upgrading or perish situation.

Their future is dependent upon their capabilities which we previously (chapter 2) have described along two dimensions. Firstly, whether they are flexible or inflexible in term of their ability to adjust their goals, their means and organisational structure to accomplish their goals under new conditions. Secondly, whether they are weak or strong in term of their ability to set realistic goals and to accomplish these goals. The latter is tightly related to their ability to exploit external knowledge and to enter into continuous technological and organisational improve-ments.

Late-comers which import huge amounts of technology cannot cost-free access and absorb new technologies. To be successful, they need to combine import with indigenous technological efforts, which brings the capacity for using and changing technologies into focus (Lall 1992). The notion of *technological capabilities* attempts to capture the great variety of skills and stocks of knowledge required to efficiently utilise such new equipment and technical information. Sanjya Lall defined technological capabilities in industry as 'the skills - technical, managerial and institutional – that allow productive enterprises to utilize equipment and technical information efficiently. Such capabilities are firm-specific, a form of institutional knowledge that is made up of the combined skills of its members accumulated over time." (Lall 1993:720) The process of acquiring and accumulating technological capabilities is in itself a complex process is normally referred to as learning. Learning takes not just efforts but also time to succeed.

The firm-centred accumulation of technological skills, knowledge and experience can be acquired through *firm-internal learning*. Directed, internal learning may be organised around formal R&D activities but knowledge can also be acquired from involvement in repair and maintenance of equipment, from trial and error experimentation, from reverse engineering etc. A second major firm-centred form of technology accumulation relates to human

[15] This competition may take the form of import competition or of domestic market competition from newly established subsidiaries.

resource formation at the firm-level which may refer to internal training activities or to recruitment of personnel that already have the relevant knowledge from education, training and working elsewhere (including inter-firm migration of S&T personnel). It should also be noticed that the importance of, and the most relevant type(s) of, internal learning effort vary according industry sector and level of industrial development. (Bell and Pavitt 1993: 178-182)

Though internal efforts are important in building a stock of technological capabilities, firms do not accumulate stocks of knowledge in isolation but utilise a variety of firm *external sources* in this process. Of particular importance are *inter-firm relationships* ('learning-from-each- other') - comprising transfer of knowledge and skills from long-term suppliers of machinery, from intermediate-goods producers, from foreign licensers, from customers, and from consultants and from private contract facilities. Another important external source of knowledge and skills is *public or quasi-public technology institutions* (such as universities, technical colleges, research laboratories, standard setting bodies etc.) Most studies show that firms which have strong in-house capabilities are more likely to search for and use external sources, and that external sources cannot substitute for internal intangible technology resources (see e.g. Bell and Pavitt 1993, Goldman et all 1997). The notion of 'absorptive capacity' is often used to describe this complementarity between the internal capability of firm and its external sources. Cohen and Levinthal has defined the absorptive capacity as 'the ability of a firm to recognize the value of new, external information, assimilate it, and apply it to commercial ends' and argued that it is related both to the current (tacit) knowledge base and to the intensity of conscious learning efforts (Cohen and Levinthal 1990). This in turn brings us back to the critical role of advanced technical and managerial training.

The absorptive capacity and inter-firm learning processes are crucial in the vertical relationship between TNCs/global buyers and local suppliers, but it is also important in the horizontal relations in-between local supplier firms. Rather than following a 'go-it-alone' strategy in strengthening their firm-level capabilities or competencies, local manufacturers may opt for more collective strategies by forming 'clusters' - i.e. a sectoral and geographical concentration of enterprises where a set of (incidental) external economies and (deliberate) multilateral joint action result in a

'collective efficiency' to the advantage of all involved enterprises (Humphrey and Schmitz 1996: 1863). Henceforth, the provision of collective services by local institutions comes to the forefront, too.

Global production networks are no panacea for upgrading of local enterprises and thus have to be combined with local enterprise strategies. Such strategies may be oriented towards upgrading inside the global network but in order to avoid being sandwiched 'between the unattainable positions at the to of the GVC and unsustainable positions at the bottom-end of the global value chains' a search for market access outside lead firms networks may be needed (Palpacuer and Parisotto 2003, 114). In the case studies, we will deal with in greater detail how enterprises related to global buyers/TNCs, how they relate to each other (inter-firm relations) and how they related to their broader local environment (extra-firm relations).

Issues for Developing Country States

Despite problems encountered by many developing countries as a consequence of the activities of TNCs and the difficulties involved in taking advantage of global networking, there is not much point in looking for solutions that try to keep the large corporations and global networks out. On the contrary, such a strategy might result in further marginalisation. Still, most researchers today agree that host countries must try to enact policies - incentives, disincentives and regulation - with a view to reducing the less desirable or undesirable consequences of TNC activity and maximising the positive consequences of these and other global value chain links.

Because of the serious difficulties that host country authorities face when trying to interfere with corporation priorities and activities, however, they may have to accept the possibility that, even with a well-designed regulatory framework and strong incentives might not have the expected impact. TNCs might transfer a substantial part of the economic surplus generated by growth to other countries, or dis-investment in the local subsidiaries may take place in case of a global downturn of the firm or if better investment opportunities arise in other localities. Similarly, global buyers may scout for better placed, more flexible or cheaper suppliers elsewhere. In the case of the Far East, changes in the U.S. market are of particular importance, and transfers orders from Southeast Asia to Mexico or to China have been recorded (cf. Ch. 8).

It is not the intention here to analyse in greater detail the problems of host government policies. Some of the issues involved, however, should be noted as a backdrop to our case studies.

First of all it should be emphasised that the issues at stake vary significantly from country to country, very much depending on the capacity of state (cf. Ch. 3). There is extremely little that we can expect weak, ('predatory states' in Evans' terminology) can do to influence TNC activities or take a pro-active stance in relation to supra-national production networks. The issue involved in foreign investment, as seen from the perspective of government officials in such states, is simply to extract the greatest personal share from whatever wealth or income might be generated by private actors. The officials' interaction with TNCs is therefore best described in terms of bargaining models among groups of individual maximizers, rather than as relations between two different kinds of institutions (Evans, 1998: 198).

Intermediate and strong developmental states - which we typically find in Asia - on the other hand, may be capable of influencing and shaping TNC behaviour and relate themselves strategically to other drivers of global/regional value chains. These states are not just aggregates of individual maximizers but organisations capable of pursuing collective goals (ibid.). Here it becomes meaningful to discuss problems of host government policy. At a high level of abstraction, and within the framework outlined above, the challenges facing decision-makers in such states are essentially how to design policies and manipulate societal conditions so that TNCs are prompted to, or acquire an interest in, providing larger financial resources, more adequate and advanced technology at lower costs, access to global distribution and marketing systems, higher spillover, and other resources and benefits in the broadest sense of the terms. In addition, it is a question of how to influence the flows of capital, technology, and other resources in such a way that the impact on internally-oriented industrial development (in particular the dynamic comparative advantages) is optimised.[16] Similarly, in the area of environment management the challenge is to create incentive structures that induce TNCs to minimise activities

[16] When we refer to industrial development here it is not to rule out the possibility that TNC activities relate primarily to agriculture or development in other sectors. Were we to take into account the impact of TNC operations on agricultural development, this could probably be done without altering the basic argument presented in the text above.

with harmful effects on the environment. Finally, such states may intervene in order to support development of skills and technology so that local firms can take advantage of upgrading opportunities in selected global and regional value chains where traditional TNCs are not the main drivers. In continuation of such support, local firms may eventually become TNCs themselves (e.g. 'Dragon Multina-tionals').

It follows from this mode of reasoning that the problems of policy cannot be reduced to limiting TNC activities or world market integration through commercial subcontracting relations as much as possible. Actually, one of the overriding concerns for developing country decision-makers is how to attract more foreign investment and how to get access to global value chains. Other policy objectives are: a) to ensure an appropriate selection of TNC investments and operations in keeping with national development priorities; b) to increase net benefits from on-going TNC activities by inducing established investors to upgrade their products, processes and functions; and finally c) to develop local capabilities and absorptive capacities, so that the local firms can take advantage of the links with foreign investors and with global value chains more broadly (Martinussen, 1988: 24 ff.; te Velde 2003:173ff).

These are formidable tasks for any developing country government, even for the developmental ones in Asia. It is very difficult to determine what would be the optimal situation as well as the actual margin for manoeuvring available to the government. Just to determine the effects of operations of TNCs and other lead agencies in various respects, let alone balancing and weighing these effects, require extensive analyses often beyond the capabilities and capacities of governmental agencies. Add to this the problems of predicting how the TNCs and other lead firms would actually respond to changes in policies and incentives - a challenge that would require not only knowledge about the firms *real* priorities and investment strategies, but also analyses of conditions in other countries where the lead firms concerned could alternatively place their investments and locate their manufacturing activities.

Disregarding these difficulties for the present we may carry the reasoning a little further by pointing out four overall strategies that, in principle, can be applied by a host-country government.

First, the government can intervene in a manner that renders superfluous specific TNC activities, the motivation being that these activities have negative net effects. The government may pursue this

overall strategy by supporting expansion of private, indigenous business at the expense of TNCs. As far as exporting is concerned the emphasis will then be on an OEM-led rather than a TNC-led mode of world market penetration. Another option is to establish public sector undertakings to replace TNC operations. Such 'discriminating' strategies, however, have become more difficult with the adoption of the TRIMs agreement and other WTO rules and with the pressure on developing country states to privatise productive activities (cf. Chapter 5).

Second, a host-country government can contribute to increasing the attractiveness of the country by improving the basic economic and other conditions that are known to affect location of TNC investments; by means of policy-induced incentives such as tax exemptions; or by improving the institutional framework for foreign investment and industrial development. A major constraint here in most countries is lack of financial means to markedly improve basic conditions that include physical infrastructure, skilled workforce etc. It is within reach of more governments to increase attractiveness by means of fiscal incentives, while improvement of the institutional framework lies somewhere in between in terms of required financial resources but are often extremely difficult to bring about for other reasons. As far as global buyers is concerned, the attractiveness of a particular location can be improved through policies that lower impediments to trade in goods and services, policies that strengthen training, testing and certification facilities; as well as through policies that support local producers in developing the necessary skills and competencies needed to participate in global value chains. As will be demonstrated in chapter 8, many Asian countries have been successful in developing both the basic and more advanced location-specific attraction factors.

Third, a government can enact specific regulations, restrictions and performance requirements with a view to minimising costs and disadvantages from TNC activities, while at the same time increasing the gains and benefits. Again, the various agreements entered into by WTO member countries have reduced the scope for selective government intervention but there is still scope for policies that encourage technological deepening and human resource development in TNC affiliates as well policies encouraging TNCs to form local linkages .

Finally, a government of a host country can help render superfluous its own regulations and restrictions by supporting indigenous business in general and the most competitive part thereof in particular. Under the 'new rules of the game' this requires the government to replace control-oriented regulations with development-oriented policies aimed at facilitating and co-ordinating national/local development efforts. A supportive policy environment is also of major importance when local manufacturers try to reposition themselves in global value chains and in particular when they try to develop new products and/or move into design, branding and marketing functions usually controlled by the leading global buyers. Moreover, specific SME policies may be of major importance in mitigating 'globalisation' processes forcing many local producers (suppliers) out of the market.

In the case studies in Part II we will deal with host-country policies and efforts in greater detail. The above outlining of four abstractly defined types of intervention is meant only as a general reminder of some of the basic issues and options.

Some of the case studies apply a global value chain approach; others look at TNC and lead firm activities from other perspectives. The common aim is to identify important implications for the case countries of increasing international economic integration driven by TNCs and other lead firms. These aspects of our analyses may be seen as investigations of 'economic globalisation' as compared with other aspects that focus on how developing countries have come under pressure 'political globalisation' - from international institutions and OECD governments - to open up their economies and provide political and institutional prerequisites for increased international economic integration. In this regard, a core issue is how and to what extent the new 'global rules' constrain the room of manoeuvre of developing states. We will deal more thoroughly with this issue in the next chapter.

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