Regionalisation, Foreign Direct Investment and Poverty Reduction: The Case of ASEAN

GLOBALISATION and poverty

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MAIN REPORT

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MAKING KNOWLEDGE WORK

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1. INTRODUCTION

Globalisation is a contentious, complex and multi-faceted phenomenon and process.[2] One major issue is the significance of particular macroeconomic mechanisms – e.g. international trade, capital flows[3] (including bank loans, foreign portfolio investments and foreign direct investment) and labour migration – in realising globalisation as a process. Moreover, business firms, especially transnational corporations (TNCs), play a key role in these mechanisms or processes. Another important facet is that the globalisation phenomenon is patchy and uneven in its impact. Thus, while globalisation has undoubtedly raised average world income levels over the last few decades (including reducing poverty levels in many countries), the capriciousness of the underlying processes can (and do) result in simultaneous increases and decreases of income and wealth, both at the global and local levels (Sala-i-Martin, 2002; Eberstadt, 2003). Thus an understanding of the processes and a consequent construction of policies to smooth imbalances are both desirable activities. Finally, geographically, the universe within which globalisation operates is not "steady-state". There are asymmetries and irregularities created by variations in factor endowments, the actions of governments and the strategies of firms themselves, among others. Thus, for example, TNCs with a *global* value chains operate, to a considerable extent, through *local* clusters of business activities which manifest themselves at various levels, including strategies associated with the existence of (supra-)*regional* groupings such as the European Union (EU), the North American Free Trade Agreement (NAFTA) and the Association of South East Asian Nations (ASEAN).[4] Of course, such "regions" (geographically contiguous groupings of countries created by governments) are not necessarily the same as geographic regions defined by firms; however there is a considerable degree of inter-linkage and

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[2] No attempt at a fuller discussion will be made here. The approach to globalisation adopted here mirrors that taken by the Globalisation and Poverty Research Programme, of which this project is a part (www.gapresearch.org/about/index.html). For a wide-ranging discussion, including an historical perspective, see IMF (1997).

[3] See section 4 for a fuller discussion of foreign direct investment and other capital flows.

[4] It is worth noting, however, that the relationship between transnational firms, governments and regionalisation is very complex and can be conceptually divided into at least four types: "(a) Economic development and proximal expansion (across borders) leading to integration between countries (France and Germany, say) and regional growth zones (for instance, the USA/Mexico border). This is essentially a "spillover" model with obvious similarities to the aspects of the gravity model. (b) A regional impulse might be imparted or intensified by a variety of corporate strategies, for instance, (i) TNC expansion to growth zones (some of the large inflow of FDI to "greater China" in recent years has been of a "me too" character); (ii) initial foreign direct investment in countries such as Singapore and Hong Kong, often driven by government incentives, can create the conditions for later "spillover" into nearby countries; and (iii) North American, Japanese and Asian investment in Europe from the mid-1980s - because of fears of a "Fortress Europe" after the EU's decision to establish a Single European Market (SEM) - has helped to accelerate the industrial and economic integration of the European Union. (c) Regional tendencies might be created or intensified by more specific regionalisation strategies of transnational corporations. For example, economies of scale may lead to "spillover" because the size of the national market is insufficient for efficient operations (though these do not need to be confined to the regional level); similarly, many TNCs take advantage of regional divisions of. (d) Finally, government policies, some deliberately designed to encourage regionalisation, are also important. The EU's Single European Market (SEM) and ASEAN's Free Trade Agreement (AFTA) and Investment Area (AIA) – see section 2 – are cases in point." (Mirza (1998), excerpted from a longer discussion).

governments increasingly act to take advantage of supra-regional value chain activity.[5]

The globalisation issues discussed above represent the foundations of this research project. The Association of South East Asian Nations (ASEAN) is widely regarded as the most successful region in the developing world in attracting foreign capital flows (at least until the Asian Economic and Financial Crisis of 1997), especially foreign direct investment (FDI), and in achieving wide-spread poverty reduction. The region can thus be seen as an exemplar or model for understanding how globalisation can play a significant role in the development process and poverty reduction. An additional aspect of interest is that ASEAN has recently enlarged to encompass four new members (Cambodia, Laos, Myanmar and Vietnam, see section 2), which are much poorer than the older member countries (Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand) and whose primary purpose for joining was to take advantage of the putative benefits of membership – especially in terms of encouraging inflows of FDI. This study can thus use the older-newer, richer-poorer dichotomy of ASEAN member countries to explore whether "ASEAN matters" and what newer members can learn from older member countries.

It is acknowledged that this is a major undertaking, which has to assess both macro and micro phenomena, and that the investigation has to be conducted coherently. With this in mind, it was determined at an early stage that the following were the key questions that needed to be answered:

■ Has FDI contributed to poverty reduction in ASEAN countries? Mostly this question had to be directed at older member countries and at a macro level.
■ Under what circumstances, mechanisms and contingencies has FDI reduced poverty? This question had to be addressed at the macro and micro (firm) level.
■ Does ASEAN matter? In other words, would the member countries have received FDI in any case, or has the existence of the regional grouping increased the likelihood of inward investment in individual countries, perhaps because of a "halo" effect, a larger market or easier establishment of cross-border production networks? For newer member countries are these types of effects resulting in new investment flows from outside ASEAN or intra-ASEAN flows of FDI?
■ What can the newer member countries of ASEAN learn from the older member countries of ASEAN (e.g. in terms of government policies encouraging particular types of firm engagement with the local economy)?
■ What are the implications of the above for national and regional policies?

These questions were then simplified into six guiding hypotheses that were tested in two sub-projects, one looking at the macroeconomic impact of FDI inflows (macro study) and one investigating firm/TNC characteristics, strategies, conduct and performance in ASEAN countries (micro study). The hypotheses and coverage by sub-project are detailed in table 1.1.

The rest of this report is divided into five sections. Section 2 provides a background on ASEAN and its member countries, examines the characteristics of FDI flows into the region, explains the choice of ASEAN countries and industries investigated in the

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[5] See also sections 2 and 5.

study and details salient characteristics of the electrical/electronics and textiles/garments industries. Section 3 reports on the results of the macroeconomic analysis (sub-project 1) of the impact of FDI on growth and poverty reduction, especially in ASEAN. Sections 4 and 5 deal with the firm-level study: section 4 consists of a literature based discussion of the interface between TNCs and host economies, whereas section 5 is devoted to analyzing the responses of firms interviewed in this sub-project. The respective methodologies for the two sub-projects are outlined in sections 3 and 4; section 4 also integrates sub-projects 1 and 2 in a single framework. Section 6 concludes with recommendations.

Table 1.1 The Project's Guiding Hypotheses

Hypothesis Number	Hypothesis	Subproject dealing with hypothesis
1	FDI reduces poverty via higher economic growth	Macro study
2	FDI reduces poverty through a direct impact on local factors of production	Macro study & Micro study
3	The impact on national economies and poverty depends on the nature and characteristics of capital flows	Macro study & Micro study
4	The impact on national economies and poverty depends on the nature and characteristics of the investing TNCs	Micro study & Macro study
5	TNCs are creating regional networks because of the regional division of labour (the "weak" "ASEAN matters" hypothesis)	Micro study
6	TNCs are creating regional networks because of dedicated national and regional policies (the "strong" "ASEAN matters" hypothesis	Micro study

2. REGIONAL AND INDUSTRY BACKGROUND

2.1 THE DYNAMICS OF REGIONAL COOPERATION AND TNC VALUE CHAINS

Since the 1980s, world wide competition for FDI has become more intense, and the promotion strategies employed by countries have also changed. In particular, they have become bolder and more innovative. For instance, promotion strategies have moved from the adoption of market friendly policies centred on liberalisation and the standardisation of treatment of foreign investors to the establishment of investment boards and the adoption of strategic marketing involving industrial clustering and investment targeting (Kotler et al, 2002; Dunning, 1997). Many FDI promotion agencies even benchmark themselves (GdpGlobal (2003))! Geo-economic changes in various parts of the world (e.g. the proliferation of regional economic groupings, Free Trade Agreements (FTAs), and sub-regional growth zones) have helped bring about greater and different styles of competition for FDI. The influence in technological development, the changing global FDI environment (including the changing geography of FDI flows), changes in the global industrial landscape and the volatile international economic situation are all factors shaping the present and future FDI competitive environment (Chandler et. al., 1998; Dunning, 2000; Lall, 2002).

A major emerging strategy in attracting FDI is by using cooperative style arrangements among groups of countries (IADB, 2002; Dunning, 1998). A distinguishing feature is that competition for FDI is no longer solely confined to between countries, but is increasingly between regions. Because of this, and the realisation of the synergistic benefits attainable, more countries are likely to follow a regional approach in attracting FDI. This kind of regional investment promotion is being shaped by increased regional integration or regional enlargement processes and the desire to increase competitiveness by providing a complementation of locational advantages among integrating groups of countries. Further, the growing network type of investment strategies pursued by TNCs in linking production units located in different countries across a region reflects the changing investment strategy of TNCs; and that could further influence promotion strategy in favour of a regional approach. On the other hand, the increase in the number of TNCs engaging in regional production networks is, in part, a response to the "synergistic investment opportunities" offered by an integrating region and the opportunities that an agglomeration of countries within a region creates for greater reduction in operation costs (e.g. the automotives sector in ASEAN, Mexico and Latin America). The ability of TNCs to more efficiently utilise regional locational advantages that complement their overall production network activities in a total value chain process is another reason worth emphasising. Regional production strategies enable TNCs to enjoy more conducive investment conditions than in a single country-location operation. In principle, this allows them to optimise the benefits of economies of scale, maximise production capacity utilisation, increase cost efficiency and internalise ownership advantages.

Countries that do not belong to a regional grouping may become less attractive as an investment location, unless their markets or economies are large, locationally efficient or technologically more advanced. Locational efficiency and market size,

among others, are important factors in ensuring competitiveness and in increasing the net value of investment projects. A regional approach can enhance these factors where an individual country by itself will have difficulty or limited scope in achieving enhanced locational competitiveness associated with the benefits of agglomeration, full capacity utilisation and in overcoming the handicap of small markets.

The regional approach to attracting or promoting FDI has been gaining momentum for the following reasons:

The changing global industrial landscape influences the manner in which companies operate within specific industries, and within a region, due to industrial clustering and agglomeration of inter-related firms. Industrial clustering has become a formidable approach for industrial development where complementary production units or firms are agglomerated to support production or supply chain systems in a cluster with the aim of developing a more efficient and productive industry. If industrial clustering continues as a favourable concept for industrial development then the FDI decision will be influenced more by industrial cluster arrangements and industry specific motivations. For industrial clustering to work in a regional context, regional cooperation in terms of attracting investment and conditions for the agglomeration of inter-related industrial activities must exist.

Regional integration and economic cooperation has helped improve the competitiveness of regions and of constituent countries in attracting FDI. For instance, the increase in FDI flows to Mercosur countries and the experience of NAFTA in terms of increased FDI to Mexico can be attributed, in part, to the positive effects of economic integration involving the countries in these regions (IADB, 2002). The increase in FDI flows to Eastern European countries in recent years is also partly influenced by the EU enlargement process involving these countries. Regional integration will have at least two categorical effects on locational advantage. One, on the region due to the combined locational advantage contributed by each individual member country, which allows a greater utilisation of the division of labour, industrial clustering and production specialisation. The other will be in influencing the investment strategies of firms and in changing the perception of investors on the investment environment of the region and of the respective member countries. Investment cooperation within a regional integration will enhance competitive advantage, provide an environment where production capacity can be optimised, generate synergy, and other economic and industrial benefits that an individual country by itself may not be able to offer and hence be less attractive as a location for FDI.

A strong private sector base is crucial to expanding entrepreneurial skills and for generating capacity to help sustain higher levels of economic development. By attracting suitable FDI, greater private sector development can, arguably, be achieved as FDI brings along with it foreign business and management skills, including technology and ideally results in the spillover effects that are important ingredients for growth and industrial progress (these assertions will be tested with regard to ASEAN in the two sub-projects). These compelling reasons, among others, motivate countries to try and attract more and quality FDI, and a viable approach is to cooperate to attract such capital flows. In a regional context, by promoting greater private sector development through FDI, including joint venture

activities, regional integration can also be expedited through investment processes and the linkage of companies and production activities. A strong private sector base hopefully means an increase in the capability of firms to undertake FD, including intra-regional investment flows.

■ Companies are increasingly finding ways to reduce cost and divest operations that have less competitive advantage. In adding value to the value chain, increasingly more and more companies are out-sourcing certain aspects of the production process to other manufacturers. Regional integration and regional investment cooperation facilitate a smoother flow of out-sourcing activities and they also provide an opportunity for an easier sourcing of parts and components within a region. This helps increase location efficiency where a country will benefit most by harmonising its locational advantages with those of other countries.

In summary of the above, one of the implications of the globalisation of firms is the globalisation of production and value chains and the extent to which this phenomenon can be used by developing countries to foster their industrialisation, and growth – and thereby reduce poverty – by encouraging the location of value creating facilities within their borders (see also section 4).[6] One of the aims of recent regionalisation strategies, such as those of ASEAN countries (see section 2.2), is to improve the chances of attracting TNCs by enhancing the joint attractiveness of contiguous groups of countries. Further, as section 2.3 shows, ASEAN has had some success in this endeavour and is a critical location in the global value chains of many TNCs.

2.2 ASEAN REGIONAL COOPERATION IN ATTRACTING FDI[7]

The reasons for ASEAN countries to cooperate in promoting FDI are similar to those explained above. However, the more conspicuous reasons are associated with the need to enhance individual country and regional competitiveness through cooperation in promoting ASEAN as an investment region – a regional model of attracting FDI. Another reason is that because of the region's integration process it is natural to include investment given that trade arrangement and other aspects of economic cooperation are already part of the region's integration agenda. Clearly, investment cooperation is a sub-set of a larger regional integration arrangement but one that can help strengthen the integration process. FDI and TNCs' regional operation strategies are centred on using combined regional locational advantages and involved in a regional division of labour that can help expedite the regional integration through the linking of production units and creating a value chain process

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[6] For a valuable, wide-ranging discussion, see the 2001 special edition of the IDS bulletin, The Value of Value Chains: Spreading the Gains of Globalisation (Vol 32, No 1), especially the first three articles by Gereffi et al (2001), Sturgeon (2001) and Humphrey and Schmitz (2001). See also further discussion of value chains in section 4 of this report.

[7] Some key dates relating to the establishment and expansion of ASEAN: 1967 - The Bangkok Declaration to establish ASEAN was signed by Indonesia, Malaysia, Philippines, Singapore and Thailand; 1984 - Brunei Darussalam joins ASEAN; 1995 - Viet Nam joins ASEAN and accedes to all ASEAN Agreements; 1997 Lao PDR and Myanmar join ASEAN and acceded to all ASEAN Agreements; 1998 - Cambodia becomes the tenth member of ASEAN and accedes to all ASEAN Agreements; 1998 - the Framework Agreement on the ASEAN Investment Area is signed by all then member countries and Cambodia accedes to the Agreement.

across the region. Regional integration and investment cooperation can be reinforcing factors that complement each other by strengthening one another.

Another key reason that helps to explain ASEAN investment cooperation is the consideration of some countries to negate certain locational *disadvantage*, such as small individual markets. AFTA (the ASEAN Free Trade Area) means that a member country with a restrictive investment regime can still be serviced through trade routes by producing in one country and exporting to another. Under such conditions, the economic argument for protecting or restricting investment flows to a certain industry or country becomes weak. If an industry or a country's market can be serviced through trade route then there is little point in restricting FDI flows, and this realisation has made many countries more receptive to investment cooperation.

The global FDI landscape and international business environment today has changed considerably from the circumstances of the 1970s and 1980s – marked, as it is, by a rapid global liberalisation process and the growing competition for FDI. Not only has there been an increase in the number of countries competing for FDI, but the style and approach of competition for such international capital flows has also changed. What ASEAN is doing today on regional investment cooperation is adapting to these changes and global challenges through strengthening the regional effort in attracting FDI. In this regard, it is important to trace the development of ASEAN investment cooperation to better appreciate the questions of "*why*" and "*how*" the region has moved to a stronger form of investment cooperation involving the implementation of a number of significant investment agreements and action plans.

Early ASEAN Investment Cooperation
Early ASEAN investment cooperation, while it was limited, can be traced back to the 1970s. Among the major achievements of the early investment cooperation was the conclusion of the 1987 ASEAN Agreement on the Promotion and Protection of Investments. Other investment issues were also discussed and were largely confined to investment cooperation and promotion issues. These included an early attempt to study the harmonisation of fiscal incentives, the organisation of investment seminars in cooperation with a number of ASEAN dialogue partners, and discussion on approaches to promote greater FDI flows from Japan, the EEC and the USA, including intra-ASEAN direct investment. Investment cooperation matters, such as on training and capacity building, were also considered in these early arrangements.

The early institutional structure and the types of investment issues discussed in ASEAN would have been insufficient as a basis for the more significant model of regional investment cooperation witnessed today. Early investment matters were only discussed as part of business activities under the Committee on Industry, Minerals and Energy (COIME) and the results of COIME meetings, which included, among others, investment issues, were reported to the ASEAN Economic Ministers for guidance or endorsement. COIME was one of the five now-defunct economic committees that helped the ASEAN Economic Ministers coordinate ASEAN economic cooperation up to 1992. Investment matters were not discussed at that time in a manner as comprehensive or in-depth as they are today. This is because,

in part, COIME had other roles and major economic matters to cover and to report to the Ministers. More importantly, the timing was not right and the conditions were not suitable for a stronger form of investment cooperation or arrangement to take place at that time.

Recent ASEAN Investment Cooperation
It was only in the mid-1990s that a more significantly structured and considerable form of investment cooperation emerged in terms of institutional arrangements, especially in terms of the comprehensiveness and depth of issues discussed. This led to the formulation of investment agreements that further strengthened the region's investment cooperation process. Significant ASEAN investment cooperation was actually forged in the high inward FDI growth years to and within the region, particularly in the period 1994-1996. Investment cooperation during this period help lay the foundations for stronger subsequent arrangements, such as the decision to establish the ASEAN Investment Area and the signing of a number of investment agreements and protocols.

Prior to the signing of the Framework Agreement on the ASEAN Investment Area in 1998, the 1995 Action Plan and the various specific activities contained in the 1996-1998 Work Programme were actively implemented. In drafting the AIA Framework Agreement, the 1995 Action Plan and the companion work programme were taken into account. Some of the work activities implemented in 1995-1997 supported the subsequent decision to establish an ASEAN investment area and the drafting of the AIA Framework Agreement. Among the 1995-1997 investment activities that facilitated in strengthening ASEAN investment cooperation were the following:

(i)   The implementation of the 1995 Action Plan and Work Programme on Cooperation and Promotion of FDI and Intra-ASEAN Investment

(ii)   An investment survey in 1996 of some 250 TNCs with investment activities in the region.[8] The survey covered issues on TNCs' location choice, investment strategies and perception of ASEAN as an investment region.

(iii)   An effort to improve the 1987 ASEAN Agreement on Promotion and Protection of Investments in 1995. This effort subsequently led to the conclusion and signing of the 1996 Protocol to Amend the 1987 Agreement.

(iv)   The outcome of an "Experts Seminar on the Promotion of Foreign Direct Investment and Intra-ASEAN Investment in the Context of the ASEAN Investment Area" in May 1996 and a "High-level Roundtable for the Formulation of Strategic Plans on Cooperation and Promotion of FDI in ASEAN" in February 1996.

There is a greater degree of potential locational complementarity in the region today than in the 1970s and 1980s because of the enlargement of the membership from the ASEAN-6 to the ASEAN-10. The newer member countries are at the outset of economic development, while some of the older members have moved to a relatively

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[8] In fact a survey by the Bradford University School of Management, Asia-Pacific Business and Development Research Unit, Mirza et. al. (1997).

advanced levels of economic attainment. Furthermore, under the conditions of rapid economic development, some ASEAN countries are increasingly faced with acute constraints on certain factors of productions (e.g. land and labour), whereas other members, including the newer ones, have plenty to offer or complement to support regional industrial development. The decision to establish the ASEAN Free Trade Area (AFTA) in 1992 has also helped pave the way for stronger forms of regional investment cooperation.

Also unlike in the 1970s and 1980s, more indigenous companies based in some ASEAN countries have become important regional players. Over the years they have gathered entrepreneurial and international business experience, including financial capabilities, for undertaking overseas production activities or expanding their existing operations outside their national boundaries, both within and beyond the region. In recent years, as maintaining cost competitiveness has become a pressing concern, companies (both indigenous ASEAN and foreign transnational corporations) in higher cost ASEAN countries have been forced to relocate their operations (or parts of their operations) to lower cost (labour abundant) member countries – reflecting the "flying geese" theory of explaining industrial development and the pattern of FDI flows. As a result of rapid private sector development, some ASEAN countries are now significant sources of FDI for the region and this is a crucial underlying factor that further encourages a stronger form of regional investment cooperation today than in the past.

In addition, regional investment cooperation has been regarded as an arrangement that yields significant advantages to individual member countries. Hence, regional investment cooperation has been accepted as a means of adding value, creating synergy and enhancing competitiveness in attracting FDI. More importantly, these regional arrangements are not been seen as primarily a negative sum game, but as a process whereby something can be gained by each member. It is believed that the regional model can generate significant complementation of locational factors that can sway FDI decision in favour of the region and, depending on the types of FDI operations, to a particular location within the grouping. So long as FDI is attracted to the region, more spill-over benefits can be retained within the region than would occur otherwise.

ASEAN Investment Cooperation Institutional Structures[9]
The strength of ASEAN member countries' commitment to regional integration, especially in investment, can be evinced by the institutional arrangements they have put in place. In February 1993, some of the ASEAN Heads of Investment Agencies (AHIA) met for the first time in a consultative forum in Jakarta. Prior to the consultative forum, the AHIA had never met in an ASEAN setting to discuss investment matters. However, the first formal meeting of AHIA was held in November 1995 and a Working Group on Investment Cooperation and Promotion (WGICP) was established to assist the Senior Economic Officials Meeting (SEOM) and the AHIA to handle regional investment matters. Since then, the institutional machinery for investment has evolved considerably due to the increasing importance attached to investment cooperation in the region. In 1996, WGICP was dissolved and all regional investment cooperation matters were taken over by a newly created body of higher

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[9] For a broader assessment of regional structures, especially after the crisis, see Beeson (2002).

ranking officials, known as Senior Officials Meeting on Investment (SOM-I). This development gave more prominence and recognition to the importance of investment issues in the context of a wider regional economic cooperation arrangement.

In December 1995, the ASEAN Heads of Government agreed to further strengthen the regional economic cooperation to include what is now referred to as the ASEAN Investment Area (AIA). By 1996, the ASEAN Economic Ministers at their meeting in Manila instructed the officials to formulate an agreement for the development of the AIA. A special ad-hoc committee was then established to negotiate and draft the Agreement. The committee commenced the drafting work in June 1997 and on 7 October 1998, the Framework Agreement on the ASEAN Investment Area was signed, and subsequently ratified, by all the Member Countries. The last instrument of ratification was received in June 1999, and the Agreement has been effectively in force since then. Implementation of some of the provisions or measures of the AIA commenced almost immediately after the signing of the Agreement, prior to the ratification.

In view of the strengthened investment cooperation, the region's institutional structures underwent further development. A ministerial level Council (known as the AIA Council) was established to oversee and coordinate the implementation of the AIA Agreement. The Council has met four times since its inaugural meeting on 8 October 1998 in Manila. A Coordinating Committee on Investment (CCI) was established to assist the AIA Council. The Committee meets regularly, on average about four to five times a year, to discuss regional investment matters and AIA implementation issues. A Working Group on Foreign Direct Investment Statistics (WGFDIS) has also been established to assist the AIA Council on all aspects of the regional FDI statistical work. The primary focus of the Working Group is to harmonise FDI measurement, data collection and the reporting system in the region and to submit to the Council a quality and comparable FDI data set, on an annual basis, to monitor the AIA development.[10]

By the late-1990s ASEAN had adopted, and is now committed to, a stronger regional approach in promoting and cooperating in attracting FDI. Specific areas of investment cooperation were intensified and strengthened with an increased frequency of meetings, at various levels, that generated significant results. Various other regional investment agreements have been formulated, signed and ratified to further strengthen the regional approach in attracting FDI. The most significant agreement concluded to-date is the agreement to establish an ASEAN Investment Area (AIA) involving the 10 ASEAN countries. The Agreement and the implementation of its provisions is now the cornerstone of ASEAN investment cooperation.

2.3 FDI BACKGROUND IN SOUTH EAST ASIA

The ASEAN member countries have seen their accumulated stock of FDI assets grow considerably over the last twenty years or so (as indicated in table 2.1). In 1980, this stock amounted to around US$24.7 billion, but has subsequently increased more than ten-fold, to almost US$283 billion by 2001. All ten individual

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[10] The ASEAN Investment Report and Statistics of Foreign Direct Investment in ASEAN are produced annually by the ASEAN Secretariat, based on input from this group.

ASEAN countries have seen their stock of FDI increase markedly over the last twenty years, although some have registered greater increases than others. As a result, the distribution of the FDI stock in the region has gradually shifted. For example, Indonesia has gone from hosting almost 42% of the total FDI stock in Southeast Asia in 1980, to 20% by 2001. In contrast, Singapore's share of the region's total FDI stock has increased from 25% to 37% - quite impressive for a city-state of around 4 million people, or less than 1% of the region's aggregate population. Thailand has also increased its share, from 4% to 10%, while Malaysia has maintained pace with the region as a whole, to remain at around 20%. The most striking increase in FDI stock, however, has been among the 'Indochina-4' transitional economies, and most notably Vietnam, which only began to seriously attract FDI inflows in the late 1980s, having been previously closed to private foreign equity inflows. The annual FDI inflows that fed into these FDI stocks in ASEAN member countries are depicted in table 2.2, for the period 1989 to 2001.

Table 2.1: Foreign Direct Investment Stock in ASEAN, 1980-2001 (US$ mn)

	1980	1985	1990	1995	2000	2001
Brunei	19	28	23	631	3,756	3,999
Cambodia	38	38	38	356	1,551	1,664
Indonesia	10,274	24,971	38,883	50,601	60,638	57,361
Laos	2	1	13	205	550	574
Malaysia	5,169	7,388	10,318	28,732	52,748	53,302
Myanmar	746	746	913	1,831	3,191	3,314
Philippines	1,281	2,601	3,268	6,086	12,440	14,232
Singapore	6,203	13,016	28,565	59,582	95,714	104,323
Thailand	981	1,999	8,209	17,452	24,468	28,227
Viet Nam	9	64	260	5,760	14,623	15,923
ASEAN	24,722	50,852	90,490	171,236	269,679	282,919
ASEAN-5	23,908	49,975	89,243	162,453	246,008	257,445
Indochina-4	795	849	1,224	8,152	19,915	21,475
percentage terms						
Brunei	0.1	0.1	0.0	0.4	1.4	1.4
Cambodia	0.2	0.1	0.0	0.2	0.6	0.6
Indonesia	41.6	49.1	43.0	29.6	22.5	20.3
Laos	0.0	0.0	0.0	0.1	0.2	0.2
Malaysia	20.9	14.5	11.4	16.8	19.6	18.8
Myanmar	3.0	1.5	1.0	1.1	1.2	1.2
Philippines	5.2	5.1	3.6	3.6	4.6	5.0
Singapore	25.1	25.6	31.6	34.8	35.5	36.9
Thailand	4.0	3.9	9.1	10.2	9.1	10.0
Viet Nam	0.0	0.1	0.3	3.4	5.4	5.6
ASEAN	100.0	100.0	100.0	100.0	100.0	100.0
ASEAN-5	96.7	98.3	98.6	94.9	91.2	91.0
Indochina-4	3.2	1.7	1.4	4.8	7.4	7.6

Source: ASEAN FDI Database

The ASEAN region's success in attracting – and then hosting over a sustained period – substantial FDI activity over the last 20 years has undoubtedly been commendable, and has been a critical element in their wider economic development trajectory (Yusuf, 2002). Indeed, some of the strategies employed to achieve this have been emulated by other developing countries, including regionalisation strategies (IADB, 2002). However, ASEAN's success in attracting substantial FDI inflows was aided and abetted by a supportive global 'tailwind'. As a consequence of inter-related changes in the conduct of international business activity – notably the liberalisation of capital controls and foreign investment regimes, and the development of transnational companies with increasingly extended and complex cross-border production and distribution networks, made possible through new innovations in information and communication technology – global FDI flow activity has burgeoned since the 1980s. As table 2.3 shows, annual global FDI flows, including those to developing countries, increased markedly during the 1990s. As host country recipients, ASEAN member countries were part of that global 'FDI story', and in the 1980s they helped spearhead this growth 'story' in the developing world.[11]

As table 2.4 shows, intra-regional FDI flows within ASEAN itself can also be clearly discerned in recent years. In the period between 1995 and 2001, roughly 10% of total FDI inflows received by host countries in the Southeast Asian region were sourced from a fellow ASEAN member. This trend is even more pronounced for the Indochina-4 transitional economies, where 23% of their total FDI inflows in this period came from the ASEAN-5 countries: 55% for Laos (primarily from Thai investors), 51% for Myanmar (led by Singapore investors), and 20% for Vietnam (also led by Singapore investors). Although figures for Cambodia are not available, it is widely understood that Malaysia has been the leading investor in this host country. The dominant home country source of intra-regional FDI flows has been Singapore, by far (see table 2.5). In the period 1995 to 2001, 65% of the US$15.26 billion total intra-regional FDI flows emanated from the city-state, compared with 14% from Malaysia, 9% from Thailand, and 8% from (pre-crisis) Indonesia. Of course, a considerable portion of such flows from Singapore were by non-ASEAN TNCs; and this is also the case, to a lesser extent, for Malaysia and Thailand.

Of course, FDI inflows within Southeast Asia have not been evenly distributed across the region. Some business sectors and locations within the region have been the recipients of much greater FDI activity than others. Despite the substantial proportion of the region's population living in rural areas and engaged in agricultural sector work, the proportion of FDI activity in many rural areas and the agriculture-related sector has been relatively small. In the case of the five countries selected for empirical study here (see section 2.4), FDI activity has tended to cluster around Phnom Penh in Cambodia, and a select number of locations in Vietnam (notably Ho Chi Minh City, Hanoi, and the southern provinces of Dong Nai and Binh Duong) have been successful in capturing the lion's share of FDI inflows. In the case of Malaysia and Thailand, the picture is a little less stark, although the same clustering effect is evident. The same is also true of business activities, with some manufacturing sectors seeing markedly more FDI activity in ASEAN – and within individual

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[11] Some observers have characterized this transition of investor perceptions towards developing economies, as suitable hosts for foreign equity capital, as a shift from 'third world countries' to 'emerging markets'.

countries – than others. Manufacturing sectors that have seen some of the most vigorous activity, in terms of project numbers, include: rubber and plastics; radio, television and communications equipment; garments; machinery and equipment; and fabricated metal products. In terms of FDI capital committed, greatest FDI activity has been in such sectors as: petroleum industry; chemicals; radio, television and communications equipment; and paper products.

Table 2.2: Foreign Direct Investment Flows in ASEAN, 1989-2001 (US$ mn)

	1989-94 (ann ave)	1995	1996	1997	1998	1999	2000	2001
Brunei	4	583	654	702	573	596	600	244
Cambodia	26	162	586	(15)	230	214	179	113
Indonesia	1,524	4,346	6,194	4,677	(356)	(2,745)	(4,550)	(3,277)
Laos	19	88	128	86	45	52	34	24
Malaysia	3,964	5,816	7,296	6,324	2,714	3,895	3,788	554
Myanmar	135	277	310	387	314	253	255	123
Philippines	879	1,459	1,520	1,249	1,752	578	1,241	1,792
Singapore	4,798	8,788	8,608	10,746	6,389	11,803	5,407	8,609
Thailand	1,942	2,068	2,271	3,626	5,143	3,561	2,813	3,759
Viet Nam	651	1,780	1,803	2,587	1,700	1,484	1,289	1,300
ASEAN	13,942	25,367	29,370	30,369	18,504	19,691	11,056	13,241
ASEAN-5	13,107	22,477	25,889	26,622	15,642	17,092	8,699	11,437
Indochina-4	831	2,307	2,827	3,045	2,289	2,003	1,757	1,560
percentage terms								
Brunei	0.0	2.3	2.2	2.3	3.1	3.0	5.4	1.8
Cambodia	0.2	0.6	2.0	0.0	1.2	1.1	1.6	0.9
Indonesia	10.9	17.1	21.1	15.4	-1.9	-13.9	-41.2	-24.7
Laos	0.1	0.3	0.4	0.3	0.2	0.3	0.3	0.2
Malaysia	28.4	22.9	24.8	20.8	14.7	19.8	34.3	4.2
Myanmar	1.0	1.1	1.1	1.3	1.7	1.3	2.3	0.9
Philippines	6.3	5.8	5.2	4.1	9.5	2.9	11.2	13.5
Singapore	34.4	34.6	29.3	35.4	34.5	59.9	48.9	65.0
Thailand	13.9	8.2	7.7	11.9	27.8	18.1	25.4	28.4
Viet Nam	4.7	7.0	6.1	8.5	9.2	7.5	11.7	9.8
ASEAN	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ASEAN-5	94.0	88.6	88.1	87.7	84.5	86.8	78.7	86.4
Indochina-4	6.0	9.1	9.6	10.0	12.4	10.2	15.9	11.8

Source: ASEAN FDI Database.
Note: Figures in brackets indicate a net outflow of FDI.

Table 2.3: Global and ASEAN Foreign Direct Investment Flows Compared,1989-2001 (US$ mn)

	1989-94 (ann ave)	1995	1996	1997	1998	1999	2000	2001
World	202,328	330,516	386,140	478,082	694,457	1,088,263	1,491,934	735,146
Developed countries	138,251	203,311	219,908	267,947	484,239	837,761	1,227,476	503,144
Developing countries	60,431	112,537	152,685	191,022	187,611	225,140	237,894	204,801
Asia	37,673	75,217	93,331	105,828	96,109	102,779	133,707	102,066
Latin America and Carib.	18,285	30,886	52,856	74,229	82,203	109,311	95,405	85,373
Central and Eastern Europe	3,647	14,668	13,547	19,113	22,608	25,363	26,563	27,200
Africa	879	1,459	1,520	1,249	1,752	578	1,241	1,792
ASEAN	13,942	25,367	29,370	30,369	18,504	19,691	11,056	13,241
ASEAN % of world total	6.9	7.7	7.6	6.4	2.7	1.8	0.7	1.8
ASEAN % of developing world	23.1	22.5	19.2	15.9	9.9	8.7	4.6	6.5
ASEAN % of Asia	37.0	33.7	31.5	28.7	19.3	19.2	8.3	13.0

Source: ASEAN FDI Database.

Table 2.4: Inward Intra-ASEAN Foreign Direct Investment Flows, 1995-2001.

Host country	Intra-regional inflows 1995-2001	Total inflows 1995-2001	Intra-regional inflows as % of total inflows, 1995-2001
Brunei	1,322	3,952	33.5
Cambodia	n.a.	1,469	n.a.
Indonesia	136	4,289	3.2
Laos	250	457	54.7
Malaysia	2,422	30,387	8.0
Myanmar	985	1,919	51.3
Philippines	1,026	9,591	10.7
Singapore	2,818	60,350	4.7
Thailand	3,903	23,241	16.8
Viet Nam	2,395	11,943	20.1
ASEAN	15,257	147,598	10.3
ASEAN-5	10,305	127,858	8.1
Indochina-4	3,630	15,788	23.0

Source: calculated from ASEAN FDI database statistics

Table 2.5: Outward Intra-ASEAN Foreign Direct Investment Flows, 1995-2001.

Source country	Intra-regional outflows 1995-2001	% of total intra-regional outflows 1995-2001
Brunei	244	1.6
Cambodia	6	0.0
Indonesia	1,179	7.7
Laos	10	0.1
Malaysia	2,191	14.4
Myanmar	19	0.1
Philippines	236	1.5
Singapore	9,937	65.1
Thailand	1,420	9.3
Viet Nam	15	0.1
ASEAN	15,257	100.0
ASEAN-5	14,962	98.1
Indochina-4	50	0.3

Source: calculated from ASEAN FDI database statistics

The Current perspective

During the latter half the 1990s, ASEAN has arguably mutated from being a leader to a laggard in the context of capturing both global and Asian FDI flows. As table 2.3 shows, ASEAN's *share* of: i) global, ii) developing world, and iii) Asian FDI flows has been contracting since the mid-1990s, quite markedly and consistently, albeit offset in part by increases in the global FDI 'pie'. This decline can be attributed to a number of factors. First, the immediate impact of the Asian financial crisis of 1997-98, and its after effects, has impaired investor perceptions of some Southeast Asian countries as economically sound and socio-politically stable host countries for FDI, offering consistent and attractive investment regimes. Second, the same regional crisis brought an abrupt halt to most intra-regional FDI flows in Southeast Asia, which as noted above, had been rising markedly in the first half of the 1990s, and from which the Indochina-4 countries in particular had derived substantial inflows.

Third, the rise of China as an increasingly magnetic host country for FDI flows across a wide spectrum of the production value chain, including the kinds of manufacturing operations that several Southeast Asian countries had previously believed to be their forte, has undoubtedly diverted some FDI activity away from ASEAN countries. However, China is now becoming a significant source of foreign investment *into* Southeast Asia, particularly having made forays into several of the Indochina-4 countries.[12] Fourth, a large part of the growth in FDI flows during the 1990s was as a result of cross-border mergers and acquisition (M&A) activity, particularly between companies located in the developed world, and through strategic sale privatisations in some developing countries. This kind of FDI activity primarily involves acquiring existing production capacity, rather than creating new capacity, often driven by TNCs' search for new economies and synergies of scale, and usually characterized by rapid bursts of 'deal flow' in individual industries as a result of consolidation trends. To a large extent, ASEAN missed out on this twin phenomenon, with relatively few large cross-border M&A deals or strategic sale privatisations enacted, at least prior to a select number of distressed corporate and bank asset sales in 1998-99 in those countries hit hardest by the Asian financial crisis. Fifth, more recently, the global economic slowdown has seen FDI activity around the world in general contract substantially since 2001, and ASEAN has not been immune from this most recent trend.

The above notwithstanding, it can be argued that as a result of several decades of attracting substantial foreign investment activity, the region's stock of FDI already comprises most major manufacturing TNCs (in one form or another), particularly in the ASEAN-5 countries, and therefore it is to be expected that new FDI inflows will become a scarcer commodity for these older members of the regional grouping. Rather, foreign investment will largely come from the expansion and/or up-grading, often using reinvested earnings, of FDI projects already present – and in some cases, quite well embedded - in the region. This sort of FDI is not so readily captured by host countries' foreign investment agencies' inflow data, often based on capital pledged for new projects that are approved by the investment agencies, or balance of payment statistics.[13] The pattern of intra-regional FDI flows in Southeast Asia

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[12] The trade and investment cooperation of ASEAN and China will most likely increase in the context of the recently initialled ASEAN-China FTA (and "ASEAN+3", i.e. plus China, Japan and South Korea, remains a distinct possibility).

[13] The Task Force on ASEAN FDI Statistics mentioned earlier is aware of these issues and is starting

partly supports this trend, as a substantial proportion of this activity actually consists of TNCs from outside ASEAN enacting new FDI projects in the Indochina-4 countries, but through their affiliates and subsidiaries located in the ASEAN-5 countries – a phenomenon clearly discerned in the survey findings.

Value Chains: Does ASEAN Matter to Transnational Corporations?
Although only indicative, table 2.6, allied with the above FDI trends, persuasively suggests that ASEAN countries have been successful in attracting manufacturing production and corporate value chains over the last few decades. Six of the 10 current ASEAN member countries[14] are among the 20 countries which have increased their share of non-resource-based manufactures the most since 1985. This reflects the extensive reconfiguration of manufacturing production (as well as services and finance) around the world over the last two or three decades, as a consequence of globalisation processes. Asia, including ASEAN, Greater China and South Korea, has been among the major winners in the global relocation of manufacturing production and assembly (as opposed to R&D, design, marketing and distribution; other parts of the value chain) to developing countries. (Dunning, 1997; Chandler et al 1998; Mirza et al, 2001; UNCTAD, 2002). Even more interesting are the gains made ASEAN countries in shares of high-technology manufacturing exports: Malaysia is second only to China and is followed by Singapore, the Philippines, Thailand and even Indonesia in 5th, 7th, 8th and 12th positions respectively. Of course, the significance of this depends on the definition of "high-technology", but certainly these countries are key beneficiaries in the relocation (or extension) of the electronics, electrical and automotive industries among others.

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to collect data on reinvestments and M&A's. Regular data in both respects will start to appear with the ASEAN Investment Report 2003, as well as national publications.
[14] Only Brunei, Cambodia, Laos and Myanmar are missing, which largely reflects their small size and minimal industrial base and an implicit bias of the table. Of these, Cambodia has certainly increased its manufacturing base considerably (in garments) since the mid 1990s.

Table 2.6 The top 20 export winners, by technology category, 1985-2000

Rank	All sectors	Resource-based manufactures	Non-resource-based manufactures	High-technology manufactures	Medium-technology manufactures	Low-technology manufactures
1	China	Ireland	China	China	China	China
2	United States	United States	Mexico	Malaysia	Mexico	United States
3	South Korea	China	Malaysia	Taiwan	United States	Mexico
4	Mexico	South Korea	United States	South Korea	South Korea	Indonesia
5	Malaysia	India	Thailand	Singapore	Spain	Thailand
6	Ireland	Russian Federation	South Korea	Mexico	Taiwan	Malaysia
7	Thailand	Thailand	Singapore	Philippines	Malaysia	Canada
8	Taiwan	Indonesia	Philippines	Thailand	Thailand	Turkey
9	Singapore	Israel	Indonesia	Ireland	Hungary	India
10	Spain	Japan	Taiwan	Finland	Indonesia	Poland
11	Poland	Switzerland	Ireland	Hungary	Poland	Vietnam
12	Hungary	Chile	Hungary	Indonesia	Czech Republic	Bangladesh
13	Vietnam	Spain	Spain	Israel	Portugal	Honduras
14	India	Australia	Poland	Costa Rica	Singapore	Dominican Rep.
15	Israel	Poland	Turkey	Poland	Turkey	Pakistan
16	Poland	Hong Kong	India	Czech Republic	Argentina	Tunisia
17	Turkey	United Arab Emirates	Israel	Turkey	India	Sri Lanka
18	Czech Republic	Mexico	Vietnam	Malta	Ireland	El Salvador
19	Chile	Iran	Czech Republic	Spain	Slovakia	Guatemala
20	Portugal	Argentina	Bangladesh	Morocco	Australia	Morocco

Source: UNCTAD (2002), p150, table VI.2, based on United Nation's Comtrade database
Note: "Winners" are economies that have raised their world trade market shares by at least 0.1 percent over the period. The top 20 in each category are shown above. ASEAN countries are shaded.

One of the best examples of the relocation of high technology manufacturing, among others, is that of the hard disk drive industry. Many major players in this industry, among them Seagate, Western Digital, Fujitsu, Komag, Fujikura and Minebea (producing at different tiers of the value chain) have transferred the preponderance of their manufacturing production to ASEAN countries[15], leaving other elements of the value chain in their home economies (usually the USA and Japan) or final markets. The global value chains of many TNCs is now configured in this way, especially in industries such as electrical and electronic products, automobiles, textiles and garments, chemicals and chemical products. However, the relative position of ASEAN countries (compared to, say, China, Mexico and Eastern Europe) varies considerably. Nevertheless, ASEAN is very much on the global value chain map (for more details on industries and their positions in individual ASEAN countries see sections 2.4 and 2.5).

Chart 2.1: Functional Integration of Foreign Affiliates of Toyota Motor Corporation in ASEAN, 2000
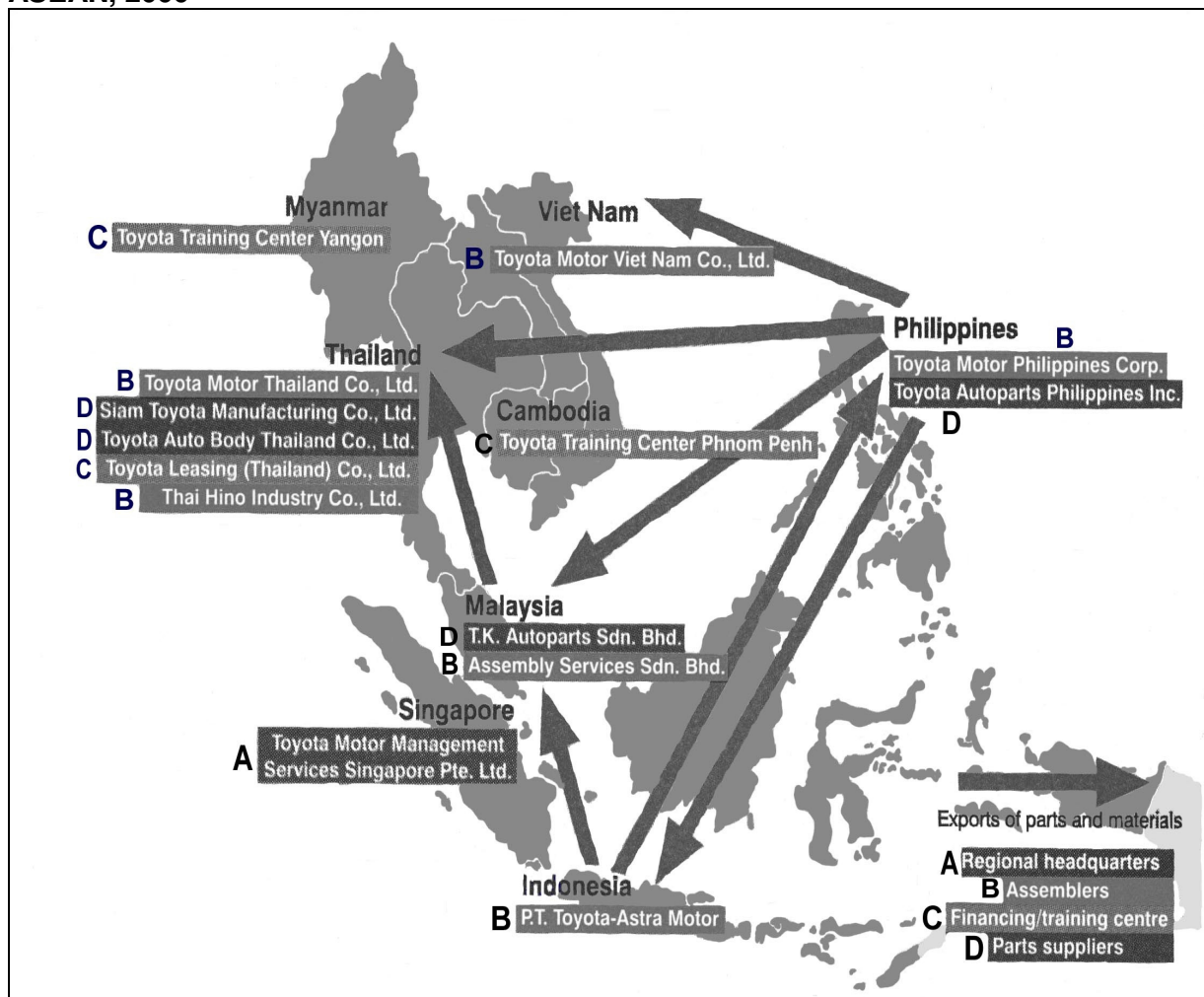
Source: UNCTAD, based on information from www.global.toyota.com, cited in World Investment Report 2001.

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[15] In some cases also China.

Table 2.7: GDP of ASEAN Member Countries (at current market prices), in US$ billions, 1996 to 2001.

	1996	1997	1998	1999	2000	2001
Brunei	5,216	5,102	3,865	4,190	4,315	4,252
Cambodia	3,341	3,270	3,000	3,289	3,343	3,400
Indonesia	227,312	222,702	97,808	140,787	150,567	141,817
Laos	1,860	1,627	1,214	1,415	1,712	1,764
Malaysia	100,888	101,213	72,237	79,149	90,041	88,050
Myanmar	4,956	4,657	4,921	5,430	6,936	7,543
Philippines	82,840	82,764	65,548	76,076	74,837	71,325
Singapore	90,957	94,495	82,259	82,671	92,701	84,909
Thailand	182,107	155,965	112,751	122,698	122,804	115,366
Viet Nam	24,658	26,843	27,209	28,677	31,319	32,793
ASEAN	724,134	698,638	470,810	544,383	578,575	551,219

Source: ASEAN Surveillance Coordinating Unit (ASCU) database

Table 2.8: ASEAN's Merchandise Exports, 1996-2001 (US$ millions)

	1996	1997	1998	1999	2000	2001
Brunei	2,593	2,662	1,891	2,539	3,904	3,533
Cambodia	644	862	900	884	1,261	1,374
Indonesia	50,189	56,297	50,371	51,242	65,407	57,364
Laos	317	313	337	302	330	310
Malaysia	76,880	77,561	71,850	84,097	98,429	87,981
Myanmar	938	975	1,065	1,140	1,644	2,322
Philippines	20,543	25,228	28,726	34,210	37,295	31,243
Singapore	126,016	125,696	110,596	115,593	138,939	124,506
Thailand	54,667	56,725	52,878	56,801	67,889	63,190
Viet Nam	7,255	9,185	9,361	11,540	14,448	15,027
ASEAN	340,041	355,503	327,975	358,347	429,547	384,886
ASEAN-5	328,295	341,507	314,422	341,943	407,959	364,284
Indochina-4	9,154	11,334	11,663	13,865	17,684	19,034

Source: ASEAN Surveillance Coordinating Unit database

Table 2.9: ASEAN's Merchandise Imports, 1996-2001 (US$ millions)

	1996	1997	1998	1999	2000	2001
Brunei	2,345	2,015	1,314	1,250	1,047	1,125
Cambodia	1,072	1,092	1,073	1,159	1,524	1,600
Indonesia	44,240	46,224	31,942	30,598	40,366	34,669
Laos	690	648	553	554	535	523
Malaysia	72,862	74,131	54,169	61,452	77,575	69,598
Myanmar	1,869	2,107	2,451	2,188	2,169	2,595
Philippines	31,885	36,355	28,082	29,252	30,380	28,496
Singapore	123,825	124,694	95,692	104,359	127,377	109,753
Thailand	70,815	61,349	40,643	47,529	62,423	60,665
Viet Nam	10,030	10,432	10,350	10,568	15,387	14,546
ASEAN	359,633	359,048	266,270	288,910	358,783	323,500
ASEAN-5	343,627	342,754	250,529	273,191	338,121	303,181
Indochina-4	13,660	14,279	14,427	14,469	19,615	19,264

Source: ASEAN Surveillance Coordinating Unit database

Table 2.10: ASEAN Trade, 1996-2001 (US$ millions)

	1996	1997	1998	1999	2000	2001
Brunei	4,938	4,677	3,205	3,789	4,952	4,659
Cambodia	1,715	1,954	1,973	2,043	2,785	2,975
Indonesia	94,428	102,521	82,313	81,840	105,773	92,033
Laos	1,007	961	890	856	866	833
Malaysia	149,743	151,693	126,020	145,549	176,004	157,579
Myanmar	2,807	3,081	3,516	3,328	3,813	4,917
Philippines	52,428	61,583	56,808	63,462	67,675	59,739
Singapore	249,841	250,390	206,288	219,952	266,316	234,259
Thailand	125,482	118,074	93,521	104,330	130,312	123,855
Viet Nam	17,285	19,617	19,711	22,108	29,835	29,573
ASEAN	699,674	714,551	594,245	647,257	788,330	708,386
ASEAN-5	671,922	684,261	564,951	615,134	746,080	667,465
Indochina-4	22,814	25,613	26,090	28,335	37,298	38,298

Source: ASEAN Surveillance Coordinating Unit database

Having said this, whatever the attraction of ASEAN as a region, most of the initial investments in ASEAN in the 1980s and 1990s (occasionally earlier) during the current phase of globalisation were aimed at specific countries as production centres. Since then, geographic spillovers (e.g. from Singapore to Malaysia), the regional division of labour (the region has a wide array of factor endowments, not to mention the existence – now – of many potentially interconnected industries, automobiles and electronics, say) and regional policies (AFTA, the AIA) have encouraged the development of regional value chains through reinvestments (see earlier) or, simply, the knitting together of existing companies and products across the region. Chart 2.1 shows an example of such a regional value chain, whereby Toyota and its suppliers have specialised in the production of various components around ASEAN (supported by ASEAN schemes), gaining from economies of scale among other benefits, which are then shipped around the company's network in South East Asia. Other companies are also involved in such regional value chains. ASEAN per se has begun to matter to TNCs, but the extent to which the region matters is not fully known, nor its status in their global strategies. These are among the key questions explored in sub-project 2 of the study (sections 4 and 5).

2.4 COUNTRY STUDIES

The Southeast Asian region comprises a diverse array of eleven national economies, of which ten are currently members of the Association of Southeast Asian Nations, or ASEAN. (East Timor, the region's newest and smallest nation, is not a member of the grouping). ASEAN encompasses roughly half a billion people, with an aggregate gross domestic product (GDP) of around US$550 billion (see table 2.7). In 2001, the region's total exports were valued at US$385 billion, and total trade was estimated at US$708 billion (see tables 2.8-2.10). ASEAN is host to an aggregate stock of foreign direct investment assets valued at roughly US$283 billion in 2001 (table 2.1).

But within this region, the historical backgrounds, socio-cultural, ethnic, language, religious and political profiles, as well as the corporate and macro-economic structures, of the ASEAN member countries are remarkably diverse for ten countries in such close proximity. With the exception of Thailand, all the ASEAN countries are former colonies. Some countries underwent a relatively smooth independence process, whilst others went through considerable pain to gain liberation. More recently, four of the countries in the region (Cambodia, Laos, Myanmar and Vietnam, or the 'Indochina-4') have been undertaking a fairly cautious economic transition process, away from central planning models and towards more market-oriented economic systems. Nonetheless, they remain avowedly socialist in most parts of their political orientation, and in two of these countries a communist party remains firmly in control. A number of other countries in the region have parliamentary democratic systems, with presidents or premiers as the head of state. Thailand's king is the world's long-running monarch, while in Malaysia (with the world's longest-running premier) the position of king is rotated every five years, among the country's state sultans and rajahs.

This regional diversity is also very apparent in the socio-economic context, as portrayed in table 2.11. The city-state of Singapore is less than 3000th the size of Indonesia, the region's largest country by far, and Brunei's population is 0.015% that of Indonesia. Similarly, the GDP of Laos is less than 65th the size of neighbouring Thailand, and Singapore's per capita GDP is 137 times greater than that of

Myanmar. Despite its small geographical size and population, Singapore has a total FDI stock in excess of US$100 billion, which is more than 180 times larger than the other Southeast Asian country with roughly the same population (and a land size that is more than 370 times greater) – Laos. Similarly, Myanmar's FDI stock per capita is less than 0.3% that of Singapore, despite having a population that is more than ten times larger. Beyond the strict confines of FDI, similar extremes within the Southeast Asian region are evident in terms of countries' trade and export performances, along with various other social and macro-economic indicators and benchmarks one might wish to employ (such as life expectancy, education levels, and per capita GDP).

A common perception is to regard the economies of Southeast Asia as being broadly divisible into two sub-regional elements: the larger and more industrially advanced market economies of the 'ASEAN-5' (Indonesia, Malaysia, the Philippines, Singapore and Thailand); and the smaller and less developed transitional economies of the 'Indochina-4' (Cambodia, Laos, Myanmar and Vietnam).[16] This duality also conforms to a number of other features of the Southeast Asian region, such as the founding members of ASEAN (the ASEAN-5) and the most recent members of the regional association (the Indochina-4).[17] Marked income disparities between the two regional 'sub-groups' are also evident – see table 2.11 – with the combined GDP of the Indochina-4 countries roughly a 10th of that of the ASEAN-5. Similarly, the weighted average per capita GDP in the ASEAN-5 countries is more than four times greater than the Indochina-4. As later sections of this report will discuss in more detail, this regional diversity in economic profiles, industrial development, and national income levels among the ten ASEAN countries pose considerable opportunities for business collaboration within Southeast Asia. For example, at the company level, differing income levels can support the division of labour within the region, in support of cross-border production networks and value chains. And at the policy-maker level, the Indochina-4 countries, as newer members of ASEAN, have an opportunity to learn at close hand some of the lessons (both good and bad) of industrial development experienced by member countries like Malaysia and Thailand.

Having been actively seeking to attract FDI inflows for much longer, it is not surprising that the combined FDI stock of the ASEAN-5 countries is almost 12 times greater than for the Indochina-4 'new-comers', although the aggregate FDI stock per person is less than five times greater in the ASEAN-5 countries than in the Indochina-4 sub-group. In terms of trading activity, the ASEAN-5 countries collectively recorded export earnings that were almost twenty times greater than the Indochina-4 countries combined, with an export performance per capita that was almost eight times greater. Clearly, the Indochina-4 countries are not yet as well integrated into the global economy and international business community as the ASEAN-5 countries, although some of these transitional economies – most notably, Vietnam -- are making very considerable steps to bridge elements of this regional dichotomy between 'old' and 'new' ASEAN. This is occurring both 'organically' through numerous business activities (such as simple trading, equity investment, and growing linkages between local and foreign firms, etc.), and also through

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[16] Brunei, the 10th state, one of the smallest, but richest does not sit comfortably in either grouping.
[17] This is also reflected in countries' various commitments to such ASEAN frameworks as the ASEAN Free Trade Area (AFTA) and the ASEAN Investment Area (AIA), with the newer members given later deadlines by which to comply with these regional initiatives.

government policies (such as liberalising foreign investment regimes, signing regional and bilateral trade agreements, and gaining accession to the WTO, etc.).

Selection process for choice of countries in study

Although elements of this report, such as section 3, analyse the whole of the Southeast Asian region, just five of the ten member countries of ASEAN were selected for closer empirical survey and analysis at the company level. Some of the main criteria used in selecting the five countries are depicted in table 2.12. Given time, cost and logistical constraints, it was decided that five countries – precisely half the total ASEAN membership – would be sufficient for the purposes of this research project, if properly chosen to capture a representational spectrum of the economic diversity of the region.

As two of the region's four transitional economies, with some of the lower per capita GDP figures in Southeast Asia, Cambodia and Vietnam were selected for inclusion in the empirical survey. Both countries are relatively new members of ASEAN (Vietnam joined the regional grouping in 1995, and Cambodia is its youngest member), and have an opportunity to learn from some of the other members on ways to develop their economies and corporate sectors, including the harnessing of FDI activity. Both countries have been actively seeking to attract FDI since the early 1990s, with some commendable success, particularly in one of the business sectors chosen for empirical study -- garment manufacturing. Indeed, the aim of attracting and harnessing FDI has been a key component of these countries' wider economic reform and business liberalisation programmes, as they undergo the transition away from centrally-planned economies. Originally, lacking a robust domestic private sector, foreign-invested enterprises (FIEs) have represented, to some extent at least, the importation of an ersatz private sector for the transitional economies, although this is now changing with the gradual evolution of a non-state domestic corporate sector. As FDI activity in these countries is still a relatively new phenomenon, the body of applied research on foreign investment in Cambodia and Vietnam remains fairly limited.

Conversely, the region's other two transitional (and less developed) economies -- Laos and Myanmar – were not selected for empirical study. In the case of Laos, FDI activity in this small economy has been quite limited, overshadowed by a handful of power projects (of which only a few have actually been enacted), and heavily dominated by investors from neighbouring Thailand. In terms of the specific business sectors selected for this study, foreign investment activity in the garment and textiles industry has occurred in Laos, but at a relatively small scale; with almost no FDI activity pertaining to the electrical and electronics sector. In the case of Myanmar, various economic and business sanctions against the current regime have resulted in a marked decline in FDI inflows over recent years (including the withdrawal of some high profile FIEs, primarily as a result of shareholder activism and consumer pressure), and the post-1988 political situation has severely contorted the profile of foreign investment in the country. As a consequence, FDI activity in the two broad business sectors selected for investigation (electrical and electronics, and garments and textiles) in Myanmar is limited at present. It was therefore decided not to conduct empirical survey work in Laos and Myanmar, as it would have been difficult to gather an adequately robust sample size.

Table 2.11: ASEAN Member Countries Compared

	Area (sq km)	Pop. (m)	Life expectancy at birth	GDP (US$ mn)	GDP per cap. (US$)*	FDI stock (US$ mn), 2001	FDI stock (US$) per cap.	Exports (US$ mn), 2001	Exports (US$) per cap.
Brunei	5,770	0.3	-	4,252	12,245	3,999	13,330	3,533	11,777
Cambodia	181,040	11.5	54	3,400	270	1,664	145	1,374	120
Indonesia	1,919,440	200.0	66	141,817	691	57,361	287	57,364	287
Laos	236,800	4.9	54	1,764	330	574	117	310	63
Malaysia	329,750	22.2	73	88,050	3,696	53,302	2,401	87,981	3,963
Myanmar	678,500	46.4	57	7,543	151	3,314	71	2,322	50
Philippines	300,000	68.6	70	71,325	914	14,232	207	31,243	455
Singapore	633	3.9	-	84,909	20,659	104,323	26,749	124,506	31,925
Thailand	514,000	61.8	69	115,366	1,831	28,227	457	63,190	1,022
Vietnam	329,560	78.0	69	32,793	416	15,923	204	15,027	193
ASEAN	4,495,493	497.6	64	551,219	1,054	282,919	569	386,851	777
ASEAN-5	3,063,823	356.5	70	501,467	1,337	257,445	722	364,284	1,022
Indochina4	1,425,900	140.8	59	45,500	314	21,475	153	19,034	135

Sources: various. Totals and averages for ASEAN, ASEAN-5 and Indochina-4 calculated by report authors.

*Weighted for ASEAN, ASEAN-5 and Indochina-4 averages.

Table 2.12: Criteria Used in Selecting Five ASEAN Countries for Empirical Survey Work

	BRUNEI	CAMBODIA	INDONESIA	LAOS	MALAYSIA
Presence of garment and textile industry	Yes, but small	Yes	Yes	Yes, but small	Yes
FDI activity in garment and textiles industry	Little	Yes, considerable	Yes	Yes, but little	Yes
Presence of electrical and electronics industry	No	Very small	Yes	Very small	Yes, substantial
FDI activity in electrical and electronics industry	No	Yes, but very limited	Yes	Yes, but very limited	Yes, substantial
Relative scale of FDI activity	Small	Small but growing	Large but contracting	Small (and focus on energy)	Yes, substantial
ASEAN membership since	1984	1999 (youngest member)	1967 (co-founder)	1997	1967 (co-founder)
Economic classification	Developing country	Less developed country	Developing country	Less developed country	Developing country
Per capita GDP (US$)	12245	270	691	330	3696

	MYANMAR	PHILIPPINES	SINGAPORE	THAILAND	VIETNAM
Presence of garment and textile industry	Yes	Yes	No	Yes	Yes, substantial
FDI activity in garment and textiles industry	Yes, but contracting	Yes	No	Yes	Yes
Presence of electrical and electronics industry	Very small	Yes	Yes, substantial	Yes, substantial	Small but growing
FDI activity in electrical and electronics industry	Yes, but very limited	Yes	Yes, substantial	Yes, substantial	Yes
Relative scale of FDI activity	Relatively small and constrained	Yes	Yes, substantial	Yes	Yes
ASEAN membership since	1967 (co-founder)	1967 (co-founder)	1967 (co-founder)	1967 (co-founder)	1995
Economic classification	Less developed country	Developing country	Developed country	Developing country	Developing country
Per capita GDP (US$)	151	914	20659	1831	416

Two of the other countries included for empirical study were Malaysia and Thailand. These countries were original founding members of ASEAN, have relatively well developed economies and industrial sectors in the Southeast Asian context, and have a great body of experience in attracting and hosting FDI activity over the last 20-30 years. The community of FIEs are an important and well-established element of the wider corporate sector in these two countries, and have established a substantial presence in various business sectors, including the two chosen for this study: electrical and electronics, and garments and textiles. As a result, a relatively substantial body of research on foreign investment activity in Malaysia and Thailand exists.

Also a founding member of ASEAN, Singapore was the fifth country selected for empirical study, primarily because of its role as the predominant location for regional headquarters of many multinational enterprises active in Southeast Asia and beyond. As the only developed economy in the region, Singapore has also been the region's leading source of intra-regional FDI flows. Singapore's hub role made the city-state's inclusion in the empirical survey crucial, given the need to better understand the process of regionalisation in Southeast Asia, as well as the cross-border integration of MNEs' manufacturing and distribution activities within the region. Singapore's enviable success in attracting substantial FDI inflows has made the city-state the subject of numerous studies of its foreign investment policies.

Conversely, Brunei was not selected for empirical study, largely because of its rather unique economic profile, which is heavily reliant on upstream oil production, and the relatively small scale of FDI activity in the sultanate. Indonesia was also not selected for empirical study, even though it has adequate FDI activity in the two chosen business sectors. Recent years have seen substantial net outflows of foreign investment from the country, largely attributed to the deterioration in its economy, and heightened political risk considerations. The turmoil faced by the country at the time that this study was designed and conducted did not make it wholly conducive to empirical analysis. The Philippines was also not selected for closer examination, although it probably could have served equally as well as Thailand, as one of the five countries chosen for empirical study, although its FDI stock per capita is roughly half that of Thailand.

Let us now briefly profile each of the five host country economies selected for empirical study.

Malaysia
Malaysia has a population size of roughly 24 million, with an average per capita GDP of around US$3,700 (roughly 3.5 times greater than the regional average). Roughly 60% of the population is urban, and approximately 8% of Malaysia's citizens are classified as living in poverty. The government has placed considerable emphasis on education, and both the gross secondary school enrolment ratio (103% for females and 93% for males) and adult literacy rates (83% for females and 91% for males) in Malaysia have improved markedly over the last two decades, broadly in parallel with the industrial development of the country. FDI inflows have played an important part in the fairly rapid industrialization of Malaysia over the last twenty years. The industry sector now accounts for roughly half of the country's GDP, with manufacturing

activity representing about 32% of total GDP. The services (42%) and agriculture (8%) sectors make up the rest of Malaysia's GDP. In 2001, Malaysia had a domestic savings rate of 42% of GDP, and a domestic investment rate of roughly 25% of GDP.

Some of Malaysia's leading industry activities – and export earners – include: a wide range of electronic and electrical goods, garments and textiles, footwear, chemical and petroleum products, rubber, palm oil, and wood products. Like Singapore, Malaysia's main export destinations are: the US, Singapore, and Japan.[18] Having adopted a consistently welcoming stance towards FDI inflows, Malaysia has accumulated an FDI stock of over US$53 billion, or US$2,400 per citizen. By developing country standards, this is high, and greater than any other country in the region, except Brunei and Singapore. FIEs are an important contributor to total industrial production, as well as a major generator of total export earnings of almost US$88 billion in 2001 – ahead of such regional peers as Indonesia, the Philippines and Thailand. Within the manufacturing sector, FDI projects related to radio, television and communication equipment (ISIC category 32) particularly stand out, both in terms of the number of individual projects and the aggregate capital committed by foreign investors. Other strong industry sectors for FDI activity in Malaysia include petroleum-related projects, chemicals, plastics, paper products, and mineral-related projects.

Singapore
Singapore's population is roughly 4 million, although a substantial number of overseas workers add to this number. The city-state's average per capita GDP, at over US$20,000, is significantly higher than of any other country in Southeast Asia, and almost twenty times the regional average. Not surprisingly for such an affluent country, the school, tertiary and university enrolment rates are fairly high in Singapore, and the adult literacy rate is 88% for females and 96% for males. Unlike the other ASEAN countries, Singapore lacks an agricultural sector of any note, with industry currently accounting for roughly 32% of GDP, and the services sector constituting the remaining 68%. Manufacturing activity in Singapore accounted for roughly 23% of the city-state's GDP in 2001, down slightly from 26% in 1980.

Singapore's corporate sector is concentrated in a number of areas, including: banking and financial services, high-end electronics and computer components, chemicals and petroleum-related activities, property, trading, and education and healthcare services. Beyond foreign currency earnings from various services, some of Singapore's major exports include: petroleum products, industrial machinery, audio visual equipment, various electronic components, as well as beverages. Singapore's stock of FDI is roughly twice that of Malaysia, thanks in large part to (both direct and indirect) FDI policies that have been extremely adept at attracting FIEs on a remarkably consistent basis for roughly 30 years. As the economy has matured over this time, so too has the city-state's FDI strategies, in order to attract FDI activity in desired business sectors.[19] More recent years have seen Singapore position itself as an attractive location for the regional (and in some cases global) headquarters of MNEs, as well as a centre for financial services, education, health

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[18] These three countries are also Malaysia leading import sources.
[19] The Singapore government has arguably been the most proactive country in the region in designing and implementing FDI strategies, including the liberal use of various incentives programmes, and even directly co-investing in specific projects with foreign investors.

care, and the life sciences.[20] Within just the manufacturing sector, the period 1995-2001 in Singapore saw the greatest activity in new FDI projects focused on radio, television and communications equipment (ISIC category 32), and the petrochemical industry (ISIC 24). This is broadly echoed in the profile of Singapore's manufactured export commodities, which are led by petroleum products and telecommunications equipment. The leading three export destinations have tended to be: Malaysia, the US and Japan.

Table 2.13: Education Indicators in ASEAN

| Country | Gross Secondary School Enrolment Ratio (%) | | | | Adult Literacy Rate (%) | | | |
| | 1990 | | Latest Year | | 1990 | | 2000 | |
	Female	Male	Female	Male	Female	Male	Female	Male
Cambodia	19	45	15	29	48	78	57	80
Indonesia	40	48	77	77	73	87	82	92
Laos	19	31	27	39	20	53	59	82
Malaysia	58	55	103	93	75	87	83	91
Myanmar	23	23	36	36	74	87	81	89
Philippines	73	74	78	77	92	93	95	96
Singapore	66	70	…	128	83	95	88	96
Thailand	30	31	89	87	90	95	94	97
Vietnam	31	33	58	64	87	94	91	96

Source: Asian Development Bank's "Key Indicators", 2002.
Note: Excludes Brunei.

Thailand

Thailand has a population of around 63 million, with an average per capita GDP of slightly below US$2,000 (roughly double the regional average). About 20% of the population is urban, and the majority of Thais remain located in rural areas. Just under 13% of the total population live in poverty, primarily in rural areas. Like Malaysia, Thailand has seen a commendable increase in its secondary school enrolment ratios (see table 2.13), and some improvement in its adult literacy rates: 94% for females and 97% for males. In 2001, Vietnam's domestic savings rate was around 27% of GDP, and its domestic investment rate was 22% of GDP.

Also like Malaysia, Thailand has witnessed a substantial increase in its industrial capacity over the last twenty years, driven in part by FDI activity, albeit not to the same extent as its southern neighbour. Industry accounts for roughly 42% of Thailand's total GDP, with manufacturing activity representing about 34% of the country's total GDP – the highest proportion among all the ASEAN countries (including Malaysia). The services (49%) and agriculture (9%) sectors account for most of the rest of Thailand's GDP.

Thailand's major industries – and export earners – include: garments and textiles, footwear, electronic equipment of various kinds, computers and their components, integrated circuits, automobiles, and jewellery. In terms of manufactured

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[20] Details of Singapore's curent policy stance towards FDI can be seen in the final report of the Economic Review Committee, 'New Challenges, Fresh Goals: Towards a Dynamic Global City', February 2003. See: <http://www.mti.gov.sg/public/ERC/frm_ERC_Default.asp?sid=150&cid=1487>.

commodities, Thailand's five main export categories in 2001 comprised: computers and computer components, electrical appliances, textile products, integrated circuits and parts, and vehicle parts and accessories. The six leading export destinations were the US, Japan, Singapore, Hong Kong, China and Malaysia (in descending order). Thailand has accumulated an FDI stock of around US$28.3 billion, or US$460 per person. As with Malaysia, FIEs have become an important source of export earnings, which amounted to over US$63 billion in 2001, ahead of Indonesia or the Philippines. Thailand's exports per capita are also ahead of these same regional peers, but less than a third of Malaysia's. Like Singapore, in the period 1995-2001, Thailand saw the greatest activity in new manufacturing FDI projects focused on the chemical industry (ISIC 24), and radio, television and communications equipment (ISIC category 32).

Cambodia
Cambodia's population of around 12 million has an average per capita GDP of less than US$300. This is slightly below the average for the four transitional economies of the region, and roughly a quarter of the weighted average for the whole of Southeast Asia. Less than 20% of the population resides in urban areas, in what remains a predominantly agricultural and natural resource-oriented economy. The majority of the workforce remains oriented towards agricultural production, at a family enterprise level. Around 36% of Cambodians live in poverty – one of the highest levels in ASEAN, albeit below the Philippines, Laos and Vietnam. Official figures suggest that Cambodia has the lowest domestic savings rate in Southeast Asia, as a percentage of GDP, at around 10% -- markedly below the 20-25% range for countries like Indonesia, the Philippines, Thailand and Vietnam, and the 40-50% range for countries like Malaysia and Singapore. Cambodia's education levels are also the lowest in ASEAN, with secondary school enrolment ratios actually declining during the 1990s (down to 15% for females and 29% for males). Partly as a consequence, the adult literacy rate is low, at 57% for females and 80% for males – below that of even Laos. The agricultural sector remains a very significant element of the Cambodian economy, accounting for around 39% of GDP,[21] the services sector another 38%, and the remaining 23% generated by industry, of which manufacturing represents about 17% of Cambodia's total GDP.

Major industries in Cambodia include garment production, various forms of wood processing, and food processing. The country's major export items comprise of garments, processed timber and wood products (such as furniture), and natural rubber. Garment production is largely responsible for the doubling of Cambodia's total export volumes since the mid-1990s, and also accounts for the presence of the US, the UK and Germany as the top three destinations for Cambodia's exports in 2001, overtaking the country's more traditional export markets of Thailand, Vietnam and Singapore.[22] Having only recently begun to attract foreign investment inflows, the country has so far accumulated an FDI stock of around US$1.7 billion, or US$145 per person. This is the lowest in the region after Laos, with much of the FDI activity focused on the garment industry, along with wood processing and tourism-related projects. However, with a gross domestic investment rate of around 15% of

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[21] Within ASEAN, only the highly agrarian economies of Laos and Myanmar have larger agricultural sectors, as measured as a proportion of their total GDPs.
[22] There has literally been an explosion in Cambodian exports to the US in recent years, most of which is attributable garments.

GDP (the lowest in Southeast Asia), the importance of FDI in Cambodia's economic development should not be under-estimated

Garment-related FDI projects (ISIC category 18) accounted for more than half the total number of manufacturing FDI projects licensed in Cambodia between 1995 and 2001, and 24% of the total capital committed by foreign investors in manufacturing projects during that period. A similar amount of capital was committed by foreign investors to a much smaller number of wood processing FDI projects (ISIC 20). Garments, wood processing, and mining projects collectively accounted for the bulk (64%) of new FDI projects in Cambodia between 1995 and 2001, as measured by the cost of projects. Cambodia's attraction as a host country has been hampered in part by a perceptions of some socio-political instability. As a result, it has higher political risk than most other countries in the region, as well as inadequacies in the area of physical infrastructure, human capital, and worrisome levels of corruption. The government has sought to offset this in part by offering the most attractive corporate income tax rates for foreign investors in the Indochina sub-region.[23] Cambodia's export earnings – of US$1.4 billion in 2001, or roughly US$120 per head of population, are also fairly modest by regional standards.

Vietnam
Finally, Vietnam's population of around 80 million is the second largest in Southeast Asia, after Indonesia. As a result of economic reforms enacted since the mid-1980s, the average per capita GDP in the country has been gradually rising, and now exceeds US$400; less than a third of the average for the ASEAN-5 countries, but higher than the average for the Indochina-4 countries. Roughly a quarter of the population lives in urban locations, with 75% still rural. Thirty-seven percent of the population lives in poverty (down from 58% in the early 1990s), mostly in rural areas. In terms of education levels, Vietnam's secondary school enrolment ratios (58% for females and 64% for males) and adult literacy rates (91% for females and 96% for males) are the highest among the transitional economies of ASEAN, and are broadly comparable to those of Indonesia and the Philippines.

In 2001, Vietnam had a domestic savings rate of 27% of GDP, and a domestic investment rate of 26% of GDP. As in several other ASEAN countries, FDI activity has played an important role in the development of the industrial sector in Vietnam since the early 1990s. As a proportion of total GDP, the agricultural sector has roughly halved over the last twenty years, to around 24% of total GDP, whilst industry (37%) and the services sector (39%) have grown markedly (as has the economy as a whole). Nonetheless, manufacturing activity in Vietnam is estimated to account for less than 20% of total GDP – only slightly greater proportionally than Cambodia and Laos. Despite the existence of several thousand state-owned enterprises, and the recent burgeoning of private (joint stock or limited liability) companies, the majority of the workforce remains oriented towards agriculture, forestry and fishing activities, largely as household enterprises.

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[23] The standard corporate income tax rate in Cambodia is 20%, but can be as low as 9% for eligible companies. Cambodia's policy conforms with Bergsman's assertion that small and 'otherwise less attractive countries that have potential as export platforms may need to have effective rates [of corporate income tax] not higher than 10 or 15 percent, or maybe even less for exporters, if they hope to get a lot of FDI' (Bergsman 1999: 7).

Largely as a result of productivity gains unleashed by the economic reform and business liberalisation programme since the mid-1980s, Vietnam has become one of the world's leading exporters of rice, coffee, various kinds of sea-foods, and other soft commodities. The country is also a major exporter of crude oil and some mineral commodities (e.g. coal), as well as garments and footwear.[24] Major export destinations comprise Japan, Australia, China, the US and Germany. Vietnam's accumulated FDI stock exceeds US$16 billion, or slightly over US$200 per person – roughly the same as the Philippines, and half that of Thailand. Again, FIEs contribute a proportion of the country's export earnings, totalling US$15 billion in 2001, or just under US$200 per person – roughly half that of the Philippines. Vietnam's FDI inflows and export earnings are both markedly greater than those of the other transitional economies of the ASEAN region.[25]

2.5 INDUSTRY STUDIES

All of the foreign-invested companies surveyed in this research project were manufacturing firms involved in one of two broad business sectors[26]:

> ■ electrical and electronics (ISIC categories 30-32, and the home appliances n.e.c. section of ISIC category 29);[27] or

> ■ textiles and garments (ISIC categories 17-18).

These two broad business sectors were chosen for this survey primarily because of the following factors:

> ■ companies in these two industries are widely dispersed across most, if not quite all, ASEAN member countries (including the five countries selected for this empirical survey), providing an opportunity for cross-country learning and the establishment of regional value chains;

> ■ the garment sector has been a substantial and growing component of total manufacturing industry (and employer) in both Cambodia and Vietnam, including a substantial FIE presence;

> ■ similarly, the electronics sector is a very substantial element of the manufacturing sectors in Malaysia, Thailand and Singapore, also with a very substantial FIE presence;

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[24] The recent signing of a bilateral trade agreement with Washington is already prompting a large increase in Vietnamese exports to the US, most notably for garments, which currently face no quota restrictions (unlike to the EU).

[25] In terms of Cambodia and Laos, this can largely be attributed to the larger scale, and slightly more developed profile, of the Vietnamese economy. In the case of Myanmar, this is largely attributable to the end of economic sanctions against Vietnam, whereas the former continues to face various international sanctions.

[26] Although a few companies in other industries were surveyed as "controls".

[27] As the home appliances n.e.c. element (ISIC code 293) is only one of three elements under ISIC category 29, the statistics provided in this section of the report, on the aggregate size of FDI activity in the electrical and electronics sector in ASEAN are derived from just ISIC categories 30-32. Consequently, the regional and country statistics given below slightly under-report the full scale of FDI in the electrical and electronics sector, which – if home appliances n.e.c. were included – would be larger.

■ these two manufacturing sectors account for a substantial proportion of individual countries' and the ASEAN region's industrial output and export volumes and foreign exchange earnings, albeit to varying degrees in different countries.

■ with regard to poverty issues, both manufacturing sectors – and especially garments manufacturing – are relatively labour intensive and major employers.

Table 2.14 compares the scale of Southeast Asia's FDI activity in these two broad business sectors with some other industry sectors that were not selected for empirical study, such as motor vehicles, wood products, and footwear. For example, the stock of motor vehicle-related FDI projects in Thailand is quite substantial, and the industry as a whole uses cross-border production networks, but its presence is small in several of the other ASEAN countries (such as the Indochina-4 countries), and therefore does not provide the degree of regional spread necessary for a study of this kind.

As can be seen in tables 2.15 to 2.18, these two broad manufacturing sectors (electrical and electronics; textiles and garments) accounted for exactly a third of all manufacturing FDI projects licensed in ASEAN between 1995 and 2001, and constituted 24% (or US$57.2 billion) of total project costs for manufacturing FDI projects (US$238.8 billion) in the region over the same period.[28] In Cambodia, they accounted for 55% of all FDI manufacturing projects licensed in 1995-2001, of which the vast majority was garment-making FIEs. In Vietnam, these two broad sectors accounted for 29% of all FDI manufacturing projects licensed in 1995-2001, with garment companies again accounting for a large proportion of the total. In Malaysia, they accounted for almost 35% of all FDI manufacturing projects licensed in 1995-2001, with electronics-related FIEs dominant.   And in Thailand, the two broad sectors together represented almost 30% of all FDI manufacturing projects licensed in the period 1995-2001, with electronics-related FIEs again dominating.[29] In terms of aggregate FDI capital pledges, the two broad sectors represented just under 33% of total FDI manufacturing project costs in 1995-2001, for both Cambodia and Vietnam. The equivalent figures for Malaysia, Singapore and Thailand were: 35%, 45%, and 25% respectively.

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[28] It is worth remembering, however, that since the early 1990s there has been a considerable increase in reinvestment in ASEAN economies (to be expected, as TNC investments mature). Unfortunately, data on reinvested income are, as yet, not collected by any ASEAN country and therefore the FDI flows reported (by country or industry) during the period 1995-2001 are likely to be underestimates.

[29] No equivalent figure is available for Singapore.

Table 2.14: Criteria Used in Selecting the Two Manufacturing Sectors for Empirical Survey Work

	Cam bodia	Indo nesia	Laos	Malay sia	Myan mar	Philip pines	Singa pore	Thail and	Viet nam*	ASEAN
FDI inflows in garments and textiles (1995-2001) % of total	29.4	2.0	6.2	2.1	11.0	1.2	0.0	2.3	23.0	2.1
FDI inflows in electrical and electronics (1995-2001) % of total	3.4	4.4	0.5	32.6	2.0	29.7	44.7	22.3	9.9	20.7
FDI inflows in motor vehicles (1995-2001) % of total	0.9	3.7	0.0	3.2	0.6	2.7	0.0	1.5	6.6	2.1
FDI inflows in leather and footwear (1995-2001) % of total	3.5	0.5	0.9	0.1	0.6	0.2	0.0	0.3	6.2	0.4
FDI inflows in wood products (1995-2001) % of total	23.9	0.6	3.2	0.3	2.0	0.4	0.0	0.3	6.3	1.0
New FDI projects in garments and textiles (1995-2001) % of total	54.6	13.6	27.4	4.4	37.0	14.2	n.a.	4.4	22.1	11.0
New FDI projects in electrical and electronics (1995-2001) % of total	0.5	15.6	2.8	30.2	6.0	26.7	n.a.	25.2	6.9	22.3
New FDI projects in motor vehicles(1995-2001) % of total	1.2	4.0	0.0	0.5	2.0	5.9	n.a.	3.5	6.1	3.0
New FDI projects in leather and footwear (1995-2001) % of total	5.9	4.0	7.5	0.4	3.0	2.5	n.a.	1.6	6.1	2.4
New FDI projects in wood products (1995-2001) % of total	3.4	6.3	8.4	4.2	7.0	1.5	n.a.	0.5	9.9	3.7

Source: Calculated from statistics in ASEAN FDI Database
Note: Vietnam % data for 2000 and 2001 only.

Table 2.15: ASEAN's FDI Inflows for Garments, Textiles, Electrical and Electronics Sectors, 1995-2001 (No. of projects)

	ISIC code	ASEAN	Cambodia	Laos	Myanmar	Vietnam**	Indonesia	Malaysia	Philippines	Singapore	Thailand
Textiles	17	474	9	1	4	45	176	99	68	n.a.	81
Garments	18	1,009	298	28	33	171	234	74	172	n.a.	64
- textiles and garments combined	17 and 18	1,483	307	29	37	216	410	173	240	n.a.	145
Office, accounting and computing machinery	30	161	0	0	0	10	98	2	52	n.a.	0
Electrical machinery	31	659	2	2	4	35	49	313	165	n.a.	99
Radio, TV and communication equipment	32	2,190	1	1	2	22	324	869	235	n.a.	739
- electrical and electronics combined	30 to 32	3,010	3	3	6	67	471	1,184	452	n.a.	838
- the above two broad sectors combined	17-18 and 30 to 32	4,493	310	32	43	283	881	1,357	692	n.a.	983
Total manufacturing sector*	-	13,468	562	106	100	976	3,021	3,919	1,691	n.a.	3,327

Source: ASEAN FDI Database.
Notes: (a) Excludes Vietnam, which does not break down its manufacturing FDI by ISIC sectors for the period prior to 2000.
   (b)From 2000 to first half of 2002 only.

Table 2.16: ASEAN's FDI Inflows for Garments, Textiles, Electrical and Electronics Sectors, 1995-2001
(No. of projects, as % of total in manufacturing)

	ISIC code	ASEAN	Camb odia	Laos	Myan mar	Viet nam**	Indo nesia	Malay sia	Philip pines	Singa pore	Thai land
Textiles	17	3.5	1.6	0.9	4.0	4.6	5.8	2.5	4.0	n.a.	2.4
Garments	18	7.5	53.0	26.4	33.0	17.5	7.7	1.9	10.2	n.a.	1.9
- textiles and garments combined	17 and 18	11.0	54.6	27.4	37.0	22.1	13.6	4.4	14.2	n.a.	4.4
Office, accounting and computing machinery	30	1.2	0.0	0.0	0.0	1.0	3.2	0.1	3.1	n.a.	0.0
Electrical machinery	31	4.9	0.4	1.9	4.0	3.6	1.6	8.0	9.8	n.a.	3.0
Radio, TV and communication equipment	30 to 32	16.3	0.2	0.9	2.0	2.3	10.7	22.2	13.9	n.a.	22.2
- electrical and electronics combined	17-18 and 30 to 32	22.3	0.5	2.8	6.0	6.9	15.6	30.2	26.7	n.a.	25.2
- the above two broad sectors combined	-	33.4	55.2	30.2	43.0	29.0	29.2	34.6	40.9	n.a.	29.5
Total manufacturing sector*	-	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	n.a.	100.0

Source: ASEAN FDI Database.
Notes: (a) Excludes Vietnam, which does not break down its manufacturing FDI by ISIC sectors for the period prior to 2000.
(b) From 2000 to first half of 2002 only.

Table 2.17: ASEAN's FDI Inflows for Garments, Textiles, Electrical and Electronics Sectors, 1995-2001 (US$)

	ISIC code	ASEAN	Cambodia	Laos	Myanmar	Vietnam**
Textiles	17	4,027,002,144	82,817,187	400,000	34,645,000	373,668,000
Garments	18	1,320,356,287	362,744,422	28,891,379	124,470,000	281,310,000
- textiles and garments combined	17 and 18	5,347,358,431	445,561,609	29,291,379	159,115,000	654,978,000
Office, accounting and computing machinery	30	801,265,049	0	0	0	6,900,000
Electrical machinery	31	5,138,235,850	51,000,000	1,490,000	16,484,000	128,668,000
Radio, TV and communication equipment	32	45,908,616,639	725,000	1,000,000	11,861,000	145,716,000
- electrical and electronics combined	17-18 and 30 to 32	51,848,117,538	51,725,000	2,490,000	28,345,000	281,284,000
- the above two broad sectors combined	-	57,195,475,969	497,286,609	31,781,379	187,460,000	936,262,000
Total manufacturing sector*	-	238,797,312,884	1,513,189,857	470,454,553	1,441,761,000	2,842,836,000

	ISIC code	Indonesia	Malaysia	Philippines	Singapore	Thailand
Textiles	17	1,537,996,000	917,423,733	118,332,432	9,982,337	1,002,713,455
Garments	18	324,896,000	116,355,084	72,722,009	7,432,481	118,455,056
- textiles and garments combined	17 and 18	1,862,892,000	1,033,778,817	191,054,441	17,414,818	1,121,168,511
Office, accounting and computing machinery	30	477,070,000	6,048,531	311,646,517	0	0
Electrical machinery	31	272,887,000	1,096,668,543	2,169,534,802	384,891,752	1,096,114,937
Radio, TV and communication equipment	32	3,427,511,000	14,672,055,495	2,274,095,030	15,740,498,962	9,631,073,406
- electrical and electronics combined	17-18 and 30 to 32	4,177,468,000	15,774,772,569	4,755,276,349	16,125,390,714	10,727,188,343
- the above two broad sectors combined	-	6,040,360,000	16,808,551,386	4,946,330,790	16,142,805,532	11,848,356,854
Total manufacturing sector*	-	94,609,027,500	48,329,279,668	15,997,123,666	36,108,421,405	48,121,100,784

Source: ASEAN FDI Database.
Notes: (a) Excludes Vietnam, which does not break down its manufacturing FDI by ISIC sectors.
(b) From 2000 to first half of 2002 only.

Table 2.18: ASEAN's FDI Inflows for Garments, Textiles, Electrical and Electronics Sectors, 1995-2001 (investment, as % of total in manufacturing)

	ISIC code	ASEAN	Cam bodia	Laos	Myan mar	Viet nam**	Indo nesia	Malay sia	Philip pines	Singa pore	Thai land
Textiles	17	1.7	5.5	0.1	2.4	13.1	1.6	1.9	0.7	0.0	2.1
Garments	18	0.6	24.0	6.1	8.6	9.9	0.3	0.2	0.5	0.0	0.2
- textiles and garments combined	17 and 18	2.2	29.4	6.2	11.0	23.0	2.0	2.1	1.2	0.0	2.3
Office, accounting and computing machinery	30	0.3	0.0	0.0	0.0	0.2	0.5	0.0	1.9	0.0	0.0
Electrical machinery	31	2.2	3.4	0.3	1.1	4.5	0.3	2.3	13.6	1.1	2.3
Radio, TV and communication equipment	32	19.2	0.0	0.2	0.8	5.1	3.6	30.4	14.2	43.6	20.0
- electrical and electronics combined	17-18 and 30 to 32	21.7	3.4	0.5	2.0	9.9	4.4	32.6	29.7	44.7	22.3
- the above two broad sectors combined	-	24.0	32.9	6.8	13.0	32.9	6.4	34.8	30.9	44.7	24.6
Total manufacturing sector*	-	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ASEAN FDI Database.
Notes: (a) Excludes Vietnam, which does not break down its manufacturing FDI by ISIC sectors.
(b) From 2000 to first half of 2002 only.

The presence of the electrical and electronics industry is particularly pronounced in the region's larger economies of Malaysia, the Philippines, Singapore and Thailand, and also apparent to a lesser extent in the region's two most populace countries: Indonesia and Vietnam. Although there is a growing domestic capability in the electrical and electronics sector within the countries of Southeast Asia (particularly evident in Singapore), most notably in terms of component manufacturing, the presence of foreign firms' subsidiaries is also very apparent. Indeed, some of the world's leading electronics firms have an assembly or production presence in the majority of ASEAN member countries. To some extent at least, the same profile is true for the textiles and garments industry in Southeast Asia, which is very well represented in Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Vietnam – both in terms of domestic and foreign-invested firms. (Laos and Myanmar have also made some strides in this sector, although the former lacks a sufficient urban workforce for large-scale garment production, and the latter has been constrained by political issues that have prompted numerous foreign-invested garment companies to withdraw from manufacturing operations in the country.[30])

Let us briefly look at these two broad manufacturing sectors in Southeast Asia in turn.

Electrical and electronics industry
Among the companies interviewed for this survey were those involved in the manufacture of:

- office, accounting and computing machinery (ISIC category 30);

- electrical machinery (ISIC category 31);

- and radio, television and communications equipment (ISIC category 32).

This manufacturing sub-sector, as represented by domestic and foreign firms alike, is substantial in ASEAN, and hosts a high presence of FIEs. In Thailand, for example, the computer and electronic components industry alone accounts for just 1% of total employment, but 4% of national GDP, 20% of total FDI inflows in 2000, and 37% of the country's export earnings in that year (McKinsey 2002). Average annual growth in this sector has been 8.9% during the 1990s, thereby significantly out-pacing Thailand's GDP growth. FIEs account for 84% of companies in this sector in Thailand, attracted in part by various incentive programmes. In the Southeast Asian region as a whole, Singapore, Thailand, the Philippines and Malaysia are the world's four largest producers of hard disk drives, ahead of China and Korea.

As can be seen in tables 2.15 to 2.16, over 3,000 electrical and electronics-related FDI projects were established in the ASEAN region between 1995 and 2001, of which roughly two-thirds were in ISIC category 32 (radio, television and communications equipment). These electrical and electronics-related FDI projects accounted for roughly 22% of total manufacturing FDI projects approved in ASEAN during that period. In terms of both the ASEAN region as a whole and the specific

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[30] Such companies have tended to come under pressure from both consumer lobby groups and shareholders alike to withdraw from Myanmar, due to concerns over the country's political and human rights record.

countries surveyed here, Malaysia was the dominant host country for new electrical and electronics FDI projects in the period 1995-2001, capturing 39% (1,184 projects) of the total for the ASEAN region, followed by Thailand (838 projects, representing 28% of the regional total). In contrast, Cambodia was host to almost negligible FDI activity in electrical and electronics manufacturing FDI (just 3 projects), and Vietnam received just 2% (67 projects) of the region's total FDI inflows in this sector during the 1995-2001 period. As table 2.16 shows, electrical and electronics projects accounted for 30% of Malaysia's total number of manufacturing FDI projects approved in the period 1995-2001, 25% for Thailand, 7% for Vietnam, and less than 1% for Cambodia. (In terms of ASEAN countries not surveyed here, the equivalent figures were: 3% for Laos, 6% for Myanmar, 16% for Indonesia, and 27% for the Philippines.)

If we look at the electrical and electronics-related FDI activity in ASEAN between 1995 and 2001, but this time in terms of the cost of projects (rather than the number of projects licensed) -- as shown in tables 2.17 and 2.18 – a very similar regional picture is apparent. This business sector again accounted for almost 22% of total new manufacturing FDI activity in the region during this period, cumulatively valued at over US$57 billion, with ISIC category 32 (radio, television and communications equipment) most prominent. Although electrical and electronic-related FDI activity was quite small in Cambodia (less than 4% of total manufacturing FDI), it accounted for 10% of total manufacturing-related FDI in in Vietnam, 33% in Malaysia, 45% in Singapore, and 22% in Thailand. (And for the other ASEAN countries not surveyed here, the equivalent figures were: less than 1% for Laos, 2% for Myanmar, 4% for Indonesia, and 30% for the Philippines.)

Textile and garment industry
Also among the companies interviewed for this survey were those involved in the manufacture of:

- textiles (ISIC category 17)

- and wearing apparel (ISIC category 18)

As can be seen in tables 2.15 and 2.16, over 1,480 garment and textile FDI projects were established in the ASEAN region between 1995 and 2001, of which almost 70% were garment FIEs. This represented 11% of all manufacturing-related FDI projects licensed within the region during this period. In terms of the number of FDI projects licensed by individual ASEAN countries during this period, garment and textile firms accounted for 55% of all manufacturing-related foreign investment projects in Cambodia, 22% in Vietnam, and roughly 4% in both Malaysia and Thailand. (Outside our five survey countries, this sector accounted for 27% of total manufacturing-related FDI in Laos, 37% in Myanmar, and 14% in both Indonesia and the Philippines.)

When measured by the cost of projects, the picture for textiles and garment-related FDI in the region is more modest. Textiles and garments accounted for only slightly more than 2% of total manufacturing-related FDI activity in ASEAN between 1995 and 2001; including: 29% of total manufacturing-related FDI activity in Cambodia, 23% for Vietnam, and roughly 2% for both Malaysia and Thailand. (Outside our five

survey countries, this sector accounted for 6% of total manufacturing-related FDI activity in Laos, 11% in Myanmar, 2% in Indonesia, and 1% in the Philippines.) This would suggest that the typical capital investment in garment and textile FDI projects tends to be relatively small, relative to some other kinds of investment projects.

Of the five ASEAN countries in this survey, Cambodia has witnessed the most significant impact from FDI activity in the garment sector. Starting from literally no active garment factories in the early 1990s, the country witnessed almost 300 FDI projects licensed for this sector between 1995 and 2001 – accounting for a quarter of total manufacturing sector FDI inflows (and more than 50% of manufacturing FDI projects) in Cambodia, and roughly 30% of all garment FDI projects licensed in the region during that period. With the vast majority of total garment output exclusively for export (primarily the US and EU markets), the sector is now Cambodia's single largest source of foreign exchange earnings, by a substantial margin. The rapid development of Cambodia's garment industry, through FDI activity, is attributable to the country's low labour rates, and the absence of the kinds of strict quotas that apply to countries like neighbouring Vietnam. One concern that Cambodia's policy-makers must have is the typically flighty nature of the garment industry, and the potential for FDI activity in this sector to withdraw as rapidly as it entered the country, should changes in quotas make other host countries more attractive.

2.6 SUMMARY

In an attempt to capture a meaningful and significant sample of FDI activity across such a diverse region as ASEAN, a matrix approach was adopted, consisting of: two large manufacturing sectors (electrical and electronics, and garments and textiles), and five member countries – Cambodia, Malaysia, Singapore, Thailand and Vietnam. It is believed that this sample of countries and industries is reasonably representative for the region as a whole, especially in terms of the issues relevant to this project.

Cambodia and Vietnam were selected as two of the region's four transitional economies, with among of the lowest per capita GDP figures in Southeast Asia. Both countries are relatively new members of ASEAN and have an opportunity to learn from those member countries with more well-established industry sectors and FDI regimes. Malaysia and Thailand were also selected for closer study, as founding members of ASEAN, with relatively well developed economies and industrial sectors, and over twenty years of experience in attracting and hosting FDI activity. Indeed, FIEs in Malaysia and Thailand have become a well-established element of the wider corporate sector in these two countries. Also a founding member of ASEAN, Singapore was the fifth country selected, as the principal location for regional headquarters of many transnational corporations operating in South East Asia. Singapore is also the region's leading source of intra-regional FDI flows (many by TNCs based in Singapore). These factors made the city-state's inclusion in the empirical survey crucial, given the need to better understand the process of regionalisation in Southeast Asia, as well as the cross-border integration of TNCs' manufacturing and distribution activities within the region. The five countries account for roughly 35% of the region's total population, 60% of the region's total GDP, and 70% of its FDI stock.

The electrical and electronic (ISIC categories 30-32, and the home appliances n.e.c. section of ISIC category 29) and the textiles and garment (ISIC categories 17-18) sectors were selected for closer study for a number of reasons. First, companies in these two industries are widely dispersed across most ASEAN member countries, thereby providing an opportunity for cross-country learning and the development of regional value chains. Second, the garment sector in both Cambodia and Vietnam has been a growing component of the total manufacturing, and includes a substantial number of FIEs. Similarly, the electronics sector is a very substantial element of the manufacturing sectors in Malaysia, Thailand and Singapore, also with a very substantial FIE presence. Thirdly, these two manufacturing sectors account for a substantial proportion of the ASEAN region's total industrial output, albeit to varying degrees in different countries. Fourthly, with specific regard to poverty issues, both manufacturing sectors – and especially garments – are relatively labour intensive, and a major source of employment. These two manufacturing sectors (electrical and electronics; textiles and garments) accounted for exactly a third of all manufacturing FDI projects licensed in ASEAN between 1995 and 2001, and constituted 24% of total project costs for manufacturing FDI projects in the region over the same period.

3. FOREIGN DIRECT INVESTMENT AND POVERTY REDUCTION: SOME CROSS-COUNTRY EVIDENCE

In this section we consider macroeconomic aspects of globalisation and poverty reduction. As a narrow indicator, we take FDI as a measure of globalisation and consider possible effects that it may have on growth and poverty reduction, both in general and specifically within ASEAN.

Considerable work has been conducted on the relationship between economic growth and poverty reduction. Based on this, a conventional wisdom is emerging which can be stated simply that, while growth is critically important for poverty reduction, the pattern and nature of the growth process in economies also matters. Following this reasoning this section explores the link between foreign direct investment (FDI) and poverty reduction. The broad hypothesis to be tested is that FDI through its growth effect or other means is poverty reducing. (For a fuller discussion of the relationship between FDI and growth and development in host countries, see section 4.) While a great deal has been written on a variety of aspects relating to poverty, the precise FDI-poverty link has rarely been addressed directly and we seek to remedy this gap in the literature. The section is subdivided into five parts. The first discusses briefly the broad dimensions of poverty in the ASEAN region and recent trends in terms of FDI. Having set out these empirical dimensions the remaining sections consider data analysis and results. The second section sets out the econometric approach and the results from the relevant literature, the third discusses data and some preliminary results. The fourth gives the main results and finally we draw some conclusions.

3.1 POVERTY AND FDI IN ASEAN

Naturally within ASEAN as a region the poverty picture is very varied, as one would expect given the diversity of income levels among the member states. Table 3.1 summarises the position in terms of income levels and past income growth rates. The inequality in the group can be seen readily: there are two high per capita income countries, Singapore and Brunei; three lower middle income countries, Malaysia, Philippines and Thailand; and the remaining members – Cambodia, Indonesia, Laos, Myanmar and Vietnam – are all on low income.

Headcount Index

In terms of poverty assessments most studies start from the widely used headcount index which requires establishing an absolute poverty line and estimating what proportion of the population fall below it. For many comparative studies a widely used measure of international poverty is the headcount index based on the World Bank US$1 per day poverty line in Purchasing Power Parity prices. An updated version of these estimates using 1993 prices is shown in table 3.2 [31]

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[31] Squire (1999) discusses some of the limitations of this approach, which include its omission of intra-country price differences between rural and urban areas, its averaging of income within a household and its inability to distinguish between the chronic and transitory poor.

Table 3.1 Basic Economic data for ASEAN countries

	GNI per capita 2000	GDP growth % annual	
	PPP $	1980-90	1990-2000
Cambodia	1,440	n.a	4.8
Indonesia	2,830	6.1	4.2
Laos PDR	1,540	n.a	6.5
Myanmar	n.a	0.6	6.6
Malaysia	8,330	5.3	7.0
Philippines	4,220	1.0	3.3
Singapore	24,910	6.7	7.8
Thailand	6,320	7.6	4.2
Vietnam	2,000	4.6	7.9

Source: World Bank (2002)

Note: Brunei is excluded from these and other statistics as it is not covered in the World Development Indicators.

East Asia as a region is one in which the absolute numbers in poverty roughly halved between 1975 and 1995 (Ahuja *et al* 1997) and where, as we see in table 3.3, the proportion in poverty has also fallen significantly. This very favourable trend was halted with the financial crisis of 1997-98, which led to significant increases in poverty in a number of countries, particularly in Indonesia and Korea. The precise consequences of the crisis for longer-term poverty alleviation remain unclear, but table 3.3 summarises estimates of the extent to which poverty rose initially in the wake of the crisis. As yet we are not aware of comparable figures on poverty that take account of recovery in most of the affected economies, with the significant exception of Indonesia.

Table 3.2 Headcount index 1987-1998

	Proportion of population below $1 per day poverty line (%)		
	1987	1990	1998
East Asia and Pacific, excluding PRC	26.6	27.6	14.7
Eastern Europe and Central Asia	0.2	1.6	3.7
Latin America and Caribbean	15.3	16.8	12.1
Middle-East and North Africa	4.3	2.4	2.1
South Asia	44.9	44.0	40.0
Sub-Saharan Africa	46.6	47.7	48.1
Total excluding PRC	28.5	28.1	23.4

Source: World Bank (2002a).

Table 3.3 Changes in headcount indices based on national poverty lines[a] 1996-98 (%)

	1996	1998
Indonesia	11.3	16.7
Thailand	11.4	13.0
Korea [b]	9.6	19.2

Source: World Bank (1999) table 3.
Note: (a) National poverty lines are $1 per day Indonesia, $1.5 Thailand and $8 Korea using 1993 constant purchasing power parity prices. (b) Urban areas only

Useful as the figures in table 3.2 are for comparative purposes, a different picture of the dimensions of poverty is obtained from the use of national poverty lines specific to individual countries. Although how far these overcome the limitations of the global poverty line approach, noted above, is open to doubt. In a majority of countries national poverty lines are above US$1 per day giving a higher estimate of the proportion of the population in poverty. However two highly significant exceptions are India (where the World Bank headcount estimate for 1994 was 47% as compared with a headcount derived from the national poverty line of 36%) and even more strikingly PRC (where for the mid-1990's the World Bank headcount estimate is 22% compared with a national figure of only 6%) (David *et al* 1999). The official poverty estimate in PRC has fallen even further since then to no more than 3% in 2001 (State Council 2001).

Table 3.4 Headcount indices from national poverty lines and Gini coefficients: ASEAN

	mid-1980's	Headcount Indices (%)				Gini coefficient
		1990's				1990's
		Survey Date	Total	Urban	Rural	
Cambodia	n.a.	1999	35.9	40.0	25.2	0.37
Indonesia	17.4	1999	23.4	26.1	19.5	0.31
Laos PDR	n.a.	1997-8	38.6	41.0	26.9	0.36
Malaysia	15.5	1999	8.1	n.a.	n.a.	0.49
Philippines	49.3	2000	40.0	54.4	25.0	0.49
Thailand	18.0	1998	12.9	17.2	1.5	0.44
Vietnam	n.a.	1998	37.0	45.0	9.0	0.35
Singapore	n.a.	n.a.	n.a	n.a.	n.a	0.39
Myanmar	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: David *et al* (1999) table 2 for mid-1980s and ADB (2002) for most recent estimates. Gini coefficients come from World Bank (2000) and ADB (2002).
Note: poverty lines are national lines. n.a.= data are unavailable.

Table 3.4 brings together headcount indices for ASEAN members based on national poverty lines. It also gives the most recent Gini coefficient estimates as an indication of inequality within these countries. The three lower middle-income countries are clearly the most unequal. Establishing any clear trend for both poverty and inequality from these figures is not really possible due to the lack of comparative data from the 1980's. Further the figures should not be compared across countries as the poverty lines are country-specific and will be significantly higher in the richer members.

However there is evidence that poverty incidence has fallen over the last 15 years or so in the three lower middle income countries – the Philippines, Malaysia and Thailand. Poverty in Singapore is likely to be very low and little is known about the position in Myanmar, although the expectation must be that poverty levels will be similar to those in the other low income members. Recent data from Vietnam suggest that in a shorter period during the 1990's when the economy experienced rapid growth poverty fell from a very high headcount ratio of 58% in 1993 to the 37% in 1998 reported in table 4 (World Bank, 1999a).

Regional Variations
National data, of course, tell only part of the story and within countries there will inevitably be locational variations in the incidence and severity of poverty. This can be illustrated by reference to ASEAN. Table 3.4 also shows recent estimates of rural and urban poverty. In the lower income countries of East Asia it is well known that the majority of the poor live in rural areas and in table 3.4 the incidence of poverty as measured by the headcount index is considerably higher in rural than in urban areas for all countries shown. None the less poverty is also an urban phenomenon with between 20% to 30% of the urban populations of Cambodia, Laos, and the Philippines below the urban poverty line. Further, where there is a tendency for urban workers to migrate back to their villages in response to economic recession ex-post poverty rates in some cases may overstate the initial impact of adverse economic shocks on urban living standards. Apart from a simple rural-urban distinction it is also well known that there are also regional differences in the distribution of poverty within countries. Major regional variations are found in large countries such as PRC and Indonesia. For example, in Indonesia for 1990 poverty incidence is estimated to have ranged from 16% in Sumatra province (with an implausibly low figure of around 1% for Jakarta) to 35% in the Eastern islands (Ahuja *et al* 1997).

Patterns of Growth
Current thinking on poverty makes it clear that while economic growth is a central requirement for a sustained reduction in poverty (at least when defined in income terms) the form this growth takes will have a crucial bearing on outcomes for the poor. Hence considerable attention has been focussed on the most effective means of intervening to both ensure that the poor share disproportionately in the fruits of the growth process (so-called pro-poor growth) and to protect the poor and vulnerable from the effects of short-term shocks that affect an economy negatively. World Bank (1990) set out the basics of a pro-poor strategy that involved a combination of job creation via labour-intensive growth- and the development of the human capital of the poor through long-term social sector investment. In addition, targeted social safety nets are to mitigate against the worst short-term effects of recession. This thinking still underlies most of the policy advice on poverty reduction and remains the central plank in the "Washington consensus" as applied on the poverty front.

Within East Asia in general, and several ASEAN countries in particular, fast growth has been accompanied by falling levels of poverty principally it appears through the mechanism of the labour market, supplemented in some cases by relatively heavy investment in education and human capital development more generally. The link with the prescriptions of World Bank (1990) is of course not coincidental as the experience in the region, or the so-called East Asian model, has strongly influenced

the Washington Consensus. Recent empirical work allows us to assess the degree to which growth in some ASEAN countries has actually been pro-poor in a formal sense.

Kakwani and Pernia (2000) decompose the causes of poverty reduction into growth (g) and redistribution (r) components. The former can be interpreted as the change in poverty holding income distribution constant and the latter as the change in poverty holding growth constant. Applying this approach to Thailand and Laos shows that although both saw a reduction in poverty during the 1990's this was not purely pro-poor growth in a formal sense since, while growth clearly served to bring down poverty, in both cases it was accompanied by regressive distributional shifts, so that the poverty impact would have been greater if income inequality had not worsened. Similarly, although slightly differently, calculations were carried out by Ahuja *et al* (1997:46-47) who showed that, while normally the growth effect significantly outweighed the redistributive effect in a decomposition of the causes of poverty reduction, nevertheless only in a minority of cases was the redistributive effect poverty reducing. These cases of pro-poor growth are in Malaysia (1973-89), Indonesia (1978-84) and the Philippines (1991-94). In the latter two cases, over different time periods growth was not pro-poor in this formal sense.

However, from a different perspective, Warr (2001) finds that for six Asian economies, including Thailand, Indonesia, Malaysia and the Philippines that growth of income per capita explains about 40% of the reduction in poverty (defined as a fall in the headcount index), but that the relationship between growth and poverty reduction is very similar between the six countries despite the fact that they had a very different composition of growth, in the sense of different relative increases in agriculture and industry. Warr concludes from this that the distributional shifts accompanying structural change (or the 'quality' of growth) may be less important than the rate at which mean income grows.

3.2 TRENDS IN FOREIGN INVESTMENT IN ASEAN

Table 3.5 shows data on the scale of foreign direct investment (FDI) to ASEAN and its share in total investment.

Several points should be noted in relation to table 3.5. First, although the absolute size of FDI is very much lower in the lower income members, it has been growing extremely rapidly from a low base and is now a significant proportion of gross domestic investment: 15% in Laos and Vietnam and nearly 30% in Cambodia. Second, given the volatility of FDI its share in total investment will fluctuate significantly between years. In most cases (with the exception of Thailand) FDI peaked in 1997 and fell between 1997 and 1999. Recovery has been uneven. However by international standards, at around 25% of the total, FDI has been an extremely high proportion of investment in several countries. Third, non-FDI forms of private capital – a mix of portfolio investment and loans – are also highly significant in the higher income ASEAN members and Indonesia – but not in the lower income countries, where stock markets are undeveloped and borrowers are not deemed credit-worthy internationally. More disaggregate company level data allows an insight into the role of foreign investors in the corporate sector of some of the larger ASEAN countries. In terms of share ownership in 1997, foreigners owned 25% of the equity

of publicly listed companies in Indonesia and Malaysia and roughly half of the figure in Thailand (Zhuang *et al* 2000:27). In summary FDI flows to the region have been of considerably greater importance than elsewhere in the developing world; it is its relationship with economic growth and poverty reduction that we seek to explain.

Table 3.5 Foreign Direct Investment in ASEAN

	FDI Flow (US$ mill)					FDI as % of total Investment	
Country	1989	1996	1997	1998	1999	1980	1998
Cambodia	n.a.	293.6	204.0	121.0	125.5	n.a.	28.1
Indonesia	682.0	6194.0	4677.0	-356.0	-2745.0	1.0	-2.7
Laos	4.0	160.0	86.0	45.0	79.0	n.a.	14.7
Malaysia	1667.9	5078.0	5136.5	2163.4	1552.9	12.5	25.8
Philippines	563.0	1517.0	1222.0	2287.0	573.0	-1.1	12.8
Thailand	1775.5	2335.9	3894.7	7315.0	6213.0	2.0	24.7
Vietnam	4.0	2455.0	2745.0	1972.0	1609.0	n.a.	15.4
Singapore	2886.6	8984.1	8085.2	5492.9	6984.3	22.8	25.5
Myanmar	7.8	310.4	387.2	314.5	216.3	n.a.	n.a.

Source: ADB (2002) for FDI flows and World Bank (2000) for FDI's share in total investment.
Note: a negative sign means net divestment.

3.3 SUB-PROJECT 1 METHODOLOGY

There is a large theoretical and empirical literature that suggests FDI has implications for the rate of growth of the host country. There is equally a large body of literature that suggests that the rate of growth in an economy affects the poverty index; most argue that the relationship between the two is positive. By deduction therefore, through its impacts on growth, FDI is likely to have an impact on the level of poverty. Besides its indirect 'trickle down' effect through higher economic activity, FDI could also impact poverty directly through employment generation as well as human capital upgrading through training provision that transnational firms may also provide.

The interactions between FDI, growth and poverty reduction however are likely to be complex. Explanations for these not only relate to the controversies that surround the interaction between FDI and growth, but also relate to the relationship between growth and poverty. The theoretical and empirical literature on FDI and its impact are at times contradictory and location specific. Different growth scenarios also likely to have different implications as far as their impact on poverty is concerned. Therefore the interaction between FDI, growth and poverty is likely to be location and period specific, given that the impact of FDI on growth, on the one hand, and that on growth and poverty, on the other, is likely to be different for different locations and at different points in time. This raises the possibility that in ASEAN, where FDI has played a particularly significant role in growth, its poverty consequences may differ from those elsewhere.

For the rest of this section, we attempt to fully specify the interaction between FDI, growth and poverty. Our analysis here relates to two distinct strands in the literature; one relates to growth accounting and the other to the interaction between growth, poverty, inequality. There is by now a well established growth accounting literature which could be used to establish the possible impact that FDI may have on growth, quantifying the magnitude of parameters of interest. There is an equally extensive, although perhaps more controversial literature, which attempts to measure the impact that growth may have on poverty. We first consider the two theoretical literatures separately and then consider possibility of merging the two to generate a model which directly captures the relationship between FDI and poverty reduction. In this section we proceed by discussing the link between FDI and growth first and then consider the relationship between growth and poverty.

FDI and Growth
The theoretical literature indicates that the share of GDP devoted to total fixed investment spending plays a crucial positive role in economic growth. This proposition seems to have been supported overwhelmingly at the empirical level. However the suggestion that the aggregate fixed investment ratio promotes growth, does not suggest that all types of investment have the same effect on growth. This has recently led to a number of empirical studies directed at identifying the effects of different categories of fixed investment on economic growth; most of these are extensions of Solow (1956). De Long and Summers (1991, 1992) and De Long (1992), have included two categories of investment-machinery equipment and non-machinery components of private fixed investment – in an economic growth equation. A rather more direct empirical application of Solow's model has been adopted by Mankiw, et. al. (1992) with other contributions including those of Knight *et al* (1993), Islam (1995), Pugno (1996).

Nonneman and Vanhoudt (1996) have generalised this approach to include various categories of investment and applied this generalised framework to an evaluation of the effects of three investment categories - physical capital, human capital and technological know-how - on economic growth. We extend Nonneman and Vanhoudt's model in order to investigate the possible differential impact that domestic and foreign investment may have on growth. Our basic growth accounting equation is set out below and Appendix 1 gives its formal derivation.

$$g_{GDP} = \beta_1 g_d + \beta_2 g_f + \beta_3 g_h + \sum_{i=1} \lambda_i x_i \tag{1}$$

where g stands for growth and the subscripts GDP, d, f and h stand for gross domestic product, domestic investment, foreign investment and human capital, respectively. d, f and h are specified as ratios of capital inputs to GDP [32]. x_i, i=1…m defines some fixed or qualitative variables which control for features of an economy. Adding an intercept and a stochastic error term allows us to run a regression estimating various GDP growth elasticities with respect to various forms of capital. Parameter estimates from regressions using equation (1) as the base, give us direct

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[32] β coefficients in equation (1) measure output elasticities with respect to various factor inputs, in this case domestic, foreign and human capital investments. The marginal contribution of each of the inputs in production can be derived by multiplying the respective elasticities by the inverse of the share of each capital input in output.

measures of the marginal propensity of GDP to grow with respect to the growth in the share of GDP of various types of investment.

Foreign investment is expected to have different attributes in contrast to domestic investment. In the context of developing countries in particular, most theoretical discussion suggests positive growth-enhancing effects, in relation particularly to the transfer of technology and management. Positive externalities for domestic producers are also posited; see for example Klein *et al* (2001)[33]. However incorporation of FDI as a separate regressor in a growth accounting exercise is acknowledged to present problems in the presence of externalities. Where these are positive this can inflate the output elasticity with respect to capital in conventional growth accounting analyses, for example as FDI adds to public knowledge as well as physical capital stock [34].

Our approach to assess the growth impact of FDI broadly follows that of Balasubramanyam *et al* (1996). It differs in specification from the widely cited study of Borensztein *et al* (1998), that explains growth by FDI and human capital inputs, initial income and a set of control variables, while excluding domestic capital investment. The latter is excluded due to the steady-state property of the model on which the analysis is based. We prefer our specification, however, on the grounds that a steady state is too strong an assumption to make and that our approach conforms more closely to conventional growth accounting procedures.

Direction of causation is also an important issue to consider in this context. There are some, including Blomstrom *et al* (1996), who tend to suggest that positive causation actually runs from economic growth to the investment ratio. As in the case of the influence of various types of investment on growth however, direction of causation for different types of investment may also vary. In particular as far as FDI is concerned, causation may run from growth to investment, at least for some economies. However recent tests in the literature generally support the view that for FDI in most situations causation runs from investment to growth; for example Lipsey (2000) tests for this by introducing lags and finds that in general it is FDI in period t-1 which is a significant explanatory variable for growth in period t [35].

Poverty and Growth
It is obvious that aggregate growth may have different relationships with poverty depending upon distributional changes during the process of growth and on initial

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[33] Formally Findlay (1978) provides a theoretical framework showing the interaction between foreign and domestic investment generating positive externalities, which in turn improve the growth potential of the host economy.
[34] See de Mello (1997:13) who shows formally how this can be expressed in an augmented Cobb-Douglas production function incorporating knowledge.
[35] Given the lack of clear theoretical direction, causation in this case is a matter of empirical investigation. The two technical methods for determining direction of causation, originating from Granger (1969) and Sims (1972) however, rely on past and future values of variables of interest, in this case growth and FDI. Our data set is rather limited in terms of its time series dimension; for some countries, time series dimension is 2 and for majority it does not exceed 3. Given that these tests are sensitive to the length of lags and leads, we therefore did not attempt to apply these to the case in hand.

inequality.[36] In our analysis we test for the inequality growth relation through one of the control variables applied to equation (1).

The recent contributions by Dollar and Kraay (2000, 2001), using the Deninger and Squire database, have generated considerable interest regarding the interaction between growth and poverty.[37] Dollar and Kraay argue that growth has in fact been beneficial for the poor. Using the most up to date data available of income of the lowest quintiles for a number of countries, their results provide strong support for the proposition that growth is good for the poor and that they benefit at least as much as the other quintiles from growth.

In our analysis of the growth-poverty relation due to lack of comprehensive cross-country data on the headcount index we do not analyse changes in poverty measured by the number of the population below an absolute poverty line. Rather we use the same proxy for poverty as that in Dollar and Kraay (2000). [38] Hence poverty is defined in relative terms as the average income of the bottom quintile of the distribution and change in poverty is measured by the change in the average income of this quintile. Although this is not an absolute poverty measure, it should also be remembered that, as noted above, the cross-country headcount index based on a US$ a day is itself subject to a number of limitations. Our poverty data for ASEAN countries are summarized in table 3.6.

Table 3.6 Relative Poverty Measures in ASEAN

Country	Period	Growth of income of the Poor [(a)]	Poor's income relative to average income [(b)]
Indonesia	1981-96	4.1	44.0
Malaysia	1981-96	4.4	22.4
Philippines	1981-97	2.0	16.3
Singapore	1981-90	6.1	34.0
Thailand	1981-93	3.9	22.5

Source: calculated from Dollar and Kraay (2000) database; growth rates are logarithmic.
Notes: (a) Defined as annual real growth of per capita income of bottom quintile (%).
(b) Defined as average income of bottom quintile to mean national income (%).

Growth of income of the poor, defined here as those in the bottom quintile, has been most rapid in Singapore and slowest in the Philippines, with each of the other three countries having an annual growth of the income per capita of the poor of around 4% (which is still high by international standards). Our question is whether this performance can be related systematically to FDI inflows.

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[36] This is formalised in Ravallion (2000) who relates the rate of poverty reduction to a distribution-adjusted average income growth, so that p = b(1-I)g, where p is rate of poverty reduction, I is the Gini coefficient and g is average growth. From an analysis of cross-country survey data he finds b is approximately twice the size of the coefficient from an ordinary growth-poverty equation.
[37] See also Hanmer and Naschold (2000) for a similar analysis of the growth-poverty link.
[38] The data set we use is not the same as that used in Dollar and Kraay (2000). We do not have access to a relatively large number of observations they have generated in the data set they use.

Our basic growth-poverty model follows that of Dollar and Kraay (2000), among others. Specifically we use the following explicit log-linear functional form as a base model for our analysis:

$$In(y^p) = \mu_1 Iny + \sum_{i=2}^{m} \mu_i x_i \qquad \qquad \text{i=2.....m} \qquad\qquad (2)$$

where y^p denotes per capita income in the poorest quintile of the population, y stands for average per capita income for the entire population, and x is a vector of all other determinants of mean income of the poor respectively. Vector x includes proxies for control variables that may include macroeconomic policies, trade openness and institutional quality.

First differencing of equation (2) gives a relationship between growth of income of the poor, g^p and growth of average income, g;

$$g^p = \mu_1 g + \sum_{i=2}^{m} \mu_i \Delta x_i \qquad\qquad (3)$$

Adding an intercept and a stochastic error term to either equation (2) or (3) gives us an econometric model of poverty determinants, the parameter estimate of which gives the magnitude of the elasticity of poverty reduction with respect to growth in the economy and other determinants of poverty.

In principle and in the case in which the formulations provide an exact relationship, one could combine equations (1) and (3) in order to get a direct relationship between growth of income of the poor and determinants of average income, including FDI. This implies substituting for income growth from the growth accounting analysis given by (1) in place of the growth term in the first difference of poverty determinants given in (3), resulting in the following relationship:

$$g^P = \sum_{j,k} \phi_{1j} g_k + \sum_{i} \phi_{2i} x_i + \sum_{i} \phi_{3i} \Delta x_i \qquad\qquad (4)$$

where $\phi_{1j} = \beta_j \mu_1, \phi_{2i} = \lambda_i \mu_1, \phi_{3i} = \mu_i$, , j=1,2,3; k=d, f, h and i=4...m. This substitution in general however is inappropriate on the grounds of the stochastic properties of the relationships specified by the two equations, as well as technical and policy considerations that are explained below.

The interaction of the independent variables in the case of growth may differ from their interaction in the case of poverty, in which case the reduced form suggested by equation (4) may at most give an estimate of the net effects of the various common variables [39]. Equation (4) gives an estimate of ϕ rather than of β and μ which we are

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[39] For example in terms of a poor 'representative household' income may be expressed as:
Y= f (L, NL,T) where Y is household income, L is the return to labour assets, NL the return to non-labour assets and T is transfers. Growth will potentially raise the value of L, NL and T. However, in addition any of the factor inputs in equation (1) may have a direct impact on these terms in addition to

interested in; they capture indirect and direct poverty effects of various variables respectively. Furthermore, if there is a correlation between growth of different types of capital and other determinants of growth of income of the poor, this generates a multicollinearity problem, as result of which the precision of parameter estimate will be affected and cannot be relied upon. A more serious problem however is likely to arise due to the stochastic nature of relationships specified by equations (1) and (3). Using equation (4) as a base regression model implies that the error term there is composed of those which are associated with (1) and (3). This, ceteris paribus, increases the extent of noise in the regression. This problem is likely to be exacerbated if, as is likely to be the case, error terms associated with specifications (1) and (3) behave differently. In that case regression is likely to produce a statistically meaningless results. This is in fact what we experience here, since, as discussed below, using equation (4) as our base model produces unsatisfactory results.

Sources of Data and Its Preliminary Analysis
Most data used in this section were extracted from the World Bank World Development Indicators CD-ROM (2000). These were complemented with additional data from the IMF's IFS CD-ROM (2000). We also checked that data for FDI are compatible in these two sources. However, we are pressed for a reliable and up to date series on poverty and inequality both for ASEAN countries and more generally. The data set most researchers have used in recent empirical research is based on Deninger and Squire (1996) and Lundberg and Squire (1998), which give income data for the poor, as well as Gini coefficients. Dollar and Kraay (2000) have extended the series both with respect to countries and time period and it is their data on income for the bottom quintile that we use[40]. There is also an extensive Theil inequality index series prepared by the University of Texas Inequality Project (Galbraith and Lu 2000). In some regressions we experiment with the use of this index as an alternative to the Gini coefficient.

We set up various data sets based on availability of data and their use in different models. All of the data sets generated were unbalanced panels. For each of the corresponding panels we also generated five-yearly averages. For each of the models specified we ran regressions on both level and average data sets to check

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their impact through the growth rate. This will not be picked up accurately in the reduced form analysis and we test separately for this effect .

[40] We do not have access to the extension that Dollar and Kraay (2000) have applied to the data which is based on Lundberg and Squire (1998). In addition Dollar and Kraay have applied some adjustment to the series on Gini coefficients and income of the lowest quintile to account for the differences in the way these series are generated and reported. As they report, there are some problems with this adjustment method and the main results do not seem to be sensitive to these adjustment: "It is worth noticing that these adjustments are identified using only within country changes in the concept measured. While this has an obvious appeal, the disadvantage is that there are relatively few within-country changes in the concept measured, and so these adjustments are not very precisely estimated and are sensitive to the observations included in the regression. Fortunately, our main results do not appear to be very sensitive to the precise adjustments used." (Dollar and Kraay 2000:9). The method involve regressing series concerned on a set of country dummies together with five other dummies to capture the way series are measured and reported. However given their reservation and that fact that in our case the problem is exacerbated further by the smaller number of observations that we have on these variables, we do not apply this adjustment mechanism here. To a large extent, the panel data approach we adopt here is likely to capture country differences in the way these series are measure and reported,

for any differences in the regression results that may be due to the excessive noise in the level data. For the growth accounting exercise data on most variables were available for a large number of countries. The largest data set that we were able to construct included 304 observations covering 42 countries, including 26 developing and 16 developed countries. Available information on income of the poor however was a limiting factor as a result of which we ended up with an smaller data set for testing the full model, capturing the interaction between FDI, growth and poverty reduction. This data set included 147 observations covering 26 countries including 18 developing countries (five of which were ASEAN) as well as 8 developed ones.

Before proceeding with the formal test of the models we carried out some preliminary investigation of the data in terms of stationarity and causation. Formal tests for these require a long length of lags for variables of interest. None of the data sets we were able to construct had sufficient lags, since for most of the developing countries in our data set we only had one or two lags. For this reason we did not carry out formal tests for these problems. Graphical inspection of the residuals and diagnostic tests however did not seem to suggest any serious problem as far as non-stationarity is concerned. Given that we were using first difference models and that most economic series are $I(1)$, we are sufficiently confident that the first difference series are $I(0)$ and that we are not capturing a spurious relationship using the first difference models. As far as causality is concerned, we are relying on empirical findings published on causation between FDI and growth (Lipsey, 2000). As far as causation between growth and poverty is concerned we do not find any evidence that it runs from poverty to growth, but rather the conventional mechanism from growth to poverty reduction is supported.

A further issue that we were concerned with in our empirical analysis is that of spatial correlation. Given the limitations in the data set we are using it is not possible to carry out a formal test on this. Again graphical inspection of residuals combined with diagnostic tests do not seem to suggest that this is a problem here either. We nevertheless warn that the results reported are at most suggestive and further detailed analysis using a more comprehensive data set may produce different results.

Table 3.7 shows correlation coefficient matrix between the main variables of interest. We use information provided here as a simple guide to the possible extent and nature of the relationship between variables of interest and in order to avoid the potential problem of multicollinearity in the regressions. The first two data columns show the extent of correlation between growth of income and poverty and some of the potential independent variables for each regression model. Most correlations have their theoretical excepted signs; few of the potential regressors are relatively highly correlated.

Table 3.7 Correlation Coefficient Matrix

	1	2	3	4	5	6	7	8	9	10	11	12
1 GDP Growth [a]	1.00											
2 Income of the Poor [b]	-0.30	1.00										
3 Gini Coefficient [c]	0.26	-0.61	1.00									
4 Share of Gross FDI in GDP [d]	0.07	0.54	-0.07	1.00								
5 Education [e]	0.13	-0.24	-0.07	-0.03	1.00							
6 Initial Level of Income [f]	-0.38	0.93	-0.38	0.50	-0.33	1.00						
7 Income per capita [g]	-0.28	0.95	-0.37	0.54	-0.33	0.98	1.00					
8 Share of Domestic Investment [h]	0.72	-0.29	0.10	-0.27	0.09	-0.36	-0.30	1.00				
9 Share of Net Inflow of FDI in GDP [i]	-0.08	0.33	-0.05	0.17	0.02	0.36	0.40	-0.04	1.00			
10 Inflation Rate [j]	-0.38	-0.18	0.10	-0.21	-0.11	-0.09	-0.14	-0.28	-0.11	1.00		
11 Relative income gap [k]	-0.35	0.93	-0.44	0.46	-0.27	0.96	0.96	-0.32	0.45	-0.18	1.00	
12 Trade [l]	0.03	0.56	-0.07	0.70	-0.20	0.55	0.57	-0.18	-0.09	-0.29	0.46	1.00

Notes:
(a) Average GDP growth per annum for the period.
(b) Average income of the lowest 20% quintile (logarithm).
(c) Average Gini coefficient, used as a proxy for income distribution.
(d) Share of gross inflow of FDI in GDP (percentage).
(e) Primary school enrolment, percentage of gross (logarithm)
(f) Initial real GDP per capita (logarithm).
(g) Real GDP per capita (logarithm).
(h) Share of domestic investment in GDP (%), net of FDI share.
(i) Share of net inflow of FDI in GDP (percentage).
(j) Annual rate of change in consumer prices (percentage).
(k) GDP per capita as a ratio of GDP per capita in USA (percentage).
(l) Share of trade (exports plus imports) in GDP (percentage)

3.4 REGRESSION RESULTS

For both the growth accounting and growth-poverty analyses we use unbalanced panel data sets with both a time series and cross section dimension and apply a fixed effect method to estimate parameters of interest. The panel data technique is now judged to be the best-practice procedure to account for the diversity of experience within and between countries (Hsiao 1986, Baltagi 1995) [41]. Results reported below are based on the model specification in equation (1) for growth to avoid problem of serial autocorrelation, which most of the regressions based on equation (A.7) as specified in Appendix 1 suffer from. First differencing generally also avoids problem of non-stationarity given that most economic data are integrated of order one, I(1) [42]. For similar reasons we apply equation (3) for the analysis of poverty.

FDI and Growth

Table 3.8 sets out our main results for the growth analysis following a version of equation (1). The table reports the results for our full set of 42 countries, although the results are essentially the same for the smaller samples including just developing countries and the five ASEAN economies. The first column (Reg1), is the basic application of equation (1) which explains growth of GDP per capita by growth of the ratio of domestic investment to GDP (GDI/GDP), growth of the ratio of foreign investment to GDP (FDI/GDP) and growth of education as measured by the primary school enrolment ratio. The equation passes all relevant diagnostic tests and the two investment ratios are statistically significant with the expected positive signs. The growth of education has an unexpected negative sign and is only very weakly significant [43]. Because the equation is in first differences the beta coefficients on the independent variables are not conventional marginal products. They can be converted to marginal productivity values, however, as given in Table 3.8. The derivation of marginal products from the relevant beta coefficients is explained in Appendix 2. Our basic results show that FDI has a positive impact on economic growth and on average for this sample its marginal product is 0.56 as compared with

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[41] We have been concerned with the issue of simultaneity, which if present, requires a more appropriate method of estimation such as 2SLS or GMM. We are however unable to establish simultaneity and therefore the report results of regressions which are based on fixed effect method, and in the case of first different model OLS which is equivalent to fixed effect method. We nevertheless attempted to run regressions using 2SLS, however data limitation and lack of appropriate instruments to use, forced us to drop application of this technique.

[42] Presence of autocorrelation may signify any of the following problems: inadequate dynamic specification, incorrect functional form as well as omitted variables. It may also signify the non-stationarity of data used. Each of these is serious enough to warrant detailed investigation. First differencing of the data in our case however resolves the problem of autocorrelation; this may have corrected for either or both of the problems of autocorrelation and non-stationarity given that annual series usually exhibit first order serial correlation and the fact that most economic series are I (1). We have followed relevant literature on growth and poverty and are confident that our model specification is appropriate. The issue of non-stationarity however could potentially be checked using unit root test. To be able to do this fully however, time dimension of the series used should be large enough to allow imposing required length of lags. In the case of panel data that we use here, there are likely to be added complication if the cross-section elements do not obey the same order of integration (Verbeek 2000). Results reported here however should be used with care.

[43] Multicollinearity could be a factor explaining this result. Inspection of correlation coefficient matrix however does not suggest this to be a problem here.

0.48 for domestic investment. This result is in direct contrast with findings of earlier studies. Balasubramanyam *et al* (1996) find an elasticity of output with respect to foreign capital of 1.84, (which is equivalent to our beta coefficient of 0.012) however they also find a negative and insignificant elasticity for domestic capital. Since a negative marginal product for domestic capital is scarcely plausible the suspicion must be that the foreign investment coefficient is picking up some of the productivity of domestic capital. Borenzstein *et al* (1998) find the opposite result that the FDI/GDP ratio has negative elasticity in most of their equations and only find a positive result when it is interacted with the education level of an economy. The implication of their result that FDI may reduce growth in economies with low levels of education and skills is one they struggle to explain.

Figures in brackets are 't' ratios. Tabulated 't' statistics for degrees of freedom in excess of 120 at 5% and 10% significance level are 1.96 and 1.64 respectively.

Our results provide support for the intuitive view that FDI raises economic growth, however they can be extended by incorporating additional variables into Reg (1). We first add an interactive term to capture the relation between the FDI/GDP ratio and an economy's education level, as measured by primary school enrolment (Reg 2). As expected from the results of other studies this interaction term is positive and significant, implying that the growth-enhancing effect of FDI is stronger in economies with higher education attainment. We then add a variable to capture the openness of an economy to foreign trade using the change in the share of total foreign trade in GDP as a proxy for openness, to test the hypothesis that openness adds to growth (Reg 3)[44]. This trade share variable is not significant however. In addition we introduce distributional shifts by adding a measure of distribution based on the change in the Theil index (Reg 4). We find the latter to be negatively and significantly correlated with growth. Since a fall in the index implies an increase in equality we have a result similar to that reported in other studies that falling inequality has a positive growth effect (Clark 1995, Persson and Tabellini 1994, Deininger and Olinto 2001). Finally we add an interactive term for FDI/GDP and advanced economies to establish whether there is a difference between the FDI-growth link there as compared with lower income economies. This interactive term is negative and significant implying that FDI has a weaker growth effect in higher-income economies, implying diminishing returns to FDI in these cases.

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[44] We also apply the level of this trade share variable as an alternative, but it is also insignificant.

Table 3.8 Growth accounting regression for general data
     (Dependent variable is GNP growth)

Independent Variables:	Reg (1)	Reg (2)	Reg (3)	Reg (4)	Reg (5)
Constant term	1.95	1.43	1.43	1.44	1.66
	(1.68)	(1.23)	(1.23)	(1.24)	(1.45)
Growth of (GDI/GDP) [a]	0.111	0.115	0.116	0.117	0.111
	(11.07)	(11.41)	(10.75)	(10.92)	(11.11)
Growth of (FDI/GDP) [b]	0.012	0.009	0.010	0.010	0.008
	(3.45)	(2.88)	(2.89)	(3.31)	(2.36)
Growth of education [c]	-0.17	-0.16	-0.16	-0.16	-0.19
	(1.88)	(1.79)	(1.78)	(1.85)	(2.19)
Interactive term (1) [d]		0.003	0.003	0.003	0.014
		(2.42)	(2.44)	(2.47)	(3.72)
Change in Trade Share [e]			-1.90	12.62	
			(0.37)	(0.52)	
Change in Theil Index [f]				-56.95.	-59.77
				(2.24)	(2.40)
Interactive term (2) [g]					-1.21
					(3.06)
Implied Marginal Productivity of K_d [h]	0.477	0.491	0.496	0.499	0.475
Implied Marginal Productivity of K_f	0.561	0.473	0.476	0.510	0.392
Education threshold effect [i]	_	5.839	7.11	_	6.097
Number of Observations [j]	304	304	304	304	304
Adjusted- R^2	0.52	0.53	0.53	0.54	0.55
Test for 1st- order serial correlation (D-W)	1.94	1.91	1.92	1.92	1.95

Notes:
(a) GDI = Net (of FDI) domestic investment, GDP = gross domestic product.
(b) FDI=Foreign direct investment.
(c) This is a proxy for human capital investment which is measured by primary school enrolment (% of gross).
(d) Interactive term (1) captures interaction between FDI and education generated as (FDI*Education).
(e) Share of trade (exports plus imports of goods and services) in GDP.
(f) Theil index used as a proxy for distribution of income.
(g) This captures interaction between advanced economies and FDI, generated as (ADV*FDI) where ADV is a dummy for advanced countries in the data set.
(h) Derivations for these implied marginal productivities are shown in appendix (2).
(i) This captures the level of change in education required to equate marginal productivity of foreign capital to that of domestic capital.
(j) This data set contains information on 42 countries, including 26 developing and 16 advanced economies.

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The addition of these variables adds to the significance of the basic equation in all instances, except that of the trade share variable. However their addition has the effect of lowering the beta coefficient on FDI/GDP implying that some of FDI's impact on growth in Reg (1) is due to its relation with these additional variables. We report the new implied marginal products for FDI for each equation. However as the education-FDI interactive term is positive and significant the higher is the education level in an economy the stronger will be the FDI growth effect. Hence we also show the education threshold effect defined as the percentage point increase in education input required for the FDI marginal product to equate to that of the marginal product of domestic capital. In Reg (2), (4) and (5) approximately a 6 to 7 percentage point increase in primary school enrolment will be sufficient for the marginal product of FDI to equal that of domestic capital. The interpretation of this is that for a developing economy, whose educational input in terms of primary school enrolment is more that 6% points above the average for our sample, in all cases the marginal product of FDI will exceed that of domestic capital.

FDI and Poverty
Our poverty analysis uses income of the bottom 20% of the population as our poverty measure. We explain changes in poverty by a version of equation (3), which relates growth of income of the poor to growth of mean income and a set of additional explanatory variables including the level of FDI/GDP ratio. The expectation is that the coefficient on the variable growth of mean income will be close to unity, since it will be a truism that with unchanged income distribution the growth of income of the bottom quintile will keep pace with growth of mean income. Our interest is in the sign and significance of the coefficients on the other explanatory variables. We are in particular interested to capture any other impact that FDI may have on income of the poor in addition to its indirect effect through growth of average income. To do this, and in the absence of any clear theoretical guidance, we include a separate proxy for FDI in the poverty regression to capture its direct (or non-growth) effects on poverty[45]. Hence FDI has two poverty impacts in this analysis first through its impact on the rate of mean income growth and second directly through this latter variable. In other words, while FDI will influence household income of the poor through changes in the returns to both labour and non-labour assets and transfers, this impact can be direct (for example if the poor receive employment by a transnational) or indirect (through the higher economic activity that FDI stimulates). For consistency we also test whether domestic investment or educational inputs have a similar dual effect, although variables reflecting this always prove to be insignificant.

Initially we attempted to apply a 'reduced form' regression model specified by equation (4), which replaces the growth term by the equation from the growth accounting analysis. However we find statistically unsatisfactory results for the reasons discussed above[46]. After abandoning the reduced form analysis we apply

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[45] Regression results based on growth accounting model suggests that there is a direct relationship between growth of average income and the proxy for FDI used in these regressions. The same proxy therefore cannot be used in poverty regression given the presence of growth of average income there as well. This is to avoid double counting and potential multicollinearity between growth of average income and FDI. In order to investigate its possible direct impact on poverty, a different proxy for FDI which is not significantly correlated with both growth of average income and FDI proxy used in growth accounting exercise should be used. The one used in this context, as signified by correlation coefficient matrix, satisfies these conditions.

[46] Regression results based on the 'reduced form' model are presented in table (10).

equation (3) using as explanatory variables for poverty, growth of mean income, the ratio FDI/GDP, the change in the Gini coefficient and the ratio of a country's GDP per capita to US GDP per capita. As noted above the growth of mean income is expected to be strongly and positively related to growth of income of the poor. The FDI to GDP ratio will be positive and significant if there are other 'non-growth' relations between FDI and poverty. The change in the Gini coefficient should be negatively related to our poverty measure, since rising inequality implies a fall in the Gini and this will raise poverty and thus lower the income of the poor, other things being equal [47]. Finally we use a country's GDP per capita to US GDP per capita to capture any catch-up effect relative to the US. If such an effect is present we will find a significant negative coefficient on this term. We run this basic equation for three samples of countries – a full set of 26 countries (Reg 1), a set of 13 developing countries (including the ASEAN five) (Reg 2) and the sample of five ASEAN countries (Reg 3). Since the role of trade openness in poverty reduction has received considerable emphasis in the literature following the discussion on Dollar and Kraay (2001), we also test whether a measure of openness to foreign trade, either the level of the trade share in GDP, the change in this trade share or the Sachs-Warner openness index (taking a dummy of unity for fully open economies by their definition) add to the explanatory power of the equation. None of these measures are significant however when a proxy for FDI is present.

Table 3.9 reports our results. Country dummies are included in the analysis, but as they are insignificant they are not reported. Regressions (1) to (3) pass the usual diagnostic tests, but not all of the variables are significant. For the larger sample and for the group of 13 developing countries as expected the coefficient on mean GDP growth is positive, significant, and close to unity. Again as expected the change in the Gini is significant and negatively associated with poverty. For all sets of countries included neither the FDI ratio nor the ratio of country's average income to that of the US is statistically significant. However the picture changes when we consider the ASEAN group since there we find that the coefficient on the FDI/GDP ratio is both positive and significant; the implication is that in ASEAN, unlike elsewhere, FDI has direct poverty reducing effects. These will be principally the employment creation and training effects of FDI[48]. The more intangible indirect effects on the poor arising from the increase in economic activity associated with FDI (the so-called trickle down effects) are reflected in our analysis by the effect of FDI on growth. In addition we find the coefficient on catch-up term of income levels vis-à-vis the US to be negative and significant, implying a form of convergence towards US income levels.

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[47] We find no correlation between change in the Gini and the FDI ratio. Inclusion of the change in the Gini in an equation that relates change in income of the poor to growth of average income is not a tautology since a change in the Gini does not match precisely change in income of the poor. If such a relationship were a tautology we would expect a much higher correlation coefficient for the basic equation.

[48] We have not tested for these effect directly in our regression analysis, but we expect that if there is any direct effect, as suggested by results reported here, it should either work through employment creation and/or human capital enhancement that multi-national corporations are alleged to be generating in host economies. These results will be fully investigated by a micro level study of possible role FDI is playing in poverty reduction in the region, which is taking place at present.

Table 3.9 Regional Poverty Regressions
(Dependent variable is the growth of income of the bottom 20% [g]

Independent Variables:	ALL [a]	LDCs [b]	ASEAN [c]		
	Reg (1)	Reg (2)	Reg (3)	Reg (4)	Reg (5)
C	-2.20	-2.53	0.107	0.117	0.078
	(1.50)	(1.37)	(0.10)	(0.10)	(0.07)
Growth of GDP	0.940	1.068	0.962	0.956	0.967
	(5.55)	(5.86)	(8.47)	(8.15)	(8.51)
Ratio of net FDI over GDP (%)	0.077	0.201	0.52	1.298	
	(0.36)	(0.47)	(2.13)	(0.42)	
Change in Gini	-3.92	-4.13	-2.44	-2.42	-2.45
	(10.7)	(8.21)	(4.35)	(4.25)	(4.38)
Ratio of GDP over US GDP (%)	0.014	-0.04	-0.13	-0.13	-0.13
	(0.60)	(0.35)	(2.15)	(2.12)	(2.13)
Interactive term (1) [d]				-0.01	0.005
				(0.25)	(2.10)
Implied marginal growth effect of FDI [e]				0.131	
Implied marginal direct effect of FDI				0.187	
Implied total effect of FDI [f]				0.318	
Implied growth elasticity of FDI				0.007	
Implied direct elasticity of FDI				0.010	
Implied total elasticity of FDI				0.017	
Number of observations	147	82	65	65	65
Adjusted R^2	0.53	0.56	0.57	0.57	0.57
Test for 1st- order serial correlation (D-W)	2.27	2.37	1.97	1.97	1.97

Notes:
(a)This regression combines all countries for which we have relevant data for. The data set includes 26 countries, including 13 developed economies, 10 developing countries and 3 new emerging economies (NEM).
(b) Developed economies and NEM are excluded from the data set for this regression.
(c) This data set includes 5 ASEAN members only.
(d) This interactive term captures interaction between foreign investment ratio and that of education, constructed as (FDI*Education).
(e) Derivation for these implied marginal productivities are shown in appendix (2).
(f) Implied total for each category is the sum of respective direct and indirect figures calculated.
Figures in brackets are 't' ratios. Tabulated 't' statistics for degrees of freedom in excess of 60 at 5% and 10% significance level are 2.00 and 1.67 respectively.

In addition to these basic results for the ASEAN sample we also introduce the interactive term FDI/GDP ratio and education level to test whether, as found by others, FDI has a stronger impact in a high education environment (Reg 4). We find

that when this interaction term is introduced it is insignificant and it also removes the significance of the FDI/GDP ratio, implying possible multicollinearity between the two variables. Introduced on it own without the FDI/GDP ratio the interactive term is significant (Reg 5) and has the expected sign.

Our results provide support, at least in the context of ASEAN, for the view that FDI has had a positive poverty-reducing effect, both through its impact on growth and separately through a 'direct' effect. As with the growth accounting analysis above the beta coefficients from the poverty equation are not conventional marginal products. However they can be converted into marginal poverty impacts as shown in Table 3.10; again the derivation is in Appendix 2. These marginal impacts can in turn be expressed as elasticities of poverty with respect to FDI. We find a marginal poverty impact of 0.318. The intuitive interpretation of this is that a 1 unit increase in FDI (i.e. $1 in purchasing power parity terms) is on average, in ASEAN, associated with an increase in income per capita of the poor of 32 cents (again in purchasing power parity terms); of this 19 cents is due to FDI's direct effect and 13 cents to its growth effect. The corresponding elasticities imply that an increase of FDI by 10% is associated on average in ASEAN with a 0.17% growth in income per capita of the poor.

3.5 DISCUSSION AND IMPLICATIONS

At the very minimum the analysis in this section has found no evidence that FDI either weakens growth or reduces the incomes of the poor. This modest conclusion, while unsurprising, has a relevance in the context of current debates on globalisation. More positively our econometric analysis finds that FDI inflows are associated with higher economic growth, while it is in countries with higher educational levels (as proxied by *primary* school enrolment) where the FDI impact on growth is strongest. In terms of the relation between growth and poverty we find, as several others have, that there is a close relation between average income growth and growth of the incomes of the poor. For our larger sample of countries we find no direct link between FDI and poverty reduction.

However, turning to the question of poverty in ASEAN we find evidence that FDI in the ASEAN region is poverty-reducing and that this effect is stronger there than elsewhere (there is a poverty reducing marginal impact of 0.32, i.e. each dollar of investment has reduced poverty by 32 cents). Further there appears something special about these relationships in ASEAN, since it is only in these five countries that there is a direct relation between FDI and poverty reduction. On average in our sample for ASEAN roughly 40% of the poverty-reducing effect of FDI arises through economic growth and the other 60% from a direct impact[49]. The obvious candidates

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[49] These percentages are based on implied marginal direct, growth and total effects of FDI reported in table (9). These in turn are based on derivation of growth of income of the poor with respect to FDI. Formally this derivation can be stated as :

$$dg^p / dfd = \partial g^p / \partial g * \partial g / \partial fd + \partial g^p / \partial fd$$

where fd stands for FDI. Based on equations (1) and (3), the first term on the right hand side is equal to $\beta_3 \mu_1$ and the second term to μ_3. From the first term we can calculate the indirect, 'trickle-down'

for this direct effect include labour training and direct employment of the poor. The growth effect will pick up additional job creation over time, but this mechanism is the conventional 'trickle-down' path in response to rising mean incomes.

The implications of these findings are considerable. ASEAN countries are significant and special. Only in the ASEAN-5 economies (i.e. the older member countries of ASEAN[50]) is there an unambiguous direct link between FDI and poverty reduction. Understanding why this is the case for these countries is essential to improving the net benefits from FDI for other developing countries, not least for the ASEAN-4 (the newer, poorer members of the association) – and suggests that their decision to join the group was worth while. Having said this, it is not clear from the foregoing what it is about ASEAN or ASEAN countries which make them "special", an issue which will be taken up in the firm level analysis (sections 4 and 5). Section 4.4 will also discuss the above results relating to "the direct and indirect effects of FDI on poverty reduction" in terms of the theory of FDI impact.

Table 3.10 Regional Poverty Regressions based on equation 4
(Dependent variable is the growth of income of the bottom 20%)

Independent variables [a]: [b]	Reg. 1 All	Reg. 2 LDCs	Reg. 3 ASEAN	Reg. 4
Constant	12.91	19.34	34.08	36.99
	(0.28)	(0.39)	(0.85))	(0.90)
Growth of (GDI/GDP)	0.25	0.31	0.24	0.24
	(4.31)	(4.51)	(5.33)	(5.34)
Growth of (FDI/GDP)	0.003	0.002	0.00	0.00
	(0.59)	(0.39)	(0.35)	(0.35)
Growth of education	0.02	0.04	0.07	0.08
	(0.20)	(0.33)	(0.76)	(0.81)
Ratio of net FDI over GDP (%)	0.36	0.30	0.45	-1.53
	(1.66)	(0.61)	(1.42)	(0.57)
Change in Gini	-3.85	-3.44	-1.51	-1.53
	(9.91)	(6.32)	(2.32)	(2.35)
Ratio of GDP over US GDP (%)	-0.04	0.00	-.05	-.05
	(1.83)	(0.00)	(0.58)	(1.38)
Interactive term (1)				0.004
				(1.38)
Number of observations	147	82	65	65
Adjusted R^2	0.50	0.50	0.40	0.40
Test for 1st- order serial correlation (D-W)	2.27	2.40	1.57	1.57

Notes:
For definition of variables and abbreviations refer to notes in tables 3.8 and 3.9. There is no evidence of multicollinearity between independent variables.
Figures in brackets are 't' ratios. Tabulated 't' statistics for degrees of freedom in excess of 60 at 5% and 10% significance level are 2.00 and 1.67 respectively.

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effect of FDI and from the second term its direct effect.
[50] Indonesia, Malaysia, the Philippines, Singapore and Thailand.

4. TRANSNATIONAL CORPORATIONS AND SPILLOVERS IN ASEAN: THE LITERATURE

It is now well established in the academic literature that foreign direct investment (FDI) can potentially benefit host economies in a number of ways. FDI can be a key ingredient of successful economic growth and development in many developing countries. Developing countries can benefit from a rapid and efficient transfer and cross-border adoption of "best practices", those being the essence of economic development (Klein et al., 2001). Section 3 showed how countries have gained both in terms of industrial growth and, more importantly, development measured, for example, in terms of poverty reduction. While the overall impact of TNCs is ambiguous in many regions (there are costs involved, also), it was shown that in the ASEAN countries analysed, the effect of FDI has been unambiguously beneficial in overall terms.

Generally, FDI is thought of as a composite bundle of capital, know-how and technology, hence its impact on growth and development is manifold (De Mello, 1997). For FDI to generate benefits for the host economy, the environment needs to be conducive. There is no doubt that the impact and spillovers of FDI in, say Singapore or Malaysia, differs from those in Cambodia or Vietnam. FDI impact will vary according to the level of economic development, but also according to the existing industrial structure (Blomström and Kokko, 1996), the educational level, infrastructure (Mody and Wang 1997) and the degree of corruption, among many other crucial environmental factors. Klein et al. (2001:16-17) identifies four critical pre-conditions for net beneficial FDI, especially with the aim of poverty reduction in mind. First, an even and competitive playing field is important, and foreign investors ought to be treated like domestic companies in the host environment. Second, there needs to be sufficient domestic capability to exploit FDI, this includes providing measures to improve education and infrastructure. Third, environmental and social standards need to be reviewed carefully, with host governments adjusting their own policies to fit into the evolving world norms. Finally, a stable macro-economic environment that allows investors to plan is essential. Therefore, overall, the right conditions must be in place in order to augment the beneficial potentiality of FDI. As section 3 has shown, FDI impacts on poverty both directly and indirectly and it is therefore necessary to focus on the many facets of FDI activities and effects on host economies. We do this in the context of regionalisation trends in ASEAN. To date, while substantial support exists for the existence of positive (and negative) spillovers from FDI, there is no consensus on causality (Lim, 2001). In this section, we will analyse various aspects of FDI and spillovers in host developing countries, commencing, briefly, with factors that determine whether FDI takes place or not and the issue of complementarity versus substitutability of investment. We follow this by looking at spillovers from a broad perspective, particularly in terms of the impact on productivity, export potential and technology. The section then focuses on intra- and inter-industry effects directing attention to FDI spillovers to suppliers, customers and competitors in host developing countries. There is a foray into the TNC contribution to employment and human resource development and, finally, we analyse the relationship between regionalisation and FDI.

4.1 OVERVIEW OF FDI

FDI and its Determinants
Foreign direct investment is a process whereby residents of one country (the source country) acquire ownership of assets for the purpose of controlling the production, distribution and other activities of a firm in another country (the host country) (Moosa, 2002: 1). FDI differs from foreign portfolio investment (FPI) inasmuch as the firm exercises management and control; in principle foreign residents engaged in FPI are solely interested in the investment return, not control of assets. Of course, since FPI involves the purchase of equity or shares in a host country enterprise, and FDI (through acquisition) can also occur in this fashion, the line between FPI and FDI is not easily delineated. Although there is no agreement on what constitutes a controlling interest, a minimum of 10 per cent shareholding[51] is normally regarded as allowing the foreign firm to exert a significant influence over the key policies of business acquired or new enterprise established. Given the recent increase in cross-border co-operative arrangements, it is not uncommon to find a firm in a host economy, being owned by several foreign companies, not all from the same source country. In some cases, no single party holds majority control. It must be emphasised that majority ownership does not necessarily equal "control". Control may be exercised with a low equity share or even without explicit management participation (Lall and Streeton, 1977). Besides issues of control, FDI also often involves shifting part of the company's assets, production or sales to the host economy (in other words, transfer of value chain activities to different geographic locations, as discussed in section 2). For the purpose of this study, we distinguish between three key types of FDI (this follows the standpoint of Caves, 1971).

Horizontal FDI: undertaken for the purpose of horizontal expansion to produce the same or similar kinds of goods abroad as at home. It is undertaken to exploit certain monopolistic or oligopolistic advantages (e.g. patent rights, differentiated products, brands, exclusive distribution networks etc.). The transfer of elements of the value chain is a type of horizontal FDI, albeit this might well increase a firms international vertical integration.
Vertical FDI: undertaken for the purpose of exploiting raw materials, acquiring suppliers or to be nearer the consumers through acquisition of distribution outlets. (Moosa, 2002:4; Lim, 2001: 11) In a globalising world economy where elements of value chains are being shifted to alternative locations, companies owning the entire (or most) of an international supply chain will resemble each other whether they come into existence through "horizontal" or "vertical" FDI. However, the trajectory of this development might well be significant (e.g. in terms of the existence of effective supply networks).
Conglomerate FDI: these are usually opportunistic acquisitions of foreign assets, unrelated to the core business, by capital rich companies, although some firms apply a "contiguity" principle (i.e. the assets acquired must have some type of relationship with core business). In some cases, there is no core business inasmuch as the parent TNC is a pure holding company.

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[51] This is the IMF "benchmark" threshold definition to which most countries adhere, although many have additional requirements and a few prefer a higher threshold (say 20%).

FDI is either expansionary, if the firm is keen to exploit its ownership advantages abroad, or defensive, if the firm is pushed into overseas expansion (for instance to reduce production costs under competitive pressures). FDI entry generally takes one of two forms – Greenfield investments (the assets established are entirely new) or cross-border mergers and acquisitions (M&A) (existing assets are bought or merged)[52]. The entry can be wholly owned (the foreign TNC entirely owns it) or a joint venture (which can be majority, 50:50 or minority – and more than two firms might be concerned). We will keep to a strict (narrow) definition of FDI in this study, for clarity, although the pertinent issues will be discussed where appropriate. FDI is conducted by transnational firms that are firms with operations in more than one country.

While we do not wish to cover exhaustively the literature on FDI determinants, coverage of this issue helps to illustrate the basic hypotheses governing the motivations for cross-border investment and production relocation. FDI often occurs in order to maximise profit and reduce costs by taking advantage of differences in cost structures, due to factor productivity and remuneration differentials across countries.

There are four principal types of TNC activity. These are natural resource seeking, market seeking, efficiency seeking and strategic asset (capability) seeking activities. Additionally, TNC activities abroad may be *aggressive* (that is seeking to take a pro-active action to advance strategic objectives) or *defensive* (that is reacting to actions taken by competitors, foreign governments or others). Undoubtedly the reasons behind overseas expansion change over time and according to circumstances (Sun and Tong: 2002). Apart from reasons for overseas expansion that are internal to the firms, there are two key types of determinants related to the host economy. The first type includes the institutional features of the host economy. These are mostly political stability, government policies in terms of the general business environment, labour conditions, intellectual property protection, etc. Macroeconomic policies are mainly monetary and fiscal policies, and they differ from macro-organisational policies, which affect patterns of resource allocation and the structure and organisation of economic activities (UNCTAD, 1998: 98). The second type of action taken by governments is related to business facilitation measures, such as FDI incentives, reducing costs of running subsidiary, and providing a good environment with amenities for expatriates (UNCTAD, 1998: 105, Holland et al., 2000). Finally it is expected in a globalised world that governments will have in place investment generating measures and facilitation measures. Clearly, as sequential investments become a key source of FDI, as in the case of Southeast Asian nations, governments need to pay increasing attention to retaining foreign investors.

Despite the discussion above on the importance of government policies, there is evidence in the literature that incentives are but a minor factor in the decisions by TNCs to locate abroad. Other locational advantages, namely political stability, the physical and legal infrastructure, macroeconomic factors and critical factor endowments, have a more prominent role in explaining FDI (Mirza et al 1997). Macroeconomic factors include national markets, essentially covering market size,

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[52] Of course mergers are rare, especially between firms from industrialised and developing countries, so most such investments are acquisitions.

growth and average incomes. Factor endowments include raw materials, human capital and the availability of low-cost unskilled labour. The latter is, undeniably, a key attractive factor for many developing countries, but it is not sufficient on its own. To be optimal abundant and low-cost labour need to be coupled with productivity. For ASEAN countries, section 3 implied that higher educational achievement in this region has been a key attractor; and other surveys of TNCs in South East Asia have underlined that skilled labour, especially engineers and managers are increasingly critical in investment (expansion) decisions (Mirza et al, 1997). Determinants are rarely relevant in isolation. Similarly, Lim (2001) assessed that key determinants are market size, infrastructure quality, political/economic stability, and free trade zones. Results in the literature are less clear about the relevance of fiscal incentives, the business/investment climate, labour costs and openness. Holland et al. (2000), studying the determinants of FDI in Central and Eastern Europe, reported that market size and growth potential have been key determinants, while factor cost advantages played a less significant role. Of course, whether investments are "horizontal" or "vertical" FDI or "expansionary" v "defensive" actions (among other motives) will clearly influence the determinants relevant in a particular situation.

Table 4.1 Host country determinants of FDI

Host Country Determinants	Type of FDI classified by motives of TNCs	Principal economic determinants in host countries
I. Policy Framework for FDI • Economic, political and social stability • Rules regarding entry and operations • Standards of treatment of foreign affiliates • Policies on functioning and structure of markets (especially competition and M&A policies) • International agreements on FDI • Privatisation policy • Trade policy (tariffs and NTBs) and coherence of FDI and trade policies • Tax policy II. Economic Determinants III. Business facilitation • Investment promotion (including image building and investment-generating activities and investment-facilitation services) • Investment incentives • Hassle costs (related to corruption, administrative efficiency, etc.) • Social amenities (bilingual schools, quality of life, etc) • After-investment services	A. Market-seeking	• Market size and per capita income • Market growth • Access to regional and global markets • Country-specific consumer preferences • Structure of markets ....
	B. Resource or asset-seeking	• Raw materials • Low-cost unskilled labour • Skilled labour • Technological, innovatory and other created assets (e.g. brand names), including as embodied in individuals, firms and clusters • Physical infrastructure (ports, roads, power, telecommunication) ....
	C. Efficiency-seeking	• Cost of resources and assets listed under B, adjusted for productivity for labour resources • Other input costs, e.g. transport and communication costs to/from and within host economy and costs of other intermediate products • Membership of a regional integration agreement conducive to the establishment of regional corporate networks

Source UNCTAD, 1998: 91

Table 4.1 summarises the discussion above, indicating the key host country determinants that are the policy framework for FDI, including economic determinants and business facilitation measures. Market seeking, resource/asset-seeking and efficiency seeking investments appear in conjunction with the principal economic determinants in host countries.

A good understanding of FDI determinants helps in grasping the complexity of FDI strategies and why and how TNCs wish to operate abroad. A final key distinction to be drawn in this context is that of integration strategies. In the past, TNCs used to resort mainly to simple integration strategies and would set up stand-alone foreign affiliates, relatively independent from parent companies and without links to other affiliates of the same firm (UNCTAD, 1998: l09). In developing countries these were mostly set up in the 1960s and 1970s, when the first export processing zones were established. More complex integration strategies have since emerged, and firms increasingly seek locations where they can combine their own mobile (firm specific) assets most efficiently with the immobile (country or location specific) resources/assets they need. Hence, firms are increasingly splitting up the production process into various specific activities (such as finance, R & D, accounting, training, parts production, distribution) or segments of these activities (UNCTAD, 1998: 111) (i.e. the value chain) – and dispersing these, as appropriate, world-wide. This has led progressively to the *new* international division of labour and the integration of production networks on an international, regional and sometimes (as in the case of China) even a national level. In this context, agglomeration economies and infrastructure facilities have grown in importance. TNCs are keen to operate among specialised clusters that provide them with the much-needed knowledge, generating and enhancing environment. This can only be performed with sufficient support services, telecommunications and transportation facilities. (See also the discussion in section 2.1 and 2.3.)

As a conclusion to this section, a number of FDI determinants often explain why a TNC would wish to locate in certain developing countries, and governments must pay more attention to creating the right environment for foreign investors and to the role of created assets for attracting or retaining FDI (this includes regionalisation policies, as detailed in section 2.2 for ASEAN) (Lall, (2002), Ramasamy and Yeung (2002)).

Substitutability of Investment in Developing Countries
When considering the impact that FDI can have on the host economy, one has to consider two questions, first, what would have happened if the FDI had not taken place (the counterfactual circumstances) and is FDI replacing or complementing local investment? It is difficult to evaluate what the situation would have been had FDI not taken place. It is often argued that FDI contributes to the host developing country by filling the saving gap (the difference between investment and savings) and the foreign exchange gap (the difference between imports and exports). Indeed, foreign firms have better access to capital, and additionally:

> "(i) FDI by a particular [TNC] in a particular project may encourage other
> [TNCs] to participate in the same project;
> (ii) such an action may encourage the flow of official development aid from
> the investor's home country and;

(iii) by offering locals attractive investment opportunities FDI may mobilise domestic savings." (Moosa, 2002: 72)

FDI brings in investment that may otherwise not have taken place, it is also generating other streams of investments. Moreover, the amount of capital brought in through FDI may not be very large, and benefits gained though intangibles may exceed the capital contribution. FDI is not solely a mere financial capital flow. It can also, ideally, be expected to increase the existing stock of knowledge/capability by providing training and skills, know-how and introducing new management practices and organisational arrangements. The extent to which FDI is growth enhancing for the host country depends on the degree of complementarity and substitution between FDI and domestic investment. De Mello (1999) finds that the degree of substitutability between capital stocks embodying old (domestic) and new (FDI related) technologies seems to be higher in technologically advanced, rather than developing recipient economies. Looking at the degree of complementarity between old and new technologies found in developing countries, it can further be argued that developing economies may:

> "(i) be less efficient in their use of the new technologies embodied in FDI, related capital accumulation;
> (ii) have difficulty to assimilate capital and technology intensive improvements; or
> (iii) that the latter are not much more modern or productive than the ones existing in the recipient economy." (De Mello, 1999:148)

It is thus possible that FDI does not transfer as much technology as might be expected. On the other hand, it is essential that countries, such as those in ASEAN, improve their abilities to use and absorb new technologies. Borensztein et al. (1998) looked at FDI flows from industrial countries to 69 developing countries, and found that FDI did contribute somewhat more to growth than domestic investment, essentially through technology transfer. We can conclude that the benefits brought by FDI in items of capital will depend on a number of factors, some being country specific (such as institutions, trade regime and political risk, policy), some being related to the firm itself and the type of technology transferred. Additionally, the question of whether FDI has a crowding out effect on domestic investment is crucial, but must be analysed in the light of how much economic growth occurs thanks to FDI augmenting capital accumulation in the host country (this, in turn, being dependent on, for example, how much human capital is available in the host country). The final aspect to be considered is that of efficiency of capital, since FDI is found to be more productive than domestic investment in many developing countries (Borensztein et al., 1998). We conclude from this section that FDI potentially boosts growth via technological upgrading and knowledge spillovers but the overall impact depends on the degree of complementarity and substitution between FDI and domestic investment, as well as other factors pertaining in the host economy.

4.2 SPILLOVERS FROM FOREIGN DIRECT INVESTMENT

In the analysis of the impact of FDI on host economies, one must distinguish between direct and indirect impacts. Direct impacts include impacts on capital formation, employment, tax revenues and trade, while indirect impacts include changes in the performance and strategic behaviour of locally owned firms and general economic dynamism. Direct impacts may be more apparent in the short-term, but indirect impacts bring substantial benefits from FDI for host economies in the medium- to long-term. Some authors focus on the transfer and diffusion of technology, (including product, process and distribution technology, and management skills), the impact of which can be substantial as TNCs import and demonstrate those technologies in the host economy, thus leading to higher levels of competition for local firms producing similar goods. In this dynamic environment local competitors might have little choice other than to try and improve their own operations, management and production methods, sometimes doing so by hiring staff previously trained and with working experience with TNCs. This competitive impact can be both positive (local firms become more competitive) or negative (local firms fail because of a lack of financial, managerial or technological resources). The latter phenomenon is sometimes referred to as "crowding out" (of local firms), especially in the context of a number of TNCs entering a particular host country.

Undoubtedly the situation will vary according to the level of development of the host developing economy, the existing competitive environment and the type of industries where foreign firms are located. Athreye and Yamin (1999) argue that the scope for economy wide spillover from FDI is limited, and that, first, spillovers depend upon industry level factors rather than trade policies, and that, second, economy wide spillovers are stronger in smaller countries. This issue arises because the authors discuss FDI impact differences according to the export orientation of the host country, i.e. in the context of export promotion and import substitution. This argument is of prime relevance in the case of developing countries. Over the past three decades, many developing countries have shifted their trade and industry policies away from import substitution in favour of export orientation. (Athukorala and Menon, 1995). Blomström et al. (2002) identify various spillovers from TNC activities. They suggest that TNCs may improve *allocative efficiency* by entering into industries with high entry barriers and reducing monopolistic distortions, and induce higher *technical efficiency*. This occurs especially if the increased competitive pressure or some demonstration effect spurs local firms to a more efficient use of existing resources. They also propose that TNC presence might lead to increases in the rate of *technology transfer and diffusion*. More specifically, case studies showed that foreign TNCs might:

> "(i) contribute to efficiency by breaking supply bottlenecks (but that the effect may become less important as the technology of the host country advances);
> (ii) introduce new expertise by demonstrating new technologies and training workers who later take employment in local firms;
> (iii) either break down monopolies and monopolies and stimulate competition and efficiency, or create a more monopolistic industry structure, depending on the strength and responses of the local firms;

(iv) transfer techniques for inventory and quality control and standardisation to their local suppliers and distribution channels; and
(v) force local firms to increase their managerial efforts, or to adopt some of the marketing techniques used by TNCs, either on the local market or internationally." (Blomström et al., 2002: 110-111)

This description provides us with an overall view of what spillovers may imply. In the coming sections, we will pay particular attention to productivity spillovers, export behaviour, transfer of technology and inter-industry effects and HRM and training. The key group analysed are those of local partners (if the company operates under a joint venture agreement), local suppliers, customers and competitors, as well as the overall business community in the host developing country.

Productivity
FDI may benefit the host country through productivity gains by various means. Productivity may increase directly within the foreign plants, or indirectly within local companies. Broadly speaking, FDI impacts on productivity in host countries by improving allocative efficiency, technical efficiency and through technology transfer and diffusion. One must start by acknowledging that technological change is an important variable in terms of its effects on the quantity, quality and variety of goods and services. The emphasis can be put on capital accumulation, thus on technical progress and innovation. Knowledge can be acquired and disseminated nationally or internationally, with knowledge spillovers occurring through international trade, FDI, formal co-operative modes, migration and education. Hegazi and Safarian (1999) use R & D as a proxy for knowledge, and looking at OECD countries, they first propose that the increase in total factor productivity depends on domestic R & D capital stock, as well as on foreign R & D capital stock. Building on this, the authors look particularly at the role of trade and FDI as diffusion channels for R & D. it is argued that

> "First, through international trade, a country can increase the productivity of its own resources by imports of intermediate products and capital equipment. Second, such trade can also open communication channels which lead to cross-border learning of various types. Third, through international contacts many foreign technologies are copied or modified. Fourth, international trade can raise the productivity of a country by spurring development of new technologies or imitation of the technologies of others" (Hegazi and Safarian, 1999: 494).

All of the above channels may operate through FDI; indeed, international trade and FDI are highly correlated, not to mention that a significant portion of the world's trade is intra-firm while another portion involves trade between TNCs and other groups. Additionally, the host country does benefit from knowledge spillovers from FDI itself. When establishing abroad foreign firms bring their own technological knowledge and their firm-specific advantages. TNCs often have a competitive edge in new product and processes and in marketing skills and organisational advantages, particularly so in host developing countries. Their presence in the country has a direct impact on the strategic behaviour of locally owned firms.

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> "Generally, productivity spillovers are said to take place when the entry or presence of [TNC] affiliates lead to productivity or efficiency benefits in the host country's local firms, and the TNCs are not able to internalise the full value of these benefits". (Blomström et al., 2000: 103)

Local firms are then led to increase their productivity, first because they are under harsher competitive pressure at home, second because they have the opportunity to copy some technology used by TNCs. Local firms are led to improve their efficiency. Such productivity spillovers take place in the foreign firm's own industry or across industries, essentially through commercial links with suppliers and customers. Therefore, FDI has substantial productivity spillovers in the host economies. Much of productivity spillover occurs through FDI rather than trade (and as discussed some trade related spillovers can actually be attributed to FDI) (Hegazi and Safarian, 1999).

Using a panel of more than 4,000 plants between 1976 and 1989 in Venezuela, Aitken and Harrison (1999) find that foreign equity participation is positively correlated with plant productivity (that is productivity within the foreign firm itself), showing that the relationship is robust only in the case of small firms. On the other hand, plants which do not receive FDI exhibit productivity declines as a result of increasing foreign activity. This can be explained by the fact that TNCs tend to locate in more productive sectors and to invest in more productive plants. Aitken and Harrison (1999: 617) conclude from their analysis that on balance, the net effect of foreign ownership on the economy is quite small. The benefits that do arise from foreign investment appear to be internalised by joint ventures, with no evidence of technology spillovers from foreign firms to domestically owned firms. Clearly results will vary greatly according to the level of development of the host economy. In developing countries, foreign firms have high labour productivity. Yet Blomström and Sjöholm (1999) find that, in the case of Indonesia, the degree of foreign ownership neither affects the level of labour productivity in foreign establishments, nor the degree of spillovers.

Overall, FDI helps increase productivity in a host economy by improving allocative efficiency, technical efficiency and by technology transfer and diffusion. these are said to take place when TNCs are not able to internationalise the full value of these benefits. Hence, as mentioned above, key efficiency improvements take place primarily within the firm. Spillover efficiency happens when the advanced technologies of TNCs are transferred to domestic plants because of their presence in the host economy. There are three main channels for spillovers. First, there are movements of highly skilled staff from TNCs and domestic firms. Second, there are demonstration effects when domestic firms learn superior production technologies through their relations with TNCs. Finally, competition is a key aspect, with local firms being led to improve production technologies and techniques. TNCs may change the nature of market concentration, they may increase competition and force domestic firms to adopt more efficient methods of operation. Kokko (1996) investigated signs of productivity spillovers from competition between local firms and foreign affiliates in the Mexican manufacturing sector, arguing that the reason why previous studies on productivity spillovers have shown contradictory results is because competition was not evaluated. Productivity spillover effects would not be proportional to foreign presence, but rather they would be related to investment

decisions and learning efforts in both foreign and local firms. Kokko (1996: 527) finds that in industries where foreign firms operate in isolation from local competition, labour productivities of foreign and local firms are simultaneously determined because of competition. He also finds that competition has an independent effect on productivity of local firms, even after accounting for the demonstration and contagion spillovers that are related to foreign presence. These results do not stand in cases of 'enclave' industries. Similarly, Sjöholm (1999) finds that FDI benefits locally owned establishments, but the effect differs between groups of industries. In Indonesia, competition is found to increase the degree of spillovers for FDI. One explanation could be that the higher the competition for foreign firms the more frequently new technology has to be brought in to keep them competitive, and the larger the scope is for spillovers Sjöholm, 1999a: 69). It appears that it is domestic competition, rather than competition from imports, that affects spillovers from FDI. Contrary to other studies, it is also found that local establishments in sectors lagging behind foreigners in technology seem to be grasping the benefits of spillovers.

In the case of China, Li et al. (2001) find that while collective and private-owned enterprises benefit from demonstration and contagion effects from foreign presence, productivity gains of state-owned enterprises largely come from competition with foreign firms. Hence, it is the presence of, as well as the competition with foreign firms, that triggers beneficial spillovers. If, focusing on labour productivity, one can assume that FDI and labour productivity are causally independent variables, nevertheless capital formation in the host can have a casual influence on FDI. The two variables are independent for several reasons.

> "First, given their access to international markets, foreign subsidiaries face a different set of relative factor prices from domestic firms. Second, developing new alternative techniques which are appropriate for developing countries is very costly. Foreign firms therefore have a tendency to use imported capital, intensive techniques which be duplicated early by domestic firms. Third, managers, plant designers and the chief engineers of foreign firms are normally trained abroad and not familiar with the existing technology of the developing host country. Moreover, they lack the incentive to disseminate the know how to domestic firms." (Kholdy, 1999: 748)

One other factor likely to explain TNCs productivity spillover in host developing economies is that of export orientation. Aitken and Harrison (1999) mention that the scope for spillovers might be greater in the export-oriented economies of East Asia. Indeed,

> "productivity is likely to rise and unit cost likely to decline if: (i) FDI is export promoting and the products of the subsidiary are destined for the larger world markets; and (ii) the underlying conditions and policies allow the installation of plants designed to achieve full economies of scale. On the other hand, if FDI is import substituting and the size of the market is too small to allow the installation of the optimum plant size, then productive efficiency may not be achieved." (Moosa, 2002: 86)

Thus, the issues of final market and plant size are important in the analysis of productivity. This is because productivity gains are related to market size, economies of scale and scope within the foreign plant and the actual utilisation of technology, together with the level of technology.

In conclusion to this section, we must draw the reader's attention to two important issues. First, there exist many studies on FDI spillover effects on productivity. Not all studies agreed on the relationships and effects of FDI on productivity. While situations may differ, some aspects of the research design may affect the results of various studies. Görg and Strobl (2001: 737) find that, on average, cross-sectional studies report higher coefficients of the effect of foreign presence than panel data studies. Also, the definition of the foreign presence variable affects the results. Second, as mentioned throughout this section, productivity spillovers depend on a number of factors, including the level of utilisation of firms, resources, the quality of the manpower in the host economy, the climate of industrial relations, the industry structure and concentration of foreign firms in certain industries, the government policies related to competition, and the export-orientation of the host economy.

TNCs and Trade Flows
TNCs in East Asia have traditionally been trade-intensive, essentially because of the type of activities they carry out in some industries, such as electronics and textiles. Not only do TNCs export a large proportion of their production, they also import parts and capital equipment from the parent TNC or from other sources, including affiliated companies. TNCs thereby affect the size and direction of trade flows. Many authors have found a strong correlation between FDI and trade flows, which leads to the question of complementarity versus substitutability between the two flows, or to what extent the production and sales of a foreign firm will replace or boost imports/exports to/from the host economy. For example, FDI may be a substitute to imports into a host economy if a TNC decides to set up operations in the country with a view to seizing the local market directly instead of importing into that market. Trade flows may change if that TNC imports some of its inputs and also if it starts exporting to third markets. This may especially be the case if the foreign firm can produce goods cheaply, and it could even start exporting to its home market. The key to this debate lies in whether the investment is horizontal or vertical. Horizontal FDI take place so as to service geographically separate markets by being located in those markets; whereas in the case of vertical FDI, various activities of the firm may be separated and located in different geographical areas, so as to benefit from comparative advantages of host economies.

By their overall spillovers on the economy, TNCs can have a positive impact on the export capacity and likelihood of the host to increase exports. Export success for many developing countries is initially based on exports of raw materials, and on labour cost advantages. Indirect FDI impacts on export competitiveness may come from technological spillovers through the economy, which in turn may allow the developing host firms to improve their international competitive position. Firms cannot sustain export by merely exploiting static comparative advantages and, in this respect, foreign firms can act as drivers for the development of technological and innovative capabilities, technological change, a continuous process of innovation in products and processes, the upgrading of organisational structures, marketing

capabilities etc. – all of which are required for host firms to develop and maintain their exports success.

Thus, TNCs influence host economies trade both directly, through their own activities, and indirectly, by establishing commercial links with other companies in the host economy, by learning effects and by stimulating technological capabilities. Aitken et all. (1997) identifies two sources of spillovers from FDI on export behaviour. These are export production in general and the specific activities of TNCs. These include localised spillovers associated with exporting by one firm that reduce the cost of foreign market access for nearby firms. Further, as TNCs provide some information and distribution services, they provide support for export from local firms. TNCs may also provide imports that are not available in the local market, and link local firms to foreign buyers. They may also influence local subcontractors' quality and production standard in such a way that they are in a position to start exporting. Aitken et al. (1997) use panel data on 2,104 Mexican manufacturing plants in the late 1980s to develop a model of the firm production decision and thereby derive a reduced form for the profitability that a firm exports. They find that the probability a domestic plant exports is positively correlated with proximity to TNCs, they also find that exports spillovers are restricted to transnational activity.

Foreign-owned enterprises are a natural conduit for information about foreign markets and technology, and a natural channel through which domestic firms can distribute their goods. To the extent that foreign investors directly or indirectly provide information and distribution services, their activities enhance the export prospects of local firms.

Technology Spillovers
Technology is at the core of economic development, firms' and countries' competitiveness, capital accumulation and, as mentioned in the previous section, of export success. When entering a host economy, TNCs bring with them a wide array of technological knowledge and it is no wonder that technological spillover is central to the discussion of TNCs' impact on host economies.

Channels of international technology transfer to developing countries have been widely studied in the literature (Tidd and Brocklehurst, 1999; Pack and Saggi, 1997; UNCTAD, 1996; Kumar, 1998 among others). Various channels have been discussed above, yet technology transfer also occurs via other means, for example, trade in capital goods, invitation and reverse engineering. According to Pack and Saggi (1997: 83) one useful way to distinguish between different channels of technology transfer is by categorising them in terms of their relative use of markets and organisations.

FDI is considered by many as an alternative to arm's length contracts for foreign production and technology transfer (Buckley and Casson, 1976; Dunning 1981, 1993). FDI is considered to be the dominant channel of international technology transfer (Pack and Saggi, 1997). Foreign firms have ownership advantages, with intangible assets such as product and process technology, brand ownership, managerial and marketing skills and access to cheaper sources of capital and raw materials (Kumar, 1998: 3). Apart from FDI, other channels of transfer to developing countries include subcontracting, technology licensing, original equipment

manufacturing (OEM) and strategic alliances. Subcontracting can occur across border directly from the parent firm or within the host economy with the foreign affiliate maintaining sub-contracting relationships with local firms. Sub-contracting is commonly found in manufacturing. Sub-contractors tend to be selected for their cost and quality advantage, but rarely for technological advantage in terms of design and development. Technology licensing allows firms to pay for the right to use another firm's intellectual property. This is particularly beneficial if the buying firm does not have the means to develop its own R & D programme. Under an OEM contract, a local firm or a foreign firm located in the host economy produces a finished product to the precise specification of the contractor and the product will be sold with the contractor's name, the contractor would normally provide the firm with specifications about the production process and with training for employees. OEM contracts are very frequent in Southeast Asia in both electronics and textiles sectors. Finally strategic alliances bring together two or more partner firms for a pre-determined project somewhere along the value chain.

Because technology is important for host developing countries, the OECD has issued guidelines to encourage TNCs to

> "(i) ensure that their activities are compatible with the technology plans of
> the host countries;
> (ii) adopt practices that allow the transfer of rapid diffusion of technology;
> (iii) address local market needs in an exercise pertaining to technology;
> (iv) license technology on reasonable terms and conditions;
> (v) develop ties with local universities and research institutes." (Moosa,
> 2002: 87)

Such guidelines are established to raise awareness within TNCs of potential technology gaps in host developing countries. Indeed empirical microeconomic studies find low levels of total factor productivity in developing country firms even when they employ equipment identical to that in industrialised countries (Pack and Saggi, 1997).

In order to assess technological capability at a country level we can use indicators of both technological 'inputs' and 'output'. R & D expenditure is considered as the most important input indicator of the technological activity, while patents obtained by inventors and actual receipts of royalties and technological fees (showing the importance of a country as a supplier of technology) constitute one of the technology output indicators (Kumar, 1998: 13). Such indicators favour industrialised economies, since innovative activity in developing countries is adaptive. Developing economies gradually build up technological efforts and countries such as Korea and Taiwan have started to export technology to nearby less developed countries. Additionally, the rise of FDI outflows from developing nations indicates growing technological capability and shows that indigenous enterprises have created their own assets, and they are in a position to exploit these overseas. On the receiving end, some countries do manage to grow by depending upon FDI for technological inputs for upgrading and diversification. This creates constraints and is not viable as a long-term development strategy, which is why developing country governments must strengthen local technological activity and must encourage local R&D. Overall, the inter-country distribution of technology transfers are highly concentrated in the

triad nations – the USA, the European Union and Japan. These countries are not only major sources of technology, but also share the bulk of all technology inflows (Kumar, 1998: 28). Technology transfers to developing countries have grown at a slower rate than overall inflows, while the share of developing countries as recipients of FDI has gone up during the 1990s. There is a source-country concentration of technology transfers to developing countries, similar to that which obtains with the distribution of FDI inflows, and with a regional aspect,

> "Japan's technology transfers have focused on Asian NIEs. French companies have a considerable proportion of their technologies going to former French colonies in francophone Africa. US companies have favoured a few Latin American countries – Mexico, Brazil and Argentina, and Asian NIEs like Korea, Singapore, Taiwan, Hong Kong and Thailand". (Kumar, 1998: 30)

FDI related technology transfers take place within the firm itself or between firms. Technology confers an advantage to its owner, and it is one of the key ownership advantages that benefit TNCs in overseas markets (Dunning, 1993). In Porter's typology of the firm (1985, 1998), the firm has six primary activities, which are inbound logistics, production or operations, outbound logistics, marketing and sales, service and internationalisation. The four support activities are the firm infrastructure, its technological development (including innovation, product design and research and development activities), human resource management and procurement. In setting up activities in a foreign country, the firm will transfer knowledge and technology for part or all of these activities. Within the sphere of its competitive advantage, the firm relies on its suppliers and customers and may wish to share some knowledge and technology with them. However, it also needs to consider its direct competitors or their manufacturing substitutes for its own products. Clearly, for foreign firms, technology transfer raises the risk of losing their technology-based competitive advantage to potential competitors. For this reason, EU companies with investments in China operating in high-technology sectors were reluctant to transfer their core technologies to China and base R&D capabilities there (Bennett et al., 2000). Foreign firms face the risk of misappropriation or leakage of technology (Bruun and Bennett, 2002). Overall, issues related to technology transfer depend on the industry concerned, to what extent the foreign firm relies on its technology for competitive advantage, how replicable the technology is and, most of all, on the absorptive capacity of the host economy. Depending on how well the foreign affiliate is "embedded" into the business environment of the host country, and on its integration within the global structure of its firm, a foreign affiliate may be in a position to develop its own technological knowledge and transfer it back to its parent firm or to other affiliates. This is the process of reverse technology transfer[53] (Hakanson and Nobel, 2001).

FDI, local technology purchase and outward foreign investment are substitutes for R&D activity (Chuang and Lin (1999). In the case of Taiwan, during the early development stage, technology transfer through FDI facilitated industry wide technological learning and diffusion and thus may have been the most effective way

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[53] Note that this term is also used to designate the flow of skilled labour from developing to industrialised countries.

for the country to strengthen its technological capability and to absorb appropriate new technologies (Chuang and Lin, 1999: 133).

But FDI has wider beneficial impacts when it comes to technology. As mentioned in the section on productivity, TNCs improve allocative efficiency and technical efficiency through technology transfer and diffusion. TNCs improve technical efficiency by introducing new expertise, by demonstrating new technologies and by training workers who later take employment in local firms. Some techniques for inventory and quality control and standardisation may be transferred to suppliers and distributors. Clearly, "to examine how the development of technology and productivity in individual local firms is related to the presence of foreign TNCs in local market, the study would require detailed micro data, both quantitative and qualitative" (Blomström et al., 2000: 111). To date, no study has been conducted in this regard, covering several years and a large number of firms and industries.

Madu (1989) provides a framework to show the factors which contribute to the success of technology transfer. These factors are, that the host developing country have a stable government, a good level of education and training, existing capabilities (firms with the ability to comprehend, use and modify technology) and cultural values favourable to the diffusion and training process. Also necessary to successful transfer is the identification and implementation of appropriate technology. Technology transfer may also depend on management effectiveness in the host economy. If the technology gap between the methods used by foreign firms and those used by local firms is too wide, technology may not be absorbed by local firms.

If the technology adopted by foreign firms is inappropriate, it may have negative effects on the host economy, mostly by creating a dualistic structure. Factor endowments of the host country must therefore be considered, otherwise the technology transferred may have adverse effects on employment, income inequality and on local firms' practices. There is therefore a case for adaptation of the technology to local conditions. Certain local conditions must be in place for efficient transfer. Looking at Indian firms, Vishwasrao and Bosshardt (2001) find that foreign ownership, firm size and market structure are among the variables that impact on a firm's probability of adopting new technology.

To sum up, FDI by TNCs is considered to be a major channel for access to advanced technologies by developing countries. FDI contributes to the host's capabilities and growth by its effects on technological progress and increasing capital accumulation (Moosa, 2002: 88). Benefits from technology transfer will only occur subject to various economic, socio-cultured and technological factors.

FDI, Inter- and Intra- Industry Effects
In a sense, many topics covered in previous sections also apply to other sectors in the host economy. By mentioning industry effects, we mean that foreign firms in a host economy will have a direct and indirect impact on customers and suppliers and on competitors. Backward linkages are the extent to which foreign firms establish links with local suppliers. Foreign firms buy parts and components manufactured by locally-owned companies, thus benefiting the latter in terms of income and, hence, local employment. Foreign firms may also contribute to the competitive development

of local suppliers, possibly through an exchange of technological knowledge and good practice and through training. Forward linkages are the extent to which foreign firms establish links with local customers, or local sales organisations and distributors. Foreign firms will have an impact on the local competitive environment.

Industry structure
It is not uncommon, in some developing countries, to find that foreign firms almost entirely dominate some industries. Hence a key issue to consider first, when analysing the effect of FDI on the industry, is whether TNC entry and presence determines industry structure. Some relatively technology-intensive sectors may exist in a host developing country purely because TNCs are operating in those sectors. In this case, it is unlikely that there will be many locally-owned competitors in the short term, although in the medium-to-long-term, locally-owned firms may develop in that industry. If TNCs enter into monopolistic host country industries, then improvement in efficiency and resource allocation may occur (Blomström et al, 2000: 121). It is not easy to identify then whether changes are directly influenced by TNCs or whether their presence in the host economy is speeding up the improvements taking place in the industry. The relationships between competition, efficiency and concentration are difficult to clearly understand. The concept of concentration comes into play when TNCs enter an oligopolistic industry (where several players are already in operation). In this case, foreign firms in developing countries may benefit from competitive advantages, there may be a crowding out effect or local firms may be absorbed by foreign firms. A direct effect of foreign firms presence in the industry include effects on initial capital requirements, capital intensity and advertising intensity. Indirect effects include changes in technology and marketing practices, or gains of policy concessions from the government (Blomström et al., 2000: 122). Undoubtedly, foreign firms' entry into a previously protected industry will have more (short-term) negative effects than entry into import-competing or export-oriented industries.

Trade-orientation of the firm and of the industry is a key aspect to consider when analysing the impact of TNCs. When it comes to industry effects in developing countries, the level of technology is also a key issue to contemplate. Market structure affects both the rate and type of technical progress, with oligopolistic markets being more conducive to technical progress. Efficiency improvements through technical innovation are thus more likely in oligopolistic markets. It is important to mention that in the case of developing countries, local firms may be pushed out of business specifically because of the technological advantages of foreign firms, and because of the new entry barriers and capital requirements arising as a result of foreign firms' activities.

Effects on suppliers
Foreign firms have an impact on host country suppliers if they create continual relationships with them that would involve recurrent transactions (Wong, 1991). Such transactions are the result of long-term supply or subcontracting relationships. If foreign firms merely purchase products off-the-shelf, this does not link the two partners more than in a simple pecuniary exchange. On the other hand, repeated interactions between the firms is likely to generate some exchange of information and even exchange of technology. Before even discussing linkages between foreign firms and suppliers, one essential question is to ask how much of their inputs foreign

firms purchase locally. The key terms to understand are primarily those of local content and local sourcing:

> 🟫 "Local content indicates the share of total outputs, components or intermediate products and ancillary products and services, produced locally. This includes inputs produced by local (foreign and domestic) suppliers, i.e. local sourcing, as well as those produced in-house by the foreign affiliates.
> 🟫 Local sourcing indicates the share of inputs supplied by firms in a host country, but very often there is no information available on the ownership of suppliers (domestically-owned or foreign-owned).
> 🟫 Finally, sometimes the definition of local content, for the purpose of determining eligibility under rules of origin in the context of preferential trade arrangements, also includes inputs from other countries belonging to the same preferential trade area." (UNCTAD, 2001: 134)

This terminology being defined, it remains to determine the type of local purchase made by foreign firms. A firm located in a host economy has the choice between importing inputs, parts and materials going into the production process, or purchasing these inputs on the local market. Within the local economy, the foreign affiliate can purchase inputs internally (that is the manufacturing of key inputs is performed either by the foreign affiliate itself, or by sister affiliates also located in the host economy) or externally either from locally-owned firms or foreign firms established in the host economy. The first choice for a firm is thus the "make or buy" decision. The decision to make or buy rests on the production and transaction costs involved. Companies nowadays tend to concentrate on their core capabilities and therefore purchase an increased amount of component parts and services externally (Casson, 2000, Krause, 2000); however in some industries, such as electronics, TNCs often have production capabilities across the value chain of the product. Indeed, although production costs are minimised if the supplier is specialised, the key transaction costs of using external suppliers may be substantial. In addition, activities of various affiliates within one TNC may be complementary, in which case substantial intra-firm exchange of parts and components is more likely to occur. While transaction costs consideration predominate in the decision to make or buy inputs, other factors also come into play when it comes to determining whether to purchase inputs locally or import them. Tavares and Young (2002) list three key groups of factors conditioning the choice between local (host country) and foreign sourcing (figure 4.1).

These are related to the TNC's overall strategy, the host country policy and environment and the industry characteristics and environment. Even if the foreign firm does purchase its inputs on the local market, as indicated earlier, in the case of developing countries and especially so in the non-resource sector (Sivalingham and Yang, 1993), it is frequently the situation that key inputs are purchased from other foreign-owned firms. One must therefore consider the local supplier industry, or the related and supporting industries as described by Porter (1990). Focusing on the host country's perspective, and adding to Tavares and Young (2002)'s model, the propensity to purchase locally will depend on the strategies of the seller, the capabilities of the buyer, host government policies and the nature of technology (Lall, 1993). In considering local purchase, one must look at the host country's economic climate. Economic growth and the investment climate are important (Lim and Pong,

82, 91), as well as the quality of infrastructure and the size of the local components industry (Belderbos et al., 2001).

Figure 4.1 Factors Conditioning the Choice between Local and Foreign Sourcing

MNE strategy
- Corporate objectives, culture and governance
- Centralisation v autonomy
- Globalisation v localization
- Inter-organisational relationships
- In-house/outsourcing/alliance policies

Subsidiary strategy and role
- Performance and evaluation criteria
- Management autonomy and entrepreneurship
- Subsidiary value chain
- Subsidiary characteristics: age, size, entry motivation & mode, and importance within MNE group

Industry characteristics and environment:
- Product
- Technology
- Competition
- Degree of globalisation or localisation, including suppliers & customers

Local v Foreign sourcing

Host country policy and environment:
- FDI policy
- Cluster strategies local sourcing and supplier development policy
- Economic development conditions and policies
- Supplier base and competencies

Source: Tavares and Young, 2002

Local governments try and encourage foreign firms to source locally, but rarely so by using local content requirements, which have not been found to be very effective (Hackett and Srinivasan, 1998). Instead, an increasing number of countries have adopted soft policies to promote not only local sourcing but also the deepening of relationships between foreign and local firms. Such linkage promotion policies, however, are highly context specific and need to be adapted to the specific circumstances prevailing in each host economy (UNCTAD, 2001: xxiii). The role of host government is three fold, since it needs to promote the competitive development of indigenous firms; to promote information exchange and raise awareness of foreign firms' requirements to local firms and of local firms' existence to foreign firms; and finally, it needs to address issues specific to foreign firms.

Various factors related to the host country itself are necessary for explaining the propensity of firms to purchase locally and to create links with local suppliers. We mentioned earlier that the industry itself and, subsequently, the types of products manufactured will lead to variations in supply patterns. In the case of developing countries, a large share of initial capital equipment is imported equipment, either from the parent country or from third countries. In the case of the electronics and textiles industries, parent firms often transfer their older equipment to developing countries. This equipment continues to be operated by foreign affiliates, while new equipment can be purchased at home, moving to high-technology at home and still benefiting from older product lines.

When it comes to purchase of inputs that will enter into the manufacturing process, firms in the primary sector have less scope for linkages with local suppliers than firms in the manufacturing or tertiary sectors (UNCTAD, 2001: 138-139). Within the latter sectors, the food processing industry leaves higher scope for local purchasing and linkages than the textiles and clothing sectors. Within the electronics and electrical industry, the level of local purchasing may be limited in developing countries, but there are extensive scope for linkage creation between foreign affiliates and local suppliers (Halbach, 89; Rasiah, 95; Supapol, 95; Giroud, 03).

Linked to the industry concerned is the type of product manufactured by the foreign affiliate and the technology intensity of the product. Developing countries have a comparative disadvantage in the manufacturing of high technology products. Even when foreign firms choose to locate in a developing country for the assembling of high-technology products, it is unlikely to source a large share of its direct inputs in the host economy, and if it does it is more likely to source from other foreign-owned firms. Reverse, foreign affiliates making standardized products with mature, non-proprietary technologies tend to prefer externalised, arm's length procurement (UNCTAD, 01: 137). Hence it is common in studies on backward linkages to find that sub-categories of products manufactured are used to explain levels of local purchase and linkage creation (Halbach, 89; Giroud, 03)

Backward linkages are also dependent upon the foreign firm's characteristics. Further, the reason why a foreign firm chooses to set up operations in a host economy is likely to have an impact on the future impact this firm will have on the host country. Market-orientation is of key importance and has been found to lead to variation in level of local content and subsequent relations with host suppliers (Supopol, 1995; Pangestu et al, 1992). Export-oriented firms will tend to purchase

less locally in developing countries, but they show a tendency to have closer relationships with existing local suppliers (Giroud, 03).

The entry mode chosen by the foreign firms may lead to different purchasing and relationship building behaviour. A firm entering into a joint-venture with a locally-owned firm might benefit from already established supply relationships by its partners. This is similar to the type of investment chosen, with acquired subsidiaries being more integrated into the local economy and having higher local content ratios than greenfield subsidiaries (Belderbos et al., 2000: 34). The age of the plant is a key factor in explaining embeddedness into the local economy (McAleese and McDonald, 1978). The foreign firm gains useful experience, over time, of the local business environment, and such knowledge will be complemented by the recruitment of local managers. In an industry where product cycles are short and new inputs are likely to be needed often, a foreign firm may be more active in looking for alternative sources of supply. Thus the age of the production of key products may also have an impact on backward linkages. An additional factor related to the foreign affiliate is that of its dependence upon its parent firm. The greater the autonomy of the affiliate the more likely it is to try and identify local suppliers and to create relationships with local suppliers (UNCTAD, 2001: 137). This factor is related to the existing international production system of the TNC. A TNC with a well established system will often have global purchasing strategies, thus the affiliate will have less freedom in its choice of sourcing. Instead the TNC will operate through centralised purchasing systems. This is common particularly in the automotive and electronics industries. Finally, the size of the affiliate may affect sourcing and linkages. Large TNCS have been found to source less locally than small ones (UNCTAD, 2001: 138), but they are also found to create more linkages with local suppliers (Giroud, 2003). Hence while large affiliates might be less beneficial to the host country by purchasing less, they might on the other hand bring benefits in terms of developing local suppliers' capabilities – as with many things, governments need to carefully balance their promotion strategies between large and small TNCs.

The factors discussed above determine the tendency to purchase on the local market and the potential linkage creation that follows from buyer-supplier relationships. The key to the discussion is, first, whether and how much the foreign affiliate purchases locally and, second, whether long-term beneficial linkages are created. In the case of developing countries, TNCs tend to minimise local purchasing because of problems related to local suppliers (Halbach, 89; Dobson, 93). Locally-owned firms lack in technical and qualitative capabilities (Gultom-Siregard, 95; Rasiah, 95), but also in volume capacity and managerial skills (Giroud, 03). Some locally-owned suppliers, however, do create supply relations with TNCs. The contractual relationship between the two parties may be a "pure" market transaction, a short-term or long-term linkage, or may even involve equity relationships (see Table 4.2).

Spillover impacts are expected across all suppliers, but further benefits are likely to occur for subcontractors or long-term suppliers. We have discussed the factors explaining backward linkages in a host developing country and the types of contractual agreements likely to link foreign firms and their local suppliers.

Table 4.2 Backward linkages and other relationships between foreign affiliates and local enterprises and organisations

Form	Relationship of foreign affiliate to local enterprise			Relationship of foreign affiliate to non-business institution
	Backward (sourcing)	Forward (distribution)	Horizontal (co-operation in production)	
"pure" market transaction	"off-the-shelf" purchases	"off-the-shelf" sales		
Short-term linkage	once-for-all or intermittent purchases (on contract)	once-for-all or intermittent sales (on contract)		
Longer-term linkage	Longer-term (contractual) arrangement for the procurement of inputs for further processing Subcontracting of the production of final or intermediate products	Longer-term (contractual) relationship with local distributor or end-customer Outsourcing from domestic firms to foreign affiliates	Joint projects with competing domestic firms	R & D contracts with local institutions such as universities and research centres Training programmes for firms by universities Traineeships for students in firms
Equity relationship	Joint venture with supplier Establishment of new supplier-affiliate (by existing foreign affiliate)	Joint venture with distributor or end customer Establishment of new distribution affiliate (by existing foreign affiliate)	Horizontal joint venture Establishment of new affiliate (by existing foreign affiliate) for the production of same goods and services as it produces	Joint public-private R & D centres/training centres/universities
"spillover"	Demonstration effects in unrelated firms ▪ Spillover on processes (incl. technology) ▪ Spillover on product design ▪ Spillover on formal and on tacit skills (shop-floor and managerial) Effects due to mobility of trained human resources Enterprise spin-offs Competition effects			

Source; UNCTAD, 2001:131

The most common source of transfer from foreign firms is linked to the technical support related to the production process and the product. Indeed it is found that even in the transfer of business and organisational know-how, or in the case of training, transfers are often related to the technical management and knowledge or involves support by the foreign firm in technical production and quality control (Giroud, 2003: 89). Table 4.3 illustrates buyer-supplier technology transfer, differentiating between product related technology, the transfer of process technology and organisational and managerial know-how transfer. Technology transfer is not the only link between foreign firms and local suppliers. Foreign firms often provide training to their suppliers, some financial flows may occur and other information may be exchanged between partners. While training commonly takes place (UNCTAD, 2001; Giroud, 2003; Halbach, 89; Wong, 91), financial transfers rarely occur. These exchanges are described in Table 4.4 below and help to indicate how extensive spillovers to local suppliers may be.

Table 4.3 Buyer-supplier Technology Transfer

Product-related technology	Transfer of process technology	Organizational and managerial know-how
1. Provision of proprietary product know-how 2. Transfer of product designed technical specifications 3. Technical consultation with suppliers to help them master new technologies 4. Feedback to product performance to help suppliers improve performance 5. Collaboration in R & D	1. Provision of machinery and equipment to suppliers 2. Technical support for production planning, quality management, inspection and testing 3. Visits to supplier facilities to advise on layout, operations and quality 4. Formation of "cooperation clubs" for interacting with suppliers on technical issues 5. Assistance to employees to set up their own firms	1. Assistance with inventory management and the use of just-in-time and other systems 2. Assistance in implementing quality assurance systems 3. Introduction to new practices such as network management or financial, purchase and marketing techniques

Source: Compiled from UNCTAD, 2001: 157-159

In her investigation of knowledge transfer from foreign firms to local suppliers in the electrical and electronic industry in Malaysia, Giroud (2003) differentiates between the factors likely to explain the existence of transfer and those explaining the likely level of transfer. She finds that overall knowledge transfer either does not occur or its level is fairly minimum. Key factors explaining the existence of transfer include the size of the firm, the type of products manufactured and the origin of the firm. Other factors, such as single supplier strategy, export orientation, being a subcontractor, time and level of intra-firm trade, also explain the existence of transfer, but to a lesser extent (Giroud, 2003: 290). In contrast to explaining why firms may or may not

transfer knowledge, other factors come into play to explain the intensity of transfer. Key explanatory factors explaining the level of transfer are mostly purchase-related (level of intra-firm trade, being a subcontractor, single supplier strategy) and origin factors. Firm-related factors such as size and the product manufactured are less important in explaining the level of transfer (Giroud, 2003; 293). This study looked at one country and one industry only. However, foreign firms spillovers to local suppliers will differ depending on a number of factors, as is illustrated in Figure 4.2. This figure shows how the level of external supply and the degree of transfer vary according to the level of technological capabilities in the host economy and the level of economic development. Determinant factors in explaining transfer will cover the time spent in the host economy, the industry, the origin of the firm, the investment strategy, the purchasing strategy and government policies.

Table 4.4 Other types of buyer-supplier transfers

Training	Sharing Information	Extending Financial Support
1. Training courses in affiliates for suppliers' personnel 2. Offering access to internal training programmes in affiliates abroad 3. Sending teams of experts to suppliers to provide in-plant training	1. Informal exchange of information on business plans and future requirements 2. Consultation on future strategies 3. Provision of annual purchase orders 4. Provision of market information 5. Encouraging suppliers to join business associations or fairs and facilitating networking	1. Pricing 2. Advance and prompt payments 3. Medium and long-term finance

Source: UNCTAD, 2001: 159-162

Figure 4.2 Stages of growth and backward linkages

Degree of transfer to local
suppliers

Level of external
direct supply

Technological
capabilities/
entrepreneurial
potential of host
country

Determinant factors:
- Time
- Industry
- Nationality
- Investment strategy
- Purchase strategy
- Government policies

Degree of
transfer to
local suppliers

Level of
development of
host country

Least
developed

Emerging

Newly
developed

Developed

Source: Giroud, 2003: 49

Forward linkages

There is a critical lack of studies on forward linkages by foreign firms in developing countries. It is therefore difficult to discuss much other than a "suspicion about the growing importance of forward linkages" (Blomström et al., 2000: 116). When forward linkages occur, it is expected that TNCs will affect local sales organisation's and distributor's (i.e. "customers") competitiveness and innovatory capacities. Clearly, the first issue to consider is the market orientation of the foreign firm. Export-oriented companies or firms with a high export ratio have no or few links with local customers. Hence, the initial investment strategy followed by the parent firm is a crucial issue. The industry, global market demand and the TNC strategy are likely to be the primary factors affecting the affiliate's export ratio. McAleese and McDonald (1978) find that foreign firms' export ratio declines over time. The authors ascribe the downward trend in this ratio to a number of factors. First, the degree of autonomy granted to the affiliate by its parent firm increases over time. The more successful the plant, the greater the authority and credibility of its resident manager. The manager also becomes more familiar with the local market environment over time. Second, new small industries may develop and start using the output of foreign firms (McAleese and McDonald, 1978: 332).

When forward linkages take place, the effect they will have on customers will depend, first, on the output produced by the affiliate and, second, on the proportion of this amount which is sold to external buyers rather than used by the affiliates for further value-adding activities (Dunning, 1993: 459). Some host country characteristics may also influence forward linkages. They include the local market size, local content regulations, and the size and technological capability of local firms (Blomström et al., 2000: 116). Rodríguez-Clare (1996: 855) adds that TNCs are more likely to have a positive linkage effect when the goods they produce are more complex than those produced by local firms (thus creating a higher demand for specialized intermediate goods), the costs of communication between the headquarters and the production plant are higher, and the home and host countries are more similar. The levels of development in host and home countries are also mentioned as key factors.

Forward linkages in host economies may be established either with industrial buyers (this would often involve buyers of technically complicated products), with local marketing outlets (such as distributors or sales agents) or with main street buyers if the foreign firm owns its own sales outlets. Benefits depend extensively on the type of products and potential users. The case of technology diffusion and adoption is a significant one. For instance "Before a new process or product innovation becomes widespread in the market, potential adopters have limited information about the costs and benefits of the innovation and may therefore associate it with a higher degree of risk. As the potential adopters come in contact with existing users (for example, TNC affiliates), information about the technology is diffused, the uncertainty regarding the pros and cons of the innovation is reduced, and the likelihood of imitation or adoption increases" (Blomström et al., 2000: 105). Thus, TNCs may either encourage users to use their new products, or by using new products themselves, they may encourage other potential users to adopt these in the host market.

There is overall little empirical research conducted on the critical issue of forward linkages, and there is a need for such studies to be carried out to better understand TNCs spillover impact through linkages with customers in host developing countries.

TNCs and local competitors

When TNCs establish themselves in a foreign market, they impact on the competitive position of the industry, and the performance of their competitors generally, by stimulating innovatory capacity (as we have discussed earlier in the technology transfer section) and by encouraging a market structure that promotes dynamic comparative advantages. TNCs have a stronger impact in developing countries, where local firms may have been shielded from international markets. TNCs thus stimulate competition and have spillovers effects, such as competitors learning from foreign firms' technological or managerial practices, hiring employees who have experience of working for TNCs, and accessing TNCs technical knowledge (UNCTAD, 1999: 214).

In developing countries, if TNCs enter relatively high-technology sectors, it is likely that there will only be a few existing local firms in the sector, if at all. In these particular sectors, local firms are often discouraged by high entry barriers. Government policies and attitudes towards entry of TNCs in these sectors will be crucial. While some countries which limited TNCs entry in automobiles and electronics, such as Korea and Brazil have generated competitive locally-owned firms in these sectors, in many other cases, FDI restrictions have failed to facilitate domestic technological competence. Host countries tend to fear crowding out effects of TNCs in certain sectors. Indeed, TNCs' presence can adversely affect learning and growth by local firms in competing activities and can reduce access or raise costs for local firms. Linked to the concept of crowding out, when local firms already exist in activities in which a TNC invest in, obstruction and diversion of the technological learning process of local firms may take place. Locally-owned firms may find it costly to retain competitiveness in sectors where TNCs operate, and they may then decide to either focus on a less competitive industry or to become suppliers to TNCs.

The demonstration effect may be an important impact of TNCs on competitors. Through demonstration effect, TNCs may impact on the productivity and market access of local firms. Pure demonstration effect often takes place unconsciously mostly because the way a firm first learns about a new technology or product that it will adopt is rarely documented (Blomström et al., 2000: 119). When local firms produce similar products to those manufactured by foreign firms it is also frequent that they will, over time, start to adopt similar production techniques. This may, in part, be due to demonstration effect and to the competitive stimulus engenderd by the presence of TNCs.

A reverse view on this topic is to see how competition impacts on the activities of TNCs. Sjöholm (1999) examines the effect of spillovers from competition and productivity gaps on establishment levels in the Indonesian manufacturing sector. He found that competition has a positive effect on spillovers from FDI (ibid: 67). One explanation given is that the higher the competition for foreign firms, the more frequent technology has to be brought in to make them competitive, and the larger the scope is for spillovers. As a secondary consequence, local establishments in

sectors lagging behind foreigners in technology seem to be capturing the benefits of spillovers. One conclusion to this finding is that a country may increase spillovers from FDI by increasing the degree of competition, especially by its indigenous firms. Such a conclusion needs to be carefully adapted, in the context of the specific conditions of the host economy. Much depends upon the sectors and industries which the host government perceives as requiring priority attention; and on the long-term development strategy of the country.

Looking more specifically at the impact of competition on productivity, one must consider that the effects are not proportional to foreign firms' presence, but. rather, they are related to investment decisions and learning efforts in both foreign-owned and locally-owned firms. Kokko (1996: 527) analyses industry data from Mexican manufacturing and finds that the labour productivities of foreign and local firms are simultaneously determined because of competition. Furthermore, competition is found to have an independent effect on the productivity of local firms, even after accounting for the demonstration and contagion spillovers that are related to foreign presence.

Clearly, competitors will be affected by TNCs presence in a number of ways, but the impact will especially depend on the characteristics of the sector in which foreign firms are entering. These characteristics include:

> "(1) the number and size of the constituent firms,
> (2) the composition of their output and the geography and character of the markets served,
> (3) their innovatory capacity,
> (4) their existing and potential economic performance,
> (5) their entrepreneurial ethos,
> (6) the market prospects for the industry and whether or not existing firms are operating at surplus capacity,
> (7) the extent to which the industry is protected from competition (by import controls, subsidies, etc…)." (Dunning, 1993: 463)

Additionally to the sector characteristics, impacts on competitors will depend upon the nature and extent of the foreign firms competitive advantages and their strategies, as well as on the form and mode of entry into the host economy. Ultimately, however, local firms' ability and willingness to compete will be the prime determinant of how they gain from competitive pressure introduced by TNCs.

Employment and Human Resource Development
As the macroeconomic analysis in section 3 showed, the FDI related reduction in poverty in the ASEAN-5 countries derived from both direct (60% of the total) and indirect (40%) effects. The direct effects are primarily due to employment and training (i.e. people earning or earning more). This explains why, not unexpectedly, one of the principal reasons that governments seek to attract FDI is because of its employment generation. Given the large stock of FDI and FDI per capita in ASEAN (table 2.11), it is to be expected that TNCs employ a significant proportion of the workforce in many ASEAN countries. However, the TNC share of total employment is hard to come by for most countries, especially those in the developing world. Data for a number of ASEAN countries in the mid to late 1990s nevertheless underlines

the significant level of direct employment by TNCs, with affiliates employing 52% of the workforce in Singapore, 43% in Malaysia, 15% in Vietnam, 7% in Thailand and 5% in Indonesia (the proportion is smaller in the latter 3 countries partly because they have far bigger populations than the first 2) (UNCTAD, 1999: table A.I.7; JFCCT, 2001). High TNC employment shares also translate into higher value added (TNC affiliates are normally, on average, more productive than domestic enterprises in developing countries) and usually higher wages in foreign in affiliates (compared to equivalent jobs in local companies). Thus, for instance, in the mid- to late 1990s, the value added per employee in foreign manufacturing affiliates was 65% higher than their domestic counterparts in Malaysia; incredibly, the same proportion was over 400% greater in Singapore[54] (UNCTAD, 2002, based on the data in table A.I.5).

Of course, direct employment only represents a part of TNC employment generation. Employment is further generated (or crowded out) by TNCs links and relations with local suppliers, distribution channels, competitors and other companies, reflecting the industry structure issues discussed in the previous section. Beyond, there are other indirect employment effects, including those engendered by rising consumption and TNC reinvestments. The findings of the macroeconomic sub-project strongly indicate that the net-employment effects of FDI have been highly positive in ASEAN (more specifically in the ASEAN-5).

Perhaps more important than employment generation for developing countries, at least in the long run, is the possibility that TNCs can play a crucial role in upgrading the skills of workers (from production workers and technicians to engineers and marketing managers). Many countries offer incentives for higher technology/skill-intensive investments; a few address the human resource development issue directly. For example, Malaysia operates a "skill development fund" (SDF) whereby companies pay a tax of 1% of their turnover, which can be recouped by engaging in training – thus most companies, including TNCs have an incentive to train their employees. Of course, as above, TNCs influence skills upgrading in linked companies. For example suppliers might be assisted in improving their quality skills and distributors might be provided with marketing knowledge and skills. In a similar vein, host country competitors are likely to be forced to upgrade the skills of their on workforce (and the demonstration effect will also play a role here). Much research suggests that it is the human capital augmentation effect of FDI, rather than human capital accumulation per se, which provides the basis for growth and development of host economies in the longer run (UNCTAD, 1999; De Mello, 1997; Ramachandran. 1993). TNCs do, after all, have greater resources to train their workforce (and those in linked firms) than domestic enterprises – and, if needs be, they can send key workers to be trained overseas.

Having said this, considerable research indicates that TNCs only have the incentive to train workers in higher skills in an environment where the host country already possess a degree of human capital. This was found to be the case in section 3, where the econometric analysis revealed that FDI impacts strongly on growth only in countries with higher levels of education. Thus, skills begat skills and, for this reason, countries place a considerable emphasis on creating an appropriate educational

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[54] Reflecting, perhaps, the heavy dependence of the island-state on TNCs and the parlous state of the bulk of the domestic manufacturing sector.

structure – not just in terms of formal school and higher education, but also with regard to vocational training, specialist training (sometimes offered as an incentive to TNCs) and lifelong learning and training (UNCTAD, 1999). In this respect, most ASEAN countries (especially the older member countries) stand out as major investors in human capital (see section 2.4) – and quite possibly this goes some way towards explaining why ASEAN is "special". However, from the mid-1990s TNCs began to express concerns about bottlenecks in critical types of human capital, for example engineers and managers (Mirza et al, 1997); a situation which has only temporarily been alleviated by the post 1997 economic downturn. Moreover, skills created in firms may not be used effectively in the rest of the economy. In this respect, in the case of Malaysia, Rasiah argues,

> "While a myriad of industries exist, four fundamental problems have undermined [Malaysia's] capacity to engender inter-firm human capital flows. First, the lack of systemic coordination has constrained the ability of firms to resolve collective action problems associated with human capital development. Second, the lack of systemic coordination has also restricted the orderly promotion of new, segments of industries to support inter-firm human capital synergies. Third, weak inter-firm connections have stimulated little the movement of entrepreneurs, professionals, technicians and skilled personnel to support new firm creation. Fourth, the lack of movement of embodied knowledge in human capital – tacit and experiential – has restricted differentiation and division of labour in the Klang Valley." (Rasiah, 2002: 122)

In other words, firms, governments, educational and other organisations have to work closely together to ensure that the benefits of skills development are fully utilised to the benefit of the host economy.

In concluding this section, a couple of other issues should be mentioned. First, "skills development" can range from production, engineering and scientific skills, through managerial and functional expertise, to business and corporate culture (including institutional structures and orientations; organisational values, attitudes and behaviour; and management and work practices). In other words, TNCs contribute not only narrow functional skills, but also deeper/wider knowledge and expertise, including (at least implicitly) values and attitudes which change orientations towards work, goals and even society in general (for a fuller discussion see Mirza, 1998; as well as Loveridge, 2002). Secondly, many TNCs engage in community, non-commercial or philanthropic activities (UNCTAD, 1999; JFCCT, 2001). The reason it is worth mentioning this here is that many of these activities have an influence on education or skill-development – e.g. assistance to villages in poorer provinces; the provision of computers to schools and communities; the sponsorship of students; the hosting of interns from Universities and schools; and training in vocational institutions.

4.3 SUMMARY OF THE PRINCIPAL EFFECTS OF FDI AND COMPARISON OF SUB-PROJECTS 1 AND 2

This section has thus far discussed the many ways that foreign direct investment impacts on the growth and development of host countries (and thereby on poverty reduction). As has already been observed, there are three principal routes of transmission, namely "direct effects", "multiplier effects" and "spillover effects", and figure 4.3 represents principal examples of these in a single integrative model or framework. The stylised world of figure 4.3 is divided horizontally between an international/regional economy and host country economy. For a variety of reasons (as discussed especially in sections 4.1 and 2.1), the TNC has established a subsidiary in the developing host, with the principal – and fairly typical – aim of conducting assembly and production operations for local, regional or global markets. The subsidiary may or may not be a joint venture, but it is perforce involved in a number of relationships.

First of all, it must set up shop by building a factory and related facilities, buy necessary equipment and supplies and, most importantly, hire workers who will frequently need to be trained-up. These interfaces between the subsidiary company and the economy are typical of the main *direct effects* that FDI has on the host country. The extent of these direct effects depends on the scale of the initial FDI; the technology employed (e.g. is it labour intensive?); the numbers of people employed and the training, wages offered; the degree to which the firm can procure essential goods and services (e.g. machinery, construction engineers); and the proportion of profits reinvested periodically in the subsidiary (or other local expansion). These direct effects are indicate by "D" in the appropriate parts of figure 4.4, which highlights the impact of FDI in a simplified form.

Secondly, inasmuch as the subsidiary company is a manufacturing company, it is a part of the value chain, both within the country and internationally (figure 4.3). As section 4.2 discussed in detail, these links are both backwards (with suppliers) and forwards (with distributors and sales organisations). Inasmuch as these linkages stimulate activity, employment etc. in supplier and distributor firms and organisations, then the initial FDI has a multiplier – i.e. amplified – effect beyond the initial direct effect on the local economy. This multiplier can be referred to as the *"value chain multiplier effect"* and its extent depends on similar factors to the direct effect. In particular, the multiplier will be effected by the degree to which the value chain linkages are in the host country or without – the greater the proportion of linkages with firms outside the host economy, i.e. in the regional or international domain, the lower will the multiplier effect. (Additionally, it is possible that some local linkages will be with the subsidiaries of other TNCs – "TNC domestic suppliers" in figure 4.3 – and this will also dilute the multiplier effect because many such companies will also have some of their linkages abroad.) In addition to the value chain multiplier, there is also a *consumption multiplier effect: e.g.* the subsidiary and its linked firms all pay taxes and their workers purchase goods and services (and pay taxes), all of which results in a boost to other sectors of the economy. These two types multiplier effect combined are indicated by an "M" in the relevant parts of figure 4.4.

Finally, as also discussed in section 4.2, the subsidiary plays a role in transferring, encouraging or obliging the transfer/take-up of knowledge, technology and skills – in a myriad of forms – to other organisations in the host country, principally through training, demonstration and competitive effects. Collectively this is known as the *spillover effect* and can be the result of both deliberate (e.g. training of workers, quality control enforcement at suppliers or student scholarships) or non-deliberate actions (e.g. competitive pressures on local firms or the subsidiary as "benchmark", model and source of "best practices"). As figures 4.3 and 4.4 (parts of the figure denoted by "S") indicate, there are many routes and transmission mechanisms through which knowledge from the TNC parent (ultimately) can reach indigenous firms and entities. The extent of the spillover effect will depend on a very wide range of issues (detailed in section 4.2), including the resources and capabilities of indigenous firms, and is elusive to quantify. Nevertheless, as the foremost reason for encouraging FDI[55], it is the holy grail of FDI impact and needs to be researched carefully (see discussion below in sub-project 2).

The three types of effect discussed above impact on the host economy over different time scales. The direct effect on the economy is immediate, but declines relatively over time (even in the event of new investments or reinvestments), provided the multiplier and spillover effects are of a reasonable level (which may not be the case, especially with regard to the latter). The multiplier effect kicks in after the direct effect, but takes time to work its way through the economy, via the value chain and the propensity of governments and individuals to consume. The spillover effect takes time to take hold – possibly years – but will ideally become dominant as indigenous firms develop their capabilities and competitiveness. Figure 4.5 depicts the stylised evolution of the relative effects of FDI on a host economy over a period of time.

Congruence of Sub-projects 1 and 2
As mentioned in the introductory section, this research project was divided into two sub-projects, one macro (sub-project 1) and one micro (firm level, sub-project 2). Although there are different emphases to these two sub-projects (see table 1.1), they investigated the same intrinsic phenomenon and figures 4.3 to 4.5 are useful in understanding the relative merits of the two approaches. Because of its macroeconomic nature, sub-project 1 could not analyse the link between FDI, growth and poverty reduction at the level of detail indicated in figure 4.3. Nevertheless, it was able to resolve the relationship between FDI and poverty reduction at the level of direct and indirect (multiplier and spillover) effects. The implication of the results (section 3.4) is that of the poverty reduction in ASEAN due to FDI (the marginal product implies that each dollar of FDI potentially leads to a poverty decline of 32 cents), 60% is due to the direct effect of FDI ("D" in figure 4.3, employment and training) and 40% is due to multiplier and spillover effects jointly. This implies that, as implied in figure 4.5, the indirect effects on growth (and hence poverty alleviation), especially the spillover effect, have yet to kick in – and, possibly, may not do so in the future (FDI in the ASEAN-5 is of some duration). If this is the case, then this is a very worrying issue for ASEAN countries and must be addressed. One way of checking the veracity of the conclusion that spillover effects are minimal is by turning to the microanalysis in sub-project 2.

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[55] In theory, if there was no spillover then a TNCs departure would simply reverse the direct and multiplier effects.

Although sub-project 2 is unable to assess poverty reduction directly (the analysis is at a firm level), the methodology ensured that the various sub-components of direct and indirect growth effects of FDI were investigated and, therefore, conclusions could be reached about their relative impact on host economies (see methodology section below).

Sub-project 2 Methodology
The aim of sub-project 2 was to interview subsidiary firms about their local linkages, impact and contribution to host country firms and the economy (and, thereby, poverty alleviation). Figure 4.6 depicts the main effects and relationships investigated, including direct effects (e.g. employment and human resources development), international and regional integration (including aspects of forward and backward linkages), backward linkages, forward linkages and "links" with competitors. A questionnaire was used to interview firm managers in 5 ASEAN countries, namely Malaysia, Thailand, Singapore, Cambodia and Vietnam (see section 2.4 for reasons why these countries were chosen). There were a number of variants of the questionnaire used, especially in Singapore where most firms interviewed were regional headquarter companies (RHQs). Appendix 3 provides details of the primary questions asked under each category of effect or relationship. The firms selected for interview were chosen using the following criteria:

■ Industry: firms engaged in electronics/electrical and garments/textiles products (a few firms in other industries were selected as a control group and by way of comparison).

■ Origins: Non-ASEAN TNCs, ASEAN TNCs and indigenous firms (the indigenous companies represented both a control group and a way of comparing competitors – and thereby competitive effects - in selected products).

■ Size: appropriate levels of small to large measured by number of employees and capital.

■ Locations: Penang, Kuala Lumpur and Selangor (Malaysia), Central Region, including Bangkok (Thailand), Hanoi and Ho Chi Minh City (Vietnam), Phnom Penh (Cambodia) and Singapore. These choices reflect the location of significant numbers of firms, sites of partner institutions and practical issues.

The proportions of firms selected by industry, source etc., of course, reflected the size and rankings of TNC activity in each respect in each host country. The number of firms to be interviewed in each host country was based on (a) the relative size of FDI in each country; (b) the time available for the fieldwork and other resources and (c) other considerations, e.g. the fact that Singapore was in the frame mainly because it was host to most regional headquarters (RHQs) in ASEAN. The intention was to interview 40 firms in each of Malaysia and Thailand (these are the biggest hosts to manufacturing FDI in ASEAN), 20 in Vietnam (a rising base for FDI), 10 in Cambodia (very little FDI and mostly in garments) and 15 in Singapore (essentially RHQs) – i.e. a total of 125. In the event the numbers of interviews actually conducted were 113 (see section 5).

The Board of Investment (BOI) in each host countries investigated, except Singapore, helped in setting up at least some interviews; though the particular role of each BOI and procedures varied from country to country. In Malaysia, considerable assistance in setting up interviews was also received from the Federation of Malaysian Manufacturers (FMM); and the Garment Manufacturers Association of Cambodia rendered support in a similar vein. The interviews were, normally, two to two and a half hours in length, though some were shorter and a few much longer. Most of the interviews were recorded, so sub-project 2 has yielded two databases, one in SPSS (a quantitative one, based on data inputted from the questionnaires) and one in Nud*ist (a qualitative one based on transcriptions from the recordings). Both databases have yet to be queried rigorously. Additional information was collected from firms, BOIs, the ASEAN Secretariat and other sources.

**Figure 4.3 The Impact of FDI on a Developing Host Country:
An Integrated Model of the Principal Direct, Multiplier and Spillover Effects**
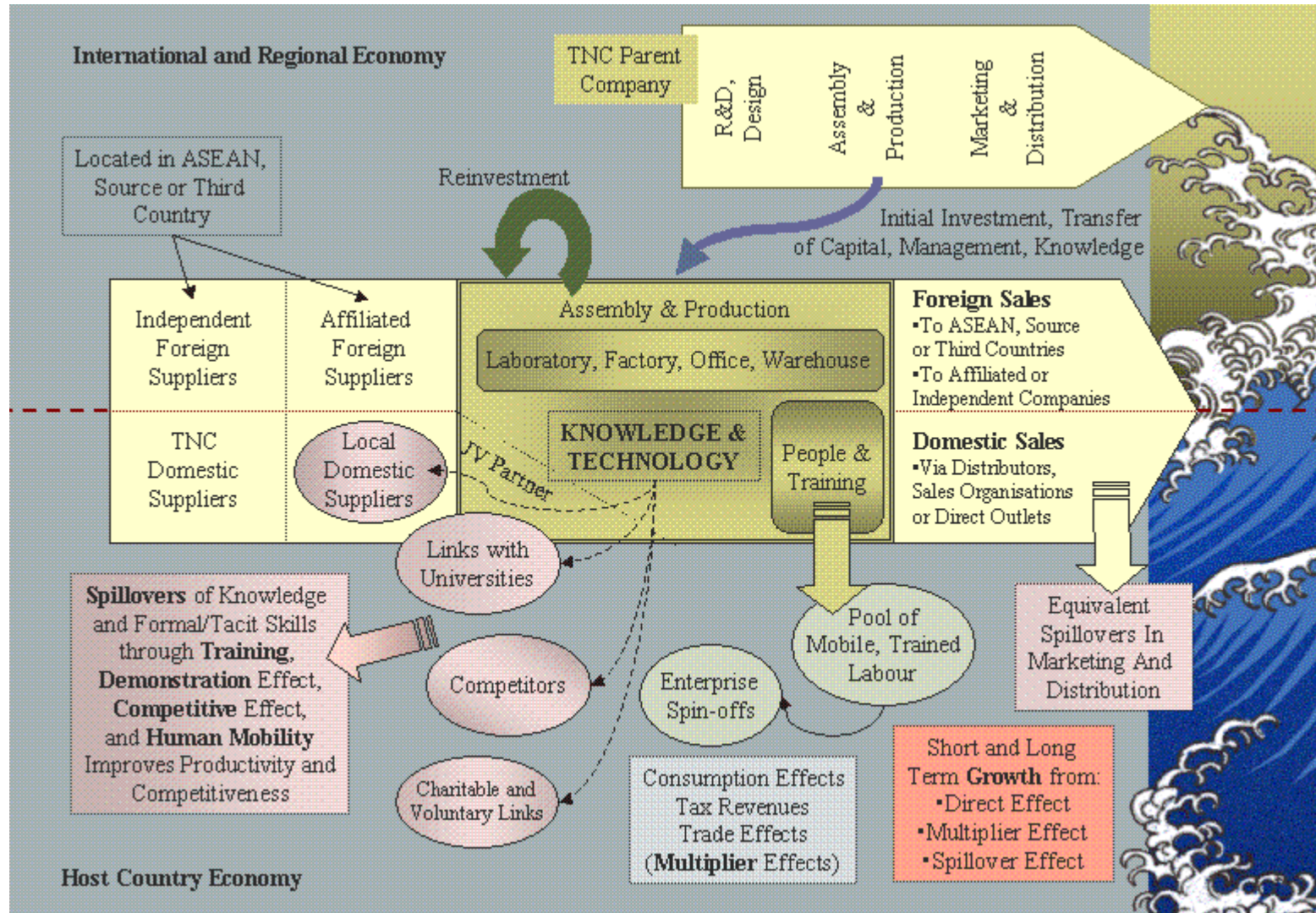
**Figure 4.4 Stylised Version of Integrated Model
Highlighting the Loci of the Direct, Multiplier and Spillover Effects**
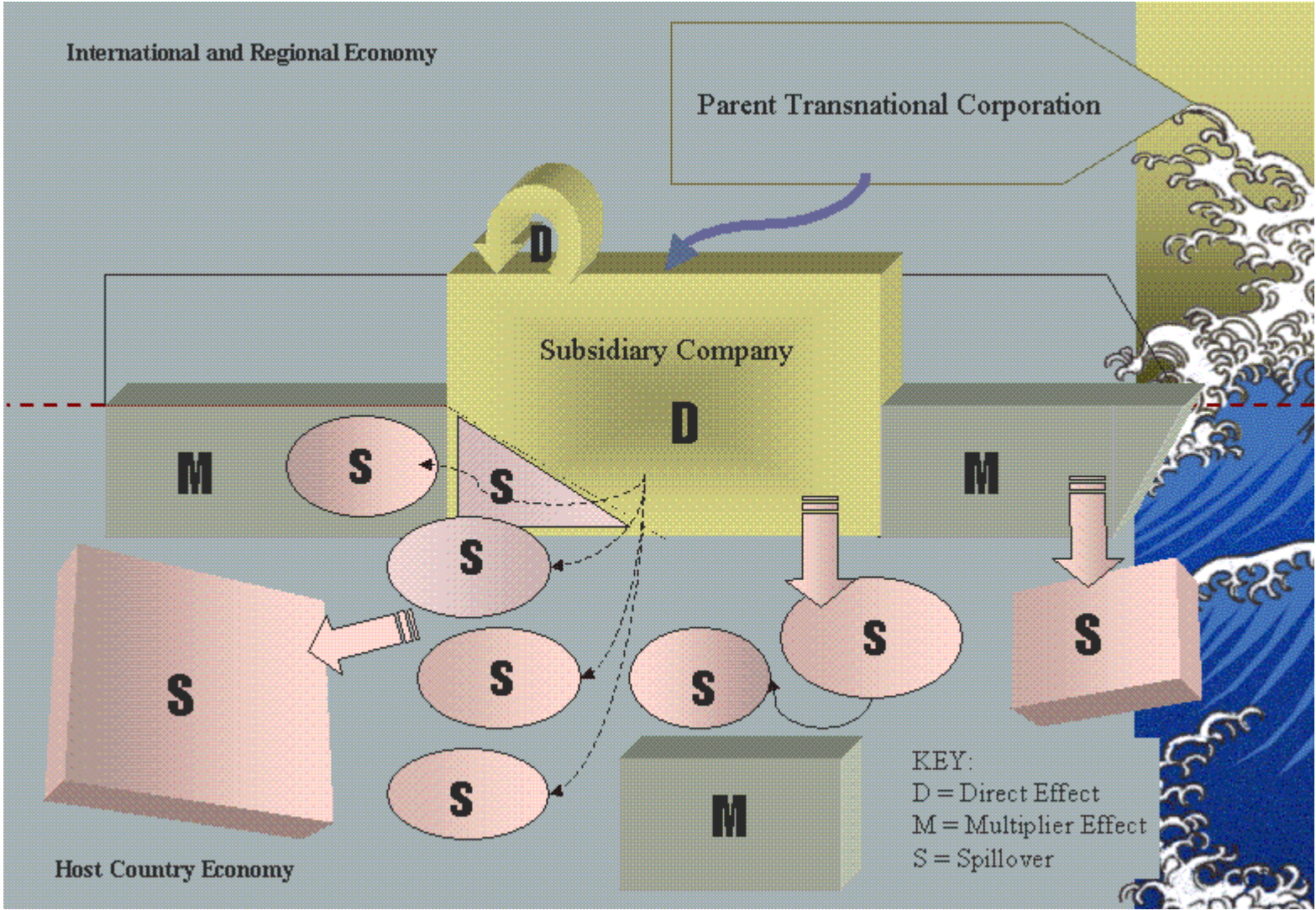
Figure 4.5 Stylised Impact of FDI:
The Changing Relative Contribution of Direct, Multiplier and Spillover Effects over Time
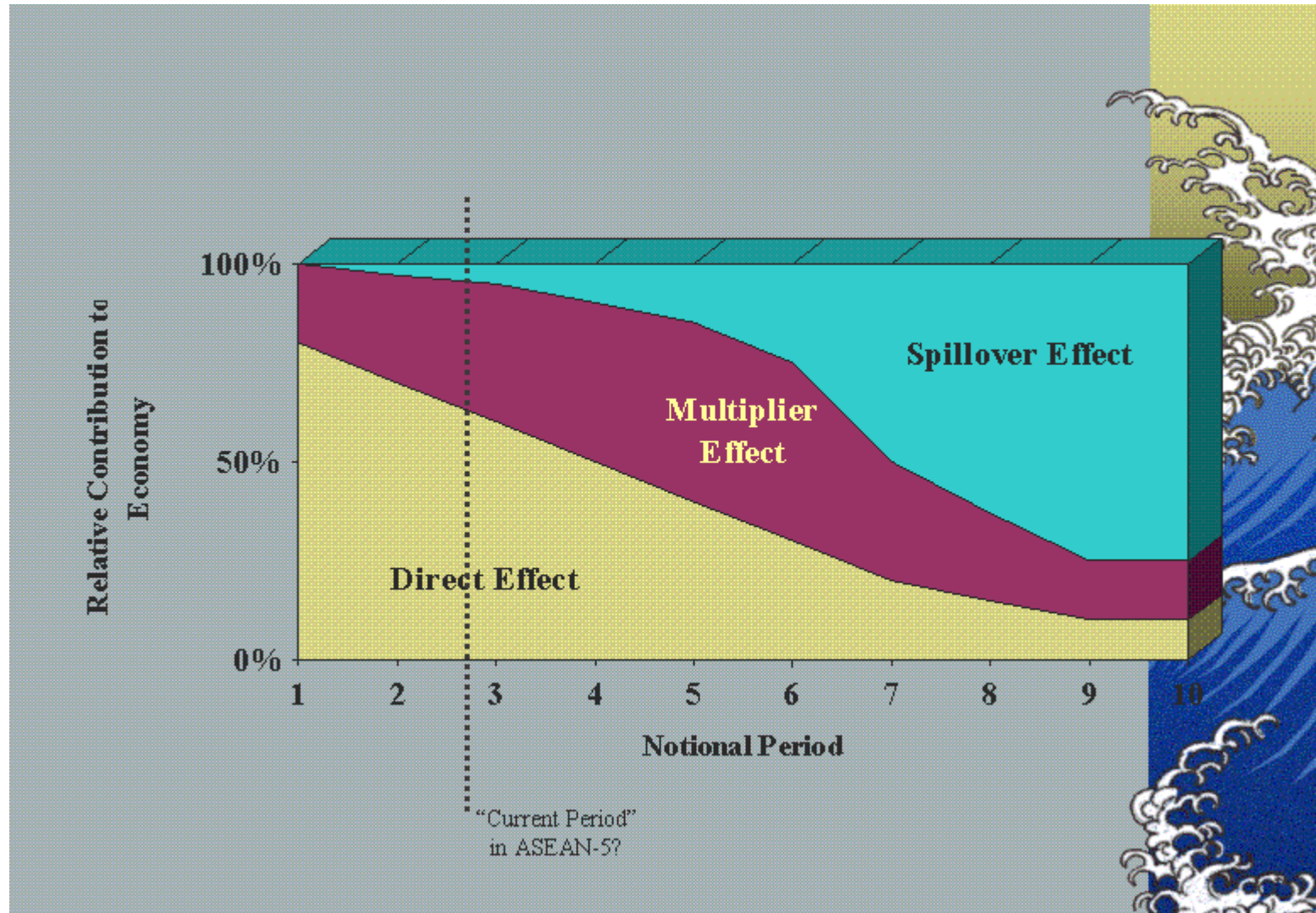
Figure 4.6 The Principal Topics Covered in Sub-Project 2

International and Regional Economy

Parent Transnational Corporation

Subsidiary Company

1

1

3

2.1

2.2

2.4

2.3

[2/3]

[3]

2.4

Host Country Economy

1. International and regional integration
2. Demonstration and competitive effects
   2.1 Backward Linkages
   2.2 Forward Linkages
   2.3 Links with Competitors
   2.4 Other Linkages
3. Human resources Impact
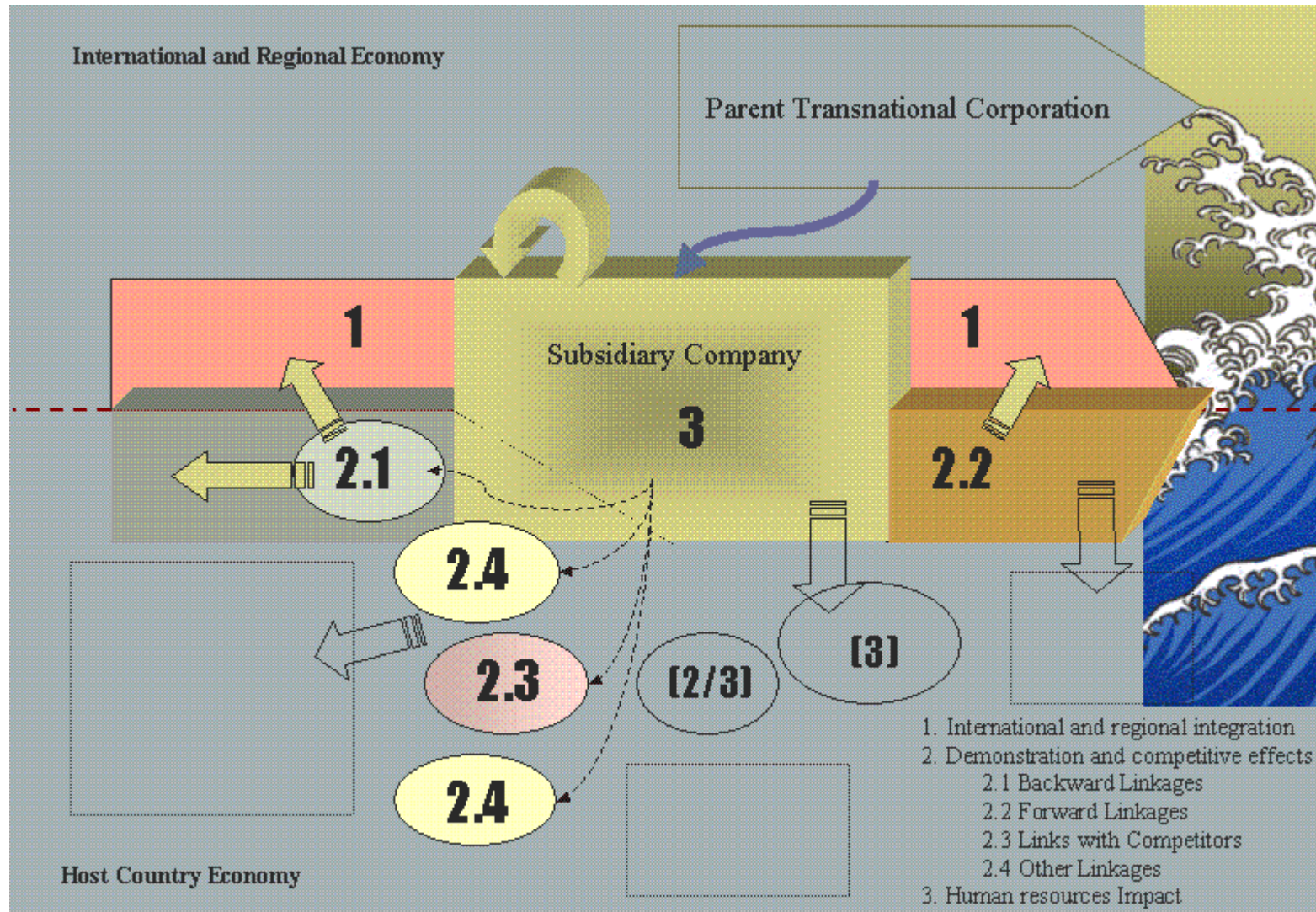
5. TRANSNATIONAL CORPORATIONS AND SPILLOVERS IN ASEAN: THE EMPIRICAL EVIDENCE

5.1 CHARACTERISTICS OF COMPANIES INTERVIEWED AND LIKELY IMPACT ON HOST ECONOMIES

As mentioned in section 4.3, a total of 113 companies were interviewed during the fieldtrips undertaken for sub-project 2. A number of these companies were "pure" regional headquarters (RHQ) firms, i.e. they had no manufacturing activities whatsoever (although others were also engaged in manufacturing). In addition 10 companies interviewed were indigenous firms (normally direct competitors with one or more TNC subsidiaries in the sample) and some firms were in other industries (e.g. 2 automakers in Thailand) by way of comparison. Most of the quantitative information presented below relates to 88[56] manufacturing companies in the 5 host countries and 4 industries surveyed.

Some key characteristics of the 88 manufacturing firms are given in tables 5.1 to 5.3. Reflecting the overall picture of FDI in ASEAN, about a third of the interviewed companies were established by Japanese TNCs, followed by USA, European and Taiwanese firms (12-14% each) (table 5.1). Two other Newly industrialised economies (NIEs), Hong Kong and South Korea have established 7% and 9% of companies each, respectively; the remaining companies belong to ASEAN firms (from Singapore and Malaysia) and firms from "other" countries (e.g. India and Australia). It is interesting to note that there are some preferences by way of host countries. For example, USA and European firms more commonly choose Malaysia as a location, while ASEAN firms are invested in the newer member countries of ASEAN, namely Cambodia and Vietnam. Japanese and NIE firms are more evenly dispersed between the host countries (though the former are entirely absent, in our sample, from Cambodia[57]). With respect to the host countries, the sample companies are divided roughly in accordance with the methodology, i.e. most are in Malaysia, Thailand and Vietnam (the larger countries which receive most manufacturing FDI in ASEAN), while smaller numbers are in Cambodia (a recipient of only a small share of regional FDI) and Singapore (most firms interviewed in Singapore are RHQs and not conjointly manufacturing).

Apart from in Singapore and Malaysia, two early recipients of FDI, most surveyed companies (84%) were established after 1980. The timing of establishment mirrors the fanning out of investment in South East Asia after the initial footfall by TNCs in Singapore in the 1970s, as well the liberalisation of regimes in nearby countries (including Cambodia and Vietnam's more recent entry into ASEAN and accession to AFTA, the AIA and other agreements – see section 2.2). This has resulted in a wave-like entry by investors into the 5 countries, in the following order: Singapore, Malaysia, Thailand, Vietnam and Cambodia (there is also a linear correspondence with these countries per capita incomes).

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[56] This number will increase in later analyses because information on a few companies is still being cleaned up.
[57] Mostly because the main manufacturing industry in which companies have invested in Cambodia is garments.

Table 5.1 Characteristics of Interviewed Companies by country of ownership, destination, period of establishment and degree of parent's involvement

Characteristic		Number, Percent	Comments
Country of Origin (number of firms and percent)	USA	12 (14%)	Concentrated in Malaysia – 7 out of 12
	Japan	27 (31%)	Fairly equally dispersed between Malaysia (10), Thailand (9) and Vietnam (7)
	Europe	11 (12%)	Biggest number in Malaysia - 5
	Taiwan	11 (12%)	Fairly equally dispersed between Malaysia (2), Thailand (4), Vietnam (3) and Cambodia (2)
	Hong Kong	8 (9%)	Fairly equally dispersed between Thailand (3), Vietnam (2) and Cambodia (2)
	Singapore	4 (4%)	Entirely in Cambodia (3) and Vietnam (1)
	South Korea	6 (7%)	Biggest number in Vietnam (3)
	Malaysia	2 (2%)	Both in Vietnam
	Other	7 (8%)	Biggest number in Thailand (4)
Host Country	Malaysia	27 (31%)	Mostly in EE (18) and CE (7)
	Thailand	25 (28%)	Mostly in EE (16) and CE (5)
	Vietnam	22 (25%)	Mostly in CE (8) and G (8)
	Cambodia	11 (12%)	Entirely in G (11)
	Singapore	3 (3%)	Entirely in EE (3)
Date Firms Started Operations (no/%)	Before 1980	14 (16%)	67% of firms in Singapore commenced operations before 1980; 33% in Malaysia
	1980-1985	8 (9%)	16% of firms in Thailand commenced operations
	1986-1990	20 (23%)	Big growth years in Malaysia (37% established in this period) and Thailand (36%)
	1991-1995	19 (22%)	Growth years in Thailand (16%), Vietnam (45%) and Cambodia (27%)
	1996-2000	19 (22%)	Growth years in Thailand (16%), Vietnam (27%) and Cambodia (54%)
	2001 or 2002	8 (9%)	Continuing expansion in Vietnam (23%) and Cambodia (18%)
Mean Ownership Share (%)		86%	Most companies (57) are wholly owned by the foreign company; only 9% are minority owned. The mean ownership by source country in reverse order is: Europe (99%), USA (94%), Japan (84%), NIEs (82%); ASEAN (77%); Other (77%)
Number of companies owned by foreign parent in host country	1	47	Nearly a half of parents have additional companies in the host country in which they are invested. This is the case for more than a half of Japanese parents (17 out of 27); Multiple companies are more common in Malaysia (17 out of 27) and Thailand (16 out of 25), reflecting longer periods of establishment.
	Over 1	41	

Note: CE = Consumer Electronics; EE = Electrical and Electronics; G = Garments; T = Textiles; NIEs = Newly industrialised economies (South Korea, Taiwan and Hong Kong).

Because many companies were established some time ago, about 50% before 1990, nearly a half of all parents have more than 1 subsidiary company in their respective host country – and this is the case for a majority of Japanese parents (which are more intensely integrated into South East Asian economies). In a similar vein a majority of companies in Malaysia and Thailand report that they have sister affiliates in these host countries, mostly because these countries are longer-term major recipients of manufacturing FDI in the region. Most companies are wholly owned by their foreign parent company and only 9% are minority owned. Companies belonging to European and USA parents are more likely to be wholly owned, but 100% or majority ownership is preponderant for all parent firms, regardless of origin (table 5.1).

Table 5.2 Reasons for investing in ASEAN Host Countries

Reason	Singapore		Malaysia		Thailand		Vietnam		Cambodia		Total	
	No	%	No	%	No	%	No	%	No	%	No	%
Government incentives/policies	2	40	9	13.4	12	17.9	10	16.1	2	12.5	35	16.1
Political stability	1	20	4	6.0	4	6.0	2	3.2	0	0.0	11	5.1
International trading systems	0	0	2	3.0	1	1.5	1	1.6	3	18.8	7	3.2
Economic stability	0	0	5	7.5	4	6.0	2	3.2	0	0.0	11	5.1
Growth rates	1	20	0	0.0	0	0.0	0	0.0	0	0.0	1	0.5
Size of the local market	0	0	6	9.0	3	4.5	9	14.5	0	0.0	18	8.3
Socio-cultural issues	0	0	0	0.0	3	4.5	0	0.0	0	0.0	3	1.4
Labour-related issues (cost, quality, capability development	0	0	8	11.9	15	22.4	15	24.2	3	18.8	41	18.9
Language ability	0	0	4	6.0	0	0.0	1	1.6	0	0.0	5	2.3
low production costs	0	0	3	4.5	0	0.0	1	1.6	1	6.3	5	2.3
Good infrastructure	0	0	5	7.5	0	0.0	0	0.0	0	0.0	5	2.3
Regional dynamics/prospects	1	20	1	1.5	2	3.0	1	1.6	0	0.0	5	2.3
Regional penetration (inc. intra-regional relocation)	0	0	1	1.5	0	0.0	0	0.0	0	0.0	1	0.5
Gain local market share	0	0	1	1.5	1	1.5	1	1.6	0	0.0	3	1.4
Follow customers	0	0	5	7.5	4	6.0	0	0.0	0	0.0	9	4.1
Customer recommendation/decision	0	0	1	1.5	1	1.5	1	1.6	2	12.5	5	2.3
Follow competitors	0	0	2	3.0	1	1.5	1	1.6	0	0.0	4	1.8
Brand building	0	0	1	1.5	0	0.0	0	0.0	0	0.0	1	0.5
Prior business contacts (OEM or other)	0	0	4	6.0	6	9.0	8	12.9	2	12.5	20	9.2
Rationalisation/reorganisation policy	0	0	1	1.5	4	6.0	1	1.6	0	0.0	6	2.8
Diversification policy	0	0	1	1.5	2	3.0	2	3.2	0	0.0	5	2.3
Other	0	0	3	4.5	4	6.0	6	9.7	3	18.8	16	7.4
Total	5	100	67	100.0	67	100.0	62	100.0	16	100.0	217	100.0

Note: Multiple responses apply: each firm was asked to give up to three reasons for investing in the Host Country.

The reasons for investing in ASEAN countries as a whole are varied (table 5.2), but the foremost concerns, in descending order are: labour (cost, quality, language ability), government incentives and policies, previous business contacts (including OEM business) and size of the local market. Essentially this is a formula for

international production, more than for local/regional market orientated investments (although both occur). Leaving aside Singapore (there are only three pertinent companies), the reasons for investing in individual hosts are similar to the general case, but there are nuances. In the case of Malaysia and Thailand, following (industrial) customers and economic stability are significant motives, and this ties in with the importance of investment post-reorganisation in the case of Thailand. Language is an chief reason in Malaysia, presumably for USA and other companies which prefer an English medium. Cambodia is a little unusual because all of the investors are in garments and have moved to the country because of the availability of quotas in the USA and Western Europe. For this reason, international trading systems stands out as a reason, as does recommendations by customers (e.g. a number of clothes brands have encouraged suppliers to invest in Cambodia because of its recently troubled, high-profile past).

5.3 Scale of Activity by Host Country and Industry

		Singapore	Malaysia	Thailand	Vietnam	Cambodia	Total
Average Number of Factories:		1.33	2.19	2.36	1.64	1.18	1.94
Ave. No. of Greenfield Factories:		1.33	1.88	2.20	0.95	Na	1.49
Average Annual Output, US$ mill.:		78	1,504	327.6	20	11	Na
Average Number of Employees:		1,053	2,699	3,750	86	443	1,998
Female workers as % of Shop Floor:		--	48	71	--	--	--
Size of Company (%)	Small	0	4	0	60	64	24
	Medium	33	11	24	36	27	24
	Large	0	23	16	4	0	13
	V. Large	67	35	32	0	0	22
	Big	0	27	28	0	9	17

		Electrical & Electronics	Consumer Electronics	Garments	Textiles
Average Annual Output, US$ mill.		1,050	452	9	201
Average Number of Employees:		3,194	1,487	369	2,214
Female workers as % of Shop Floor:		79	40	--	56
Size of Company (%)	Small	5	30	52	20
	Medium	18	20	35	40
	Large	15	15	4	20
	V. Large	36	20	4	0
	Big	26	15	4	20
Does the company have a strategic role? (%)	Yes	65	45	26	20
	No	35	55	74	80

Note: Small = up to 50 employees; Medium = 51-250 employees; Large = 251-1000 employees; Very Large = 1001-3,500 employees; and Big = Over 3,500 employees.

Table 5.3 indicates some of the scale and scope of the companies interviewed. On average each company has roughly 2 factories, though this varies from a mean of 1.18 in Cambodia to 2.36 in Thailand, which is to be expected given the different

scale of manufacturing activity in each country and the length of time investors have been established in both countries. Greenfield factories predominate because there were very few indigenous manufacturing companies when investments first began in each country. Again leaving Singapore aside, there is a very big difference in the scale of the factories in Malaysia and Thailand (part of the ASEAN-5), as opposed to Cambodia and Vietnam, whether this is measured as average annual output or the number of employees. There are some extremely big firms in both Malaysia (as measured by output) and Thailand (as measured by employment). Some of this is explained by the differential presence of electrical/electronic firms (which are large), as opposed to garments/textiles (which are smaller and more commonly located in Cambodia and Vietnam).

It is clear from just the scale of foreign company operations in Malaysia and Thailand that there is likely to be a large direct impact on the local economy. In addition, table 5.3 implies a direct effect via an increased participation by women in the workforce. In both Malaysia and Thailand women are heavily employed by foreign manufacturers (as in the other countries[58]); and this is the case in all four industries, with the lowest rate of female participation – still high, at 40% of the shop-floor workforce – being in consumer electronics. Detailed questioning during the interviews also revealed that a very large proportion of workers were from provincial areas, also resulting in a strong direct effect on poverty reduction. Finally, it is also worth mentioning that most electronics companies in Malaysia and Thailand (table 5.3) have been assigned a strategic role by the parent company and that this improves the chances of greater direct and, especially, indirect FDI effects on their respective economies (this is less commonly the case in garments and textiles). Looking at the underlying data, 40 out of 88 companies have been assigned a strategic role. This role is divided almost equally between, "additional R&D related functions" (12 firms), "additional role in two or more functional areas" (13 firms) and "totally autonomous subsidiary" (13 firms). In the case of Malaysia and Thailand, even if spillover is less significant at present, these strategic trends bode well for the future.

5.2 INTERNATIONAL AND REGIONAL INTEGRATION

Intrinsically these companies are likely to be highly integrated with the international economy, as is clearly indicated in tables 5.4 and 5.5. Overall, over 70% of the output is exported from host economies, 7% to other ASEAN economies (table 5.4), making the local/regional sales 35% of the total. The output sold internationally is fairly evenly distributed between North America, Europe and Asia (mostly Japan), in keeping with the relative scale of these economies. However, there are significant differences between industries and host countries. Thus, 97% of garment output is exported out of ASEAN, indicating the nature of this value chain – i.e. exclusively the production of goods by sub-contractor manufacturers for major retailers and brands in rich, industrialised countries. By contrast, the majority of the output by textile companies is sold locally or regionally (58% in total) because these companies supply inputs to garment manufacturers (and the rest of the output goes to linked firms in East Asia). This leaves a higher local/regional share of output for the electrical and electronics (46%) and consumer electronics (41%), but for slightly different reasons: the former industry is more likely to be supplying inputs to other

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[58] (The data is in the process of being cleaned)

companies; whereas the latter industry has a greater inclination to sell to final consumers (via distributors and sales companies). These industry differences are reflected in the direction of outputs/exports for individual countries, especially Cambodia which is only represented by the garment industry.

With regards to inputs/imports, about three quarters of inputs are imported, 13% from ASEAN countries, giving a local/regional input "content" of 39% (table 5.5). In contrast to outputs, however, the bulk of non-local/regional inputs are from Japan (15%) and East Asia (29%), reflecting their proximity and importance in both the electrical/electronic and garment/textiles industries. Again there are marked difference between industries. Electrical and electronics has a much larger share of inputs from Japan, North America and Europe, probably reflecting the value chains of particular products (e.g. in semiconductors and hard disk drivers). This is reflected in the input shares for Malaysia, which is base to proportionally more such companies in the sample (this applies to a lesser extent to Thailand, which is also more dependent on North America). Consumer Electronics is more dependent on local/regional and Japanese inputs, probably reflecting its relative local/regional market orientation and long local presence, as an industry, in the region (as well as the origin of companies, many from Japan and South Korea, which are more likely to have regional-level operations). The links of garment and textile companies to parents/affiliated companies in East Asia and ASEAN also comes through strongly (mirrored especially in Cambodia). Singapore, as a regional hub, receives 40% of its inputs from ASEAN (and, intriguingly, the same proportion from the "rest of the world"). Unsurprisingly, companies with parents in particular source countries import a larger share of inputs from these locations. This is especially the case for NIE firms (62% of total inputs, especially tied to the division of labour in the garment industry). ASEAN, European and Japanese firms receive about 40% of inputs from their home countries, on average. However, this is far less the case for USA originated companies (23%) and those from other countries. On the other hand, Japanese, USA and "other" companies are more inclined to buy inputs in host economies; and European and ASEAN firms buy more from the region. Some regional value chains undoubtedly exist.

Table 5.4 Direction of Outputs/Exports

(Percentage share, reading across rows)		Local	ASEAN	Japan	East Asia	Europe	North America	Rest of the World
Total Exports (100%)		28	7	13	8	20	22	4
Industry	Elec. & Electronics	35	11	12	8	14	17	2
	Cons. Electronics	36	5	15	7	13	20	11
	Garments	2	1	16	8	40	33	0
	Textiles	52	6	1	16	7	9	10
Host Country	Singapore	40	10	0	20	10	20	0
	Malaysia	29	7	10	8	20	23	3
	Thailand	26	13	14	8	14	23	2
	Vietnam	40	2	21	8	10	13	10
	Cambodia	0	0	1	5	57	36	0

Note: Export requirements are imposed by governments on 57% of companies, but this tends to reflect their inclinations.

Table 5.5 Direction of Inputs/Imports

(Percentage share, reading across rows)		Local	ASEAN	Japan	East Asia	Europe	North America	Rest of the World
Total Exports (100%)		26	13	15	29	7	7	3
Industry	Elec. & Electronics	30	9	21	13	11	11	3
	Cons. Electronics	34	19	26	14	0	3	3
	Garments	10	13	3	61	7	5	3
	Textiles	33	16	1	37	0	6	7
Host Country	Singapore	2	40	5	2	10	0	40
	Malaysia	35	8	22	11	13	11	0
	Thailand	35	1	18	25	3	16	2
	Vietnam	20	23	14	30	7	0	6
	Cambodia	0	18	0	82	0	0	0
Source Country	Japan	33	12	39	10	0	2	3
	USA	37	6	16	9	1	23	5
	Europe	15	21	2	9	43	8	0
	3 NIEs	23	2	3	62	3	6	4
	ASEAN	5	58	9	37	0	0	0
	Others	34	10	3	32	4	16	4

Note: Local content requirements are imposed by governments on 8% of companies

Turning to parent companies' regionalisation policies and companies' degree of ASEAN integration, table 5.6 shows that only a little over a third of foreign parents divide their international operations on a regional basis. However 70% of consumer electronics firms have regional divisions (driven by market orientation, undoubtedly) and this is also the case for 44% of parents in the electrical and electronics industries (albeit this sector contains a wide variety of types of firm). Of those with regional divisions, only 42% of parents regard ASEAN as a region (i.e. a bare 15% of all firms); and, when they do, Singapore is the regional headquarters (RHQ) of choice. (When ASEAN is not a region, the location is much more variegated, as table 5.6 shows.) If the 33 firms which cannot integrate their operations in ASEAN (e.g. they only have activities in one ASEAN country) are excluded, the level of integration of ASEAN operations is quite high: 57% of companies have "moderate" integration or above and a quarter have very close integration (although this could involve logistics and strategic communication, rather than production flows) (table 5.7). By host country, regional integration is highest for Singapore (regional hub) and Cambodia (many investors are based in ASEAN); by source country it is highest for Europe (probably reflecting a division of labour in electronic companies, e.g. consumer electronics and semiconductors), ASEAN (firms are based in the region) and other companies; and by industry, as expected, it is highest for garments and textiles. Companies which regard ASEAN as a region do not appear to integrate regional operations more tightly than others; however, companies which operate regional divisions overall seem to have a greater inclination to integrate at the "loose" to "close" levels (table 5.7). (It is likely that very close integration is driven more by the nature of the product itself.)

Four-fifths of equipment used by the surveyed companies was purchased new (most investments were Greenfield), but only 7% was bought locally (except in Singapore where the share was 23%, implying the existence of machinery or tool making manufacturers). Interestingly, no matter the nationality of the firm, most new

equipment purchases were from Japanese manufacturers, followed by manufacturers from companies' home economies.

In summary, foreign companies based in ASEAN host countries are heavily integrated internationally in terms of output and inputs. A moderate level of local integration has been established, especially in terms of supply of inputs, and regional integration – though small – is expanding. There are quite sharp differences between industries, source countries and host countries and these nuances have to be carefully considered as a guide to policy.

Table 5.6 Parent Company Regionalisation Policy

		Electrical & Electronics	Consumer Electronics	Garments	Textiles	Total
Does the company subdivide its operations on a regional basis?	Yes (no, %)	17 44%	11 70%	1 4%	1 20%	33 38%
If so, is ASEAN a Region?	Yes (no, %)	7 42%	6 42%	0 0%	1 100%	14 42%
Location of RHQ, when ASEAN is **NOT** a Region (no):		Japan, 5; Hong Kong, 4; Singapore, 3; Thailand, 2; Taiwan, 2; Malaysia, 1				
Location of Regional HQ when ASEAN is a Region (no):		Singapore, 12; Malaysia, 1; Thailand 1				
Countries/Regions controlled from ASEAN HQ (no):		ASEAN, 6 (42%); ASEAN & Asia-Pacific (2); Other, 6				

Table 5.7 Companies' Degree of Integration of ASEAN Operations

Number of firms %		Not at All Integrated	Loose Integration	Moderate Integration	Close Integration	Very Close Integration
Overall Level of Integration (no, %)		14 (25%)	10 (18%)	12 (22%)	6 (11%)	13 (24%)
Company sub-divides operations on a regional basis?	Yes	7	3	4	1	8
	No	6	7	8	5	5
Does ASEAN Constitute a Region for company?	Yes	3	4	5	3	2
	No	3	3	3	2	3
Mean score of ASEAN Integration (based on a 1-5 scale, not at all to very close integration):						
Host Country		Singapore	Malaysia	Thailand	Vietnam	Cambodia	Total
		3.33	2.79	2.87	2.54	4.00	2.89
Source Country		Japan	USA	Europe	3 NIEs	ASEAN	Others
		2.33	2.67	3.40	2.43	4.50	4.00
Industry		Elect. & Elec.	Con. Electronics		Garments	Textiles
		2.81	2.56		3.14	5.00

Note: 33 companies were entirely ineligible for this analysis because, for example, they had no sister companies in ASEAN.

5.3 LOCAL LINKAGES, THE VALUE CHAIN MULTIPLIER AND SPILLOVERS

Although, as the previous section showed, foreign firms in ASEAN host countries are integrated with the international and local economies (at a rough ratio of 7:3), it is also important to (a) take into account whether these links are with affiliated or non-affiliated companies (i.e. do the benefits seep to independent companies?) and (b) especially in the local economy, determine whether the links with non-affiliated companies are with indigenous firms or foreign companies based in the same host country (i.e. do indigenous, locally-owned firms benefit?).

Backward Linkages

Table 5.8 shows that, overall, inputs are predominantly purchased from non-affiliated companies (68%), although this is less the case for Malaysia, Thailand and Vietnam (reflecting the necessity for key inputs in certain industries, table 5.9). However, a higher proportion of inputs from affiliated companies are bought regionally or internationally. Thus (as table 5.8 also shows) an appreciable percentage of inputs purchased from non-affiliated companies are bought in local markets, especially in the case of Malaysia and Thailand. In essence, this represents the higher purchase of parts and components in these host countries by companies in the electrical and electronic industries (including consumer goods).

Table 5.8 Purchase of Inputs from Affiliated and non-Affiliated Companies by Host Country

%		Singapore	Malaysia	Thailand	Vietnam	Cambodia	Total
Share of Inputs purchased from:	Affiliated Companies	17	27	32	50	8	32
	Non-Affiliated Companies	83	73	68	50	92	68
Share of inputs from Non-Affil. Companies:	Local Market	22	41	48	32	0	na
	ASEAN	30	9	3	8	11	na
	Rest of World	47	46	46	46	89	na

Note: Because of missing values the shares purchased from non-affiliated companies do not sum to 100% (especially for Vietnam)

Table 5.9 Purchase of Inputs from Affiliated and non-Affiliated Companies by Source Country and Industry

%		Japan	USA	Europe	3 NIEs	ASEAN	Others
Share of Inputs purchased from:	Affiliated Companies	40	26	41	24	39	14
	Non-Affiliated Companies	60	74	59	76	61	86

%		Elect. & Elec.	Con. Electronics	Garments	Textiles
Share of Inputs purchased from:	Affiliated Companies	31	48	14	65
	Non-Affiliated Companies	69	52	86	35

Note: Because of missing values the shares purchased from non-affiliated companies do not sum to 100% (especially for Vietnam)

It is not as yet clear from the data-set[59] what proportion of purchases from host country based firms are inputs sourced from indigenous concerns, but these are

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[59] This will require further delving into the quantitative database.

likely to be appreciable in Singapore, Thailand and Malaysia and far lower in the two newer ASEAN member countries, approaching zero in Cambodia. More importantly, it is important to know something about the nature of the inputs bought from indigenous suppliers. Table 5.10 compares the types of inputs purchased in the host economy from locally-owned versus foreign-owned suppliers. There is a very marked difference between the two. Only 10% of the interviewed companies (7 out of the pertinent 68 firms) buy any high-tech inputs from indigenous firms, whereas this share rises to 60% for foreign-owned suppliers based in ASEAN countries. Most purchases from locally-owned firms are for low-tech inputs and, even more so, for secondary products (e.g. packaging). Despite this, two-thirds of companies interviewed said that they were using indigenous suppliers "adequately", mostly because the relevant inputs were not available or were of low quality. The implications of this is that the spillover that we should be looking for initially is **not** the capability to make competitive additional/other products, **but rather** to improve the availability, quality and competitiveness of the principal inputs themselves.

Table 5.10 Type of Inputs Purchased from Locally-Owned and Foreign-Owned Firms

		Percentage of good purchased from firms		
		Hi-Tech Inputs	Low-Tech Inputs	Secondary Products
Local Suppliers	**None (number of purchasing firms)**	**61**	**26**	**17**
	Some or All (number of firms)	**7**	**42**	**51**
Foreign Suppliers	**None (number of purchasing firms)**	**26**	**27**	**57**
	Some or All (number of firms)	**38**	**37**	**7**

Note: 65% of companies say that they use local suppliers "adequately"

Table 5.11 Proportion of Companies with Supplier Partnership Schemes

	%	Japan	USA	Europe	3 NIEs	ASEAN	Others
Is there a Supplier Partnership Scheme?	Yes	29	50	56	6	0	50
	no	71	50	44	94	100	50
	%	Elect. & Elec.		Con. Electronics		Garments	Textiles
Is there a Supplier Partnership Scheme?	Yes	35		35		9	0
	No	65		65		91	100
	%	Singapore		Malaysia		Thailand	Vietnam
Is there a Supplier Partnership Scheme?	Yes	0		52		32	0
	No	100		48		68	100

Note: Only 30% of companies have a formal supplier partnership scheme.
Only 13% of companies provide financial assistance to suppliers

This improvement of locally-owned suppliers capabilities can come about in various ways, including the suppliers' interface with their foreign-owned customers in the host economy. Thus table 5.11 illustrates how some foreign companies (about 30% of the sample) have a direct and immediate policy of improving the quality and competitiveness of their locally-owned suppliers using supplier partnership schemes. This implies commitment, actions and activities (e.g. training) and – often – necessity, inasmuch as world-class standards (especially the ISO 9000 and 14000 series) require quality inputs and a commitment to quality, the environment and other elements all the way down the supply chain. In our sample, supplier partnership

schemes are run most commonly by larger, resource-rich, committed companies, especially those from Europe and North America (and to a lesser extent Japan). They are found entirely in Malaysia and Thailand, reflecting the stronger European and USA presence, as well as greater investment by electronics companies. In many cases, Singapore suppliers may not gain much from supplier partnership schemes, but their absence in Vietnam (and Cambodia) needs to be explained. The mostly likely reason is that the electronics industry is relatively new in Vietnam and therefore a supplier base has not yet been established or arisen[60] (the inputs structure for garments and textiles tends to differ quite markedly and, in particular, depends heavily on high-volume commodities). The country's authorities can therefore learn a lot from the experience of Malaysia and Thailand.

Apart from the formalised system of learning inherent in supplier partnership schemes, indigenous firms can benefit from knowledge transfer "simply" by working with foreign companies. The inputs these customers use must meet world standards; they are usually very specific products, of high quality (and maybe technology), need to be produced within very narrow tolerances and involve not just "physical" technology, but also managerial, engineering and technical skills and techniques. It is in the interest of the purchasing companies to ensure that the inputs are produced efficiently and that the product is of a high order. Thus, considerable knowledge can flow down the supply chain, both explicitly and implicitly, and foreign companies are often willing to assist suppliers when problems are encountered. Tables 5.12 to 5.14 indicate the key types of product and process technology, knowledge and expertise transferred by companies to locally-owned suppliers. Overall, not unexpectedly, the type of knowledge most commonly transferred relates to specifications for standard materials and components (a mean of 4.12 out of a possible 5 in table 5.12). A bit further behind in terms of likelihood of transfer are other specifications, such as operational requirements or technological aspects, followed – not uncommonly – by jointly designing materials or components. The main support offered to suppliers is in technical management (i.e. quality, production issues), but occasionally other types of support are also offered (e.g. supplying tools, machinery or materials[61]). Knowledge transfer is much more common in Malaysia and Thailand than Vietnam, reflecting the better established supply firms and the extensive electrical and electronics industries (tables 5.12 and 5.13); it is pretty minimal in garments and textiles. The degree of transfer is also much higher for USA, Japanese and European[62] firms than for firms from NIEs or ASEAN (table 5.13). Finally, even in the absence of supplier partnership schemes, foreign companies are willing to offer training, but it is pretty limited and mostly confined to electronics and technological issues (table 5.14).

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[60] Most of the foreign companies interviewed in Vietnam were importing inputs and had few links with local businesses, although this had as much to do with the absence of appropriate suppliers. Nevertheless a number of state-owned and non-state firms were attempting to create backward links with foreign firms in all industries. In electronics local firms were also using the route of joint venturing for linkages and learning, assisted by FDI legislation which requires JVs in most cases.
[61] There are interesting examples or case studies of all of these in the qualitative database.
[62] There are some nuances in terms of what is more likely to be transferred between USA, Japanese and European firms, but further analysis would be needed to denote significance.

Table 5.12 Product and Process Technology and Knowledge Transferred to Locally-Owned Suppliers, by Host Country

Type of knowledge	Mean Ratio (on a 1-5 scale)			
	Malaysia N=25	Thailand N=22	Vietnam N=20	Total N=68
Specification about standard materials/components	4.64	4.41	3.10	4.12
Method of manufacture, operational specifications	2.96	2.55	2.00	2.52
Physical or technological specifications	3.52	2.82	2.53	2.97
Joint design of materials and components	2.68	2.45	1.84	2.39
Joint design of operational requirements	2.28	1.95	1.63	1.97
Support in establishing a production plant	1.75	1.82	1.84	1.79
Support by supplying machinery	1.80	1.50	1.58	1.63
Support in supplying tools, materials etc.	1.96	2.18	1.95	2.03
Support in input procurement	1.84	2.09	1.63	1.85
Support in supplier business management	2.00	1.73	1.63	1.79
Support in supplier technical management	2.56	2.50	1.89	2.34

Note: The total includes one firm in Singapore

The 1-5 score range is 1=never transferred; 5=very frequently transferred.

Table 5.13 Product and Process Technology and Knowledge Transferred to Locally-Owned Suppliers, by Source Country

Type of knowledge	Mean Ratio (on a 1-5 scale)					
	Japan N=24	USA N=10	Europe N=9	3 NIEs n=19	ASEAN N=2	Others N=4
Specification about standard materials/components	4.33	4.60	4.11	3.53	3.00	5.00
Method of manufacture, operational specifications	2.74	2.40	2.44	2.63	1.50	1.75
Physical or technological specifications	2.78	3.20	4.00	2.68	2.50	2.75
Joint design of materials and components	2.13	2.83	2.56	2.21	2.50	3.25
Joint design of operational requirements	2.17	1.90	2.00	1.84	1.00	1.75
Support in establishing a production plant	1.75	1.67	2.00	1.72	2.00	2.00
Support by supplying machinery	1.83	1.60	1.56	1.28	2.50	2.00
Support in supplying tools, materials etc.	1.96	1.50	1.56	2.33	3.00	3.00
Support in input procurement	2.13	2.00	1.44	1.61	2.00	1.75
Support in supplier business management	2.00	1.70	2.00	1.44	2.50	1.50
Support in supplier technical management	2.71	1.90	2.00	2.06	3.50	2.75

Note: The 1-5 score range is 1=never transferred; 5=very frequently transferred.

Table 5.14 Knowledge Transferred to Locally-Owned Suppliers and Training Offered, by Industry

Type of knowledge	Mean Ratio (on a 1-5 scale)			
	Electrical and Electronics N=34	Consumer Electronics N=20	Garments N=11	Textiles N=3
Specification about standard materials/components	4.44	4.30	3.45	1.67
Method of manufacture, operational specifications	2.62	2.89	1.73	2.00
Physical or technological specifications	2.97	3.42	2.45	2.00
Joint design of materials and components	2.68	2.42	1.55	2.00
Joint design of operational requirements	2.06	2.15	1.30	2.00
Support in establishing a production plant	1.91	1.85	1.45	1.00
Support by supplying machinery	1.79	1.50	1.55	1.00
Support in supplying tools, materials etc.	2.15	2.15	1.64	1.00
Support in input procurement	1.91	2.00	1.55	1.00
Support in supplier business management	1.85	1.90	1.55	1.00
Support in supplier technical management	2.41	2.80	1.55	1.00
Type of Training:				
Professional training for suppliers' managers	1.62	1.63	1.27	1.00
Operations training for machinery and equipment	1.76	1.95	1.27	1.00
Technical training on the technology used	2.09	2.05	1.27	1.00
Seminars at the subsidiary	1.88	1.47	1.18	1.00
Seminars at the suppliers	1.59	1.65	1.18	1.00
Seminars in institutions	1.59	1.37	1.27	1.00
Suppliers' employees are trained at the subsidiary	1.94	1.74	1.27	1.00
Suppliers employees are trained by subsidiary staff at the suppliers	1.88	1.89	1.27	1.00

Note: The 1-5 score range is 1=never transferred; 5=very frequently transferred.

Of course, more important than the potential transfer of technology and expertise per se is (a) the extent to which the knowledge is actually absorbed; and (b) the extent to which this improves the capabilities of local suppliers and results in improvement gains. Tables 5.15 to 5.16 attempt to measure these gains in terms of critical capabilities and skills acquired by indigenous suppliers – as assessed by the foreign companies in our survey (who are probably in a better position to evaluate improvements than the suppliers themselves). It seems that there has been an appreciable level of spillover to supplier firms, especially in terms of improvements in capabilities of most importance to the foreign firms themselves: cost, quality, delivery, lead-time performance and service focus (the mean out of 5 is over 3 for all these skills – and much higher in Malaysia and Thailand) (table 5.15). There is also some improvement in related production (inventory control, continuous improvement, technical skills and safety) and business (business focus, commercial awareness and professionalism) skills. The least improvement is in more fundamental R&D related expertise, such as innovation and design skills – but these would, in most cases, not be transferred to suppliers (or, indeed, subsidiary companies

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themselves). Suppliers in Malaysia have improved more than in Thailand; and those in the latter more than firms in Vietnam. The differences between the means of specific skills/capabilities between the three countries are quite marked and significant. In a similar vein there is a transition in skills improvement by industry from electrical and electronics (highest improvement) through consumer electronics and garments to textiles (least) (table 5.17). This reflects the nature of each industry, the degree to which transferable skills exist, the existing capabilities of local suppliers and the opportunities which exist for the transfer to take place. Finally, suppliers working for USA firms are significantly more likely to improve (partly because of the industries in which these firms operate, partly the capabilities inherent in the main host country – Malaysia – and partly because the firms themselves are more likely to run supplier partnership schemes) than firms from Europe or Japan (table 5.16). On the other hand, improvements are much more marked for firms from these countries than those from NIEs and ASEAN (although this difference should be examined more carefully before definitive conclusions are drawn). Having said this, on a qualitative basis, the interviews threw up "best practices" in the case of firms from most source countries; and, indeed, for all host countries and industries.

Table 5.15 Supplier Improvement as a Result of Working with Foreign Firms, by Host Country

Improved Performance in terms of:	Mean Ratio (on a 1-5 scale)			
	Malaysia N=24	Thailand N=23	Vietnam N=19	Total N=67
Cost	3.83	2.83	2.47	3.09
Quality	3.88	3.57	2.95	3.51
Delivery	3.96	3.39	2.53	3.36
Inventory Control	2.88	2.70	2.05	2.58
Lead Time Performance	3.54	3.09	2.26	3.00
Continuous Improvement	3.21	2.91	2.21	2.82
Technical Skills	3.38	2.57	2.32	2.79
Design Skills	2.58	1.35	1.58	1.86
Innovation Skills	2.79	1.48	1.16	1.86
Safety	3.29	2.35	1.21	2.36
Business Focus	3.35	2.26	1.74	2.52
Commercial Awareness	3.42	2.39	1.74	2.58
Service Focus	3.83	3.17	2.16	3.12
Professionalism	3.70	2.70	2.05	2.86

Note: 1 = no improvement; 5 = very large improvement

The upshot of the above analysis of backward linkages is that, although the indirect effects of FDI are not as great as might be desired (because of the purchase of inputs overseas and the existence of foreign-owned suppliers in each host country), nevertheless spillovers *are* incurring and locally-owned suppliers are improving in their capabilities. In the first instance, this should allow them to transplant foreign-owned suppliers (to a degree) and, in the longer run, allow them to become fully-fledged manufacturers in their own right. There are many nuances to this picture, e.g. in terms of host countries, source countries, industries, size and other firm characteristics, all of which need to be taken into account at the policy level.

Table 5.16 Supplier Improvement as a Result of Working with Foreign Firms, by Source Country

Improved Performance in terms of:	Mean Ratio (on a 1-5 scale)					
	Japan N=24	USA N=10	Europe N=7	3 NIEs n=19	ASEAN N=2	Others N=5
Cost	3.33	3.90	3.00	2.68	2.00	2.40
Quality	3.71	3.90	3.71	3.11	2.50	3.40
Delivery	3.67	4.10	2.86	3.00	2.50	2.80
Inventory Control	2.95	3.20	1.71	2.11	2.50	2.60
Lead Time Performance	3.33	3.60	3.14	2.26	3.00	2.80
Continuous Improvement	3.25	3.10	2.71	2.26	3.00	2.40
Technical Skills	3.21	2.70	2.71	2.58	3.00	1.80
Design Skills	2.13	1.80	1.86	1.68	1.50	1.60
Innovation Skills	2.13	1.90	2.14	1.53	1.50	1.60
Safety	2.52	3.20	2.43	1.74	3.00	2.00
Business Focus	2.79	3.00	2.71	1.72	3.00	2.60
Commercial Awareness	2.87	3.20	2.86	1.74	3.00	2.60
Service Focus	3.21	3.89	2.86	2.89	3.00	2.60
Professionalism	2.96	3.78	3.00	2.32	2.50	2.80

Note: 1 = no improvement; 5 = very large improvement

Table 5.17 Supplier Improvement as a Result of Working with Foreign Firms, by Industry

Improved Performance in terms of:	Mean Ratio (on a 1-5 scale)			
	Electrical and Electronics N=32	Consumer Electronics N=20	Garments N=11	Textiles N=4
Cost	3.59	2.95	2.27	2.00
Quality	3.91	3.40	3.18	1.75
Delivery	3.91	3.35	2.18	2.25
Inventory Control	2.97	2.85	1.27	1.75
Lead Time Performance	3.44	3.15	2.18	1.00
Continuous Improvement	3.38	2.40	2.18	2.25
Technical Skills	2.91	3.00	2.45	1.75
Design Skills	2.13	1.65	1.91	1.75
Innovation Skills	2.29	1.70	1.36	1.75
Safety	2.87	2.35	1.55	1.75
Business Focus	2.91	2.47	2.00	1.00
Commercial Awareness	2.97	2.85	1.64	1.75
Service Focus	3.71	2.85	2.36	2.00
Professionalism	3.39	2.55	2.27	2.00

Note: 1 = no improvement; 5 = very large improvement

Forward and other Linkages

The analysis of links and relationships between the foreign companies in the sample and local distributors, competitors etc. is not as advanced because of various complications, so the following is merely the emerging story. In terms of forward linkages, it is worth bearing in mind that, on average, only 28% of outputs are sold or exchanged in the host countries (with an additional 7% in ASEAN). This is good in terms of the foreign-trade multiplier (one of the benefits of export-oriented industrialisation), but it means that there is less likelihood of spillovers through links with local sales and marketing organisations. An additional complication is that the sales and marketing of their output is wholly controlled by only 15% of foreign companies in our sample (sales/output exchange is mostly determined by parents,

sister sales organisations and international purchasers) and this reduces the scope for forward linkages. In addition, many local sales are, in fact, inputs for other TNC originated enterprises (or occasionally large locally-owned manufacturers) and therefore there are no relevant forward linkages. Because of these complications, only 50 sample companies are selling appreciable amounts in the local market and mostly to foreign industrial customers. In consequence, a mere 14 companies claim to contribute to the development of local distributors or sales organisations, mostly in consumer electronics. A half (7) of companies assisting distributors are in Vietnam because most investments there by electronics firms are locally market orientated (whereas the preponderance of investors in this sector in Singapore, Malaysia and Thailand are a part of international value chains). In conclusion, as long as manufacturing FDI in ASEAN countries is primarily export orientated, spillover gains from forward linkages in host/regional economies will be lesser than those from backward linkages (though it is true that local sales orientation by foreign firms is increasing). However, although this judgment will most likely apply equally to other export-orientated manufacturing FDI, it is worth mentioning that this study has not examined forward linkages by sales subsidiaries[63], as opposed to manufacturing subsidiaries. Given the consumption multiplier, such sales subsidiaries have been established in many economies to service expanding local markets for international goods. Such subsidiaries will have a dynamic of their own in terms of forward linkages, impact on competitors and the training of workers with sales/marketing skills. Inasmuch as there is a large presence of locally-owned companies (including ethnically Chinese ones) in some of these countries this is indicative of additional FDI effects missed in this study.

Moving to influence on locally-owned competitors, most companies were not able to reply because there were no direct competitors for their products or activities. Of the 30 or so who could respond, about 80% agreed that local competitors had improved since they arrived in the host country, although nearly all stressed that local competition was based primarily on price[64]. Despite this, it was deemed that the competitive level of 75% of local companies was 3 or less (on a scale of 1 to 5). Nevertheless improvements were being made in production techniques (53% of companies), the development of similar products to the foreign company (50%) and the adoption of better management methods (55%). In overall terms, through a combination of competitive and demonstration effects, local companies are improving, although there is still some way to go – especially because of the technology gap and the difference in scale of local versus foreign companies (e.g. table 5.3 shows that the average employment of foreign companies in consumer electronics in the sample is about 1,500 people which dwarfs virtually all local competitors).

However, allowing for these caveats, a number of local companies were interviewed (in Malaysia and Thailand) in products such as consumer electronics, semiconductors, contract manufacturing and air-conditioners in order to better

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[63] Such subsidiaries might be sister affiliates of foreign manufacturing companies in the host economy; or they might be independently established with no direct link with manufacturing in the country.
[64] Some companies darkly referred to the likelihood that local companies were becoming more competitive by importing Chinese sourced products, rather than because of an improvement in their production methods.

understand how they compete effectively against foreign manufacturers. Although fuller details cannot be given here, a number of tendencies can be observed:

■ In areas such as consumer electrical and electronic goods, foreign companies have demonstrated the viability of certain products (e.g. refrigerators, TVs and air-conditioning units), both in terms of market demand and production. Local competitors expand into these markets, although they might aim at certain niches because of their size.

■ However, size need not be a barrier if new entrants enter particular markets (whether these be domestically orientated or export orientated). A typical example is where a large local company which was previously in another industry (often utilities, sometimes agro-based) or services enters an industry which is deemed to be lucrative. The key issue is to gather human and technological resources (the latter often embodied in the former), which is feasible in both Malaysia and Thailand because of the existence of skilled, developed labour (see section 5.4). Finance is not usually an issue.

■ Finally, a processes similar to the above might occur through a "spin off" where managers, engineers and other workers might decide to establish a company to produce a competing product or, perhaps, inputs or new products. In this case, the human resources and skills are available, but financial and other resources might be an issues. Examples of all three types of competitive effect were gleaned from the interviews.

Sub-project 2 also collected information on other linkages, including links with universities and schools; good citizenship and training activities; and charity and voluntary activities. These linkages, relationships and activities were extensive (especially for larger or development orientated firms from industrialised countries), but still need to be further analysed before they can be reported. (Much of the information is qualitative and in case study form.)

5.4 HUMAN RESOURCES DEVELOPMENT

The country studies in section 2 showed that, because of the scale of FDI in the ASEAN-5 countries (and increasingly in Vietnam and Cambodia in recent years), the direct effect of FDI on employment generation has been immense, a conclusion confirmed by the sample companies in this survey. The number and average size of foreign investors, especially in the electronics industries, is large (table 5.3). The econometric results in section 3 also implied that a proportion of the large direct effect of FDI on poverty reduction was due to the level of training, an issue to which we turn in this section.

Table 5.18 shows that the vast bulk of shop-floor workers in the sample companies are educated to at least the secondary school level[65]; only in Cambodia does this proportion slip, with 50% of workers possessing no formal education. Beyond this, a considerable amount is expended on human resource development and training. On average, 1.9% of the payroll is spent on training and over 6 days devoted to training

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[65] It is worth mentioning that, as discussed in sections 3 and 4, an educated workforce is a precursor to improving the beneficial impact of FDI.

per worker per year. These amounts are higher for the electronics industries and, therefore, Singapore and Thailand (Malaysia stands exactly at the average). In contrast, there is very little by way human resource development expenditure in garments and Cambodia because, after initial training, there is very little need for additional training.[66] On the other hand, the current level of training is very high in Vietnam because many investors have only recently arrived. In terms of source countries of companies, the USA stands ahead of Japan and Europe, but not overwhelmingly so, especially in terms of training days. As before companies from the NIEs and ASEAN devote less expenditure or training days to human resource development. It is also noteworthy that training leads to in-house qualifications in many companies, especially in the electronics sector – often this is "only" certification for specific jobs, but there is usually a link to pay and/or promotion.

Table 5.18 Human Resource Development Indicators

		Proportion of Shop-floor Workforce Educated at the Secondary School Level or Higher (%)	Average Share of Annual Payroll spent on Human Resource Development (%)	Average Number of Days Spent on Training per Year (number)	Does Training Lead to In-House Qualifications? (Average Score from 1-5 range)
	All Companies	82	1.9	6.3	2.6
Industry	Elec. & Electronics	89	2.6	6.7	3.2
	Cons. Electronics	92	1.7	7.7	2.8
	Garments	60	0.1	3.8	1.4
	Textiles	82	0.2	9.7	2.6
Host Country	Singapore	90	3.0	5.5	2.5
	Malaysia	90	1.9	6.3	3.5
	Thailand	89	2.7	6.2	2.7
	Vietnam	78	1.5	9.0	2.2
	Cambodia	49	0.0	0.0	1.0
Source Country	Japan	na	1.8	6.8	2.5
	USA	na	3.4	7.3	3.1
	Europe	na	2.8	6.0	3.7
	3 NIEs	na	0.5	6.3	2.5
	ASEAN	na	0.0	4.2	1.2
	Others	na	3.0	6.2	2.3

Notes: 50% of Cambodia's workforce have no formal education
In-house qualification range: 1 = never; 5 = always

Staff training is conducted in a variety of facilities, ranging from the shop-floor (on-the-job training) through seminars in training rooms to offsite training at specialist training centres or educational institutions. Of course, the latter facilities are mostly for managerial training or the development of functional skills. Many companies send their engineers overseas, especially to the parent company, for advanced training. Larger companies have their own training centres and some – especially in high-tech sectors – have a branch of the global company's University or College. In addition, companies with extensive regional operations or an RHQ sometimes subdivide training among different regional training facilities, reflecting the relative advantages of particular subsidiary companies.

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[66] In addition during the fieldwork it was discovered that much of the training was, in fact, conducted by various NGOs which played a role in skilling women to work in garment factories.

Table 5.19 Current Level of Employees' Skills, by Host Country

Level of attainment in terms of:	Mean Ratio (on a 1-5 scale)					
	Singapore N=2	Malaysia N=25	Thailand N=24	Vietnam N=22	Cambodia N=9	Total N=82
Cost Awareness	4.5	3.6	3.5	2.8	1.8	3.2
Quality Control	4.5	4.1	4.1	3.6	3.0	3.8
Delivery Adherence	5.0	4.0	4.1	3.3	3.0	3.7
Inventory Control	3.5	3.8	3.6	3.5	2.7	3.5
Specific Technical Skills	4.5	3.9	3.5	3.6	2.7	3.6
Design Skills	4.5	2.8	2.3	2.4	1.6	2.4
Innovation Skills	4.0	3.1	2.5	2.5	1.8	2.6
Safety Awareness	4.0	4.4	3.7	3.5	2.7	3.8
Business Focus	4.0	3.6	3.2	2.7	1.9	3.1
Commercial Awareness	3.0	3.5	2.7	2.7	1.9	2.9
Work Motivation	4.0	3.6	3.7	3.4	2.8	3.5
Service Focus	3.5	3.7	3.6	2.7	2.5	3.3
Inter-personal Skills	4.0	3.5	3.2	2.8	2.9	3.2
Team Working	4.5	4.2	3.9	3.4	3.3	3.8
Professional Attitude	3.5	3.7	3.4	3.3	2.0	3.3
Problem Solving	4.0	3.7	3.5	3.2	2.2	3.3

Note: 1 = low skill attainment; 5 = very high skill attainment

Table 5.20 Current Level of Employees' Skills, by Industry

Level of attainment in terms of:	Mean Ratio (on a 1-5 scale)			
	Electrical and Electronics N=37	Consumer Electronics N=19	Garments N=21	Textiles N=5
Cost Awareness	3.7	3.3	2.4	2.2
Quality Control	4.2	3.7	3.5	3.2
Delivery Adherence	4.1	3.6	3.3	3.2
Inventory Control	3.7	3.6	3.1	3.4
Specific Technical Skills	3.8	3.6	3.3	3.2
Design Skills	2.8	2.4	2.0	2.2
Innovation Skills	2.9	2.7	1.9	2.8
Safety Awareness	4.0	3.9	3.3	3.2
Business Focus	3.4	3.1	2.5	3.0
Commercial Awareness	3.2	3.0	2.4	2.8
Work Motivation	3.8	3.5	3.1	3.4
Service Focus	3.6	3.4	2.6	3.0
Inter-personal Skills	3.4	3.0	2.9	3.0
Team Working	4.0	4.0	3.4	3.6
Professional Attitude	3.7	3.4	2.8	2.8
Problem Solving	3.7	3.3	3.0	2.8

Note: 1 = low skill attainment; 5 = very high skill attainment

Given the amount of resources expended, on the whole, on staff training, it is important to evaluate how this impacts on the capabilities of the workforce. Tables 5.19 to 5.21 are based on companies' assessment of the level of skills attained by their workforce (a few skills are general, some apply to shop-floor workers and others apply to specific groups of employee, for example engineers or marketers). Companies rate their employees quite highly – there are very few skills rated below 3 on average – and higher than the equivalent skills imbibed by supplier firms. This is to be expected, since employees are instructed or trained directly, whereas suppliers normally receive technology, knowledge or expertise indirectly. As before, skill levels are far higher in the older member countries of ASEAN (Singapore, Malaysia and Thailand), partly because companies arrived some time ago and partly because of

the industry effect – the skills level is higher in electronics firms (which invest more in human resource development and relevant systems).[67] In a similar vein, and for related reasons, the skills-set of firms originating in the USA, Japan and Europe is somewhat higher than that of those from the NIEs or ASEAN. It is interesting to note that about a half of the companies surveyed reckon that the skills level of their work-force is on par with that of their foreign parent firm – or better.

Table 5.21 Current Level of Employees' Skills, by Source Country

Level of attainment in terms of:	Mean Ratio (on a 1-5 scale)					
	Japan N=26	USA N=11	Europe N=10	3 NIEs N=22	ASEAN N=7	Others N=5
Cost Awareness	3.4	3.7	3.4	3.0	1.7	3.2
Quality Control	3.9	4.1	4.2	3.7	2.7	4.2
Delivery Adherence	3.9	4.1	3.8	3.5	2.7	4.0
Inventory Control	3.4	3.9	4.0	3.6	2.6	3.0
Specific Technical Skills	3.6	4.4	4.0	3.5	2.4	3.2
Design Skills	2.6	2.6	2.6	2.6	1.7	1.6
Innovation Skills	2.5	3.4	2.4	2.9	2.1	1.6
Safety Awareness	3.9	4.1	4.1	3.6	2.4	4.0
Business Focus	3.2	3.1	3.8	3.0	2.0	2.7
Commercial Awareness	3.1	3.1	3.5	2.8	2.3	1.7
Work Motivation	3.5	3.4	4.1	3.6	2.7	3.4
Service Focus	3.4	3.5	3.1	3.4	2.5	3.0
Inter-personal Skills	3.3	3.3	3.2	3.1	2.6	3.4
Team Working	3.6	4.3	4.0	3.8	3.1	3.2
Professional Attitude	3.4	3.9	3.8	3.2	2.1	3.0
Problem Solving	3.6	3.5	3.6	3.4	2.0	2.8

Note: 1 = low skill attainment; 5 = very high skill attainment

The above discussion confirms that there is a very strong direct FDI effect on the scale of employment and the quality of the workforce (through training) and, thereby, on poverty reduction in the older ASEAN countries. This effect is not so strong, as yet, in newer ASEAN member countries, but there is much that can be learnt from the ASEAN-5, especially Malaysia and Thailand. Beyond this, there is clearly a significant pool of skilled, trained labour in Singapore, Malaysia and Thailand, ripe to be married to new industrial experiences. On the whole, this has yet to happen (see Rasiah 2002 for Malaysia) and governments need to consider ways of encouraging spillovers potentially emanating from the development of relatively high levels skills among work-forces throughout ASEAN.

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[67] Of course, garment companies may well argue that the skills set required in this industry is relatively lower.

6. CONCLUSIONS

Allowing for the preliminary nature of some of the findings in section 5 (further, deeper analyses have yet to be conducted), there is a strong concurrence between the results of sub-projects 1 and 2. Among the ASEAN-5 countries[68], both sub-projects find a large direct FDI effect on poverty reduction, transmitted through employment and training (see especially sections 3.4 and 5.4). In addition there is an indirect effect, transmitted through growth (according to sub-project 1) and, more precisely (according to sub-project 2), through (a) the supply chain multiplier, (b) the consumption multiplier and (c) a variety of spillover effects (see section 4.3 and figures 4.3 and 4.4). However, the indirect effect is not as strong as the direct effect according to sub-project 1 and the results of sub-project 2 seem to bear this out:

■ The supply chain multiplier and spillovers associated with backward linkages are weakened by (a) more than two-thirds of inputs being purchased from abroad; (b) a large proportion of locally-sourced inputs being purchased by foreign-owned suppliers; and (c) the fact that most inputs bought from indigenous suppliers are low technology or secondary products. (On the other hand there has been an appreciable improvement in the skills and performance of locally-owned suppliers, whose initial strategy should arguably be to improve the capability of their manufacture of components/inputs before branching out into new products.)

■ Forward linkages related to the surveyed industries are, if anything, weaker. Two-thirds of output is exported; very few of the surveyed companies directly control sales and distribution; and much of the sales/exchange in the local economy is to other foreign industrial companies. Consumer electronics are the primary source of good news inasmuch as they are sold in local markets and result in support and knowledge transfer to local distribution and sales firms. (Having said this, the more important forward linkages are likely to be with the sales subsidiaries of consumption good orientated companies; these were not a part of the survey in sub-project 2.)

■ There are very few locally-owned direct competitors of any note, although they are improving in terms of competitiveness (according to the surveyed companies). (Moreover, there is evidence of market entry through new entrants – e.g. a conglomerate previously in other areas, often services – and spin-offs.)

■ A highly trained pool of skilled labour now exists in the ASEAN-5 countries, especially in Malaysia and Thailand, but there have only been limited spillovers in terms of spin-offs and mobility to indigenous firms. (This is one of the areas requiring priority attention by host country governments.)

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[68] Singapore, Malaysia, Thailand, Indonesia and the Philippines - the original member countries of the Association. All 5 are included in the analysis in sub-project 1 and the first 3 in sub-project 2.

Table 5.22 Summary of Malaysia and Thailand's Experience of FDI Effects on the Economy, Growth and Poverty Reduction (based on this research study).

Type of FDI Effect		Degree of Impact	Comments
Direct Effects	Employment	High	Very high levels of FDI in both countries means that large numbers of people are employed by manufacturing TNCS. Many subsidiaries are large, resulting in a big direct impact on the economy, growth and poverty reduction. A very high proportion of workers are women and from poorer provinces.
	Training, Human Capital	High	Relatively advanced segments of value chains transferred to both countries, the quality of local products has to be high in order to meet expectations of international markets, many subsidiaries assigned strategic roles (e.g. related to R&D) or autonomous. High expenditures on HRD and many days devoted for training.
	(Reinvestment)	Middling	Primary source of future FDI expansion in these economies. TNCs need to be convinced to reinvest more
Consumption Multipliers	Consumption	High	High rise in employment and wages led to this and the growth of ancillary industries from real estate to retail services. Local conglomerates grew on the back of this expansion.
	Taxes	High	Facilitated the improvement of social benefits, infrastructural development, education and training etc. (Note careful urban planning in Malaysia as opposed to Thailand.)
	Net Exports	High	Import of consumption goods low compared to exports
Value Chain Multipliers	Suppliers	Middling	Import of inputs from abroad; many local foreign-owned suppliers
	Distributors & Sales Orgs.	Low to Mid	Most output shipped overseas or to manufacturing TNCs in each country.
	International links	High	Results in high exports, but a source of concern when too large a share is imported. Key issue is to improve the local supplier base. Opportunities for regional value chains, especially taken up by ASEAN TNCs and Consumer Electronics firms (among others).
Spillover Effects (training, competitive effects, demonstration effects and human mobility)	Suppliers	Middling	Still not enough spillovers in high-tech goods, but international supply chains mean that "world standard" technology, knowledge and expertise is imparted or seeps to suppliers. A half of subsidiaries maintain supplier partnership schemes in Malaysia; a third in Thailand.
	Distributors & Sales Orgs.	Low	As above. Sales subsidiaries related to imported consumption goods might be significant in spillover effects (but not surveyed).
	Competitors	Low to Mid	Direct competitors few, but improving. However, exemplars of more robust competition provided by entrants (e.g. locally-owned conglomerates which have grown wealthy because of consumption multipliers) and spin-offs.
	Human Capital	Low to Mid	Still only a minimal flow of skilled labour to locally-owned suppliers and manufacturers. Spin-offs minimal. Loss of skilled women workers back to provinces and other occupations?

Having recognized all this, we should not lose sight of the considerable poverty reduction in the ASEAN countries in the 1980s and 1990s; a boon which continues today in the ASEAN-5, as a whole[69]; and increasingly in ASEAN-4[70] countries, such as Vietnam and Cambodia. Moreover, the war against poverty is not yet over. Apart from the poverty reducing effects of FDI, there has been considerable growth, engendered by TNC activity in the ASEAN-5 and ASEAN-4 countries. This has been due to direct, multiplier and spillover effects and it is essential to better utilise these effects to generate more growth and further reduce poverty. The key is to tap more fully into the spillover effects (section 4.3 and 4.5). Following on from this last point, it should be said that the mildly disappointing conclusions regarding linkages and competitive effects above relate to ASEAN as a whole (essentially ASEAN-5 in sub-project 1 and a mix of ASEAN-5 and ASEAN-4 in sub-project 2). However, some countries have done better (in terms of poverty reduction, growth, utilization of spillover effects etc.) and can be used as "role models" for ASEAN-4 countries (or, indeed, developing countries elsewhere).

In both sub-projects Malaysia and Thailand[71] stand out as exemplars and table 5.22 summarises their experience with FDI effects – and therefore the types of lessons that other countries can learn. Of course, the precise nature of the lessons will depend on the circumstances of each country and a whole variety of contingencies. For example, in the discussion in section 5, it became clear that the following factors, among many others, matter: industry, market orientation, size, source country, government education and human resource training policies etc. Many complexities need to be taken into account, but the experiences of ASEAN countries such as Malaysia and Thailand are a good place to start.

Finally, table 5.23 summarises the study's findings with respect to the original guiding hypotheses in section 1. In general, ASEAN does matter in terms of the relationship between FDI, growth and poverty reduction (compared to other developing countries) and the findings are generally consistent with the hypotheses. Of course, qualifications apply, as always. However further work (based on the data already collected) is necessary to fully understand how "ASEAN matters" in terms of TNC regional networks (hypotheses 5 and 6).

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[69] Albeit allowing for some rise in poverty, following the Asian Economic crisis, both in the poorer , badly hit ASEAN-5 countries such as Indonesia and the countries examined in this study, including Thailand (Deolalikar, 2002).
[70] The 4 newer, poorer member countries, i.e. Cambodia, Laos, Myanmar and Vietnam.
[71] Leaving aside Singapore whose economy differs so significantly from the ASEAN-4 that comparisons are not so meaningful.

Table 5.23 The Project's Guiding Hypotheses – Study Findings

Hypothesis Number	Hypothesis	Study Findings
1	FDI reduces poverty via higher economic growth	The study findings are consistent with this hypothesis, but ASEAN is special: in general the relationship between FDI and poverty reduction is more ambiguous (because FDI has costs as well as benefits). Only 40% of poverty reduction thus far is from growth, but this share may increase as spillover effects become stronger.
2	FDI reduces poverty through a direct impact on local factors of production	The study findings are consistent with this hypothesis. About 60% of poverty reduction has been due to increased employment (of the poor) and human resource development.
3	The impact on national economies and poverty depends on the nature and characteristics of capital flows	The study findings are consistent with this hypothesis, but there are many contingencies because of the complexity of flows. For example, the study reveals very strong industry effects.
4	The impact on national economies and poverty depends on the nature and characteristics of the investing TNCs	The study findings are consistent with this hypothesis, but there are many contingencies because of the complexity of TNC characteristics. For example, suppliers seem more likely to improve their performance (i.e. spillovers are greater) when working for USA TNCs, as opposed to firms from other countries (many factors are involved).
5	TNCs are creating regional networks because of the regional division of labour (the "weak" "ASEAN matters" hypothesis)	This appears to be happening to a degree, for example with TNCs in consumer electronics and ASEAN TNCs investments in Vietnam and Cambodia (e.g. because of the attraction of cheaper labour or quotas).
6	TNCs are creating regional networks because of dedicated national and regional policies (the "strong" "ASEAN matters" hypothesis)	Little evidence of this was found directly. However, the effect of this might be "invisible" in the sense that TNCs take advantage of the consequences of these policies – but do not need to know the details. For example, in the past, Malaysian and Thai policies towards FDI were strongly influenced by Singapore (both in terms of style and content, i.e. recognising a particular regional division of labour), but TNC investors only observed an impact on national investment climates. AFTA and the AIA have, arguably, had a similar in recent years (both Cambodia and Vietnam acceded to these agreements).

APPENDICES

APPENDIX 1 : Model Specification.

As in Nonneman and Vanhoudt (1996) we assume an aggregate linearly homogenous Cobb-Douglas production function with labour and *m* categories of capital, including human capital. This can be written as follows:

$$Y = A_t L_t^{(1-\Sigma\alpha_j)} K_{t1}^{\alpha 1}...., K_{tm}^{\alpha m} \qquad \textbf{(A.1)}$$

where Y is total output or GDP; A, an indicator of Solow's labour-augmenting technical progress; L, the quantum of labour; K_j, capital stock of type *j* (j = 1, 2, ... m); subscript *t* denotes the time period; and α_j is the share of owners of *j* type of capital in total income, on the assumption that factor inputs are paid their marginal products. The assumption of a linearly homogenous production function ensures that the share of income accruing to workers is 1 - $\Sigma\alpha_i$. The quantum of labour L_t is assumed to grow at the rate of *n* per annum and the labour-augmenting technical progress at *g* per annum. In that case the annual growth rate of the *effective* labour force is *n + g* - which is assumed to be exogenous within the model. The model also assumes that a constant fraction s_j of income is invested in each category *j* of capital stock, so that the total fraction of income invested is $s_1 + ... + s_m$.

$$\frac{dk_{jt}}{dt} = s_j y_{jt} - (n + g + \delta_j)k_{jt} \qquad (j = 1.......m) \qquad \text{(A.2)}$$

By denoting output per effective labour unit as *y* and capital stock of type *j* per effective labour unit as k_j, the following set of differential equations can be derived:

where δ_j is the annual rate of depreciation of capital stock *j*. Setting equation (A.2) equal to zero would yield the steady-state values of the k_j's. Substitution of the steady-state values of the k_j's into the production function of equation (A.1) yields the following equation for the steady-state value of output per effective worker, in logarithms, denoted by ln (*y**):

$$\ln(y*) = \frac{1}{1-\Sigma\alpha_j} \sum_{j=1}^{m} \alpha_j [\ln(s_j) - \ln(n + g + \delta_j)] \qquad \textbf{(A.3)}$$

By adding the intercept and error terms to equation (A.3), a stochastic model is formed which can be estimated, at least in principle.

The above equation assumes that all countries are currently on their steady states, which can be regarded as a very strong assumption. This assumption is however not necessary and can be relaxed, as has often been done in the literature. In that case, it can be shown that (Barro and Sala-i-Martin, 1992 and Islam, 1995):

$$\ln(y_t) - \ln(y_0) = (1 - e^{-\lambda t})[\ln(y*) - \ln(y_0)] \qquad (\lambda > 0) \qquad \textbf{(A.4))}$$

where y_0 is the initial income per worker; y_t is the end-of-period income per worker; e is the exponent; y^* is the steady-state income per worker as defined earlier; and λ is an indicator of the annual speed of conditional convergence of income towards its steady-state value. Substituting for $\ln(y^*)$ from equation (A.3) into equation (A.4) we arrive at the following:

$$\ln(y_t)= \varphi(1 - e^{-\lambda t})\sum_{j=1}^{m} \alpha_j\, [\,\ln(s_j) - \ln(n + g + \delta_j)] + e^{-\lambda t}\ln(y_0) \qquad \textbf{(A.5)}$$

where $\varphi = 1/(1-\Sigma\alpha_j)$. In all the empirical studies that have since been reported, including that of Mankiw *et al* (1992), a fixed and equal amount of the combined depreciation rate (δ_J) and the rate of labour-augmenting technical progress (g) has been assumed for every country, this constant amount being 5% per annum. In other words, the expression $g + \delta_J$ in the above equation has always been assumed to be 5% for every observation or data point. This is partly due to lack of data on the rate of technical progress and capital stock depreciation. Due to the same reasons we also make the same assumption in this study. By assuming that $g + \delta_j$ is equal for every country and that δ_j is equal for every category of capital stock, equation (A.5) simplifies to equation (A.6):

$$\ln(y_t)= \varphi(1 - e^{\lambda t})\sum_{j=1}^{m} \alpha_j\, [\,\ln(s_j) - \ln(n + g + \delta)] + e^{-\lambda t}\ln(y_0) \qquad \textbf{(A.6)}$$

In this study we make distinction between three different type of investment: domestic, foreign and human. The specific form that equation (A.6) takes in our case therefore would be as follows:

$$\ln(y_t)= \beta_1 \ln(I_d)+ \beta_2 \ln(I_f)+ \beta_3 \ln(I_h)+ \beta_4 \ln(y_0)$$
(A.7)

where $\beta_j = \varphi(1 - e^{\lambda t})\,\alpha_j$ and $I_j = s_j/(n + g + \delta)$, j=d,f,h. First differencing equation (A.7) gives us the following growth accounting formulation. Given that initial income remains the same therefore the first difference of the last term in equation (A.7) will be zero.

$$g_{GDP} = \beta_1\, g_d + \beta_2\, g_f + \beta_3\, g_h \qquad\qquad (A.8)$$

where g stands for the growth and subscripts GDP, d, f and h stand for gross domestic product, domestic, foreign and human capital. Adding an intercept and a stochastic error term as well as some fixed/qualitative variables to equation (A.7) or to the growth accounting formulation (A.8), allow us to run a regression estimating various GDP growth elasticities with respect to various forms of capital. Equation (A.7) and equation (A.8) with the modifications specified, form the econometric growth accounting models we use in our empirical investigation. Parameter estimates from regressions using equation (A.8) (equation (1) in the text) as the base give us direct measures of the marginal propensity of GDP to grow with respect to growth of share in GDP of various types of investment, as well as other determinants of GDP growth. These coefficients are very close to conventional elasticities;

multiplying these by the inverse of the factor shares in income gives us conventional marginal products (see Appendix 2 for details).

APPENDIX 2: Calculation of Elasticities

Parameter estimates from equation (1) provide us with an approximate measure of growth elasticity with respect to various investments or capital inputs. Ignoring growth of human capital from equation (1) and concentrating on domestic and foreign investment gives us the following relationship:

$$g_{GDP} = \beta_1\, g_d + \beta_2\, g_f \qquad\qquad\qquad\text{(B.1)}$$

Or alternatively this relationship can be written as:

$$\ln Y/Y_{-1} = \beta_1\,(\ln I/Y\ -\ \ln I_{-1}/Y_{-1}) + \beta_2\,(\ln F/Y - \ln F_{-1}/Y_{-1}) \qquad\text{(B.2)}$$

where I stands for domestic investment, F for foreign investment and subscript (-1) stands for the first lag of relevant variables. Further simplification of (B2) will give us the following:

$$\ln Y/Y_{-1} = \beta_1 \ln I/I_{-1} + \beta_2 \ln F/F_{-1} - (\beta_1 + \beta_2)\ln Y/Y_{-1} \qquad\text{(B3)}$$

Or

$$(1+\beta_1+\beta_2)\ln Y/Y_{-1} = \beta_1 \ln I/I_{-1} + \beta_2 \ln F/F_{-1} \qquad\text{(B4)}$$

which in turn is simplified as:

$$\ln Y/Y_{-1} = \gamma_1 \ln I/I_{-1} + \gamma_2 \ln F/F_{-1} \qquad\qquad\text{(B5)}$$

where $\gamma_i = \beta_i/(1+\beta_1+\beta_2)$, i=1,2. (B5) shows the first difference relationship between variables which also holds equally in terms of respective levels given that the lag terms on each side cancel each other, and therefore:

$$\ln Y = \gamma_1 \ln I + \gamma_2 \ln F \qquad\qquad\qquad\text{(B6)}$$

(γ_i) from (B6) gives us the appropriate elasticity of output with respect to domestic and foreign capital. The only difference between these elasticities and the respective parameter estimates based on equation (1) is the scale effect $(1+\beta_1+\beta_2)$ which is not much larger than unity and therefore β_i from equation (1) are close approximates of output elasticities with respect to domestic and foreign capital.

APPENDIX 3: Principle Areas Covered in the Questionnaires

A. Background Information
Host/home countries
Ownership structure/entry mode
Company's involvement in the host economy
Company's activities in the host economy
Company's size and employee outlook

B. International and Regional Integration
Regional structure of company, if appropriate
Details about regional headquarters, if appropriate
Details about functional roles performed by the affiliate.
Exports / output destination, past and future trends, government policies, intra- / inter- firm patterns
Imports / input destination, past and future trends, government policies, intra- / inter-firm patterns
Origin of capital equipment of the affiliate
Company's regional (intra-ASEAN) integration, if appropriate

C- The Subsidiary within the Local Economy
Business links maintained with local suppliers in the host country
Contractual arrangements with suppliers
Support system for suppliers in the host country
Results of the support system for suppliers in the host country
Business links maintained with local customers in the host country
Links maintained by this company with its competitors in the host country
Other contributions by foreign affiliate in the local economy?

D- Human Resource Development
Details about Human Resource Development
Details about shop-floor workers
Recruitment strategy
Facilities for staff training, qualifications, incentives for training
Skill levels of employees
Comparison of staff training within firms

E- Future Prospects in ASEAN
Details about profits gained, re-investment potential
Future investment intentions in ASEAN, if appropriate
Specific regional policies requirements

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