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Asian Trade: Long-Term Patterns and Key Policy Issues

Prema-chandra Athukorala

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Hal Hill

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Prema-chandra Athukorala

and

Hal Hill

The Arndt-Corden Division of Economics
College of Asia and the Pacific
The Australian National University

Corresponding Address :
Prema-chandra Athukorala
Hal Hill
The Arndt-Corden Division of Economics
College of Asia and the Pacific
The Australian National University
Canberra ACT 0200
Email: prema-chandra.athukorala@anu.edu.au
hal.hill@anu.edu.au

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Asian Trade: Long-Term Patterns and Key Policy Issues

Prema-chandra Athukorala

Hal Hill

Arndt Corden Division of Economics
College of Asia and the Pacific
Australian National University
prema-chandra.athukorala@anu.edu.au
hal.hill@anu.edu.au

Abstract: This paper offers an analytical interpretation of Asian trade patterns since the late 1960s, in the context of three general, conditioning factors: rapid growth and structural change, host country commercial policy environments, and institutional and technological factors governing global trade and investment patterns. Highlighting the diversity of trade structures and export performance across Asia, the paper documents the successive waves of policy reforms leading to the adoption of export-oriented strategies first in Japan and the four NIEs, then the ASEAN Four, followed by China and the Indo China states, and most recently India. Particular attention is paid to the rapidly growing phenomenon of 'international production fragmentation', that is, the geographic separation of activities involved in producing a good (or service) across two or more countries, and its implications for both the analysis of trade flows and trade policy. Our analysis of China's rise as a global trading giant demonstrates that the alleged fears of China 'crowding out' small, latecomer exporters are overstated, as is the associated notion of 'export pessimism'. Finally, notwithstanding India's recent rapid growth, the comparative analysis highlights the small scale of its international trade, as compared to East Asia in general and China in particular.

JEL classification: F10, F11, O24

Key words: Asia, China, India, trade patterns, production fragmentation

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1) Introduction

Since the 1970s Asia, and particularly East Asia, has achieved the fastest rates of economic growth, structural transformation and commercial integration of any region in the world. Several countries have lifted themselves from dire poverty to OECD living standards, while several more are confidently moving along this trajectory, a process likely to be only temporarily disrupted by the current global financial crisis. The region is characterized by enormous diversity but, from very different starting points and at different rates, all countries have become more open. Fortunately, discriminatory trading arrangements have been slower to develop in Asia, and therefore this commercial integration has been overwhelmingly market driven.

By 1970, only Japan and the four Asian NIEs, all resource-poor economies, had decisively and successfully adopted outward-looking development strategies. By 1980, the ASEAN Four had begun to embark down this path, with Malaysia a clear leader, followed by Thailand. By 1990, almost all of East Asia had enacted major trade and investment liberalizations. Led by Japan, the five more advanced Asian developing economies had begun to graduate quickly out of the earlier specialization in labour-intensive manufactures, in the process opening up major new export opportunities for follower countries, especially those with open trade and investment regimes. China was now emerging as a major international actor. The changes were occurring more slowly in South Asia, with Sri Lanka by far the fastest liberalizer. Moreover, major non-Asian developing country exporters had emerged, such as Brazil, Chile and Mexico in the Americas, and Mauritius in ‘Africa’. But the main focus of the world in the early 1990s was on the ‘East Asian Miracle’ (World Bank 1993), comprising the seven mostly small-medium economies of the region.

East Asia has continued to be the world's major engine of export growth, with what turned out to be a relatively minor interruption, in aggregate, from the Asian economic crisis. China has emerged as the fastest growing exporter and a major hub for international production networks, overtaking the now slow-growth Japan in that role. India has begun to liberalize and grow rapidly for the first time in its independent history. Its trade growth has begun to accelerate, albeit relatively slowly compared to China, and from a very low base. Bangladesh and Vietnam have become significant exporters for the first time, as have some of the faster reformers in Eastern Europe. These trends continued into the first decade of the 21st century. China's historically rapid transformation, underpinned by its accession to the WTO, has reinforced its position as the region's and the world's principal export growth engine (Garnaut and Song, eds, 2006). The East Asian Miracle of the early 1990s has morphed into the Asian Miracle, and the world now has to 'dance' with the two Asian giants (Gill and Kharas, 2007). If the two decades from 1980 led to the widespread use of the tem the 'Pacific Century', the period since 2000 has come to be labeled the 'Asian Century'. Inevitably, the current global financial crisis has interrupted this process, as export-dependent economies with weaker financial sectors have been severely affected. However, it is unlikely that this process of rapid growth and increasing international integration will be permanently derailed.

Inevitably, the rise of large, export-oriented economies imposes strains on the international trading system, and it may provoke a backlash from established trading nations. It may also lead to a misunderstanding of the processes and implications of these patterns, and hence the danger that inappropriate policy responses could harm the global public good of an open international trade and investment system, and choke off the historic process of poor countries growing out of poverty.

The aim of this paper is to examine and offer an analytical interpretation of trade patterns, in the context of three general, conditioning factors: rapid growth and structural change, host country commercial policy environments, and institutional and technological factors governing global trade and investment patterns. We also document emerging developments in world trade and their implications for national development policy making and regional economic cooperation initiatives.

It is important to examine these trade flows over a reasonably long period of time. The rates of growth and structural change have been rapid, and there have been successive waves of policy reform, some incremental, others 'big bang'. We conduct the analysis on a decade-by-decade basis. Such a periodization fits reasonably conveniently with the timing of growth dynamics and the waves of reform referred to above. We define 'Asia' 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).[1] Developing Asia (DA) refers to South and East Asia except Japan.

A key theme running through 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. While the cross-border exchange of parts and components (which we refer to as 'fragmentation trade') is now a global phenomenon, there is clear evidence that it is far more important for economic growth and structural transformation in East Asia than elsewhere. Intra- and extra-regional patterns of fragmentation trade and trade in related final goods (referred to as 'final trade') are unlikely to follow the same geographic patterns. Therefore, trade shares as conventionally defined can lead to misleading inferences, both concerning the relative importance of countries and regions and also their growth dynamics. Among other issues canvassed, we also comment 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.

This paper is organized as follows. In section 2 we briefly develop a framework that guides the subsequent analysis. We argue that the key factors shaping countries' participation in the global economy are openness to trade and investment, together

[1] For expositional convenience, the term 'Developing' is retained, even though of course several East Asian economies now have OECD-level incomes. Note also that, as always in these exercises, although Singapore is geographically part of Southeast Asia, it arguably belongs to the four NIEs in some analytical sense. We have left it in Southeast Asia since it continues to be the region's trading hub.

with complementary inputs such as swift and efficient logistics provision that enable firms to connect to international production and buying networks. Next, in section 3, the major part of the paper, we examine 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, as well as highlighting the growing importance of 'network trade'. Section 4 summarizes our arguments and draws out some general inferences.

2) The Policy Environment

This section develops an analytical framework that attempts to explain comparative export performance and composition. That is, the 'dependent variables', discussed in greater detail in the next section, are export growth rates, or global trade shares, and export composition, particularly the extent to which a country has become enmeshed in global production networks.

Our framework identifies three broad sets of policy measures and outcomes. The first is openness to international trade and investment. This is the most important, and an obvious pre-requisite for participation in the global economy. Trade openness is usually measured either as a 'revealed' or policy variable. The former is typically 'trade orientation' measured as exports or total trade (exports + imports) as a percentage of GDP, while the latter is measured by average tariff rates, the dispersion in these averages, and the extent of NTBs. A more sophisticated measure, rarely available for cross-country purposes, is effective rates of protection. There are also various general indicators of trade openness, either in the form of international rankings or simply binary (0/1) classification. The best known of these is the Sachs-Warner (1995) index.[2]

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[2] The index classifies the post war trade policy history of a given country into two sub-periods (closed-economy = 0 and open-economy = 1) based on the timing of sustained trade opening. See Table 2, Note 1 for the criteria used in identifying the year of demarcation. The original Sachs-Warner classification covered 100 countries (78 developing and 22 developed countries) over the period 1945 to 1994. Wacziarg and Welch (2003) have updated the classification to 2000, while expanding the coverage to 131 countries.

All these measures have their shortcomings. The caveats associated with the use of trade/GDP ratios are well known: it is a comparison between a net and a gross concept; trade is measured in gross terms (intermediate material inputs + value added) whereas GDP is essentially measured on a value-added basis (that is, net of intermediate material inputs). Thus, the measured change in trade orientation is sensitive to changes in import intensity of export production. As we will see later in this paper, over the past decade there has been a palpable shift in the export composition away from primary products and towards labour intensive light manufacturing and, more recently, the ongoing process of international production fragmentation — breaking the production process in to many geographically separated steps—within high-tech industries.[3] The increase in measured trade orientation could partly reflect the fact that these new product lines are relatively more import-intensive compared to the former. Another limitation for cross-country comparisons is that the ratios need to be adjusted for size, in recognition of the fact that small countries by definition will trade more than larger ones.

Tariff rates can be used to compare trade openness across countries when there is little reliance on NTBs. However, the presence of NTBs greatly complicates the analysis. Tariff rates may also vary considerably, depending on whether applied or bound rates are used, or 'effective rates'.[4] Trade policy comparisons also need to allow for partial reforms. Most countries attempt to compensate exporters for duties paid on imported inputs. These typically take the form of duty exemptions or drawbacks, or the establishment of export processing zones. These compensating interventions are rarely incorporated into international comparisons. The Sachs-Warner classification of open and closed economies has the attraction of a clear analytical foundation, a long time series, and comprehensive country coverage. However, it is a somewhat blunt characterization of liberalization status. Given the complexity of economic policy reforms, a binary classification of liberalization status naturally involves a significant element of subjectivity (Rodriguez and Rodrik, 2000).

[3] In the recent literature on international trade, an array of alternative terms have been used to describe this phenomenon, including 'international production fragmentation', 'vertical specialization', 'slicing the value chain' and 'outsourcing'.

[4] That is, total customs revenue as a percentage of the total value of imports.

Bearing these caveats in mind, we employ average tariffs, the Sachs-Warner index, and the export/GDP ratio, which together enable us to assert with reasonable confidence whether an economy is broadly open. Table 1 shows average tariff rates since 1980 for 16 Asian economies. Several key conclusions are evident. First, there is a universal trend towards lower tariffs, with the apparent exceptions of Nepal and Vietnam to be discussed shortly. In some countries, the declines have been very large, more than halving since the 1980s in India, China, the Philippines, Thailand, Taiwan, Japan and Korea. Where these declines have clearly been accompanied by falling NTBs, as for example in the Philippines, the trade liberalizations have been very significant. In comparative terms, average Asian tariff levels are clustered around developing country norms, indicating that other regions have essentially caught up to Asia in this respect.

Table 1 about here

Second, within Asia, the East Asian economies are generally more open than those of South Asia. In 2004, India and Pakistan had the highest average tariffs, with the Indian figure being three times that of China. Within East Asia, there is no significant north/south divide. Hong Kong and Singapore have of course always had negligible protection. The others mostly range up to 10%. Importantly, though not adequately recorded here, the East Asian economies were much quicker than those of South Asia (with the partial exception of Sri Lanka) to adopt partial reforms that enabled exporters to operate on an effective free-trade footing.

Third, the figures for the late reformers need to be interpreted with caution. For example, the absence of any major change in Vietnam's average conceals the fact that the process of formal tariffication commenced only in the mid 1990s, and that the major trade policy reforms have (appropriately) entailed a shift from NTBs to tariffs (Athukorala, 2006d). In the case of Myanmar, the low tariffs mean little when the state interferes extensively in most aspects of commercial life and when there is extensive smuggling.

Table 2 depicts the patterns and chronology of liberalization status of Asian countries based on the Sachs-Warner classification. According to this classification

Hong Kong, Malaysia, Singapore and Thailand have always remained open throughout the post war era. Japan, Korea and Taiwan completed the transition from closed to open trade regimes by the 1960s. By the turn of the century (the end point of time coverage of Wacziarg and Welch 2003), only China and Myanmar (and Laos, Cambodia and Vietnam, which are not covered in the classification) remained 'closed'. Among these countries, China and Vietnam have undertaken significant tariff cuts (Table 1) and dismantled most NTBs and restrictions on foreign exchange dealings on current account transactions in the ensuing years (Naughton 2007, Athukorala 2006d). Consequently, from about 2005 the 'socialist economic system' characterization remains the only Sachs-Warner closed-economy criterion applicable to these countries. Laos and Cambodia too have undertaken significant trade reforms in recent years, bringing average tariffs and NTB coverage well below 40%. However, residual elements of the back market premium remain.[5]

Table 2 about here

The standard revealed openness measure, the export/GDP[6] ratio, is reported in Table 3. The inter-country differences and the time profile revealed by this measure are broadly consistent with those we have already observed. However, as we have already noted, the usefulness of this measure in its own right as an indicator of trade openness is limited because, by construct, it is driven by structural shifts in production and trade patterns. Of particular relevance in this connection is the ongoing process of international production fragmentation, which involves small value added additions at various stages of the production process of a given final good in various countries, thus resulting in inflated trade values relative to GDP. Even in small countries, at least 60% of GDP is generated by non-tradable sectors. Thus an export share of much more than 30- 40% can arise only when export production involves adding fairly small amounts of value to imported inputs (Krugman 1995, p. 335).

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[5] These observations on Laos and Cambodia are based on country economic profiles in various issues of Asian Development Bank, Asian Development Outlook. See also Fane (2006) on Lao trade policy.

[6] Exports are generally regarded as preferable to total trade (or imports) as the numerator in calculating this ratio because restrictiveness of a given country's policy regime is presumably better captured by export performance.

Table 3 about here

Three additional general points on openness to foreign trade are relevant. First, it is important not to lose sight of historical dimensions. Japan, Korea and to a lesser extent Taiwan (though not Hong Kong and Singapore) based their development strategies on 'neo-mercantilist principles', involving a single-minded projection of national firms into foreign markets combined with import substitution in protected domestic markets. This approach was feasible as long as these countries were relatively few in number and their market shares in other countries remained small. Moreover, the global geo-strategic environment was also supportive: such a strategy was tolerated in this cold-war era by the then dominant USA. But such an approach is no longer feasible in a world of many and large developing country exporters, and in the absence of the earlier strategic imperatives. It is also incompatible with contemporary broad-based multilateral trade arrangements under the WTO (Lee and Roland-Host, 1998).

Second, historically Asia has not been enthusiastic towards preferential trading agreements (PTAs). Until recently, the only functioning PTA in the region was the ASEAN Free Trade Agreement, and its predecessors. In any case, AFTA has been mild in its impacts, owing to relatively liberal rules of origin, many of the concessions being multilateralized, and rapidly diminishing margins of preference in the face of unilateral liberalizations. However, in the 1990s, the advent of the European Union and the rise of regionalism in North America led to some rethinking in the region. More recently, the aggressive promotion of PTAs, particularly by the US, has begun to undermine this commitment to unilateral liberalization, with potentially damaging consequences. The proliferation of PTAs has now become arguably the major trade policy issue in the region.[7]

Third, trade and foreign direct investment (FDI) liberalization have generally gone hand in hand, and there are obvious synergies between the two. However, the progress towards more open foreign investment regimes has been slower, reflecting the more complex political economy equations, and the lingering attraction of the so-

[7] See Baldwin (2006), Bhagwati (2007) and Plummer (2007) for discussion of these issues.

called 'Japan model' of export-oriented industrialization with a restrictive FDI posture (Hill, 2008). In the 1970s, only three economies – the two city states and Malaysia – had unambiguously open FDI regimes. Indonesia appeared to be quite open, owing to its large resource-based FDI. In the 1980s, Southeast Asia remained the most open region and South Asia the most restrictive (except for Sri Lanka). Thailand and the Philippines became significant recipients. Inflows to China were growing, but still relatively small. India remained essentially off-limits to FDI. The 1990s marked a turning point, when several countries liberalized and global flows increased. Significantly, these liberalizations survived the Asian economic crisis, although in Indonesia political turbulence deterred investors for half a decade. China suddenly became very open, while India began to open up very gradually. The three Indo China states also became much more open to FDI.[8]

Openness to trade and investment is a necessary but not sufficient condition for successful global economic integration. Equally important is the overall business environment. International competitiveness requires high quality infrastructure, both hard and soft, especially for successful participation in time-sensitive global production and purchasing networks. Labour markets need to reflect underlying supply and demand conditions, with wage growth and differentials driven by productivity. Prudent macroeconomic management is required to provide a stable and predictable commercial policy environment, and to ensure that exchange rate outcomes do not impair competitiveness. Above all, political stability and policy certainty figure prominently among prerequisites for profitable long-term investment, particularly for MNEs.

In recent years there have been various attempts to build databases on the business environment based on investor surveys or other subjective assessments of a large number of countries. Table 4 shows the rankings of the Asian countries in one of these, the *Doingbusiness* database of the World Bank, which has the widest country coverage.[9] The data confirm the superiority of East Asia over South Asia, with the four Asian NIEs together with Malaysia and Thailand ranking higher; the two city-

[8] See Lindblad (1998), Hill (2004) and Athukorala (2007).

[9] Data are given only for the latest year for which the survey results are available. There has not been a significant change in the ranking of individual Asian countries since the commencement of survey in 2004.

states have the highest ranking. China ranks ahead of India by a wide margin. The differences between Northeast and Southeast Asia are not significant. Nevertheless, this ranking exercise is at best indicative and it also presumably reflects the development paradigms of the institution preparing the data. Communist states such as China and Vietnam fare poorly, in spite of the sweeping reforms of the past two decades, and even when they are obviously commercially attractive to foreign investors. Moreover, any raking exercise of this nature naturally tends to overlooks East Asia's early mover advantage, in which MNEs became deeply embedded in the region's economy well before other developing regions.

Table 4 about here

There is a large literature on macroeconomic management in the major Asian economies.[10] Although this literature is beyond the scope of this paper, it is important to highlight the principal conclusion from it, namely that macroeconomic policy regimes in East and Southeast Asia have been largely consistent with their commitment to an outward-oriented development strategy. None of the countries in the region has experienced episodes of hyperinflation and massive exchange rate misalignment, unlike countries in Latin America and Africa. Indonesia and Malaysia are notable among resource-rich developing countries in the world for managing resource booms well rather than becoming victims of the 'resource curse' (Collier 2007, Gelb and Associates, 1987).

3) Trade Patterns

Trade data used in this paper are compiled from the UN *Comtrade* database. The method of data compilation and various other aspects of our data are described in the appendix to this paper. Our analysis of trade flows commences in 1969/70,[11] when developing country industrial exports first became highly topical, and by which time most but not all developing countries were reporting their trade statistics. We then report trade statistics by decade, with two-year averages to allow for annual

[10] See for example Corden (2003), Little *et al*. (1993), World Bank (1993) and Gill and Kharas (2007).
[11] In order to minimize the effect of possible random shocks and measurement errors, two-year averages are used in inter-temporal comparison throughout the paper.

fluctuations. The data for total merchandise trade used here are net of oil and gas. Among the countries covered in this study, oil and gas account for a significant share of exports only in Malaysia and Indonesia.[12] However, in both countries there has been a significant shift in export composition of exports away from oil and non-oil primary products to manufacturing.

The combined share of Asian countries in world non-oil exports recorded a three-fold increase, from 11.1% to 33.2%, between 1969/70 and 2006/7 (Table 5).[13] The region accounted for over 40% of the total increment in world exports over this period. East Asia dominated this impressive export growth story. Within East Asia, the share of 'developing' East Asia (East Asia excluding Japan) recorded a four-fold in crease (from 4.7% to 23.8% during this period. Notwithstanding the 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, which is by far the dominant South Asian economy.

Table 5 about here

In the 1970s and 1980s, Japan dominated the region's trade, accounting for nearly 60% of its exports and imports. The picture has changed dramatically over the past two decades: between 1969/70 and 2006/7, DEA's share in total regional exports and imports increased from 42% to 76%, and 38% to 80%, respectively. 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 developing countries

[12] The shares of oil and gas in Indonesian and Malaysian merchandise exports peaked in the late 1970s at almost 60% and about 45% respectively. They have declined consistently since then, and in the past decade have averaged about one-quarter and one-tenth of the respective totals.

[13] Hereafter, we will use the terms 'total world exports/trade' and 'total world non-oil exports/trade' interchangeably. Trade and investment magnitudes throughout the paper are measured in current US dollars unless otherwise indicated.

(that is, all developing countries less Asian developing countries) has increased throughout the period, although of course at a slower rate than DEA.

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 5 and 6). By 2006/07 manufactures accounted for 92.1% of total exports from Asia, up from 78.3% four decades ago. Given the nature of their resource endowments, Japan and the four Asian NIEs relied very heavily on manufacturing for export expansion from the outset. However, beginning in the 1970s, a notable shift towards manufacturing is observable across all countries, at varying speeds and intensity. Between 1969/70 and 2006/7 the share of manufacturing in total exports of developing Asian countries increased from 44.3% to 86.2%. The shares in ASEAN countries and South Asia respectively increased from a mere 11% to 71.0% and 52.1% to 74.4% between these two time points. Among individual countries Indonesia, Vietnam, and Pakistan, and small latecomer 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.

Table 6 about here

Asia's share in total world manufacturing exports increased from 12.9% in 1969/70 to 36.6% in 2006/7. This increase came entirely from the DEA economies, since the share of Japan fell over this period, from 8.9% to 7.8%, and South Asia still accounted for a tiny share, around 1%, at the end of the period (Table 6). From about the early 1990s, China's rise has been the key factor behind the rapid increase in the world market share of DA countries, but exports from Taiwan, Korea, and the ASEAN countries have also recorded impressive growth. China's share in world manufacturing exports increased from a mere 0.5% in 1969/70 to 3% in 1989/90 and to 13.7% in 2006/7.

Within manufacturing, machinery and transport equipment (SITC 7), and especially the three sub-categories of information and communication technology products,[14] have played a pivotal role in this structural shift (Tables 6 and 7). In 2006/7, this commodity category accounted for 58% of total manufacturing exports from Asia, up from 55.6% a decade ago (Table 6). This increase came from DEA countries whose share increased from 46.0% to 56.7% in a context where Japan's share declined from 74% to 70.7%. 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 Asia is much smaller. Within the machinery and transport equipment category, ICT products have been the most dynamic component of Asian export expansion. The share of Asia in world machinery and transport equipment exports increased from 14.5% in 1994/95 to 42.4% in 2005/07, with DEA accounting for over four-fifths of the increment. By 2005/07, over 58% of total world ICT exports originated from Asia, up from 49.5% in 1994/5 (Table 7). By 2006/7 China accounted for 22.8% of total world ICT exports, up from 4.2% in 1994/5. In electrical goods, China's world market share increased from 3.1% to 20.6% between these two years.

Table 7 about here

Asia's share in the other main product categories has also increased over time, though at a slower rate. Of particular interest here is the notable increase in the 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.

The data presented in Table 8 help understand changes over time in the export ranking of Asian countries compared to other developing countries. There has been a growing

[14] 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).

concentration of exports among the top ten countries over time: their share increased from 71.4% in 1969/70 to 84.2% in 2005/06. The rapid expansion of exports from the leading DEA countries has been the dominant cause of this increased concentration. The increase in China's share in total developing country exports, from 8.6% in 1969/70 to 15% in 1989/90 and then to 38.5% in 2005/6, is particularly noteworthy. However, a close look at the table points to the fragility of the now-popular inference (Jomo 2007, Collier 2007), sometimes referred to as the 'new export pessimism', that East Asia's dominant position precludes other countries from success in export expansion.

Table 8 about here

In particular, there have been notable changes in the relative position of many countries in their overall ranking, and these shifts can be meaningfully related to effective domestic policy reform. Of particular note is India. Its ranking plummeted between 1969/70 and 1989/90 before recording a mild recovery following the policy reforms in the early 1990s. Malaysia and Thailand moved from the second and third deciles respectively to the top ten by 1989/90, and then consolidated their positions in the next one-and-a-half decades, notwithstanding their severe economic crises in 1997-98. Bangladesh and Sri Lanka have moved from the bottom to middle ranks over the past two decades. Moreover, data for the lower deciles of exporters (lower than reported here) reveal the emergence, and in some cases rapid growth, of newcomers. This again runs counter to the arguments of what may be termed the 'neo export pessimism school', that the East Asian early movers, and now China and India, are crowding out opportunities for latecomers. That is, even countries with highly unfavourable initial conditions have been able to achieve export success following reforms. It is worth recalling that Bangladesh had been written of as a 'basket case' in the 1970s and 1980s, that Sri Lanka has experienced a prolonged and vicious insurgency for most of the period under analysis, and that the Indo China countries were cut off from the global economy for a decade or more and also experienced severe losses of human capital.

Network Trade

The fast growth of machinery trade in Asia 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 (Athukorala 2006b, Kimura 2006, McKendrick *et al*,. 2000). International production fragmentation has become one of the defining characteristics of world trade over the past few decades. The electronics MNEs based in the USA started the process in the late 1960s in response to increasing pressures of domestic real-wage increases and rising import competition from low cost sources. However, unfavourable investment climate in these countries—macroeconomic instability, political tensions, trade union upheavals and uncertainty—led American producers to switch to sub-suppliers located in East Asia.[15]

Linking Southeast Asia to the global electronics production networks began in 1968 with the arrival of two US companies, National Semiconductors and Texas Instruments, to set up plants to assemble 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 island's electronics industry.

From the late 1970s, the MNEs with production facilities in Singapore began to relocate some low-end assembly activities in neighbouring countries (particularly Malaysia, Thailand and the Philippines) in response to the rapid growth of wages and land prices. Many newcomer MNEs to the region also set up production bases in these countries, by-passing 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. From about the early 1990s the emergence of China as the 'global factory' of electrical and electrical goods assembly based on parts and

[15] See Helleiner (1973); Grunwald and Flamm (1985); Feenstra (1998) and Brown and Linden (2005).

component imported from other countries has contributed to rapid expansion of network trade in the region. More recently, regional production networks have begun to expand to Vietnam. 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 headquarter services for production units located in neighbouring countries. [16]

The best available indicator of the intensity of fragmentation-based specialization is the share of parts and components in total manufacturing trade.[17] World trade in parts and components increased from about $502 billion (18.9% of total exports) in 1992/93 to over $1,800 billion (22.3%) in 2006/07, accounting for nearly one-fourth of the total increment in world manufacturing exports between these two years. There has been a palpable shift in component production away from mature industrial economies toward developing countries (Table 9). The share of developing countries in total component trade increased from 27% in 1992/3 to 47% in 2006/7, driven primarily by the growing importance of East Asian countries in global production-sharing. The share of East Asia (including Japan) in total world exports of components increased steadily from 27% in 1992/93 to 39% in 2005/6, despite a notable decline in Japan's share in recent years. The share of DEA (East Asia excluding Japan) increased from 17.8% to 32.3% in the same period. In 2006/7, DEA accounted for over two thirds of the total component trade of developing countries. Developing countries, led by DEA, accounted for over 70% of the expansion in world parts and components trade during 1995-2007. World markets shares of ASEAN countries, with the exception of Singapore, have grown faster compared to the regional average. However, developed countries still account for the bulk of this trade, reflecting their high initial levels. India remains a relatively minor participant in global production networks. In 2006/07 for instance, India accounted for a mere 0.3% of component exports.

Table 9 about here

[16] For a discussion of the factors underpinned the continued attraction of the East Asia region as the prime location of fragmentation-based international specialization, see Athukorala and Yamashita (2007).

[17] 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'.

Table 10 presents comparative statistics on the share of components in total manufacturing exports, imports, and total manufacturing trade (imports + exports), disaggregated by major product categories. It is evident that the share of components in East Asian trade is much higher than that of all other regions. In 2006/07, components accounted for over 35% of total manufacturing trade from DEA, compared to the world average of 22.2%, Within East Asia, ASEAN countries stand out for their heavy dependence on production fragmentation trade, which accounts for 44% of their manufacturing exports and is a critical part of their export dynamism. The data for all countries and country groups show that parts and component account for a much larger shared of exports and imports of ICT products and electrical goods sub-categories compared to the other product categories. Also, the import and export shares of parts and components in these two commodity groups are strikingly similar in magnitude, reflecting two-way trade occurring within production networks. These patterns are much more prominent for the East Asian economies compared to the rest of the world.

Table 10 about here

China's manufacturing trade patterns differ from its East Asian neighbours. In particular, the components share in its total manufacturing imports is much larger compared to the corresponding share in its manufacturing exports. This difference is consistent with our earlier observation that China's rise in world trade has brought about a notable shift in the division of labour within regional production networks, with ASEAN countries playing an increasing role in producing parts and components for the rapidly growing final assembly activities in China.

Direction of Trade

We have already drawn attention to the importance of fragmentation-based trade in East Asia's rising economic interdependence. We now examine the implications of this new form of international specialization 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. These two issues are central to the

contemporary debate on growth dynamism and the process of intra-regional versus inter-regional economic integration in Asia and elsewhere.

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, from about the early 1980s.[18] 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 expanding AFTA to encompass Japan, China and South Korea (the ASEAN plus 3 proposal), and more broadly towards an 'Asian Economic Community', and of various proposals for monetary integration in the region, often refer to deepening economic interdependence, as reflected in intra-regional trade among these countries, as evidence of likely success of these initiatives. Another implication of the highly publicized apparent trade integration in the region was the so called 'decoupling' thesis, which was a popular theme in the Asian policy circles in the first decade of the new millennium until the onset of the recent financial crisis.[19] This thesis held that East Asian region had become a self-contained economic entity with potential for maintaining its own growth dynamism independent of the economic outlook for the traditional developed market economies.

The above discussion 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 in East Asia compared to global trade patterns. First, component trade has played a much more important role in trade expansion in East Asia compared to the rest of the world. Second, trade in components accounts for a much larger share in intra-regional trade than is the case for the rest of the world. Given these two peculiarities, conventional trade flow analysis is bound to yield a misleading picture as to the relative importance of intra-regional trade, as compared to

[18] See for example Kwan 2001; Drysdale and Garnaut 1997; Frankel and Wei 1997; Petri 1993, Lee and Roland-Holst 1989.
[19] See Yoshitomi (2007) and Park and Shin (2009) and the works cited therein.

global trade, for growth in East Asia. This is because growth based on assembly activities depends on the demand for final goods, which in turn depends on extra-regional growth.

To illustrate these arguments intra-regional trade shares estimated separately for total manufacturing trade, component trade and final manufacturing trade (that is, total manufacturing trade less component trade) are reported in Table 11. The table covers trade in East Asia[20] and three sub-regions therein which relate to contemporary Asian policy debate on regional integration. Data for NAFTA and EU are reported for comparative purposes. Estimates are given for total trade (imports plus exports) as well as for exports and imports separately in order to illustrate possible asymmetry in trade patterns resulting from East Asia's increased engagement in fragmentation-based international exchange.

Table 11 about here

Trade patterns depicted by the unadjusted (standard) trade data affirm the 'received' view that Asia, in particular East Asia, has become increasingly integrated through merchandise trade. In 2006/7 intra-regional trade accounted for 55.1% of total manufacturing trade, up from 53.2% in 1992/3. The level of intra-regional trade in East Asia was higher than that of NAFTA throughout this period and was rapidly approaching the level of EU-15. For developing East Asia (Asia excluding Japan) and ASEAN +3, the ratios are lower than the aggregate regional figure, but they have increased at a much faster rate. The intra-regional trade share of ASEAN has been much lower compared to the other two sub-regions.

However the picture change significantly when parts and components are netted out: the intra East Asian share in final trade (total trade less parts and components) in 2006/7 was 46.4, down from 50.3% in 1992/3. The estimates based on unadjusted data and data on final trade 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

[20] There is no notable difference between intra-regional trade patterns of Asia (East Asia plus South Asia) and East Asia given that South Asia accounts for a tiny share in total Asian trade.

estimates based on final trade. Interestingly, we do not observe such a difference in estimates for NAFTA and EU.

The intra-regional shares calculated separately for imports and exports clearly illustrate the risk of making inferences about regional trade integration based on total (imports plus exports) data. There is a notable asymmetry in the degree of regional trade integration in East Asia. Unlike in EU and NAFTA, in East Asia the increase over time in intraregional trade ratio (both measured using unadjusted data and data for final trade) has emanated largely from rapid increase in intra-regional imports; the expansion in intra-regional exports has been consistently slower. The dependence of East Asia (and country sub-groups therein) on extra-regional markets (in particular those in NAFTA and EU) for export-led growth is far greater than is revealed by the standard intra-regional trade ratios commonly used in the debate on regional economic integration. For instance, in 2006/7 only 43.9% of total East Asian manufacturing exports were absorbed within the region, compared to an intra-regional share of 64.4% in total manufacturing imports. For developing East Asia the comparable figures were 33.4% and 46.7% respectively. This asymmetry is clearly seen across all sub-regions within East Asia. The asymmetry between intra-regional shares of import and exports is, therefore, much sharper when parts and components are netted out. This is understandable given the heavy 'component bias' in Asian intra-regional trade and the multiple border-crossing of parts and components within regional production networks. On the export side, the intra-regional share of final goods declined continuously from 46% in 1995 to 37% in 2007, whereas intra-regional import shares increased from 56% to 63% between these two time points.

This asymmetry in intra-regional trade in East Asia reflects the unique nature of the involvement of Japan and China in regional production networks. From about the late 1980s Japan's manufacturing trade relations with the rest of East Asia have been 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 (Athukorala and Yamashita 2008). The emergence of China as a leading assembly centre within regional production networks since the early 1990s further amplified this trade asymmetry. That is, China is importing parts and components from the other

East Asia countries to assemble final products which are predominantly destined for markets in the rest of the world (Athukorala 2009).

In sum, these data support the hypothesis that, where fragmentation-based trade is expanding rapidly, the standard trade flow analysis can generate misleading inferences regarding the process of economic integration through trade. When data on assembly trade are excluded from trade flows, these estimates suggest that extra-regional trade is much more important than intra-regional trade for continued growth in East Asia, whether or not Japan is included. Thus, the rising importance of product fragmentation seems to have strengthened the case for a global approach to trade and investment policymaking rather than a regional one.

This inference is basically consistent with the behavior of trade flows in East Asia countries following the onset of the global financial crisis (Athukorala and Kohpaiboon 2009). All major East Asian countries (including China which was expected to cushion the rest of East Asia against a global economic collapse) experienced a precipitous trade contraction from about the last quarter of 2007, revealing the fragility of the decoupling thesis. The remarkably synchronized nature of the trade contraction across countries in the region is generally consistent with close trade ties among the East Asian countries forged within regional production networks. Taiwan, Korea and Japan have suffered the highest rates of contraction in exports to China compared to the other countries in the region, reflecting their greater dependence on that market. China's imports from most countries in the region have contracted at a much faster rate compared to exports, perhaps an indication of destocking of imported parts and components by Chinese firms given the gloomy outlook for exports. China's growth rate has been sustained in 2009, after an initial slowdown, not because of any trade decoupling but rather because of the government's massive fiscal stimulus during the year.

4) Concluding Remarks

At least seven concluding observations warrant attention.

First, at the risk of stating the obvious, Asia exhibits great diversity in economic development strategies and commercial policy. It ranges from Japan and the four high income NIEs to the late reforming, low-income countries in South Asia, and to the three former centrally-planned Mekong economies, which only recently reconnected to the global economy. There are vast differences in economic structure and hence patterns of comparative advantage. Prima facie, this suggests that individual countries have their own niche in attracting FDI across different stages of the production process in vertically integrated global industries. Moreover, these divergent experiences make Asia an important laboratory for examining issues central to the debate on development strategies.

Second, 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 the equally rapid expansion of manufacturing exports from China to extra-regional markets, mostly North America and Europe.

Third, as a corollary, to benefit from the new opportunities for trade expansion through the fragmentation-based division of labour, the ideal, first best policy choice appears to be unilateral liberalization, combined with WTO-centred multilateral liberalization. The rise of product fragmentation has therefore strengthened the case for a global, rather than a regional, approach to trade and investment policymaking. It is very doubtful whether regional cooperation initiatives can significantly improve economic growth and welfare, and whether they are in any case feasible for global

production networks seamlessly encompassing a dozen or more countries. Given the global orientation of the region's economies, we question whether there would be any significant positive pay-off from current efforts to promote regional cooperation, unless they recognize the principle of 'open regionalism'. With both the current Doha Round and APEC apparently floundering and directionless, this is one of the major multilateral policy challenges of our time.

Fourth, 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 complementarities of FDI in China and other countries in the region. The migration of some production processes within vertically integrated high-tech industries to China, such as electronics, motor vehicles and cameras, does not necessary imply a zero sum game of competing to attract FDI. Rather, it also opens up opportunities for producing original-equipment-manufactured 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 just one nation, preferring instead to diversify the risk of exchange rate instability or supply disruptions. There is also evidence that rapid growth in wages has already begun to erode some of China's cost advantages. Manufacturing wages in coastal regions are now higher than those of Indonesia, the Philippines, and Vietnam, the latter by a large margin. Moreover, resource rich countries in the region, like Indonesia, Malaysia, Laos and Cambodia, are becoming increasingly attractive investment locations for Chinese firms.

Fifth, this analysis underlines 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.

Sixth, the notion that international export markets are somehow difficult to penetrate, or that the benefit/cost ratio is in some sense unfavourable, has been influential since at least the 'Prebisch thesis' in the early post-war period. In the 1980s, it resurfaced just as the developing world's largest and most successful export effort was underway.[21] We have argued above that the rise of China is positive sum game for reforming countries that are able to meet the prerequisites for participation in global production networks. The empirical evidence clearly shows that reforming countries, even those with highly unfavourable initial conditions, have been able to achieve rapid export growth. Important Asian examples in the late 20th century to which we have drawn attention include Bangladesh, Cambodia and Vietnam. Admittedly, these countries enjoy a geographic advantage over African and Latin American countries. They are surrounded by high-growth, outward-oriented regimes, with both the demonstration effects of policy success and the technology and investment spillovers associated with the search for new low-cost production bases. Nevertheless, it is important not to overstate geography, as Rodrik (2004) and others are inclined to. Geography does not guarantee policy success, as the East Asian examples of Burma and even the Philippines demonstrate. Moreover, geography has not held back non-Asian success stories, such as Chile and Mauritius.

Seventh, we draw out some implications for the analysis and interpretation of trade statistics. Two in particular warrant attention. First, as the 'slicing up' of production processes continues, and a host country's exports may embody very little domestic value added, it becomes increasingly difficult to draw inferences from the aggregate

[21] Although see Hughes (ed) (1988) for an effective demolition at this time.

value of trade statistics. The comparison between the gross value of exports and a value added concept such as GDP was always problematic. But in the presence of large parts and components trade, it is becoming ever more tenuous to employ export growth as a performance indicator, or exports/GDP as a proxy for openness, without careful qualification. This is especially so for international comparisons, across countries with very different participation in these global networks.[22] A second implication is for factor intensity analysis. Pioneered by Lary (1968) and applied extensively by Drysdale and Garnaut (1997), Krause (1982), and others, it has become a very widespread tool among economists to draw inferences concerning comparative advantage from trade composition analysis. This application was feasible as long as factor intensity rankings were internationally consistent, that is, an industry that was relatively labour-intensive in a poor country was similarly so in a rich country. The rise to global dominance of the electronics industry renders this exercise questionable. Electronics is usually recorded as R&D-intensive, as it actually is in industrialized economies. However, the components assembly activity, that is typically shipped off to low-income locations, can be very labour-intensive. This becomes an especially serious empirical issue when, as in much of East Asia, electronics accounts for over half of merchandise exports.[23]

Data Appendix

The data for this paper are compiled from the UN Comtrade database, based on Revision 3 of the Standard International Trade Classification (SITC, Rev. 3). The discussion on overall trends and patterns of trade covers the period from 1969 to 2007, the most recent year for which data are available for all reporting countries. Data on the basis of SITC Revision 3 are available only from 1986. The data for the previous years (based on SITC Revision 2) were recast using the commodity concordance available from the UN Statistical Office database to achieve consistent data coverage for the period of study.

[22] See for example some research reported in the Economist, January 5, 2008, 'An old Chinese myth', which indicates that, measured on a gross basis, the export/GDP share for China was almost 40% in 2007, whereas on a 'domestic value added' basis it was just under 10%.

[23] It can account for the otherwise puzzling finding that, for example, the Philippines has the most 'R&D intensive' export structure in Asia, according to Lall (2000).

To analyze the growing importance of regional production networks in determining trade patterns, we rely on detailed (5-digit) data for the period 1992 to 2007. In its original form (SITC, Rev 1), the UN trade data reporting system did not provide for the separation of fragmentation-based trade (parts and components) from final manufactured goods. SITC Revision 2, which was introduced by the UN in the late 1970s and implemented by most countries in the early 1980s, adopted a more detailed commodity classification, which allowed the separation of parts and components within the machinery and transport sector (SITC 7). There was, however, considerable overlap between some advanced-stage component production/assembly and assembly of final goods in Revision 2 (Ng and Yeats 2001). Revision 3 was introduced in the mid-1980s with significant improvements. Apart from providing a comprehensive coverage of parts and components in SITC 7, it also separately reports parts and components of some products belonging to SITC 8 (‘miscellaneous manufactures’).

These improvements notwithstanding, SITC Revision 3 does not provide for the construction of data series covering the entire range of fragmentation-based trade. Although data reported under SITC 7 provide a comprehensive coverage, the same cannot be said for SITC 8. In the case of clothing, furniture and leather products for instance, where outsourcing is prevalent and perhaps increasing, related components such as pieces of textiles, parts of furniture, and parts of leather soles are presumably recorded under other SITC categories. Moreover, there is evidence that production fragmentation has been spreading beyond SITC 7 and 8 to other product categories, such as pharmaceutical and chemical products (which fall under SITC 5) and machine tools and various metal products (SITC 6). Assembly activities in software trade have likewise recorded impressive expansion in recent years. These are lumped together with ‘special transactions’ under SITC 9. As a result, the magnitude of parts and component trade measured on the basis of SITC Revision 3 is downward-biased. However, the understatement is unlikely to be substantial because fragmentation-based international specialization is predominantly concentrated in the machinery and transport equipment category (SITC 7) (Yeats 2001, Krugman 2008).

Although the SITC Rev. 3 was introduced in the mid-1980s, a close examination of country-level data shows that data recording systems in many countries had considerable gaps in the coverage of coverage of parts and components

trade until the early 1990s. Therefore we use 1992 as the starting year of our data disaggregation. The list of parts and components used in data disaggregation was prepared by carefully linking the parts and accessories identified in the Broad Economic Classification (BEC) Registry of the United Nations Statistical Division (available at http:/www. unstats.un.org/unsd/cr/registry) with the 5-digit SITC products.

The data are tabulated using importer records, which are considered to be more appropriate for analyzing trade patterns than the corresponding exporter records. Compared to country records, importer records are also presumably less susceptible to double-counting and erroneous identification of the source/destination country in the presence of entrepot trade, as in for example China's trade through Hong Kong and Indonesia's trade through Singapore (Ng and Yeats 2003, Appendix 1; Feenstra *et al*. 1999). Some countries also fail to properly report goods shipped from their own export-processing zones, simply lumping these exports into one highly aggregated category of 'special transactions' under SITC 9. It is difficult to find a satisfactory solution for these problems, but 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 than other records, because there are normally important legal penalties for incorrectly specifying this information on customs declarations. Among the East Asian economies, Taiwan is not covered in the UN data system; Vietnam has not yet begun to make data available using the standard UN format; and Singapore does not report its bilateral trade with Indonesia for political reasons. In these cases, we filled the data gaps using the corresponding trading partner records. Most of the Comtrade import data are reported CIF. CIF figures are used for consistency, even for countries reporting FOB data.

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Table 1 : Trends in Average Applied Tariff Rates in Developing and Industrial Countries, 1980-2004 (%)

Country/Group	1980-4	1985-9	1990-4	1995-9	2000-4
Japan	---	7.0	6.3	2.8	2.7
Korea		17.5	9.7	9.3	9.1
Taiwan	26.5	16.8	12.5	8.4	5.5
China	49.5	39.3	40.0	18.8	12.8
Indonesia	---	13.7	13.4	6.4	8.5
Malaysia	---	14.9	14.3	6.9	7.6
Singapore	---	0.5	0.4	0.3	0.2
Philippines	29.3	27.8	23.7	13.3	5.9
Thailand	41.2	40.3	37.2	19.6	8.9
Cambodia	---	---	---	---	16.2
Lao PDR					10.3
Myanmar	---	---	---	4.8	4.6
Vietnam	---	---	13.4	13.7	14.4
India	74.3	93.5	57.0	33.7	24.0
Nepal	22.1	21.6	19.1	15.8	14.6
Pakistan		66.7	58.5	41.6	18.8
Sri Lanka	31	27.6	25.5	16.3	9.1
Australia	---	14.2	10.7	6.5	5.2
New Zealand	---	---	8.0	5.4	3.6
Memo Items					
Developing Countries	45.4	42	34.0	19.7	13.2
Low Income	73.3	64	46.7	23.1	15.9
Middle Income	32.9	28.9	27.3	15.0	9.5
High Income non-OECD	22.9	9.1	0.4	3.6	2.8

Notes: All tariff rates are based on simple averages for all goods in ad valorem rates, or applied rates, or MFN rates whichever data are available for the longer period.
Tariff data are primarily based on UNCTAD TRAINS database, while WTO IDB data are used for gap filling where possible.
--- Data not available.

Source: Nicita and Olarreaga (2006) and Asia Pacific Economic Cooperation (APEC) Secretariat online data base (for data for Lao PDR).

Table 2: Liberalization status and trade policy

Country	Liberalisation status/dates during [1](1945-2000)	Data on trade policy (Sachs-Warner criteria)			
		Average tariff[2] (1990-99) (%)	NTB coverage[3] (1990-98) (%)	Black-market Premium[4] (1990-99) (%)	Export marketing boards/ Socialist state
Hong Kong	Always open	---	2.1	-0.02	0
Malaysia	Always open	11.7	19.6	1.35	0
Singapore	Always open	0.32	2.1	0.8	0
Thailand	Always open	29.54	17.5	1.8	0
Taiwan	1963	9.85	---	0.95	0
Japan	1964	5.98	---	-0.35	0
Korea	1968	11.3	25.0	0.03	0
Indonesia	1970	16.27	31.3	7.1	0
Philippines	1988	19.09	---	4.36	0
Nepal	1991	15.28	---	24.23	0
Sri Lanka	1991[5]	24.34	22.7	7.84	0
Pakistan	1991	54.73	---	9.74	0
India	1994	48.63	93.8	7.45	0
Bangladesh	1996	43.7	---	83.27	0
Myanmmar[6]	Remain closed	5.7	---	2280.77	0
China[7]	Remain closed	31.06	---	35.89	1

Notes:

1. Based on the application of Sachs-Warner criteria according to which a country is classified as open if does not satisfy all five criteria for the entire duration of a give time period:
   (i) Non-tariff barrier coverage of intermediate and capital goods imports of 40 per cent or more;
   (ii) Average tariff on intermediate and capital goods imports of 40 per cent or more;
   (iii) A black market exchange rate that is depreciated by 20 per cent or more relative to the official exchange rate;
   (iv) A socialist economic system (as defined by Kornai 1992); and
   (v) A state monopoly on major exports.
2. Unweighted average tariff
3. Core non-tariff barrier frequency on capital goods and intermediates, including quotas, licensing, prohibitions, and administered pricing.
4. [(parallel exchange rate/official exchange rate) – 1]*100.
5. Previous temporary liberalization episodes: 1950-56; 1977-83.
   Sri Lanka embarked on a major economic liberalization in 1977. Of the five Sachs Warner criteria (Note 1) the only criterion that the Sri Lankan policy regime failed to meet during 1983-89 was the third, but this was only for a single year (1983) (In that year the back market exchange rate premium marginally exceeded 20% because of a temporary run on the currency propelled by the eruption of ethnic violence). This minor aberration aside, the entire period since 1977 can be treated as an open economy era.
6. Remains closed based on the black market exchange rate premium.
7. Remains closed on the basis of the Communist Party dominance and the black market exchange rate premium.

--- Exact figure is not available, but it is commonly beloved to be well below the Sachs-Warner criteria.

Source: Sachs and Warner 1995 and Wacziarg and Welch (2003)

Table 3: Trade Orientation of Selected Asian Economies,[1] 1969/70-2006/07 (%)

	1969/70	1974/75	1979/80	1984/85	1989/90	1994/5	1999/00	2006/07
Japan	12	14	13	15	10	9	11	15
Korea, Rep.	15	27	30	33	30	28	40	45
China	3	5	10	11	18	24	21	41
Hong Kong, SAR	92	85	90	108	131	138	138	206
Taiwan	18	23	33	39	42	43	51	70
Indonesia	14	27	33	24	25	27	40	30
Malaysia	40	45	56	54	73	92	121	114
Philippines	21	23	23	24	28	35	53	45
Singapore		80	95	103	134	174	190	240
Thailand	16	20	24	23	35	41	64	73
Cambodia	---	---	---	---	68.4	61.8	85.2	106.3
Lao, PDR	---	---	---	---	47.2	52.5	57.5	58.2
Vietnam	---	---	---	---	30	33	53	75
Bangladesh	7	4	6	4	6	10	14	20
India	4	6	7	5	7	11	13	22
Pakistan	8	13	12	10	15	17	14	15
Sri Lanka	25	27	33	28	29	35	38	30
Developing countries[2]	10	13	15	16	20	23	26	33

Notes:

--- Data not available.

1. Exports of goods and services relative to GDP (at current prices), two year averages.
2. Low and middle income countries as per the World Bank country classification.

Source: World Bank, World Development Indicators Database, Taiwan (Republic of China), *Taiwan Statistical Data Book*, Taipei: Council for Economic Planning and Development, Taipei (data for Taiwan) and ADB, Key Economic Indicators database (for Cambodia and Lao PDR).

Table 4: Indicators of ease of doing business ranking of selected Asian countries, 2009

Economy	Starting a Business	Dealing with Construction Permits	Employing Workers	Registering Property	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contract
Singapore	10	2	1	16	5	2	5	1	1
Hong Kong, SAR	15	20	20	74	2	3	3	2	
Japan	64	39	17	51	12	15	112	17	2
Thailand	44	12	56	5	68	11	82	10	2
Malaysia	75	104	48	81	1	4	21	29	5
Korea	126	23	152	67	12	70	43	12	
Taiwan	119	127	159	26	68	70	100	30	8
Pakistan	77	93	136	97	59	24	124	71	15
China	151	176	111	30	59	88	132	48	1
Vietnam	108	67	90	37	43	170	140	67	4
Sri Lanka	29	161	110	141	68	70	164	66	13
Bangladesh	90	114	132	175	59	18	90	105	17
Nepal	73	129	150	28	109	70	107	157	12
India	121	136	89	105	28	38	169	90	18
Indonesia	171	80	157	107	109	53	116	37	14
Philippines	155	105	126	97	123	126	129	58	11
Lao PDR	92	110	85	159	145	180	113	165	11

Note: * The dataset covers 181 countries. Countries are ranked in ascending order (best practice country = 1).

Source: World Bank, *Doing Business 2009* (http://www.doingbusiness.org)

Table 5: Asia in World Trade

	Total (non-oil) trade (%)			Manufacturing trade (%)			Manufacturing share in total exports (%)		
	1969/70	1989/90	2006/7	1969/70	1989/90	2006/07	1969/70	1989/90	2006/07
(a) Exports									
Asia	11.1	24.7	33.2	12.9	27.5	36.6	78.2	89.3	92.1
East Asia	11	23.8	29.9	12	26.7	33.7	72.5	90.3	91.5
Japan	6.3	10.4	6.5	8.9	12.7	7.8	93.4	94.1	94.8
Developing East Asia	4.7	13.4	23.8	3.1	14	26.1	44.3	84.3	86.2
North Asia	2.5	9.6	17.7	2.8	10.7	19.9	72.2	90.6	92.4
China	0.8	2.9	11.8	0.5	3	13.7	45.1	83.6	93.6
Hong Kong	0.9	1.7	0.7	1.3	2	0.7	95.1	96.5	91.3
Korea	0.3	2.2	3.0	0.3	2.6	3.5	75.4	93.6	90.1
Taiwan	0.6	2.7	1.9	0.6	3.1	2.2	71.5	91.9	89.6
ASEAN	2.2	3.9	6.1	0.4	3.3	6.2	11	68.2	71.0
Indonesia	0.3	0.5	0.9	0	0.4	0.7	3.8	55.6	47.1
Malaysia	0.8	1	1.7	0.1	0.7	1.8	7.2	60.4	78.6
Philippines	0.5	0.3	0.7	0.1	0.3	0.7	10.3	62.8	86.8
Singapore	0.2	1.1	1.3	0.1	1.3	1.5	45.9	91.2	74.3
Thailand	0.3	0.8	1.3	0	0.6	1.3	7.7	59.6	78.1
Vietnam	0	0	0.3	0	0	0.3	---	13.5	56.5
South Asia	0.1	0.9	1.6	0.9	0.8	1.3	52.1	71.5	74.4
India	0.9	0.6	1.2	0.7	0.5	1	55.9	71.5	71.1
Sri Lanka	0.1	0.1	0.1	0	0.1	0.1	8.2	62.2	75.7
Bangladesh	0	0.1	0.1	0	0.1	0.1	---	78.4	93
Pakistan	0	0.2	0.1	0.2	0.2	0.1	54.2	71.8	84.3
Memo items									
Developing countries	14.7	20.9	43	5.9	19.3	42.4	26.8	74.2	63.3
Developed countries	85.3	79.1	57	94.1	80.7	57.6	73.3	82.2	77.3
World	100	100	100	100	100	100	66.5	80.6	70.7
US$ bn	205	2386	9620	137	1922	8295			

(b) Imports										
Asia	13.6	21	24.7	10.1	19.3	24.9	49.2	76.2		67.8
East Asia	11.6	19.9	23.3	8.3	18.3	23.6	47.6	74.1		69.2
Japan	6.5	7	4.2	3	5	3.7	30.4	57.7		52.4
Developing East Asia	5.1	12.9	19.2	5.3	13.3	20	69.7	83		73.5
North Asia	2.7	9.5	13.8	2.7	9.6	14.4	72.9	80.9		74.3
China	0	2.3	6.8	0	2.3	6.8	92.3	81		73.9
HK	1.3	3.1	3.2	1.3	3.4	3.7	69.5	87.5		91.1
Korea	0.9	2.3	2.2	0.8	2.2	2.1	59.9	74.8		59
Taiwan	0.6	1.7	1.6	0.6	1.7	1.7	69.7	80.1		70.5
ASEAN	3.1	5.1	5.3	3.2	5.4	5.6	68.4	84.3		71.6
Indonesia	0.4	0.7	0.4	0.5	0.8	0.4	80.7	83		53.7
Malaysia	0.5	1	1.2	0.5	1	1.2	63.9	85.6		78
Philippines	0.5	0.4	0.5	0.6	0.3	0.5	77.3	76.4		75.3
Singapore	0.9	1.9	1.9	0.9	2.1	2.1	63.7	87.4		74.6
Thailand	0.5	1.1	1	0.7	1.1	1.1	85.9	84.1		68.1
Vietnam	0	0	0.4	0	0	0.35		60.3		68
South Asia	2	1.1	1.4	1.8	1	1.2	59	74.8		49
India	1.2	0.7	1.2	1.6	0.7	1	94.9	77.7		47.1
Sri Lanka	0.2	0.1	0	0.1	0.1	0	52.1	73.5	68.3*	
Bangladesh	0	0.1	0	0	0.1	0		65.9	72.1*	
Pakistan	0.7	0.2	0.2	0	0.2	0.2		68.1		57.2
Memo items										
Developing countries[1,3]	16.5	21.6	38.2	18.6	21.4	38.2	74.9	80		70.9
Developed countries[2,3]	83.5	78.4	61.8	81.4	78.6	61.8	64.8	80.7		70
World	100	100	100	100	100	100	66.5	80.6		70.3
US$ bn	205	2386	9620	137	1922	8295				

Notes:

1 Excluding Asian developing countries. 2 Excluding Japan. 3 Based on the UN country classification.

Source: Compiled from UN Comtrade database, and Trade Data CD-ROM, Council for Economic Planning and Development, Taipei (for data on Taiwan)

Table 6: Commodity Composition of Manufacturing Exports[4] (% of total for each country/region)

	Chemicals (SITC 5)	Resource based products (SITC 6 - SITC 68)		Machinery and transport equipment (SITC 7)				Miscellaneous manufacturing (SITC 8)	
		Total	Textiles	Total	ICT products [4] (SITC 75+76+772 +776)	Electrical goods (SITC 77 - 772 - 776)	Road vehicles (SITC 78)	Total	Apparel (SITC 84)
Asia									
1994/5	5.8	15.4	5.7	55.6	30.3	5.0	9.3	23.3	7.8
2006/7	7.6	13.4	3.3	58.0	35.1	6.0	7.6	21.1	6.2
East Asia									
1994/5	5.8	14.3	5.1	57.3	31.3	5.2	9.5	22.7	7.0
2006/7	7.4	12.3	2.9	59.8	36.4	6.2	7.7	20.5	5.4
Japan									
1994/5	6.4	10.1	1.7	74.0	29.4	5.1	20.2	9.4	0.2
2006/7	9.0	10.6	1.1	70.7	23.2	5.5	22.7	9.7	0.1
Developing East Asia									
1994/5	5.3	17.0	7.3	46.0	32.6	5.2	2.4	31.6	11.6
2006/7	6.9	12.8	3.4	56.7	40.3	6.4	3.4	23.6	7.0
North Asia									
1994/5	5.5	19.3	9.3	38.3	23.7	5.6	3.0	36.9	13.5
2006/7	6.0	14.1	3.9	53.9	36.3	7.0	3.7	26.1	7.4
Taiwan									
1994/5	6.8	23.7	11.5	50.9	30.5	6.1	4.7	18.6	3.5
2006/7	12.5	17.9	5.4	54.0	33.5	8.6	3.6	15.8	0.8
Korea									
1994/5	8.1	23.6	10.6	53.4	33.9	5.5	7.0	14.9	6.1
2006/7	10.4	13.0	3.1	67.2	39.1	4.8	12.7	9.4	0.9
China									
1994/5	4.2	15.7	7.5	24.8	14.8	5.4	0.9	55.3	20.1

2006/7	3.9	13.6	3.8	50.8	36.1	7.4	1.5	31.7	9.8
Hong Kong									
1994/5	3.1	15.8	9.0	35.7	24.9	5.1	0.4	45.4	23.1
2006/7	4.4	15.3	4.9	45.9	34.7	6.1	0.4	34.4	15.0
ASEAN10									
1994/5	4.8	12.0	2.9	63.5	52.8	4.5	0.8	19.7	7.4
2006/7	9.7	8.8	1.6	65.7	53.1	4.3	2.6	15.8	5.5
Indonesia									
1994/5	5.9	41.8	11.5	13.2	9.2	1.7	0.9	39.1	16.7
2006/7	9.7	23.9	6.1	38.7	24.6	6.4	2.5	27.7	12.6
Malaysia									
1994/5	3.6	9.2	1.8	73.5	63.7	4.5	0.8	13.7	5.8
2006/7	5.9	6.5	0.8	78.0	70.7	3.4	0.6	9.6	2.3
Philippines									
1994/5	1.9	5.6	1.5	58.3	48.3	7.2	1.2	34.3	17.9
2006/7	1.3	3.1	0.6	85.2	74.9	6.4	1.4	10.4	4.9
Singapore									
1994/5	6.9	4.1	0.6	80.9	68.0	4.5	0.7	8.2	1.3
2006/7	20.7	3.7	0.3	67.6	55.6	2.8	0.5	8.0	0.3
Thailand									
1994/5	3.5	15.5	4.3	52.6	39.4	5.6	0.8	28.3	8.9
2006/7	9.3	13.1	2.3	62.1	39.6	5.1	9.0	15.6	4.8
Vietnam									
1994/5	1.3	12.5	6.4	3.9	0.9	0.5	0.9	82.3	42.8
2006/7	2.5	10.3	3.5	18.0	8.6	4.1	1.5	69.2	26.1
Other ASEAN									
1994/5	1.9	12.6	0.4	5.8	1.0	0.3	0.8	79.7	37.3
2006/7	0.3	4.0	1.0	2.0	0.5	0.3	0.6	93.7	85.6
South Asia									
1994/5	6.0	47.8	23.2	6.5	1.5	0.7	1.8	39.8	31.2
2006/7	13.0	40.3	14.3	11.6	1.9	2.0	2.6	35.2	25.5
India									
1994/5	8.5	50.7	16.8	9.2	2.0	0.9	2.7	31.7	21.8

2006/7	16.8	43.2	10.2	14.9	2.4	2.6	3.4	25.1	13.7
Bangladesh									
1994/5	2.8	15.6	8.8	1.2	0.2	0.1	0.1	80.5	77.9
2006/7	1.6	9.2	6.3	1.0	0.2	0.1	0.3	88.2	86.3
Pakistan									
1994/5	0.6	65.4	59.6	0.6	0.1	0.1	0.0	33.4	26.7
2006/7	2.9	59.1	54.7	1.3	0.2	0.1	0.2	36.6	29.2
Nepal									
1994/5	2.2	58.2	55.2	1.1	0.4	0.2	0.1	38.6	36.1
2006/7	15.0	47.9	34.5	2.8	0.3	1.2	0.1	34.3	24.7
Sri Lanka									
1994/5	1.2	19.7	5.4	4.1	1.7	1.1	0.2	75.1	65.4
2006/7	1.5	20.2	2.7	6.9	1.6	2.0	0.9	71.4	66.0
Memo items									
Developed countries[1,3]									
1994/5	14.8	22.2	7.4	54.3	15.7	4.4	14.9	13.6	1.9
2006/7	19.6	17.5	3.5	52.6	13.2	3.9	15.9	12.6	1.3
Developing countries[2,3]									
1994/5	8.2	17.3	2.9	41.9	24.9	5.1	4.1	27.7	11.4
2006/7	9.1	15.2	1.8	52.1	32.1	5.9	5.8	21.3	7.1
World									
1994/5	12.8	18.8	4.2	50.6	18.5	4.6	11.6	17.8	4.8
2006/7	15.1	16.2	2.5	52.4	21.2	4.8	11.6	16.3	3.8

Notes:
--- Data not available
1 Excluding Asian developing countries. 2 Excluding Japan. 3 Based on the UN country classification.
4. ICT Information and communication technology products
Source: Compiled from UN Comtrade database, and Trade Data CD-ROM, Council for Economic Planning and Development, Taipei (for Taiwanese data)

Table 7: World Export Shares of Selected Manufactured Products (%)

	ICT products [4] (75+76+772+776)	Electrical goods (77 - 772 - 776)	Road vehicles (78)	Textiles (SITC 65)	Apparel (SITC 84)
Asia					
1994/5	49.5	33.1	24.1	40.4	49.5
2006/7	58.1	44.0	22.8	45.7	57.6
East Asia					
1994/5	49.5	33.0	23.9	35.0	43.0
2006/7	58.0	43.5	22.5	38.3	48.7
Japan					
1994/5	18.6	13.0	20.4	4.6	0.5
2006/7	8.3	8.8	14.8	3.4	0.2
Developing East Asia					
1994/5	30.8	19.9	3.5	30.3	42.6
2006/7	49.7	34.7	7.7	34.9	48.5
North Asia					
1994/5	15.6	14.7	3.2	26.7	34.3
2006/7	34.1	29.2	6.3	30.8	39.4
Taiwan					
1994/5	4.7	3.8	1.2	7.8	2.1
2006/7	3.6	4.1	0.7	4.8	0.5
Korea					
1994/5	4.7	3.1	1.6	6.5	3.3
2006/7	6.5	3.5	3.8	4.4	0.9
China					
1994/5	4.2	6.2	0.4	9.4	22.2
2006/7	22.8	20.6	1.7	20.2	35.1
Hong Kong					
1994/5	1.9	1.5	0.0	2.9	6.7
2006/7	1.2	0.9	0.0	1.5	3.0
ASEAN 10					
1994/5	15.3	5.3	0.4	3.7	8.3
2006/7	15.6	5.5	1.4	4.1	9.1
Indonesia					
1994/5	0.3	0.2	0.0	1.6	2.1
2006/7	0.8	0.9	0.1	1.6	2.2
Malaysia					
1994/5	5.4	1.5	0.1	0.7	1.9
2006/7	6.0	1.3	0.1	0.6	1.1
Philippines					
1994/5	1.0	0.6	0.0	0.1	1.4
2006/7	2.5	0.9	0.1	0.2	0.9
Singapore					
1994/5	6.5	1.7	0.1	0.2	0.5
2006/7	3.8	0.9	0.1	0.2	0.1
Thailand					
1994/5	2.1	1.2	0.1	1.0	1.8
2006/7	2.4	1.3	1.0	1.2	1.6
Vietnam					

1994/5	0.0	0.0	0.0	0.1	0.5
2006/7	0.1	0.2	0.0	0.4	1.9
Other ASEAN					
1994/5	0.0	0.0	0.0	0.0	0.2
2006/7	0.0	0.0	0.0	0.0	1.3
South Asia					
1994/5	0.1	0.2	0.2	5.5	6.5
2006/7	0.1	0.6	0.3	7.5	8.9
India					
1994/5	0.1	0.1	0.2	2.6	2.9
2006/7	0.1	0.5	0.3	3.9	3.5
Developed countries[1,3]					
1994/5	59.5	66.9	89.4	47.4	28.2
2006/7	35.8	47.5	78.9	40.8	19.6
Developing countries					
1994/5	40.5	33.1	10.6	52.6	71.8
2006/7	64.2	52.5	21.1	59.2	80.4

--- Data not available

1 Excluding Asian developing countries. 2 Excluding Japan. 3 Based on the UN country classification.

4. ICT Information and communication technology products.

Source: Compiled from UN Comtrade database, and Trade Data CD-ROM, Council for Economic Planning and Development, Taipei (for Taiwanese data).

Table 8: Manufacturing Exports from Developing Countries: Country Ranking in Ascending Order of Export Value, 1969/70, 1989/90 and 2006/07

	1969/70		1989/90		2006/07	
	Country	Share (%)	Country	Share (%)	Country	Share (%)
Top 10	**Hong Kong**	19.6	**Taiwan**	15.5	**China**	38.7
	Taiwan	8.6	**China**	15.0	**South Korea**	10.4
	India	8.6	**South Korea**	13.1	**Taiwan**	8.7
	China	7.5	**Hong Kong**	10.5	Mexico	6.2
	Yugoslavia	5.8	**Singapore**	6.5	**Malaysia**	5.2
	South Africa	5.3	Mexico	5.6	**Singapore**	4.3
	South Korea	5.1	Brazil	4.3	**Thailand**	3.6
	Mexico	4.9	**Malaysia**	3.8	**India**	**2.8**
	Pakistan	3.2	**Thailand**	3.0	Brazil	2.4
	Brazil	2.8	**India**	2.7	Turkey	2.2
	Subtotal	71.4	Subtotal	80.1	Subtotal	84.4
Second 10						
	Argentina	2.0	Yugoslavia	2.5	**Hong Kong**	1.9
	Singapore	2.0	**Indonesia**	1.9	**Philippines**	2.1
	Iran	1.8	Turkey	1.8	**Indonesia**	1.9
	Jamaica	1.2	**Philippines**	1.4	South Africa	1.0
	Malaysia	1.2	South Africa	1.1	**Vietnam**	0.8
	Philippines	1.2	Argentina	0.9	United Arab Emirates	0.7
	Lebanon	0.8	**Pakistan**	0.8	Saudi Arabia	0.6
	Colombia	0.8	Saudi Arabia	0.8	Argentina	0.5
	Guatemala	0.8	Morocco	0.6	**Pakistan**	0.4
	Egypt	0.7	Tunisia	0.5	**Bangladesh**	0.4
	Subtotal	12.5	Subtotal	12.2	Subtotal	10.3
Third 10	Angola	0.7	Macao	0.5	Costa Rica	0.3
	Guinea	0.7	Liberia	0.4	Colombia	0.3
	Suriname	0.6	Panama	0.4	Morocco	0.3
	New Caledonia	0.6	Dominican Republic	0.4	Tunisia	0.3
	El Salvador	0.6	United Arab Emirates	0.3	Egypt	0.2
	Panama	0.6	Venezuela	0.3	Chile	0.2
	Thailand	0.5	Colombia	0.3	Venezuela	0.2
	Trinidad & Tobago	0.5	**Bangladesh**	0.3	Croatia	0.2
	Chile	0.5	**Sri Lanka**	0.3	**Sri Lanka**	0.2
	Sierra Leone	0.5	Chile	0.2	Dominican Republic	0.2
	Subtotal	5.9	Subtotal	3.5	Subtotal	2.6
The rest		4.5		1.9		1.3
Total		100		100		100
US$ bn		11		409		2834

Notes: UAE is United Arab Emirates
Source: Compiled from UN *Comtrade* database.

Table 9: Geographic Profile of World Trade in Parts and Components, 1992/3 and 2005/6

	Exports		Imports		Trade (exports + imports)	
	1992/3	2005/7	1992/3	2005/7	1992/3	2005/7
East Asia	30.1	40.6	24.4	38.1	27.3	39.4
Japan	15.7	10.0	3.3	4.0	9.5	7.0
Developing East Asia	14.4	30.6	21.1	34.1	17.8	32.3
Republic of Korea	2.3	4.9	2.7	2.7	2.5	3.8
China	1.1	10.9	2.4	11.5	1.8	11.2
Hong Kong, SAR	1.7	0.8	3.6	6.1	2.6	3.4
Taiwan	3.3	3.3	2.8	2.6	3.1	3.0
ASEAN 10	6.1	10.7	9.6	11.1	7.8	10.9
Indonesia	0.1	0.5	0.9	0.3	0.5	0.4
Malaysia	2.1	3.8	2.6	2.8	2.3	3.3
Philippines	0.6	2.1	0.5	1.4	0.5	1.8
Singapore	2.5	2.7	4.0	4.9	3.3	3.8
Thailand	0.8	1.4	1.6	1.4	1.2	1.4
Vietnam	0.0	0.1	0.0	0.2	0.0	0.1
Other ASEAN	0.0	0.0	0.1	0.0	0.0	0.0
South Asia	0.1	0.3	0.6	0.7	0.4	0.5
India	0.1	0.3	0.4	0.6	0.2	0.5
Oceania	0.3	0.2	1.3	0.8	0.8	0.5
NAFTA	24.8	17.6	26.9	20.4	25.8	19.0
Mexico	2.4	2.7	1.9	3.4	2.1	3.1
EU15	36.0	27.7	38.3	28.7	37.2	28.2
Developed countries	76.2	53.9	69.7	51.6	72.9	52.7
Developing countries	23.8	46.1	30.3	48.4	27.1	47.3
World	100	100	100	100	100	100
	502	1762	502	1762		

Source: Compiled from UN Comtrade database (importer records).

Table 10: Share of Parts and Components in Manufacturing Trade, 2006/7 (%)

	Exports						Imports					
			Machinery & transport equipment			Misc. Mfg.		Machinery & transport equipment				Misc. mfg
	Total mfg	Total	ICT product	Electrical goods	Road vehicles		Total mfg	Total	ICT product	Electrical goods	Road vehicles	
Asia	26.3	42.1	55.1	24.2	25.1	4.2	36.1	59.3	76.1	30.8	45.7	8.2
East Asia	26.9	43.3	55.4	26.6	24.6	4.9	35.9	59.3	76.6	31.2	46.2	8.4
Japan	29.4	39.5	70.4	40.0	20.1	14.7	24.6	48.3	58.6	34.1	32.6	5.8
Developing East Asia	26.2	44.6	52.9	23.2	33.3	3.7	37.9	60.9	78.7	30.6	50.6	9.4
Taiwan	32.7	56.2	75.2	15.8	64.5	15.4	34.3	57.6	84.3	26.2	55.1	12.3
Korea	31.4	46.1	65.1	26.2	17.4	4.8	28.3	51.6	76.9	28.7	54.3	9.7
China	18.1	34.2	38.3	22.1	51.5	2.5	37.6	60.2	81.3	34.4	56.1	10.2
Hong Kong	24.6	50.4	58.2	23.3	44.1	4.1	36.8	61.4	70.5	26.6	17.4	5.3
ASEAN 10	38.3	57.3	63.5	30.6	39.0	4.2	43.8	65.0	81.0	31.7	49.0	13.6
Indonesia	18.6	46.8	47.9	41.8	74.2	1.6	16.9	34.1	31.3	47.7	52.4	11.7
Malaysia	46.8	59.2	62.5	20.5	76	7.2	51.1	68.8	84.9	30.2	37.7	20.6
Philippines	65.8	76.5	81.2	43.6	77.5	5.9	64.1	83.0	94.2	33.9	32.2	29.7
Singapore	41.6	60.7	67.1	22.8	54.3	7.3	52.7	69.5	79.4	34.8	40.9	12.5
Thailand	25.3	39.3	48.1	23.0	25.4	5.9	30.0	53.8	74.7	25.4	75.6	8.1
Vietnam	8	41.2	36.2	63.1	47.6	0.8	11.5	30.3	52.9	25.6	34.9	7.6
Other ASEAN	0.7	31.2	73.9	44.6	1.4	0.1	11.5	25.4	27.6	16.5	4.9	1.8
South Asia	5.1	42.2	65.2	41.9	43.2	0.7	13.3	26.7	32.3	33.9	43.8	6.4
India	6.5	41.4	63.8	42.2	43.7	1.3	14.4	28.9	35.5	34.6	83.6	6.7
World	22.3	40.7	55.5	30.6	27.9	5.9	22.3	40.7	55.5	31.2	27.6	5.8

Source: Compiled from UN Comtrade database, and Trade Data CD-ROM, Council for Economic Planning and Development, Taipei (for data on Taiwan)

Table 11: Intra-regional shares of Manufacturing Trade: Total, Parts and Components, and Final Trade (%), 1994/5 and 2006/07[1]

	East Asia[2]	Developing East Asia[2]	ASEAN+3[1]	ASEAN	NAFTA	EU15
4.1: Total Manufacturing[2]						
4.1a: Total						
Exports						
1994-95	47.2	38.2	15.3	20.7	44.4	61.2
2006-07	43.9	33.4	21.9	18.4	48.1	56.9
Imports						
1994-95	58.2	34.9	43.0	15.5	36.3	64.1
2006-07	64.4	46.7	49.3	20.8	32.0	57.9
Trade (exports + imports)						
1994-95	53.2	36.5	27.0	17.8	39.9	62.6
2006-07	55.1	40.0	30.4	20.1	38.4	57.4
Parts and components						
Exports						
1994-95	50.2	42.6	33.7	30.3	43.5	62.3
2006-07	61.1	53.9	35.3	25.4	46.9	55.9
Imports						
1994-95	65.9	35.3	39.6	20.2	39.5	58.0
2006-07	66.9	50.9	47.8	22.9	39.9	55.2
Trade						
1994-95	57.0	38.7	35.4	24.2	41.4	60.1
2006-07	62.9	52.1	40.2	23.1	43.2	55.5
Final goods [3]						
Exports						
1994-95	46.0	36.8	11.4	16.1	44.7	60.9
2006-07	36.9	28.3	17.0	15.9	48.7	57.0
Imports						
1994-95	55.4	34.7	43.4	12.9	35.3	65.6
2006-07	63.0	42.8	50.2	20.6	30.2	58.5
Trade						
1994-95	50.3	35.7	25.4	14.3	39.4	63.2
2006-07	46.4	34.0	29.1	18.0	37.3	57.7

Notes:

1 Intra-regional trade shares have been calculated excluding bilateral flows between China and Hong Kong.

2. SITC 5 to 8 less SITC 68.

2 Total (reported) trade – parts and components.

Source: Compiled from UN Comtrade database, and Trade Data CD-ROM, Council for Economic Planning and Development, Taipei (for data on Taiwan).

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