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# TRADE AND INVESTMENT PATTERS IN ASIA: REGIONALISATION OR GLOBALISATION?

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# Trade and Investment Patterns in Asia: Regionalisation or Globalisation?

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# Trade and Investment Patterns in Asia: Regionalisation or Globalisation? [1]

## 1 Introduction

The purpose of this paper is to document and analyse the emerging patterns of international trade and cross-border direct investment in Asia, with a view to informing the contemporary debate on growth dynamism and the process of intra-regional versus inter-regional economic integration. The paper aims to add new insights into the sizeable existing literature on this subject in relation to three major areas. First, a key theme running though this paper is the implications of international fragmentation of production – that is, the geographic separation of activities involved in producing a good (or service) across two or more countries – for the debate on regional versus global integration of these countries. Second, as an extension to this theme, particular attention will be placed on the debate as to whether the emergence of China as the world's fastest growing industrial economy will crowd out other countries' opportunities for integrating into the regional and global economy through fragmentation-based specialization. Third, an attempt is made to examine the emerging complementarities between trade and investment patterns, an aspect which has so far remained virtually overlooked but is vital for understanding the on-going process of economic integration in the region.

For the purpose of the study Asia is defined here to encompass the economies of South and East Asia. East Asia includes Japan, and developing East Asia (DEA), which covers the newly industrialized economies (NIEs) in North Asia (South Korea, Taiwan and Hong Kong), China and members of the Association of Southeast Asian Nations (ASEAN). Developing Asia (DA) refers to South and East Asia except Japan. Hong Kong and China are treated as one geographical entity, while reporting data separately for the two economies for comparative purposes. This is justified not only because Hong Kong was reverted back to Chinese sovereignty, but also because the two economies

[1] This paper draws on my on-going collaborative research with Hal Hill.

have increasingly been closely interlinked through trade and investment following China's market oriented reform initiated in the late 1970s. To gain perspectives, the Asian experience is examined in the wider global context.

The results suggest that, while fragmentation-based specialisation is now a global phenomenon, it is far more important for economic growth and structural transformation in the East Asian economies than elsewhere. Notwithstanding recent market oriented reforms, India still remains a minor player in this most dynamic area of trade expansion. The degree of dependence of the East Asian economies on this new form of international specialisation is proportionately larger in this region compared to North America and Europe. MNE from America, Europe and Japan, and more recently MNEs from the East Asian NIEs have played a pivotal role in linking the countries in the region to regional and global production networks. A highly important recent development has been the rapid integration of China into regional production networks as a major final assembler based on parts and components imported from the rest of East Asia: an important counterpoint to the popular belief that China's global integration would crowd out other countries opportunities for benefiting from rapidly growing fragmentation trade. These developments do not, however, mean that production fragmentation has contributed to lessening the regions dependence on the global economy. On the contrary, the region's growth dynamism based on vertical specialisation is deeply dependent on its extra regional trade in final goods, and this dependence has, in fact, increased over the years. The on-going process of production fragmentation has thus strengthen the case for a global, rather than a regional, approach to trade and investment policy making in countries in the region.

The remainder of the paper is organized as follows. Section 2 examines general patterns of trade since 1970, for Asia as a whole, for the major sub-regions, and by country. This examination includes trade flows over time in aggregate, by major partners, and by major commodity groups, paying particular attention to the phenomenon of 'network trade' based on international fragmentation of production. Central to the discussion in this section is the implications network trade for the relative importance of

intra-regional versus global economic integration, and the way in which latecomers in the region are hooking into the growth process through global integration. Section 3 investigates investment patterns, focusing on the comparative performance of Asian developing countries attracting and managing foreign direct investment (FDI), and the FDI-trade nexus. The final section summarizes the key findings and draws out some general inferences.

## 2 Trade Patterns

The analysis in this section is based on data compiled from the UN *Comtrade* database. In order to assess the magnitude and nature of trade within global production networks, it is necessary to separate parts and components (henceforth referred to as 'components' for brevity) from final (assembled) products in reported trade data. We do this through a careful disaggregation of 5-digit level data based on the Revision 3 of the Standard International Trade Classification (SITC, Rev 3) of the United Nation trade data reporting system (See Appendix). In its original form (SITC, Rev. 1), the UN trade data reporting system did not provide for the separation of parts and components from final manufactured goods. The version introduced in the late 1970s (SITC, Rev. 2), which was fully implemented by most countries only in the early 1980s, adopted a more detailed commodity classification that provided for the separation of parts and components within the machinery and transport sector (SITC 7). However, considerable overlap between some advanced-stage assembly activities and related final goods within the sector made it difficult to undertake a precise separation of fragmentation-based trade from total trade (Ng and Yeats 2001). Revision 3, which was introduced in the mid-1980s, marked a significant improvement over Revision 2. In addition to redressing the issue of overlap within SITC 7, it provided for the separation of parts and components trade in the miscellaneous goods sector (SITC 8). These two sectors together accounted for around 70 per cent of total world manufacturing trade (defined as goods belonging to SITC 5 through 8 less SITC 68 (non-ferrous metals)) during the period under study. For the purpose of analyzing overall trade trends and changes in commodity composition we

combine the data reported under the Revisions 2 and 3 of the Standard International Trade Classification (SITC) for the period from 1969/70 to 2005/6. The separation of components from reported trade data is however possible only from 1992 when almost all countries reporting to the UN trade system had adopted the revised reporting system.

The data are tabulated using partner-country records, which are considered more appropriate compared to the corresponding reporter records for analysing trade patterns for a number of reasons (Ng and Yeats, 2003, Appendix 1, Feenstra *et al.*, 2005). Partner-country records are admittedly less susceptible to double counting and erroneous identification of the source/destination country in the presence of entrepot trade compared to data based on reporting country records (e.g., China's trade through Hong Kong and Indonesia's through Singapore). Also, some countries fail to properly report goods shipped from their own export processing zones. These exports are simply lump these exports into one highly aggregated category of 'special transactions' under SITC 9. While no fully satisfactory solutions exist for these problems, it is generally believed that data compiled from importer records are less susceptible to recording errors and reveal the origins and composition of trade more accurately since there normally are important legal penalties for incorrectly specifying this information on customs declarations. Partner country records also permit covering trade of countries which are not covered in the UN data system. Among the countries covered in this study, Taiwan is not covered in the UN data system and Vietnam has just begun to make data available according to the standard UN format.

In order to achieve comparability across countries, data on oil and gas trade (SITC 3) are excluded from the coverage of merchandise trade. Among the Asian countries covered in this study, oil and gas account for a significant share of exports only in Malaysia and Indonesia.[2] In both countries there has been a dramatic shift in export

[2] The following statistics reveal this declining trend:

Share of oil and gas in merchandise exports (%)

| | | 1969/70 | 1979/80 | 1989/90 | 2005/06 |
|---|---|---|---|---|---|
| Indonesia | | 24.5 | 58.8 | 40.0 | 25.7 |
| Malaysia | | 3.8 | 45.0 | 17.2 | 11.0 |

composition of exports away from crude oil and non-oil primary products to manufacturing. The date are in current US$ terms.

*Trends*

Table 1 summarises data on the relative trade performance of Asian countries in world trade. The combined share of Asian countries in world non-oil exports recorded a three-fold increase, from 11.1% to 33.4%, between 1969/70 and 2005/6 (Table 5).[3] The region accounted for over 40% of total increment in world exports over this period. East Asia dominated this impressive export growth story, accounting for over 95% of the total regional trade. Within East Asia, the combined world market share of ASEAN increased persistently from 2.2% in 1969/70 to 6.3% in 2005/6, but these countries still account for less than a fifth of total Asian trade. Notwithstanding notable export expansion in recent years, South Asia still accounts for a mere 1.4% of total world trade, equivalent to less than 5% of Asia's total trade. Among the nine largest DEA economies only Hong Kong, Indonesia and the Philippines have smaller world trade shares than India, by far the dominant South Asian economy. In 1969/70 China's world export share (0.8%) was at par with that of India, but was more than 10 times larger in 2005/6 (India: 1.1%, China 12.3%)

In the 1970s and 1980s, Japan dominated the region's trade, accounting for over two-thirds of its exports and imports. The picture has changed dramatically over the past two decades, as DEA's share increased from 13.4% in 1989/90 to 25.1% in 2005/06. The rise of China has been the dominant factor behind this structural shift, but the other countries in the region have also increased their world market shares. Thus, on first inspection, there is no indication of China 'crowding out' its neighbours. We return to this issue below. In the global context, Asia's market share gains have come predominantly at the expense of developed countries. The combined share of other

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[3] Hereafter, we will use the terms 'total world exports/trade' and 'total world non-oil exports/trade' interchangeably and to mean the same thing. Trade and investment magnitudes throughout the paper are measured in current US dollars unless otherwise indicated. Data are presented as two-year averages to smooth out the impact of yearly fluctuations in trade.

developing countries (that is, all developing countries less Asian developing countries) has increased persistently, though of course at a slower rate than DEA.

*Commodity Composition*

Rapid export growth in Developing Asia (DA), mainly driven by the DEA group, has been underpinned by a pronounced shift in export structure away from primary commodities and toward manufactures (Tables 2 and 3). By 2005/06 manufactures accounted for 92% of total exports from Asia, up from 78.3% three decades ago. Given the nature of their resource endowments, Japan and the four Asian NIEs (Hong Kong, Taiwan, Korea, and Singapore) relied very heavily on manufacturing for export expansion from the very beginning. However, beginning in the 1970s, a notable shift towards manufacturing is observable across all countries, at varying speeds and intensity. Between 1979/80 and 2006/7 the share of manufacturing in total exports of developing Asian countries increased from 63.0% to 92.0%. The shares of ASEAN and South Asia respectively increased from 31.5% to 67.3% and 55.5% to 80.3% between these two time points. Among individual countries Indonesia, Vietnam, and Pakistan (and of course the very small late-comer Indo China economies) have a significantly lower share of manufactures in their exports, reflecting both their comparative advantage and their later adoption of export-oriented industrialization strategies.

Asia's share in total world manufacturing exports increased from 19.5% in 1979/80 to 36.6% in 2005/6. This increase came entirely from the DEA economies, since the share of Japan fell sharply over this period (from 11.4% to 7.8%) and South Asia still accounted for a tiny share, around 1%, at the end of the period (Table 6, Figure 1). China's rise has been the key factor behind the rapid growth of manufacturing exports from developing Asia, but exports from Taiwan, Korea, and the ASEAN countries have also recorded impressive growth.

Within manufacturing, machinery and transport equipment (SITC 7), in particular the three sub-categories of information and communication technology products[4] therein,

[4] Hereafter referred to as ICT, comprising the sum of office machinery (SITC 75), telecommunication and sound recording equipment (SITC 76), and electric machinery (SITC 77).

have played a pivotal role in this structural shift. The share of Asia in world machinery and transport equipment exports increased from 11.9% in 1989/90 to 41.3% in 2005/06, with DEA accounting for over four-fifths of the increment. By 2005/06, over 67% of total world ICT exports originated from Asia, up from 49% in 1989/90. The share of machinery and transport equipment in the export structures of some of the more industrialized economies of East Asia is particularly high. By contrast, that for Indonesia, Vietnam and all of South Asian is much smaller (Table 2).

Asia's share in world exports of the other main product categories has also increased over time, though at a slower rate. Of particular interest here is the notable increase in region's share in miscellaneous manufacturing. This mostly consists of standardized labour-intensive manufactured goods, in particular clothing and footwear. China has accounted for much of this increase but, in contrast to ICT exports, the geographic participation has been broader. A number of low-wage countries in Southeast and South Asia, including Indonesia, Vietnam, India, Sri Lanka, Bangladesh, and Cambodia (the latter included under 'Other ASEAN countries') have all recorded impressive gains in market share.

*Network Trade*

The fast growth of machinery trade has been driven by rapid growth of international fragmentation of production in world trade and the increasingly deep integration of East Asian countries into the global production networks (Ng and Yeats 2003, Athukorala 2006 and 2008, Kimura 2006).

International production fragmentation ('fragmentation', for short) has been an important feature of the international division of labour since about the mid-1960s. The role of East Asia in fragmentation-based global production networks began in 1968 with the arrival in Singapore of two US companies, National Semiconductors and Texas Instruments to assembly semiconductor devices. By the beginning of the 1970s Singapore had the lion's share of offshore assembly activities of the US and European

semiconductor industries. Virtually every international electronics producer was present in Singapore by the mid-1980s, when the hard disk drive assemblers entered the country further boosting its role as a global assembly centre. During the next five years semiconductor production declined in relative importance, and computer peripherals, especially hard disk drives and computers became the more important part of the islands electronic industry. By the late 1980s, Singapore was the world's largest exporter of hard disk drives, accounting for almost half of world production (McKendrick *et al*., 2000).

As early as 1972 the MNEs with production facilities in Singapore began to relocate some low-end assembly activities in neighbouring countries (particularly in Malaysia, Thailand and the Philippines) in response to rapid growth of wages and land prices. Many newcomer MNEs to the region also set up production bases in these countries bypassing Singapore. By the late 1980s this process had created a new regional division of labour, based on skill differences involved in different stages of the production process and relative wages, and improved communication and transport infrastructure. At the time, there was a widespread concern in policy circles in Singapore that the regional spread of MNE operations in electronics industry could be at the expense of Singapore. However, the subsequent developments vividly demonstrated that 'the larger the scale and scope of electronic industry [which produces a wide range of heterogenous end-products, each of which needs a large number of equally heterogenous components in its manufacture] in Southeast Asia, the greater the economies of scale and more the opportunities for specialisation for all participating countries (Goh, 1990). More recently, regional production networks have begun to expand to Vietnam (Athukorala, 2007, Chapter 10).[5] Despite obvious advantageous in terms of location and relative wages, Indonesia has so far failed to benefit from this new form of international specialisation because of the unfavourable domestic investment climate (Athukorala, 2006a).

[5] Until recently, the fledgling electronics industry in Vietnam was largely dominated by small companies from newly industrialized countries in East Asia, with the sole exception of Fujitsu which operated a medium-size assembly plat in Ho Chi Ming City. On 28 February 2006, Intel Corporation, the world's largest semiconductor producer, announced that it will invest $300 million to build a semiconductor testing and assembly plant (with an initial workforce of 1200) in Ho Chi Ming City as part of its worldwide expansion of production capacity.

The continued attraction of East Asia as a location of assembly activities seems to have been underpinned by a number of factors. First, despite rapid growth, manufacturing wages in all ASEAN countries except Singapore still remain lower than or comparable to those in countries in the European periphery and Mexico.[6] Moreover, significant differences in wages among the countries within the East Asia region have provided the basis for rapid expansion of intra-regional product sharing systems, giving rise to increased cross-border trade in parts and components. Second, the relative factor cost advantage has been supplemented by relatively more favourable trade and investment policy regimes, and better ports and communication systems that facilitate trade by reducing the cost of maintaining 'services links'.

Third, as first-comers in this area of international specialisation, ASEAN countries (in particular Malaysia, Singapore and Thailand) seem to offer considerable agglomeration advantages for companies that are already located there. Site selection decisions of MNEs operating in assembly activities are strongly influenced by the presence of other key market players in a given country or neighbouring countries. Against the backdrop of a long period of successful operation in the region, many MNEs (particularly US-based MNEs) have significantly upgraded technical activities of their regional production networks in ASEAN and assigned global production responsibilities to affiliates located in Singapore and more recently also to those located in Malaysia and Thailand (Borrus *et al.*, 2000; McKendrick *et al*., 2000). All in all, the ASEAN experience seems to support the view that MNE affiliates have a tendency to become increasingly embedded in host countries the longer they are present there and the more conducive the overall investment climate of the host country becomes over time (Rangan and Lawrence, 1999; Athukorala and Yamashita, 2006).

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[6] Average annual compensation **(**Salary/wage plus other remuneration) per worker (US$) in selected countries: China 1835 (2001), Indonesia 880 (2000), Philippines 2965 (2000), Thailand 3345 (1994), Malaysia 4380 (2000), Vietnam 650 (2000), Taiwan 14420 (1997), Korea 15780 (2000), Singapore 20440 (2000), Poland 2502 (2000), Hungary 2898 (2000), Czech Republic 4150 (1998), Mexico 8050 (2000) (Source: China: China Statistical Press (2003) (average wage for Beijing, Tianjin, Shanhai, Zhejiang, Liaoning and Guangdon); Vietnam, General Statistical Office 2000; other countries: Nicita and Olarreage (2006), Statistical Appendix).

Over the years Singapore's role in regional production networks has gradually shifted from low-skill component assembly and testing to component design and fabrication and providing head-quarter services for production units located in the neighbouring countries. Singapore's attractiveness as the regional centre of cross-border production networks has been continuously enhanced by the policy emphasis of the government on infrastructure development, expanding the human capital base, maintaining labour relations in a manner highly conducive for international production, and sound macroeconomic management (McKendrick *et al*., 2000; Brown and Linden, 2005).

While MNEs from the US dominated the scene at the formative stage of the spread of assembly activities in the late 1960s, Japanese and Western European MNEs have become increasingly involved since the late 1970s. More recently, MNEs from more advanced developing countries, notably those from the East Asian NIEs have also joined this internationalization process. In response to rising domestic wages, the growing reluctance of domestic labour to engage in low paid blue-collar employment, and stringent restrictions on the importation of labour, firms in electronics and other durable consumer goods industries in the East Asian NIEs have begun to produce components and sub-assemblies in low-cost neighboring countries.

There is no unique way to measure the intensity of fragmentation-based specialization. However, for the purpose of time-profile analysis of the phenomenon, the best available indicator of is the share of parts and components in total recorded trade in machinery and transport equipment (Yeats 2000, Athukorala 2006a, Jones, Kierzkowski Lurong 2005).[7] Data on world market shares of machinery exports disaggregated into components and finals goods (reported total exports – parts and components) and the relative importance of components in total machinery exports are summarised in Table 4.

[7] Henceforth, for the sake of brevity, we use the term 'components' in place of 'parts and components' and 'machinery' in place of 'machinery and transport equipment'.

The share of East Asia in world component trade increased from 34% in 1989/90 to 40% in 2005/6. This resulted from an increase in the share of DEA from 16.5% to 28.1%, which more than counterbalanced a sharp decline in the share of the one-time regional giant, Japan, from 17.8% to 11.3%. Within DEA, all countries covered in our data tabulations have recorded increases in world market shares, with the ASEAN countries exhibiting faster increases compared to the regional average. India remains a tiny participant in the global production networks even though it has great potential to benefit from this new form of international specialization, given the relatively low-cost and trainable labour, and its location in a region that has become the growth centre of component production and assembly in the world. In 2005/6 India accounted for a mere 0.3% of component exports and 0.2% of final good exports in world machinery trade.

The dependence of the East Asian countries as a group on component trade is much higher compared to all other regions in the world. In 2005/6, components accounted for 34.7% of total machinery exports of these countries. Within East Asia, the ASEAN countries, in particular Malaysia, Philippine, Singapore and Thailand, stand out for their heavy dependence on product fragmentation for export dynamism. In 2005/6, components accounted for 58.4% of the total exports of the six ASEAN countries, up from 46.7% in 1989/90. For instance the combined export share of the six main member countries of the ASEAN Free Trade Area (AFTA) more than doubled (from 5.9% to 10.4%) between these two years.

In the 1990s there was growing concerns in policy circles in East Asia that the formation of NAFTA and the integration of some new countries emerging from the former Soviet Union with the rest of Europe would adversely affect the relative position of developing East Asian countries in world assembly activities. Indeed, in addition to the new tariff concessions, proximity to industrial countries and relatively low wages by regional standard (though not compared to some of the East Asian countries) can be considered as added advantages of these countries compared to East Asian countries in production fragmentation based international specialisation (Egger and Egger 2005, Ng

and Yeats 2003, Kierzkowski 2001). However, this prediction does not seem to have materialized world market shares of Mexico and rest of Europe (EUT less EU) have increased, but at a much slower rate than that of developing East Asia. It seems that in spite of geographical proximity and tariff concessions under FTAs, US producers still find East Asia as a more attractive location for fragmentation-based international exchange for the reasons discussed at the outset in this section.

The growing importance of China is component trade particularly noteworthy. Between 1992/3 and 2005/6, the share of China in total world exports and imports of component increased from 1.4% to 7.3%, and in total imports from 2.5% to 9.8% respectively. A comparison of the data on the share of components in total exports and imports (the last 2 columns in Table 4) points to an important difference between China and the other Developing East Asian Countries (DEACs). In China components accounts for a much larger share of imports (60.4% in 2005/6) compared to that in exports (34.8%). In other DEAs the percentage shares are broadly similar on the import and export side. This difference seems rapid expansion of China's role in world trade has brought about a notable shift in the regional division of labour, with the other DEACs, in particular ASEAN countries, playing an increasing role in producing parts and components for the rapidly growing final assembly activities in China.[8]

*China in regional production networks*

The data reported in Table 6 illustrates the growing importance of East Asia in China's machinery trade, focusing separately on trade in components and final products. The data clearly reflect the evolving role of China as an assembly centre within the East Asian region. The share of East Asia in total parts and component imports to China has increased sharply. By 2004/5, over two thirds of total components imports to China originated in the region. By contrast, only 47.8% of Chinese final products found markets in these countries. The share of Japan in component imports to China declined from 26.8% in 1992/3 to 22.6%

[8] The simple point here is that specialisation in component production/ assembly involves both importing and exporting of components within global production chains, involving multiple border crossing of components as countries add value at different slices of the value chain. By contrast final assembly in China involves importing components and exporting the assembled final products largely to North America, the EU and other third country markets..

in 2004/5, but all other East Asian countries have gained market shares. The combined share of imports from Southeast Asian countries recorded the sharpest increase, from a mere 1 % in 1992/3 to 16.0% in 2004/5. Among these countries, import shares of Malaysia and the Philippines have increased at a faster rate compared to that of Singapore. The increase in market of the countries in the region has been reflect in a sharp decline in China's extra-regional imports of components. For instance, import shares of the US and EU declined from 10.5% to 7.0%, and from 19.4% to 10.7% between these two time points.

This new 'China dimension' of regional production networks in East Asia is further illustrated by the data reported in Table 5. Compared to the increased intra-regional dependence in component imports of China, geographic composition of its final goods exports is characterised by a clear extra regional bias. In 2004/6, 62% of total final product exports found market outside the East Asian region, up from 45% in 1992/3. The share of final exports to East Asia and DEA declined from 55.0% to 38.0%, and 49.5% to 26.5% between 1992/3 and 2004/6. Final goods exports to ASEAN accounted for around 5% throughout this period, whereas the share of component imports from ASEAN increased from less than 2% in 1992/3 to over 16.0 in 2005/06. These differences in the geographic patterns of imports and exports reflects the increasingly important role played by China as a final product assembler for advanced-country markets using parts and components procured from countries in the region, with Southeast Asian countries among them playing an increasingly important role. The data also point to an increase in two-way trade in components between China and the rest of East Asia. For instance the share of Southeast Asia in total component exports of China increased from 5.8% to 13.0% accompanied by to 16% an increase in the region's share of Chinese exports from 1% between 19992/3 and 2004/6. This pattern reflects the occurrence of multiple border crossing of components at different stages in the production process, a well documented feature of international production fragmentation (Brown and Linden 2006). However, reflecting China's preeminent role as the global assembly centre in the region, the total value of component exports to the other East Asian countries (and also to the entire world) is much smaller compared to imports from these countries (in 2005/6: imports

from and export to the rest of East Asia: US$ 125 billion and US$ 74). In 2005/6, China ran an overall trade deficit (as a percentage of exports) of -62% in components trade and a surplus of 103% in final good trade in machinery. Almost 90% of the deficit of component trade was with the rest of East Asia whereas the share accounted by intra-regional exports in total surplus in final trade was around 25%.

*Overall patterns of fragmentation trade*

Table 6 compares geographic patterns of total manufacturing trade and trade in components. The data vividly demonstrate the East Asia's peculiar heavy reliance on fragmentation-based international exchange in the global context. For instance, in 2005/6 intra-regional exports accounted for 44.4% of total manufacturing exports from East Asia. The comparable figure for component exports was 60.9%. Intra-regional regional share in component imports is even larger. These patterns are in sharp contrast to those in NAFTA and EU15 (as well as in overall global trade). Moreover the intra-regional shares in total component imports and exports have grown faster between 1992/3 and 2005/6 compared those in total imports and exports. The increase in component intensity has been particularly in ASEAN's trade with the other developing East Asian countries, China in particular. Korea and Taiwan are also involved in sizable cross border trade with the other countries in the region. For all East Asian countries, the share of components in both intra-regional exports and imports have increased at a much faster rate than in exports to and imports from countries outside the region. These patterns are in sharp contrast to those observed for NAFTA and EU15 (as well as total global trade). In both these geographical entities, the shares of intra-regional trade in total manufacturing trade (both on export and import sides) and component trade imports are broadly similar in magnitudes.

*Direction of Trade: Regionalisation or globalisation?*

There is a vast literature on what may be termed 'standard trade data analysis', that is, essentially based on the traditional notion of horizontal specialisation, in which trade is an exchange of goods that are produced from start to finish in just one country. This literature unequivocally points to a persistent increase in intra-regional trade in East Asia,

whether or not Japan is included or not, from about the early 1980s.[9] This evidence figures prominently in the current regional debate concerning the establishment of regional trading arrangements covering some or all countries in East Asia. In particular, the proponents of the proposal to expand AFTA to encompass Japan, China and South Korea (the ASEAN+3 proposal), and more broadly towards an 'Asian Economic Community', often refer to deepening economic interdependence, as reflected in intra-regional trade among these countries, as evidence of its likely success. Increasing trade integration is also cited as an indicator of the potential benefits of monetary integration in the region (Kwan 2001).

However, the discussion so far in this section on the emerging patterns of intra-regional component trade casts doubts on the validity of these inferences. We have noted two important peculiarities of trade patterns in East Asia compared to global trade and trade patterns for the EU and NAFTA countries. First, component trade has played a much more important role in trade expansion in East Asia relative to the overall global experience and that of countries in other major regions. Second, trade in components accounts for a much larger share in intra-regional trade than it does in trade with the rest of the world. Given these two peculiarities, trade flow analysis based on reported trade data is bound to yield a misleading picture as to the relative importance of intra-regional trade relations (as against global trade) for growth in East Asia, and also ASEAN. This is because growth based on assembly activities depends on the demand for final goods, which in turn depends increasingly on extra-regional growth. Data reported in Table 7 on intra-regional shares of trade in total manufacturing, components and final goods for various regional economic groupings help understand this important point.

Intra-regional shares computed using 'unadjusted' data for total trade (exports + imports) (the commonly used indicator of regional economic integration in East Asia) reported in Table 7 affirms the 'received' view that Asia, in Particular East Asia, has

[9] See for example Kwan 2001; Drysdale and Garnaut 1997; Fujita 2008, Petri 1993, Lee and Roland-Holst 1989.

become increasingly integrated trough merchandise trade. The share of intra-regional trade in East Asia increased from 34.2% in 1979/80 to 47.3% in 1992/3 and then to 54.0% in 2005/6. For Developing East Asia, the magnitudes of the comparable fifires are a little lower, but the degree of increment over the time has been faster; from 21.2% in 1979/80 to 42.6% in 2005/6. By 2005/6, the degree of trade integration in East Asia had surpassed that of NAFTA (40.7%) and was rapidly approaching that of EU15 (59.0%).

When we shift our focus from total trade to export and import trade, we notice a startling asymmetry in the degree of measured trade integration in East Asia (and all the sub-regions there is), which has surprisingly been ignored in the previous literature. Unlike in EU and NAFTA, in East Asia the increase over time in intra-regional trade ratio has emanated largely from rapid increase in intra-regional imports; intrea-regional exports expansion has lagged behind persistently. In 2005/06 intra-regional import flows amounted to 68.9% of total manufacturing imports of East Asia, up from 38.9% in 1979/80. Intra-regional share in total regional exports was, however, significantly lower, 30.6% in 1979/80 and 45.4% in 2005/06. In other words, the region is much more heavily dependent on extra-regional trade for its growth dynamism than is (misleadingly) suggested by the total regional trade share, and this dependence has remained virtually unchanged for the last decade. In other world, the aggregate intra-regional trade share used widely in policy forums camouflage the continuing importance of extra-regional trade fo growth dynamism in East Asia.

Until about the mid 1990a, this asymmetry in intra-regional trade was largely a reflection of the unique nature of Japan's involvement in fragmentation trade in East Asia. Japan's trade relations with the rest of East Asia is predominantly in the form of using the region as an assembly base for meeting demand in the region and, more importantly for exporting to the rest of the world. Japan has persistently maintained a trade surplus with all East Asian countries in both total manufacturing trade and trade in component, of which the latter is much larger (data not reported for brevity). Over the past decade or so, China's emergence as the final goods assembly center in the region has further contributed to this asymmetry. As already noted, rapid expansion in export-

oriented assembly in China relies heavily on intra-regional imports of components where as final goods imports from China are largely destined to extra regional markets.

More importantly, the picture revealed by the total (export + imports) intra-regional trade ration change dramatically when we net out parts and components from published trade data and focus instead on final trade. The two alternative estimates (original and adjusted) are vastly different for East Asia, particularly for DEA and ASEAN. Both the level of trade in the two given years and the change over time in intra-regional trade shares are significantly lower for estimates based on final trade. The intra-regional share of final manufacturing trade in East Asia increased only marginally between 1992/3 and 2005/6 (from 46.2% to 47.5%) in sharp contrast to a notable increase (from 47.3% to 54%) recorded by the conventionally used trade share. While the difference between intra-regional shares of final and total trade is observable for both exports and imports, the magnitude of the difference is much larger on the export side. The difference in magnitude between regional trade shares estimated in gross and net terms is much larger for developing East Asia and ASEAN compared to estimates for the entire region. In 2004/06 only 29.7% of final goods exports from developing Asia found markets within the region, compared to 39.1% in total exports. For AFTA the relevant figures were 14% and 19.7%, respectively. It is also interesting to note that, unlike in the case of East Asia (or developing East Asia and AFTA), the estimated intra-regional trade share for NAFTA, the EU and the other regional groupings are remarkably resilient to the inclusion or exclusion of component trade.

In sum, the estimates presented in this section support the hypothesis that, in a context where fragmentation based trade in expanding rapidly, the standard trade flows analysis can lead to misleading inferences regarding the on-going process of economic integration through trade. Production fragmentation leads to double-counting of trade flows in published trade data because goods in process cross multiple international borders in the course of their production sequence. The total amount of trade involving the goods while in process can be a multiple of the final value of that good. Moreover, trade shares calculated using reported data can lead to wrong inferences as to the relative importance of the ‘region’ and the rest of the world for growth dynamism of a given

country/region, even controlling for double counting in trade. When data on component trade are excluded from trade flows, our estimates suggest that extra-regional trade is much more important than intra-regional trade for continued growth dynamism of East Asia, both including and excluding Japan. This is because the rate of expansion of component trade depends crucially on the demand for the related final goods.

## 3 Investment patterns

The available data on FDI and MNE operations are generally of poor quality compared to the trade data. The only available time series data relates to only aggregate FDI inflows and out flows. Even these data (readily available from the *World Investment Report* database of the UNCTAD) suffers from a number of limitations.[10] Not all countries record every component of FDI flows. [11] For most countries, the data series on FDI capture only equity capital and inter-company debt; in fact, the majority of countries do not report data on the third component. There is evidence that the component "retained earnings" in FDI is positively related to the years of operation of firms in a given country, and that US MNEs have a general tendency to rely more on retained earnings for investment expansion compared to MNEs from other countries (Lipsey 2000). Thus, this problem of data coverage can lead to a considerable underestimation of the actual magnitude of FDI in a given host country, depending on the history of MNE involvement and the source country profile of FDI. Even for the components for which data are available, the quality of data varies considerably across countries. For instance, some countries (such as China and Hong Kong) do not make an adequate distinction between portfolio investment and foreign direct investment. For these reasons, a comparison of data among countries, and even over time for a given country, should be made with

[10] For details on the nature and limitations of the *World Investment Report* FDI data see UNCTAD 2005, Box 1.1

[11] According to the standard definition, FDI consists of three components. These are: (a) equity capital, that is, the shares owned by the foreign direct investor (MNE) in its affiliates firms; (b) retained earnings, that is, the MNE's share (in proportion to its direct equity participation) of earnings not distributed as dividends by affiliates, or earnings not remitted to the parent company (such retained profits are reinvested by affiliates); and (c) intra-company loans or intra-company debt transactions (except that for working capital) referred to as short- or long-term borrowing and lending of funds between the parent company and affiliated enterprises.

caution. Moreover, the data coverage tends to vary over time in a given country because of changes made to the data recording system.[12]

Data of FDI inflows from the *World Investment Report* database are summarised in Tables 8 and 9. Total FDI flows to developing Asia increased sharply from an average annual level of $1.5 billion during 1970-04 to $200 billion in 2006. The share of Asia in total FDI flows to developing countries almost doubled (from 32.6% to 52.6%) between these two time points. As a share of total global flows, the increase was from 6.7% to 15.3% (Table 12). FDI inflows as a share of GDFCF have been significantly higher than the comparable figure for all developing countries throughout the period 1970-1996, followed by a minor reversal in the pattern during the years of the Asian financial crisis, 1997-99. The average FDI/GDFCF ratio for developing Asia for the entire period 1970-2006 was 9.2%, compared to 6.2% for all developing countries and a global average of 7.0%.

A notable feature within developing Asia is the dramatic increase in inflows to China. During the first four years of reforms (1979-83) inflows were rather modest, amounting to about $2 billion. FDI inflows began to gather momentum in the latter half of the 1980s, but were interrupted by the Tiananmen Square incident in 1989. Then, from 1991, FDI began to increase dramatically (Wang, 2005). Over the past two decades China has been by far the largest developing country recipient of inward FDI. China's share in total FDI inflows to all developing and transition economies increased from 11% during 1985-89 to 32% during 2000-04. For the six years 2000-06, China has been the second largest recipient of foreign investment in the world, at about $50 billion per annum and accounting for 7% of total gross inflows, after the USA, which has received about $140 billion per annum, or 13% of total inflows (UNCTAD 2005). China's share in inflows to Asian developing countries increased from 11.4% during 1980-84 to 48.5% during 2000-

[12] For instance, the Reserve Bank of India broadened the coverage of its FDI estimation procedure in 2003 (with effect from 2000/1 fiscal year) to include retained earnings. According to the revised data for 2000/1 and 2001/2, on average the new component accounted for about 40% of the total reported FDI figures (Reserve Bank of India).

06, and it has accounted for well over half of the total increment in FDI inflows to the region during this period.

Total FDI flows to the ASEAN countries increased sharply from an average annual level of $3 billion in the second half of the 1980s to nearly $30 billion during the six years before the onset of the recent financial crisis. At the time the region accounted for one-fourth of total inflows to developing countries and a little over a third of total inflows to developing Asia. Singapore, Malaysia, Thailand and Indonesia were among the eight largest developing country recipients of FDI. Flows to the Philippines continued to remain low by international standards, but they increased from $40 million to over $1 billion by the mid-1990s. The lion's share of ASEAN's FDI inflows was absorbed by Singapore – 50% of the regional total in the 1980s and 40% in the 1990s – while Indonesia, Malaysia and Thailand absorbed most of the remainder. In the first half of 1990s, net capital inflows relative to gross domestic fixed capital (GDFCF) stood at over 30% in Singapore, 19% in Malaysia, 10% in the Philippines, and 4% in Thailand. As they opened up, the transition economies of Cambodia, Laos and especially Vietnam recorded healthy FDI inflows from the first half of the 19990s, before faltering during the latter part of the decade. In these countries, FDI accounted for much larger shares of GDFC, reflecting continuing low levels of domestic private investment until recently as a result of the insecure investment climate for local SMEs.[13]

The data point to a notable break in investment flows to ASEAN countries following the onset of the 1997-98 financial crisis. Total FDI inflows to the region have declined persistently from about $35 billion per annum prior to 1997 to an annual average of about $24 billion during 1997-79. However, the post-crisis experiences of individual countries vary substantially. Indonesia experience negative FDI inflows until 2004, contributing significantly to the decline in total flows to the region. When the three atypical boom years prior to the onset of the crisis are excluded, owing to the abnormal investor euphoria, there is no discernible break in the trend of FDI inflows to Singapore, Thailand and the Philippines. Flows to the Philippines, the country least affected by the

[13] Namely, about 30% in Vietnam, 20% in Laos and 24% in Cambodia.

crisis among this group, in fact continued to increase rapidly throughout. Net FDI flows to Malaysia declined from $7.2 billion in 1996 to $6.0 billion in 1997, a 24% contraction, and have remained virtually flat at that level from about mid-1998. This is contrast to a significant increase in flows to Korea and Thailand. It could well be that the prolonged period of policy and political uncertainty following the onset of the crisis, and widespread market skepticism about the fate of Malaysia's unorthodox reform package introduced in September 1998, may have played a role. The two extreme cases of Indonesia (continuous contraction until 2003) and the Philippine (continuous increase until its own political woes in recent years) clearly suggest the post-crisis decline in FDI inflows to the region was a temporary aberration associated with economic disruption and political turbulence caused by the crisis. Moreover, there is also evidence that the decline in FDI after the onset of the crisis was by and large limited to domestic market-oriented investment, while FDI in export-oriented industries continued to increase throughout the period, boosted by the now highly competitive exchange rates (Athukorala 2003).

It is also important to note that the continuation of the crisis-driven decline in FDI inflows to these countries well beyond the period of recovery after the crisis (that is, beyond 2000) was largely a reflection of a large overall decline in global FDI flows during 2000-2003 (UNCTAD 2005), and a global downturn in electronics. Total global FDI inflows declined from $134 billion in 2000 to $83 billion in 2001, $72 billion in 2002, and $63 billion 2003, before recovering marginally to $65 billion 2004.[14] Total inflows during the four years from 2001 to 2004 were 24% lower than the comparable figure for the preceding four years, 1998-2000. Interestingly, FDI inflows to the crisis-affected Asian countries (and to developing Asia in general) seemed to have been remarkably resilient in the face of this massive global contraction.

The 1990s saw a marked increase in FDI to India, a trend that represents a clear break from the preceding two decades. India's share of FDI in total developing country inflows increased from 0.4% in the 1980s to over 1.5% in the first two years of the new

[14] There has yet to be a comprehensive explanation for this massive contraction in FDI flows, an unprecedented occurrence since 1970, when the *Word Investment Report* FDI series commenced.

millennium. As a share of GDFCF the increase was from less than 0.3% to over 3% between these time points.[15] Nevertheless, the increase has to be seen in perspective. Total annual FDI inflows to India during 2000-06 amounted to a mere 10% and 8% respectively of those into China and ASEAN (Table 12). A notable aspect of FDI flows to India is that they have behaved quite independently of the global trends in FDI inflows to developing countries. This pattern clearly suggests that the domestic investment climate (demand-side factors in the investment market) has been the prime mover of investment flows to the country. FDI inflows to Bangladesh, Pakistan and Sri Lanka have registered notable increases over the past two decades, but they still account for a tiny share of total flows to developing countries, and are dwarfed by those into DEA.

*Outward and Intra-regional (cross-border) FDI*

There has been a significant increase in FDI flows from countries in the region (Table 15, Figure 3). Japan emerged as a major overseas investor from the late 1960s, while for Korea, Singapore and Taiwan the outflows began to rise sharply from around the mid 1980s. The share of DEA in total global outflows is still quite small, although has been increasing rapidly, from just 0.3% in 1970-74 to over 6% in 2006. These countries feature much more prominently in developing country outflows, accounting for 59% of the total in 2006, up from 3.4% in 1970-74.

As an outcome of its dramatic economic transformation over the past two decades, China itself is now becoming a significant overseas investor, predominantly in the other developing countries in the region. Resource-rich countries like Indonesia, Malaysia, Laos and Cambodia have begun to attract 'resource seeking' investors from China. There is also evidence that the rapid increase in wages propelled by this fast growth has already begun to erode China's attractiveness as a low-wage investment and to entice Chinese firms involved in labour intensive manufacturing (clothing and footwear in particular) to relocate production to lower wage neighbours. For instance, Chinese investors are already the largest investors in the Cambodian garment industry and they have also begun to enter Vietnam. The imposition of punitive trade restrictions

[15] The recorded increase in inflows in the past three years over the previous years partly reflects revisions to India's FDI estimation procedures, as noted above (see footnote 10).

by the European Union and the USA on clothing and footwear imports from China in the mid-2005 has also driven this process.[16]

Japan's FDI in the 1980s was directed largely to North America and Europe, when these two destinations accounted for about two thirds of the total (Kawai and Urata, 1989). But the East Asian share began to increase in the 1990s, with a sharp rise in manufacturing FDI flows. The driving force was the sharp appreciation of Japanese yen during 1992-95, which substantially reduced Japan's international competitiveness. Since the mid-1980s, the geographical distribution of Japanese FDI within Asia has changed significantly, first from the NIEs to ASEAN, and then to China and other Asian countries. By sector, until the mid-1980s, Japanese FDI in chemical products, general machinery and transport equipment was greater than that in electrical machinery. However, since then the composition has began to switch towards electronics and electrical machinery, accelerating in the 1990s as the large investments in China took place. Over the past two decades, Korea, Taiwan and Singapore have sharply increased FDI in the region.

How important are these intra-regional flows compared to extra-regional inflows to host countries in the region? To sed light on this issue, data on the source country composition of FDI inflows to some Asian countries are summarised in Table 11. It is evident that, notwithstanding recent increases in intra-regional flows, the bulk of FDI inflows to Developing East Asian countries, other than to China, come from extra-regional sources. However, there are significant differences among these countries in terms of relative importance of individual source countries. For instance, investors from the East Asian NIEs accounted for relatively large share of total investment in Lao PDR and Vietnam. So were investors from the EU in Brunei and Myanmar. A striking feature of the recent source-country profile of India compared to that of ASEAN in the relatively minor role played by investors from Japan and the East Asian NIE. This mostly reflect the fact that, despite recent reforms, the investment environment is still not conducive for

[16] This point is based on interviews conducted with the officials of the Cambodian Investment Board in March 2006.

efficiency seeking investment, an area where Japanese and East Asian investors generally played a more prominent role at the regional and global levels. Increase in the relative importance of investment by non-resident Indian from (captured in 'other' sources in Table 10) has been an important feature of Indian investment approvals in recent years. China is unique for the dominance of regional investors in total inflows of FDI. During 20001-05, 73% of total FDI inflows to China originate in countries in East Asia, with Hong Kong and Taiwan accounting for 40.5% and 6.9% respectively.[17] These regional flows are related with shift in production bases (mostly those involved in low-wage assembly activities to China. Thus, FDI inflow patterns in China mirror the growing importance of that country as the regional assembly center within regional production networks.

*Industry profile*

The traditional colonial pattern of FDI was characterized by a heavy concentration in primary sector, mining and tropical cash crop production for export. From the 1960s, there was a gradual shift in the sectoral composition of FDI in favour of manufacturing. From about the early 1980s investment in services tended to increase rapidly, a development that received a further boost as this sector opened up as part of FDI liberalization, in some cases following the recent economic crisis. In particular, FDI participation in banking and other financial services increased through direct acquisitions and mergers of local banks and companies seeking to create internationally competitive units. Throughout the 1980s and first half of the 1990s, this sector was the major recipient of FDI, the best documented, and the mostly complementary to the sweeping trade policy reforms of that era. However, it needs to be noted that the service sector then began to attract an increasingly large share of FDI, so much so that by 2000 about half the stock of FDI in developing countries was in this sector, more than double the share in 1990 (UNCTAD, 2002). By the turn of the 20$^{th}$ Century, manufacturing accounted for over a third of total FDI in the DEA, with the primary sector (agriculture and mining) and

[17] Part of the reported FDI from Hong Kong is 'round tripping' capital. That is, it is investment that originated from the Mainland and returned to it in the guise of 'Hong Kong investment' to take advantage of tax, tariff and other benefits accorded to foreign-invested firms. It may be that these flows constitute about 15% of Hong Kong investment in China (We 2000, Naughton 2006).

the tertiary sector (construction and various services) accounting for about 28% and 23% respectively ( UNCTACT 2000, Books and Hill 2006 (six country case studies), Athukorala Table 7-4)

That is, the past three decades have witnessed a profound shift, though at varying times, in the relationship between MNEs and the host countries in the region, as more and more countries have adopted an outward-oriented growth strategy. During the first two decades of the postwar period, FDI in Taiwan and Korea was predominantly involved in domestic-market oriented production. In both countries from about the mid-1960s there was a major shift in the industry composition of FDI, from the early concentration on import substitution toward export-oriented production. From about the late 1980s, FDI has played an important role in the rapid world market penetration of exports from these economies, particularly in automotive, consumer electronics and electrical goods (Koo 1985, Schive 1990, Amsden and Chu 2003). In Singapore, from the beginning manufacturing FDI was predominantly in 'efficiency seeking' (export oriented) production, mostly electronics. In other ASEAN countries, there has been a major shift in MNE activities away from 'market seeking' (domestic-market oriented production) and towards efficiency-seeking production, gradually from the mid-1970s and at an accelerated pace in the 1990s (Huff 1994, Athukorala and Hill 2003). Old-style import-substituting FDI behind tariff barriers is still found, but only in a few industries, such as automobiles and petrochemicals, and even here significant liberalizations have occurred. As in Singapore, efficiency-seeking FDI in Malaysia and the Philippines has largely concentrated in electronics. In Thailand in recent years there has been major FDI into export-oriented electronics and automotive industries; for the latter industry, the country has become the major hub for Southeast Asia. By contrast, in Indonesia efficiency-seeking FDI has continued to remain confined largely to standard labour intensive consumer goods production.

Among the later-reforming countries in the region, in Vietnam, during the first decade of liberalization, FDI was heavily concentrated in domestic-market-oriented capital-intensive industries, the chemicals and automotive industries in particular, together with

the construction and services sectors. The period from about the late 1990s has seen a notable expansion of MNE activity into labour-intensive consumer goods production, in particular clothing, footwear and furniture. More recent years have seen some promising signs of MNE entry into component assembly in the electronics and electrical goods industries (Athukorala and Tran 2008). On 28 February 2006, Intel Corporation, the world's largest semiconductor producer, announced that it will invest $300 million (subsequently revised to 1 billion) to build a semiconductor testing and assembly plant (with an initial to absorb 1200 workers) in Ho Chi Ming City as part of its worldwide expansion of production capacity. There is evidence from other countries in the region such as Singapore, Thailand and the Philippines that there is something of a heard mentality in the site selection process of electronic multinational firms, particularly is the first on the scene is a major player in the industry. There is fact evidence that this process has already begun to repay in Vietnam. For instance, the Taiwanese-based Hon Hai Precision Industry Co., the world's biggest electronics contract manufacturer announced in Ausgust 2007 its plan to set up a $5 billion plant in Vietnam (*The Wall Street Journal*, 213 30 August 2007, p. 1). The other major players in electronics industry which have already appeared in investment approval records of the Ministry of Planning and Investment include Foxconn, Compal and Nidec. The Saigong Hi-Tech Park has begun to emerge as an investment hub bringing together foreign investors with domestic companies in setting up assembly and testing plants linked to regional production networks (*The Wall Street Journal*, 7 October 2007, p. 1).

In Cambodia, FDI is heavily concentrated in the export-oriented garments industry, as well as tourism. In Laos, hydroelectricity production and extractive industries, mostly gold and tin mining, have been the major attraction to foreign investors, in addition to some investment, mostly by regional investors, in export-oriented garments.

FDI into China heavily concentrated from the beginning in export-oriented industries, more so than in Vietnam and the other transition economies. As we show in the next section, until about the mid 1990s virtually all of the industrial output of foreign-

invested enterprises (FIEs) was exported. Since then the share of domestic market sales in total FIE output has gradually expanded in line with the relaxation of investment approval procedures to permit production for the vast domestic market. Foreign firms began to benefit from cost advantages arising from scale economies involved in production for the vast domestic market, and to thereby gain competitiveness in the world market for various consumer durables and electronics products. As a consequence, the efficiency-seeking and market-seeking distinction as applied to the FIE operations has become increasingly blurred (Huang 2003).

It is important to note that, the migration of some production processes within vertically integrated high-tech industries such as electronics, motor vehicles and cameras to China does not necessary imply a zero sum game in the competition for FDI. Rather, this process opens up opportunities for additional investment in OEM (original equipment manufacturing) and BTO (back to office) activities in the ASEAN countries for the Chinese market. For instance, recently Intel Corporation, the world's largest computer chip maker, simultaneously invested $200 million in a second semiconductor chip assembly and testing plant in the central Chinese city of Chengdu, in addition to its $500 million assembly and testing facility in Shanghai. However, at the same time it invested $40 million to expand the design and development activities in its plant in Penang, Malaysia, and also announced plans to spend $100 million a year on further expansion of R&D activities there.[18] More recently Intel signed an agreement with the government of Vietnam to set up a large electronics component assembly plant in that country, as the first step in linking Vietnam to its regional and global operational network.[19] The Intel story clearly suggests that the highly publicized cases of MNEs migrating from ASEAN to China may simply reflect only one side of the ongoing process of restructuring international production within the region. They are also consistent with emerging patterns of manufacturing trade in the region. As we have seen in the previous section, there is clear evidence of the rapid expansion of components and parts exports within the broader product category of machinery and transport equipment (SITC7) from

[18] *Asian Wall Street Journal*, 27 August 2003. P A1 and A4
[19] This information is obtained from www.intel.com.

the five major ASEAN countries to China. Trade in parts and components in high-tech industries is dominated by MNEs and the FDI flows to China and other countries in the region are 'complementary' rather than 'competitive'.

Among major Asian economies, India still remains an outlier in process of region-wide process of increased FDI participation in export-oriented activities. In the case of India, one-third of the FDI stock at independence in 1947 was in the primary sector (plantations, mining and oil), one-quarter in manufacturing, and the rest in services, mostly trade, construction, transportation and utilities (Athreye and Kapur, 2001, Table 3). From the 1960s, inflows tended to concentrate increasingly in manufacturing, while there was also considerable divestment out of other sectors. By the late 1980s, manufacturing accounted for about 85% of the FDI stock in the country. Recent trends, based on approval data, point to a noticeable increase in FDI in energy, telecommunication, transportation and various other services sectors. Of the total approved FDI during 1991-2002, more than half was in construction and services, with 43% going into manufacturing and the balance to primary sector activities. Within manufacturing, the capital goods sector (basic metal products, machinery and transport equipment) has continued to remain the predominant recipient of FDI (Athukorala, 2006). Though India has an enormous supply of low-wage, low-skill manpower that could be used to attract FDI into garments and other simple assembly activities, the overall investment regime has continued to favour foreign investment in heavy industry, complex activities predominantly focused on the domestic market. There has not been any significant increase in India' penetration of world markets in industrial products in the 1990s despite the increase in FDI (Srinivasan 1998). The only notable exception has been the phenomenal increase in software exports since the mid 1990s (Saxenian 2002).[20]

Table 12 assembles a data set to examine the contribution of MNEs to manufactured exports from the four East Asian NIEs and seven developing Asian countries (China, Indonesia, Malaysia, the Philippines, Vietnam, India and Sri Lanka).

[20] Software exports from India increased rapidly from about $330 million in 1993/94 to over $2.7 billion by the end of the decade (Saxsenian 2003, Table 5.1).

MNE involvement in export expansion is measured in terms of the percentage share accounted for by MNE affiliates in total manufactured exports (MNEXS) (Column 3). Export performance is measured in terms of the share of each country in total world manufactured exports (world market share, WMSH) (column 4). The final column contains summary observations on the nature of the product composition of MNE-related exports in terms of the typology developed in the previous section. Data on MNEXS and WMSH are plotted for the six countries for which time series data series of sufficient length available in Figure 4. It is important to emphasize that these data on the MNE share in exports are pieced together from diverse sources and are therefore not strictly comparable. In particular, there is no uniform treatment of the ownership share used in identifying the 'multinationality' of host country firms across these sources. Estimation errors in individual country figures are also unlikely to be consistent across countries, as obviously data quality varies. Nevertheless, the estimates assembled here are the best available and, taken together, they yield a number of important inferences.

The widely held view that that MNE involvement in export expansion from the NIEs (other than Singapore) is low by international standards generally remains valid in our data set (Nayyar 1978, Cohen 1975, Hone 1974). Nevertheless, there is evidence that FDI has played a qualitatively much more important role than that suggested by these figures. Many joint ventures in Korea, particularly those with minority ownership (which constituted almost three-quarters of all investment) were initiated by Korean entrepreneurs who approached potential foreign investors (Koo 1985, p 213). In the case of Taiwan, Ranis and Schive (1985, p 134) observe that: 'While FDI never occupied a dominant position in total manufacturing investment, it was qualitatively important in certain specific industries.' In any case, it is important to note that in both Korea and Taiwan the MNE share in exports did increase significantly from about the mid-1970s to mid-1980s, as compared to the figures reported by Nayyar (1978) for the late 1960s. Detailed case-studies of the export performance of these countries suggest that this increase reflected the important role played by MNEs in these countries, as they shifted from the early reliance on labour intensive, standard consumer goods sectors to assembly activities in vertically integrated high-tech industries, and subsequently to sophisticated

consumer durables production (Hobday 1995, Koo 1985, Lee 1992, Ranis and Schive 1985, Schive 1990 and 1991, and Amsden and Che 2003). The available evidence on product composition of exports by MNE affiliates in Taiwan and Korea clearly attest to this important role played by these firms in the structural transformation of exports from these countries. Given the rapid expansion of traditional labour intensive exports at the initial stage of export-led growth in these countries, any analysis based on MNE shares of *total* exports obviously fails to capture this important point. It is interesting to note that the MNE export shares in Korea and Taiwan have tended to decline from about the mid-1980s. This is most likely due to the combined effects of exports by domestic firms growing more rapidly in recent years, and an increase in domestic sales by MNE affiliates in consumer durable industries in response to the strong growth expansion in domestic demand fuelled by rapid economic growth.

There is clear evidence that the strong export performance of the latecomers to export-led industrialization (second-tier exporting countries) in Asia over the past two decades has been closely associated with MNE involvement. The data points to a close positive correlation between the share of exports accounted for my MNE affiliates and the share in total world manufacturing exports for Indonesia, Malaysia, Thailand, the Philippines, and Vietnam. Clearly, the entry of MNEs has been *export creating* in these countries.

By contrast, in India, where MNE subsidiaries are still predominantly of the old-fashioned 'tariff-jumping' variety, both the share of MNEs in total manufactured exports and the rate of export growth have continued to remain low.[21] Interestingly there has been a mild, yet persistent, decline in both MNE share in manufactured export from India from about the mid-1980s and the decline became sharper following the liberalisation reforms initiated in 1991. A detailed analysis of the underlying factors is beyond the scope of this study, but the explanation seems to be in the nature of the post-reform trade and foreign investment regimes. As already noted, from the early-1980 India gradually

[21] For a fuller discussion on India's failure to attract MNEs as a major cause of her lack-lustre export performance, see Srinivasan 1998.

relaxed restrictions on intermediate and investment goods imports, and removal of these restrictions was intensified as part of the liberalisation reforms initiated in 1991. Consequently the pressure on MNE affiliates (which are predominantly domestic-market oriented) to export in order to become eligible for importing gradually waned and then virtually disappeared after 1991. At the same-time, given the half-hearted nature of the policy regime relating to FDI and still-binding bureaucratic restraints on FDI approval procedure, so far India has not been successful in attracting export-oriented foreign investors.[22]

The inference that MNE participation is crucial for latecomers' export success gains further support from a comparison on the link between MNE participation and world market penetration in India and China, the two giant economies in the region (Figure 4). In China, the share of exports from enterprises with foreign equity rose from 0.4% in 1984 to nearly 60% in 2005.. This was accompanied by a more than 10-fold increase in china's share in total manufactured exports over this period. By contrast, in India, where MNE subsidiaries are still predominantly of the old-fashioned 'tariff-jumping' variety, both the share of MNEs in total manufactured exports and the rate of export growth have continued to remain low.[23] Interestingly, since the mid 1980s there has been a mild, yet persistent, decline in the MNE share of India's manufactured exports, and this decline became more pronounced following the 1991 reforms. A detailed analysis of the underlying factors is beyond the scope of this study, but the explanation seems to be in the nature of the post-reform trade and foreign investment regimes. From the early-1980 India gradually relaxed restrictions on intermediate and investment goods imports, and the removal of these restrictions was intensified as part of the liberalization reforms initiated in 1991. Consequently the pressure on MNE affiliates, which are predominantly domestic-market oriented, to export in order to become eligible for access to import (foreign exchange and quotas), gradually waned and then virtually

[22] Note that the increase in export share in the late 1980s is consistent with the tightening of import and exchange controls in response to the balance of payments crisis preceding the 1991 liberalisation.

[23] For a fuller discussion on India's failure to attract MNEs as a major cause of her lacklustre export performance, see Srinivasan 1998.

disappeared after 1991. [24] At the same-time, given the half-hearted nature of the policy regime relating to FDI and the still-binding bureaucratic restraints on FDI approval procedure, India has thus far not been successful in attracting export-oriented foreign investors.

The available data do not permit precise disaggregation of exports by MNE affiliates according to the typology developed in the previous section. However, the various country case studies on the nature of the product composition of MNE-related exports (summarized in Column 4) do provide empirical support for our arguments concerning changing export patterns and the potential role of MNEs in the expansion of manufactured exports. It is evident that light manufactured goods and assembly activities within vertically integrated high-tech industries have been the main areas of MNE export activities. In Singapore, Malaysia and the Philippines, MNE involvement is predominantly in assembly activities. In the other second-tier exporting countries, the standard labour intensive products still account for the bulk of exports, but the relative importance of assembly activities seems to have increased over the years in all cases. There is also evidence of a notable shift in assembly processes, from component assembly to final good assembly in China, Thailand and Malaysia. Interestingly, there is no evidence of a shift in MNE activities from component specialization into final goods assembly in Singapore. It seems that, given the highly favorable investment climate and deep-rooted operational links coupled with relatively high domestic wages, MNEs use Singapore as the regional centre for high-tech activities in component *production*, while undertaking relatively more labour intensive assembly of components and final goods in China and neighbouring ASEAN countries, mostly Malaysia together Thailand and the Philippines. All in all, the information pieced together in Table 12 indicates that MNEs have played a pivotal role in the emerging patterns of fragmentation-based international division of labour in East Asia.

[24] Relating to this point, note that the increase in the export share in the late 1980s is consistent with the tightening of import and exchange controls in response to the balance of payments crisis preceding the 1991 liberalization.

Among the countries covered in this study Sri Lanka is unique for the prolonged heavy concentration of MNE activities in standard labour intensive products, mostly garments and toys, in Sri Lanka can be explained in terms of unfortunate developments in the investment climate (Athukorala and Rajapatirana 2000, Chapter 6). Despite the government's continued commitment to an outward-oriented policy since the late 1970s, with further strengthening of general incentives for export-oriented FDI over the years, and the availability of cheep and trainable labour, political and policy instability has been a major deterrent to MNE involvement in assembly activities. Foreign firms involved in vertically integrated assembly industries, unlike those involved in light consumer good industries such as garments, usually view country risk and the other elements in the investment climate from a long-term perspective. Two major electronics multinationals from the USA (Motorola and Harris Corporation) had in fact finalized plans to establish large assembly plants in the Katunayake Export Processing Zone in the early 1980s. These plans were abandoned as the political climate began to deteriorate. In the site selection process for MNE electronics facilities, there is something akin to a “herd psychology”, particularly if the first-comer is a major player in the industry. Considering this, one can surmise that, if the Motorola and Harris projects had been completed, many other MNEs would have followed suit, giving a major boost to the expansion of assembly exports from Sri Lanka.

## 4 Concluding Remarks

There is clear evidence that that fragmentation-based specialization has become an integral part of the economic landscape of East Asia. Trade in parts and components has been expanding more rapidly than conventional final-good trade. The degree of dependence on this new form of international specialization is proportionately larger in East Asia, in particular in ASEAN, than in North America and Europe. A highly important recent development in international fragmentation of production has been the rapid integration of China into the regional production networks. This development is an important counterpoint to the popular belief that China’s global integration would crowd

out other countries' opportunities for international specialization. China's imports of components from countries in ASEAN and other developing East Asia countries have grown rapidly, in line with rapid expansion of manufacturing exports from China to extra-regional markets, mostly to North America and the European Union.

Booming trade in parts and components has resulted in a rapid increase in intra-regional trade in East Asia, both including and excluding Japan. This does not, however, mean that the process has contributed to lessening the region's dependence on the global economy. On the contrary, the region's growth dynamism based on vertical specialisation is deeply dependent on its extra-regional trade in final goods, and this dependence has in fact *increased* over the years. Put simply, growing trade in components has made the East Asia region increasingly dependent on extra-regional trade for its growth dynamism.

China's emergence as a major trading power and an investment location is not a 'zero sum proposition' from the perspective of the region. Rather it seems to have added further dynamism to region-wide MNE operations. There are significant potential complementarily of FDI in China and other countries in the region. Migration of some production processes within vertically integrated high-tech industries such as electronics, motor vehicles and cameras to China does not necessary imply a zero some game of competing for attracting FDI. Rather, it also opens up of opportunities for producing original-equipment-manufacturer goods and back-to-office service operations in other countries. Even if China continues to remain relatively attractive, not all stages of production within vertically integrated global industries are going to move there. Supply chain managers are reluctant to source all of their inputs from any one nation, preferring instead to diversify the risk of exchange rate instability or supply disruptions.

There is evidence of deep complementarities between trade and FDI. This phenomenon is demonstrated by the significant increase in the share of MNEs in manufactured exports from developing countries since the mid 1970s. Moreover, MNEs have been responsible for a larger share of exports from latecomers to export-led industrialization in Asia compared to the historically specific experiences of Japan, Korea

and Taiwan. For latecomer DCs the entry of MNEs is virtually essential for export success through joining global production networks.

The analysis of trade and investment flows in this study throw into sharp relief the contrasts between East and South Asia, and particularly between China and India, notwithstanding converging growth rates. India and other South Asian countries have continued to remain under performers in attracting FDI. India in particular has immense potential to become a major host to MNEs. It has the advantage of a large, educated English speaking population that is willing to work at relatively low wages. In spite of widespread illiteracy, few countries can match its combination of low-wage, highly skilled workers. The pull of a large established industrial economy like India, despite its current deficiencies and technological gaps, is also much greater than that of its smaller, less industrialized neighbours. This is not just because of the potential of its market, but because of the level of local industrial skills and experience, which could provide a fertile basis for operations of foreign firms if the liberalization process continues. India could in fact become a major destination for both market-seeking and efficiency-seeking FDI.

The remarkable success in the global software and information technology industries highlights India's potential to grow through export-oriented FDI under more liberal trade and investment regimes. The software industry is unique in India in that the restrictions on MNE entry have been virtually abolished. This was also accompanied by the removal of quantitative restrictions on imports of computers and peripherals, and drastic cuts in import tariffs on these products. This combination of FDI and trade liberalization laid the foundations that made the domestic software industry internationally competitive. Now virtually every major global company in the software industry has a base in India and the entry of MNEs has opened up opportunities for Indian companies to thrive through functional specialization, and to develop niche products and services for large clients abroad. As one commentator puts it, 'the success of foreign investment in the software industry is a measure of the failure of India's restrictions on foreign investment elsewhere' (Desai 2002, p 205).

Finally, what are the implications of these findings for the contemporary policy debate on regional economic cooperation? In particular, is the newfound fondness of countries in the region for free trade agreements (FTAs) consistent with the objective of maximising gains from the ongoing process of international product fragmentation? Trade in components and final assembly is postulated to be relatively more sensitive to tariff changes than is final trade (or total trade as captured in published trade data). Normally a tariff is incurred each time a good-in-process crosses a border. Consequently, a one percentage point reduction in tariff leads to a decline in the cost of production of a vertically integrated good by a multiple of this initial reduction, in contrast to a 1 per cent decline in the cost of a regular traded good. Tariff reduction may also make it more profitable for goods that were previously produced entirely in one country to become vertically specialised. Consequently, in theory, the trade-stimulating effect of FTAs would be higher for trade in parts and components than for normal trade, other things remaining unchanged. However, in reality, much would depend on the nature of rules of origin built into FTAs (Krishna 2006, Garnaut 2003). Trade-distorting effects of rules of origin are presumably more detrimental to fragmentation-based trade than to conventional final-goods trade, because of the inherent difficulties in defining the 'product' for duty exemption and because of the transaction costs associated with the bureaucratic supervision of the amount of value added in production coming from various sources. Moreover, maintaining barriers to trade against non-members (while allowing free trade among members) can thwart 'natural' expansion of fragmentation-based trade across countries. Thus, to benefit from the new opportunities for trade expansion through the fragmentation-based division of labour, the best policy choice appears to be multilateral liberalisation through the World Trade Organization process; the ongoing process of product fragmentation seems to have strengthened the case for a global, rather than a regional, approach to trade and investment policymaking. After all, we all know that the foundation for the success of export-oriented industrialisation in East Asia, and the emergence of the region as the powerhouse of fragmentation based international exchange was laid primarily by unilateral trade-cum-investment liberalisation well before the emergence of the new-found penchant for forming FTAs.

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**Table 1: Asia in World Trade: Share in World Trade Share and Manufacturing Share in Total Trade (%)**

| | Share in world trade | | | | Country composition of Asian trade | | | |
|---|---|---|---|---|---|---|---|---|
| Exports | 1969/70 | 1979/80 | 1989/90 | 2005/6 | 1969/70 | 1979/80 | 1989/90 | 2005/6 |
| Asia | 11.1 | 17.3 | 24.7 | 33.4 | 100.0 | 100.0 | 100.0 | 100.0 |
| East Asia | 11.0 | 16.5 | 23.8 | 32.0 | 98.9 | 95.0 | 96.4 | 95.7 |
| Japan | 6.3 | 8.6 | 10.4 | 6.8 | 56.8 | 49.7 | 42.3 | 20.4 |
| Dev East Asia | 4.7 | 7.9 | 13.4 | 25.1 | 42.1 | 45.4 | 54.2 | 75.3 |
| China+ Hong Kong | 1.7 | 2.1 | 4.6 | 12.9 | 15.1 | 12.2 | 18.5 | 38.8 |
| China | 0.8 | 1.0 | 2.9 | 12.3 | 7.0 | 5.9 | 11.7 | 36.8 |
| HK | 0.9 | 1.1 | 1.7 | 0.7 | 8.1 | 6.4 | 6.9 | 2.0 |
| Korea | 0.3 | 1.2 | 2.2 | 3.2 | 2.8 | 7.0 | 9.1 | 9.5 |
| Taiwan | 0.6 | 1.6 | 2.7 | 2.8 | 5.0 | 9.1 | 11.1 | 8.3 |
| ASEAN | 2.2 | 3.0 | 3.9 | 6.3 | 19.9 | 17.3 | 15.6 | 19.0 |
| Indonesia | 0.3 | 0.5 | 0.5 | 0.9 | 2.7 | 3.0 | 2.1 | 2.6 |
| Malaysia | 0.8 | 0.9 | 1.0 | 1.8 | 7.3 | 5.4 | 4.0 | 5.2 |
| Phillipines | 0.5 | 0.5 | 0.3 | 0.7 | 4.8 | 2.8 | 1.4 | 2.1 |
| Singapore | 0.2 | 0.5 | 1.1 | 1.3 | 1.8 | 3.1 | 4.6 | 3.9 |
| Thailand | 0.3 | 0.5 | 0.8 | 1.3 | 2.7 | 2.7 | 3.2 | 3.9 |
| Vietnam | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.9 |
| South Asia | 0.1 | 0.9 | 0.9 | 1.4 | 1.1 | 5.0 | 3.6 | 4.3 |
| India | 0.9 | 0.6 | 0.6 | 1.1 | 8.4 | 3.4 | 2.3 | 3.2 |
| Sri Lanka | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | 0.4 | 0.3 | 0.2 |
| Bangladesh | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 | 0.3 | 0.2 | 0.4 |
| Pakistan | 0.2 | 0.1 | 0.2 | 0.1 | 1.8 | 0.9 | 0.7 | 0.4 |
| Developing countries[1, 3] | 10.0 | 8.7 | 7.5 | 13.9 | | | | |
| Least developed countries[3] | 1.9 | 0.9 | 0.5 | 0.4 | | | | |
| Developed countries[2,3] | 79.0 | 74.8 | 68.6 | 54.1 | | | | |
| World | 100.0 | 100.0 | 100.0 | 100.0 | | | | |
| US$ billion | 205 | 1093 | 2386 | 8932 | | | | |

(b) Imports

| | | Share in world trade (%) | | | Country composition of Asian trade | | | |
|---|---|---|---|---|---|---|---|---|
| | 1969/70 | 1979/80 | 1989/90 | 2005/6 | 1969/70 | 1979/80 | 1989/90 | 2005/6 |
| Asia | 12.8 | 13.6 | 20.5 | 23.9 | 100.0 | 100.0 | 100.0 | 100.0 |
| East Asia | 11.6 | 13.0 | 19.9 | 22.8 | 91.0 | 95.4 | 96.7 | 95.5 |
| Japan | 6.5 | 6.1 | 7.0 | 4.4 | 51.1 | 44.7 | 34.1 | 18.4 |
| Developing East Asia | 5.1 | 6.9 | 12.9 | 18.4 | 39.8 | 50.7 | 62.6 | 77.1 |
| China + Hong Kong | --- | 2.7 | 5.4 | 10.7 | --- | 19.7 | 26.4 | 44.8 |
| China | --- | 1.0 | 2.3 | 7.2 | --- | 7.3 | 11.1 | 30.4 |
| HK | 1.3 | 1.7 | 3.1 | 3.4 | 9.9 | 12.4 | 15.3 | 14.4 |
| Korea | 0.9 | 1.5 | 2.3 | 2.3 | 6.8 | 10.8 | 11.4 | 9.8 |
| Taiwan | 0.6 | 1.0 | 1.7 | 1.7 | 4.8 | 7.6 | 8.2 | 7.1 |
| ASEAN | 3.1 | 3.8 | 5.1 | 5.4 | 24.6 | 27.8 | 24.9 | 22.6 |
| Indonesia | 0.4 | 0.7 | 0.7 | 0.5 | 3.3 | 5.2 | 3.6 | 1.9 |
| Malaysia | 0.5 | 0.7 | 1.0 | 1.2 | 4.2 | 5.3 | 4.8 | 5.1 |
| Philippines | 0.5 | 0.4 | 0.4 | 0.5 | 4.2 | 3.2 | 1.7 | 2.1 |
| Singapore | 0.9 | 1.4 | 1.9 | 2.0 | 7.2 | 10.0 | 9.4 | 8.2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Thailand | 0.5 | 0.5 | 1.1 | 1.1 | 4.3 | 3.8 | 5.3 | 4.5 |
| Vietnam | 0.0 | 0.1 | 0.0 | 0.3 | 0.0 | 0.4 | 0.1 | 1.3 |
| South Asia | 2.0 | 1.2 | 1.1 | 1.4 | 15.7 | 9.0 | 5.5 | 6.0 |
| India | 1.2 | 0.6 | 0.7 | 1.1 | 9.0 | 4.6 | 3.3 | 4.5 |
| Sri Lanka | 0.2 | 0.1 | 0.1 | 0.1 | 1.5 | 0.9 | 0.4 | 0.3 |
| Bangladesh | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 1.1 | 0.6 | 0.2 |
| Pakistan | 0.7 | 0.3 | 0.2 | 0.2 | 5.1 | 2.5 | 1.2 | 1.0 |
| Developing countries[1, 3] | 11.4 | 16.4 | 8.7 | 16.6 | | | | |
| Least developed countries[3] | 1.1 | 0.7 | 0.2 | 0.3 | | | | |
| Developed countries[2,3] | 77.0 | 70.6 | 71.4 | 60.7 | | | | |
| World | 100 | 100 | 100 | 100 | | | | |
| US$ billion | 205 | 1093 | 2386 | 8932 | | | | |

Notes:
1 Excluding Asian developing countries. 2 Excluding Japan. 3 Based on the UN country classification.
Source: Compiled from UN Comtrade database.

**Table 2: Commodity Composition of Merchandise Exports[4] (%)**

| | | Primary products[4] | | | | Manufacturing | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Country/country group | | Total | Food and beverages (SITC 0+1) | Minerals[4] SITC 2+68) | Agri. Raw material SITC 4 | Total | Chemicals (SITC 5) | Resource-based products (SITC 6) | Machinery and transport equipment[5] (SITC7) | ICT products | Miscellaneous manufacturing[6] SITC8 | Clothing and footwear (SITC 84 + 85) |
| Asia | 1979/80 | 20.4 | 8.3 | 10.7 | 1.4 | 78.3 | 4.0 | 22.3 | 36.5 | 15.1 | 17.6 | 3.4 |
| | 2005/06 | 6.4 | 2.5 | 3.4 | 0.4 | 92.0 | 6.8 | 13.0 | 54.2 | 39.2 | 19.1 | 7.0 |
| East Asia | 1979/80 | 19.2 | 7.4 | 10.4 | 1.4 | 79.4 | 4.1 | 21.4 | 38.0 | 15.8 | 17.8 | 3.1 |
| | 2005/06 | 5.8 | 2.3 | 3.1 | 0.4 | 92.5 | 6.6 | 12.2 | 56.2 | 40.8 | 18.7 | 6.4 |
| Japan | 1979/80 | 3.7 | 1.3 | 2.3 | 0.1 | 95.6 | 5.3 | 22.2 | 59.8 | 19.0 | 9.4 | 0.7 |
| | 2005/06 | 2.7 | 0.4 | 2.3 | 0.0 | 95.5 | 8.7 | 11.1 | 67.4 | 27.6 | 9.3 | 0.1 |
| Developing East Asia | 1979/80 | 35.0 | 13.7 | 18.7 | 2.7 | 63.0 | 2.9 | 20.4 | 15.6 | 12.5 | 26.3 | 5.5 |
| | 2005/06 | 6.7 | 2.8 | 3.3 | 0.6 | 91.9 | 6.1 | 12.4 | 53.2 | 44.3 | 20.0 | 8.2 |
| China + Hong Kong | 1979/80 | 21.0 | 12.6 | 8.1 | 0.3 | 76.7 | 4.1 | 21.5 | 10.2 | 8.0 | 41.6 | 5.9 |
| | 2005/06 | 4.4 | 2.2 | 2.2 | 0.0 | 94.7 | 3.6 | 13.9 | 48.0 | 41.3 | 30.4 | 12.7 |
| China | 1979/80 | 39.4 | 23.8 | 15.1 | 0.5 | 60.1 | 7.8 | 29.8 | 3.5 | 1.2 | 20.1 | 2.0 |
| | 2005/06 | 4.4 | 2.2 | 2.1 | 0.0 | 94.9 | 3.6 | 13.9 | 48.3 | 41.5 | 30.3 | 12.5 |
| Hong Kong | 1979/80 | 5.2 | 3.1 | 2.0 | 0.1 | 90.8 | 1.0 | 14.5 | 16.0 | 13.8 | 60.0 | 9.3 |
| | 2005/06 | 3.2 | 0.8 | 2.4 | 0.0 | 91.8 | 4.0 | 14.2 | 42.4 | 37.9 | 31.9 | 14.9 |
| Korea | 1979/80 | 11.0 | 7.9 | 2.9 | 0.1 | 88.3 | 3.3 | 23.6 | 16.3 | 13.8 | 29.6 | 27.1 |
| | 2005/06 | 3.6 | 0.9 | 2.7 | 0.0 | 95.2 | 9.9 | 13.7 | 64.1 | 42.3 | 9.0 | 1.0 |
| Taiwan | 1979/80 | 12.5 | 9.8 | 2.7 | 0.0 | 86.9 | 3.0 | 24.4 | 23.6 | 17.0 | 36.2 | 11.4 |
| | 2005/06 | 3.5 | 0.9 | 2.7 | 0.0 | 94.9 | 8.9 | 14.2 | 60.0 | 50.8 | 0.0 | 0.1 |
| ASEAN | 1979/80 | 65.7 | 18.7 | 40.4 | 6.6 | 31.5 | 1.8 | 12.3 | 15.0 | 12.7 | 7.2 | 0.7 |
| | 2005/06 | 14.2 | 5.8 | 6.2 | 2.2 | 83.4 | 8.0 | 8.2 | 55.2 | 48.5 | 13.1 | 6.2 |
| Indonesia | 1979/80 | 92.3 | 25.8 | 63.9 | 2.6 | 7.4 | 1.6 | 4.6 | 1.2 | 1.0 | 1.2 | 0.1 |
| | 2005/06 | 34.1 | 7.9 | 19.8 | 6.4 | 62.7 | 6.0 | 18.0 | 24.5 | 19.7 | 17.6 | 10.5 |
| Malaysia | 1979/80 | 75.0 | 5.3 | 56.6 | 13.1 | 24.3 | 0.8 | 14.4 | 14.5 | 13.2 | 3.3 | 0.5 |
| | 2005/06 | 10.1 | 2.0 | 4.1 | 4.0 | 88.4 | 5.1 | 6.4 | 69.7 | 66.3 | 8.0 | 2.2 |
| Philippines | 1979/80 | 65.5 | 24.6 | 31.0 | 9.9 | 32.9 | 1.2 | 8.4 | 10.6 | 9.7 | 14.3 | 1.6 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005/06 | 10.1 | 4.7 | 4.4 | 1.0 | 88.2 | 1.0 | 4.0 | 75.3 | 71.9 | 9.2 | 4.4 |
| Singapore | 1979/80 | 18.1 | 5.1 | 10.4 | 2.7 | 69.8 | 4.7 | 11.1 | 41.1 | 32.6 | 13.8 | 1.5 |
| | 2005/06 | 3.0 | 1.5 | 1.3 | 0.2 | 93.2 | 19.3 | 3.6 | 63.3 | 55.2 | 7.3 | 0.3 |
| Thailand | 1979/80 | 72.5 | 45.8 | 26.6 | 0.0 | 27.1 | 1.3 | 22.5 | 6.1 | 5.3 | 6.5 | 0.3 |
| | 2005/06 | 16.0 | 10.4 | 5.5 | 0.1 | 81.3 | 7.3 | 10.8 | 50.9 | 37.2 | 12.8 | 4.8 |
| VietNam | 1979/80 | 73.1 | 39.7 | 32.9 | 0.5 | 26.7 | 1.7 | 8.1 | 3.1 | 0.6 | 15.0 | 1.2 |
| | 2005/06 | 25.2 | 21.5 | 3.8 | 0.0 | 74.1 | 1.8 | 7.8 | 13.3 | 9.3 | 51.4 | 37.6 |
| Other ASEAN | 1979/80 | 85.6 | 37.0 | 48.6 | 0.0 | 13.1 | 0.3 | 10.5 | 2.1 | 0.4 | 1.4 | 0.0 |
| | 2005/06 | 31.9 | 13.3 | 18.5 | 0.0 | 66.5 | 0.2 | 6.6 | 1.2 | 0.5 | 62.5 | 60.6 |
| South Asia | 1979/80 | 43.2 | 26.0 | 16.3 | 0.9 | 55.5 | 2.0 | 40.1 | 6.0 | 0.1 | 12.8 | 9.4 |
| | 2005/06 | 18.6 | 8.0 | 10.2 | 0.5 | 80.3 | 10.3 | 33.7 | 9.1 | 3.1 | 28.9 | 22.5 |
| India | 1979/80 | 41.6 | 24.8 | 15.9 | 1.0 | 57.7 | 2.6 | 40.0 | 8.1 | 0.0 | 14.6 | 11.4 |
| | 2005/06 | 20.6 | 7.6 | 12.6 | 0.4 | 78.1 | 13.1 | 35.5 | 11.5 | 3.9 | 20.0 | 12.7 |
| Sri Lanka | 1979/80 | 70.5 | 51.7 | 15.9 | 2.9 | 26.9 | 0.6 | 11.5 | 0.8 | 0.4 | 14.1 | 13.7 |
| | 2005/06 | 23.5 | 16.3 | 5.4 | 1.8 | 75.9 | 1.1 | 17.2 | 5.2 | 2.7 | 54.3 | 50.6 |
| Bangladesh | 1979/80 | 30.2 | 13.9 | 16.3 | 0.0 | 60.5 | 0.4 | 59.2 | 0.2 | 0.1 | 0.8 | 0.1 |
| | 2005/06 | 6.3 | 4.9 | 1.4 | 0.0 | 93.4 | 1.4 | 8.4 | 0.9 | 0.3 | 82.7 | 82.0 |
| Pakistan | 1979/80 | 41.1 | 23.6 | 17.5 | 0.0 | 58.3 | 0.6 | 47.5 | 1.5 | 0.2 | 8.9 | 2.3 |
| | 2005/06 | 12.6 | 9.2 | 3.4 | 0.0 | 86.5 | 2.5 | 52.1 | 1.1 | 0.3 | 31.9 | 26.0 |
| Nepal | 1979/80 | 60.4 | 22.8 | 35.5 | 2.0 | 38.3 | 5.4 | 28.2 | 1.2 | 0.3 | 3.5 | 0.0 |
| | 2005/06 | 22.5 | 9.9 | 5.2 | 7.4 | 77.1 | 11.6 | 39.4 | 2.2 | 1.2 | 26.2 | 19.6 |
| Developing | 1979/80 | 65.8 | 40.0 | 24.5 | 1.3 | 30.7 | 4.5 | 22.0 | 10.2 | 4.0 | 8.0 | 1.3 |
| countries[1.3] | 2005/06 | 27.7 | 12.6 | 14.8 | 0.3 | 66.0 | 9.8 | 25.3 | 31.4 | 13.1 | 14.3 | 8.1 |
| Developed countries[2.3] | 1979/80 | 27.0 | 13.2 | 13.2 | 0.5 | 70.1 | 10.8 | 20.7 | 31.5 | 8.0 | 10.3 | 1.3 |
| | 2005/06 | 15.0 | 7.9 | 6.8 | 0.3 | 81.1 | 16.8 | 15.3 | 40.8 | 12.7 | 10.7 | 1.5 |
| World | 1979/80 | 27.1 | 13.1 | 13.3 | 0.7 | 70.5 | 9.3 | 21.5 | 32.1 | 9.0 | 11.1 | 1.5 |
| | 2005/06 | 14.0 | 6.7 | 6.8 | 0.4 | 82.1 | 12.5 | 15.6 | 42.9 | 21.1 | 13.4 | 4.0 |

Notes

1 Excluding Asian developing countries.
2 Excluding Japan
3 Based on the UN country classification
4. Excluding oil and gas
5. Including ICT products
6. Including clothing and footwear

--- Data not available

ICT Information and communication technology products (SITC 75+76+77)

Source: Compiled from UN Comtrade database.

**Table 3: Source Country Composition of World Manufacturing Exports, 1979/80, 1989/90 and 2005/06 (%)**

| Country/country group | | Total | Chemicals (SITC 5) | Resource-based products (SITC 6) | Machinery and transport equipment[4] (SITC7) | ICT products (SITC 75 – 77 | Miscellaneous manufacturing[5] SITC8 | Clothing and footwear (SITC 84 + 85) |
|---|---|---|---|---|---|---|---|---|
| Asia | 1979/80 | 19.5 | 7.5 | 18.1 | 19.9 | 29.3 | 27.7 | 35.4 |
| | 2005/06 | 36.6 | 17.7 | 27.0 | 41.3 | 60.6 | 46.3 | 57.5 |
| East Asia | 1979/80 | 18.8 | 7.4 | 16.6 | 19.8 | 29.2 | 26.8 | 34.7 |
| | 2005/06 | 35.2 | 16.6 | 24.3 | 41.0 | 60.4 | 43.5 | 50.2 |
| Japan | 1979/80 | 11.4 | 4.8 | 8.7 | 15.7 | 17.8 | 7.2 | 4.2 |
| | 2005/06 | 7.8 | 4.6 | 4.8 | 10.5 | 8.7 | 4.6 | 0.2 |
| Developing East | 1979/80 | 7.4 | 2.6 | 7.9 | 4.0 | 11.4 | 19.6 | 30.5 |
| Asia | 2005/06 | 27.5 | 12.0 | 19.5 | 30.5 | 51.7 | 38.9 | 50.1 |
| China + Hong | 1979/80 | 2.4 | 0.9 | 2.2 | 0.7 | 1.9 | 8.2 | 8.7 |
| Kong | 2005/06 | 14.4 | 3.6 | 11.1 | 14.1 | 24.6 | 28.4 | 40.1 |
| China | 1979/80 | 0.9 | 0.8 | 1.4 | 0.1 | 0.1 | 1.8 | 1.3 |
| | 2005/06 | 13.7 | 3.4 | 10.5 | 13.4 | 23.4 | 26.8 | 37.6 |
| Hong Kong | 1979/80 | 1.5 | 0.1 | 0.8 | 0.6 | 1.8 | 6.4 | 7.4 |
| | 2005/06 | 0.7 | 0.2 | 0.6 | 0.7 | 1.2 | 1.6 | 2.5 |
| Korea | 1979/80 | 1.6 | 0.4 | 2.0 | 0.6 | 1.9 | 4.0 | 7.6 |
| | 2005/06 | 3.6 | 2.4 | 2.7 | 4.6 | 6.2 | 2.1 | 0.8 |
| Taiwan | 1979/80 | 2.0 | 0.5 | 1.9 | 1.2 | 3.1 | 5.4 | 12.6 |
| | 2005/06 | 3.1 | 1.9 | 2.5 | 3.8 | 6.6 | 0.0 | 0.1 |
| ASEAN | 1979/80 | 1.4 | 0.6 | 1.9 | 1.5 | 4.5 | 2.1 | 1.6 |
| | 2005/06 | 6.3 | 4.0 | 3.3 | 8.1 | 14.4 | 6.2 | 9.7 |
| Indonesia | 1979/80 | 0.1 | 0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 |
| | 2005/06 | 0.7 | 0.4 | 1.0 | 0.5 | 0.8 | 1.1 | 2.3 |
| Malaysia | 1979/80 | 0.3 | 0.1 | 0.7 | 0.4 | 1.5 | 0.3 | 0.3 |
| | 2005/06 | 1.8 | 0.7 | 0.7 | 2.8 | 5.4 | 1.0 | 0.9 |
| Philippines | 1979/80 | 0.2 | 0.1 | 0.2 | 0.2 | 0.6 | 0.7 | 0.6 |
| | 2005/06 | 0.7 | 0.1 | 0.2 | 1.2 | 2.3 | 0.5 | 0.8 |
| Singapore | 1979/80 | 0.6 | 0.3 | 0.3 | 0.8 | 2.1 | 0.7 | 0.6 |
| | 2005/06 | 1.5 | 2.0 | 0.3 | 1.9 | 3.4 | 0.7 | 0.1 |
| Thailand | 1979/80 | 0.2 | 0.1 | 0.5 | 0.1 | 0.3 | 0.3 | 0.1 |
| | 2005/06 | 1.3 | 0.8 | 0.9 | 1.5 | 2.3 | 1.2 | 1.6 |
| Vietnam | 1979/80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2005/06 | 0.3 | 0.0 | 0.2 | 0.1 | 0.1 | 1.2 | 2.9 |
| Other ASEAN | 1979/80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 1989/90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| South Asia | 1979/80 | 0.6 | 0.1 | 1.5 | 0.1 | 0.1 | 0.9 | 0.7 |
| | 2005/06 | 1.3 | 1.1 | 2.7 | 0.3 | 0.2 | 2.7 | 7.2 |
| India | 1979/80 | 0.5 | 0.2 | 1.1 | 0.1 | 0.0 | 0.8 | 4.4 |
| | 2005/06 | 1.0 | 1.1 | 2.3 | 0.3 | 0.2 | 1.5 | 3.2 |
| Sri Lanka | 1979/80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.6 |
| | 2005/06 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.3 | 0.9 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bangladesh | 1979/80 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2005/06 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.8 | 2.6 |
| Pakistan | 1979/80 | 0.1 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.2 |
| | 2005/06 | 0.1 | 0.0 | 0.5 | 0.0 | 0.0 | 0.3 | 0.9 |
| Nepal | 1979/80 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2005/06 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Developing | 1979/80 | 3.2 | 3.6 | 7.6 | 2.3 | 3.3 | 5.3 | 6.7 |
| Countries[1.3] | 2005/06 | 10.4 | 10.1 | 20.9 | 9.5 | 8.0 | 13.8 | 26.4 |
| Developed | 1979/80 | 55.5 | 64.7 | 53.8 | 54.8 | 49.6 | 51.7 | 50.1 |
| Countries[2.3] | 2005/06 | 49.9 | 67.8 | 49.4 | 48.1 | 30.4 | 40.2 | 19.7 |
| World | 1979/80 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| | 2005/06 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Notes:

1 Excluding Asian developing countries. 2 Excluding Japan.
3 Based on the UN country classification. 4 Including ICT products.
5. Including clothing and footwear --- Data not available
ICT = Information and communication technology products (SITC 75+76+77).

Source: Compiled from UN Comtrade database.

**Table 4: World Trade in Machinery and Transport Equipment, 1992/3 and 2005/6 (%)**

| | Regional/country composition (%) | | | | | | Share of parts and components in total trade (%) | |
|---|---|---|---|---|---|---|---|---|
| | Total trade | | Parts and components | | Final goods | | | |
| | 1992/3 | 2005/6 | 1992/3 | 2005/6 | 1992/3 | 2005/6 | 1992/3 | 2005/6 |
| (A) EXPORTS | | | | | | | | |
| East Asia | 34.5 | 37.5 | 34.3 | 39.7 | 34.6 | 35.8 | 40.9 | 46.9 |
| Japan | 19.1 | 11.4 | 17.8 | 11.3 | 19.9 | 11.5 | 38.5 | 43.9 |
| Developing East Asia | 15.4 | 26.1 | 16.5 | 28.4 | 14.7 | 24.2 | 43.9 | 48.2 |
| Rep. of Korea | 2.4 | 4.3 | 2.9 | 4.1 | 2.1 | 4.4 | 49.0 | 42.8 |
| Taiwan | 3.3 | 3.8 | 3.6 | 5.4 | 3.1 | 2.5 | 45.0 | 63.8 |
| China | 2.3 | 9.3 | 1.4 | 7.3 | 3.0 | 10.9 | 24.5 | 34.8 |
| Hong Kong, SAR | 1.0 | 0.7 | 1.4 | 1.0 | 0.8 | 0.5 | 55.6 | 60.4 |
| AFTA | 6.3 | 8.0 | 7.2 | 10.5 | 5.7 | 6.0 | 46.7 | 58.4 |
| Indonesia | 0.1 | 0.5 | 0.1 | 0.6 | 0.2 | 0.5 | 31.1 | 48.4 |
| Malaysia | 2.1 | 2.8 | 2.4 | 3.8 | 1.9 | 2.0 | 46.8 | 59.5 |
| Philippines | 0.4 | 1.2 | 0.7 | 2.0 | 0.2 | 0.6 | 73.7 | 73.5 |
| Singapore | 2.8 | 2.0 | 3.0 | 2.7 | 2.6 | 1.5 | 44.9 | 58.6 |
| Thailand | 0.9 | 1.3 | 1.0 | 1.4 | 0.9 | 1.3 | 43.0 | 45.7 |
| Viet Nam | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 25.8 | 55.9 |
| South Asia | 0.1 | 0.2 | 0.1 | 0.3 | 0.1 | 0.2 | 49.5 | 53.0 |
| Oceania | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 39.6 | 43.8 |
| NAFTA | 22.4 | 18.1 | 24.5 | 19.7 | 21.0 | 16.7 | 44.9 | 48.4 |
| EU 15 | 35.3 | 35.4 | 32.5 | 31.1 | 37.3 | 38.9 | 37.9 | 38.9 |
| World | 100 | 100 | 100 | 100 | 100 | 100 | 41.1 | 44.3 |
| US$ billion | 1379 | 3110 | 567 | 1378 | 812 | 1732 | | |
| (B ) IMPORTS | | | | | | | | |
| | 1989/90 | 2005/6 | 1989/90 | 2005/6 | 1989/90 | 2005/6 | 1989/90 | 2005/6 |
| East Asia | 24.7 | 26.3 | 27.5 | 36.6 | 22.7 | 18.2 | 45.8 | 61.6 |
| Japan | 3.4 | 3.7 | 3.5 | 4.2 | 3.3 | 3.3 | 42.0 | 49.9 |
| Developing East Asia | 21.3 | 22.6 | 24.0 | 32.4 | 19.3 | 14.8 | 46.5 | 63.5 |
| Rep. of Korea | 2.4 | 2.2 | 2.9 | 3.0 | 2.0 | 1.6 | 49.5 | 59.7 |
| Taiwan | 2.4 | 2.0 | 3.2 | 2.8 | 1.8 | 1.4 | 55.3 | 62.1 |
| China | 3.5 | 7.2 | 2.5 | 9.8 | 4.2 | 5.1 | 29.0 | 60.4 |
| Hong Kong SAR | 3.9 | 4.0 | 3.8 | 5.7 | 3.9 | 2.7 | 40.3 | 62.5 |
| AFTA | 9.2 | 7.2 | 11.7 | 11.2 | 7.4 | 4.0 | 52.6 | 68.8 |
| Indonesia | 0.9 | 0.3 | 1.0 | 0.3 | 0.9 | 0.3 | 43.5 | 44.7 |
| Malaysia | 2.2 | 1.8 | 3.1 | 3.0 | 1.5 | 0.8 | 58.7 | 75.0 |
| Philippines | 0.5 | 0.8 | 0.6 | 1.5 | 0.4 | 0.2 | 48.5 | 86.1 |
| Singapore | 3.7 | 2.9 | 5.0 | 4.6 | 2.8 | 1.6 | 55.1 | 69.4 |
| Thailand | 1.7 | 1.1 | 2.0 | 1.5 | 1.5 | 0.8 | 48.2 | 58.8 |
| Viet Nam | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.3 | 20.8 | 38.3 |
| South Asia | 0.5 | 0.8 | 0.6 | 0.6 | 0.4 | 0.9 | 47.2 | 36.0 |
| NAFTA | 27.2 | 25.2 | 28.2 | 22.3 | 26.5 | 27.5 | 42.6 | 39.2 |
| EU 15 | 33.7 | 35.4 | 33.1 | 32.0 | 34.2 | 38.2 | 40.4 | 40.0 |
| World | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 41.1 | 44.3 |
| US$ billion | 1379 | 3110 | 567 | 1378 | 812 | 1732 | | |

Source: Compiled from UN Comtrade database

**Table 5: Direction of China's Trade in Machinery and Transport Equipment (%):**

| | Total | | Parts and components | | Final | |
|---|---|---|---|---|---|---|
| **(a) Exports** | 1992/93 | 2005/6 | 1992/93 | 2005/6 | 1992/93 | 2005/6 |
| East Asia | 58.4 | 47.2 | 66.2 | 64.3 | 55.0 | 38.0 |
| Japan | 7.8 | 12.0 | 13.0 | 12.9 | 5.5 | 11.5 |
| Developing East Asia | 50.6 | 35.2 | 53.2 | 51.3 | 49.5 | 26.5 |
| Hong Kong, SAR | 42.0 | 21.0 | 42.4 | 29.9 | 41.8 | 16.2 |
| Korea | 1.1 | 3.5 | 2.1 | 4.6 | 0.6 | 2.8 |
| Taiwan | 1.8 | 2.6 | 2.8 | 3.7 | 1.4 | 2.0 |
| AFTA | 5.7 | 8.1 | 5.8 | 13.1 | 5.7 | 5.4 |
| Indonesia | 1.2 | 0.9 | 1.1 | 0.9 | 1.2 | 0.9 |
| Malaysia | 1.0 | 2.3 | 1.2 | 4.9 | 0.9 | 0.9 |
| Philippines | 0.3 | 0.6 | 0.3 | 0.8 | 0.4 | 0.5 |
| Singapore | 2.1 | 3.0 | 2.6 | 4.7 | 1.8 | 2.1 |
| Thailand | 1.2 | 1.3 | 0.7 | 1.8 | 1.4 | 1.0 |
| Vietnam | 0.2 | 0.5 | 0.2 | 0.4 | 0.2 | 0.5 |
| South Asia | 3.3 | 1.2 | 2.9 | 1.0 | 3.5 | 1.3 |
| NAFTA | 16.2 | 24.5 | 13.3 | 16.2 | 17.4 | 28.9 |
| EU15 | 10.2 | 16.4 | 8.7 | 10.4 | 10.8 | 19.6 |
| World | 100 | 100 | 100 | 100 | 100 | 100 |
| US$ billion | 14.2 | 325.8 | 4.3 | 114.1 | 9.9 | 211.6 |
| **(b) Imports** | 1989/90 | 2005/6 | 1989/90 | 2005/6 | 1989/90 | 2005/6 |
| East Asia | 55.1 | 60.3 | 64.8 | 67.7 | 50.4 | 47.8 |
| Japan | 27.4 | 22.9 | 26.8 | 22.6 | 27.7 | 23.4 |
| Developing East Asia | 27.6 | 37.4 | 37.9 | 45.1 | 22.6 | 24.4 |
| Hong Kong, SAR | 13.6 | 3.7 | 24.2 | 4.9 | 8.5 | 1.7 |
| Korea | 2.1 | 9.1 | 3.0 | 9.4 | 1.6 | 8.7 |
| Taiwan | 10.8 | 13.1 | 9.1 | 14.9 | 11.6 | 9.9 |
| AFTA | 1.1 | 11.6 | 1.6 | 16.0 | 0.8 | 4.5 |
| Indonesia | 0.0 | 0.6 | 0.0 | 0.6 | 0.0 | 0.6 |
| Malaysia | 0.2 | 4.3 | 0.2 | 6.9 | 0.1 | 0.2 |
| Philippines | 0.0 | 2.3 | 0.0 | 3.4 | 0.0 | 0.4 |
| Singapore | 0.7 | 2.7 | 1.2 | 2.9 | 0.5 | 2.4 |
| Thailand | 0.1 | 1.9 | 0.1 | 2.3 | 0.1 | 1.2 |
| Vietnam | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.1 |
| South Asia | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 |
| NAFTA | 13.6 | 11.0 | 11.0 | 8.7 | 14.9 | 15.1 |
| EU15 | 23.4 | 16.7 | 19.4 | 10.7 | 25.3 | 26.8 |
| World | 100 | 100 | 100 | 100 | 100 | 100 |
| US$ billion | 37.7 | 292.2 | 12.2 | 184.2 | 25.4 | 108.4 |

Source: Compiled from UN Comtrade database.

**Table 6: Direction of Manufacturing Trade: Total manufacturing and Parts and Components**

**(a) Exports**

| | | A1: Total Manufacturing Exports | | | | | | | | B1: Parts and Components Exports | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Exports | Year | EA | Japan | DEA | C+H | ASEAN | NAFTA | EU15 | Other | EA | Japan | DEA | C+H | ASEAN | NAFTA | EU15 | Other |
| East Asia (EA) | 1992/93 | 40.0 | 5.2 | 34.9 | 18.5 | 13.0 | 32.3 | 20.3 | 7.3 | 44.0 | 3.4 | 40.5 | 14.5 | 20.8 | 33.5 | 17.6 | 5.0 |
| | 2005/06 | 44.4 | 6.7 | 37.7 | 23.2 | 10.6 | 26.4 | 17.7 | 11.5 | 60.9 | 6.4 | 54.5 | 32.5 | 17.6 | 19.5 | 12.8 | 6.8 |
| Japan | 1992/93 | 32.5 | . | 32.5 | 11.9 | 14.8 | 34.8 | 21.4 | 11.4 | 37.3 | . | 37.3 | 10.6 | 19.4 | 36.9 | 18.8 | 7.0 |
| | 2005/06 | 42.8 | . | 42.8 | 22.2 | 12.7 | 27.8 | 17.1 | 12.3 | 53.0 | . | 53.0 | 28.1 | 18.0 | 25.2 | 14.8 | 7.0 |
| Developing East | 1992/93 | 46.0 | 9.3 | 36.7 | 23.6 | 11.5 | 30.4 | 19.5 | 4.0 | 51.8 | 7.5 | 44.3 | 19.0 | 22.3 | 29.5 | 16.1 | 2.6 |
| Asia (DEA) | 2005/06 | 44.9 | 8.8 | 39.1 | 23.5 | 9.9 | 25.9 | 17.9 | 11.3 | 63.7 | 8.6 | 55.1 | 34.1 | 17.4 | 17.4 | 12.2 | 6.7 |
| China +Hong | 1992/93 | 50.6 | 7.7 | 43.0 | 36.6 | 4.7 | 26.1 | 19.1 | 4.1 | 64.5 | 4.9 | 59.5 | 41.3 | 13.2 | 18.5 | 12.7 | 4.3 |
| Kong (C+H) | 2005/06 | 38.1 | 9.7 | 28.5 | 14.5 | 5.7 | 30.0 | 20.0 | 11.9 | 58.7 | 9.1 | 49.6 | 20.2 | 11.9 | 19.5 | 13.7 | 8.1 |
| ASEAN | 1992/93 | 41.0 | 9.3 | 31.7 | 8.5 | 20.8 | 33.0 | 22.3 | 3.7 | 52.4 | 7.2 | 45.2 | 8.9 | 32.8 | 29.9 | 16.7 | 1.0 |
| | 2005/06 | 50.2 | 8.7 | 41.4 | 19.1 | 19.4 | 22.6 | 17.2 | 10.0 | 65.1 | 8.0 | 57.1 | 27.2 | 26.1 | 16.1 | 13.2 | 5.6 |
| South Asia | 1992/93 | 18.3 | 6.2 | 12.1 | 5.7 | 5.4 | 32.0 | 40.3 | 9.4 | 29.4 | 2.8 | 26.6 | 3.4 | 22.3 | 16.6 | 34.2 | 19.8 |
| | 2005/06 | 17.5 | 2.0 | 15.5 | 8.7 | 5.6 | 29.2 | 32.7 | 20.6 | 20.2 | 3.5 | 16.7 | 6.0 | 9.4 | 26.8 | 33.2 | 19.8 |
| NAFTA | 1992/93 | 20.7 | 7.5 | 13.2 | 3.9 | 6.3 | 46.9 | 22.0 | 10.4 | 21.3 | 6.7 | 14.6 | 3.0 | 8.2 | 47.8 | 23.3 | 7.6 |
| | 2005/06 | 17.2 | 4.5 | 12.6 | 5.1 | 5.1 | 51.5 | 18.7 | 12.5 | 24.7 | 5.0 | 19.7 | 5.9 | 10.6 | 47.8 | 18.0 | 9.5 |
| EU15 | 1992/93 | 8.1 | 2.5 | 5.5 | 2.2 | 2.5 | 9.7 | 66.9 | 15.4 | 7.5 | 1.3 | 6.2 | 2.0 | 3.3 | 12.0 | 66.1 | 14.4 |
| | 2005/06 | 7.8 | 1.9 | 6.0 | 3.3 | 1.8 | 11.3 | 58.2 | 22.7 | 11.0 | 1.5 | 9.5 | 4.7 | 3.7 | 11.2 | 56.5 | 21.3 |
| World | 1992/93 | 20.3 | 4.3 | 16.0 | 7.6 | 6.4 | 23.6 | 43.8 | 12.3 | 22.3 | 3.3 | 18.9 | 6.1 | 9.9 | 27.8 | 40.1 | 9.8 |
| | 2005/06 | 22.0 | 3.9 | 18.1 | 10.5 | 5.4 | 23.3 | 36.4 | 18.2 | 34.7 | 4.2 | 30.6 | 16.7 | 11.0 | 21.8 | 30.6 | 12.9 |

**(b) Imports**

| | Year | A1: Total Manufacturing Imports | | | | | | | | | | B1: Parts and Components Imports | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East Asia (EA) | 1992/93 | 57.8 | 20.6 | 37.1 | 16.0 | 9.0 | 17.8 | 17.0 | 7.4 | 60.7 | 27.8 | 32.9 | 8.4 | 13.8 | 23.7 | 13.0 | 2.6 |
| | 2005/06 | 68.9 | 15.8 | 53.1 | 22.8 | 14.2 | 11.9 | 13.3 | 5.9 | 74.6 | 16.9 | 57.7 | 21.2 | 19.5 | 13.4 | 9.6 | 2.4 |
| Japan | 1992/93 | 35.6 | . | 35.6 | 11.6 | 9.7 | 30.6 | 25.4 | 8.5 | 32.0 | . | 32.0 | 5.3 | 12.9 | 50.4 | 15.3 | 2.4 |
| | 2005/06 | 58.8 | . | 58.8 | 32.9 | 14.1 | 17.8 | 17.9 | 5.4 | 64.9 | . | 64.9 | 46.5 | 19.9 | 22.4 | 10.8 | 1.9 |
| Developing East | 1992/93 | 63.7 | 26.1 | 37.6 | 17.2 | 8.8 | 14.4 | 14.8 | 7.1 | 65.7 | 32.7 | 33.0 | 8.9 | 14.0 | 19.1 | 12.6 | 2.6 |
| Asia (DEA) | 2005/06 | 71.0 | 19.1 | 51.9 | 20.7 | 14.3 | 10.6 | 12.3 | 6.1 | 75.9 | 19.2 | 56.7 | 17.7 | 19.5 | 12.1 | 9.4 | 2.5 |
| China +Hong | 1992/93 | 71.3 | 20.3 | 51.0 | 30.9 | 5.0 | 8.9 | 12.2 | 7.7 | 72.4 | 28.8 | 43.7 | 19.1 | 8.5 | 12.0 | 12.6 | 3.0 |
| Kong (CH+HK) | 2005/06 | 75.2 | 17.1 | 58.1 | 18.2 | 11.3 | 7.4 | 11.7 | 5.7 | 82.8 | 18.6 | 64.2 | 13.2 | 17.0 | 6.7 | 8.5 | 2.0 |
| ASEAN | 1992/93 | 59.6 | 30.0 | 29.6 | 4.7 | 14.6 | 17.3 | 16.7 | 6.4 | 64.1 | 32.4 | 31.7 | 3.8 | 19.4 | 20.4 | 13.0 | 2.6 |
| | 2005/06 | 66.4 | 19.0 | 47.4 | 13.8 | 22.2 | 14.4 | 12.7 | 6.6 | 68.2 | 18.2 | 50.0 | 11.9 | 24.9 | 18.3 | 10.2 | 3.3 |
| South Asia | 1992/93 | 31.6 | 11.2 | 20.4 | 6.8 | 5.6 | 13.0 | 39.5 | 15.9 | 35.4 | 22.0 | 13.4 | 3.4 | 6.4 | 18.1 | 39.1 | 7.3 |
| | 2005/06 | 39.7 | 6.0 | 33.7 | 15.7 | 9.9 | 10.7 | 29.7 | 19.9 | 44.6 | 7.9 | 36.7 | 13.4 | 14.4 | 14.7 | 32.1 | 8.7 |
| NAFTA | 1992/93 | 40.2 | 19.0 | 21.2 | 7.1 | 6.3 | 34.8 | 17.7 | 7.3 | 36.9 | 22.0 | 14.9 | 1.9 | 6.3 | 42.6 | 16.7 | 3.8 |
| | 2005/06 | 38.6 | 9.7 | 29.0 | 17.0 | 6.1 | 33.7 | 18.1 | 9.6 | 38.0 | 12.8 | 25.2 | 9.8 | 7.7 | 41.3 | 15.6 | 5.1 |
| EU15 | 1992/93 | 13.6 | 6.3 | 7.3 | 2.8 | 2.3 | 8.8 | 65.5 | 12.1 | 13.4 | 7.8 | 5.6 | 0.9 | 2.4 | 14.4 | 63.5 | 8.7 |
| | 2005/06 | 16.6 | 3.8 | 12.8 | 7.2 | 3.0 | 7.8 | 59.8 | 15.7 | 17.9 | 5.3 | 12.5 | 4.9 | 4.5 | 11.1 | 56.1 | 15.0 |
| World | 1992/93 | 29.3 | 12.9 | 16.4 | 6.4 | 4.5 | 17.5 | 42.9 | 10.3 | 30.7 | 16.6 | 14.1 | 2.8 | 5.9 | 24.8 | 38.5 | 6.0 |
| | 2005/06 | 34.2 | 8.1 | 26.1 | 13.2 | 6.2 | 15.2 | 37.4 | 13.2 | 42.5 | 11.1 | 31.5 | 10.9 | 10.4 | 18.8 | 30.3 | 8.3 |

EU15 Fifteen member countries of the European Union NAFTA North American Free trade Area

Source**:** Complied from *UN Comtrade Database* using the commodity/country classification described in the text (Section 3).

**Table 7: Intra-Regional Trade Shares: Total Manufacturing, Parts and Components, and Final Trade (%), 1992/93 and 2005/06[1]**

| A: Total Manufacturing | | East Asia[a] | East Asia[b] | AFTA | South Asia | NAFTA | EU |
|---|---|---|---|---|---|---|---|
| Trade (X+M) | 1992/3 | 47.3 | 37.1 | 17.1 | 2.3 | 40.0 | 66.2 |
| | 2005/6 | 54.0 | 42.6 | 20.7 | 2.5 | 40.7 | 59.0 |
| Exports (X) | 1992/3 | 40.0 | 36.7 | 20.8 | 2.2 | 46.9 | 66.9 |
| | 2005/6 | 44.4 | 39.1 | 19.4 | 2.3 | 51.5 | 58.2 |
| Imports (M) | 1992/3 | 57.8 | 37.6 | 14.6 | 2.4 | 34.8 | 65.5 |
| | 2005/6 | 68.9 | 51.9 | 22.2 | 2.6 | 33.7 | 59.8 |
| B: Parts and Components | | | | | | | |
| Trade (X+M) | 1992/3 | 51.0 | 37.8 | 24.3 | 2.1 | 45.0 | 64.7 |
| | 2005/6 | 67.1 | 55.9 | 25.5 | 1.1 | 44.3 | 56.3 |
| Exports(X) | 1992/3 | 44.0 | 44.3 | 32.8 | 5.2 | 47.8 | 66.1 |
| | 2005/6 | 60.9 | 55.1 | 26.1 | 1.8 | 47.8 | 56.5 |
| Imports (M) | 1992/3 | 60.7 | 33.0 | 19.4 | 1.3 | 42.6 | 63.5 |
| | 2005/6 | 74.6 | 56.7 | 24.9 | 0.8 | 41.3 | 56.1 |
| C: Final goods | | | | | | | |
| Trade (X+M) | 1992/3 | 46.2 | 37.0 | 13.9 | 2.3 | 38.1 | 66.5 |
| | 2005/6 | 47.5 | 35.8 | 16.9 | 2.6 | 39.5 | 59.7 |
| Exports(X) | 1992/3 | 38.9 | 35.1 | 16.2 | 2.0 | 46.5 | 67.0 |
| | 2005/6 | 37.3 | 29.7 | 14.8 | 2.4 | 53.1 | 58.7 |
| Imports (M) | 1992/3 | 56.9 | 39.0 | 12.2 | 2.6 | 32.3 | 66.0 |
| | 2005/6 | 65.3 | 48.6 | 19.7 | 2.9 | 31.5 | 60.7 |

a Including Japan
b Excluding Japan
C Total manufacturing net of parts and component.
Source**:** Complied from *UN Comtrade Database.*

**Table 8: FDI Inflows, 1970-2006**

| | 1970-74[1] | 1975-79[1] | 1980-84[1] | 1985-89[1] | 2000-06[1] | 1997-99[1] | 2000-04[1] | 2005[1] | 2006[1] |
|---|---|---|---|---|---|---|---|---|---|
| **(a) Value, US$ million** | | | | | | | | | |
| World | 22443 | 38470 | 73433 | 161263 | 248655 | 765814 | 834430 | 945795 | 1305852 |
| Asia | 1671 | 2980 | 7267 | 15460 | 52635 | 107378 | 126699 | 169965 | 193026 |
| Japan | 158 | 152 | 328 | 124 | 1023 | 6386 | 7589 | 2775 | -6506 |
| Developing Asia[2] | 1513 | 2829 | 6939 | 15336 | 51612 | 100992 | 119111 | 167190 | 199531 |
| East Asia | 379 | 728 | 2692 | 8853 | 30770 | 68378 | 88480 | 116253 | 125774 |
| China + Hong Kong | 161 | 508 | 2382 | 6998 | 28429 | 60583 | 79502 | 106024 | 112360 |
| China | 0 | 0 | 772 | 3275 | 22770 | 43680 | 50894 | 72406 | 69468 |
| Hong Kong | 161 | 508 | 1610 | 3723 | 5659 | 16904 | 28608 | 33618 | 42892 |
| South Korea | 153 | 121 | 116 | 710 | 1008 | 5865 | 5978 | 7050 | 4950 |
| Taiwan | 66 | 99 | 192 | 987 | 1314 | 1799 | 2567 | 1625 | 7424 |
| South-East Asia | 1070 | 2007 | 4036 | 6098 | 19269 | 28449 | 24406 | 41071 | 51483 |
| Cambodia | 0 | 0 | 0 | 0 | 86 | 214 | 132 | 381 | 483 |
| Indonesia | 365 | 730 | 293 | 553 | 2714 | 857 | -1217 | 8337 | 5556 |
| Lao PDR | 0 | 0 | 0 | 1 | 47 | 61 | 24 | 28 | 187 |
| Malaysia | 263 | 553 | 1413 | 998 | 5032 | 4311 | 2928 | 3965 | 6060 |
| Myanmar | 0 | 1 | 0 | 14 | 248 | 622 | 227 | 236 | 143 |
| Philippines | 54 | 146 | 234 | 561 | 1099 | 1416 | 1031 | 1854 | 2345 |
| Singapore | 266 | 487 | 1733 | 3034 | 6731 | 12548 | 14160 | 15004 | 24207 |
| Thailand | 104 | 95 | 358 | 930 | 2051 | 5822 | 4568 | 8957 | 9751 |
| Viet Nam | 1 | 1 | 8 | 6 | 1069 | 1924 | 1370 | 2021 | 2315 |
| South Asia | 64 | 93 | 211 | 386 | 1573 | 4164 | 6225 | 9866 | 22274 |
| Bangladesh | 1 | 3 | 5 | 0 | 51 | 487 | 414 | 692 | 625 |
| Bhutan | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 9 | 6 |
| India | 51 | 42 | 67 | 195 | 964 | 2807 | 4956 | 6676 | 16881 |
| Nepal | 0 | 0 | 0 | 1 | 4 | 13 | 6 | 2 | -7 |
| Pakistan | 10 | 35 | 80 | 142 | 433 | 583 | 633 | 2201 | 4273 |
| Sri Lanka | 1 | 12 | 57 | 43 | 113 | 261 | 201 | 272 | 480 |
| | | | | | 0 | 0 | 0 | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **(b) Share in global flows** | | | | | | | | | |
| Developed economies[3] | 79.3 | 73.6 | 68.1 | 82.6 | 66.0 | 72.1 | 71.4 | 62.4 | 65.7 |
| Developing economies[3] | 20.7 | 26.4 | 31.9 | 17.4 | 32.9 | 26.5 | 26.3 | 33.2 | 29.0 |
| Africa and the Middle East | 6.2 | 3.7 | 2.6 | 2.2 | 1.9 | 1.4 | 1.9 | 3.1 | 2.7 |
| Latin America + Caribbean | 10.4 | 12.2 | 10.8 | 5.2 | 9.1 | 11.4 | 8.9 | 8.0 | 6.4 |
| Transition economies[4] | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.4 | 2.4 | 4.4 | 5.3 |
| Developing Asia | 6.7 | 7.4 | 9.4 | 9.5 | 20.8 | 13.2 | 14.3 | 17.7 | 15.3 |
| East Asia | 1.7 | 1.9 | 3.7 | 5.5 | 12.4 | 8.9 | 10.6 | 12.3 | 9.6 |
| China + Hong Kong | 0.7 | 1.3 | 3.2 | 4.3 | 11.4 | 7.9 | 9.5 | 11.2 | 8.6 |
| China | 0.0 | 0.0 | 1.1 | 2.0 | 9.2 | 5.7 | 6.1 | 7.7 | 5.3 |
| Hong Kong | 0.7 | 1.3 | 2.2 | 2.3 | 2.3 | 2.2 | 3.4 | 3.6 | 3.3 |
| South-East Asia (ASEAN)[5] | 4.8 | 5.2 | 5.5 | 3.8 | 7.7 | 3.7 | 2.9 | 4.3 | 3.9 |
| South Asia | 0.3 | 0.2 | 0.3 | 0.2 | 0.6 | 0.5 | 0.7 | 1.0 | 1.7 |
| | | | | | | | | | |
| **(c ) Share in inflows to developing countries** | | | | | | | | | |
| Africa and the Middle East | 30.2 | 13.9 | 8.2 | 12.8 | 5.8 | 5.4 | 7.3 | 9.4 | 9.4 |
| Latin America + Caribbean | 50.5 | 46.3 | 33.8 | 30.1 | 27.6 | 43.1 | 33.7 | 24.0 | 22.1 |
| Transition economies[4] | 0.0 | 0.0 | 0.0 | 0.0 | 3.3 | 5.4 | 9.0 | 13.1 | 18.3 |
| Developing Asia | 32.6 | 27.8 | 29.6 | 54.7 | 63.0 | 49.8 | 54.3 | 53.2 | 52.6 |
| East Asia | 8.2 | 7.2 | 11.5 | 31.6 | 37.6 | 33.7 | 40.4 | 37.0 | 33.2 |
| China + Hong Kong | 3.5 | 5.0 | 10.2 | 25.0 | 34.7 | 29.9 | 36.3 | 33.7 | 29.6 |
| China | 0.0 | 0.0 | 3.3 | 11.7 | 27.8 | 21.5 | 23.2 | 23.0 | 18.3 |
| Hong Kong | 3.5 | 5.0 | 6.9 | 13.3 | 6.9 | 8.3 | 13.0 | 10.7 | 11.3 |
| South-East Asia (ASEAN)[5] | 23.1 | 19.7 | 17.2 | 21.7 | 23.5 | 14.0 | 11.1 | 13.1 | 13.6 |
| South Asia | 1.4 | 0.9 | 0.9 | 1.4 | 1.9 | 2.1 | 2.8 | 3.1 | 5.9 |

Notes:

1 Annual averages

2 Countries in East Asia (other than Japan), Southeast Asia (ASEAN) and South Asia.

3 Based on the United Nations standards classification

4 Transition economies in Central and Eastern Europe.

5 Member countries of the Association of Southeast Asian Nations.

Source: Compiled from UNCTADT World Investment database.

**Table 9: FDI Inflows (as % of GDFCF), 1970-2006**

| | 1970-74 | 1975-79 | 1980-84 | 1985-89 | 1990-96 | 1997-99 | 2000-04 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|
| Developing Asia | 4.3 | 2.8 | 2.3 | 3.7 | 9.0 | 11.2 | 10.5 | 11.4 | 13.5 |
| East Asia | 4.9 | 2.2 | 1.7 | 3.7 | 9.2 | 11.6 | 11.2 | 10.0 | 10.1 |
| China | 0.0 | 0.0 | 0.7 | 2.5 | 14.9 | 13.3 | 9.6 | 8.8 | 8.0 |
| Hong Kong | 8.7 | 10.8 | 14.7 | 23.0 | 22.3 | 35.8 | 71.6 | 90.4 | 103.9 |
| South Korea | 5.3 | 0.6 | 0.4 | 1.2 | 0.9 | 4.6 | 3.5 | 3.0 | 1.9 |
| Taiwan | 2.5 | 1.2 | 1.2 | 3.4 | 3.4 | 2.6 | 4.0 | 2.3 | 10.3 |
| South-East Asia | 8.3 | 6.3 | 5.4 | 7.4 | 15.6 | 18.5 | 16.3 | 19.8 | 20.9 |
| Cambodia | 0.4 | 0.1 | 0.3 | 2.3 | 32.4 | 46.8 | 16.5 | 32.3 | 38.9 |
| Indonesia | 12.4 | 7.1 | 1.1 | 1.8 | 7.0 | 0.1 | -4.2 | 12.3 | 6.4 |
| Lao PDR | 2.1 | 1.0 | 0.6 | 0.6 | 35.5 | 35.6 | 8.0 | 5.8 | 37.1 |
| Malaysia | 14.4 | 13.4 | 11.9 | 8.7 | 26.7 | 17.0 | 12.7 | 15.2 | 20.1 |
| Philippines | 2.0 | 2.5 | 2.0 | 6.8 | 11.1 | 9.2 | 7.1 | 12.6 | 14.1 |
| Singapore | 17.0 | 14.6 | 20.7 | 31.7 | 44.1 | 39.7 | 56.1 | 57.6 | 79.5 |
| Thailand | 3.2 | 1.5 | 2.7 | 3.9 | 5.9 | 20.5 | 14.4 | 17.5 | 16.5 |
| Viet Nam | 0.2 | 0.2 | 2.6 | 0.6 | 45.8 | 26.4 | 12.2 | 11.5 | 12.5 |
| South Asia | 0.4 | 0.3 | 0.3 | 0.4 | 2.2 | 3.5 | 4.0 | 4.4 | 9.3 |
| Bangladesh | 0.1 | 0.2 | 0.1 | 0.0 | 0.8 | 4.7 | 3.3 | 4.6 | 3.9 |
| India | 0.4 | 0.2 | 0.1 | 0.3 | 1.7 | 3.0 | 4.0 | 3.6 | 8.7 |
| Nepal | 0.1 | 0.0 | 0.0 | 0.2 | 0.7 | 1.3 | 0.5 | 0.2 | -0.4 |
| Pakistan | 0.6 | 0.6 | 1.0 | 1.4 | 4.8 | 5.0 | 5.1 | 13.1 | 24.1 |
| Sri Lanka | 0.1 | 1.1 | 3.2 | 2.2 | 5.9 | 6.7 | 4.9 | 4.4 | 6.2 |
| Memorandum items | | | | | | | | | |
| World | 2.2 | 1.9 | 2.4 | 3.5 | 6.0 | 11.7 | 11.7 | 10.4 | 12.6 |
| Developed countries | 2.0 | 1.7 | 2.2 | 3.6 | 5.2 | 11.1 | 11.2 | 9.3 | 11.8 |
| Developing countries | 3.3 | 2.3 | 2.9 | 3.3 | 9.1 | 13.5 | 12.6 | 12.6 | 13.8 |

Notes

1 Annual averages

2 East Asia (excluding Japan) + Southeast Asia + South Asia.

3 Based on the United Nations standard classification

4 Transition economies in Central and Eastern Europe

Source: Compiled from UNCTADT World Investment database

**Table 10: FDI Outflows, 1970-2006**

| | 1975-79[1] | 1980-84[1] | 1985-89[1] | 1990-96[1] | 1997-99[1] | 2000-04[1] | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|
| **(b) Outflow, US$ million** | | | | | | | | |
| Asia | 2245 | 5226 | 30205 | 54219 | 65237 | 85782 | 110114 | 153280 |
| Japan | 2134 | 4279 | 23758 | 25008 | 24296 | 32385 | 45781 | 50266 |
| Developing Asia[2] | 111 | 947 | 6446 | 29211 | 40941 | 53397 | 64333 | 103014 |
| East Asia | 19 | 542 | 5868 | 22513 | 31544 | 41209 | 49836 | 74099 |
| China + Hong Kong | | 416 | 2656 | 17209 | 22577 | 31608 | 39463 | 59589 |
| China | | 54 | 671 | 2322 | 2324 | 3734 | 12261 | 16130 |
| Hong Kong | | 361 | 1985 | 14887 | 20253 | 27873 | 27201 | 43459 |
| South Korea | 16 | 81 | 715 | 2246 | 4462 | 3624 | 4298 | 7129 |
| Taiwan | 4 | 45 | 2384 | 3049 | 4500 | 5979 | 6028 | 7399 |
| South-East Asia | 92 | 403 | 649 | 6626 | 9285 | 10613 | 11918 | 19095 |
| Indonesia | | 4 | 15 | 914 | 98 | 815 | 3065 | 3418 |
| Malaysia | | 244 | 229 | 1438 | 1653 | 1526 | 2972 | 6041 |
| Singapore | 0 | 47 | 29 | 158 | 143 | 186 | 189 | 103 |
| Thailand | 90 | 106 | 325 | 3621 | 7024 | 7796 | 5034 | 8626 |
| South Asia | | 2 | 43 | 72 | 112 | 1575 | 2579 | 9820 |
| India | | 3 | 6 | 66 | 80 | 1529 | 2495 | 9676 |
| | | | | | | | | |
| **(b) Geographic composition of global outflows** | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Developed countries[3] | 98.5 | 94.8 | 93.3 | 86.3 | 91.2 | 88.4 | 84.4 | 84.1 |
| Japan | 5.7 | 9.7 | 16.7 | 9.3 | 3.2 | 4.1 | 5.5 | 4.1 |
| Developing countries[3] | 1.5 | 5.2 | 6.7 | 13.5 | 8.4 | 10.7 | 13.8 | 14.3 |
| Africa | 0.5 | 1.2 | 0.3 | 0.6 | 0.3 | 0.1 | 0.3 | 0.7 |
| Latin America + Caribbean | 0.6 | 1.4 | 1.1 | 2.0 | 2.7 | 3.7 | 4.3 | 4.0 |
| Developing Asia[2] | 0.3 | 2.1 | 4.5 | 10.8 | 5.4 | 6.7 | 7.7 | 8.5 |
| East Asia | 0.1 | 1.2 | 3.7 | 8.3 | 4.1 | 5.2 | 6.0 | 6.1 |
| China + Hong Kong | | 0.9 | 1.9 | 6.4 | 3.0 | 4.0 | 4.7 | 4.9 |
| China | | 0.1 | 0.5 | 0.9 | 0.3 | 0.5 | 1.5 | 1.3 |
| South-East Asia | 0.2 | 0.9 | 0.5 | 2.5 | 1.2 | 1.3 | 1.4 | 1.6 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| South Asia | | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.3 | 0.8 |
| **(b) Geographic composition of outflows from developing countries** | | | | | | | | |
| Africa | 33.0 | 22.9 | 4.8 | 4.6 | 4.1 | 0.5 | 2.0 | 4.7 |
| Latin America and the Caribbean | 41.2 | 26.0 | 16.9 | 14.7 | 31.7 | 34.8 | 30.9 | 28.2 |
| | | | | | | | | |
| Developing Asia[2] | 19.5 | 41.0 | 67.8 | 80.3 | 63.6 | 62.9 | 55.5 | 59.1 |
| East Asia | 3.4 | 23.5 | 55.8 | 61.9 | 49.0 | 48.5 | 43.0 | 42.5 |
| China + Hong Kong | | 18.0 | 27.9 | 47.3 | 35.1 | 37.2 | 34.1 | 34.2 |
| China | | 2.3 | 7.1 | 6.4 | 3.6 | 4.4 | 10.6 | 9.2 |
| South-East Asia | 16.1 | 17.4 | 6.8 | 18.2 | 14.4 | 12.5 | 10.3 | 10.9 |
| South Asia | | 0.1 | 0.5 | 0.2 | 0.2 | 1.9 | 2.2 | 5.6 |

Notes

1 Annual averages

2 East Asia (excluding Japan) + Southeast Asia + South Asia.

3 Based on the United Nations standard classification.

**Table 11: Source-country Composition of FDI Inflows into Selected Asian countries, 2001-05**

| Source Countries | ASEAN | | | | | | | | India[1] | China[2] |
|---|---|---|---|---|---|---|---|---|---|---|
| | Indonesia | Malaysia | Philippines | Singapore | Thailand | Vietnam | Other | Total | | |
| Japan | 24.9 | 9.8 | 21.2 | 13.7 | 23.3 | 19.6 | 1.7 | 15.6 | 8.2 | 11.0 |
| China | -0.8 | 0.5 | 2.8 | 0.5 | --- | 4.4 | 1.2 | 0.6 | --- | 0.0 |
| Hong Kong | 0.1 | 1.0 | 4.4 | 1.9 | 7.2 | 0.8 | 1.1 | 3.6 | 0.6 | 40.5 |
| Taiwan (ROC) | -0.6 | 2.2 | 1.9 | 1.9 | 2.8 | 22.8 | 0.1 | 3.0 | 0.2 | 6.9 |
| Korea, South | 8.6 | -0.4 | 2.2 | 0.3 | 0.6 | 15.7 | 1.9 | 1.6 | 4.6 | 8.6 |
| ASEAN | 3.2 | 19.7 | 9.5 | 4.3 | 13.7 | 19.4 | 30.8 | 10.7 | 3.7 | 5.7 |
| Indonesia | --- | 1.0 | 0.4 | 1.3 | 0.1 | 0.9 | 0.3 | 0.8 | --- | --- |
| Malaysia | 1.8 | --- | 0.7 | 1.7 | 0.5 | 3.2 | 4.0 | 1.5 | 1.8 | 0.7 |
| Philippines | --- | 0.5 | -- | 0.2 | 0.1 | 0.0 | 0.2 | 0.2 | 0.0 | --- |
| Singapore | -1.1 | 16.7 | 8.2 | --- | 12.9 | 12.5 | 22.7 | 7.0 | 1.9 | 5.0 |
| Thailand | 3.2 | 0.1 | 0.2 | 0.9 | --- | 2.8 | 4.2 | 1.0 | --- | --- |
| India | 0.1 | -0.1 | --- | 0.3 | --- | --- | 1.2 | 0.2 | --- | --- |
| | | | | | | | | | | |
| EU | 78.1 | 23.5 | 16 | 29.1 | 12.9 | 2.6 | 53.6 | 25.7 | 28.3 | 8.5 |
| USA | -31.9 | 44.0 | 26.1 | 19.0 | 14.2 | 1.0 | 6.2 | 17.2 | 13.6 | 9.8 |
| Canada | 5.5 | -0.9 | --- | 4.0 | 0.1 | 0.4 | 0.2 | 2.0 | --- | 1.1 |
| Australia | -8.3 | 0.9 | 0.8 | 2.3 | 0.9 | 4.8 | 1.0 | -1.0 | --- | 1.0 |
| New Zealand | --- | 0.1 | --- | --- | --- | 8.5 | 1.6 | 0.1 | --- | --- |
| Other countries | 4.0 | -0.9 | 20.2 | 10.1 | 20.8 | 10.7 | 0.2 | 12.5 | 38.1[3] | 6.9 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Note: 1 Date for 2000-04 2 Date for 2001-06 --- Zero or negligible

3 Includes investment by non-resident Indians and possibly considerable amount of local private investment 'round-tripped' via Mauritius.

Source: Compiled from ASEAN Secretariat, ASEAN Statistical Yearbook (http://www.aseansec.org/pdf/ASEAN_Statistical2003.pdf , CIEC database (China), and The Indian Investment Office website at http://iic.nic.in/iic2_c01.htm.

**Table 12: MNE Involvement in Manufactured Exports and Selected Export Performance Indicators in Developing Asian Countries[1]**

| Country | Period | MNE share in exports (MNEXS)[2] (%) | World market Share (WMSH) (%)[3] | Nature of export composition of MNE affiliates by the late 1990s[4]. |
|---|---|---|---|---|
| (1) | (2) | (3) | (5) | (7) |
| Hong Kong | 1970-74 | 10.0* | 0.52 | Mostly B2.1 and B3, with the latter |
| | 1980-84 | 13.8* | 1.10 | Increasing rapidly in recent years. |
| | 1985-89 | 16.0 | 1.19 | |
| | | | | |
| South | 1970-74 | 19.3* | 0.93 | B3.1 and B3.2. with the latter |
| Korea | 1975-79 | 25.0* | 1.07 | Increasing rapidly in recent years |
| | 1980-84 | 25.8* | 1.65 | |
| | 1985-89 | 26.1* | 2.30 | |
| | | | | |
| Taiwan | 1975-79 | 36.7 | 1.13 | 2.3a and 2.3b, with the latter |
| | 1980-84 | 27.9 | 1.76 | Increasing rapidly in recent years |
| | 1990-94 | 19.7 | 2.61 | |
| | 2000-04 | 10.1 | | |
| | | | | |
| Singapore | 1970-74 | 70.0 | 0.78 | 2.3a and 2.3b. 2.3a still dominates, but |
| | 1980-84 | 74.9 | 1.35 | there as been a continuing shift from |
| | 1990-94 | 85.2 | 2.16 | 2.3a to 2.3b since about the mid-1980s |
| | 2000-04 | 89.1 | 1.52 | |
| | | | | |
| China | 1985-89 | 5.3 | 1.49 | Predominantly B2 and B3.2, with some |
| | 1990-94 | 24.3 | 2.44 | Increase in B3.1 recently |
| | 2000-04 | 53.16 | 9.55 | |
| | 2005 | 58.30 | 13.12 | |
| | | | | |
| Indonesia | 1990-94 | 28.5 | 0.62 | Predominantly B2, with some increase |
| | 1995-99 | 38.5 | 0.67 | In B3.1 recently |
| | 2000-04 | 45.3* | 0.68 | |
| | | | | |
| Malaysia | 1975-79 | 65.2 | 0.40 | Predominantly B3.1a, with some |
| | 1985-89 | 75.6 | 0.59 | (but diminishing) involvement in B3.2. |
| | 1990-94 | 78.1 | 1.11 | |
| | 2000-04 | 86.13 | 1.89 | |
| | 2005 | 87.80 | 1.85 | |
| | | | | |
| Philippines | 1985-89 | 49.9* | 0.16 | Predominantly B3.1, with a small and |
| | 1990-94 | 47.6* | 0.21 | diminishing share of B3.2 . |
| | 2000-04 | 85.7* | 0.07 | |
| | | | | |
| Thailand | 1970-74 | 11.4* | 0.15 | B1, B2, B3.1 and B3.2, with the latter |
| | 1980-84 | 13.5* | 0.33 | two increasing rapidly in recent years. |
| | 1990-94 | 50.4* | 0.91 | |
| | 1995-99 | 62.6* | 1.11 | |

| | | | | |
|---|---|---|---|---|
| Vietnam | 1990-94 | 12.0 | 0.05 | Predominantly B1 (mostly seas food) |
| | 1995-99 | 39.2 | 0.12 | and B2, with a small, but increasing, |
| | 2000-04 | 48.6 | 0.20 | share of B3.1. |
| | 2004-06 | 56.9 | 0.28 | |
| | | | | |
| India | 1970-74 | 5.0 | 0.50 | A wide range of 1, with some minor |
| | 1980-84 | 8.7 | 0.40 | increase in B2 and B3.1 |
| | 1990-94 | 4.6 | 0.53 | |
| | 2000-04 | 4.6* | 0.82 | |
| | | | | |
| | | | | |
| Sri Lanka | 1975-79 | 25.7* | 0.01 | Predominantly B2, and some B1 (mostly |
| | 1980-84 | 42.8 | 0.03 | ceramics and rubber goods) and B3.1 |
| | 1990-94 | 63.5 | 0.05 | |
| | 2000-04 | 43.2 | 0.08 | |
| | 2005 | 36.3 | 0.07 | |

*Notes*

1 In all cases manufactured exports have been measured using the ISIC-based definition (i.e. all goods belonging to Division 3 of the International Standard Industry Classification) or an approximation to it. Figures reported are five-year averages unless otherwise indicated.

2 Annual averages.

3 Figures marked with asterisk are for a single year or some years falling within the given five year period. For details see the Appendix.

4 Product categories listed in Column 7:

- A Exports by market-seeking MNE affiliates: product mix varies depending on the nature of import-susbtitution policy regime, domestic market size, export incentives and export performance requirements imposed by the government.
- B Exports by efficiency-seeking (export-oriented) MNE affiliates.
- B1 Resource-based manufacturing – Local processing of primary products previously exported in raw state
- B2 Standard consumer goods – clothing, shoes, sporting goods.
- B3 Assembly activities within vertically integrated production systems
- B3.1 Parts and component assembly : : parts of electronic and electrical machinery, motor vehicle parts etc.
- B3.2 Final assembly: computers, cameras, motor vehicles etc

*Source*: Athukorala (2007), Chapter 3 (updates using the same data source detailed therein)

**Figure 1: Asia's Share in World Manufacturing Exports**

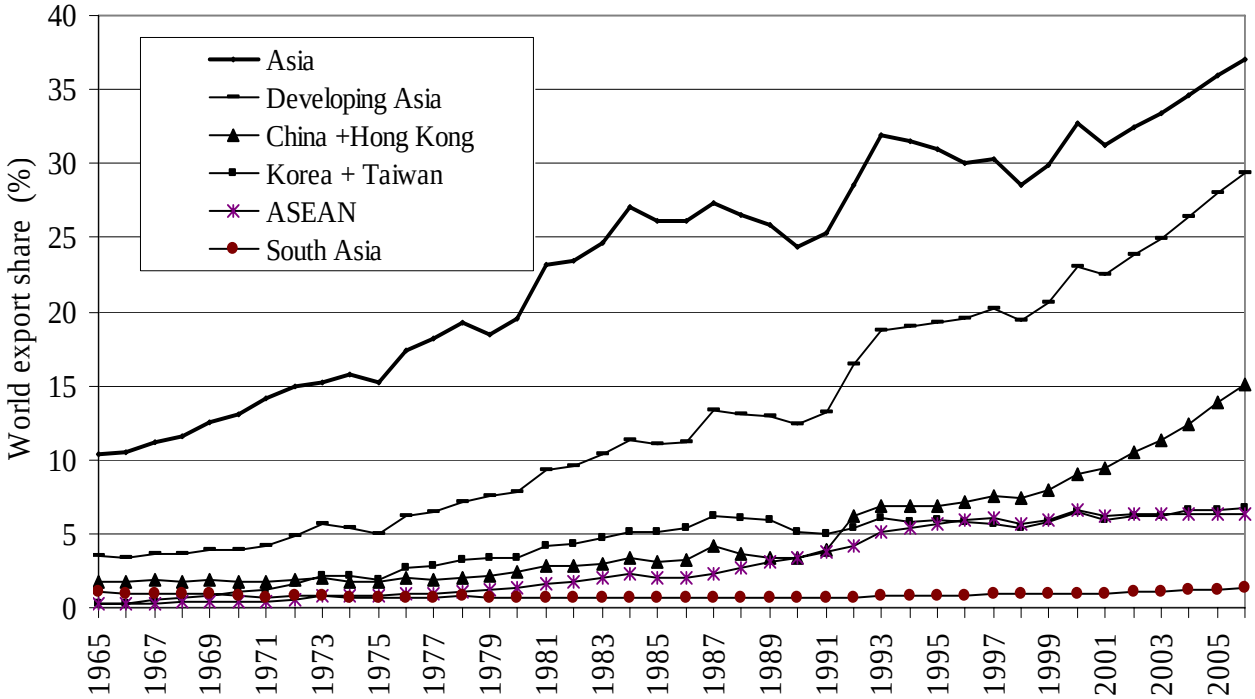
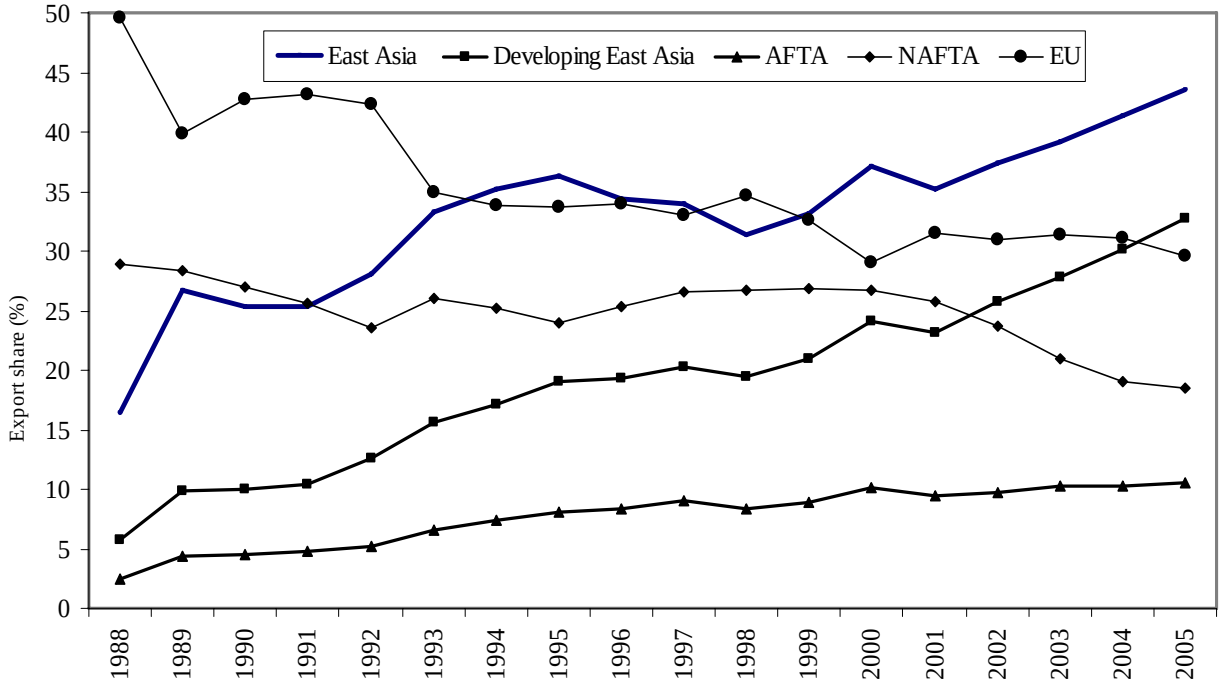
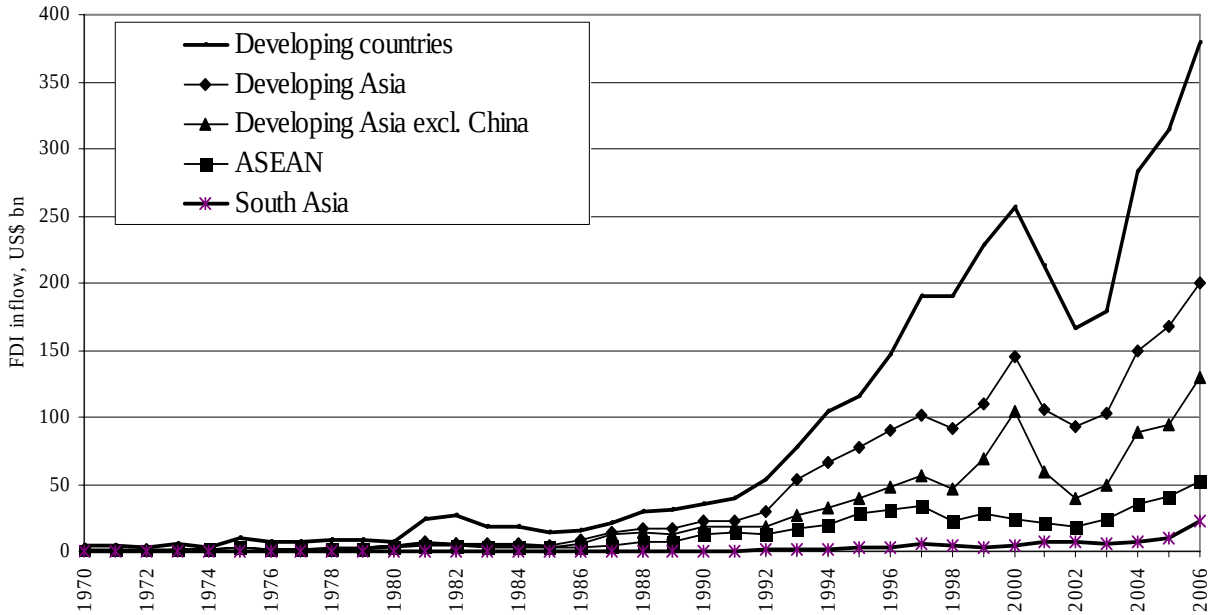



**Figure 2: Share of Parts and Component in Manufacturing Exports by Region, 1988-2005 (%)**



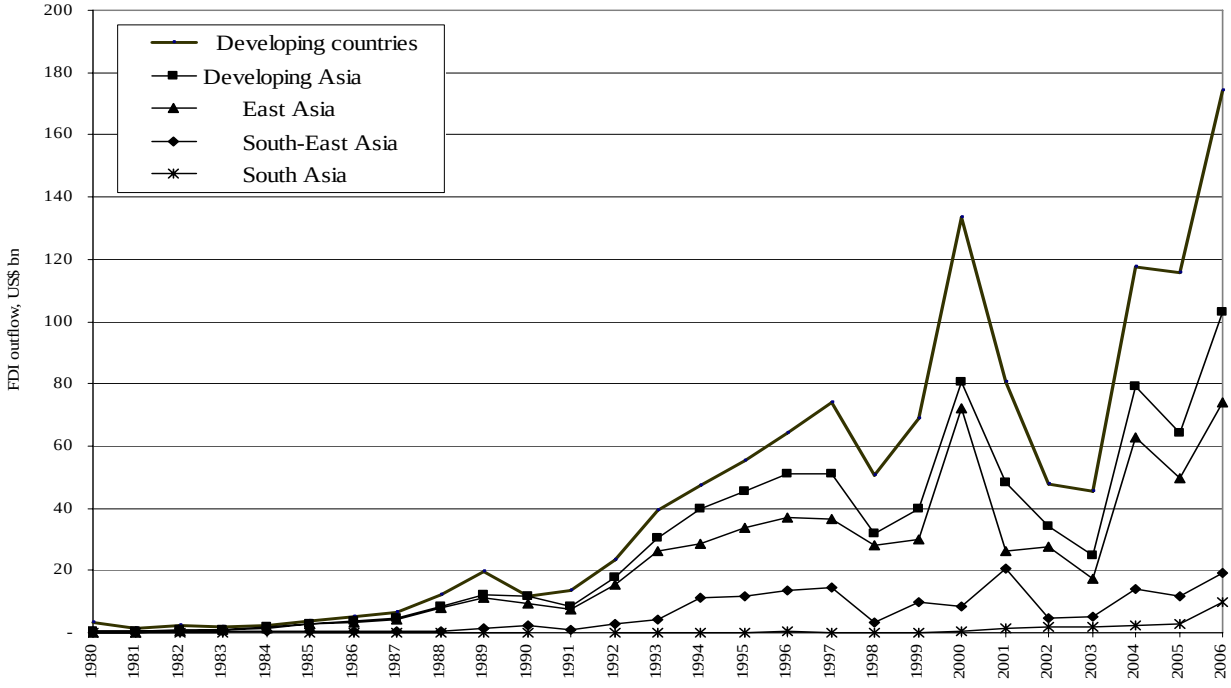

Source: Based on data compiled from Comtrade database (exporter records)

**Figure 2: FDI Inflow, 1970-2006 (US$ billion)**




Source: UNCTAD, World Investment database

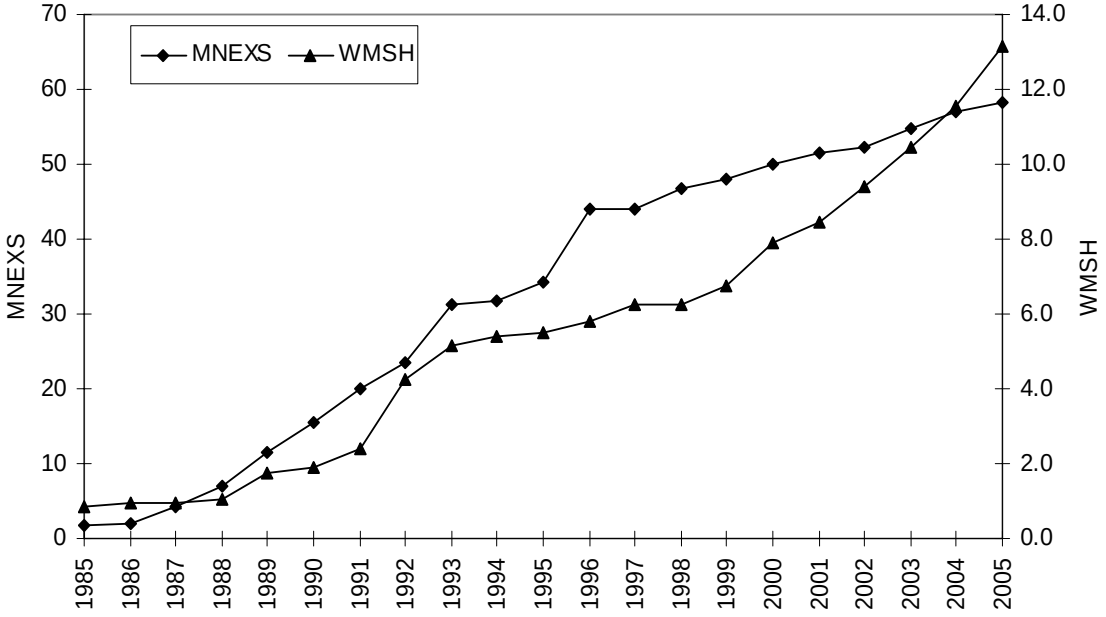
**Figure 3: FDI Outflow, 1980-2006 (US$ billion)**



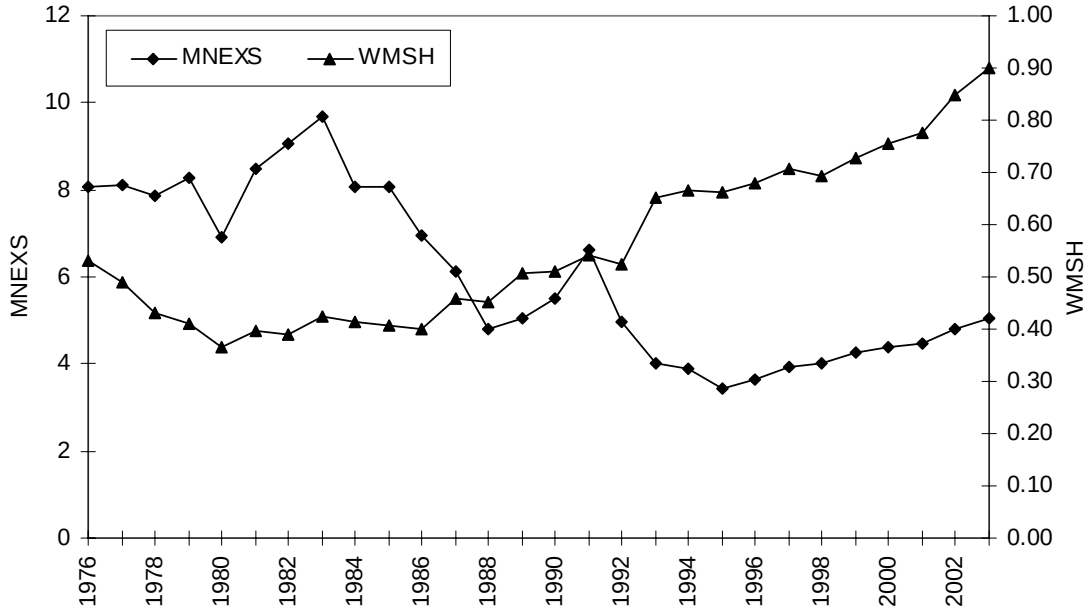

Source: UNCTAD, World Investment database

**Figure 4: The role of MNE affiliates in Manufacturing Exports from China, India, Malaysia, Singapore, Sri Lanka and Vietnam (MNE share in exports (MNEXS, country share in world exports (WMSH) and characteristics of MNE production)**

(a) China




(b) India




Notes: MNEXS Share of MNE affiliates in total manufacturing exports
WMSH Share in world manufacturing exports (of the given country)

Source: As for Table 12