

United Nations Conference on Trade and Development

# World Investment Report

**2001** Promoting  
Linkages

## *Chapter V*



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## CHAPTER V.

# POLICIES TO STRENGTHEN LINKAGES

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### A. The role of government policy

**I**s there a need for governments to promote actively the creation and deepening of linkages? There are certainly conditions under which the benefits of linkages are so clear to enterprises that no policies are needed to encourage firms to strike them. However, markets may fail to create efficient linkages, raising the cost to both parties of entering into long-term supply relationships and reducing the ability of domestic firms to become competitive suppliers. Failures can arise at several levels. TNCs may be unaware of potential suppliers, or may find it too costly to locate or deal with them. They may be reluctant to invest in building local capabilities because the benefits leak out to other buyers. Local capabilities may be too far below the levels needed to make it feasible for TNCs to invest in improving them. Or domestic suppliers may not have access to technology or finance.

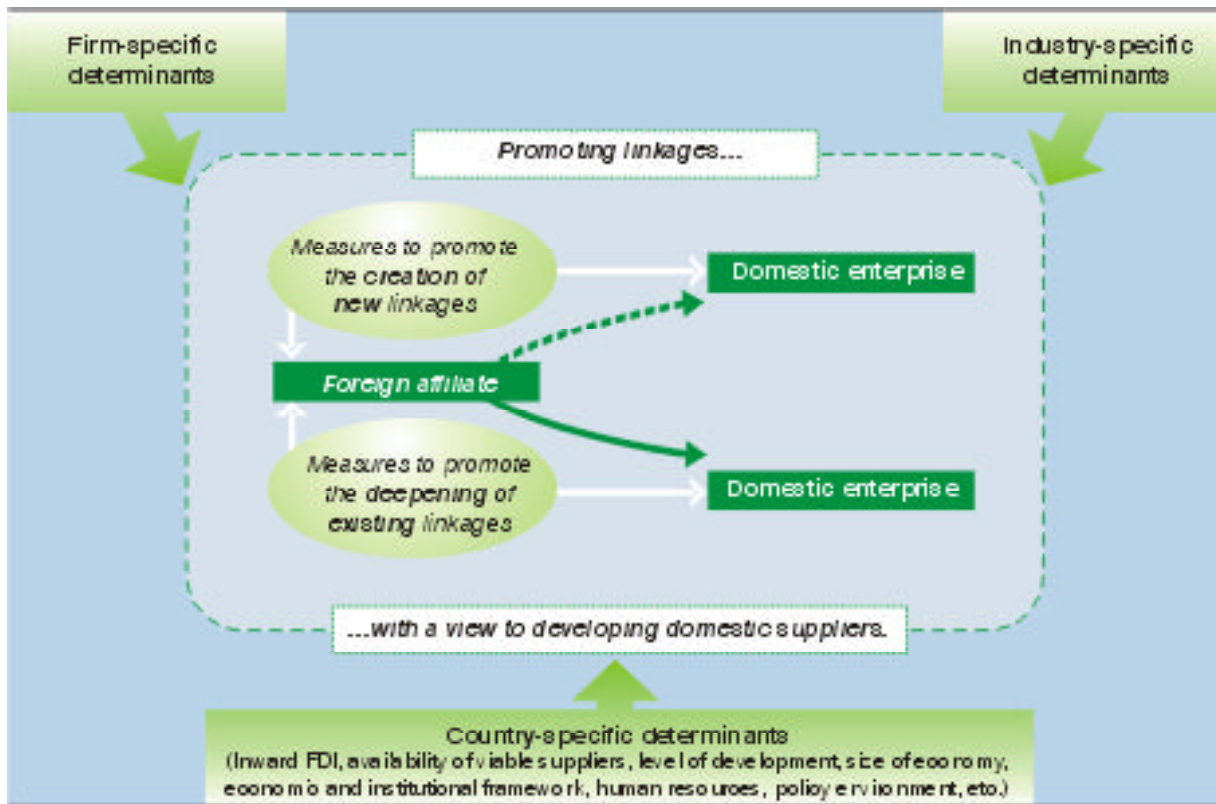
Hence, governments can encourage the creation and deepening of backward linkages by lowering the costs and raising the rewards of linkage formation for both TNCs and local firms. The objective is, as stated earlier, not to create linkages for their own sake, but rather to stimulate linkages that raise the efficiency of production and contribute to the diffusion of knowledge and skills from TNCs to the local enterprise sector. The assumption is that, whatever productive linkages there are, there is room for encouraging the creation of more and deeper linkages.

This chapter reviews, therefore, policy measures taken in different countries to promote linkages, with a view to establishing a “menu” of instruments that countries can use for this purpose, in this

important area at the intersection of enterprise development and FDI policies. The focus of the policy discussion is narrow: it is limited to the relationship between foreign affiliates and local firms (figure V.1). This is not to minimize the importance of other policy areas: for example, without foreign affiliates (and, hence, a policy to attract FDI) and domestic firms (and, hence, a policy that promotes their growth and competitiveness), the preconditions for linkages do not exist. Indeed, the more policy measures aimed at promoting linkages are consistent with, and embedded in, a broad range of policies that facilitate enterprise development (figure V.2), the higher the chances for linkage-promotion policies to succeed.

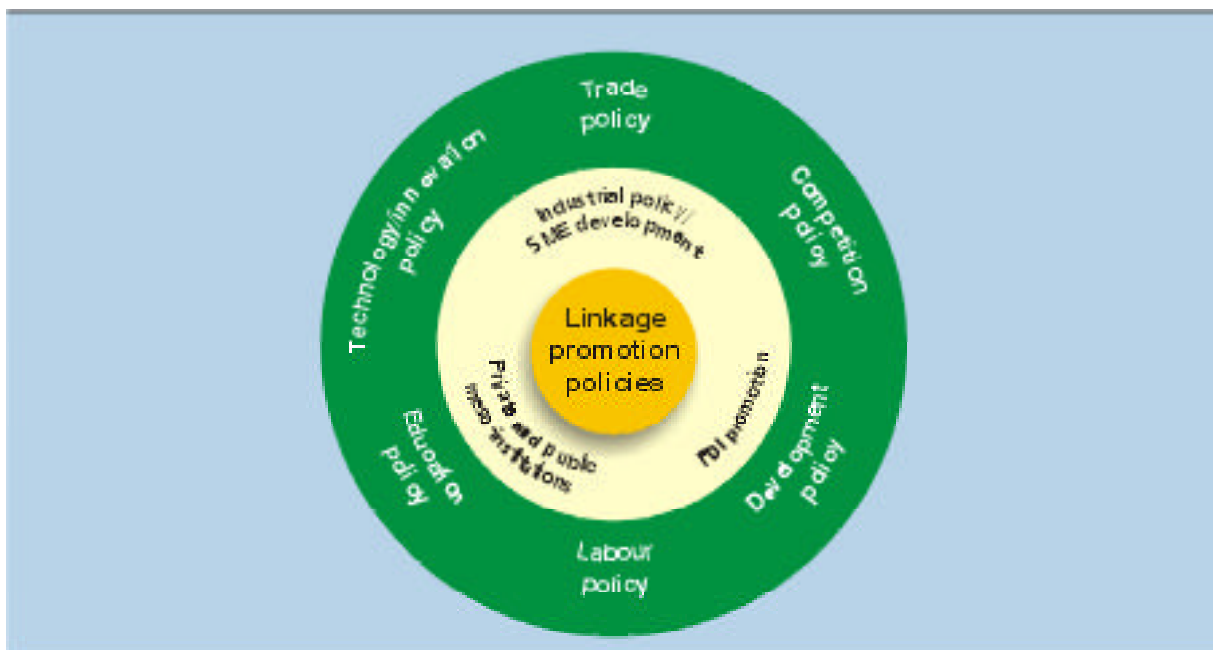
Care must be taken, however, when drawing lessons from the experience of different countries. Not all measures reviewed in this chapter have always yielded positive results in terms of promoting efficient linkages, if for no other reason than that they may have been applied to meet different policy objectives. Success also depends on whether other policies are in place. For instance, the promotion of supply links may be successful because it is complemented by a general policy of technology upgrading or industrial training. A certain strategy may work only in a specific historical, cultural, institutional or political context, making it difficult to transpose it to a different setting. In other words, many linkage promotion measures are context-specific, and the role of the enterprise and industry determinants discussed in chapter IV needs to be taken into account. Moreover, the description of a policy per se does not capture the way it has been implemented in a particular country, if only because proper implementation may require strong institutional capacities; not every government may have adequate resources for this purpose. Hence, if the same policy is implemented elsewhere, but without the

Figure V.1. Policy focus for the promotion of backward linkages



Source: UNCTAD.

Figure V.2. The linkages policy environment



Source: UNCTAD.

same efficiency, flexibility or participation of stakeholders, it may yield quite different – and perhaps disappointing – results.

Given this caveat, there are nevertheless important lessons to be learned from the policy experience of different countries. Many of the problems of linkage creation are generic. Market failures tend to occur across countries – even though the exact nature and incidence of such failures can vary by level of development and the specific national context. Governments have to make a broad strategic choice on the level at which they tackle such failures. Some can be addressed at a broad level – for instance, by encouraging information exchange or skill creation. Others are better addressed at more specific sectoral or activity levels, by targeting linkage policies to industries in which TNCs are most active. Still others can be geared to particular geographical locations, such as dynamic clusters of interest to foreign investors. Many governments have policies at all levels, with the differences in emphasis and nuance rather than strategy.

It is important to note, however, that the policy space available for national linkage policies is narrowing. A number of the direct measures used in the past to increase local purchases are being phased out, as a result of autonomous liberalization by host countries, the decline of interventionist policies and rules agreed in the context of the WTO and other international agreements. This does not mean that the role of policy is less important – on the contrary. But more attention needs to be given to policies that are in line with market forces and that build, in particular, on the mutual interests of both foreign affiliates and domestic firms (see chapter IV) to create and deepen linkages and foster competitiveness and economic growth. The challenge for each country is to identify which kind of measures are appropriate under its specific circumstances. The ultimate aim is to strengthen productive capacities of suppliers and, in particular, help them to produce higher value-added goods and services in an internationally competitive environment. In the process, some domestic suppliers may expand internationally and become TNCs in their own right (see box IV.1.)

This chapter reviews policy measures of relevance for linkage formation. Section B discusses some broad policy measures, notably in the areas of trade and investment, that can influence the behaviour of foreign affiliates, against the backdrop of recent developments in the international regulatory environment. The analysis then turns, in section C, to specific measures that can be generally applied with a view to facilitating more and deeper linkages. Section D shows how a number of countries have combined several of these measures into targeted comprehensive linkage programmes.

## B. Trade and investment measures influencing linkages

Many host country policies affect the operations of foreign affiliates in various ways. Some of them can – often indirectly and incidentally, but also, at times, through deliberate use for this purpose – encourage linkages. The focus of this section is specifically on various trade and investment measures of relevance to linkages.

High *tariffs* on imports required by foreign affiliates could in theory lead to an increase in local sourcing of needed inputs by affecting their relative costs from different sources. However, import-substitution policies of this kind have been generally discontinued.

*Rules of origin* determine the national origin of a product for the purpose (among others) of granting preferential treatment. Rules of origin based on the level of domestic value added or local content, and implemented as part of preferential trade arrangements,<sup>1</sup> can have important effects on FDI and linkage creation in the preference-receiving countries (UNCTAD, 1999). In general, these effects are the more significant, the higher the preferential margin and the lower the administrative costs associated with origin compliance. On the other hand, excessively stringent rules tied to a minor preferential margin have limited impact.

In the case of the Japanese automobile manufacturer Suzuki's investment in Hungary, for example, rules of origin under the Association Agreement with the European Community were a factor in the firm's decision to locate there, create local linkages and increase local value added, so as to enjoy duty-free access for car exports to the European Union (box V.1). However, while rules of origin can lead to a relocation of activities to developing host countries, they do not necessarily lead to more or deeper linkages with local (let alone domestic) firms in those countries. Mexico, for instance, has attracted new FDI in electronics and television sets from firms wishing to have preferential access to NAFTA's two northern partners; but the impact on the share of local suppliers appears to have been negligible so far; the

bulk of parts and components, especially sophisticated ones, are produced by foreign affiliates (Carrillo, 2001). This suggests that, where local supply capacity is weak, foreign affiliates are likely to meet local content provisions contained in rules of origin either through internalized production or host country-based foreign-owned suppliers rather than domestic ones.<sup>2</sup> In addition, rules of origin have other shortcomings, including the way in which they are designed and implemented.<sup>3</sup>

Traditionally, the most prominent tool to encourage foreign affiliates to link up with local firms has been *local content requirements*, either mandatory or in return for incentives. Local content requirements – like rules of origin – do however not necessarily lead to linkages, as foreign

#### Box V.1. Suzuki's local sourcing in Hungary

Magyar Suzuki started commercial production in Hungary in 1992. Suzuki's decision to locate in Hungary and to source from domestic suppliers is partly the result of the preferential treatment given to goods, including cars, of Hungarian origin by the EU; its plant was largely oriented, from the outset, towards that market. Between 1992 and 1999, Magyar Suzuki exported 62 per cent of its cumulative output, mostly to the EU. In order for Magyar Suzuki cars to be considered of Hungarian origin (and enjoy EU duty free treatment), Magyar Suzuki had to rely on Hungarian inputs (or materials originating in the EU and in other European countries which, through so-called cumulation, are considered as local inputs) for at least 60 per cent of its cars' value. Magyar Suzuki's relatively high local value added also reflects company philosophy, which seeks to increase local involvement to avoid making its plants an enclave in the local environment. As a result, in 2000, 29 per cent of the components used by Magyar Suzuki was produced by the firm itself, 26 per cent was provided by its Hungarian suppliers – both domestic and foreign-owned, while 15 per cent was imported from the EU and 30 per cent from Japan.

Employing 2,100 persons directly, Magyar Suzuki is a major employer in the medium-sized town of Esztergom. It purchases a wide range of raw materials, parts and components from primary and secondary suppliers, and its indirect impact creates employment to 31,000 persons in 263 companies (box table V.1.1). In 2000, it had a high share of local value added compared to most of the other major foreign affiliates in Hungary; only some electronics firms established through acquisitions (General Electric, Electrolux) matched its share (Hungary, 2001a, p.3).

In 2000, to promote further its local embeddedness, Magyar Suzuki prepared a cluster-focused subcontracting promotion plan, the Mid-Hungarian Automotive Cluster. Magyar Suzuki decided to provide information on infrastructure and financing facilities to potential suppliers, both foreign and Hungarian. In the same year, Magyar Suzuki organized international seminars (for 47 potential foreign suppliers) and produced, jointly with the local authorities, other public relations materials to disseminate information. In 2001, the Esztergom Industrial Park had 560 000 m<sup>2</sup> open space, equipped with water pipeline, sewage, electricity, gas and telecommunications network, available for potential newcomers.

Source: UNCTAD, based on information provided by Magyar Suzuki.

Box table V.1.1. Magyar Suzuki and its supplier network, 2001

Item	No. of enterprises	Employees
Magyar Suzuki	1	2 100
Primary suppliers	55	10 400
Secondary suppliers	208	20 800
Total	264	33 300

Source: Magyar Suzuki.

affiliates can decide to internalize production within their host country operations. Although it is not clear how widely local content requirements have been used in the past,<sup>4</sup> they (together with other trade-related investment measures (TRIMs) are now being phased out as a result of changes in host countries' economic strategies (from protectionist to open strategies) and of international commitments, in particular the 1995 WTO TRIMs Agreement (box V.2). Only a limited number of countries have requested an extension of the transition period for the TRIMs they had notified under Article 5.1 of the Agreement (table V.1).<sup>5</sup> In any case, the experience with local content requirements is mixed (box V.3).

There are other *host country operational measures* (UNCTAD, forthcoming a) that can lead to linkages, even though this may not be among their principal objectives. In particular:<sup>6</sup>

- *Joint venture requirements* can lead to higher levels of local sourcing, reflecting

the greater familiarity of joint venture partners with local suppliers. But, again, the evidence is mixed: some studies concluded that even voluntary joint ventures are not more likely to strike linkages than wholly owned affiliates (Moran, 1998; Driffield and Mohd Noor, 1999).

- *Export performance requirements* may not always lead to a substantial increase in linkages; but where they lead to linkages, these tend to have a higher quality – precisely because export markets are more exacting and hence foreign affiliates need to upgrade suppliers where this is needed. Such requirements seem to have played a role in pushing TNCs when automotive and electronics industry firms incorporated production facilities in developing countries and economies in transition into their international sourcing strategies, creating new patterns of international production (Moran, 1998, p.50). Foreign affiliates in these industries, in turn, formed strong backward linkages with domestic suppliers, who received a continuous flow

#### Box V.2. The TRIMs Agreement in brief

The TRIMs Agreement, which entered into force on 1 January 1995, specifies in its Article 2 that, “[w]ithout prejudice to other rights and obligations under GATT 1994, no Member shall apply any TRIM that is inconsistent with the provisions of Article III or Article XI of GATT 1994” (WTO, 1995). An illustrative list in the annex of the Agreement describes measures that are inconsistent with Articles III (4) and XI (1). These cover essentially the following types of measures: local content requirements; trade-balancing requirements; foreign exchange balancing requirements; and restrictions on exportation. The Agreement bans not only TRIMs that are mandatory, but also those whose compliance is necessary in order to obtain an advantage; it applies only to investment measures related to trade in goods; it does not cover trade in services.

Article 4 of the TRIMs Agreement allows developing countries to deviate temporarily from the obligations of the Agreement, as provided for in Article XVIII of GATT and related WTO provisions on safeguard measures for balance-of-payments difficulties. With regard to transition periods, developed, developing and least developed countries were given, respectively, two, five and seven years from the date of entry into force of the WTO Agreement to eliminate notified TRIMs. Furthermore, upon request, the transition period could be extended for developing and least developed countries that demonstrate particular difficulties in implementing the provisions of the Agreement. (WTO members that, as of June 2001, had sought extensions of the transition period were Argentina, Chile, Colombia, Egypt, Malaysia, Mexico, the Philippines, Pakistan, Romania and Thailand.)

The TRIMs Agreement is subject to further review by the Council on Goods no later than five years after the date of its entry into force (Article 9). In this context, several proposals have been circulated, including the following: maintaining the present list of restrictions or even reducing the coverage of such list; extending the phase-out period to allow developing countries more time to address their specific needs regarding economic, financial or social policies; and increasing the coverage of the list of prohibited TRIMs.

Source: UNCTAD, forthcoming a.

Table V.I. Notifications submitted under Article 5.1 of the TRIMs Agreement\*

Member	Date of communication <sup>a</sup>	Industry	Category of the illustrative list
Argentina	30 March 1995; 21 March 1997	Automotive industries	Local content and trade-balancing
Barbados	31 March 1995	Pork processing enterprises	Local content
Bolivia <sup>b</sup>	24 June 1998	Hydrocarbons sector	Restrictions on exportation
Chile <sup>c</sup>	14 December 1995	Automotive industries	Local content and trade balancing
Colombia	31 March 1995; 4 June 1995; 31 July 1995; 30 September 1996	Agro-industry	Local content and trade balancing
Costa Rica <sup>d</sup>	30 March 1995	General	Local content
Cuba <sup>e</sup>	18 July 1995	Fuel, raw and other materials, tools, equipment, spare parts accessories, consumer goods; transport and marine insurance	Local content
Cyprus <sup>f</sup>	30 October 1995	Cheese and groundnuts products	Local content
Dominican Republic	26 April 1995	General	Local content and trade balancing
Ecuador	20 March 1996	Automotive industries	Local content
Egypt	29 September 1995	General	Not specified
India	31 March 1995; 22 December 1995; 18 March 1996; 11 April 1996	Consumer goods	Restrictions on exportation
Indonesia	23 May 1995; 28 October 1996	Automotive industries, utility boilers, soyabean and fresh milk products	Local content
Malaysia	31 March 1995; 14 March 1996	General and automotive industries	Local content
Mexico	31 March 1995	Automotive industries	Not specified
Nigeria <sup>g</sup>	17 July 1996	General	Not specified
Pakistan	30 March 1995	General	Local content
Peru	3 March 1995	Milk powders, anhydrous fat and other milk products	Local content
Philippines	31 March 1995	Automotive industries and coconut-based chemicals	Local content and foreign-exchange balancing
Poland <sup>h</sup>	28 September 1995	Cash registers	Local content
Romania	31 March 1995	General	Local content
South Africa	19 April 1995	Automotive industries, telecom- munication equipment, tea and coffee	Local content
Thailand	30 March 1995	Automotive industries, manufacture of milk and dairy products, aluminium sheets, TV picture tubes, transformers, air-conditioners and paper products	Local content
Uganda	17 June 1997	General	Not specified

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**Table V.I. Notifications submitted under Article 5.1 of the TRIMs Agreement\***

Member	Date of communication <sup>a</sup>	Industry	Category of the illustrative list
Uruguay	31 March 1995; 30 August 1995	Automotive industries	Local content
Venezuela	31 March 1995	Automotive industries	Local content

Source: UNCTAD, forthcoming a.

\* Under Article 5.1 of the TRIMs Agreement, members were required to notify to the Council for Trade in Goods, within 90 days after the date of entry into force of the WTO Agreement, any TRIMs that are not in conformity with the Agreement. A decision adopted by the WTO General Council in April 1995 provided that governments that were not members of the WTO on 1 January 1995, but were entitled to become original members within a period of two years after 1 January 1995, should make notifications under Article 5.1 within 90 days after the day of their acceptance of the WTO Agreement.

a Most of the TRIMs notified are probably no longer in place as only ten members (Argentina, Chile, Colombia, Egypt, Malaysia, Mexico, the Philippines, Pakistan, Romania and Thailand) have sought an extension of the transition period.

b Bolivia subsequently submitted a notification indicating that it does not apply any TRIMs that are not in conformity with the Agreement.

c Initially, Chile notified its measure under the Automotive Statute as a prohibited subsidy under the WTO Agreement on Subsidies and Countervailing Measures. However, after further analysis, this measure was also notified as a TRIM.

d Costa Rica subsequently submitted a notification indicating that it intends to eliminate measures notified under Article 5.1 in advance of the expiry of the transition period.

e Cuba subsequently informed the Committee that the measures notified by Cuba under Article 5.1 are no longer in force.

f This notification superseded Cyprus' previous one of 29 June 1995: Cyprus subsequently submitted a notification indicating that it has eliminated measures notified under Article 5.1.

g Nigeria subsequently submitted a notification indicating that the Nigerian Enterprises Promotion Act of 1989 has been repealed and replaced with the Nigerian Investment Promotion Commission Decree 1995.

h Poland had subsequently submitted a notification indicating that it has eliminated measures notified under Article 5.1.

### Box V.3. Experiences with local content requirements

The issue of the economic efficiency of local content requirements in creating linkages between foreign affiliates and local firms has been much debated. Some studies have argued that, under certain circumstances, mandatory measures can be useful in giving local firms the opportunity to build supply capabilities (Balasubramanian, 1991; Halbach, 1989). Evidence suggests that local content requirements contributed to the development of supplier industries in the Republic of Korea (Wong, 1992), Taiwan Province of China (Dahlman and Sananikone, 1990), Brazil, Mexico and Thailand before the 1990s (UNCTAD, 2000a). One study found that local content and other market reservation schemes had a positive influence on the development of domestic suppliers to foreign affiliates geared to domestic markets (Halbach, 1989, pp. 16-17).

Other studies have questioned the usefulness and efficiency of local content requirements and market reservations (Moran, 1998 and 1999). While they lead to higher local linkages, they can diminish the profitability of foreign investments and therefore reduce the attractiveness of the host countries involved as FDI locations, particularly when local suppliers are not competitive. Some evidence suggests that local content requirements discouraged manufacturing investment from Japan and the United States (Hackett and Srinivasan, 1998). In liberalized trade regimes, they may make foreign affiliates uncompetitive and reduce their export potential or even their ability to survive. The prolonged use of local content requirements can also lead to high costs, poor quality and a lack of long-term competitiveness in supplier industries (UNCTC, 1981). Thus, using surveys of the automobile industry (Bale and Walter, 1986), the petrochemical industry (Gray and Walter, 1984) and the informatics industry (Frischtak, 1986), one observer concluded that the use of "local content requirements in highly protected markets is not only extremely costly, but also quite ineffective" (Moran, 1998, p. 5). Another recent study (Xia and Lu, 2001) showed that local content requirements in China did promote the development of domestic suppliers but at the cost of low efficiency, high costs of production and hence a loss of competitiveness of the enterprises concerned.

The case for local content requirements rests essentially on the need to promote infant supply firms by providing support (in the form of assured demand) during their learning periods. The issue is thus similar to that of infant industry protection. Where used carefully, with offsetting measures to ensure that suppliers face competitive pressures and have access to the technology and skills they need to improve their capabilities, they can foster efficient suppliers. Where used in a protected setting, with few pressures to invest in building competitive capabilities, they can result in inefficient suppliers that saddle the economy with high costs, outdated technologies or redundant skills.

Source: UNCTAD.



of technical and managerial improvements and benefited from economics of agglomeration, scale and scope (Moran, 1998, chapter V). It is difficult, however, to generalize, on the basis of these industry experiences, that export-performance requirements invariably produce favourable outcomes as regards linkages to domestic suppliers in host countries.

While these two kinds of measures are not prohibited by the TRIMs Agreement, a number of interregional, regional and bilateral agreements (or drafts thereof) explicitly prohibit, condition (e.g. on incentives) or discourage them (and other host country operational measures) (table

V.2). In contrast to the TRIMs Agreement, however, such agreements in some cases allow these additional measures (or some of them) in so far as they are linked to incentives (UNCTAD, forthcoming a). In contemplating linkage-enhancing measures, governments need therefore to be aware that some countries (or groups of countries) have already agreed to prohibit these in some investment agreements, suggesting, perhaps, that the same issues may eventually be raised at the multilateral level.

While the measures described in the preceding paragraphs are prescriptive, countries can also offer *incentives* to foreign affiliates to encourage the creation of

**Table V.2. Examples from international agreements (or attempts thereof) that prohibit, condition<sup>a</sup> or discourage certain host country operational measures<sup>b</sup>**

Host country operational measure	Instrument
Requirements to establish a joint venture with domestic participation	GATS; draft MAI
Requirements for minimum level of domestic equity participation	GATS; draft MAI
Requirements to locate headquarters for a specific region or the world market	draft MAI
Employment performance requirements	draft MAI
Export performance requirements	NAFTA Canada – Barbados BIT; Canada – Philippines BIT; Canada – Trinidad and Tobago BIT; Canada – Venezuela BIT; El Salvador – Peru BIT; Malaysia – United Arab Emirates BIT; Mexico – Switzerland BIT; United States – Trinidad and Tobago BIT; United States – Bolivia BIT; draft MAI
Restrictions on sales of goods or services in the territory where they are produced or provided	El Salvador – Peru BIT ; NAFTA; United States – Bolivia BIT; draft MAI
Requirements to supply goods produced or services provided to a specific region or the world market exclusively from a given territory	United States – Trinidad and Tobago BIT; draft MAI
Requirements to act as the exclusive supplier of goods produced or services provided	NAFTA; Mexico-Switzerland BIT
Requirements to transfer technology, production processes or other proprietary knowledge	NAFTA; Canada – Barbados BIT; Canada – Philippines BIT; Canada – Trinidad and Tobago BIT; Canada – Venezuela BIT; El Salvador – Peru BIT; Mexico – Switzerland BIT; United States – Trinidad and Tobago BIT; United States – Bolivia BIT; draft MAI
R&D requirements	United States – Trinidad and Tobago BIT; United States – Bolivia BIT; draft MAI

Source: based on UNCTAD, forthcoming a.

<sup>a</sup> For example, certain performance requirements are permitted in so far as they are linked to incentives.

<sup>b</sup> Provisions on performance requirements may be subject to exceptions, derogation, reservations, safeguards and the like. As in the case of GATS, they may apply only to sectors, for which specific commitments have been made. Moreover, provisions on performance requirements may be subject to national treatment and most-favoured-nation treatment provisions.

linkages (provided that relevant international obligations are observed). Direct and targeted measures are tax exemptions for affiliates from corporate income tax, value-added tax or sales tax.<sup>7</sup> Thus, some governments, like that of Indonesia, exempt exporters from value-added tax to encourage the use of local inputs (Felker and Jomo, 2000). In other cases, affiliates are allowed to treat the costs related to linkage formation as tax-deductible expenses. For example, in Malaysia, large companies participating in an Industrial Linkage Programme (ILP) can claim expenditure incurred for the training of employees, product development, testing and factory auditing (to ensure the quality of vendors' products), as a deduction in the computation of income tax (Malaysia, MITI, 2001). Linkage creation is also used as one of the criteria to grant "pioneer" or similar status to foreign investors. "Pioneer" status usually entitles firms to various types of fiscal or financial incentives, or to other benefits. In Malaysia, for example, pioneer status is granted to companies proposing to manufacture promoted products or undertake promoted activities, taking into consideration the value added, level of technology and industrial linkages involved in the projects (Malaysia, MIDA, 2001). The Thai Board of Investment also offers a variety of incentives to promote investment projects that use domestic resources and develop basic and support industries (Thailand, BOI, 2001). Moreover, sometimes changes of the tax system itself can facilitate linkages.<sup>8</sup>

It is difficult to isolate the impact of incentive measures on linkage formation from that of other measures that usually form part of an incentive package, or from the impact of economic conditions in a host economy. Some studies have found that incentives can be important in developing subcontracting relations; on the other hand, if local suppliers are not able to meet the needs of foreign investors efficiently, incentives alone are unlikely to have an impact on linkages.<sup>9</sup> Furthermore, special attention needs to be given to avoid granting incentives in situations in which linkages would be forged even in the absence of incentives, which would then simply result in windfall gains for foreign affiliates. In

any event, the use of incentives must be compatible with the TRIMs Agreement and the Agreement on Subsidies and Countervailing Measures. Hence, particular care needs to be taken in the design and implementation of linkage-related incentive schemes. Under the TRIMs Agreement, local content requirements and other trade-related investment measures mentioned in the Agreement, are prohibited if they are a condition "to obtain an advantage". In other words, an incentive linked to a local content requirement is not considered permissible. Incentives are also covered by the Agreement on Subsidies to the extent that they fall within the definition of a subsidy contained in the Agreement. And again, the use of subsidies contingent upon the use of domestic over imported goods ("import substitution subsidies") is forbidden, although transition periods are provided for developing (five years) and least developed countries (eight years) (table V.3). On the other hand, while forgoing local content requirements, developing countries may find it useful to encourage linkages through well-targeted incentives to foreign affiliates (or domestic firms for this purpose) that engage in linkage creation and deepening activities, such as technology upgrading and the training of local suppliers. But incentives of this kind are currently open to challenge ("actionable"). Thought should therefore be given to adapting the relevant WTO rules to render this category of development-related subsidies non-actionable. To avoid free riding, affiliates receiving incentives could be required to commit matching resources.

Issues pertaining to performance requirements and incentives often arise in the context of concrete negotiations between governments and TNCs, especially of large FDI projects. *Contractual arrangements* with foreign investors can offer host governments an opportunity to encourage the formation of local linkages by including this element in their award procedures. Under the Umbrella Subcontracting Scheme of Malaysia, for example, the Government granted procurement contracts without competitive tendering to a furniture market intermediary company in exchange for its marketing the products of medium-sized local companies (Meyanathan, 1994).

Privatization transactions may also offer opportunities to keep linkage consideration in mind. For example, when Volkswagen bought Skoda (Czech Republic) in 1991, one of the best-effort commitments it made was to rely increasingly on domestic suppliers.<sup>10</sup>

Finally, thought could be given to the possibility that *home countries* encourage their TNCs through fiscal, financial and other incentives to forge local linkages in developing countries. Some developed countries give support in the form of loans, government-sponsored insurance and equity financing for FDI in developing countries and economies in transition (UNCTAD, 2001b). In some cases, such assistance is limited to SMEs. So far, however, the development of linkages between foreign affiliates and local firms does not appear to have been emphasized in these programmes, although there is progress in this direction. The Government of the United Kingdom published, in December 2000, a White Paper on International Development which noted that “[e]ven with good policies in place, it can be difficult for some developing countries to stimulate domestic investment and attract foreign investment”. One of the measures the Government of United Kingdom announced to deal with this situation is that it would establish a “Business Linkages Challenge Fund” which “will support enterprises in

developing countries to form linkages with domestic and international partners. It will facilitate knowledge transfer and improve access to the information and markets necessary to compete in a global economy” (United Kingdom, 2000, pp. 61-62).

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Developments in the global economy and changes in the international policy framework, including commitments in WTO and other international arrangements, have changed the scope for national policy options. Some measures that were applied in the past are now considered less relevant or non-permissible in this new environment. However, there is flexibility within the existing framework, e.g. in the form of extension of transition arrangements and differential treatment of countries at different level of development. Moreover, some agreements are subject to further review. The challenge for policy makers is, therefore, how to adjust to this new international policy framework, make use of the options allowed within this framework and use other policy measures which are not subject to multilateral rules to integrate FDI more deeply into their national economies and, in particular, benefit from backward linkages. Some of these other measures are discussed below.

**Table V.3. The WTO Agreement on Subsidies<sup>a</sup>**

Type of subsidy	Developed countries	Developing countries	Least developed countries
Subsidies contingent on use of domestic goods	Prohibited	Prohibited after 5 years (end of 1999)	Prohibited after 8 years (end of 2002)
Subsidies contingent on export performance	Prohibited	Prohibited after 8 years (end of 2002) <sup>b, c</sup>	Permissible (also for the 20 countries listed in Annex VII of the Agreement as long as their GNP per capita remains below \$1,000 per year) <sup>c</sup>
Subsidies that may cause adverse effects to the interests of another WTO member	“Actionable” <sup>nd</sup>	“Actionable” <sup>nd</sup>	“Actionable” <sup>nd</sup>

Source: UNCTAD.

<sup>a</sup> The table does not summarize the provisions of the Agreement related to countervailing measures. The Agreement does not cover subsidies provided for the services sector.

<sup>b</sup> This period may be extended in particular cases on the basis of specific economic, financial and development needs.

<sup>c</sup> Developing and least developed countries are required to phase out export subsidies to products for which they gain more than a 3.25 per cent share of world trade for two consecutive years. The phase out periods are two years for developing countries and eight years for LDCs.

<sup>d</sup> “Actionable” subsidies are not prohibited per se but they are open to complaint through the WTO dispute settlement mechanism. They can also be subject to countervailing measures applied by importing countries.

### C. Specific measures to assist the creation and deepening of linkages

The discussion so far has dealt with certain broad policy measures that can influence the behaviour of foreign affiliates in terms of linkage development. Beyond these, there are two basic (mutually not exclusive) approaches that can be pursued. One involves encouraging linkages in general, regardless of the industries involved. This is a broad approach – it basically seeks to make the regulatory framework more conducive for linkage formation. The discussion below provides a menu of policy measures that can be considered under this approach. The other approach, discussed in section D, goes further in that it involves the establishment of a specific linkage promotion programme dedicated to increasing and deepening linkages between foreign affiliates and domestic firms.

The linkage process is affected by a host country's overall policy environment, including its economic and institutional framework, the availability of human resources, infrastructure and the degree of political and macroeconomic stability. Moreover, it is evident that the volume and nature of inward FDI determine the potential for linkage formation; for this reason, targeting foreign investors with linkage potential can be a part of a general FDI targeting strategy and hence an element in linkage promotion. But perhaps the single most important host country factor influencing linkage formation is the availability of local suppliers with competitive costs and quality. This is, of course, related to a country's level of development. The technological and managerial capabilities of domestic firms also determine to a large extent the ability of a host economy to absorb and benefit from the knowledge that linkages can transfer. In particular, the tendency for foreign affiliates to source the most sophisticated and complex parts and components either internally or from a preferred (foreign-owned) supplier within or outside a host country depends essentially on the capabilities of local companies. Another key requirement,

often stressed by TNCs, is the "right attitude" towards continuous improvement and, in particular, a commitment to upgrade quality on the part of suppliers; this is regarded by some as more important than the actual level of quality at any given point in time (Yoon, 1994; Belderbos et al., 2001; Altenburg, 2000).<sup>11</sup>

The process of linkage formation is also affected by the availability of supporting meso-institutions. Public and private providers of financial, technological and training support often play key roles in the process of fostering the development of viable suppliers. Without this kind of institutional support, domestic firms may be unable to get a required quality certificate, training or capital needed to become competitive. Moreover, the costs incurred for foreign affiliates may simply be too high for them to get engaged in supplier development activities.

Support of another kind may also be important. Domestic suppliers – because they are typically small in size and economically weak – can be at a disadvantage when negotiating with buyers, especially when a single firm is the only or main customer. Governments can help to a certain extent to balance the negotiating positions of buyers and suppliers. For example, guidelines, model contracts or similar instruments setting out minimum requirements may be useful. In the Republic of Korea, the 1984 Act on Fair Transactions and Subcontracting gave the Government supervisory authority to monitor buyer-supplier transactions (Meyanathan, 1994). In India, policy measures have been implemented to strengthen the legal and institutional framework for linkage formation, including a proposal to prevent large enterprises from abusing their position.<sup>12</sup> The relationship between domestic suppliers and their buyers is often a delicate one and therefore requires constant attention and care.

This section focuses first on measures related to information provision and matchmaking to help domestic firms link up with foreign affiliates. It then examines various means to strengthen existing linkages in the areas of technology upgrading, training and financial assistance.

In each of these areas, specific measures are presented as they have been taken by governments. They represent a “menu” of sorts from which governments can choose in light of their specific circumstances. Typically, these measures do not distinguish between foreign affiliates and domestic firms and they can be applied across industries.

## 1. Information and matchmaking

The first set of policy measures to help domestic firms link up with foreign affiliates involves the provision of information and matchmaking. Such efforts may be needed to help overcome information failures as regards linkage opportunities. The most prominent ones are:

- *Provision of information.* Governments can act as facilitators by gathering and disseminating information on linkage opportunities and by guaranteeing the accuracy of the information provided. The information may include details about prices paid for particular components, qualities and even the products and processes used. It may consist simply of a list of inputs and materials available locally. Or it may include the names, locations and profiles of the supplier firms and some company information, along with data on the characteristics and structure of supplier industries. The information can be made available through simple hand-outs or brochures, but the recent tendency in most programmes is to use electronic databases. Of course, the more detailed and complex the data, the more useful they are to users – but the higher the cost of providing the information. (Governments may charge a fee for the use of the information services.) Information can also be provided through public announcements, linkage-information seminars and missions, and by international exhibitions. Instead of direct intervention, governments can support information exchanges by private institutions; some are promoted by international organizations like UNIDO.<sup>13</sup> It must be recognized, however, that maintaining a reliable, up-to-date broad-based database is difficult and costly and

that, unless it fulfils these criteria, its usefulness may be limited.

- *Matchmaking.* Matchmaking implies a more active government role and focusing on the specific capabilities and needs of individual buyers and suppliers and working closely with them to reach supply arrangements. It can take many forms: facilitating one-to-one TNC-supplier encounters and negotiations, acting as honest broker in negotiations, supporting supplier audits, providing advice on subcontracting deals, sponsoring fairs, exhibitions, missions and conferences. Governments can also organize meetings to bring suppliers and buyers in particular industries together, to enable them to show their products, make contacts and initiate deals. They can try to establish the input needs of foreign affiliates and identify parts and components for local supply. They can monitor linkages and act as troubleshooters when problems arise. The Irish National Linkage Programme, for example, helps with bureaucratic processes and institutions in subcontracting arrangements and with resolving problems and disputes in linkage relationships (box V.8). The most common types of matchmaking activity consist of arranging individual meetings and visits to plants. The “Meet the Buyer” Programme in the Czech Republic arranges meetings between foreign investors and potential Czech suppliers as part of CzechInvest support measures (Czech Republic, 2001; box V.10). In Thailand, the Unit for Industrial Linkage Development (BUILD) of the Board of Investment arranges for visits to assembly plants by potential suppliers. Since the initiation of the Vendors’ Meet Customer Programme in 1997, there have been about 50 visits to factories (Thailand, Office of the Prime Minister, 2001; see annex E to this chapter). In Mexico’s state of Baja California Norte, a variety of trade fairs bring supplies and buyers together (see annex D to this chapter).

Many linkage-promotion efforts put emphasis on overcoming the information gap. In many countries such institutions as chambers of commerce or industry associations can be valuable sources of information for foreign affiliates that are newcomers in these countries. Based on the

experience of information and matchmaking activities in different countries, some lessons can be drawn. First, public initiatives can indeed play a role in enhancing the availability of information. This may be particularly important with regard to foreign affiliates that have recently invested in a host country. Second, matchmaking activities, however, make sense only when there are viable suppliers. Third, matchmaking initiatives need to be complemented by efforts at enhancing the competence and capabilities of domestic suppliers. Matchmaking cannot remedy supplier weaknesses but can be an important complement. Fourth, matchmaking efforts should be based on close collaboration with the private sector. The active participation of foreign affiliates is a key factor for the success at matchmaking programmes and trade fairs (see, e.g. Carrillo, 2001).

## 2. Technology upgrading

The technological capabilities of local firms are key determinants of their ability to qualify as suppliers to firms operating in increasingly competitive markets. They also influence the extent to which suppliers are able to take advantage of the opportunities for further technological improvement that linkages may provide. More and more foreign affiliates demand that their suppliers comply with quality standards such as ISO9000, QS9000, HACCP and VDA. Accordingly, the technological upgrading of local supplier firms is a priority for host countries, and several governments have adopted measures to encourage technology transfer from buyer firms to supplier firms and to strengthen technological cooperation between the two. These measures may be general or focus particularly on suppliers to large firms, including foreign affiliates. Often, they are part of comprehensive programmes to promote backward linkages (see section V.D). They are, moreover, implemented against the background of increasingly open policy frameworks for FDI and also growing pressure — including through the TRIPS agreement — to strengthen intellectual property regimes. The issue may be of less relevance for buyer-supplier transfers as they typically do not seem to involve the transfer of proprietary technology (see chapter IV).

In general, however, firms, including foreign affiliates, are hesitant to transfer proprietary technology in an environment in which the protection of intellectual property is not robust, because of the potential risk of imitation by competitors.<sup>14</sup> Some studies have found that the intellectual property regime in a host country could affect the inflow of FDI and the type of technology transferred, particularly in high technology industries such as chemicals, pharmaceuticals, machinery and electrical equipment (Mansfield, 1995; Maskus, 1997; UNCTAD, 1993).<sup>15</sup>

Against this background, some measures that are specifically relevant to encouraging technology transfer from foreign affiliates to their local suppliers include:

- *Technology transfer as a performance requirement.* Technology transfer requirements are used by governments (unless they have entered specific treaty obligations to the contrary), sometimes in conjunction with the provision of an incentive (e.g. tax incentive), to induce the transfer of technologies from TNCs, not only to their foreign affiliates and joint venture partners, but *also* to local firms that are subcontractors of foreign affiliates. The Republic of Korea used technology transfer requirements to domestic firms in the 1960s (Kim, 1999) but subsequently discontinued their application in 1989, as the measure did not produce the expected result.<sup>16</sup> More recently, agreements in China's automobile and autoparts industries stipulated a certain degree of transfer of technology (Xia and Lu, 2001). However, such arrangements may be phased out in the light of China's accession to WTO.
- *Partnerships with foreign affiliates.* Some governments use foreign affiliates as partners in technology upgrading programmes. Singapore's Local Industry Upgrading Programme (box V.4) gives responsibility to managers seconded by affiliates to the Economic Development Board to identify potential suppliers, and evaluate their capabilities and design programmes to remedy their weaknesses. Foreign affiliates participating in the programme then transfer technology and skills to suppliers to upgrade the

capabilities of the latter. (Box V.4 also illustrates the success of one local firm in upgrading its technology through participation in the programme.) The Government provides organizational and financial support.

The ultimate aim of encouraging technology transfer, including to suppliers, is to strengthen the innovatory capacity of firms in developing countries. In this regard, *incentives to encourage innovation in domestic firms and R&D cooperation* play a critical role. Some governments offer incentives to firms (foreign and domestic) for R&D cooperation with other firms or research institutes. This creates another – and potentially valuable – form of backward linkages (which may also include direct input by suppliers). For example, starting in 1991, Brazil gave fiscal incentives to information technology companies that invested at least 5 per cent of local sales in R&D, and 46 per cent of the expenditure was on projects developed jointly with Brazilian universities or research centres. Between 1993 and 1998, 272 companies (including affiliates of leading TNCs like Ericsson, NEC and Compaq) availed themselves of these incentives (Galina, 2001). Motorola drew upon this incentive to establish a Brazilian centre for semiconductor component development which it built into a global research centre in collaboration with local universities (Galina, 2001).

Some governments give similar incentives to universities and research institutes to cooperate in R&D with firms (again, both domestic and foreign). The Government of India gives incentives (bonuses and royalty shares from new products) to national laboratories to strengthen linkages with enterprises. At the same time, it has reduced budgetary support for laboratories, forcing them to raise funds from corporate sources (Reddy, 2000, p. 79). Institutes with a strong research base are subcontracting R&D work from industry. TNCs like Intel and Motorola are using the research capabilities of the Indian Institutes of Technology for developing semiconductors and chip designing methodologies.

Besides the measures implemented by host country governments, *home countries* too, can take measures to encourage technology transfer by foreign affiliates to local suppliers in host countries. Some international agreements, including TRIPS, encourage technology transfer from home to host countries. To the extent measures to that effect are successful and foreign affiliates establish technology linkages with domestic firms, they contribute to a strengthening of the technological capacities of domestic host country firms. Home country incentives can be useful in this respect – building for example on the provisions of the TRIPS Agreement. One of the Agreement's objectives is that "the

#### **Box V.4. Singapore's Local Industry Upgrading Programme**

The Economic Development Board (EDB) of Singapore was established in 1961 as a government agency replacing the Industrial Promotion Board of 1957. Its initial aim was to increase employment by attracting FDI. The composition of FDI targeted by the Board has subsequently followed a pattern of technological upgrading, both in terms of industry and of corporate function. It moved to more sophisticated and export-oriented industries – e.g. computer parts, computer peripherals, software packages and silicon wafers – in the 1970s, and began to target high-technology industries requiring specialist skills, such as integrated circuits, computers, industrial electronic equipment and speciality chemical products since the 1980s.

The EDB added a linkage programme to its FDI targeting strategy in 1986 when it established the Local Industry Upgrading Programme (LIUP) to upgrade, strengthen and expand the pool of local suppliers to foreign affiliates, by enhancing their "efficiency, reliability and international competitiveness" (Singapore, EDB, 2001a, p. 2). Simultaneously, the EDB created the Small Enterprise Development Bureau to provide support to SMEs. This was corroborated by the 1988 SME Master Plan, which promotes and develops selected SMEs, such as those that are innovative start-ups or possess critical mass, capability and commitment to innovate and grow. From its inception, the LIUP has been part of a wider development vision and industrial policy. Most recently, under its "Industry 21" initiative, the EDB seeks to develop Singapore into a "hub

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#### Box V.4. Singapore's Local Industry Upgrading Programme

of knowledge-driven industries" (Singapore, EDB, 2001a, p. 1). Singapore follows a long-term human resources development plan, based on projections of future growth industries. For example, university programmes and students are directed into study courses according to future skills needs of the economy (Singapore, EDB, 2001a).

LIUP is implemented in 3 phases:

- Phase 1: improvement of overall operational efficiency, such as production planning and inventory control, plant lay out, financial and management control techniques.
- Phase 2: introduction and transfer of new products or processes to local enterprises.
- Phase 3: joint product, process research and development with foreign affiliates' partners.

Activities can be undertaken concurrently under the three phases. The role of the LIUP is to offer organizational and financial support to upgrade and develop vendors. It operates with the involvement of foreign firms, and TNCs are encouraged to enter into long-term contracts with local suppliers and assist them to upgrade their products and processes (see box). While the initiative was initially launched for the electronics cluster, the LIUP now covers medical products, petroleum and petrochemicals, marine, transportation and logistics, education and information technology clusters (Singapore, EDB, 2001a).

The LIUP's activities include a variety of support measures. For instance, the EDB contributes to the salary of a foreign affiliate's representative seconded to a local supplier to make the affiliate's supplier more competitive. Specific benefits are offered to those TNCs that enrol themselves in the vendor development programme. Thus, the Government of Singapore can maintain its influence over the character and content of the capital upgrading process.

Local suppliers are encouraged to expand internationally, e.g. follow their TNC customers when they establish plants elsewhere, notably in South-East Asia. This extends the LIUP programme beyond a conventional local linkage development programme.

Over time, the economy has developed substantial contractual buyer-supplier arrangements, with knowledge transfers flowing in both directions (Chew and Yeung, 2001). For example, in 1999, about 30 foreign affiliates and 11 large local enterprises, government-linked companies and government agencies were partnering some 670 vendors under the LIUP. Most of these were in the electronics or electrical industries. In the mid-1990s, among the suppliers that had participated in the programme, productivity had increased by an average of 17 per cent, and value added per worker by 14 per cent (Battat et al., 1996). Some local firms, such as Advanced Systems Automation and Manufacturing Integrated Technology, have managed to evolve from domestic suppliers to internationalized companies performing highly complex functions (Mathews, 1999). Both these companies are today preferred global first-tier suppliers to their TNC customers. This would suggest that Singapore's approach, combining a targeted FDI promotion strategy with a linkage programme, has had positive effects on economic deepening.

#### FJ Industrial and Hewlett Packard

FJ Industrial, a domestically-owned firm in Singapore, started its operations as a small manufacturer of aluminium and plastic nameplates. It graduated to become the first local firm to manufacture membrane switches and circuits, which are technologically more advanced and are aimed at replacing the mechanical push-buttons on computer keyboards, copy machines, calculators microwave ovens, etc. Under the LIUP, Hewlett Packard's affiliate in Singapore assisted FJ Industrial in diversifying into these technologically sophisticated products. It helped its supplier to set up production facilities with process control equipment and sanitized rooms. FJ's factory manager and an engineer were provided training on the manufacture of membrane switches and circuits at the Olin Hunt Specialty Products factory in Los Angeles, Hewlett Packard placed a large order on FJ Industrial for switches and circuits for incorporation in its new generation calculators and computers.

*Source:* UNCTAD, based on Lim and Fong, 1991, pp. 130-131.

*Source:* UNCTAD, based on Singapore, EDB, 2001a; Battat et al., 1996; Chew and Yeung, 2001; Mathews, 1999; Tan 1990; and communications from John Mathews (May 2001).



protection and enforcement of intellectual property rights should contribute to the transfer and dissemination of technology” (Article 7). In addition, some clauses refer specifically to the promotion of transfer of technology to LDCs. The Agreement recognizes the special needs and requirements of its least developed members by providing for assistance to them by the developed country members on the issue of technology transfer. More specifically, Article 66(2) requires developed country members to “provide incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least developed country members in order to enable them to create a sound and viable technological base”. Further, Article 67 states that, “in order to facilitate the implementation of this Agreement, developed country Members shall provide, on request and on mutually agreed terms and conditions, technical and financial cooperation in favour of developing and least developed country Members”.<sup>17</sup>

In conclusion, the experience of firms (see chapter IV) and of selected countries suggests that the most successful technological linkage measures are two-pronged, directed at both suppliers and buyers. Policies aimed only at inducing or encouraging foreign affiliates to transfer technology have generally not been very effective. Those addressing only local supplier firms have done better, but comprehensive policies addressing both sides of the equation have turned out best. Partnerships with foreign affiliates in upgrading supplier capabilities have been particularly effective.

### 3. Training

Developing countries attach a high priority to human resource development (particularly in SMEs). They pay particular attention therefore to strengthening the human-resource-development dimensions of supplier linkages, including those with foreign affiliates. Policy instruments in this area range from measures that form part of broad-based policies for SME development

and/or comprehensive supplier development programmes, to programmes or measures targeting learning interrelationships between supplier- and client-enterprises in particular industries. Government training programmes that are targeted solely at SMEs or local suppliers – implemented by several countries, including, with considerable success by a few developing countries – not involving buyers, can strengthen training and skills-development interaction between foreign affiliates and their domestic suppliers. But the measures considered here are those that are related more specifically to the promotion of training and educational assistance for suppliers’ employees by (or involving) buyer (or potential) buyer firms, including especially foreign affiliates.

However, only a few countries provide fiscal or financial incentives to firms (including foreign affiliates) for this purpose. The Republic of Korea gives tax incentives to large firms (domestic as well as foreign) to compensate partly for expenditures on human resource development in SMEs (including suppliers). (These expenditures are eligible for a tax credit of up to 10 per cent.<sup>18</sup>) Some countries provide financial support to firms, including suppliers to affiliates, that send workers for training or incur training expenses. In Singapore, the Skills Development Fund of the Singapore Productivity and Standards Board gives financial assistance to companies for training their workers. Thailand grants a 150 per cent tax deduction for training expenses recognized by the Ministry of Labour; in the past, this has been relatively hard to obtain, although improvements have been made recently (Brimble, 2001). In Malaysia and Hungary, training costs can be subsidised.

On the whole, however, the main focus of the measures pursued by host countries for strengthening inter-firm linkages in the area of training and skills is on assisting buyer and supplier linkages in general, and although few of them specifically and exclusively target foreign affiliates and their domestic suppliers, they are also of direct relevance to linkages between them. Host country measures include:

- *Promoting supplier associations.* Supplier associations established with government support can help build training linkages. For instance, the Republic of Korea encourages big companies (including foreign affiliates) to help organize SME supplier associations and participate in their training and other programmes. In 1999, 6,100 subcontractors received management assistance and training from big firms through this system.<sup>19</sup> The “Source Wales” Programme of the Welsh Development Agency also uses a supplier association as a forum to exchange skills and techniques between clients and suppliers, with major customers or consultants hired by the programme, acting as tutors for SMEs (Morgan, 1997; box V.5).

#### Box V.5. Source Wales

The Welsh Development Agency – one of the sub-national development agencies in the United Kingdom – runs a programme called “Source Wales”. Since it combines matchmaking and supplier upgrading activities, it is in essence a linkage programme. It is not exclusive to foreign affiliates, but Source Wales works closely with foreign affiliates, and they are major players in the different programme activities.

In terms of matchmaking, Source Wales runs a custom-built supplier database that records the capabilities of Welsh enterprises.<sup>a</sup> This helps firms elsewhere in the United Kingdom as well as foreign affiliates to find suitable Welsh suppliers. The buyers’ commercial, technical and quality requirements and the selection criteria by which they choose potential suppliers are also disseminated.

Source Wales sponsors or is involved in various business improvement programmes, covering a broad range of activities:

- The Winning Business Programme targets ambitious, growth-oriented companies operating in medium or fast-growth market segments and young entrepreneurial companies producing niche products or services.<sup>b</sup> The Programme offers practical help by improving the understanding of the situation of each business, identifying marketing performance indicators, providing marketing tools and transferring necessary skills and expertise to ensure sustainable improvement.
- The Lean Methodologies Programme aims at increasing a company’s productivity, quality and delivery. The Programme trains companies in the use of a fact-based diagnostic process to identify the non-value-adding activities within the business. A tailor-made action plan is then designed to abolish these.
- A Strategic Direction Programme develops business strategies by helping companies use such strategic management instruments as market analysis and future planning. In this process, a designated Source Wales programme manager meets with a company to discuss its current situation and ideas for the future. A trained assessor then performs a benchmark test to establish the current position, highlighting strengths and weaknesses and areas in need of improvement. At the end of the Programme, the company has a comprehensive strategy, with measurable achievement targets. Approximately one year after the Programme has been completed, a second benchmark is carried out to measure progress.<sup>c</sup>
- The Workplace Management Programme provides training in tools and techniques to help overcome problems associated with a company’s “culture”, such as resistance to change. A team selected from a company’s staff is trained in team-work and problem-solving and use of analysis tools.<sup>d</sup>
- The Activity Based Management Programme aims to help Welsh companies improve customer service levels by analysing the complete cost structure of a business and eliminating costs that do not add value. The Programme tackles issues such as sales and marketing strategies, organization and process development, cost reduction, performance measurement, reduction in quality costs and management reporting systems.

Another modality is that of “Supplier Associations”, a forum in which new skills and techniques are exchanged among clients and suppliers, and in which the major subcontractors act as tutors for SMEs (Morgan, 1997). These Associations are either initiated by foreign-owned buyers, or by supplier firms, and are generally organized by the industry involved. Source Wales offers two types of events for the benefit of these Associations: the first involves

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### Box V.5. Source Wales (concluded)

annual or bi-annual strategy meetings among contractors and supplier firms; the second consists of periodical conferences and seminars. Costs of speakers, of organizing the meeting venue and of incidentals are absorbed by Source Wales (Izushi, 1999, p. 743).

In terms of supplier development, major original equipment manufacturers are engaged either on a one-to-one basis or among a network of firms. In either case, the programmes are delivered by third-party consultants and managed by Source Wales. For example, Source Wales has worked on supplier development programmes with large foreign affiliates of Ford (Bridgend plant), Sony (Bridgend plant) and Robert Bosch (Llantrisant plant). The latter are referred to as “sponsors” or “lead companies”. Sometimes lead companies are the most advanced in terms of best-practice capabilities. In other cases, lead companies actually learn from participating suppliers, if these are more capable. According to an evaluation undertaken in 1996, the Source Wales programme was effective and innovative (Segal Quince Wicksted, 1996, cited in Morgan, 1997).

An important feature of Source Wales is that it is staffed by professionals with hands-on experience of international markets and industries. This facilitates a constructive dialogue with major industrial buyers.

Source: UNCTAD.

<sup>a</sup> According to the website of the Welsh Development Agency, the system contained more than 4,300 companies as of January 2001.

<sup>b</sup> Other criteria relate to a company's culture, the attitude and motivation of the employees and the leadership capability of key managers.

<sup>c</sup> In a related programme, Source Wales consultants teach companies how to carry out a benchmarking exercise on their own.

<sup>d</sup> One element is an “improvement toolbox” that examines workplace organization; waste elimination; change-over time reduction; just-in-time production techniques; total productive maintenance, etc.

- *Support for private sector training programmes.* Government agencies may assist large firms, including foreign affiliates, to undertake training targeted at SMEs.<sup>20</sup> Public support for training linkages between affiliates and suppliers can also be provided at the local level. The Penang Skills Development Centre in Penang plays an important role in putting together training courses contributed by TNCs to upgrade skills in the supplier workforce (Intel, 2001). In Singapore, public-private-sector cooperation for training is an important part of the Local Industry Upgrading Programme.
- *Collaboration with international agencies.* International agencies can participate in training efforts for suppliers in host countries. The UNIDO partnership programme, in its first phase aimed at the automotive component industry in western India, began in 1999 as a collaborative effort of the Government of India, Fiat and non-governmental institutions and groups within India (see box V.6).<sup>21</sup>

Insufficient information makes it difficult to evaluate the different kinds of government measures in the area of training

outlined above. Experience with some programmes, such as those of Wales, Singapore and Penang in Malaysia, suggests that the returns to well-conceived initiatives to promote learning and skills development among local suppliers can be high. Best practice involves mobilizing the cooperation of buyer enterprises to overcome resource and organizational constraints, and staff targeted for training, and periodic evaluation of training programmes and follow-up. Furthermore, in many cases, governments can rely on external partners for the provision of the required training.

## 4. Finance

Financial relationships are a necessary part of linkages between foreign affiliates and their domestic suppliers. They range from the pricing of a supplier's product to the provision of long-term finance. While possibilities to help suppliers in pricing negotiations in a market-based economy are limited, there may be a need for *legal protection* against unfair contractual arrangements and other unfair business practices. Competition policy has an important role to play here. A government

can also sponsor legal assistance systems for suppliers negotiating contracts with large firms and provide suppliers with information on benchmark prices and alternative business opportunities, or encourage business associations to do so.

In developing countries, where shortage of finance is a major constraint facing domestic suppliers (in particular SMEs), the challenge is mainly to encourage the provision of financial support by foreign affiliates to their domestic suppliers, since the former are generally likely to be in a better financial position than the latter. Such support, when it occurs, can directly increase financial resources available to suppliers,

contribute to reducing the cost of finance for them, and/or reduce the uncertainty surrounding the sustainability of financial flows. It can be encouraged by various government measures (which, as in other areas, do not necessarily have to distinguish between foreign affiliates and domestic firms):

#### *Short-term finance*

- Governments can encourage a shortening of payment delays through tax measures. In the Republic of Korea, for example, tax reductions of up to 10 per cent of the total corporation or income tax are offered to encourage prompt payments to suppliers.<sup>22</sup>

#### **Box V.6. Partnership for training: the UNIDO Partnership Programme to strengthen the automotive component manufacturing industry in India**

The UNIDO Partnership Programme is jointly implemented by UNIDO, the Government of India, selected TNCs and other large corporations, research institutions and civil society organizations.<sup>a</sup> Its objective is to create a pool of competent and internationally competitive domestic component suppliers in India's automotive industry. That is expected, in turn, to result in the formation of strong linkages between foreign affiliates and domestic suppliers in the industry. The programme is targeted at SMEs that are second- and third-tier suppliers in the industry – suppliers that do not supply directly to car manufacturers but rather to firms that do. Target firms are characterized by an employment size ranging from 20 to 80 employees and also by specific difficulties in accessing technology, human resources, information and finance and integrating them into their operations. In its first phase, which began in 1999, the programme was directed at automotive component manufacturers in the Mumbai-Pune region of western India.

Training is a major component of the programme. Training activities are jointly designed by the project partners (including target companies) based on inputs provided by the TNCs among them – FIAT in phase I and FORD in phase II – on requirements which suppliers are expected to fulfil. Four international experts (two specialists in automobile manufacturing; one in plastics; and a fourth expert with extensive experience in rubber and rubber-extrusion products, identified through the participating institutions, including FIAT) are responsible for the design and implementation of the enterprise-oriented shop-floor training and training of junior engineers. In addition, experts from Automotive Research Association of India and Automotive Component Manufacturing Association of India, provide technical and managerial training and expose managers of participating enterprises to international best practices. Each participating company pays a fee of INR20,000, regardless of the number of people trained. However, in phase II, which was launched in August 2000, each participating company will pay a fixed price for specific services, also depending on the number of managers or employees trained. So far 300 Indian firms – an average of about 15 persons per firm – have received training under the programme. The core activity of the programme is shop-floor training in world-class manufacturing methods such as the 5Ss (abbreviated from the Japanese words *Seiri*, *Seiton*, *Seison*, *Seiketsu*, and *Shitsuke*, meaning housekeeping, workplace organization, cleanup, keep cleanliness, and discipline – simple but effective methods to organize the workplace); and Poka-Yoke (Japanese for “mistake-proofing”), also known as Zero Quality Control. In addition, UNIDO software for financial planning and business performance assessment is installed and training given on how to use these tools. A UNIDO survey of participating companies and survey results revealed significant improvements in productivity, training for continuous improvement and quality standards.

*Source:* UNIDO, 2000, and other information provided by UNIDO.

<sup>a</sup> The budget for the programme was \$305,000, funded equally by Fiat, the Government of India and UNIDO.

- Governments can limit payment delays through legislation. Again, in the Republic of Korea, the Fair Subcontract Transactions Act mandates a time limit (60 days) on delayed payments. In India, the Interest on Delayed Payments to Small Scale and Ancillary Industrial Undertakings Act of 1993 stipulates that payment to subcontractors should be made within 30 days.
- Governments can make arrangements to guarantee the recovery of delayed payments. In the Republic of Korea and Taiwan Province of China, public guarantee funds offer up to 100 per cent coverage on promissory notes. The Government of Hungary has two non-refundable facilities (the Economic Development and the Small and the Medium-sized Enterprises Development Targeted Allocations) to re-finance borrowings by subcontractors.
- Governments can offer indirect financing to suppliers channelled through their buyers. In Mexico, for example, a State-owned development bank operates an "AAA Trust Fund" that provides the most creditworthy large firms (categorized as "triple A") with funds to finance preferential credit lines to their suppliers.<sup>23</sup>

#### *Medium- to long-term finance*

- Governments can offer tax credits or reductions and other fiscal benefits to firms providing long-term funds to suppliers. An example is the Fundo Fiat in Brazil (Borges Lemos et al., 2000).
- Governments can co-finance supplier development programmes along with the private sector. This is the case with the Penang Skills Development Centre, the UNIDO programme for upgrading automotive component manufacturers in India, and the Government of India's co-financing and subsidization of subcontracting exchanges.
- Governments may take a direct role in providing finance to local firms to improve their capacities. For example, the Government of Hungary provides firms that are suppliers to large firms (a good number of which are foreign affiliates) financial support for new investments, the re-

financing of loans and improving operating capabilities. This is done on a cost-sharing basis, with half the costs covered by the firms. From 2000, consultants working for first-tier suppliers providing support for leasing by SMEs can also apply for financial assistance. In the Mexican *Programa de Desarrollo de Proveedores*, the national development bank finances suppliers to large companies (again, most of which are foreign affiliates).

- *Mandatory transfer of funds from foreign affiliates to local suppliers.* Although such a scheme has not yet been tried in practice, in theory, it could emulate the mechanisms of the Foster Father Business Partner programme in Indonesia (initiated in 1992), while avoiding its shortcomings. The latter "strongly encouraged" all large firms to allocate 1-5 per cent of their profits to small enterprises. One of its weak points was that it did not link the use of those resources to improvements in the production and supplying capabilities and economic efficiency of supplier SMEs benefiting from the scheme. Another shortcoming was that most of the beneficiaries of the scheme were selected by the authorities, without sufficient consideration of their potential as suppliers to large firms. Due to a lack of tangible benefits for them, foreign affiliates showed little interest in participating, making the scheme non-enforceable (Altenburg, 2000, p. 50; Kian Wie, 1994, pp. 106-107; Swisscontact, 1996, p. 10-11).

Finally, as in the case of other linkage areas, *home country governments* can take measures to encourage financial support by their TNCs to local suppliers in developing countries. Examples include:

- *Two-step loans.* Credit lines may be provided to foreign affiliates or local banks for loans to local suppliers. For instance, the Japan Bank for International Cooperation offers credit lines to local state-owned banks in host countries for loans to local firms including suppliers to Japanese affiliates. Additionally, during the Asian financial crisis, as part of emergency measures, the Bank authorized Japanese affiliates in Thailand to use its loans for working capital so that they could also extend financial assistance to crisis-hit

local suppliers in the form of advance purchases and advance payments. (Under normal circumstances, loans by this bank can be used for the purchase of machinery and equipment only.)<sup>24</sup>

- *Using official development assistance (ODA).* ODA resources can be used to fund (together with firms and host governments) supplier development programmes in a host economy. In Mexico, for example, the Tijuana Development Council manages and coordinates the *Fondo Tijuana* (with resources from the Inter-American Development Bank) to finance local suppliers in the electronics cluster. The five-year budget (2000-2005) of the *Fondo* has \$2.7 million for technical cooperation and \$12 million for a venture capital fund. (See the text on Mexico in the annex of this chapter.)

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Governments have an important role to play in countries that do not have a well-functioning capital market. One of the things they can do is to encourage foreign affiliates to extend financial support to their domestic suppliers through measures to influence the regulatory framework for financial linkages or through the provision of co-financing or guarantees in financial arrangements between foreign affiliates and local suppliers. However, direct financial participation can be costly for governments, and the benefits derived from it need to be assessed carefully relative to its costs.

### **D. Specific government linkage promotion programmes**

The above review has highlighted various measures to bring suppliers and foreign affiliates together and to strengthen their linkages, regardless of the industries involved. Some countries have taken a more proactive approach by setting up specific linkage promotion programmes dedicated to increasing and deepening linkages between foreign affiliates and domestic firms. These programmes combine several of these specific measures and typically focus on a

limited number of industries and firms. Targeting is almost inevitable when governments allocate scarce resources for industrial development, and it is economically justifiable when different activities offer varying scope for technological learning, skill building or spillover benefits. Governments use various means for selecting targets for linkage creation (box V.7). Sometimes, these programmes are organized at the national level. In other cases, they are part of sub-national strategies. These latter programmes are characterized by a cluster approach, some running in parallel to nationwide linkage efforts, others being stand-alone initiatives (annex table V.2).

Not surprisingly, most specific linkage programmes are in countries with a significant FDI presence and a strong local supplier base.<sup>25</sup> Most of these countries have institutions for SME development and FDI promotion, as well as the skills and financial resources to staff and fund linkage programmes.

Common objectives of such programmes are to increase domestic production and employment; improve the current account; make TNCs more rooted in the local economy; and, above all, upgrade the capabilities of domestic enterprises. The relative importance of these objectives varies and has shifted over time. For example, the programmes in Ireland (box V.8) and Singapore (box V.4) were initially triggered by the need to increase employment; subsequently, technology upgrading took precedence.

Three elements are common to the special national-level linkage programmes:

- the provision of market and business information;
- matchmaking by such means as trade fairs or data bases;
- support to local enterprises through provision of managerial and technical assistance, training, audits and, occasionally, by financial assistance or incentives.

The relative weight assigned to each of these elements depends upon the objectives of the individual programme. It also depends on

the level of enterprise development, the involvement of the private sector in determining the needs of firms and the financial and human resources available for the programmes. Programmes aiming mainly at facilitating the establishment of linkages tend to emphasise matchmaking between domestic firms and foreign affiliates. Those aiming mainly at upgrading the technological capabilities of domestic firms place a stronger emphasis on technical and other support to domestic firms with supplier potential. This often includes strategic decisions on the activities to be covered in the programme.

The earliest programmes (table 2 in the annex to this chapter), dating from the mid-1980s, were undertaken in Ireland, Singapore and Malaysia (box V.9). The Thai linkage programme started in 1992. Programmes in the Czech Republic (box V.10) and Hungary date from the mid-1990s and that in Costa Rica began in 2000.<sup>26</sup>

Linkage programmes at the sub-national level focus on subregions or industries.<sup>27</sup> Their objectives go beyond simply creating linkages, increasing employment and balancing trade and include:

#### **Box V.7. Targeting potential local suppliers**

Targeting potential suppliers implies, first, the identification of industries in which local firms have the capacity to forge linkages or in which this capacity can be successfully developed. In the case of Ireland, for example, realistic supply opportunities were identified in metal and plastic components industries, although other industries (such as printing, packing, automation equipment, electronics manufacture assembly, and system testing equipment) were also explored for potential local sourcing (Battat et al., 1996; Crone, 2001).

Governments have used various criteria to select local firms with the potential of becoming suppliers to foreign affiliates. These relate to technical and production capabilities, size, ownership, industry and the quality of the top management of local firms in terms of vision and eagerness to improve their firms and benefit from government support. Thus, in Ireland, a prime consideration for selecting companies as beneficiaries of government support is the attitude of the management of the local firm. In identifying potential domestic suppliers, some governments work closely with foreign affiliates to ensure that they identify market requirements properly (especially as to demand, supply capacities and quality and other requirements) and, from the beginning, involve the private sector in their efforts. This is the case with the Irish National Linkage Programme (NLP), Singapore's Local Industry Upgrading Programme (Singapore, EDB, 2001b), Costa Rica's Provee project and Thailand's BUILD Programme (Thailand, Office of the Prime Minister (BOI), 2001). (See boxes below and the annex to this chapter.)

Suppliers selected for linkage programmes are sometimes classified into different categories, based on firms' capabilities, competitive advantages and chances of success in a linkage programme aimed at enhancing their capabilities. For example, in the case of the Irish National Linkage Programme, only 70-80 suppliers out of an estimated 750 on its database were selected to be included in its supplier development programme (Crone, 2001; Ireland, 2001a). In Hungary, the Government has classified local suppliers in four categories: already suppliers; ready to become suppliers; suppliers that require assistance in specific areas to become suppliers; firms that cannot become suppliers in the short term. Half of the Government's resources are provided to the first category of firms on a cost sharing basis, while not more than 40 per cent are devoted to firms in the second category, and only 10 per cent to firms in the two last categories (Hungary, 2001b). In the UNIDO Programme on Industrial Subcontracting and Supply Chain Management, the selected local companies should meet at least two of four criteria: more than nine employees; specialised equipment; specialised manufacturing process; and ISO9000 certification.<sup>a</sup> The UNIDO Partnership Programme (box V.6) for the development of autoparts suppliers in western India targets second- and third-tier suppliers according to the following criteria: 50 per cent ISO9000 or self-certified companies; a minimum of two years in operation; non-captive sub-suppliers (with at least two unrelated customers); and committed and motivated management.<sup>a</sup>

Source: UNCTAD.

<sup>a</sup> Information provided by UNIDO.

### Box V.8. Ireland's National Linkage Programme

Since the mid-1980s, Enterprise Ireland has been operating various linkage programmes designed to improve the integration of foreign enterprise into the Irish economy. The current National Linkage Programme (NLP) was introduced in 1998. Enterprise Ireland is a government organization, established in 1985 under the Ministry of Finance.<sup>a</sup> Its enterprise development activities take place in the context of Ireland's current National Development Plan (2000-2006) (Ireland, Ministry of Finance, 2000). Its core mission is "to work in partnership with client companies to develop a sustainable competitive advantage, leading to a significant increase in profitable sales, exports and employment" (Enterprise Ireland, 2001, p.1). Accordingly, the agency works in partnership with private industry and other institutions, notably universities. It pursues two tasks: first, to support Irish enterprises to build capacity, innovate and create new partnerships; second, to assist international investors to source and identify key suppliers in Ireland.

With a staff of about 15 people, the NLP functions primarily as a brokerage service with the aim of promoting local sourcing by foreign affiliates in Ireland. Under its linkage programme, NLP representatives initially visited foreign affiliates to determine their sourcing requirements and made efforts to match these with the production profiles of local suppliers. However, local suppliers encountered a variety of difficulties in terms of capabilities and capacities to meet the standards set by foreign affiliates. The programme hence increasingly turned to capacity building.

The NLP was focused primarily on potential suppliers to TNCs in the electronics industry, engineering and, more recently, the healthcare industry. "Realistic" supply opportunities were identified in metal and plastic components, while such industries as printing and packaging, automation equipment, electronics manufacture assembly and system testing equipment, were also explored to determine whether local sourcing could potentially increase.

The NLP closely cooperates with foreign affiliates, as well as with their parent companies, to identify specific parts and components that may be supplied domestically and to identify the domestic firms that show the greatest potential. A key criterion used for selecting companies to participate in the supplier development programme is the attitude of the management teams of local firms, which should be "forward thinking, ambitious, and dynamic" (Crone, 2001, p. 2).<sup>b</sup>

With the carefully selected local firms, the NLP works to resolve operational problems, making use of available assistance programmes. The agency helps suppliers design support programmes, conducts development activities and assists suppliers entering into subcontracting arrangements with foreign affiliates. A wide range of services is currently offered to potential suppliers.<sup>c</sup> Recently, and in response to the growing need for suppliers to become sub-assemblers, the NLP is also actively promoting a restructuring of local industry by "marrying" supplier companies, rather than focusing on single-component providers to the foreign affiliates.

As each company has its own distinctive ambitions, capabilities and needs, the agency aims at delivering solutions tailored to the individual circumstances of each enterprise. A "Development Adviser" is the company's main contact point in Enterprise Ireland. This professional staff member helps suppliers to assess their needs and capabilities, formulate an agreed "growth plan" and identify the range of services and resources needed to execute the plan.

Under a "Networks/Value Adding Partnerships" scheme (which seeks to help small companies overcome limitations imposed by their size), eight networks were set up in industries, ranging from cheese making to mould making, with a view to undertaking joint research and development, marketing and procurement-related activities. Reportedly, this scheme resulted in additional sales of Irish £16.7 million for participating companies in 1997 (Ireland, Minister for Finance, 2000, p. 230).

To support SMEs more generally, the National Plan has allocated Irish £128 million to support marketing capabilities focussed on SMEs, as these often fail to undertake market development on their own, due to a lack of expertise, financial resources and the perceived risks involved. The supplier development programme has focused on 70 to 80 firms, ranging from small specialist suppliers to firms of up to 150 employees. Activities include (Ireland, Minister for Finance, 2000, p. 139 f):

- market information and research on market trends, competition, logistics, market strategy options, product development and design upgrading of skills;

/...



### Box V.8. Ireland's National Linkage Programme (concluded)

- sectoral and company promotional activities, such as trade fairs, advertising, literature and public relations;
- training in areas including that of supply chain management

Enterprise Ireland also runs a sophisticated electronic database, covering supplier firms in 20 industries, called the supplier search facility (Enterprise Ireland, 2001). Searches can be run by industry, by company or by product. The industries covered include aerospace, agricultural machinery, automotive components, electronics and engineering sub-supply, pharmaceuticals, textiles and clothing and other consumer products, natural resource-based industries (such as the foodstuffs, timber) and services (such as print and packaging, process control and instrumentation and telecommunications). Any firm in Ireland is eligible for inclusion. The site covers approximately 750 supplier companies.

Between 1985 and 1987, an estimated 250 foreign affiliates have been actively involved in the linkage programme. During that period, affiliates operating in Ireland increased their local purchases of raw materials fourfold, from Irish £438 million to £1,831 million, and more than doubled their purchases of services from Irish £980 million to over £2 billion. In the electronics industry alone, the value of inputs sourced locally rose from 12 to 20 per cent over the same period. On average, suppliers saw their sales increase by 83 per cent, productivity by 36 per cent and employment by 33 per cent.<sup>d</sup> Several have become successful international subcontractors; some of the larger domestic supplier companies involved in the NLP have subsequently been acquired by foreign TNCs.

Surveys aimed at evaluating the impact of the NLP have been undertaken by the National Policy and Advisory Board for Enterprise, Trade, Investment, Science, Technology and Innovation (Forfas) since 1996. For the electronics industry, it was concluded that, by the mid-1990s, a ceiling of around 20 per cent of material input purchases from within Ireland had been reached. It was unlikely that this industry would grow much beyond its current size level because of a lack of indigenous capability in technologically complex subsectors (Crone, 2001).

Some observers found that the demand for the agency's brokering services has diminished over time. Recent inward investors tend to be better-equipped in terms of procurement staff, many having recruited staff with knowledge of local sourcing opportunities. In response, the resources devoted to the NLP have recently been scaled down, and some activities previously undertaken by the NLP are now provided in a more targeted fashion by the International Business Linkages Department of Enterprise Ireland with a staff of eight people.

In summary, the combination of programmes provided by Enterprise Ireland has contributed to the emergence of suppliers of high-quality goods and services, delivering to affiliates as well as to other buyers. Some lessons that were drawn from the Irish case are that:

- Matchmaking requires accompanying measures to upgrade the capabilities of potential and existing suppliers; the need for matchmaking as such may diminish over time as the composition of affiliates and their motivations for locating in a given country, or their local knowledge, changes.
- Supplier development efforts should be selective, in order to achieve the best outcomes from limited resources. For example, efforts should focus on those SMEs that have the greatest potential for growth. The NLP normally ignored the smallest firms because they were considered unlikely to grow to a size that is large enough to enable them to win business with foreign affiliates (Crone, 2001).
- Close collaboration with foreign affiliates and their parent TNCs is crucial.
- Close coordination and collaboration amongst the various government agencies involved in assisting local suppliers are important elements.

*Source:* UNCTAD, based on the Enterprise Ireland website and information provided by Enterprise Ireland, as well as Crone, 2000 and 2001.

<sup>a</sup> Originally, the programme was implemented by the Industrial Development Authority.

<sup>b</sup> This is similar to the approach taken in the linkage programme in Penang state, Malaysia.

<sup>c</sup> Services are offered in business planning and information, research, development and design; production and operations; marketing and business development; human resource development and finance.

<sup>d</sup> Data provided by Enterprise Ireland.

**Box V.9. National and regional linkage development schemes in Malaysia**

In Malaysia, linkage policies have been unified under the umbrella of the Second Industrial Master Plan (1996-2005),<sup>a</sup> formulated and implemented by the Ministry of International Trade and Industry (Malaysia, MITI, 2001). This Master Plan pursues an approach to industrial development that has strong implications for the creation and deepening of linkages: its core objective is to move the economy up the value chain, from assembly-based and low value-added activities towards activities in R&D, product design, distribution and marketing. A related objective is to support the evolution of internationally competitive clusters; these are to be nurtured by integrating key manufacturers with their suppliers and with key business services, and by developing the requisite infrastructure and institutions. The approach seeks to generate backward and forward linkages and domestic spin-offs, as well as to develop domestic SMEs (Malaysia, MITI, 2001).<sup>b</sup> Institutionally, the Master Plan brings together public and private sector players.<sup>c</sup>

Within this broader context, the Malaysian Industrial Development Authority (MIDA) is the principal agent for the promotion and coordination of industrial development, including foreign and local investment in manufacturing (Malaysia, MIDA, 2001). At the operational level, two agencies are responsible for the promotion of industrial linkages: the Small and Medium Industries Corporation, a specialized agency that provides advisory services, guidance and assistance to enhance the competitiveness of the SMEs in Malaysia, and the Ministry of Entrepreneur Development.

The Industrial Linkages Programme of the Small and Medium Industries Corporation offers a number of incentives.<sup>d</sup> Large companies participating in the Industrial Linkages Programme can claim tax deductions for expenditure incurred in supplier-related support activities, such as training, product development and testing, or factory auditing ensuring the quality of vendors' products. Suppliers ("vendors"), including SMEs, are eligible for incentives if they manufacture promoted products within an approved Industrial Linkages Programme. This is either a full tax exemption at statutory income levels for a period of five years under the pioneer status; or an investment tax allowance of 60 per cent on qualifying capital expenditure incurred within a period of five years. Suppliers in an approved Industrial Linkages Programme, who are capable of reaching world class standards in terms of price, quality and capacity, are eligible for similar incentives.<sup>e</sup>

In a related effort, the Small and Medium Industries Corporation launched a Global Supplier Programme in 1999, which is aimed at strengthening the competitiveness of Malaysian SMEs, so that they become suppliers not only to foreign affiliates of TNCs, but also evolve into global suppliers.<sup>f</sup> It has the following objectives:

- to invite TNCs to share resources in terms of specialist trainers and training materials;
- to raise funding from the state and federal governments for such initiatives as the Human Resources Development Fund and the training grant provided under the Skills Upgrading Programme which finances up to 50 per cent of the training costs;
- to explain tax incentives, such as the Double Deduction Incentives; and
- to ensure the commitment of local companies to participate actively in the Global Supplier Programme.

The Global Supplier Programme currently operates two initiatives. The first is training in critical skills and the second is an initiative to build linkages with TNCs. The training initiative focuses on helping participants acquire competencies to adopt and use new technologies; it has three levels of training.<sup>g</sup> All trainers come from participating TNCs and are technical personnel with many years of "hands-on" experience. They are therefore in a position to assess the suppliers' performance as well as evaluate the effectiveness of the training.

Under the linkage initiative, foreign affiliates "adopt" local companies and guide them for upgrading in leadership skills and technology. The selection criteria for this programme are dependent on conditions agreed between the foreign affiliates and the participating local suppliers. In most cases, this would be a long term commitment of up to two years with regular

### Box V.9. National and regional linkage development schemes in Malaysia (concluded)

reviews between foreign affiliates and the local suppliers. Quarterly review meetings are chaired by representatives of participating foreign affiliates, with participation of the chief executive officers of the Small and Medium Industries Corporation. The state of Penang, location of most of the major electronics affiliates in the country, has been actively implementing this programme. This initiative has been operational since 2000; eight TNCs and nine SMEs are currently involved.

Neither at the national nor at the state level has there been a systematic assessment of the effectiveness of policy instruments in fostering local input linkages and technology transfer. Nevertheless, a recent study (Jomo, Felker and Rasiah, 1999) examined the impact of various policy measures on local sourcing in Malaysia. It concluded that investment incentives, such as those available under the Promotion of Investment Act of 1986, can be effective in fostering local input linkages as well as technology transfer.

At the firm level, there is some anecdotal evidence of local firms that have forged strong supplier partnerships with TNCs. These firms have benefited from programmes such as the Vendor Development Programme (the predecessor to the Global Supplier Programme), but have also on their own initiative developed their capability to expand their range of products and services and cultivate new customers. The establishment of the Penang Skills Development Centre has encouraged more TNCs to participate in the Human Resources Development Fund; utilization of this fund by TNCs is now much more extensive compared to that of local firms.

In Penang, incentives to encourage the physical relocation of small firms to industrial estates adjacent to the free industrial zones have proven to be a key policy tool in the process of developing linkages and technology transfer. The physical proximity of firms to their customers allowed a greater degree of interaction and diffusion of modern manufacturing practices. A few of these small “backyard” firms have grown into international suppliers of products such as moulds and dies.

Source: UNCTAD.

- <sup>a</sup> This Plan had several precursors. The 1958 Pioneer Industries Ordinance was conceived as a mechanism within Malaysia's import substitution strategy, granting tax holidays, giving tariff exemptions for import-substituting investment, and adopting a cascading tariff structure. The first Industrial Master Plan (1986-1995) contained detailed targets for technology transfer and local content and was complemented by the 1986 Promotion of Investments Act which offered a new set of Pioneer status tax holidays. In 1991, this was revamped so as solely to grant pioneer status tax benefits if a firm fulfilled two of four criteria: value added of 30-50 per cent; local content levels of 20-50 per cent; technology intensity as indicated by share of managerial and technical staff in total employees; and industrial linkages (see Felker and Jomo, 2000, p. 23 et seq.).
- <sup>b</sup> The industries enjoying support are electrical and electronics, chemicals, petrochemicals, pharmaceuticals, textiles and apparel, transportation, the automotive industries and aerospace, as well as natural-resource based clusters, such as wood-based and agro-based and food products (Malaysia, MITI, 2001).
- <sup>c</sup> The Industrial Co-ordination Council, chaired by the Minister of International Trade and Industry, includes representatives of the public and private sectors. Its 19 Industry Cluster Working Groups, co-chaired by the private sector, identify issues and opportunities for the development of industry clusters.
- <sup>d</sup> An immediate predecessor of the Industrial Linkage Programme was the Vendor Development Programme, introduced by the MITI in 1993. Under this modality, TNCs and their affiliates offering guaranteed purchasing contracts and technical support to local suppliers received incentives or, more generally, support in their investment undertakings (see Felker and Jomo, 2000, pp. 23-30).
- <sup>e</sup> Full tax exemption at statutory income level for 10 years, or an investment tax allowance of 100 per cent on qualifying capital expenditure incurred within a period of five years. The incentives are administered by MIDA. See Malaysia, MIDA, 2001; Driffield and Mohd Noor, 1999.
- <sup>f</sup> It evolved from an initiative by Motorola which approached the Penang Skills Development Centre to outsource their supplier training programme. To initiate this proposed programme, Motorola invited its suppliers to a Supplier Resource Transformation meeting at the Penang Skills Development Centre. A comprehensive package on vendor training was conceptualized in the form of the Global Supplier Programme. Subsequently, eight other TNCs decided to incorporate the Global Supplier Programme into their own vendor development programmes.
- <sup>g</sup> The Global Supplier Programme training offers various “packages”. Package 1 is a basic course on core competencies, comprising presentation skills, meeting and negotiating techniques, time management and project management. Package 2 introduces to various quality standards and statistical packages and is delivered in 8.5 training days spread over four months. Package 3 is an advanced programme that teaches design capabilities (CAD/CAM; design for assembly or manufacturability, etc.). There are also modular courses teaching various engineering subjects.

### Box V.10 The Czech Republic's National Supplier Development Programme

It is one of the strategic goals of the foreign investment promotion agency of the Czech Republic, CzechInvest, to support the country's supplier base and to link it to foreign affiliates. It is also a way to convince potential foreign investors to locate in the Czech Republic. It is in this context that the agency introduced its Supplier Development Programme in 1999, designed to improve links between Czech suppliers of components and services and foreign affiliates operating in the Czech Republic. It has three objectives: to promote modern industrial technology, to heed environmental protection considerations and to raise qualifications of the local labour force's.

In January 2001, the Supplier Development Programme introduced a new "Twinning Programme", co-funded by the EU and the Government of the Czech Republic. This two-year subprogramme focuses specifically on the electronics and electro-technical industry. For a local supplier to qualify for the Twinning Programme, annual revenues must exceed \$2 million. If the Programme proves to be successful, the Supplier Development Programme is expected to extend its coverage to other industries for the 2003-2005 period. At the end of the Twinning Programme, CzechInvest plans to prepare a detailed evaluation and send the information to the Government.

The Supplier Development Programme currently consists of three elements:

- *Collection and distribution of information* regarding the products and capabilities of potential Czech component suppliers, so as to enable foreign manufacturers to short-list and contact potential new suppliers. The profiles of potential suppliers are available through CzechInvest's website; it currently covers 1,000 firms .
- *Matchmaking*, comprising three elements: First, "*Meet-the-Buyer*" events between foreign investors and potential Czech suppliers. The sessions focus on identifying the type of components and services that foreign investors are considering subcontracting. Such meetings are on offer to incoming manufacturing affiliates as part of CzechInvest's standard package of support. Second, *seminars and exhibitions* are organized with and for Czech suppliers and foreign affiliates. Third, the *matchmaking programme* takes the form of concrete proposals to potential foreign investors, indicating potential suppliers in the Czech Republic.<sup>a</sup>
- *Upgrading of selected Czech suppliers*. Since 2000, CzechInvest has organized *upgrading programmes* for selected Czech suppliers that meet predefined criteria in high-technology industries, such as electronics, or for selected engineering firms supplying to a wide range of industries (e.g. machine spare parts producers, plastic form producers and packaging firms). The selected firms produce an upgrading plan, tailored to their individual capacities and requirements. Progress is monitored with quantifiable performance benchmarks that compare Czech companies with their competitors from the EU. The upgrading process usually includes consultancy and training support in such areas as the utilization of technology, general management operations, ISO certification and organizational change. A second component is training in a wide range of areas, including finance, management, quality assurance and marketing.<sup>b</sup> The costs of training are shared evenly by the Government of the Czech Republic and the EU. Assistance and advice currently cover financial restructuring and productivity improvement. As a means of providing assistance to accessing finance, results of the training programme are to be presented to private sector bankers with the aim of promoting the financing of the trained electronics suppliers. These programmes aim to improve the selected suppliers' financial, production and inventory management, as well as their capacity to undertake purchasing and quality control.

Initially, the Government of the Czech Republic had financed the operational costs of the programme (about \$3 million for a three-year period), with co-funding from the EU's Phare programme. The Government plans to continue the Supplier Development Programme during the EU accession negotiations, and expects that it would subsequently qualify for the EU's Structural Fund programmes. The Ministry of Labour has indicated to CzechInvest that it would contribute funds to support the development of investment in areas with high rates of unemployment. CzechInvest periodically evaluates the progress made by the suppliers.

- intensifying interaction among firms in a cluster of industries or in a (spatially dispersed) network of enterprises;
- creating an environment conducive to continuous technological upgrading;
- enhancing the quality of FDI and rooting foreign affiliates more firmly in the local economy.

Cluster-oriented programmes seek to build on location specific capabilities and use “third generation” investment promotion strategies. (See conclusion, Part One.) They therefore exploit the two-way interaction between clusters and FDI, one strengthening the other. The emphasis is on moving up the value chain and linking local value chains with global ones. Several programmes that began as national programmes have evolved into cluster-oriented programmes (e.g. that of Scotland).

In cluster-oriented programmes, linkages between local firms and foreign affiliates are considered an (automatic) by-product, not the primary objective. The measures used are broader than in the special national programmes. They typically encompass matchmaking, institution building and strengthening the competitiveness of

suppliers. The main instruments are technology policy, with R&D and technical support for local firms. Emphasis is placed on the good functioning of such institutions as standards and quality bureaux, business networks and professional associations. Examples of this approach are the Global Supplier Programme of Penang state, Malaysia, the Mexican national and local level programmes, the high-technology linkage programme in Costa Rica, as well as the regional programmes in the United Kingdom, namely that in northeastern England, the Source Wales programme and several initiatives under the Scottish Enterprise Network (see box V.5 and annex to chapter V).

There is a third, broader category of programmes, which is not within the focus of this chapter but nevertheless merits mention. These programmes are not exclusively geared to linking foreign and local firms, but have an indirect impact on linkages. Examples range from the supplier development and “ancillarization” initiatives in India to the SME schemes of most developing economies.

Linkage programmes can be located in different agencies. Some come under the auspices of foreign investment promotion agencies as in Thailand and the Czech

#### **Box V.10 The Czech Republic's National Supplier Development Programme (concluded)**

Institutionally, CzechInvest is linked to other parts of the Government, notably the Ministry of Industry, one of the SME promotion agencies, an export development agency and a technical university. Suppliers and foreign affiliates, industry associations (such as the Confederation of Industry and Transportation, the Chamber of Commerce, the Electro-technical Industry Association) and others represent the private sector. Service providers, including the standards institute, quality centres, the technical university, training centres and financial institutions (banks, venture capital funds) are also engaged in the CzechInvest schemes. For instance, the Czech Export Bank is prepared to finance exports of the Czech electronics industry, and the Czech Guarantee Bank envisages providing soft loans to suppliers.

CzechInvest's strategy for 2000-2004 now covers support to domestic investment as well. This ties in well with its mission to promote linkages. Other adaptations in the programme are an increasing attention to training and financial assistance. Moreover, similar to many of the other linkage programmes, the creation of clusters and supply-chain management are receiving more attention.

*Source:* UNCTAD, based largely on information provided by CzechInvest.

<sup>a</sup> When CzechInvest receives a request from an investor, it identifies potential suppliers from the database and provides their data to the investor, together with a one-page questionnaire. As a follow-up, if the investor is interested in any of the potential suppliers, CzechInvest introduces the foreign investor to the potential supplier and negotiates a deal on behalf of the investor.

<sup>b</sup> The trainers are drawn from Sheffield Hallam University in the United Kingdom. The training programme has 60 candidate companies, of which 20 had to be selected by October 2001 for full training. The others will have access to low-cost training in specific areas.

Republic. Others are integral parts of economic development agencies such as the Economic Development Board of Singapore, Enterprise Ireland, the Malaysian Ministry of International Trade and Industry and its operational arm, the Malaysian Industrial Development Authority; and the Ministry of Economic Affairs of Hungary. Yet others are part of regional development strategies as in the northeastern England, Scottish and Welsh programmes in the United Kingdom.

In most instances, as in Ireland, Wales, Singapore or Thailand, the public agency liaises with the private sector, via a joint steering committee or through consultations. The northeastern England programme has an interesting variation. It involves the local and national government, the business community and trade unions; interaction with regional universities is especially well established.

Funding sources for linkage programmes are mixed. In most special national and cluster- and network-development programmes, the bulk of funding is provided by the government agency concerned. In some programmes, staff is seconded from within the agency, but not provided with financial resources (e.g. the BUILD programme in Thailand). Other programmes have succeeded in raising considerable finance from international and domestic public sources (Czech Republic, Mexico, Costa Rica).

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It is difficult to make a full evaluation of government linkage programmes. Each takes place in a specific economic environment, and it is not possible to ascribe the establishment or deepening of linkages to any particular measure. There are always many other factors that may influence the process. (For a review of various attempts to measure linkages, see box V.11).

In general, the effectiveness of a linkage programme is largely context specific, predicated on the economic environment and institutional setting. If local firms have well-functioning linkages among themselves, it is more likely that they

will actively engage in a linkage programme. Similarly, active programme implementation may be helped by the presence of effective domestic and international chambers of commerce, or other groups representing enterprises (the case of Thailand, for example), or a strong involvement of the Government (the cases of Costa Rica, Malaysia and the United Kingdom). Assessments of the programmes in Singapore and Thailand have found these to have been successful in that they have contributed to an increased number of linkages, higher productivity, more local value added, and/or improved capabilities and productivity of local suppliers.<sup>28</sup>

More generally, the main ingredients of successful linkages programmes are:

- Strong political commitment. Programmes pursued at the sub-national level may have more impact, particularly in large countries, since they allow for a focused approach and a bundling of resources, and are more amenable to close interaction among stakeholders.
- Clear delineation of the lines of responsibility, with coherence among goals and measures. Some linkage programmes, notably in the newer generation of cluster-oriented programmes, tend to have conflicting or overlapping lines of authority, with overall policy responsibility and implementation situated in different ministries and agencies. Such a situation calls for special efforts to coordinate.
- Effective public-private partnerships. Linkages will only be sustained if they are technically viable and commercially profitable for the firms involved. Suppliers can induce governments to assist them by encouraging local sourcing by affiliates. Foreign affiliates and their parent companies can help the government identify the scope for local sourcing and give advice on programmes needed. To be convincing and generate mutual trust, linkage programmes need to be staffed by professionals with the appropriate skills and background.

Finally, the more linkage promotion programmes are embedded in policies that facilitate enterprise development in general

**Box V.11. Measuring linkages and their economic impact – an overview**

Collecting and analysing evidence on linkages is a crucial prerequisite for evaluating policies on linkages. Linkages may be measured in different ways. One set of measures relates to the *extent* of linkages in an economy. Another focuses on the economic *impact* of linkages in terms of increased competitiveness of local firms, contribution to growth and employment, and so on.

*Extent of linkages.* The simplest indicator of the extent of linkages is the number of linkages. One way to do this is to simply count the number of relationships between foreign affiliates and domestic suppliers. This was one of the indicators used to evaluate the Singaporean LIUP (Mathews, 1999). A similar approach was used in Hungary to evaluate the Subcontractors' Target Programme: the share of domestic firms in the number of suppliers to affiliates. This indicator was also used in Costa Rica to estimate linkages between local suppliers and free-zone firms. Another frequently used measure is the value of contracts of local suppliers; this was used in Thailand to assess the BUILD programme.

Measuring the share of affiliates' locally sourced inputs in total inputs (in value terms) shows the importance of local sourcing but does not indicate the role of local firms in such sourcing. This measure was used in Ireland to evaluate the National Linkage Programme in the electronics industry (Crone, 2001). Other studies, for Sweden (Ivarsson, 1996), Malaysia (Giroud, 2001b), Thailand (Supapol, 1995) and Scotland and Northern Ireland, also used this indicator.

The share of locally sourced inputs is part of the "retained value" measure, the purpose of which is to measure the embeddedness of foreign affiliates in the local economy and host economies' share in value-added. "Retained value" is the sum of the local wages paid by a foreign affiliate, inputs sourced locally, profits accruing to local shareholders and local taxes paid.

A variation of this is the share of value added by local suppliers in total value added by foreign affiliates. The local content of foreign affiliate production (the inverse of the ratio of imports to production) is sometimes used to capture the degree to which affiliates link with the host economy; studies in Thailand, Malaysia, India and China have used this indicator. Local content does not, however, capture linkages properly since it includes affiliates' in-house production. Indicators that allow this distinction are therefore preferable. It is also desirable to measure linkages with locally owned firms rather than with affiliates of foreign suppliers. Such data, however, are often difficult to collect.

*Depth of linkages.* This set of measures is more complex. The impact of linkages falls into two broad categories: macro and micro. At the macro level, the effect of linkages can be assessed by their contribution to increases in employment, output or exports. These are difficult to calculate unless a realistic counterfactual (what would have happened in the absence of the linkages) assessment can be posited.

At the micro level, the contribution of linkages can be measured by the growth in supplier productivity, improvements in the quality of their products and the shift into higher value products. Such indicators are also used to measure productivity, technology-intensity and so on by other types of analysis. The challenge is to distinguish the effects of linkages from those of other factors that also affect productivity, technological capacity and product range. While it is almost impossible to obtain definite answers on the basis of quantitative data, surveys of foreign affiliates and their suppliers can provide useful information in this regard.

Because of data availability, efforts to assess linkage programmes have focused on the first group of indicators. The number of supplier contracts resulting from linkages supported by the programmes has been used to measure outreach. Some programmes use evidence on the use of different components of the programmes. In Costa Rica, a study (Monge; 2000) of linkages in free zones uses evidence on companies collaborating with local suppliers and on those transmitting technical specifications or providing training to suppliers.

Little evidence is available on how agencies that run linkage programmes measure the economic impact of their programmes. It is difficult to establish a clear link between macro or micro indicators and linkage programmes. A question related to the cost effectiveness of programmes is whether any increase in linkages would have been achieved in any event, i.e. without government intervention.

Source: UNCTAD.

(figure V.2), the higher is the likelihood that they will succeed. It is vital to have well-functioning institutions to channel two-way flows of information between governments and stakeholders and to provide industrial services. At the political level, institutions also comprise business associations of various kinds, as well as representatives of trade unions and possibly of other local interest groups.

\* \* \*

There is clearly scope for government support to promote linkages between foreign affiliates and local suppliers. The above analysis shows how wide the range of policy measures is, although the effectiveness of the measures used cannot be fully assessed with the evidence at hand. Moreover, the more specific measures are embedded in broader policies aimed at strengthening the domestic enterprise sector, the more difficult it becomes to isolate the specific effects of linkage promotion policies. At the same time, the space for policy interventions that directly influence the operations of foreign affiliates of relevance to linkage formation has now become more limited than it was a decade or two ago. In this new context, measures that are in line with market forces are at a premium, correcting of course for structural weaknesses that are characteristic of developing countries. In particular, governments are increasingly relying on measures that address market failures and reduce the costs and risks for linkage partners. This requires the full involvement and cooperation of the linkage partners – foreign affiliates and domestic suppliers – and their associations.

### Notes

<sup>1</sup> Examples include free trade agreements and autonomous or negotiated preferential trade schemes, such as the Generalized System of Preferences (GSP), the Global System of Trade Preferences (GSTP) among developing countries, the Cotonou Agreement and the Caribbean Basin Initiative.

<sup>2</sup> As noted earlier (box IV.2), attracting foreign suppliers can also have advantages. When foreign suppliers are involved, there can be secondary effects on domestic suppliers if they source from second- or third-tier suppliers.

<sup>3</sup> For example, stringent rules (e.g. with very high domestic content requirements) may discourage investment, particularly in least developed countries. When the same rules of origin apply to a number of countries, what may suit the capacity of some may be difficult to achieve for others. To mitigate some of these problems and facilitate the use of trade preferences, rules of origin may allow for the “cumulation” of inputs originating in other developing countries participating in the preferential scheme (see UNCTAD, 1998b, for a more detailed analysis of cumulation rules). Furthermore, in the case of autonomous preferential trade schemes, rules of origin are decided unilaterally by the preference-giving country.

<sup>4</sup> No systematic recent data are available. A 1989 survey of 31 developing countries showed that 23 had local content requirements (and four had trade-balancing requirements). In nine countries, local content requirements applied in all industries and, in one country, in all but one industry (mining and petroleum extraction). These figures do not take into account ad hoc local content requirements negotiated with individual foreign investors, usually in exchange for incentives; thus the actual figures may be higher (United States Trade Representative, “1989 TRIMs Survey”, cited in Battat et al., 1996, table 2, p. 14); On the other hand, a 1977 benchmark survey of United States foreign affiliates found that, in that year, only 3 per cent of the foreign affiliates of United States TNCs were subject to minimum local content requirements (UNCTC, 1991, p.14). Foreign affiliates located in developing countries were subject to such requirements twice as often (6 per cent) as the world average. The same survey carried out in 1982 found a lower usage of local content requirements, both worldwide (around 2 per cent) and in developing countries (2 per cent, *ibid.*, p. 15). The two data series are nevertheless not directly comparable since firms with sales of less than \$3 million were not included in the later survey. In 1982, a United States International Trade Commission study of United States-owned motor vehicles, chemicals and high-technology TNCs revealed major differences across industries in terms of being subject to local content requirements (*ibid.*, pp. 16-17). In motor vehicles, a high percentage of United States-owned affiliates (37) was subject to such requirements. In the meantime, in chemicals, the comparable ratio was 3 per cent and in office equipment, computers and accounting machines, it was only 10 per cent.

<sup>5</sup> In the context of the Uruguay Round agreements implementation discussions some developing countries have proposed that they should have



another opportunity to notify existing TRIMs which they would then be allowed to maintain until the end of a new transition period.

6 See also below, the section on technology upgrading.

7 An example is the Center-Satellite Factory System in Taiwan Province of China which includes a package of fiscal (tax depreciation) and financial incentives to encourage large firms – foreign and domestic – to engage in local supplier relations (Dahlman and Sananikone, 1990, pp. 108-109).

8 A value-added tax can be a source of encouragement for establishing backward linkages. Traditional turnover taxes levied on the full value of products and services transacted between firms may deter linkages (and favour radical integration) by raising tax liabilities on stages of production spread over independent firms. By contrast, value-added taxes, imposed only on additional value at each stage may favour linkages. This consideration appeared to have played a role when Thailand introduced a value-added tax (Battat et al., 1996).

9 Thus, Driffield and Mohd Noor (1999) found that foreign affiliates that have been given pioneer status incentives have stronger backward linkages in the local economy. The success of the Centre-Satellite Factory System of Taiwan Province of China has been attributed to the incentive package as much as to the fact that the island's SMEs were competitive; the incentive package was combined with advisory services to strengthen local suppliers (Altenburg, 2000, p. 56; Dahlman and Sananikone, 1990, pp. 108-109).

10 Up to mid-1996, both the number of domestic suppliers and their share in the supply of parts and materials of Skoda decreased. On the other hand, the absolute value of supplies from Czech suppliers increased, and these suppliers became increasingly internationally competitive (Zemplinerova, 1996; Havas, 2000).

11 Some suppliers are unwilling to receive support from a buying firm. This may be because they are reluctant to share information related to costs and processes; they may not be aware of the need for improvement; or there may be a lack of trust between the two firms involved (Handfield et al., 2000).

12 Information provided by the Government of India on its Ancillary Development Programme. In 1996, UNIDO helped the Government of India to set up a subcontracting exchange jointly with the Indian Small Industries Development Organization (SIDO). By 2000, the exchange had included 1,100 subcontractors in its database.

14 It is often argued that the relevance of intellectual property protection in connection with transfer of technology is strong where

high, easily imitable technology is at stake, such as the case of computer software; it is also strong in cases where “tacit”, non-codified knowledge is essential to put a technology into operation (Correa, 2000).

15 However, as stated by one scholar (Maskus, 1997, p. 16): “economists cannot be entirely optimistic about the implications of stronger IPRs for technology transfer”.

16 The measure did provide access to foreign technologies, but very often not state-of-the-art technologies. Over time, the measure was perceived to be a liability, as the end-result would be a transfer of out-of-date technologies, while discouraging foreign firms to invest in the Republic of Korea. (Information obtained through informal discussion with an official of the Government of the Republic of Korea.)

17 See UNCTAD 2000c; UNCTAD 2001c; UNCTAD 2001d; UNCTAD forthcoming a; UNCTAD forthcoming b.

18 Communication from the Government of the Republic of Korea.

19 Information obtained from the Korea Federation of Small Business.

20 In Taiwan Province of China, the Center-Satellite (CS) Factory System, aimed at strengthening relationships between large enterprises and their “satellite” suppliers, includes training among its programmes (Battat et al., 1996). Initially, the CS Development Center (CSD) – a government agency – tried to persuade firms to establish a CS factory system. Then, “center factories” and the CSD assisted satellite firms draw up plans to help suppliers in various ways, including training key personnel and increasing awareness of best practice by arranging visits by supplier personnel to plants locally and overseas. In Malaysia and Thailand, national productivity councils act as catalyzers and organizers in setting up training courses for suppliers and inducing foreign affiliates to become involved in the training courses. Information provided by UNIDO.

22 Information on the Special Tax Treatment Control Law provided by the Government of the Republic of Korea.

23 Information obtained from [http://www.nafin.com.mx/Gran\\_empresa\\_y\\_gobierno/Geg\\_fide.htm](http://www.nafin.com.mx/Gran_empresa_y_gobierno/Geg_fide.htm); see also the text on Mexico in the annex to this chapter.

24 Information obtained from the Japan Bank for International Cooperation.

25 FDI as a share of gross fixed capital formation has consistently exceeded the respective region's average in, for example, Ireland, the United Kingdom, Malaysia, Singapore, Costa Rica, Hungary and the Czech Republic.

26 See the annex to this chapter for information on the programmes in Thailand, Hungary and Costa Rica.

- <sup>27</sup> The analytical underpinning of this type of linkage programme is based on ideas similar to those in the work on competitive advantage and on clusters (see Part One). At the political level, several of these programmes build on a clear “vision” or development strategy; examples include the Malaysian Vision 2020 Manifesto of 1991 (which had pinpointed the need to deepen and upgrade the industrial structure, see Felker and Jomo, 2000, p. 22) and the Industry 21 Initiative in Singapore (Singapore, EDB, 2001a).
- <sup>28</sup> See, for example, Battat et al., 1996 on Singapore. On Thailand, Board of Investment reply to the UNCTAD 2000 survey; the Thai Board of Investment survey examined linkages between and among foreign affiliates, local firms and joint ventures.



## Annex to chapter V. Additional country programmes

This annex contains descriptions of other government programmes that promote linkages, not included in chapter V. A summary of all programmes reviewed is provided in table 2.

### 1. United Kingdom: the regional development agency for the northeast<sup>1</sup>

“One Northeast” is the regional development agency for the northeastern region of England in the United Kingdom.<sup>2</sup> Its aim is to further “the economic development of the region, by encouraging new investment and entrepreneurial growth, the expansion and development of educational opportunities, and the redevelopment of the region’s industrial, logistics, and urban and rural infrastructures” (One Northeast, 2001, p. 1). The programme is part of a greater Regional Action Plan and the Regional Economic Strategy.

The objectives of One Northeast are to link existing FDI with local suppliers and to attract new FDI that matches the local suppliers’ potential. It works notably with local firms towards upgrading their productive capacity, and assists affiliates in identifying suppliers. Activities include:

- *Information provision.* An electronic database lists regional manufacturing firms (8,500 companies) and summarizes their capabilities (One Northeast, 2001). The focus is on industries and industrial activities with high potential, including chemicals; food and beverages and agriculture-related industries; the life sciences; and specialized business services, tourism and other services.
- *Consultancy services.* One Northeast consultant teams identify potential suppliers, prepare profiles of their capabilities and assist them in becoming suppliers.
- *Benchmarking.* The agency offers benchmarking services. To identify and select suitable local suppliers, subcontracting firms can avail themselves of

a management tool named the Supplier Capability Assessment Tool (SCAT), developed by One Northeast together with Glasgow University (see box 1).

Funding for One Northeast as a whole averages £6 million per annum, of which the supplier development activities account for around £450,000 (One Northeast, 2001; Harding et al., 1996, p. 57). Roughly one-third comes from the Department of Trade and Industry, the Invest in Britain Bureau and the Regional Supply Office; one-third from the local authority and private sector contributions, sponsorship and sales of business services; and the remainder from the European Union and other donors (Loewendahl, 2001). One Northeast has 190 staff members, of whom 10 persons work specifically on supplier benchmarking and development (as of mid-2001).

The agency gauges success by the number of jobs created and by the increases in the turnover of local firms. According to One Northeast, the expenditure on supply chain programmes has generated considerable new contracts for the region’s SMEs (Loewendahl, 2001).

### 2. United Kingdom: the Scottish Enterprise programme<sup>3</sup>

The programme of Scottish Enterprise (a government agency that reports directly to the Ministry of Enterprise) seeks to attract FDI and to foster economic development.<sup>4</sup> Scottish Enterprise is designed as a “fully integrated economic development agency”.<sup>5</sup> Its activities embrace economic and social goals, notably to:

- support business start-ups and help existing companies to expand;
- make Scotland a more competitive location through the provision of business sites and premises and in improving the business environment;
- promote and encourage exports;
- attract inward investment;

- develop skills, break down barriers to employment and ensure that disadvantaged groups and areas are included.

Enterprises, local authorities and other public institutions, trade unions, as well as educational bodies, are active partners in the agency, brought together via a set of Local Enterprise Fora created in 2000. Scottish Enterprise is publicly funded. The annual budget for the entire agency was £440 million in 2000/2001. It is expected to generate a proportion of its own revenue through returns on investment and the sale and lease of property. Fifteen of the agency's staff work directly on supplier development activities.

Since 1997, Scottish Enterprise has been pursuing a cluster-oriented approach to regional economic development. It targets those industries in which Scotland is particularly strong, so as to strengthen linkages and to encourage investment in leading-edge technologies generated in local universities. The approach includes giving

increasing attention to second- and third-tier suppliers. Clusters have been promoted in oil and gas, food and beverages, forestry industries, microelectronics (including optoelectronics), semiconductors, biotechnology and services (such as tourism and software, including multimedia) (Scottish Enterprise Network, 2001).

The first Scottish Supplier Development Programme dates from 1989, followed by the Scottish Supplier Base Forum established shortly thereafter. The original objective was to accelerate growth in the Scottish economy by creating an infrastructure of excellence, comprising component manufacturing and sub-assembly as well as manufacturing. In this initial phase, the industry focus was on the plastic moulding and sheet metal industries.

Since 1989, surveys have been undertaken periodically to ascertain weaknesses in the Scottish supplier base and examine the requirements of electronics TNCs. Scottish Enterprise finances supplier audits, performed by contracted consultants

### Box 1. The Supplier Capability Assessment Tool

The Supplier Capability Assessment Tool (SCAT) guides audits of potential suppliers and assists both subcontractors and supplier firms in finding linkage opportunities. It provides procurement managers of inward investor enterprises with comparative information not readily available. SCAT assesses the potential supplier firms' culture and gives an indication of the long-term stability of the management team. The range of skills in companies is profiled, as are the recruitment and training strategies and staff turnover. Together with the audited accounts and the firms' organigramme, this allows a "holistic view" of the audited firms' performance and potential at the time of assessment. A two standard-method questionnaire is used:

- "SCAT 1", compiled in a short factory tour;
- "SCAT 2", which is a more comprehensive assessment and takes a full day to complete.

It examines production processes and explores the performance of manufacturing methods, such as just-in-time production, continuous improvement and quality control, and benchmarking, logistics and e-commerce applications. Environmental performance is also scrutinized, such as recycling provisions. This assessment entails a tour of the entire plant (manufacturing area, offices, canteen, rest rooms, reception area and grounds). The assessment is consolidated electronically. The software allows for an instant comparison among the firms assessed. Both the potential supplier and clients receive the report; clients also receive a more detailed assessment which includes a financial appraisal. Typically, three to four companies tendering for a particular contract from an inward investor or a domestic company would be assessed. It is a client who then selects a supplier. One Northeast is not commercially involved at any time, but it finances the process. The client is obliged to inform One Northeast of all ensuing contracts and to register any increase in jobs. Such information is reported to the Department of Trade and Industry of the Government of the United Kingdom, and to the European Union, and can also be used as a tool to assess the programme itself.

Source: UNCTAD, based on Archie Workman, One Northeast.

working to a set of standard questions developed at the agency. The audits, which typically engage three consultants for a one-month period, are available to current or potential suppliers to foreign affiliates. Based on the consultants' reports, Scottish Enterprise, together with suppliers and foreign affiliates, develops a strategy for supplier upgrading which continues over a two-to-three-year period. Monthly meetings monitor progress.

The Supplier Base Forum currently has approximately 100 members: foreign affiliates and local suppliers that have at least 50 per cent of their business activities in the electronics sector. Membership is by invitation or by application. The Steering Committee is made up of Scottish Enterprise as the initiator of the Forum and elected members. The Forum organizes supplier development; moreover, it provides an opportunity for formal and informal networking, and sharing information on the sourcing requirements and patterns of foreign affiliates.

The Supplier Base Forum was complemented in 1993 by the Scottish Electronics Forum. It comprises original equipment manufacturers in the electronics industry. Various associations provide institutional support to this Forum. They include the National Microelectronics Institute (owned by major United States and European semiconductor companies), the Scottish Opto-Electronics Association, the Scottish Advanced Manufacturing Centre, Edutronic (a specialist industry-led surface mount training facility) and the Microelectronics Imaging and Analysis Centre (Peters et al., 2000).

As a means of indirect evaluation, Scottish Enterprise tracks the share of local purchasing in annual purchasing patterns of original equipment manufacturers in the electronics industry. The goal is for local sourcing (from domestically or foreign-owned suppliers) to reach 40 per cent for any given product (Krause and Handfield, 1999). The agency not only supports local suppliers but is also active in attracting foreign suppliers to support foreign affiliates' sourcing needs.

According to selective interviews conducted by an academic research team (Krause and Handfield, 1999), some foreign affiliates require their suppliers to be involved in Scottish Enterprise programmes. This suggests that foreign affiliates assess the programme favourably.

### 3. Costa Rica's High Technology Supplier Project <sup>6</sup>

Since the late 1990s, Costa Rica's FDI initiatives have focused on the development of high-technology industries, notably semiconductors, health care and communication/information industries.<sup>7</sup> In this connection, the country adopted a linkages-related programme in 2000, the project Costa Rica Provee – Development of Suppliers for Multinational High Technology Enterprises. The overall objective of this programme is to develop an internationally-competitive local supplier base, in close cooperation with foreign affiliates in the country and by encouraging linkages between the high-technology relevant foreign affiliates and domestic suppliers. This interaction is meant to expedite the technological upgrading of local SMEs and to increase local value added in the operations of foreign affiliates in high-technology activities. The project was triggered by the observation that high-technology affiliates were sourcing only 5-7 per cent of their intermediate inputs from local suppliers.

The project is sponsored and implemented jointly by a group of public and private sector institutions: the Costa Rican Investment Board, the Costa Rica Foreign Trade Corporation, the National High Technology Center Foundation (a private institute with a link to the Government), the Costa Rica Chamber of Industry and the Ministry of Economy, Industry and Trade. For the initial three-year period, the Inter-American Development Bank provided financial support (\$900,000), which complements the \$600,000 of local funds.

The Costa Rica Provee has structured the linkage-providing process into three phases, each consisting of several steps:

*Analysis of demand.* The project reviews all high-technology affiliates located in Costa Rica, and pre-selects affiliates, based on their size, technological level and whether they have a methodology for supplier evaluation in place. In the first round, of ten high-technology affiliates identified by the project, six indicated their interest in and willingness to participate in the programme. They identified the areas of metals and mechanics, containers, moulds, packaging material and plastic products as those where they would be willing to source locally. Their sourcing requirements were analysed and matched with Costa Rica Provee's database of local suppliers.

*Project development.* The initial phase is followed by an evaluation of potential suppliers, undertaken jointly by Costa Rica Provee and representatives of the participating high-technology affiliates. The affiliates and the suppliers agree upon a series of business development activities. A bidding process then identifies providers of technical assistance and training services in response to the suppliers' requirements.

*Project execution.* The supplier receives technical assistance and training, sponsored by Costa Rica Provee, followed by another audit carried out by the high-technology affiliate, to assess the suppliers' ability to meet the previously specified requirements. This then leads to an actual contract.

The first such linkage activity was initiated in early 2001. Babylliss Conair, an affiliate of Conair (United States), needed a supplier of metallic bodies for its production of hairdryers. The project's database identified five potential suppliers. The project's Executive Unit and Babylliss Conair representatives jointly undertook intensive factory visits (over a three-week period), auditing and screening the potential supplier firms. At the end of the process, Babylliss Conair selected Leogar S.A. and awarded a contract of over \$750,000 for the supply of 35,000 metallic bodies for the production of hairdryers during 2001. Costa Rica Provee will provide technical assistance and training to Leogar at an estimated cost of \$20,000.<sup>8</sup> As a result of the contract, Leogar's turnover is expected to increase by about 18 per cent. This also led to a

follow-on contract with Tecnimatriz y Motrosa, established through Babylliss Leogar, to design and produce inputs, at a value of about \$150,000. Babylliss Conair is considering continuing cooperation with Leogar S.A. (Egloff, 2001; IADB, 2001; Larraín et al., 2001).

It is too early for an assessment of the Costa Rica Provee Project as the programme became operational only in 2000. Nevertheless, the Executive Unit is already reviewing the project's design, reflecting on the lessons learned during the first months of its operation. Only a limited number of high-technology foreign affiliates appeared in a position to enhance linkages with local suppliers effectively. On the supplier side, domestic SMEs were finding it difficult to meet the priority needs of high-technology foreign affiliates and were rarely in a position to outperform competing foreign suppliers because of their own higher unit production costs. Moreover, domestic suppliers had problems in terms of access to finance. Therefore, at present, considerations are under way to redesign the project. The aim is to ensure that the linkage programme matches the country's strategic objectives, and concentrates on the quality of linkages in terms of their technological content.

#### 4. Linkage-related programmes in Mexico<sup>9</sup>

Recognizing the lack of linkages resulting from the particular logic of the *maquiladoras* programme,<sup>10</sup> the Government of Mexico began pursuing a more proactive supplier development policy in the early 1990s, notably encouraging foreign affiliates to source from local companies. The National Industrial Modernization and Foreign Trade Programme (1990-1994), for example, was designed to promote locally-embedded industrial clusters. Policy elements included a new standardization and quality policy; promotion of total quality control through various meso-institutions; technological modernization based on industrial reorganization schemes; and strategies to favour outsourcing (Sanchez Ugarte, et al., 1994).

In 1993, another programme designed to facilitate linkages with domestic suppliers was introduced — the *empresas integradoras*

**Table 1. The main public and private agencies relevant to linkage development in Tijuana, Baja California Norte, Mexico, 2001**

Institution	Public	Private
Development Council of Tijuana (Consejo de Desarrollo de Tijuana (CDT))	X	X
Educational Linkage Committee (Comité de Vinculación Educativa)	X	X
Ministry of the Economy (Secretaría de Economía)	X	
Secretariat of Economic Development, State Government (Secretaría de Desarrollo Económico-Gobierno del Estado de Baja California Norte)	X	
National Finance Agency (Nacional Financiera-Financiamiento y Asistencia a la Pequeña Empresa )	X	
Border Governors Forum (Foro de Gobernadores Fronterizos)	X	
Entrepreneur Coordination Council (Consejo Coordinador Empresarial (CCE))		X
United States-Mexico Chamber of Commerce		X
National Industry Chamber (Cámara Nacional de la Industria y la Transformación (CANACINTRA))		X
Maquiladora Industry Association- West Coast (Asociación de la Industria Maquiladora Zona Costa)		X
Economic and Industrial Development Council of Tijuana (Desarrollo Económico e Industrial de Tijuana (DEITAC))		X
Western Maquiladora Trade Association		X
Japanese Maquiladora Trade Association		X
Korean Maquiladora Trade Association		X
National Chamber of the Electronics, Telecommunications and Informatics Industries (Cámara Nacional de la Industria Electrónica, Telecomunicaciones e Informática (CANIETI))		X
ProduCen (Productivity Centre for the Electronics Industry of Baja California)		X

Source: UNCTAD, based on Carrillo, 2001.

programme. It encourages cooperation among suppliers in the form of joint ventures. These enjoy a simplified corporate tax system, preferential access to credit lines of the National Finance Agency and assistance in technology and training (Altenburg et al., 1998).

Complementing this, the Government reformed in 1995 the export promotion programmes that had been instituted in the 1980s. Inputs from Mexico were exempted from value-added tax in order to remove disadvantages to local suppliers.

Building on these developments, the Industrial Policy and Foreign Trade Programme, introduced in 1996, aimed at developing highly competitive regional and industrial clusters with increasing numbers of micro, small and medium-sized firms. Simultaneously, the Government adopted a Programme for the Development of Suppliers. Some 500 large companies are registered in this programme, among them many major foreign affiliates. This Programme has two main components: first, financial assistance for suppliers through the National Finance Agency; and, second, information and matchmaking activities, such as databanks and trade fairs where potential suppliers can present their products.<sup>11</sup> A comprehensive internet-based

supplier database, established in 1997, consolidates information from various existing registers.<sup>12</sup>

These federal programmes are complemented by a number of initiatives at the sub-national level to promote FDI, speed up paperwork, provide information, create matchmaking databases and organize regional subcontracting fairs. The Secretariat of Industrial Development of the state of Baja California Norte has been particularly active. It cooperates closely with other public-sector agencies and institutions, such as employment services, a project on quality and modernization called *Calidad Integral y Modernización*,<sup>13</sup> with the National Finance Agency, the Bancomex, as well as with the private sector, including *maquiladora* associations and local business organizations.

In Tijuana, for example, a broad alliance of private and public sector institutions have coalesced to support the cluster's development (table 1). Funding is provided in large measure by the "Fondo Tijuana", coordinated by the Development Council of Tijuana. This fund, a ten-year project launched in 2000, is co-financed by the Inter-American Development Bank, the National Finance Agency and private investors from Mexico as well as from the United States. It is meant to enable local



companies (old or newly established ones) to become suppliers in the electronics cluster. The funding comprises \$2.7 million for technical cooperation and \$12 million in the form of a venture capital fund for firms that want to become suppliers to the *maquila* industry. In the first phase, 17 firms were to receive support (7 existing firms and 10 newly established firms).

In summary, Mexico has a number of measures and programmes for the promotion of supplier linkages. However, these programmes may need to be better coordinated to achieve more impact and become integrated into an overall framework. With respect to Tijuana, feedback from various surveys suggests that neither foreign affiliates nor Mexican suppliers were sufficiently aware of existing initiatives (Carrillo et al., 1997; Escamilla, 2000, pp. 221-222; Carrillo, 2001). There was a general opinion among private associations that industrial policy needed to be reinforced, with a focus on developing specific industries and products and to increase technological sophistication, competitiveness and value-added activities. In a similar vein, several companies interviewed mentioned the lack of clarity in customs regulations and *maquila* status as obstacles for sourcing inputs from Mexican companies (Carrillo, 2001).<sup>14</sup> It may be that these shortcomings will be addressed as the *maquiladora* programme is phased out, and the various recent linkage-related and supplier development initiatives come on stream.

## 5. Thailand's BUILD programme<sup>15</sup>

In the context of its activities on promoting domestic and foreign investment, the Board of Investment of Thailand (BOI), situated in the Office of the Prime Minister, created a linkage programme in 1992. It is managed by the BOI's Unit for Industrial Linkage Development (BUILD). The programme is designed to "act as an intermediary between manufacturers of ready-made products and small and medium-sized manufactures of parts, which will result in the linkage of industries and the transfer of production technology" (Thailand, BOI, p. 6), thus linking large

enterprises – foreign or domestic – with SMEs. The main objectives are to strengthen the assembler and parts supplier relationship; to promote the development of suppliers, notably SMEs; to increase production efficiency and quality; and to promote cooperation among foreign investors, Thai parts manufacturers and the Thai Government towards this end.

The programme encompasses five main activities: providing information about subcontracting opportunities, notably via a comprehensive computerized database; matchmaking services for individual firms; technical and management assistance to local suppliers interested in developing subcontracting relationships; provision of detailed technical and market information on establishing supplier industries in areas with high potential; and the organization and coordination of training courses to upgrade the marketing and technological capability of small and medium-sized local suppliers (BOI, p. 7).

To date, BUILD has concentrated its activities mostly on information provision and matchmaking services. Two specific activities were launched in 1997:<sup>16</sup> the *Vendors Meet Customers Programme* (VMC) and the *ASEAN Supporting Industry Database* (ASID).

The VMC Programme was established to stimulate domestic sourcing of parts and components, particularly automotive and electronics parts. BOI acts as a broker to match buyers or assemblers and vendors or suppliers. The programme arranges for suppliers to visit assembly plants. Such visits enable potential suppliers to learn about the product and process requirements of assemblers, while assemblers make contact with potential local subcontractors. It can also be an opportunity for suppliers to agree on strategic alliances or a sharing of orders when the scale exceeds their individual firm's capacity to deliver components to an assembler. As a consequence, a group of roughly 70 domestic suppliers, members of the BUILD programme,<sup>17</sup> established a Subcontracting Promotion Club in 1999. Members share information on incoming orders and subcontract each other.

Assemblers submit lists of imported parts to BUILD, allowing parts makers capable of producing listed parts to participate in the factory visit, and meet with the purchasing department. Since the programme began in 1997, there have been close to 50 visits to factories. During its first three years, BUILD focused on local assemblers. In 2001, BUILD started to expand its activities to overseas markets. In early May 2001, the Unit organized a mission to Germany focusing on the automotive industry. Various meetings between BUILD members and industry associations in Germany were arranged.

ASID provides information on over 12,000 manufacturers in various ASEAN industries, of which roughly 7,000 firms are in Thailand. It is one of ASEAN's initiatives to increase awareness of supplier industries in member countries. Investment promotion organizations in the ASEAN member countries are responsible for developing this web-based database, and updating the data to permit free global access to ASEAN industry information.

With regard to technical and management assistance, BUILD has informal relationships with various organizations, such as the Industrial Finance Corporation of Thailand, the Market for Alternative Investment – which is Thailand's version of the United States NASDAQ – and the National Science and Technology Development Agency, to assist supplier companies in solving difficulties and meeting customers' demand. BUILD has developed formal connections with the vocational education system, but depends on informal connections with most other government agencies providing services or support to SMEs. However, to some extent, BUILD is constrained by its inability, and indeed its lack of mandate, to provide *direct* support to strengthening the managerial and technical capacity of Thai suppliers, which is why it relies on other government programmes in this area.

The BUILD programme is part of the BOI and has eight full-time staff members and a budget averaging some five million baht annually. There are plans to make it self-supporting in the future by charging

firms for their participation in BUILD promotion activities.

The BOI of Thailand has assessed BUILD's impact, using the cumulated transaction values of business deals as a proxy to measure the programme's success. Three evaluations have been carried out to date through interviews and questionnaires.<sup>18</sup> The BOI surveyed approximately 400 firms, including 100 per cent Thai-owned companies, joint ventures and wholly foreign-owned companies.

At the time of the first evaluation, six companies had established industrial linkages, with business deals accounting for 120 million baht. By the time of the second evaluation, industrial linkage deals increased to a value of 1,030 million baht, covering 58 companies. In the third evaluation, 98 companies were identified as successful, with business deals accounting for 2,638 million baht. This amounts roughly to a 200-fold increase in the value of contracts generated over a short period of three years. It is also of interest to note that, of the 98 firms that had recorded supplier contracts in 1999-2000, a majority (59 firms) were wholly Thai-owned. These 98 companies had established business deals predominantly with assemblers which are TNCs (62 per cent of the value of business deals registered). Approximately a quarter of the transactions established were among members of the BUILD database and 10 per cent of deals was with overseas contractors. These comprised wholly Thai-owned firms as well as joint ventures. Thus, one of the expected benefits to Thailand – to expand industrial activity through FDI – was met.

## 6. Hungary's Integrators' Subcontracting Programme<sup>19</sup>

In 1998, the Ministry of Economic Affairs of the Government of Hungary introduced the Subcontractors Target Programme. It was subsequently relaunched as the Integrators' Subcontracting Programme and designated as one of the central programmes within a national development plan.<sup>20</sup> The promotion of supplier links is partly driven by the need

to prepare local industry for competition within the European Union before the country becomes a full member.

The Programme initially aimed at promoting direct linkages between final assemblers and local SMEs, regardless of ownership. Currently, its focus is on promoting links between first tier suppliers – called “integrators” – and their second- and third-tier suppliers (Hungary, 2001a). Most of the first-tier firms in the priority industries are foreign-owned, and roughly 80 per cent of the second-tier supplier firms are fully Hungarian-owned. Thus, the programme is de facto a programme promoting linkages between foreign affiliates and domestic firms. Originally, the programme focused on the automobile industry, electronics and rubber and plastics; it subsequently added textiles, furniture, building materials, services and retail trade to the list of priority industries.

The Integrators’ Subcontracting Programme gives priority to relatively advanced supplier firms: half of the resources are provided to firms that are already suppliers to foreign affiliates, and another 40 per cent to firms that are very close to that status. Specifically, the following types of services are available:

- *Access to a national subcontracting database and related information services*, managed jointly by the Ministry of Economic Affairs and the Hungarian Investment and Trade Development Agency. The database contains screened data on 1,500 potential and existing subcontracting enterprises in the machinery, vehicles, electronics, rubber and plastics industries. The data are collected by Supplier Information Centres whose tasks are to inform participating firms about the Programme, collect information on buyer needs, identify potential and existing subcontractors, and help subcontractors logistically and in improving their management.
- *Education, training, consultancy services*. The main areas for training and education are: strategic business management and management training; quality assurance (with special emphasis on the introduction of a new version of ISO 9000); the

implications of, and conditions for, accession to the European Union; logistics; and e-business and e-commerce.<sup>21</sup>

- *Promotion of the international presence of Hungarian firms*. These activities organize or catalyse business contacts and meetings between potential suppliers and buyers and facilitate Hungarian participation in relevant international fairs and exhibitions.
- *Financial support and grants from the Ministry of Economic Affairs*. The Ministry of Economic Affairs offers grants to existing and potential subcontractors. In 2001, two additional sources of finance were introduced: a grant covering up to 30 per cent of the costs of quality management and insurance, expansion of production or product range, development of logistics and informatics; and a grant covering up to 50 per cent of the costs involved in cluster development. The Government also financially supports supplier audits, covering up to 75 per cent of the cost, with a ceiling of HUF 400,000.<sup>22</sup>

Moreover, innovation centres, as well as universities and research institutes indirectly support the Integration Subcontracting Programme by coordinating relevant aspects of research and development.

The Integrators’ Subcontracting Programme – and its precursors – have reached a fairly extensive network of firms. In mid-1999, the programme covered 1,438 supplier firms, representing 110,000 employees (14 per cent of the total employment in manufacturing). The value of deals contracted and signed through the then National Subcontracting Information Network reached HUF 1.4 billion (\$6 million) in 1999. The duration of contracts varied between 6 and 12 months. Between 1998 and 2000, a number of key foreign affiliates (e.g. Opel, Audi, Suzuki, Ford, General Electric, Nokia and Electrolux) signed 76 supplier contracts under the programme. The value of 21 of the contracts publicly announced was HUF 5.9 billion (\$24.5 million) per annum.<sup>23</sup> According to latest estimates, the share of Hungarian firms among the suppliers to foreign affiliates increased from 16 per cent in 1999 to 21 per cent in 2000 (Peredi, 2000).

## Notes

- 1 This section is based on information from One Northeast and an abridged version of Loewendahl, 2001.
- 2 It succeeded the Northern Development Company, established as a tripartite body in 1986, comprising representatives from local political parties, the business community and trade unions (Loewendahl, 2001).
- 3 This part A draws largely on information provided by Scottish Enterprise and Krause and Handfield, 1999.
- 4 Scottish Enterprise was established in 1991 under the Enterprise and New Towns (Scotland) Act of 1990, combining the former Scottish Development Agency and the Training Agency in Scotland.
- 5 The programme also has social goals, with a focus on employment and on creating an “inclusive society”. The annual report states: “Our purpose is to help the people of Scotland create and sustain jobs, prosperity and a high quality of life” (Scottish Enterprise Network, 2001, p. 1).
- 6 Based on information provided by the Costa Rica Provee, 2001; Monge, 2000; Egloff, 2001; ECLAC, 2000; IADB 2001.
- 7 At its inception, the Costa Rican Investment Board pursued an investment promotion strategy focused on textiles. As wage levels increased, and competition from lower-wage emerging markets rose in the early 1990s, it began to target other industries such as the electrical, electronic and telecommunication industries. It is against the background of this shift into targeting high-technology that the country successfully attracted Intel in 1996. For a detailed analysis of the evolution of Costa Rica’s FDI policy, see for example ECLAC, 2000.
- 8 In particular, this will consist in training regarding electrostatic painting environment, environment protection guidelines and new production floor layout, as well as accompanying workshops and conferences and the establishment of a permanent information network with the foreign affiliate. As a result, Leogar was able to improve in production technology which has also enhanced its potential to become a supplier to other foreign affiliates in the future.
- 9 The following is based on Carrillo, 2001 and information from SECOFI.
- 10 The *maquiladoras* programme, through low tariffs on component imports, has favoured the processing of these components for re-exports, with limited opportunities to create linkages with domestic suppliers.
- 11 Apart from those organized under the Programme for the Development of Suppliers, a variety of other fairs have been introduced. They include: input exhibits by potential suppliers; exhibits by *maquila* clients; firms that completely “dismantle” their products so that visitors can identify the components; highly specialized exhibits, such as plastic injection and packing; and exhibits promoted by one TNC only, such as Sony (Altenburg et al., 1998; Carrillo, 2001).
- 12 It provides a computer-based matchmaking programme as well as data on size of firms and capacity. However, some firms have been hesitant to register in it for fear of disclosing too much information.
- 13 The “Calidad Integral y Modernización” initiative is designed to address the lack of competitiveness of local SMEs, resulting from poor education or management techniques. The project, launched in 1987 by the World Bank, trains industrial workers. Since 1993, supplier development has been integrated into the programme and has been carried out jointly with regional agencies. Advisory services and training in the areas of information, financing and technology are provided by private consultants and, depending on the size of the participating company, subsidized up to 70 per cent by the project. An example is the cooperation between Volkswagen de Mexico and its suppliers with the initiative.
- 14 For example, the changes stipulated by Article 303 of the NAFTA imposes import duties, as of 1 January 2001, on all components, materials, equipment and tools imported from outside of NAFTA, but destined to the NAFTA countries. This eliminated the “no-duty” status of the Mexican *maquiladora* industry which had hitherto applied to merchandise exported to the United States or Canada.
- 15 The following is based on Office of the Prime Minister (BOI), 2001, and on other information provided by the Board of Investments (BOI).
- 16 This became pressing when the economic crisis of 1997-1998 offered an opportunity for potential suppliers as they had cost advantages vis-à-vis imported intermediate inputs as a result of the currency devaluation. At that time, subcontracting linkages were also perceived as a step towards initiating joint venture arrangements, which could serve to replenish the capital of ailing domestic firms.
- 17 Firms register to become members of BUILD; there is no screening, and fees are not levied. The programme foresees, for a later time, classifying participating firms into three divisions.
- 18 Information provided by the BOI.
- 19 Based on information provided by the Ministry of Economic Affairs of Hungary.
- 20 “The primary objective of the... subprogram[s] is to loosen up the current dual structure of

the Hungarian economy, and to continue to strengthen Hungarian SMEs' links to multinational companies with a foothold in Hungary in terms of production, innovation and information" Hungary, Ministry of Economic Affairs, 2001, p. 1.

<sup>21</sup> The latter is provided by the Hungarian Investment and Trade Development Agency with a view to preparing Hungarian suppliers for Internet-based bidding for international contracts.

<sup>22</sup> In 1999, 28 supplier firms applied for such audits, of which 27 received assistance, for a total value of HUF 5.4 million. Another 61 firms applied for assistance, of which 31 firms received assistance, for the value of HUF 84.9 million.

<sup>23</sup> The value of the other contracts was kept confidential.

Table 2. Key elements in specific linkage programmes

Region/ country/ element	Agency and institutional specifics	Industry focus	Effective coverage of database or of the supplier development programme	Information through fairs etc.	Subcontracting exchange and matchmaking	Programme components			Staffing/ Funding	Evaluation programme
						Supplier development in cooperation with foreign affiliates		Supplier development and selection		
						Identification	Upgrading			
National Linkage Programme, <b>Ireland</b> , since 1998, replacing a 1995 programme.	Enterprise Ireland, government's enterprise development agency.	Electronics, engineering, healthcare, also pharmaceuticals, natural resource-based products.	Database covering firms in 20 industries.	▲	▲	Identify supply opportunities and affiliate requirements.	Support through development advisers, network building, and market development.	15 staff	▲	
One Northeast Newcastle Upon Tyne, <b>United Kingdom</b> (succeeding the Northern Development Company 1986-1999).	Regional development agency with private sector and trade union involvement, also donor funding. Sub-national programme with a cluster element.	Automotive, plastics and rubber, chemicals, consumer white goods, food and beverage and agro-industries, micro-electronics, military equipment, life sciences, various services such as accounting.	8,000 firms in electronic database.	▲		Benchmarking and auditing activities.	4 Consultancy on upgrading of.	Circa 10 staff members and circa £450,000 for supplier development.	Measured by turnover of local firm and employment gains.	
Scottish Enterprise, Edinburgh, <b>Scotland</b> .	Government agency with private sector involvement. Sub-national programme with a cluster element.	Microelectronics, semi-conductors, energy, foods, biotechnology.				Scottish Supplier Base Forum (since 1991), Scottish Electronics Forum (1993).	Supplier audits and consultancy services to develop upgrading strategies.	15 staff on supplier development.		
Source Wales, Cardiff, <b>United Kingdom</b> .	Welsh Development Agency, regional development agency. Sub-national programme with a cluster element.	Electronics, aerospace, automotive services, garments industries.	4,300 firms in database.			▲	Extensive training programmes to improve quality and performance of suppliers.		▲	
Development of Suppliers for Multinational High Technology Enterprises (Costa Rica Provee), <b>Costa Rica</b> since 2000.	Public sector in cooperation with foreign affiliates and with donor support.	High-technology industry.	All high-technology foreign affiliates visited, 6 currently involved in supplier development.		Supplier database, Analysis of affiliates' requirements.	Screening and auditing of potential suppliers	Technical assistance, project development and training to suppliers selected by foreign affiliates, Consultancy in upgrading.	\$900,000 from the Inter-American Development Bank and \$600,000 from the Government of Costa Rica; 4 staff.	Continuous project revision and adaptation.	
Industrial Linkage Programme of the Industrial Master Plan (1996-2005), <b>Malaysia</b> since 1996.	Ministry of International Trade and Industry, Malaysian Industrial Development Authority and the Small and Medium Industries Corporation; private sector participation via the Industrial Coordination Council.	Electrical and electronics products, chemicals, petrochemicals, pharmaceuticals, textiles and apparel, autos, motor cycles, marine and aerospace development, machinery and equipment, resource-based industries.			SME directory by region and industry.	▲	Global Supplier Programme of the Small and Medium Industries Development Corporation; training and upgrading in Penang, Perang Skills Development Centre provides skills upgrading programmes with affiliate interventions.		Not systematically.	
National Industrial Modernization and Foreign Trade Programme (IPFTF) (1990-1994), revamped in 1996, and Programme for Development of Suppliers (1995), <b>Mexico</b> .	Public sector with private sector involvement.		Almost 500 large companies registered in the Web page of the Programme for Development of Suppliers.	Industry and firm specific fairs.	Within the Programme for Suppliers, matchmaking in especially arranged fairs.	Suppliers selected receive special financing from the National Finance Agency.	Worker and Manager Training under the CIMO (Calidad Integral y Modernización) initiative (since 1991).	\$1.2 billion budgeted for 2001 for credit under the Programme for Development of Suppliers.		

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				Information through fairs etc.	Subcontracting exchange and matchmaking	Supplier development in cooperation with foreign affiliates			
						Identification and selection	Upgrading		
Tijuana Fund, Mexico since 2000.	Public and private.	Maquiladora industry, in particular the electronics sector.	17 local firms receiving support.			Technical assistance and finance.	\$14.7m in total, co-financed by the IADB, the National Finance Agency and private investors from Mexico and the United States.		
Local Industry Upgrading Programme (LIUP), Singapore since 1986.	Economic Development Board, National development agency with public-private interaction.	Electronics, chemicals, engineering, medical products, petroleum and related products, information technology.	30 foreign affiliates, 11 large local firms, 670 supplier firms.			Organizational and financial support, with the involvement of foreign affiliates: - Improvement of overall operational efficiency - Transfer of new products and processes to local enterprises. - Joint R&D with foreign affiliates			
Board of Investment Unit on Industrial Linkage Development (BUILD), Thailand since 1992.	Investment promotion agency, in the office of the Prime Minister.	Electronics, automotive components.	ASEAN Supporting Industry Database (ASID) – computerized database of contractors and suppliers, circa 12,000 ASEAN companies in the database, of which 7,000 firms in Thailand.	Market information; plant visits, trade fair visits.	Vendor Meets Customer Programme – information on subcontracting; individual matchmaking.	Not directly; supplier development is provided under other ministries, or through other service providers.	8 full-time staff; 5 million Thai baht annually.	Periodical reviews or participating firms, using the cumulated transaction values of business deals.	
Supplier Development Programme, Czech Republic since 1999.	Czechinvest, government investment promotion agency, together with the Ministry of Industry, Chamber of Commerce and various business associations.	Electronics, engineering.	circa 1,000 supplier firms in the database.	Seminars, exhibitions; concrete matchmaking proposals	"Meet the buyer" events.	"Twinning Programme": supplier development programmes promotion agencies.	CZK 100 million, \$3 million, 5 persons, co-funded by the	Evaluation of suppliers' progress.	
Integrators' Subcontracting Programme, Hungary since 1998.	Ministry of Economic Affairs, jointly with Hungarian Investment and Trade Development Agency. Programme not limited to foreign affiliates.	Originally electronics, automobile industry, rubber and plastics; in 2001, textiles, furniture, etc. added.	Screened data on 1,500 firms in the database; 1,438 participant supplier firms in the programme (in 1999). Database on CD-ROM.	▲	Data are collected by Supplier Information Centres.	Education, training and consultancy services, e.g. on standards, e-business, logistics. Also financial support and grants.		▲	

Source: UNCTAD.

Note: For details, see boxes V.4, V.5, V.8, V.9, V.10 and annex to chapter V.