# Asian Economic Integration

### *ASEAN+3+1 or ASEAN+1s?*

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# Foreword

This working paper is an outcome of the project on "Preferential Trading Agreements in Asia: towards an Asian Economic Community" being undertaken by ICRIER. The project is funded by the IDRC, Ottawa. On the basis of an empirical analysis, the paper establishes the economic rationale for a regional trading bloc in Asia that consists of ASEAN and four large Asian economies viz China, India, Japan and Korea, the so called ASEAN+4 arrangement. The findings of the empirical analysis suggest that India's prior alignment with the ASEAN in the ASEAN+1 framework may be a more efficient or the least cost path to entering the ASEAN+4 bloc. This holds true for all the four major economies in forging their ties with ASEAN. The paper also highlights the possible adverse impact of the China-ASEAN free trade agreement (FTA) on India and identifies the sectors that are likely to be most affected by the implementation of the Early Harvest Programme of this FTA.

The findings of the paper assume importance in the context of India's ongoing efforts at regional integration and its vision of a Pan Asian FTA. I am confident that this paper will provide an important contribution in shaping India's policy stance on bilateral and regional trading arrangements.

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Director and Chief Executive
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# Abstract

In this paper an attempt is made to evaluate the most efficient approach to regional economic integration in Asia. For the purpose, Asia is defined as inclusive of ASEAN, the plus three economies of China, Japan, Korea and India that is the ASEAN plus four. Given that ASEAN is an existing regional bloc in Asia, alternative approaches to the alignment of the plus four economies with ASEAN for the formation of the ASEAN+4 trade bloc have been evaluated to determine if there are efficiency costs by way of distortion in the patterns of trade away from those expected on the basis of comparative advantage. The findings of our analysis underscore the efficiency of a prior alignment with ASEAN for all the plus four economies.

**Key words**: regional economic integration, Asia, efficiency cost, comparative advantage, first mover advantage, trade diversion.

**JEL Classification**: F13, F14, F15

# Asian Economic Integration[*]
*ASEAN+3+1 or ASEAN+1s?*

## 1       Introduction

The concept of an Asian economic community was first proposed at the Bali ASEAN summit in 2003. The concept has been taken forward in the East Asia Summit held in December 2005. At this summit ASEAN+3, India and Australia and New Zealand came together to deliberate on the evolution of an Asian Economic Community on the lines of the European Union (EU). These developments notwithstanding several initiatives are already under way towards achieving the objective of regional economic integration in Asia.  Among these are agreements between the ASEAN regional grouping and Japan (AJCEP), China (ACCEC), Korea[1] (AKCCP) and India (AICEC). The framework agreement has been signed for all these initiatives. A further initiative at forming a preferential trading arrangement in the region comprising ASEAN +3 is under discussion and is seen by many as the building bloc of a future East Asian Community (EAC). The EAC can then become the harbinger of the Asian Economic Community.

Regional economic integration or preferential trading arrangements (PTAs) among economies in any region have however raised several concerns. A primary concern is if the PTA implies an efficiency cost and as a consequence undermines trade liberalization through the multilateral process. Given that a PTA accords preferential treatment to members vis a vis non- members there is always a possibility of trade being diverted away from non-members to members. On occasion when non-members are more efficient producers this process of trade diversion will imply a cost in terms of denying both the producers and the consumers access to lower cost and more efficiently produced goods. A preferential trading arrangement therefore needs

[1] In this paper Korea represents Republic of Korea.

to be evaluated to determine if there are efficiency costs by way of distortion in the patterns of trade away from those expected on the basis of comparative advantage.

Having regard to this background of regional economic integration in Asia and the concerns raised on efficiency costs there is a need to undertake an analysis of the proposed new regional arrangement in Asia. Understanding the efficiency implications of the preferential trading arrangement will help policymakers in the participating countries to better prepare for and cope with economic integration in the region and evaluate the worth of the formation of future PTAs vis a vis multilateral liberalization. It is in this context that we set out the research agenda for this paper.

As such an attempt is made to evaluate the most efficient approach to regional economic integration in Asia. For the purpose, we define Asia as inclusive of ASEAN, the plus three economies of China, Japan, Korea and India i.e. the ASEAN+4[2]. Given that ASEAN is an existing regional bloc in Asia, alternative approaches to the alignment of the plus four economies with ASEAN for the formation of the ASEAN+4 trade bloc have been examined in terms of their efficiency costs. As a first step to our analysis, however, we establish the economic credentials of ASEAN+4 as a potential candidate for regional economic integration in Asia.

The paper proceeds as follows. A brief description of the sample period and data and review of previous empirical literature are given in Sections 2 and 3 respectively. In Section 4 a detailed analysis of the trends in intra-regional trade of the ASEAN+4 economies is undertaken to determine if there is a significant trade bias evident among the member countries. The index of trade intensity and the more sophisticated measures like trade bias and complementarity indices have been used to establish the case for ASEAN+4 as a regional trade bloc. The westward extension of ASEAN+3 to include India as an integral member of the ASEAN+4 is explained in Section 5. Alternative routes to Asian economic integration in terms of their economic efficiency are examined in Section 6. Efficiency is interpreted in terms of least cost of

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[2] The ASEAN-Australia &New Zealand Comprehensive Economic Partnership Agreement i.e. AFTA-CER CEP has trade facilitation rather than trade liberalization as its agenda. Our analysis is therefore restricted to 14 of the 16 countries that were represented in the East Asia Summit in December 2005.

adjustment of a country's production structure for participation in the preferential trading arrangement by itself as also against multilateral liberalization. The regional orientation index has been used jointly with the index of comparative advantage to analyze existing and potential inefficiencies in trade patterns. Costs that may have to be incurred by any of the plus four countries on account of trade diversion following a pre-emptive entry in ASEAN by any one country are estimated in Section 7. Section 8 concludes with a presentation of the main findings of our analysis and their implications for shaping economic regionalism in Asia.

## 2       Sample period and data

The drive towards regionalism in Asia gained momentum only after the 1997-98 East Asian crisis. The reference period for the analysis in this paper is therefore 1999-2003. For the purpose of comparison, where required, the analysis has also been undertaken for the period 1995-99. UNCOMTRADE based trade (export and import) data classified according to the Harmonized System (HS) at the 2 and 6-digit levels have been used for analysis.

## 3       Previous empirical literature

Several studies have examined the idea of regional economic integration in Asia. Most of these studies have focused on separate regions of ASEAN like North East Asia (the plus three economies of China, Japan and Korea) and the ASEAN+3. Mingqui (2003) has analyzed the ASEAN+3 region for economic integration. In his study Mingqui provides evidence of increased interdependence among the 13 economies in the area of trade, capital flows and human resource mobility in support of economic integration in the region. ADB (2005) presents data indicative of the extent of trade and investment integration in Asia by sub-regions like East Asia and South Asia.  In the study East Asia is defined as the ASEAN 10 and the PRC, Japan, Hong Kong, China and Taipei, China. The extent of regional integration has been indicated on the basis of the intra-regional trade and investment shares and intensity measures.  A large number of studies, however, deal with the impact of trade bloc formation in terms of welfare and economic gains by undertaking ex post analysis using the gravity model e.g. Lee, Park and Shin (2004) and/ or an ex ante analysis

using CGE techniques[3]. The most comprehensive study by Scollay and Gilbert (2001) highlights the small benefits associated with bilateral arrangements and points out the damage that some of them could inflict upon member and non-member nations.

A systematic comparison or assessment of the many arrangements that have been proposed for economic integration in Asia has, however, not been undertaken so far. Studies on the efficiency of alternative regional arrangements or on the strategy of optimal sequencing of regional economic integration in Asia are missing. Furthermore, India does not find a mention in the limited number of impact studies undertaken for Asian FTAs. Even where options for economic integration of ASEAN-East Asia that are inclusive of India are considered the focus remains on simplistic statements on India's complementarities with East Asia in the services sector and the emerging trends of India's competitive advantage as an outsourcing hub in the region[4]. The focus of this study is at variance with issues discussed in the available literature as it aims at identifying the most efficient approach to the formation of a regional economic/trade arrangement in Asia that is inclusive of India. This is the first ever efficiency - based analysis of sequencing regional economic integration in Asia.

## 4    The case for ASEAN+4 as a potential trade bloc

### 4.1    The potential strength of ASEAN+4

The ASEAN+4 region comprising two of the most dynamic economies in the world that is India and China is referred to as the 'Arc of Advantage'. As may be noticed from the available facts presented in Table 4.1, the gross national income of the countries comprising this regional bloc is over US $ 7.6 trillion in 2003 and is comparable to the US $ 9.4 trillion gross national income of the EU. In terms of purchasing power parity, the national income of ASEAN+4 is US $ 16 trillion and is more than the national income of NAFTA which is US $ 13 trillion or of the EU which is US $ 11 trillion. The combined total reserves of this region are about US$ 2

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[3] For example Scollay and Gilbert (2001) and Yamazawa (2001) have estimated the potential effect of FTAs in North East Asia on welfare, trade and productivity.

[4] The strengthening of India's linkages with ASEAN (5-in particular) finds a mention in Rajan and Sen in ADB (2005). The context however continues to be the 'increasing complementarities in the services sector'.

trillion, and are much larger than that of the EU. Given that the proposed 14 country singular economic entity of ASEAN+4 has a 19 per cent share in total world trade which is almost as much as that of NAFTA and contributes 21 per cent of the global output and is in addition home to about half of the world's population, it has the potential to impact the global as well as the regional economies.

**Table 4.1: ASEAN+4 Region: Summary Indicators**

|  | ASEAN+4 | NAFTA | EU |
|---|---|---|---|
| Gross National Income (trillion US $) | 7.60 | 12.50 | 9.40 |
| National income (trillion US $)PPP | 16.00 | 13.00 | 11.00 |
| Population (billion) | 3.03 | 0.42 | 0.45 |
| Total reserves (trillion US $) | 1.60 | 0.25 | 0.52 |
| Share of world trade (%) | 19.22 | 20.27 | 38.80 |

*Source: WDI, World Bank, 2005*

## *4.2 Trends in intra-regional trade*

The case for ASEAN+4 as a potential trade bloc in Asia is proposed on the basis of the encouraging trends evident in intra-bloc trade. Intra-regional trade as a per cent of total trade at an aggregate level for the ASEAN+4 economies along with some selected blocs is shown in Table 4.2[5]. Trade among the member nations of ASEAN+4 as against their trade with the rest of the world registered an increase in the period 1995-2003 even though there was a fall in 1999, possibly on account of the East Asian crisis. In 2003 intra-bloc trade for ASEAN+4 was 44 per cent. This value of intra-regional trade share is higher than the corresponding share for many of the existing trade blocs in the year of their formation. For example, intra bloc trade for NAFTA was 42.1 per cent in 1994 and for Mercusor it was 12.9 per cent in 1991[6].

**Table 4.2: Intra-Bloc Trade (%)**

| Regions | 1995 | 1999 | 2003 |
|---|---|---|---|
| ASEAN | 25.5 | 24.6 | 25.3 |
| ASEAN+4 | 42.0 | 39.5 | 44.0 |
| NAFTA | 45.0 | 50.1 | 49.9 |

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[5] Data has been presented at four-year intervals to reduce the influence of any annual irregular variations such as those on account of fluctuations in commodity prices.
[6] Maurice Schiff and L. Alan Winters (2003).

It is also evident from Table 4.2 that the potential of ASEAN+4 as a candidate for regional economic integration is higher than that of the existing regional bloc in Asia that is ASEAN. Intra-ASEAN trade is less than that for ASEAN+4. This fact is further corroborated when the trends for intra-bloc exports and imports shown in Tables 4.3 and 4.4 are analyzed. There exists a positive difference between the levels of intra-bloc exports and imports for the proposed ASEAN+4 grouping as against the existing ASEAN. In 2003, intra-ASEAN trade– both exports and imports stood at 22 per cent and this is much lower than the 35 per cent and 43 per cent of intra-ASEAN+4 exports and imports respectively.

**Table 4.3: Intra Bloc Exports (%)**

| Year | 1995 | 1999 | 2003 |
|------|------|------|------|
| ASEAN | 25.5 | 22.5 | 22.4 |
| ASEAN+4 | 35.2 | 31.1 | 35.0 |

**Table 4.4: Intra Bloc Imports (%)**

| Year | 1995 | 1999 | 2003 |
|------|------|------|------|
| ASEAN | 17.5 | 21.8 | 22.0 |
| ASEAN+4 | 38.9 | 39.8 | 43.0 |

Trends in intra-regional trade are therefore suggestive of the strength of the ASEAN+4 as a potential candidate for a regional bloc in Asia[7].This conclusion is further substantiated when the degree of 'trade bias' among member nations of the proposed bloc is evaluated using the index of trade intensity (TI). As noted by Petri (1992), increases in intra-regional trade signify an increase in interdependence but do not give a strong indication of the 'bias' towards regionalization, as they may reflect changes in other variables, especially income growth. The growth in internal trade

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[7] A series of earlier papers like Wonnacott, Paul and Mark Lutz (1989), Summers, Lawrence (1991), Krugman (1993) and Frankel et al (1995) argue that RTAs with larger pre–trade volumes and geographically proximate countries are likely to be welfare improving. Member nations of RTAs are referred to as 'natural trading partners' based on the criterion of the volume of trade. The volume of trade, may not, even though it is the most popular criterion, necessarily provide an objective measure of the extent to which the trading partners are 'natural' given that the volume of trade is itself affected by trade policy.

shares may, therefore, reflect income-induced changes in imports, rather than a rise in 'natural' tendency to trade. To control this effect the TI index normalizes the bilateral or intra-regional trade shares according to the importance of the country or region in total world trade. The index of trade intensity with a value greater than one is indicative of higher bilateral trade than can be expected on the basis of the countries' share in world trade. The change in the value of the index over time reveals if any two countries/groupings are experiencing an increased or decreased tendency to trade with one another. An increasing value of the index is indicative of enhanced prospects for further integration while a decreasing value would suggest diminished prospects. The TI index therefore, provides additional insights into the prospects for regional economic integration.

Table 4.5 below summarizes the change in the TI index[8] at 3 time points[9] in our reference period. For a comparative picture the TI indices at the same time points are also shown for NAFTA. The TI index for ASEAN+4 clearly documents the increase in the concentration of trade within the region. The TI index as shown in Table 4.5 exceeds unity for all the three time points in our reference period. This is indicative of 'intense' trade relations within the ASEAN+4 regional grouping[10]. The TI index for ASEAN+4 is comparable to that for NAFTA, particularly at the time of the latter's coming into effect[11]. Trends in the index of trade intensity further confirm the claim of ASEAN+4 as a potential candidate for a regional trade bloc in Asia.

**Table 4.5: Intra-regional Trade Intensity Index**

| Regions | 1995 | 1999 | 2003 |
|---------|------|------|------|
| ASEAN   | 3.9  | 4.5  | 4.4  |
| ASEAN+4 | 2.1  | 2.2  | 2.2  |
| NAFTA   | 2.4  | 2.3  | 2.7  |

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[8] Intra-ASEAN Trade Intensity equals: (Intra ASEAN Exports/Total World Exports)/{(Total ASEAN Exports/Total World Exports)*(World Exports to ASEAN/Total World Exports)}: Kawai (2004)

[9] A limitation that is often cited of the TI index is that it fails to account for the distance between individual countries. Ng and Yeats (2003) have calculated the distance adjusted TI at a time point. The calculation of the TI over three different time points in our analysis should take care of this as bilateral distance remains constant over the period of time.

[10] Relative to ASEAN the TI index for ASEAN+4 that is inclusive of China, Japan, Korea and India is smaller in magnitude as the TI indices control for a region's relative size in world trade.

[11] This corroborates earlier evidence in favor of the ASEAN+4. Intra-regional trade shares for ASEAN+4 in contrast with that of ASEAN are comparable to that for NAFTA at the time of the latter's formation.

While available trends on intra-ASEAN+4 trade establish the strength of the group by itself and relative to the existing bloc in Asia, that is, ASEAN for regional economic integration, there is a need to ascertain the relative positioning of India vis-à-vis the other three economies. The need to contextualize India in the proposed bloc becomes evident when we look at the share of each of the plus four economies in intra-ASEAN+4 trade (Table 4.6). It is observed that India makes the lowest contribution to intra-regional trade (exports and imports) for the proposed trade bloc. In comparison with Japan that has the maximum share of 28 and 25 per cent in total regional exports and imports respectively in 2003, India's share at about 2.0 and 3.0 per cent in exports and imports respectively is the lowest.

**Table 4.6: Share of the +4 Economies in Intra ASEAN+4 Exports and Imports (%)**

| Countries | Share in Intra ASEAN+4 Exports | | Share in Intra ASEAN+4 Imports | |
|---|---|---|---|---|
| | **1999** | **2003** | **1999** | **2003** |
| China | 15.7 | 20.3 | 18.7 | 27.8 |
| India | 1.4 | 2.0 | 2.9 | 2.8 |
| Japan | 30.1 | 27.8 | 30.1 | 25.4 |
| Korea | 14.2 | 13.5 | 12.9 | 12.8 |

India's alignment with ASEAN+4 is, however, justifiable on account of the rate at which its trade with India is growing relative to that with the plus three economies, increased share vis-à-vis other major trading blocs and partner countries in India's total trade and the growing importance of India as a market for exports of ASEAN+4 economies. We present evidence in support of India's increasing trade linkages with the proposed bloc.

## 5 The case for India in ASEAN+4

### 5.1 Rate of growth of total trade with ASEAN+4

The rate of growth of total trade of the plus four economies with ASEAN+4 is presented in Table 5.1. It is observed that the rate of growth of India's total trade with ASEAN+4 over 1999–2003 is close to that of China and greater than that of Japan

and Korea. Among the plus four economies, India, registered the highest annual rate of growth of total trade with ASEAN+4 over the period 2001-2003.

**Table 5.1: Rate of Growth of Total Trade with ASEAN+4 (%)**

| Year | India | China | Japan | Korea |
|---|---|---|---|---|
| 1999/2000 | - 3.2 | 33.0 | 28.3 | 31.2 |
| 2000/2001 | 11.4 | 5.4 | - 9.5 | - 11.8 |
| 2001/2002 | 24.8 | 21.9 | 5.3 | 13.2 |
| 2002/2003 | 37.3 | 37.4 | 20.6 | 23.8 |
| Average annual rate of growth | 9.5 | 12.7 | 3.0 | 5.3 |

### 5.2 *Trade with ASEAN+4 vis-à-vis other regional blocs*

India's trade with regional blocs presents an interesting picture (Table 5.2). In 1995, the EU (15/25) was the most significant trading bloc for India in terms of its share in total trade. Trade with the EU constituted 28 per cent of India's total trade. This was followed by NAFTA at around 15 per cent and ASEAN at 8 per cent. In 2003, the share of EU in India's total trade has fallen to 21 per cent and the share of the proposed ASEAN+4 bloc has increased to about 20 per cent[12]. With its share in India's total trade having increased to equal that of the EU, ASEAN+4 has emerged as the other dominant partner bloc for India.

**Table 5.2: Shares of Select Trade Blocs in India's Total Trade (%)**

| Year | EU15 | EU25 | NAFTA | Mercosur | ASEAN | ASEAN+4 | SAARC |
|---|---|---|---|---|---|---|---|
| 1995 | 27.4 | 28.0 | 14.9 | 0.8 | 7.8 | 18.1 | 2.9 |
| 1999 | 23.5 | 24.0 | 15.2 | 1.1 | 8.5 | 17.5 | 2.1 |
| 2003 | 20.2 | 20.7 | 12.9 | 0.9 | 9.3 | 19.9 | 3.4 |

### 5.3 *Trade with ASEAN+4 vis-à-vis Rest of the World*

India's trade orientation towards the proposed trade bloc is also apparent when we look at the increasing divergence between the shares of ASEAN+4 and the rest of the world in India's total trade. As is evident from Figure 5.1, there is a clear increase in the share of ASEAN+4 in India's total trade at the expense of the rest of the world.

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[12] It may be noted that the share of ASEAN in India's total trade has remained at about the same level over 1995-2003.

Over the period 2000–2003 the share of ASEAN+4 in India's total trade has increased from 15 to almost 20 per cent and that of rest of the world registered a fall from 85 to 80 per cent.

**Figure 5.1: Share of ASEAN+4 vs. ROW in India's Total Trade**
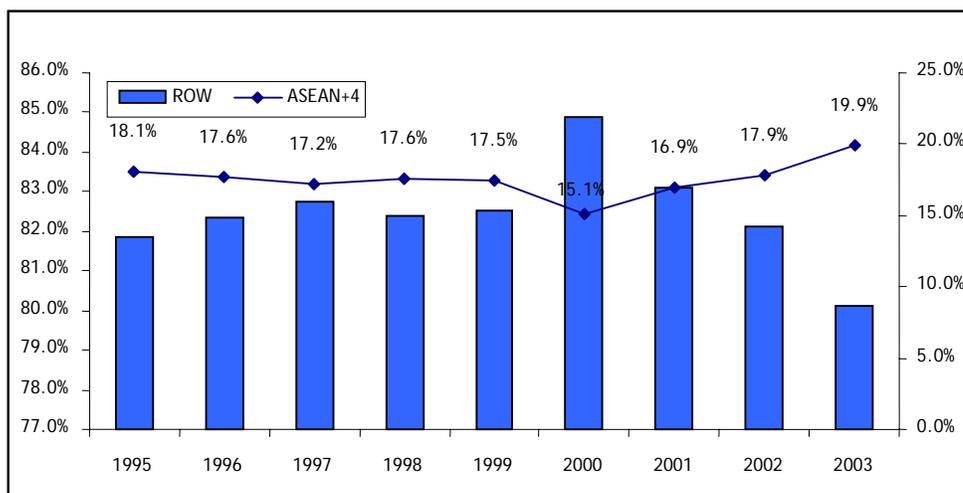


As concerns individual member nations, three of the ASEAN+4 countries–China, Japan and Singapore feature among the top ten trading partners for India in 2003. Singapore and China first emerged among the top ten trading partners for India in 2000 and have remained so since then. China has over the same period emerged as the third largest trading partner for India (Table 5.3).

**Table 5.3: India's Top Ten Trading Partners**

| Top Ten 2003 | Share 2003 (%) | Top Ten 1995 | Share 1995 (%) |
|---|---|---|---|
| USA | 11.7 | USA | 13.7 |
| UAE | 5.0 | Germany | 7.5 |
| *China* | 4.9 | *Japan* | 6.8 |
| UK | 4.4 | UK | 5.7 |
| Belgium | 4.1 | Belgium-Lux. | 4.1 |
| Germany | 3.8 | UAE | 3.9 |
| Hong Kong | 3.3 | Hong Kong | 3.2 |
| *Japan* | 3.1 | Italy | 2.8 |
| *Singapore* | 3.0 | Russian Fed. | 2.7 |
| Switz.Leicht. | 2.6 | Saudi Arabia | 2.7 |

*Note: Countries in bold and italics are members of ASEAN+4*

*5.4     India as a market for the ASEAN+4*

Simultaneous with the increase in the share of ASEAN+4 in India's total trade it is observed that there is an increase in India's relevance for the ASEAN+4 nations. Evidence shows that India is increasingly being looked at as a market for exports (Table 5.4). Over the years 1995-2003 India registered the highest rate of growth in the region for Chinese and Indonesian exports. India is second only to China as the most attractive market in the region for Korean, Malaysian and Thai exports.

**Table 5.4: India as a Market for ASEAN+4: A Comparison with the +3 Economies**

| Markets | Bru. Dar. | China | India | Indon. | Japan | Korea | Malay. | Phili. | Singap. | Thai. |
|---------|-----------|-------|-------|--------|-------|-------|--------|--------|---------|-------|
| CHINA | - | - | 86.7 | 13.1 | 17.9 | 31.6 | 27.6 | - | 29.7 | 27.5 |
| INDIA | - | 37.4 | - | 39.7 | - 0.6 | 17.0 | 22.8 | - | 7.2 | 13.5 |
| JAPAN | - | 12.1 | - 2.6 | 1.2 | - | 6.1 | 2.2 | - | 0.6 | 2.3 |
| KOREA REP. | - | 22.3 | 7.7 | 5.4 | 1.3 | - | 5.3 | | 9.6 | 11.0 |

*Notes: figures in the table represent average annual rog of exports to the specific markets over 1999-2003.*

The fact that India is emerging as an important market for intra-regional exports is corroborated when we look at India's trade with ASEAN+4. It may be seen from Table 5.5 that the average annual rate of growth of imports of India from ASEAN+4 exceeds the rate of growth of India's exports to ASEAN+4.  In addition, when compared with other plus four economies, the rate of growth of India's imports from ASEAN+4 is second to China and significantly higher than that of Japan and Korea.

**Table 5.5: ROG of Exports and Imports of the Plus Four Economies: 1995-2003**

| | **India** | **China** | **Japan** | **Korea** |
|---|---|---|---|---|
| Imports from ASEAN+4 | 10.8 | 14.6 | 4.4 | 4.8 |
| Exports to ASEAN+4 | 7.7 | 10.5 | 1.7 | 5.8 |

*To recap*:

- Trends in intra-bloc trade reveal the strength of ASEAN+4 as a potential candidate for regional economic integration.

- Trends in index of trade intensity further substantiate the claim of ASEAN+4 as a regional trade bloc in Asia.

- In the proposed trade bloc, though India's share in total intra-bloc trade is the lowest relative to the plus three economies yet its alignment with the ASEAN+4 bloc is justified on account of its growing trade linkages with the proposed bloc.

Having noted the case for the justification for the inclusion of India in the proposed bloc of ASEAN+4, we analyze if India can be positioned in a manner similar to the plus three economies or if there are any features characterizing India that make it distinct from the other three economies and which may have implications for trade integration in Asia. For this purpose we undertake a comparative analysis of the trade bias towards the proposed bloc as exhibited by India and the plus three economies.

## 6 India vis-à-vis the plus three economies

It is observed that the share of trade with ASEAN+4 in total trade, exports and imports is far greater for the plus three economies than for India. In 2003, the share of ASEAN+4 in Korea's total trade is 41 per cent, double the region's share of 20 per cent in India's total trade. Corresponding shares for China and Japan are 33 and 36 per cent respectively. Similar trends are observed for exports and imports (Table 6.1).

**Table 6.1: Share of ASEAN+4 in Total Trade of the Plus Four Economies: 2003**

|  | India | China | Japan | Korea Rep |
|---|---|---|---|---|
| Total Trade | 19.9 | 33.2 | 36.2 | 41.2 |
| Exports | 17.6 | 26.0 | 33.0 | 39.0 |
| Imports | 21.7 | 40.9 | 40.2 | 43.6 |

The TI index[13] further highlights the difference between India and the plus three economies vis-à-vis ASEAN+4. The TI index for each of the plus four economies with ASEAN+4 is presented in Table 6.2. The value of the TI index is close to 2 for all the plus three economies. This implies intense trade of these economies with ASEAN+4. In contrast the TI value of India with ASEAN+4 is yet to attain the value of unity. This suggests that unlike the plus three economies India does not at present reveal a marked trade bias towards the ASEAN+4.

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[13] Following Kojima (1964) and Drysdale (1969), the index of trade intensity is defined for country i's exports to country j as the share of I's exports going to j$(Xij/Xi)$ relative to the share of j's imports $(Mj)$ in world imports net of I's imports $(Mw-Mi)$. That is,
$Iij=(Xij/Xi)/ Mj/Mw-Mi$.

**Table 6.2: Trade Intensity Indices with ASEAN and ASEAN+4**

|  | India | Japan | Korea | China |
|---|---|---|---|---|
| 1995 | 1.2 | 2.4 | 1.9 | 0.9 |
|  | *0.9* | *2.1* | *2.0* | *1.7* |
| 1999 | 1.2 | 2.6 | 2.4 | 1.2 |
|  | *0.8* | *2.1* | *2.3* | *2.1* |
| 2003 | 1.7 | 2.4 | 1.8 | 1.1 |
|  | *0.9* | *2.2* | *2.1* | *1.7* |

*Numbers in italics and bold are TI indices for ASEAN+4*

Clearly then, even though India's trade relations with ASEAN+4 are growing and doing so at a rate higher than that for any of the other plus four economies, the magnitude of trade as also the intensity of trade are not yet comparable with that of any of the plus three economies. This trend is borne out by our calculations of the bilateral trade bias index (BI). The BI[14] measures the average influence of relatively low or high resistances to individual commodity trade between one group of countries and another as compared with the latter's trade with the rest of the world. A BI index with a value greater than unity indicates a positive influence or bias while a value less than unity measures a negative influence. The bias indices shown in Table 6.3 present the picture of India's differential position among the plus four economies even more vividly. Given that the value of the index is less than unity, India's trade bias is not yet as intense as or comparable with that of the plus three economies' towards the ASEAN+4.

**Table 6.3: Index of Trade Bias**

|  | India | China | Korea | Japan |
|---|---|---|---|---|
| 1995 | 1.9 | 1.2 | 1.8 | 2.7 |
|  | *0.8* | *2.0* | *2.0* | *2.6* |
| 1999 | 2.0 | 1.7 | 2.3 | 3.4 |
|  | *0.8* | *2.4* | *2.2* | *3.1* |
| 2003 | 2.2 | 2.0 | 1.9 | 3.0 |
|  | *0.9* | *2.1* | *2.3* | *3.5* |

*Numbers in italics and bold are Bias indices for ASEAN+4*

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[14] The BI has been calculated at the aggregate trade level and sector level for this paper. However calculation of the BI is laborious as it involves the matrices of bilateral trade by commodity unlike for the TI index. Given that $I_{ij}=B_{ij}*C_{ij}$ (Drysdale, 1982) the intensity index is more informative at lower costs and provides the same information as the Bias index if $C_{ij}$ does not change much over the reference period. This is true of our data as $C_{ij}$ remains close to/ equal to unity all along the reference period of this study.

So, India's trade with ASEAN+4 increasing at a rate greater than that of any of the plus three economies and its increasing importance as a market for ASEAN+4 provides the basis for accepting India as an integral part of ASEAN+4[15]. However, the share of the proposed bloc in the plus three economies' total trade is far greater than and more intense relative to its share in India's total trade. So a de facto market led integration of the plus three economies with ASEAN (the ASEAN+3)[16] is evident. In the ASEAN+4 set of countries India thus stands out as the 'distant' economy. For a trade bloc comprising the ASEAN, China, Japan, Korea and India it is therefore imperative that the path of integration for the 'distant' economy be identified. Considering that the index of trade intensity and bias is greater than unity for India-ASEAN trade over 1995-2003[17] we suggest that India should enter the ASEAN+4 by first aligning with ASEAN in an ASEAN+1 arrangement. This may happen through either of the following two options[18]:

a. ASEAN+1s: India's alignment on a plus one basis combined with all the plus three economies also entering through a plus one arrangement. A convergence of all the ASEAN+1 agreements will lead to the emergence of ASEAN+4; *or*

b. ASEAN+3+1: As stated above the ASEAN +3 already exists as a de facto market led arrangement. India enters last through the ASEAN+1 route to constitute ASEAN+4.

We evaluate these two routes in terms of their efficiency costs using a two part methodology which is explained below.

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[15] India's trade intensity index with ASEAN+4 is less than one for aggregate trade. However when a sector-wise TI index is calculated it is greater than one for sectors like agriculture and allied commodities, minerals and mineral fuels and more recently in the chemicals and plastics sector. This is borne out by our calculations of the sector-wise CI and BI indices. This therefore supports our earlier inference on India's justified alignment with ASEAN+4. Results of sector-wise BI, CI and TI index are presented in the Appendix –Tables A.1-A.3.

[16] ASEAN+3 has been referred to as the most suitable candidate for East Asian regionalism in the literature (Baldwin, 2006; Drysdale, Peter 2001). At this stage the ASEAN+3 group is not a regional trading agreement. The focus in ASEAN+3 is on financial cooperation.

[17] See Tables 15 and 16.

[18] Note that for the plus three economies the TI and BI in Tables 15 and 16 indicate equal bias towards the existing and proposed bloc.

# 7    The most efficient route to ASEAN+4: ASEAN+3+1 or the ASEAN+1s?

## 7.1    *Regional orientation and comparative advantage*

To estimate the efficiency costs associated with alignment of the plus four economies with ASEAN we examine if the additional trade that is generated on account of the anticipatory effects of the proposed/under negotiation/signed preferential arrangements is primarily in products in which these countries reveal comparative advantage in the global market. The analysis will allow us to infer if additional trade and increased export dynamism is in products where the plus four countries have low enough costs to be competitive in the world market. If this does not hold true then the comparison suggests that the additional trade within the respective markets/trading arrangements is inefficient, has attached costs and could have been replaced by more efficient outside suppliers[19].

The investigation is undertaken using two indices - the index of revealed comparative advantage (RCA)[20] and the regional orientation (RO) index. The RO index conveys useful information about change in geographic patterns of trade as it takes the ratio of the share of a product in exports to the region to the share of the product in exports to third countries[21]. Both the index of RO and RCA are calculated at the 2-digit level of HS classification and for ASEAN+4 and ASEAN as target markets. As such, direct comparisons of the two indices provide an indication of the extent to which trade orientation towards ASEAN+4 and ASEAN distorts trade patterns based on

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[19] The issue is essentially whether RTAs foster 'high cost' imports at the expense of 'low cost' ones. The traditional calculations of trade diversion based on import data infer this from the displacement of imports from non-partners by those from partners, implicitly comparing partner and non-partner costs by their relative competitiveness in the pre-RTA regional market. In this section we follow the supplementary view as developed in Yeats (1997) where inference about 'high' and 'low' costs is made by implicitly comparing the relative competitiveness of partner and non-partner goods in world markets.

[20] The index of Revealed Comparative Advantage (RCA) is calculated as
$RCAj = [xoj/Xto] / [x*wj \div X*w].100$ where $x*wj$ and $X*w$ represent world (ASEAN) exports of product j and total world exports respectively. $xoj$ and $Xto$ represent country exports of j to world (ASEAN).

[21] The regional orientation (RO) index is defined as:
$Rj = [x_{rj} / X_{tr}]/ [x_{oj} /X_{to}].100$
where $x_{rj}$ and $x_{oj}$ represent the value of exports of j to ASEAN and to ROW, respectively and $X_{tr}$ and $X_{to}$ reflect the total value of the country's exports to ASEAN and outside the arrangement.

comparative advantage in the global market[22] for each of the plus one economies. Efficiency costs are measured as the percentage of sectors in which the economy is getting increasingly oriented towards the respective region over 1995-2003[23] even though it is not competitive in these sectors in the global market. In other words we identify the percentage number of sectors which satisfy the following criterion.

$$(RO_{2003} - RO_{1995}) > 0 \ \& \ RO_{2003} > 1 \ and \ RCA_{2003} < 1$$

*in two target markets-* ASEAN and ASEAN+4

The results of our analysis are presented in Table 7.1. The efficiency costs are lower

**Table 7.1: Efficiency Costs\*: Regional Orientation and Comparative Advantage**

|  | ASEAN | ASEAN+4 |
|---|---|---|
| India | 50.0 | 53.6 |
| China | 26.1 | 66.7 |
| Japan | 90.9 | 85.1 |
| Korea | 68.3 | 77.5 |

*\*% number of Sectors*

for alignment with ASEAN relative to ASEAN+4 for all the economies except Japan. For China the cost of alignment with ASEAN is low relative to alignment with ASEAN+4 and lowest among the plus four economies. In comparison with about 67 per cent for ASEAN+4 only 26 per cent sectors are such that despite being comparatively disadvantageously placed in the world market China's exports from these sectors are getting increasingly oriented towards ASEAN. For India, in about 50 per cent of the sectors increased export orientation towards ASEAN is observed despite a lack of comparative advantage in the world market in comparison with 54 per cent such sectors in case of ASEAN+4. Corresponding figures for Korea are 68 and 78 per cent for ASEAN and ASEAN+4 respectively. Clearly, ASEAN+1 is a more cost efficient arrangement for all the economies except Japan[24].

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[22] An attempt has also been made to do the same for the rest of the world market or the Non-ASEAN world. The results are not significantly altered.

[23] The change in RO index is calculated over a period of time as it conveys only limited information about trade patterns if computed for a single point in time. Inter-temporal comparisons over relatively short periods provide useful information on the way the geographic pattern of trade is changing.

[24] As an alternative to this strict efficiency criterion if costs are calculated as percentage number of sectors that are increasingly getting oriented towards the target market-ASEAN or ASEAN+3 but

## 7.2 *Efficiency costs vis-à-vis multilateral liberalization*

### 7.2.1 *Alignment of comparative advantage*

In this section we estimate the efficiency costs by undertaking a comparison of the comparative advantage of each of the plus four economies in the ASEAN+4/ASEAN market and the world market. Alignment of the structure of a country's comparative advantage in the two markets (ASEAN and world or ASEAN+4 and world) will imply fewer shifts in the production structure and lower costs as a consequence of an FTA with either ASEAN+4 or ASEAN. In addition, we have also compared the RCA across the three markets cross classified by factor intensity. The analysis will provide evidence of a shift, if any, of the factors of production, between industries that may be required as a consequence of regional integration. The efficiency costs as estimated in this section will also be indicative of the cost of participation in the regional FTA relative to participation in multilateral liberalization which, according to conventional wisdom, is considered the 'first best' solution for attaining the potential benefits of a more open world economy.

The index of RCA has been calculated at HS-6 digit level for the most recent year of our sample period that is 2003[25]. The alignment of RCAs has been checked using the Spearman Rank Correlation Coefficient (SRCC) at the aggregate level (for all sectors) and separately for agriculture, manufacturing, minerals and fuels, chemicals and plastics and manufactures chiefly by materials and miscellaneous manufactures[26]. The SRCC, a non-parametric test, is often used to test for independence between two random variables. The range of possible values is from $-1$ to $+1$. A value close to $+1/-1$ will be interpreted to mean strong positive/negative rank correlation while a value of zero indicates a complete lack of correlation. For the purpose of our analysis, a

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experiencing a fall in comparative advantage in the world market i.e. $(RO_{2003} - RO_{1995}) > 0$ & $(RCA_{2003} - RCA_{1995}) < 0$ alignment with ASEAN emerges as the lower cost and hence more efficient option for all the plus four economies. The results are reported in the Appendix Table A.4.

[25] As the arrangements are yet to fructify we calculate efficiency costs using the most recent year 2003 as indicative of future costs.

[26] The alignment of the structure of comparative advantage has been undertaken irrespective of the value of the index. Alternately alignment of only those commodities where countries are comparatively advantageously placed has also been tried. The results do not alter the earlier implications.

high[27] rank correlation will be interpreted to mean the ranking of a country's industries by comparative advantage in a particular market, in this case, ASEAN or ASEAN+4 is similar to its ranking in the global market. A low coefficient will indicate that the ranking is considerably different across the two markets. The former implies lower cost of alignment with the respective preferential arrangement vis-à-vis the multilateral participation. The results are presented in Table 7.2.

**Table 7.2: Alignment of Comparative Advantage vis-à-vis Multilateral Liberalization**

|  | India | China | Japan | Korea |
|---|---|---|---|---|
| **All Sectors** | **0.66** | **0.72** | **0.73** | **0.63** |
|  | *0.73* | *0.84* | *0.79* | *0.78* |
| Agriculture & Allied | **0.63** | **0.60** | **0.59** | **0.55** |
|  | *0.74* | *0.81* | *0.67* | *0.74* |
| Manufacturing | **0.67** | **0.74** | **0.72** | **0.63** |
|  | *0.73* | *0.85* | *0.78* | *0.78* |
| Minerals & Mineral Fuels | **0.64** | 0.44 | **0.68** | 0.48 |
|  | *0.82* | *0.85* | *0.89* | *0.78* |
| Chemicals & Plastics | **0.70** | **0.75** | **0.65** | **0.67** |
|  | *0.75* | *0.86* | *0.73* | *0.82* |
| Manufacturers chiefly by Mat. | **0.69** | **0.74** | **0.71** | **0.61** |
|  | *0.74* | *0.83* | *0.79* | *0.77* |
| Machinery | **0.55** | **0.72** | **0.76** | **0.65** |
|  | *0.57* | *0.82* | *0.84* | *0.79* |
| Misc (HS 90-99) | 0.38 | 0.85 | **0.73** | **0.60** |
|  | *0.50* | *0.85* | *0.82* | *0.75* |

*Note: Italicized: ASEAN+4; Bold: Moderate; pink: high: All others: Low; All significant*

The value of the coefficient of SRC is fairly high at the aggregate level and for individual sectors for all economies. As against multilateral liberalization, participation in either of the two arrangements, that is, ASEAN+4 or ASEAN, does

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[27] While no strict definitions are available we specify the range of 0-0.4 as low, 0.5-0.7 as modest and 0.8 and above as high for the SRCC.

not imply significant shifts in the comparative advantage and, consequently, in the production structure. The extent of alignment is slightly higher at the aggregate level for all the economies for the ASEAN+4 market.

## 7.2.2  *Alignment of comparative advantage and shifts in factor intensity*

Five categories of factor intensity (FI) are identified. These are primary, unskilled - labour intensive, natural - resource intensive, human-capital intensive and technology intensive. The export patterns of the economies reclassified according to these five categories are compared across markets-world and ASEAN and world and ASEAN+4-for alignment using the SRCC. The results, presented in Table 7.3, are interesting. The value of the coefficient varies across countries but again falls in the range of being classified as modest to high, with very few in the latter category. India stands out as distinctly different from the other plus three economies. The export structure is aligned broadly similarly in ASEAN and world and ASEAN+4 and world for India. The value of the SRCC is almost the same in the two target markets. This implies an indifference between alignment with ASEAN or ASEAN+4 for India as neither implies any major shift of factors from their current employment in industries as oriented towards production for the global market. For the plus three economies ASEAN+4 is marginally more efficient than ASEAN.

**Table 7.3: Alignment of Comparative Advantage and Shifts in Factor Intensity**

|  | India | China | Japan | Korea |
|---|---|---|---|---|
| Human-Capital Intensive | **0.71** | **74** | **0.72** | **0.65** |
|  | *0.75* | *0.82* | *0.79* | *0.78* |
| Primary | **0.65** | **0.55** | **0.62** | **0.57** |
|  | *0.77* | *0.82* | *0.77* | *0.79* |
| Unskilled-Labour Intensive | **0.62** | **0.66** | **0.71** | **0.60** |
|  | *0.68* | *0.75* | *0.78* | *0.75* |
| Natural-Resource Intensive | **0.71** | **0.62** | **0.75** | **0.60** |
|  | *0.75* | *0.77* | *0.80* | *0.77* |
| Technology Intensive | **0.64** | **0.72** | **0.71** | **0.66** |
|  | *0.67* | *0.85* | *0.79* | *0.81* |

*Note: Italicized: ASEAN+4; Bold: Moderate; pink: high All others: Low;*

To consolidate our results efficiency costs in terms of a shift in factor intensity has been analyzed using another approach. The number of commodities for which a country enjoys comparative advantage in each market has been counted in each FI

category. A comparison is undertaken to see if there are major numerical differences across the global and regional markets. If true, it will imply shifts of the factors of production from one category to another and this displacement of factors may involve costs. The results are presented in Tables 7.4 and 7.5. We observe a broad alignment of comparative advantage in terms of factor intensity for the plus four economies in the world and ASEAN/ASEAN+4 markets. India has maximum comparative advantage revealed in unskilled-labor-intensive commodities, followed by technology-intensive and human-capital-intensive in that order–both in the world market and ASEAN/ASEAN+4 market. In general, India's revealed comparative advantage in ASEAN/ASEAN+4 is in line with that in the global market. The numbers in ASEAN and ASEAN+4 are more or less similar and distinct differences or patterns are not evident. No major costs are anticipated on account of alignment with either of the preferential arrangements vis-à-vis the global market. The results are on similar lines for the plus three economies.

**Table 7.4: Shifts in Factor Intensity: % Count of Products: ASEAN**

| Factor Intensity | India | | China | | Japan | | Korea | |
|---|---|---|---|---|---|---|---|---|
| Human-Capital Intensive | 19.5 | *22.1* | 18.3 | *18.7* | 21.7 | *23.8* | 23.5 | *24.2* |
| Natural-Resource Intensive | 6.2 | *6.3* | 5.0 | *6.1* | 6.5 | *8.7* | 6.6 | *7.3* |
| Primary | 15.1 | *17.3* | 10.1 | *10.5* | 3.9 | *5.2* | 7.0 | *6.8* |
| Technology Intensive | 21.4 | *22.2* | 25.8 | *28.0* | 47.0 | *42.1* | 31.8 | *29.1* |
| Unskilled-Labour Intensive | 32.4 | *25.3* | 36.4 | *31.7* | 10.8 | *10* | 25.5 | *26.8* |
| Un-Classified | 5.5 | *6.8* | 4.4 | *5.1* | 10.1 | *10.2* | 5.6 | *5.8* |
| **Total No. of Products** | 1511 | *996* | 1826 | *1898* | 1178 | *1163* | 859 | *865* |

*Bold and Italicized: ASEAN; Otherwise: World*

**Table 7.5: Shifts in Factor Intensity: % Count of Products: ASEAN+4**

| Factor Intensity | India | | China | | Japan | | Korea | |
|---|---|---|---|---|---|---|---|---|
| Human-Capital Intensive | 19.5 | *20.5* | 18.3 | *17.9* | 21.7 | *23* | 23.5 | *23.9* |
| Natural-Resource Intensive | 6.2 | *5.8* | 5.0 | *6.6* | 6.5 | *6.6* | 6.6 | *6.0* |
| Primary | 15.1 | *17.1* | 10.1 | *13.4* | 3.9 | *4.6* | 7.0 | *8.9* |
| Technology Intensive | 21.4 | *21.7* | 25.8 | *24.5* | 47.0 | *37.5* | 31.8 | *24.7* |
| Unskilled-Labour Intensive | 32.4 | *28.9* | 36.4 | *32.9* | 10.8 | *19.8* | 25.5 | *31.1* |
| Un-Classified | 5.5 | *6.0* | 4.4 | *4.7* | 10.1 | *8.4* | 5.6 | *5.4* |
| **Total No. of Products** | 1511 | *1114* | 1826 | *2084* | 1178 | *1527* | 859 | *1354* |

*Bold and Italicized: ASEAN+4; Otherwise: World*

Based on the above analysis of efficiency conditions it is considered that India's entry into the ASEAN+4 trade bloc will be more efficient if made through an ASEAN+1 arrangement. For China and Korea also the ASEAN+1 framework will be the more appropriate route. While the ASEAN+4 is marginally more efficient vis-à-vis multilateral liberalization, costs of regional orientation of exports are lower for both Korea and China in an alignment with ASEAN in the ASEAN+1 arrangement. Alternative calculations of efficiency costs give a similar inference for Japan also. A convergence of the plus one initiatives of all the plus four economies with ASEAN may therefore be the more efficient route to achieving regional economic integration.

## 8      If ASEAN+1: is there a first mover advantage?

If Asian economic integration is to be achieved through a convergence of the ASEAN+1 initiatives it is necessary that we analyze if a pre emptive entry to ASEAN by any of the plus four economies will give it a first mover advantage vis-à-vis the other economies. Context and sequence of events is important in evaluating a preferential trading arrangement. The ASEAN-China FTA triggered a positive domino effect in the region. First, Japan followed suit by submitting a similar proposal and soon India and Korea also followed. The late entrants–Japan, India and Korea may face export diversion on account of China being the first mover for FTA formation with ASEAN. This is particularly relevant as the Early Harvest Programme of the ASEAN-China framework agreement is already in implementation and the FTA itself will be the first to be effective. In this section we examine if China's prior entry in ASEAN has an adverse impact through trade diversion on the other three economies. The degree to which each country is affected through trade diversion will depend critically on how much overlap there is between the exports of these countries[28]. Empirical analysis of the trade diversion effect of the ASEAN-China FTA on partners in the Asian FTA has not been undertaken so far. We undertake an analysis of the export similarity of the plus four economies using conventional

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[28] Unlike the econometric analysis of trade diversion and trade creation effects of the PTAs using the gravity model and general equilibrium techniques this exercise enables us to distinguish the trade diversion effects at the commodity level. Commodities/product groups where India is most threatened on account of trade diversion as a consequence of the China-ASEAN FTA are thus identified in this paper.

techniques and, in addition, introduce innovations by evaluating the existing and potential overlap of comparative advantage of the plus four economies at the sector and commodity levels.

## 8.1    Export Overlap

First, an evaluation of the degree of overlap of exports of the plus four economies has been undertaken by a simple analysis of export composition. The observations thus made are substantiated using the statistical technique of Spearman Rank Correlation Coefficient (SRCC). The SRCC is calculated for exports both at the 2 and 6-digit HS level for India, China, Japan and Korea to ASEAN in 2003. As a check of the robustness of the results, the above exercise using correlations is repeated using a separate and equally popular export similarity technique known as the Finger–Kreinin Index (F-KI) [29].

The analysis of export composition reveals that there is very little similarity between the exports of India and the other three economies to ASEAN. At the 2-digit level (Table 8.1), we find that there is only a moderate export overlap between India and China, Korea and Japan. High overlap is indicated for exports of Korea with Japan. The export overlap between Korea and Japan is in fact the highest. The risk of trade diversion due to being left out or as a late entrant to the ASEAN would therefore not be particularly high for India. The risk of trade diversion is high for Korea vis a vis

**Table 8.1: Export Similarity of the +4 Economies in ASEAN: 2003.  (HS 2 digit)**

|            | India | China | Korea | Japan |
|------------|-------|-------|-------|-------|
| India      | -     | 0.6   | 0.6   | 0.5   |
| China      | -     | -     | 0.7   | 0.6   |
| Korea Rep. | -     | -     | -     | 0.8   |
| Japan      | -     | -     | -     | -     |

[29] The FKI estimates the export similarity by calculating the relative importance of various commodities in the export structure of pairs of countries and then using a filtering technique, that is,
$S = \sum i \, min([Xia/ \sum Xia ], [Xib/ \sum Xib])$
Where i =trade by disaggregated commodity
a, b=two countries
The first ratio is the share of commodity I in country a's total exports and the second is the share of commodity i in country b's total exports. If these ratios are equal then the ratio in our formula would sum to one, indicating perfect similarity. On the other hand, if they are totally different, the formula would be zero. The index can thus range from 0 to 1.

Japan. The results of the SRCC calculations at the 6-digit level of dis-aggregation presented in Table 8.2, however, allay the fears of trade diversion for all the four economies. The value of SRCC is low and, therefore, indicative of a negligible export overlap between the plus four economies reinforcing further our conclusion that the risk of trade diversion for a late entrant is low as is the first mover advantage.

**Table 8.2: Export Similarity of the +4 Economies in ASEAN: 2003.  (HS 6 digit)**

|           | India | China | Korea | Japan |
|-----------|-------|-------|-------|-------|
| India     | -     | 0.4   | 0.3   | 0.2   |
| China     | -     | -     | 0.4   | 0.4   |
| Korea Rep.| -     | -     | -     | 0.5   |
| Japan     | -     | -     | -     | -     |

*\* Significant at all levels*

The F-K index is estimated at the 2 and 6-digit level of disaggregation for India, China, Japan and Korea. The results are given in Tables 8.3 and 8.4. At the commodity level (HS-6 digit) the value of the index is small, thus corroborating the evidence on the SRCCs of the export structure of the plus four economies to ASEAN. The extent of competition between the plus three and India in the ASEAN market is almost non-existent.

**Table 8.3: Finger-Kreinin Index: ASEAN (HS 2 digit)**

|       |      | India | China | Japan | Korea |
|-------|------|-------|-------|-------|-------|
| India | 1995 | -     | 0.50  | 0.34  | 0.44  |
|       | 2003 | -     | 0.46  | 0.36  | 0.44  |
| China | 1995 | 0.50  | -     | 0.50  | 0.58  |
|       | 2003 | 0.46  | -     | 0.67  | 0.71  |
| Japan | 1995 | 0.34  | 0.50  | -     | 0.71  |
|       | 2003 | 0.36  | 0.67  | -     | 0.81  |
| Korea | 1995 | 0.44  | 0.58  | 0.71  | -     |
|       | 2003 | 0.44  | 0.71  | 0.81  | -     |

**Table 8.4: Finger-Kreinin Index: ASEAN (HS 6 digit)**

|       |      | India | China | Japan | Korea |
|-------|------|-------|-------|-------|-------|
| India | 1995 | -     | 0.24  | 0.15  | 0.15  |
|       | 2003 | -     | 0.27  | 0.16  | 0.18  |
| China | 1995 | 0.24  | -     | 0.33  | 0.26  |
|       | 2003 | 0.27  | -     | 0.31  | 0.43  |
| Japan | 1995 | 0.15  | 0.33  | -     | 0.27  |
|       | 2003 | 0.16  | 0.31  | -     | 0.46  |
| Korea | 1995 | 0.15  | 0.26  | 0.27  | -     |
|       | 2003 | 0.18  | 0.43  | 0.46  | -     |

As the scope for trade diversion on account of export similarity of the plus four economies to ASEAN+4 is almost negligible, the ASEAN+1 arrangement can be perceived as an efficient vehicle to achieve regional economic integration in Asia.

## 8.2   *Overlap of comparative advantage*

For greater robustness of our results we also examine the extent of overlap in comparative advantage that each economy enjoys in the ASEAN market at present or is likely to enjoy in the future. Two sets of commodities are identified.

i)      Overlap of existing comparative advantage: The first set comprises commodities for which more than one of the plus four economies currently enjoys comparative advantage in the ASEAN market.

ii)     Potential for overlap of comparative advantage: The second set comprises commodities for which the plus four economies can in future develop comparative advantage in ASEAN as they are currently advantageously placed in the world market.  The potential possibility for exports of these commodities to ASEAN would be lost/threatened on account of one of the plus four economies making a prior entry into the ASEAN market.  The threat is more real if one of the plus four countries is at present the main country of origin of imports of these products for ASEAN.

### 8.2.1   *Overlap of existing comparative advantage*

Among the plus four economies maximum overlap of existing comparative advantage in the ASEAN market is observed between India and China. For 52 per cent of the commodities where India and China have an advantage in the world market as well as in ASEAN, India enjoys greater comparative advantage relative to China in the ASEAN market. Indian exports of these commodities are likely to be adversely affected if China makes a prior entry in ASEAN. Trade will be diverted away from India. Further, for 72 per cent of these commodities, India is actually more competitive than China even in the world market. Among these are commodities like marine products (fish and mollusks) and leguminous vegetables that belong to sectors

1-8 (HS classification) [30]. Tariff concessions have been offered on these commodities under the Early Harvest Programme (EHP) of China's FTA with ASEAN. India is, therefore, negatively affected through trade diversion on account of the implementation of the EHP of China's FTA with ASEAN. In the longer run when the ASEAN-China FTA is fully implemented the maximum number of products that are likely to suffer export diversion belongs to the cotton sector. Commodities like cotton sewing thread, plain weave cotton, cotton yarn, twill weave cotton, and woven fabric of cotton may suffer maximum export diversion. The advantage that China may get on account of an FTA may render it cheaper for ASEAN to import these commodities from China, in which case there is trade diversion from India and in addition efficiency loss for ASEAN. This implies that there is a cost to staying out of the ASEAN arrangement for India on account of China's pre emptive entry in ASEAN. For Japan and Korea, on the other hand, the extent of trade diversion is greater vis-à-vis each other's entry in ASEAN rather than with respect to China's entry in ASEAN.

### 8.2.2   *Potential for overlap of comparative advantage*

As the threat of export diversion for India is evidently the highest from China, the potential for overlap comparative advantage is analyzed for India vis-à-vis China only. The set is defined as commodities that ASEAN imports and where India currently enjoys comparative advantage in the world market and is either more or equally advantageously placed relative to China. It is interesting to note that even though at present China is not as advantageously placed in the world market as India, it is the main source of ASEAN imports. In these commodities India has a potential for developing comparative advantage in ASEAN as it is already far more advantageously placed than China in the world market. A set of 19 such commodities is identified. Of these 19 commodities – seven or 37 per cent belong to product groups like textiles, manmade filaments and footwears and gaiters that are intensive in unskilled labour (Table 8.5). The ASEAN-China FTA will further intensify exports of these commodities from China to ASEAN and simultaneously prevent India from

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[30] A complete list of products where India is comparatively more advantageously placed in both the world and ASEAN market is provided in Appendix (Table A.5).

exploiting its potential for exports to ASEAN. China's entry in ASEAN prior to India through the ASEAN- China FTA thus also implies potential trade diversion for India.

**Table 8.5: Commodities with Potential for Overlap of Comparative Advantage between India and China in the Unskilled labor Intensive Category**

| HS Code | Product |
|---|---|
| 520543 | Cotton yarn,>/=85%,multi,combed,232.56 >dtex>/=192.31,nt put up,nes |
| 540262 | Yarn of polyester filaments, multiple, nes, not put up |
| 550999 | Yarn of other synthetic staple fibres, not put up, nes |
| 560750 | Twine, cordage, ropes and cables, of other synthetic fibres |
| 560900 | Articles of yarn, strip, twine, cordage, rope and cables, nes |
| 630710 | Floor-cloths,dish-cloths,dusters & similar cleaning cloths,of tex mat |
| 640420 | Footwear with outer soles of leather and uppers of textile materials |

## 9      Conclusions

In this paper alternative approaches to the alignment of the plus four economies with ASEAN for the formation of the ASEAN+4 trade bloc have been examined in terms of their efficiency costs. On the basis of an analysis of the trends in intra-regional trade the study establishes the strength of ASEAN+4 as a potential trade bloc in Asia. Evidence on India's increasing trade linkages with ASEAN+4 is used to justify India's inclusion in the regional trade bloc. The share of the plus four economies reveals a de facto market led integration for the ASEAN+3. India stands out as the 'distant' economy in this set of countries. It is imperative therefore that any proposal for regional economic integration in Asia that is inclusive of India should focus on the optimal route for India's integration into the trade bloc.

Our results show that a prior alignment with ASEAN in the ASEAN+1 framework may be a more efficient or least cost path to entering the ASEAN+4 bloc for all the plus four economies. The costs of aligning with ASEAN in the plus one framework are lowest for China. Regionally oriented export patterns do not imply any significant costs of adjustment of the production structure or shift of factors of production away from those that are consistent with the orientation towards the global market. A convergence of the plus one initiatives may therefore be a more efficient route to

achieving regional economic integration. This is also the more practical path to the emergence of an ASEAN plus four regional bloc as even though the ASEAN initiatives with China, Japan, Korea and India maybe seen as leading the region towards an economically integrated whole they are as yet within the framework of the ASEAN+1 agreements and ASEAN negotiates with each country separately.

Efforts will however need to be made within the region to ensure that the 'ASEAN+1' agreement can act effectively as a stepping stone to an 'ASEAN+4" agreement. Only if the ASEAN+1 agreements of the plus four economies are compatible with each other would there be hope of linking these agreements to constitute a regional economic entity in Asia in future. Compatibility is possible as the elements of the +1 agreements are still being negotiated. A greater focus on harmonization and consistency within ASEAN is required-say for e.g. with respect to the rules of origin that at present may be scattered and inconsistent with one another.

Finally, in case China makes a pre-emptive entry into ASEAN, which it is bound to considering that the Early Harvest Programme (EHP) is already in effect and the FTA will be the first to be implemented, India, among the plus four economies, will be the most adversely affected due to trade diversion. The EHP of the ASEAN-China FTA that offers tariff concessions on commodities of sectors 1-8 (HS) will have a negative impact on India. Products like marine products - fish and molluscs and leguminous vegetables are likely to suffer. In the longer run when the ASEAN-China FTA is fully implemented the maximum number of products that are likely to suffer export diversion in India belongs to the cotton sector. Commodities like cotton sewing thread, plain weave cotton, cotton yarn, twill weave cotton, and woven fabric of cotton may suffer maximum export diversion. In the long run the ASEAN-China FTA may also limit India's export potential in ASEAN in product groups like textiles, manmade filaments and footwears and gaiters that are largely unskilled labor intensive commodities. It is imperative therefore that India should hasten its process of negotiations for an early conclusion of the India-ASEAN FTA. For Japan and Korea trade diversion is expected to be greater vis a vis each other's entry in ASEAN rather than with respect to the early implementation of the ASEAN -China FTA.

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**APPENDIX**

**Table A.1: India: Sector -wise Trade Intensity Index with ASEAN+4**

| Sectors | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|---|---|
| Agriculture & Allied | 1.4 | 1.5 | 1.5 | 1.3 | 1.4 | 1.3 | 1.4 | 1.5 | 1.3 |
| Minerals & Mineral Fuels | 1.3 | 1.3 | 1.2 | 1.7 | 1.6 | 0.6 | 0.6 | 1.6 | 1.7 |
| Chemicals & Plastics | 0.9 | 0.9 | 0.9 | 1.0 | 1.1 | 1.0 | 1.1 | 1.2 | 1.3 |
| Manufacturers chiefly my Materials | 0.7 | 0.7 | 0.5 | 0.5 | 0.6 | 0.5 | 0.6 | 0.7 | 0.7 |
| Machinery | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 0.9 | 0.9 | 0.8 | 0.6 |
| Misc. | 0.4 | 0.4 | 0.5 | 0.6 | 0.6 | 0.7 | 1.3 | 1.0 | 1.1 |

**Table A.2: India: Sector-wise Complimentarity Index with ASEAN+4**

| Sectors | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|---|---|
| Agriculture & Allied | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| Minerals & Mineral Fuels | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 |
| Chemicals & Plastics | 1.0 | 1.0 | 0.9 | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 |
| Manufacturers chiefly by Materials | 1.0 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 1.1 | 1.1 | 1.1 |
| Machinery | 0.9 | 0.9 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 |
| Misc. | 0.9 | 0.8 | 0.8 | 0.8 | 0.9 | 0.8 | 0.9 | 0.9 | 0.8 |
| **Aggregate** | **1.1** | **1.0** | **1.0** | **0.9** | **1.1** | **1.0** | **1.0** | **1.0** | **1.1** |

**Table A.3: India: Sector-wise Bias Index with ASEAN+4**

| Sectors | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|---|---|
| Agriculture & Allied | 1.14 | 1.20 | 1.04 | 0.95 | 0.99 | 0.97 | 1.20 | 1.18 | 1.12 |
| Minerals & Mineral Fuels | 0.98 | 0.91 | 0.87 | 1.25 | 1.44 | 0.46 | 0.44 | 1.22 | 1.40 |
| Chemicals & Plastics | 0.82 | 0.92 | 0.90 | 1.18 | 1.26 | 1.03 | 1.10 | 1.28 | 1.23 |
| Manufacturers chiefly by Materials | 0.62 | 0.54 | 0.47 | 0.49 | 0.56 | 0.55 | 0.62 | 0.70 | 0.55 |
| Machinery | 0.78 | 0.77 | 1.05 | 0.82 | 1.40 | 1.31 | 1.17 | 1.19 | 0.97 |
| Misc. | 0.52 | 0.57 | 0.65 | 0.81 | 0.61 | 0.94 | 1.68 | 1.10 | 1.92 |
| **Aggregate** | **0.75** | **0.74** | **0.69** | **0.69** | **0.80** | **0.75** | **0.86** | **0.92** | **0.88** |

**Table A.4: Efficiency Costs*: Alternative Calculations**

| | ASEAN | ASEAN+4 |
|---|---|---|
| India | 33 | 38 |
| China | 51 | 75 |
| Japan | 18 | 42 |
| Korea Rep. | 44 | 58 |

*% number of Sectors*

**Table A.5*: Overlap of Existing Comparative Advantage: India and China**

| Sl. No | HS Code | Product |
|--------|---------|---------|
| 1 | 030379 | Fish nes, frozen, excluding heading No 03.04, livers and roes |
| 2 | 030799 | Molluscs nes,shelld o not&aquatic invert nes,fz,drid,saltd o in brine |
| 3 | 071390 | Leguminous vegetables dried,shelled,whether or not skinnd or split,nes |
| 4 | 090240 | Black tea (fermented) & partly fermented tea in packages exceedg 3 kg |
| 5 | 100630 | Rice, semi-milled or wholly milled, whether or not polished or glazed |
| 6 | 120220 | Ground-nuts shelld,whether or not broken,not roastd or otherwise cookd |
| 7 | 150810 | Ground-nut oil, crude |
| 8 | 151550 | Sesame oil&its fractions whether/not refind,but not chemically modifid |
| 9 | 250820 | Decolourising earths and fuller |
| 10 | 251400 | Slate, whether or not roughly trimmed or merely cut etc |
| 11 | 282120 | Earth colours cntg 70%/more by wght of combind iron evaluatd as Fe2O3 |
| 12 | 290342 | Dichlorodifluoromethane |
| 13 | 290490 | Derivs of hydrocarbons cntg mixtures of sulpho,nitro or nitroso groups |
| 14 | 290611 | Menthol |
| 15 | 292142 | Aniline derivatives and their salts |
| 16 | 292143 | Toluidines and their derivatives; salts thereof |
| 17 | 292221 | Aminohydroxynaphthalenesulphonic acids and their salts |
| 18 | 293319 | Heterocyclic compds cntg an unfused pyrazole ring in the structure,nes |
| 19 | 293626 | Vitamin B12 and its derivatives, unmixed |
| 20 | 293942 | Pseudoephedrine (INN) and its salts |
| 21 | 294190 | Antibiotics nes, in bulk |
| 22 | 320412 | Acid and mordant dyes and preparations based thereon |
| 23 | 320415 | Vat dyes and preparations based thereon |
| 24 | 320417 | Synthetic organic pigments and preparations based thereon |
| 25 | 320641 | Ultramarine and preparations based thereon |
| 26 | 380810 | Insecticides, packaged for retail sale or formulated |
| 27 | 401120 | Pneumatic tires new of rubber for buses or lorries |
| 28 | 401390 | Inner tubes of rubber nes |
| 29 | 401511 | Gloves surgical of rubber |
| 30 | 401691 | Floor coverings and mats of rubber exc cellular and hard rubber |
| 31 | 410429 | Bovine and equine leather, tanned or retanned, nes |
| 32 | 420100 | Saddlery and harness for any animal, of any material |
| 33 | 481610 | Paper, carbon or similar copying, nes |
| 34 | 500600 | Silk yarn&yarn spun from wilk waste,put up f retail sale;silk-worm gut |
| 35 | 500720 | Woven fabrics of silk/silk waste,o/t noil silk,85%/more of such fibres |
| 36 | 500790 | Woven fabrics of silk, nes |
| 37 | 520411 | Cotton sewg thread >/=85% by wght of cotton,not put up for retail sale |
| 38 | 520522 | Cotton yarn,>/=85%,single,combed, 714.29 >dtex>/=232.56, not put up |
| 39 | 520523 | Cotton yarn,>/=85%, single, combed, 232.56 >dtex>/=192.31, not put up |
| 40 | 520541 | Cotton yarn,>/=85%, multiple, combed,>/=714.29 dtex, not put up, nes |
| 41 | 520811 | Plain weave cotton fabric,>/=85%, not more than 100 g/m2, unbleached |
| 42 | 520821 | Plain weave cotton fabrics,>/=85%, not more than 100 g/m2, bleached |
| 43 | 520831 | Plain weave cotton fabric,>/=85%, not more than 100 g/m2, dyed |
| 44 | 520912 | Twill weave cotton fabric,>/=85%, more than 200 g/m2, unbleached |
| 45 | 520921 | Plain weave cotton fabric,>/=85%, more than 200 g/m2, bleached |
| 46 | 520941 | Plain weave cotton fabrics,>/=85%, more than 200 g/m2, yarn dyed |
| 47 | 520959 | Woven fabrics of cotton,>/=85%, more than 200 g/m2, printed, nes |
| 48 | 521122 | Twill weave cotton fab,<85% mixd w m-m fib,more than 200 g/m2,bleachd |
| 49 | 550922 | Yarn,>/=85% of polyester staple fibres, multiple, not put up, nes |
| 50 | 551012 | Yarn,>/=85% of artificial staple fibres, multiple, not put up, nes |
| 51 | 551299 | Woven fabrics,containg>/=85% of other synthetic staple fib,o/t unbl/bl |

*Cont'd….*

| Sl. No | HS Code | Product |
|--------|---------|---------|
| 52 | 551313 | Woven fab of polyest staple fib,<85% mixd w/cot,</=170g/m2,unbl/bl,nes |
| 53 | 551592 | Woven fabrics of oth syn staple fib,mixd w/wool o fine animal hair,nes |
| 54 | 551644 | Woven fabrics of artificial staple fib,<85% mixed with cotton,printed |
| 55 | 570299 | Carpets of other textile materials, woven, made up, nes |
| 56 | 570310 | Carpets of wool or fine animal hair, tufted |
| 57 | 610120 | Mens/boys overcoats, anoraks etc, of cotton, knitted |
| 58 | 610442 | Womens/girls dresses, of cotton, knitted |
| 59 | 610831 | Womens/girls nightdresses and pyjamas, of cotton, knitted |
| 60 | 620422 | Womens/girls ensembles, of cotton, not knitted |
| 61 | 620442 | Womens/girls dresses, of cotton, not knitted |
| 62 | 620443 | Womens/girls dresses, of synthetic fibres, not knitted |
| 63 | 620453 | Womens/girls skirts, of synthetic fibres, not knitted |
| 64 | 620630 | Womens/girls blouses and shirts, of cotton, not knitted |
| 65 | 620821 | Womens/girls nightdresses and pyjamas, of cotton, not knitted |
| 66 | 620891 | Womens/girls panties, bathrobes, etc, of cotton, not knitted |
| 67 | 621142 | Womens/girls garments nes, of cotton, not knitted |
| 68 | 621430 | Shawls, scarves, veils and the like, of synthetic fibres, not knitted |
| 69 | 621440 | Shawls, scarves, veils and the like, of artificial fibres, not knitted |
| 70 | 630311 | Curtains,drapes,interior blinds&curtain or bed valances,of cotton,knit |
| 71 | 630391 | Curtains/drapes/interior blinds&curtain/bd valances,of cotton,not knit |
| 72 | 630492 | Furnishing articles nes, of cotton, not knitted or crocheted |
| 73 | 630520 | Sacks and bags, for packing of goods, of cotton |
| 74 | 630790 | Made up articles, of textile materials, nes, including dress patterns |
| 75 | 640320 | Footwear,outr sole/uppr of leathr,strap across the instep/arnd big toe |
| 76 | 681260 | Asbestos paper, millboard and felt |
| 77 | 701610 | Glass cubes&oth glass smallwares backd o not for mosaics o decor purp. |
| 78 | 711790 | Imitation jewellery nes |
| 79 | 720110 | Pig iron,non-alloy,containg by wght </=0.5% phosphorus in primary form |
| 80 | 720890 | Flat rolled prod, i/nas, not further worked than hot rolled, nes |
| 81 | 721790 | Wire of iron or non-alloy steel, nes |
| 82 | 732394 | Table,kitchen or oth household art&parts thereof,i or s,enamelled,nes |
| 83 | 732591 | Balls, grinding and similar articles of iron or steel, cast for mills |
| 84 | 732599 | Articles of iron or steel, cast, nes |
| 85 | 732619 | Articles of iron or steel, forged or stamped, but not further worked |
| 86 | 741532 | Screws, bolts and nuts of copper excluding wood screws |
| 87 | 741700 | Cookg or heatg apparatus,domestic,non-electric&parts thereof of copper |
| 88 | 761410 | Stranded wire,cables,plaited bands,etc,alum,steel core,not elect insul |
| 89 | 820190 | Scythes,sickles&other hand tools used in agriculture,horticulture etc |
| 90 | 820310 | Files, rasps and similar tools |
| 91 | 820411 | Wrenches, hand-operated, with nonadjustable jaws |
| 92 | 820510 | Drilling, threading or tapping tools |
| 93 | 820570 | Vices, clamps and the like |
| 94 | 821290 | Parts of non-electric razors |
| 95 | 821490 | Kitchen chopper,cleavers & mincing knives & other articles of cutlery |
| 96 | 843041 | Boring or sinking machinery nes, selfpropelled |
| 97 | 844841 | Shuttles for weaving machines (looms) |
| 98 | 871493 | Bicycle hubs and free-wheel sprocket wheels |
| 99 | 901600 | Balances of a sensitivity of 5 cg or better with or without weights |
| 100 | 960810 | Ball point pens |

*Note: Products where India is more advantageously placed than China in the World and ASEAN.*

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