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Meaning of Indian Economic Dynamism for the East Asian Economic Integration Process

Ram Upendra Das

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ERIA
Economic Research Institute for ASEAN and East Asia

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Research and Information System for Developing Countries

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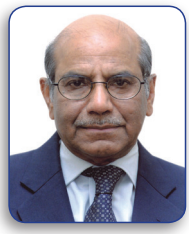

Ambassador Shyam Saran
Chairman, RIS

Professor Hidetoshi Nishimura
Executive Director, ERIA

The global economy is at the cross-roads. The economic crisis still looms large over the global horizon. There has been a perceptible shift in the economic gravity towards East Asia. While the multilateral negotiations at the WTO remain inconclusive, the world is witnessing emergence of mega-economic groupings such as Transpacific Trade Partnership (TTP), Transatlantic Trade and Investment Partnership (TTIP) and Regional Comprehensive Economic Partnership (RCEP).

Developments such as above, situate economic integration process in East Asia on a different footing, with a spread-out economic dynamism landscape across ASEAN, Japan, China, South Korea, India, Australia and New Zealand.

This study by Professor Ram Upendra Das focuses on various dimensions of Indian economic dynamism and implications for the East Asian economic integration process, in a mutually beneficial framework. It analyses the possibilities of more strengthened and heightened two-way trade and investment linkages with the application of state-of-the-art modelling and empirical techniques;

focuses on making India as a hub for knowledge-intensive manufacturing and R&D activities; underscores the imperatives of tapping India's *soft power* by providing important insights into the commercial aspects; and delves into the scope for harnessing the demographic dividend. The study also highlights the merits of domestic economic reforms in India and provides policy-insights into some of the relevant economic integration strategies in the East Asian region.

We hope that the study would contribute to the East Asian economic integration process through facilitating adequate domestic and regional policy responses, including in the RCEP, but also further propel the ideas contained in India-ASEAN Eminent Persons' Group Report, the Vision Statement of the ASEAN-India Commemorative Summit (2012) held in New Delhi and various declarations at the East Asia Summits.

Shyam Saran

Hidetoshi Nishimura

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Note: *East Asia in this study refers to ASEAN+6*

Executive Summary

India's recent economic performance is heralded as a success story inasmuch as it has shown high growth dynamism, has remained as one of the top few economies of the world in PPP terms and has been able to double its per capita GDP in less than a decade. It has been ranked very high as an important FDI destination. This economic dynamism needs to be harnessed by increasing its presence in the East and South-east Asian region in a mutually beneficial manner. Given that the East Asian region is characterised by developmental asymmetries and a lack of any pan-Asian comprehensive economic integration agreement, the study sets its basic objective as one which would demonstrate as to what does Indian economic dynamism bring to the ASEAN+6 process, including its developmental implications. It also highlights how India's *soft power* has not only cultural and ethical dimensions but also crucial economic significance to its integration within Asia. Detailed analysis is undertaken in the study to conceptually and empirically assess mutually beneficial potential in the realms of trade in goods, trade in services, FDI, demographic complementarities, development partnership etc. India's projected growth in its market size and potential for cooperation in terms of reciprocal market access including in areas amenable to creating regional values chains and knowledge-intensive sectors are also dovetailed. The study, based on the findings, makes some broad recommendations towards creating

a pan-Asian comprehensive economic integration framework, which could address developmental asymmetries in the region, through a pro-active Indian commercial presence, along with other ASEAN+5 countries.

Major Findings

- Analysing the macro level trade and FDI linkages between India and ASEAN+5 countries, the study finds an element of dynamism in both exports and imports along with a semblance of stability overtime. At the sectoral level sectors such as food products, minerals and machinery & electricals show potential for further export-augmentation between India and ASEAN+5. The two-way FDI linkages between India and ASEAN+5 countries suggest that India's outflows have been greater than FDI inflows and in both respect the flows are concentrated primarily vis-à-vis Singapore and Japan, notwithstanding statistical problems preventing adequate comparisons.
- One of the aspects explored in the study was to compare different countries, including India's, strategies of growth adopted as a component of their overall development paradigm. India brings with herself, along with other countries of the ASEAN+5, important lessons for adopting growth strategies as part of unique development paradigm, especially relevant for the LDCs and other developing countries of the ASEAN+5.
- It leads to underscoring the imperatives of regional economic integration that could help balance external and domestic sources of demand for economic growth outcomes.
- Estimates of Computable General Equilibrium (CGE) modelling for different scenarios and alternative configurations of regional economic integration suggest that ASEAN+6 negotiations under RCEP would fetch

greater welfare and trade gains for ASEAN+6 countries as compared to TPP. Considering that India's economic presence in the East Asian region need not be viewed in a static sense rather it must be placed in a dynamic setting, the study also makes projection of gains for the years 2025, 2030, 2040, and 2050 in mutual trade between India and ASEAN+5 countries in a partial equilibrium framework by using the augmented gravity model that shows enormous gains.

- The country pairs with maximum potential for trade complementarities (measured by Cosine Index) for exports from India to a partner (μ) include Indonesia, Singapore, Cambodia, Australia and the Philippines. Complementarities of exports from ASEAN+5 to India (λ) are high in the case of Japan, Philippines, Myanmar, Vietnam, among others. Between India and ASEAN+5, bilateral trade complementarities potentially exist in sectors such as Food products, Fuels, Chemicals, Textiles and Clothing, Machinery and Electricals and Transportation.
- A more detailed disaggregated level analysis of assessing trade potential that is mutually beneficial, based on RCA methodology at HS 6-digit level identify a large range of products. This potential is identified for country-wise bilateral pairs for two-way trade. Identification of items at HS-6-digit level are based on three conditions of feasibility, consistency and dynamism in the RCA Index.
- Using Intra-Industry Trade (IIT)-based complementarity measured by Grubel - Lloyd (GL) Index at HS-4-digit classification, the study identifies enormous potential for bilateral country-pair-wise intra-industry trade for a large number of items and industries, pronouncing India's trade-relevance both as a demandeur and supplier of products.

- The study further finds an inverted-U type relationship between IIT and RCA, suggesting that a part of IIT, i.e. the vertical IIT, proxied here by RCA, reaches a limit in determining the overall actual IIT flows between India and ASEAN+5 countries. While at the theoretical level, this has important implications in terms of the traditional trade theories hitting a ceiling beyond which they cannot explain the IIT- type trade flows at the operational level, it also poses the question as to what should be the policy response to address this situation, whereby horizontal IIT type trade flows could be sustained. While the New Trade Theories explain the phenomenon of horizontal IIT, they shed little or no light on how to sustain such trade flows in a bilateral and regional context. It is this question that the study subsequently addresses. To unshackle this problem the study explored into the determinants of IIT, which is very relevant from the point of view of production fragmentation pursuits in the region, with the help of a Tobit model, according to which one of the most important determinants of IIT is an RTA among ASEAN+6 countries in which India's RTAs play an important role. It is in this sense India has the potential to contribute to trade augmentation not only between India and individual ASEAN+5 countries but also help propel IIT among the ASEAN+5 countries by becoming an integral part of the regional production networks, facilitated by a region -wide FTA in goods under the RCEP.
- The study finds rich potential for tapping two-way FDI complementarity between India and the ASEAN+5. Sectors amenable to India's outflows include several segments of agriculture, industry and services. For FDI inflows, these are primarily in various services such as construction, telecommunications, software, hotel and tourism and in manufacturing such as computer hardware, drugs and

pharmaceuticals, chemicals, automobiles, and metallurgy. The study also amplifies India's needs of investment for infrastructural upgradation and the existing potential for FDI inflows from the ASEAN+5 such as Japan, Singapore, Australia and Malaysia in transport, construction sectors, to name a few, especially in the backdrop of India's liberalised FDI policy regime with respect to infrastructural sectors and emphasis by the government on PPP and Private Participation in Infrastructure (PPI) modalities of investment cooperation.

- What India brings to the rest of ASEAN+5 cannot be limited to the perception that India is just another country for East Asian Economic integration, the study emphasises. India's presence and economic integration with the rest of East Asian economies need to be viewed in a broader perspective and by taking into account new features of the Indian economy. This is done in the study by highlighting that India's geographical location makes it amenable to becoming a hub for ASEAN+5 countries for accessing the markets of South Asia, Central Asia, West Asia and especially the Eastern Cost of Africa from north to south. Secondly, India has emerged as the potential hub in knowledge-intensive and hi-tech sectors like the IT, Automobile Designs, Chip designing, Chemicals and Pharmaceuticals, Bio-informatics, Refined Petroleum etc. The two-way linkages between India and East Asian countries in terms of trade, FDI, technology and movement of natural persons thus need to be assessed and recognised more objectively. The study also dwells into India's growth in middle class and its implications for the rest of the region. It is observed that India would be one of the largest markets in the region and would offer tremendous opportunities to absorb import supplies from other countries in East and South East Asia due to expanding purchasing power.

- Any analysis of what India means in economic terms for East Asia often leaves the aspect of India's potential to contribute through its 'soft power'. Moreover, the economic and commercial aspects of India's soft power are missed out completely from any such analysis. The study brings out these aspects as well by dwelling on mutually beneficial scope of cooperation in Audio-Visual services, traditional medicines, yoga and other dimensions of the Indian way of life.
- The ASEAN+6 region has been characterised by enormous developmental asymmetries manifested in variable such as GDP and per capita GDP levels, their growth rates, growth rate volatilities, unemployment and inequality levels, physical infrastructure and social infrastructure like health and education . While still a recipient of ODA e.g. from Japan, India has also been focusing on development cooperation with other developing countries, including in the Asian region. This has included development assistance in the forms of concessional loans without conditionalities, capacity building, technical assistance, humanitarian assistance, in various areas and on different occasions, on a sustained basis. One of the most important implications of India's development partnership is in terms of addressing developmental asymmetries in ASEAN+6 region. In this context, it may be appropriate to mention that India's development cooperation or partnership with other developing countries is distinct from a doner-donee relationship as in the case of India it is primarily demand-driven and not imposed by India on other fellow developing countries. It has been in the spirit of sharing of developmental experiences and knowledge-dissemination, coupled with elements of development-oriented financing and project-based cooperation. India also contributes to institution-building in various countries. One such relevant example is the financial contribution which India

makes towards ERIA as a gesture to promote high-quality research on economic cooperation issues in ASEAN and East Asia.

- The issue of demographic dividend which is expected to be reaped by India with adequate skill formation also provides new insights and avenues for potential two-way human resources flows, i.e. the Temporary Movement of Natural Persons (TMNP) through Mode 4 of trade in services, especially given the complementary nature of such flows vis-à-vis aging economies in the East Asian region and also those countries that are expected to face skill shortages. This has been demonstrated by inter-country comparison of Dependency Ratio across ASEAN+6 and by matching skill shortages in ASEAN+5 with similar skill availability in India.

Policy Recommendations

Regional comprehensive economic development and cooperation strategy in Asia could well provide an answer to narrowing the development gaps as per the rationale and empirical evidence presented in this study's preceding sections. However, it has been noticed in various regional integration schemes that when cooperation efforts are spread over a multitude of dimensions and executed in multifarious ways they often dissipate and become less effective. Hence, evolving focused policy-strategy is crucial that could include the following:

a) Broadening and Deepening Regional Economic Integration in Asia: Trade and Investment Cooperation, Liberalisation and Facilitation

Given the potential of regional economic integration, especially in the realms of trade and investment cooperation to help narrow the development gaps and bring about convergence in levels of development, the proposal of an Asian Economic Community bringing together all major sub-regions of the continent following

a building bloc approach assumes importance. These may initially cover trade and investment liberalisation, cooperation and facilitation across sectors as recommended by the Comprehensive Economic Partnership of East Asia (CEPEA) Track II Study under the East Asia Summit process and taken up more cohesively by the RCEP process of ASEAN+6 within the agreed timeline.

A road-map for achieving a pan-Asia economic community may prepared.

b) According Special and Differential Treatment to Less Developed Countries

A regional economic integration scheme bringing together highly advanced economies like Japan, South Korea, Australia, and New Zealand, developing economies like China, Thailand, the Philippines, Indonesia, Singapore and India, and least developed countries like Cambodia, Laos, Myanmar and Vietnam, obviously has to recognise the differences in the capacities of partner countries and incorporate special and differential treatment (S&DT) to enable the relatively poorer countries to participate in the regional economic integration process according to their capacities.

A Programme of Action in this regard with a time schedule may be finalised.

c) Cooperation in Appropriate Technology and Human Resources for Bridging Development-Gaps

Cooperation in the domains of information and communication technologies (ICTs) to bridge digital divide could be given greater emphasis in Asia to bring about development convergence besides trade liberalisation under an FTA. Technology capabilities with the help of capacity building modules and proper diffusion infrastructure need to be focused upon. Similar potential exists in the areas of biotechnologies for pro-poor growth along with adequate bio-safety provisions. Cooperation in medicines and public health for instance through joint R&D is yet another area

of priority in order to bring about development convergence. Similarly, sharing of experience for skill development and trade in educational services has rich potential for bridging development gap in the region. This could cover a whole range of skill formation across sectors and movement of service providers across countries.

In this regard, a detailed study may be undertaken in the context of India serving as a hub for ASEAN+5 countries, connecting them with South Asia, Central Asia, West Asia and the eastern coast of Africa.

d) *Harnessing Indian Economic Dynamism and India's Soft Power*

Policy efforts need to be made to take advantage of Indian economic dynamism from both the angles of India being a demandeur and supplier of goods, services, FDI, technology or knowledge-intensive products and services, human resources etc. India's development partnerships, demographic dividends through skill-development planning and areas such as traditional medicines, audio-visual services, yoga, cuisine, clothing, among others, need to be adequately harnessed by adequate policy initiatives across the ASEAN+6 configuration.

Efforts shout be made to identify the specific modalities of cooperation in these areas.

e) *Undertaking Domestic Economic Reforms*

It would be important for India to deepen its domestic reform efforts in several areas that may include fiscal consolidation, improving manufacturing and value addition, employment generation, infrastructure development, labour market reforms, skill development and so on, in order to make its economic dynamism even more relevant for the East Asian economic integration process.

1
Introduction

The Asian reality is characterised by developmental asymmetries across countries on one hand and a lack of comprehensive pan-Asian formal regional economic integration agreements, on the other. The need for the latter is of paramount importance, given the fact that economic performance of Asia has been phenomenal which has to be sustained on the basis of Asian growth impulses. This becomes even more relevant, especially in the context of economic resilience displayed in the times of recent crisis, albeit it has its own variations across countries.

While most regional cooperation initiatives entail trade liberalisation and investment cooperation agreements, they have largely been bereft of being contextualised in terms of developmental goals like poverty reduction. However, regional economic integration agreements are also considered to be important policy mechanisms to address developmental asymmetries in a particular region.

Indian economic performance is considered to be one of the best across economies in the world, even during the times of global economic crisis of the recent times. India has developed capacities and its economic characteristics as observed in recent years make India an important economic entity in any regional and geographical configuration of economic integration. Besides, India has to offer a wide array of experiences and capabilities for shared prosperity on dimensions often captioned as 'soft power'. The aspect of soft power has thus far not been viewed adequately from a commercial angle in any such study on a similar subject.

In the above backdrop this study has the following basic objectives:

- To demonstrate both analytically and empirically what Indian economic dynamism brings to the East Asian economic integration process, especially by way of its trade and developmental implications.
- To highlight how India's soft power has not only cultural and ethical dimensions but also crucial economic significance to its integration within Asia.

In order to achieve the above-mentioned objectives this study includes analysis on some important dimensions in different sections, as highlighted below.

The contextual basis of this study is set by highlighting some contours of Indian economic dynamism in Section 2. Analysis of the macro-level trade and FDI Linkages between India and the rest of the ASEAN+5 countries is undertaken in Section 3. What implications the Indian development paradigm has for the rest of the region, especially the least developing and developing countries, have been brought out briefly in Section 4. Against this backdrop, the study moves on to assessing trade and economic welfare gains that may accrue to ASEAN+6 countries. This has been done by Computable General Equilibrium (CGE) stimulation in Section 5 comparing TPP and RCEP and identification of areas of economic complementarities through Cosine, RCA and IIT indices in Section 6.

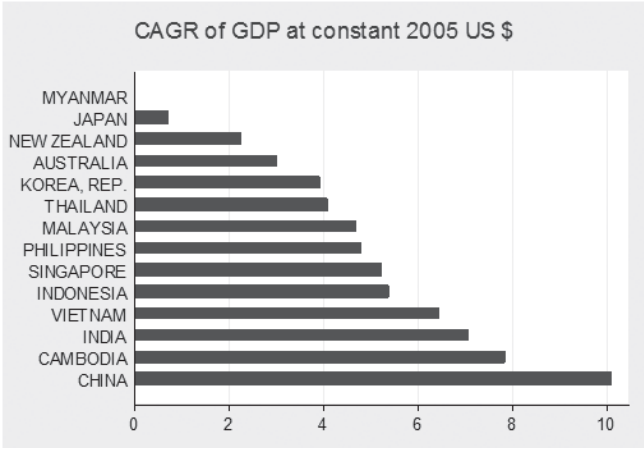
Using an augmented gravity model in Section 7 of the study makes projections of trade gains over a period of time that may accrue to both India and the ASEAN+5 in the realm of trade in goods are presented. The importance of an FTA among ASEAN+6, including India is elaborated with the help of conceptual logic and econometric estimates in Section 8. Given the recent economic growth dynamism of India, to what extent it offers through its potential market size expansion, market access to parts and components imports from ASEAN+5 into India is presented in

Section 9. Some of the sectoral advantages that India offers to the rest of the region in Knowledge-intensive and Hi-tech sectors are highlighted in Section 10. Various dimensions of India's 'Soft power' with their mutually beneficial commercial implications are highlighted in Section 11. These include dimensions of development partnership, demographic dividend, Audio-Visual services, traditional medicines, yoga, traditional clothing, food, in nutshell, the Indian way of life. Some dimensions of domestic economic reforms are summarised in Section 12, which would facilitate taking full advantage of India's economic integration with the East Asin region. Major findings and conclusion are presented in Section 13. Some of the policy recommendations are made in Section 14.

2
The Indian Macroeconomic Context

India has been on an augmented economic growth trajectory in recent times. One aspect of it is the recent GDP growth dynamism which is amply demonstrated in Figure 1. This Figure presents a comparative CAGR of GDP growth rates for the period 2000-2012 for the ASEAN+6 countries.

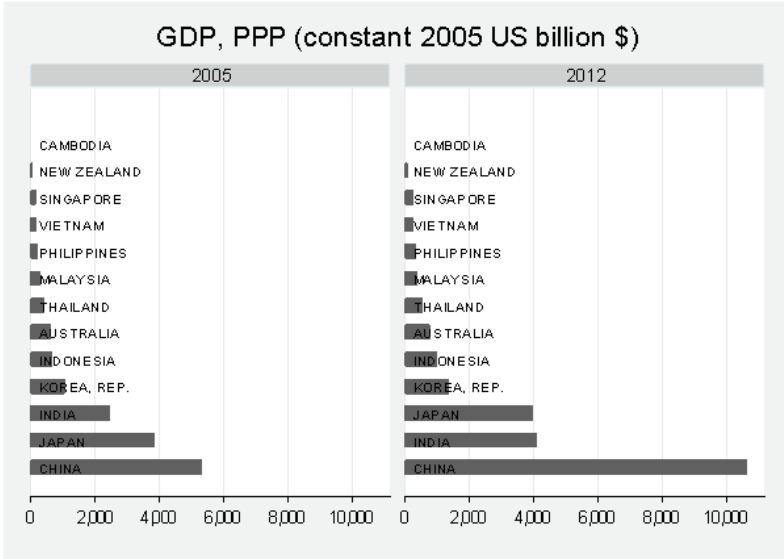
Figure 1: India's Growth Dynamism: 2000-2012



Source: Based on World Bank, World Development Indicators, 2013.

The recent economic growth dynamism of India is also reflected in GDP in PPP terms (2012) whereby India stands next only to China (Figure 2). The Indian experience of doubling its GDP per capita in less than a decade is yet another dimension of Indian economic growth dynamism.

Figure 2: India's Level of GDP in PPP Terms among ASEAN+6



Source: Based on World Bank, World Development Indicators, 2013.

India has been consistently ranked very high as an FDI destination by several agencies and this is also manifested in the increasing FDI inflows over time, yet another indicator of India's economic dynamism.

The share of services in GDP has been more than 50 per cent or so on a sustained basis which has led to India being considered as a services sector-oriented economy.

Since there have been concerns about declining share of manufacturing in GDP, policy makers in India have taken cognisance of this fact and aim to increase the share of manufacturing in GDP. Average share of Indian manufacturing sector stagnated at 15-16 per cent since mid 1980s. However, the other growing economies have succeeded to maintain this average close to 25 per cent of total GDP. The main reasons behind the poor performance of manufacturing sector in India for initial post-liberalisation period are resource constraints, inadequate infrastructure and lack of skilled labour. These concerns are reflected in government's new

Box 1: India's New Manufacturing Policy (2011)

1. Creating National Investment and Manufacturing Zones (NIMZs) with advance state of the art and integrated town ship concept. The industrial township will also be equipped with developed social and skill development infrastructure. Under NIMZ industries are bound to use clean energy driven technology.
2. Policy instruments for manufacturing – applicable generally including in NIMZs
   i) Rationalisation/simplification of business regulations
   ii) Simple/expeditious exit mechanism for non viable units
   iii) Technology development, including green technologies
   iv) Industrial training and skill upgradation measures
   v) Incentives for MSMEs
3. Special Focus Sectors:
   - Employment intensive industries: Textiles & Garments, Leather & Footwear, Gems & Jewellery, and Food Processing industries;
   - Capital goods: Machine Tools, Heavy Electrical Equipments, Heavy Transports, and Earth Moving & Mining Equipments;
   - Industries with strategic significance: Aerospace, Shipping, IT Hardware & Electronics, Defence Equipments, and Solar Energy;
   - Industries where India enjoys a competitive advantage: Automobiles, Pharmaceuticals, and Medical Equipments;
   - Small and Medium Enterprises: The National Manufacturing Competitiveness Programme will be strengthened and the recommendations of Task Force on MSME for creation of a separate fund with SIDBI, strengthening of National Small Industries Corporation (NSIC), modification of lending norms and inclusion of lending to MSMEs under 'priority sector' lending will be given due regard in taking appropriate measures; and
   - Public Sector Enterprises: A suitable policy framework will be formulated to make them competitive while ensuring functional autonomy.

Source: Based on GOI (2012), DIPP, Ministry of Commerce and Industry.

industrial policy (Box 1). The basic objective of the latest policy is to increase the sectoral share of manufacturing at least up to 25 per cent of GDP by 2022. By achieving this goal India would be able to create 100 million new job opportunities even at the present level of employment elasticity. The primary objective is to increase the level of domestic value addition in manufacturing with increased investment in R&D. With better technological knowhow India can be projected as an international manufacturing hub with augmented global competition. Ensuring skill development and SMEs are the most crucial aspects of the new policy reform. The industrial development under the new policy regime aims to be sustainable, inclusive and pro-environment.

Having highlighted several aspects of the Indian economic dynamism and government's focus on domestic manufacturing and value addition, we move on to analysing bilateral trade and investment linkages between India and ASEAN+5.

3
Bilateral Trade and FDI Linkages between India and ASEAN+5

The overall bilateral trade linkages, at the macro level, between India and the ASEAN+5 countries have evolved tremendously over the years and present with several important insights (Table 1). First, the bilateral trade displays dynamism in both exports and imports. This is evident from the most recent phase since 2000. India's exports to ASEAN+5 as a proportion of its total exports to the world increased from 14.55 per cent (2000) to around 21 per cent (2012). Similarly, India's imports from ASEAN+5 as a per cent of its imports from the world increased from 19.84 per cent (2000) to 27.52 per cent (2012). On the other hand, exports of ASEAN+5 to India as a proportion of its total exports to the world rose from 0.95 per cent (2000) to 2.55 per cent (2012) and imports of ASEAN+5 from India as a proportion of its total imports from the world increased from 0.73 per cent (2000) to 1.34 per cent (2012).

Secondly, all of the above-mentioned shares of bilateral trade relations have shown considerable degree of stability, over time, rather than very wide fluctuations. However, the relationship is more stable with respect to India's trade in relation to the world than what it is of ASEAN+5 vis-à-vis its global trade linkages, as the estimates of coefficient of variation suggest. Thirdly, even in the post-crisis phase i.e. after 2008, the bilateral trade relations have remained largely unaffected.

Fourthly, one of the most important insights of this exercise is that ASEAN+5 countries are more important for India in relation to India's global trade linkages than what India is to ASEAN+5 countries with respect to their overall trade with the world. This

is important especially in the context of the present study, as this indicates the enormous potential that exists for augmenting bilateral trade, a dimension to which we revert in subsequent sections.

Table 1: Bilateral Trade Linkages between India and ASEAN+5: Overall Trends and Mutual Importance

(Per cent)

Year	India's Exports to ASEAN+5 as a % of its Total Exports to the World	India's Imports from ASEAN+5 as a % of its Total Imports from the World	ASEAN+5's Exports to India as a % of its Total Exports to the World	ASEAN+5's Imports from India as a % of its Total Imports from the World
2000	14.55	19.84	0.95	0.73
2001	15.30	20.43	1.00	0.79
2002	17.77	20.90	1.00	0.84
2003	18.59	24.25	1.17	0.88
2004	20.17	24.03	1.32	1.09
2005	21.73	23.89	1.54	1.14
2006	21.90	27.22	1.78	1.20
2007	21.68	27.99	2.09	1.34
2008	20.47	28.13	2.39	1.55
2009	21.79	30.35	2.65	1.35
2010	22.80	29.07	2.77	1.47
2011	22.13	28.71	2.83	1.54
2012	20.93	27.52	2.55	1.34
Mean	19.99	25.56	1.85	1.17
SD	2.56	3.42	0.70	0.28
CV	12.78	13.37	37.90	23.63

Source: Author's own calculations based on IMF (2013) Direction of Trade Statistics.

Note: SD= Standard Deviation; CV= Coefficient of Variation.

When the same analysis (Table 1a) is undertaken at a more disaggregated level of country-groups viz. (i) China, South Korea, Japan; (ii) Australia and New Zealand; (iii) Brunei; (iv) Indonesia, Malaysia, Singapore, Thailand; (v) Philippines; and (vi) Cambodia, Laos, Myanmar, Vietnam, it is observed that the

primary linkages and trade-related mutual importance is mainly vis-à-vis two groups i.e. (i) China, South Korea and Japan and (ii) Indonesia, Malaysia, Singapore, Thailand. These suggest that the potential for enhancing trade between India and other groups are tremendous.

Table 1a: India's Trade Linkages with EAS: Disaggregated Group of Countries

(Per cent)

India's Exports to EAS as a per centage of its Exports to the World		
	2000	2012
Exports to China, South Korea, Japan	7.00	8.66
Exports to Australia, New Zealand	1.10	1.00
Exports to Brunei	0.01	0.01
Exports to Indonesia, Malaysia, Singapore, Thailand	5.37	9.42
Exports to Philippines	0.44	0.38
Exports to Cambodia, Laos, Myanmar, Vietnam	0.63	1.46
India's Imports from EAS as a per centage of its Imports from the World		
Imports from China, South Korea, Japan	8.85	15.97
Imports from Australia, New Zealand	2.29	2.93
Imports from Brunei	0.00	0.15
Imports from Indonesia, Malaysia, Singapore, Thailand	8.20	7.65
Imports from Philippines	0.12	0.10
Imports from Cambodia, Laos, Myanmar, Vietnam	0.38	0.71
EAS's Exports to India as a per centage of its Exports to the World		
Exports of China, South Korea, Japan	0.38	1.42
Exports of Australia, New Zealand	0.08	0.27
Exports of Brunei	0.00	0.01
Exports of Indonesia, Malaysia, Singapore, Thailand	0.46	0.78
Exports of Philippines	0.00	0.01
Exports of Cambodia, Laos, Myanmar, Vietnam	0.01	0.06
EAS's Imports from India as a per centage of its Imports from the World		
Imports from China, South Korea, Japan	0.41	0.69

continued Table 1a...

continued Table 1a...

Imports from Australia, New Zealand	0.04	0.07
Imports from Brunei	0.00	0.00
Imports from Indonesia, Malaysia, Singapore, Thailand	0.24	0.51
Imports from Philippines	0.01	0.01
Imports from Cambodia, Laos, Myanmar, Vietnam	0.02	0.06

Source: Author's own calculations based on IMF (2013) Direction of Trade Statistics.

The bilateral sectoral trade linkages too give some interesting insights. A comparison can be made of average annual growth in value of India's exports to ASEAN+5 in recent years taken as 2009-2012 with average growth in ASEAN+5's imports from world during the same period. It is observed from Table 2 that sectors such as Food Products, Minerals, Machinery and Electricals have registered lower growth rates in terms of India's exports to ASEAN+5 than the latter's growth rates of imports from the world, indicating clearly the potential room for further scaling up exports from India to ASEAN+5 in these sectors. One gets an additional supporting argument in favour of sectors such as Food Products and Machinery and Electricals, wherein India's exports to world have grown at a faster pace than India's exports to ASEAN+5.

Table 2: Bilateral Trade Linkages between India and ASEAN+5: Sectoral Trade Growth

(Average Annual Growth in Value during 2009-2012 in per cent)

HS 2-Digit code	Sector	India's Exports to ASEAN+5	ASEAN+5's Imports from the World	India's Exports to the World
16-24	Food Products	39.72	53.44	78.12
25-26	Minerals	-10.81	87.73	-9.74
27-27	Fuels	127.27	88.70	105.74
28-38	Chemicals	66.95	57.41	57.24
50-63	Textile and Clothing	144.10	55.17	46.13
84-85	Machinery & Electricalstricals	6.01	44.10	32.86
86-89	Transportation	77.38	68.45	70.61

Source: Author's own calculations based on UN (2013) COMTRADE Database.

Note: HS classification pertains to 2007 version.

In terms of FDI linkages between India and ASEAN+5, several features are discernible from Table 3: (i) while India is generally considered as a capital-scarce country, vis-à-vis ASEAN+5 it is both and FDI- recipient as well as and FDI-source. (ii) Interestingly, while India is host to FDI from eleven of the ASEAN+5 countries, it is an FDI-source to fourteen of them. (iii) Contrary to expectations, it is noticed that each year under consideration i.e., between 2009 and 2013 India's outflow to the region is considerable; however, it is greater than inflows also due to inconsistency in data reporting. (iv) In terms of FDI inflows to India the major sources are Singapore with more than 50 per cent share on an average of the total FDI's inflows from the region, followed by Japan with around 37 per cent share. Malaysia, South Korea and China also show an upward trend as sources of FDI to India. (v) In terms of India's outflow to the ASEAN+ regions Singapore occupies more than 50 per cent share, followed by Japan with 26 per cent and Indonesia around 12 per cent share. South Korea also is recipient of India's FDI outflows. (vi) Overall, both the FDI inflows and outflows are concentrated primarily vis-à-vis Singapore and Japan, and therefore India is both a home and host of FDI flows with respect to these countries.

The macro level trade and FDI linkages between India and ASEAN+5 countries provide us with interesting insights. In terms of trade linkages, there is an element of dynamism observed in both exports and imports along with a semblance of stability overtime, however the Coefficient of variation suggest a greater degree of stability when India's trade with ASEAN+5 is taken as a proportion of India's total trade with world. Same is not true with regard to trade of ASEAN+5 with India as a proportion of former's trade with the world. At the sectoral level sector such as food products, minerals and machinery & electricals show potential for further export-augmentation from India to ASEAN+5 region.

Table 3: FDI Flows between India and ASEAN+5 countries

(US$ million)

	FDI Inflows				FDI Outflows			
Country	**2009-10**	**2010- 11**	**2011-12**	**2012-13**	**2009-10**	**2010-11**	**2011-12**	**2012-13**
AUSTRALIA	166.29	24.26	51.15	41.22	36.76	234.25	2412.81	1296.58
	(3.62)	(0.70)	(0.59)	(0.79)	(0.51)	(1.82)	(26.43)	(21.76)
BRUNEI	NA	NA	NA	NA	NA	NA	0.90	1.35
							(0.01)	(0.02)
CAMBODIA	NA	NA	NA	NA	NA	NA	0.44	9.61
							(0.00)	(0.16)
CHINA	41.36	1.56	72.69	151.86	30.58	40.42	53.41	65.32
	(0.90)	(0.04)	(0.84)	(2.89)	(0.42)	(0.31)	(0.59)	(1.10)
INDONESIA	570.25	1.03	0.5	4.49	266.01	29.49	107.20	79.45
	(12.41)	(0.03)	(0.01)	(0.09)	(3.68)	(0.23)	(1.17)	(1.33)
JAPAN	1,183.40	1562	2,971.70	2,237.22	1.49	1.53	10.56	5.87
	(25.76)	(44.98)	(34.42)	(42.64)	(0.02)	(0.01)	(0.12)	(0.10)
LAOS	NA	NA	NA	NA	2.00	2.00	2.06	0.20
					(0.03)	(0.02)	(0.02)	(0.00)

Table 3 continued...

Table 3 continued...

MALAYSIA	38.21	40.39	18.2	237.88	7.12	75.05	400.65	116.19
	(0.83)	(1.16)	(0.21)	(4.53)	(0.10)	(0.58)	(4.39)	(1.95)
MYANMAR	NA	NA	NA	NA	1.65	45.25	9.72	2.57
					(0.02)	(0.35)	(0.11)	(0.04)
NEW ZEALAND	13.18	1.53	0.94	2.54	0.56	5.34	2.74	0.64
	(0.29)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
PHILIPPINES	0.2	0.5	2.42	27.41	31.52	33.45	55.29	19.17
	(0.00)	(0.01)	(0.03)	(0.52)	(0.44)	(0.26)	(0.61)	(0.32)
SINGAPORE	2,379.18	1705.11	5,257.32	2,307.84	6787.42	11856.27	6035.72	4344.03
	(51.79)	(49.10)	(60.89)	(43.99)	(93.91)	(92.11)	(66.13)	(72.92)
SOUTH KOREA	166.88	131.35	244.79	223.99	0.15	462.49	0.78	3.42
	(3.63)	(3.78)	(2.84)	(4.27)	(0.00)	(3.59)	(0.01)	(0.06)
THAILAND	35.1	4.94	14.13	12.07	59.59	9.63	33.24	22.15
	(0.76)	(0.14)	(0.16)	(0.23)	(0.82)	(0.07)	(0.36)	(0.37)
VIETNAM	0.01	0	0.01	0.1	2.70	76.11	3.25	1.91
	(0.00)	(0.00)	(0.00)	(0.00)	(0.04)	(0.59)	(0.04)	(0.03)
Total	4,594.06	3472.67	8633.85	5246.62	7227.54	12871.28	9127.41	5957.48

Source: FDI Inflows data from GOI, DIPP 2014 and Outflows Data from RBI's Database (2014).

Note: Figures in parentheses are shares in total with respect to ASEAN+5.

The two-way FDI linkages between India and ASEAN+5 countries suggest that India's outflow have been greater than FDI inflow and in both respect the flows are concentrated primarily vis-à-vis Singapore and Japan, notwithstanding statistical and definitional limitations preventing adequate comparison. Overall, indications are towards rich potential for investment cooperation between India and ASEAN+5.

4
Development Paradigm

The Export-led Growth strategy has been adopted by several countries all over the world, including South Korea and other newly industrialising economies, the South-east Asian countries, China and India. This strategy helped countries to considerably improve their growth performances. However, this strategy came under serious doubts during the 'Asian Financial Crisis', when the first and second tier NICs confronted the 'fallacy of composition' whereby they were producing similar products and exporting to similar markets, creating a glut in various production lines and putting stress on their balance of payments situation. This strategy has come to be criticised also for proving to be insufficient for helping Middle Income Countries (MIC) in transition to reach the level of High Income Countries (HIC), with South Korea being an exception.

As an alternative to the export-led growth strategy, emphasis has been laid on the domestic demand-led growth strategy. More recently, in the wake of the global economic meltdown, the importance of domestic demand-led growth strategy has been reiterated. Additionally, it has been argued that the focus should be on the regional sources of growth impulses for addressing developmental challenges. Since India has focused on both the strategies i.e. export-led growth and domestic-demand-led growth simultaneously, which has helped in somewhat insulating it from the full blown effects of the global economic crisis, the Indian experience has a lot to offer to other developing countries in the

East Asian region. In any case, it needs to be studied in greater depth as to what does the Indian growth strategy mean for other developing countries in East Asia.

The Indian paradigm assumes further importance in the context of its economic linkages that may unfold in future with the East Asian neighbours. Given the 'Look East Policy' of India and its increased trade and investment linkages with Asian countries, India's importance for the region is likely to get more pronounced. The recent emphasis in India on industrialisation and value addition, including in the knowledge-intensive sectors as imbibed in the 'New Manufacturing Sector' policy would be more relevant for the East Asian countries in times to come. To what extent, India emerging as a new manufacturing hub alongside its dynamic services sector growth trajectory would be meaningful for the East Asian countries both in terms of its market size and sources of imports, is a matter which needs deeper study.

A synoptic view of (i) Export-led Growth Strategy (ii) Domestic Demand-led growth strategy needs to be placed in conjunction with (iii) Import Substitution-led growth strategy and (iv) Growth- led Export Strategy. It would suggest that the Indian experience has been a combination of them and this has important implications for the development paradigm of LDCs and developing countries of the ASEAN+5.

(i) Export led Growth Strategy

The export-led growth strategy has been successful in various countries, especially in East and South East Asian economies and also in India.There were various internal and external conditions that made this strategy successful (Hong 2011). These included favorable labor and regulatory conditions etc. However, this strategy has over time come under strain due to *Fallacy of Composition* (see also Blecker, 2002 and Sue Xuegong, 2012).

(ii) Domestic Demand- led Growth Strategy

The concept of domestic demand-led growth strategy as an alternative to the export-led growth strategy has been much

debated. Felipe and Lin (2005) define this strategy as one that results in growth of domestic demand accompanied by growth in GDP and income. Further, they classify two scenarios which can be referred to as domestic demand-led growth. The first comprises the case in which GDP growth is positive with a growth in domestic demand but net exports are falling. While the second defines a scenario in which both domestic demand and net exports are rising.

An argument in favor of domestic demand-led growth strategy made is that this strategy while emphasising on the need to boost domestically produced goods and services does not discount external demand. Moreover, since the export oriented growth strategy is not a sustainable strategy in the long run, countries aspiring for a high income status must look for alternative development paths to achieve their objectives.

Felipe (2003) finds the discourse on these strategies to be 'meaningless' because most Asian countries cannot generate enough domestic demand so as to completely shift the focus away from export growth. Moreover, to attain economies of scale these countries will need to encourage exports. On the other hand, a policy of promoting domestic demand will reduce the reliance on foreign markets. Felipe (2003) argues against the idea that both these strategies are mutually exclusive. The 'dual track' strategy followed in recent times in different countries needs to be understood.

(iii) Import Substitution-led Growth Strategy

The import substitution strategy entails the curtailment of imports of goods and at the same time, encouraging the development of domestic capacity of the same. Since demand for the goods is known to exist, the implementation of tariff or non-tariff barriers will protect the domestic industry against foreign competition in its 'start-up' stage. This argument is popularly known as the 'Infant Industry' argument. Another reason for the implementation of this strategy was that in the post World War II era, a long term trend of falling real prices for primary commodities which were

exported by many developing countries of Asia and Latin America was observed (Ogujiuba, 2011). Thus, this deterioration of terms of trade against the developing countries meant fewer receipts on exports and more expenditure on imports confronting foreign exchange constraints. Therefore, prompting many developing countries to embark upon the path of import substituting industrialisation.

But what happened in India and other countries that followed this strategy in the 1950s and the 1960s was that domestic industries grew accustomed to the protectionist policies and thus had no incentives to become more efficient. Moreover, countries following these policies could not take advantage of economies of scale because domestic demand in their countries did not support it, (Pahariya, 2008). Though initially it was argued that the gains from increasing domestic production will offset the efficiency losses of protection, today the import substitution strategy is synonymous with government intervention and inefficiency (Felipe,2003). But an industry which was created as a 'byproduct' of the import substituting regime was India's software industry. A paper by Patibandla *et al.* (2000), puts forth the argument that though the import substituting policies were responsible for creating inefficiencies in many industries, they were instrumental in facilitating the birth of the software industry due to specific supply side conditions it brought about.

Often import substitution is pitted against export promotion strategies. An example of a study which argues against classifying these strategies as contradictory trade policies is Subasat (2009). This study argues against the perception that import substitution is an inward looking policy with state interference while export promotion is an outward looking policy without state intervention as these conclusions are drawn on the basis of static two sector model.

(iv) Growth-led Export Strategy

A particular set of studies of much interest here are those which are trying to determine the causality between exports and output

or GDP. Bahmani-Oskooee *et al.* (2009) use the Johansen's co integration technique together with weak exogeneity test to determine whether aggregate output or exports is exogenous in the long run. Since they followed this technique over the period from 1960 to 1999 for a set of 61 developing countries, their results were country specific. With an objective to determine whether export led growth policies are efficient in the context in South Africa, nine provinces of South Africa were taken as a sample in Chang (2013). After applying the bootstrap panel Granger Causality approach, for seven of the nine provinces studied, neither export growth nor output growth were causing each other. Only in the province of Mpumalanga, growth was found to be causing exports. Thus, policymakers need to gauge for themselves the context and follow indigenous growth strategies which are in sync with local conditions.

To sum up, various countries have adopted various strategies of growth as a component of their overall development paradigm and India is no exception. Most prominent strategies followed by various countries have been export-led growth strategy and Domestic demand-led growth strategy. However, India presents an important case in point which has pursued not only these two strategies but also adopted the import substitution-led growth strategy and growth-led export strategy, often one in conjunction with the other out of these four strategies. In this sense, India brings with herself, along with other countries of the ASEAN+5, important lessons for adopting growth strategies as part of unique development paradigm specially relevant for the LDCs and other developing countries of the ASEAN+5 region.

In addition, studying the various development paradigms will enable us to find ways for greater economic integration (Kuchiki and Uchikawa 2008).

One may conclude by saying that regional economic integration could well offer avenues to combine external and domestic sources of demand for achieving growth outcomes.

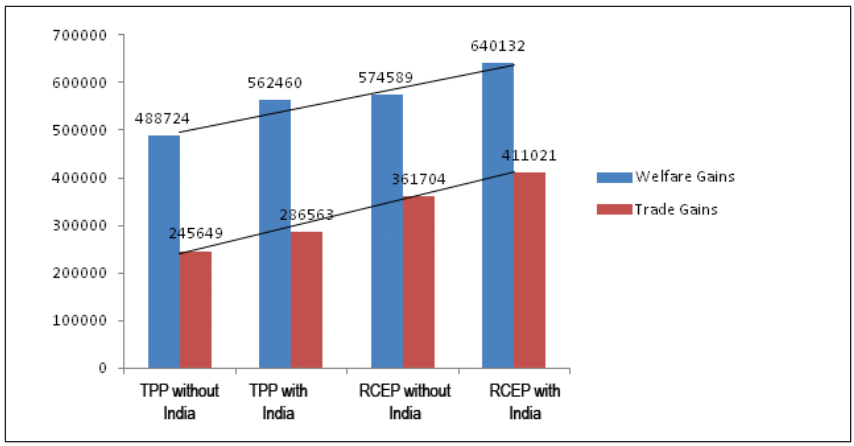
5

Alternative Regional Configurations and Welfare Gains

The welfare and trade gains have been estimated, using a multi-sector computable general equilibrium (CGE) model. This is the standard Global Trade Analysis Project (GTAP) model, coordinated by the Center for Global Trade Analysis, Purdue University. The basic model is documented in Hertel (1997). The data is obtained from the latest GTAP database version 8.

For computation, after country and sectoral aggregation estimations were made for various scenarios. The analysis was undertaken for four groups, viz. TTP without India; TTP with India; RCEP without India; and RCEP with India (Figure 3).

Figure 3: Trade and Welfare Gains in RCEP with India's Presence (US$ billion)



Source: Author's estimates based on CGE simulations (GTAP 8.0)

Note: The results pertain to the final scenario which included tariff liberalisation; trade facilitation; reduction in transaction costs; and productivity gains.

Results are presented for the final scenario which includes full reduction of import tariffs among the members, except a small negative list; trade facilitation, which is incorporated by the import augmenting technical progress in our model; reduction in transaction costs through improved shipping linkages; and productivity gains, owing to a combined effect of both a 'self-selection' hypothesis and through the 'learning by exports' channel, as these are difficult to separate in the model.

Among the many prophesised gains that trade liberalisation is supposed to bring to developing countries, increases in the level of productivity in countries coming under the purview of this study is well documented Hahn and Narjoko (2009).

The simulation results in a static framework (see Table A in Annexure) of Computable General Equilibrium modelling (CGE) suggest that trade and welfare gains are greater in RCEP which is an ASEAN+6 process inclusive of India, as compared to the TPP, under various simulation scenarios of tariff liberalisation, trade facilitation etc.

6
Economic Complementarities

While attempts were made in previous studies (e.g, Kawai and Wignaraja (2007), among others) to highlight the role of India for the East Asian regional integration processes, they were largely at the macro level. In the preceding section we have also provided some new results at the macro level through CGE simulations with the latest relevant datasets. However, now we would supplement this by focusing on the existence of economic complementarities between India and other ASEAN+5 countries at a fairly disaggregated level with the help of techniques that includes Revealed Comparative Advantage (RCA) and Intra-Industry Trade (IIT). FDI complementarities would also be explored. A special focus would be given to the economic opportunities for East Asian countries for developing Indian infrastructure and the possibilities of FDI inflows for ASEAN+5 region.

One way of ascertaining trade complementarities is by matching the export vector of India with import vector of another country from ASEAN+5 region to determine similarity or dissimilarity in them, implying absence or presence of trade complementarity between the countries in question. This is best given by the well-known Cosine Index. Given two vectors of exports and imports, A and B, the cosine similarity, θ, is represented as

$$\text{similarity} = \cos(\theta) = \frac{A \cdot B}{\|A\|\|B\|} = \frac{\sum_{i=1}^{n} A_i \times B_i}{\sqrt{\sum_{i=1}^{n} (A_i)^2} \times \sqrt{\sum_{i=1}^{n} (B_i)^2}}$$

The resulting similarity ranges from −1 meaning exactly opposite, to 1 meaning exactly the same, with 0 usually indicating independence, and in-between values indicating intermediate similarity or dissimilarity.

The calculated values of the Cosine Index among each bilateral pair of India and ASEAN+5 region are presented in Table 4. The country pairs with maximum potential for complementarities for exports from India to a partner (μ) include Indonesia, Singapore, Cambodia, Australia and the Philippine. On the other hand, complementarities of exports from ASEAN+5 region to India (λ) are high in the case of Japan, Philippines, Myanmar, Vietnam, among others.

Table 4: Trade Complementarities: Pair-wise Cosine Index

Partner	Cosine Index (μ) of India with ASEAN+5 countries	Cosine Index (λ) of India with ASEAN+5 countries
Australia	0.396	0.16
Cambodia	0.484	0.149
China	0.153	0.008
Indonesia	0.62	0.073
Japan	0.127	0.46
Korea Rep.	0.1	0.091
Malaysia	0.264	0.062
Myanmar		0.312
New Zealand	0.279	
Philippines	0.337	0.477
Singapore	0.536	0.125
Thailand	0.088	0.071
Viet Nam		0.193

Source: Author's calculations based on UNCTADstat 2012.

Note: μ implies India's exports matched with import vector of partner and λ implies India's imports matched with export vectors of partner from ASEAN+5.

Table 5 lists out basic indicators computed by using UN Comtrade data. Column A and B in the above table indicate the

level of trade in the year 2012. To be more specific, both these columns show the absolute value of Indian exports to ASEAN+5 and to the world, respectively. In terms of value, the fuels sector records the highest figure for exports from India, both to ASEAN+5 countries and to the World.

Column C expresses the trade values in column A and B in relative terms, that is, as a percentage of exports of India. Column D which presents the ASEAN+5 countries' imports from the world will be useful in the calculation of the indicative and relative trade potential.

Helmers and Pasteels (2006) define the Indicative Trade Potential (ITP) calculated in Column F as follows:

$$ITP_{ijk} = min\,(X_{ik}, X_{jk}) - X_{ijk}$$

where $X_{ik} = \sum_{j=1}^{J} X_{jik}$ and $X_{jk} = \sum_{i=1}^{I} X_{ijk}$

They argue that the computation of this indicator will help identify the products for which there is trade complementarity between the exports of a country (India in this case) and imports of the target country (ASEAN+5 countries)'. Also, they emphasise upon the fact that this indicator makes a strong assumption, that the importing country can potentially import all that is exported to it.

In the above table, the ITP indicator has been calculated for some selected sectors at the HS 2-digit level instead of products at the HS 6-digit level. A high Indicative Trade Potential (ITP) indicates that trade can take place between the two regions. In our analysis, the Machinery and Electricals followed by the Fuels sector, record the highest ITP figures.

The last column containing the relative indicative trade potential is with respect to India's export capacity. By this measure, most of the sectors show high degree of potential for exports from India to ASEAN+5 such as Food products, Fuels, Chemicals, Textiles and Clothing, Machinery and Electricals and Transportation, except Minerals. The reverse trade flows' potential is presented in Table 5a.

Table 5: Trade Flows at the Sectoral Level (2012)

HS Code (2007)	Sector	India's exports to ASEAN+5 (US$ bn)	India's exports to the World (US$ bn)	Share of ASEAN+5 in India's Exports (%)	ASEAN+5's imports from the World (US$ bn)	Indicative potential trade (US$ bn)	Relative Indicative potential trade (%)
		A	B	C=B/A	D	F = min(B,D)-A	G =F/B
16-24	Food Products	1.88	7.53	25.03	87.33	5.64	74.97
25-26	Minerals	3.74	4.93	75.83	203.98	1.19	24.17
27-27	Fuels	14.78	54.38	27.17	1094.15	39.6	72.83
28-38	Chemicals	6.56	31.28	20.97	315.69	24.72	79.03
50-63	Textile and Clothing	6.01	32.68	18.40	122.56	26.67	81.60
84-85	Machinery and Electricals	3.47	21.83	15.89	1130.58	18.36	84.11
86-89	Transportation	4.21	18.23	23.09	238.97	14.02	76.91

Source: Author's own calculations using UN Comtrade Data.

Table 5a: Trade Flows at the Sectoral Level (2012)

HS 2007 Code	Sector	ASEAN+5's Exports to India (US$ bn)	ASEAN+5's Exports to the World (US$ bn)	Share of India in ASEAN+5's Exports (%)	India's imports from the World (US$ bn)	Indicative potential trade (US$ bn)	Relative Indicative potential trade (%)
		A	B	C=A/B	D	F= min(B,D)-A	G=F/B
16-24	Food Products	0.44	82.65	0.53	1.61	1.18	1.42
25-26	Minerals	2.42	83.83	2.88	10.09	7.68	9.16
27-27	Fuels	16.60	400.77	4.14	185.70	169.10	42.19
28-38	Chemicals	15.17	281.97	5.38	37.21	22.04	7.82
50-63	Textile and Clothing	4.33	325.49	1.33	5.15	0.82	0.25
84-85	Machinery and Electricals	39.56	1707.67	2.32	65.88	26.31	1.54
86-89	Transportation	5.20	467.03	1.11	13.56	8.36	1.79

Source: Author's own calculations using UN Comtrade Data.

From HS 2-digit level of identification of potential sectors for two-way trade between India and ASEAN+5, we now move on to undertake a more detailed disaggregated level analysis of identifying trade potential that is mutually beneficial. This is based on RCA methodology at HS 6-digit level. Results are presented on India's comparative advantage at HS 2-digit level sectors, derived from 6-digit level RCA, vis-a-vis partner as given in Table 6. These are based on three conditions of feasibility, consistency and dynamism in RCA. Feasibility implies those products which reveals comparative advantage i.e. RCA > 1. The second criterion is to find out the products which show comparative advantage through the period under consideration i.e. 2007-2011. That implies RCA > 1 each year. The third criterion is imposed in order to capture the trend of comparative advantage for each product classified at HS 6-digit level and satisfies first two conditions. To measure how dynamic the comparative advantage of a particular product is we consider the average growth rate of calculated RCA value from 2007 to 2011. We then consider only those products whose RCA values exhibit positive growth rate. Given these criteria we chose those products in which India has comparative advantage but the rest of the ASEAN+5 are at a disadvantageous position.

Table 7 is converse of what we have presented in Table 6. Here we take only those products in which India has comparative disadvantage whereas rest of the ASEAN+5 countries have comparative advantage.

From comparative advantage-based identification of items and sectors for potential trade interaction we now move to Intra-Industry realm of trade complementarity with the calculation of Grubel–Llyod (GL) Index at HS 4-digit classification. Table 8 presents aggregated results, for the sake brevity at HS 2-digit level. For the purpose of aggregation we only consider those products at HS 4-digit classification which have GL Index value more than 0.75 consistently for the period: 2007 to 2011.

Table 6: India's Comparative Advantage vis-à-vis ASEAN+5
HS 2-digit Level Sectors

Country	INDIA
Australia	03 07 08 09 10 11 12 13 14 17 25 26 27 28 29 30 32 34 38 39 40 41 42 50 51 52 53 54 55 56 57 58 59 60 61 62 63 68 69 71 72 73 75 76 81 82 84 85 87 89 90 91 93 94 96
Cambodia	09 10 14 29 30 40 52 60 61 62 63 71 73 87 88 89 94
China	01 02 03 07 08 09 10 11 13 14 25 26 27 28 29 30 32 33 34 37 38 39 41 52 53 54 55 57 59 60 61 62 63 68 69 71 72 73 75 78 84 85 87 88 90 91
Japan	02 03 05 08 09 11 12 13 14 17 25 26 27 28 29 30 32 33 34 37 38 39 40 41 42 48 50 51 52 53 54 55 56 57 58 59 60 61 62 63 68 69 71 72 73 75 76 79 82 84 85 87 89 91 93 94 96
Korea Rep.	02 03 05 08 09 10 11 12 13 14 17 25 26 28 29 30 32 33 37 38 40 41 42 48 50 51 52 54 55 56 57 58 59 60 61 62 63 68 69 71 72 73 75 76 81 82 84 85 87 89 91 94 96
Malaysia	01 02 03 05 07 08 09 10 11 12 13 17 25 26 27 28 29 30 32 33 37 38 39 40 41 42 52 53 54 55 56 57 58 59 60 61 62 63 68 69 71 72 73 76 81 82 84 85 87 90 91 94 96
Myanmar	08 54 61 62
New Zealand	08 09 10 11 12 13 17 25 27 28 29 30 32 37 38 39 40 41 42 51 52 54 55 56 57 58 59 61 62 63 68 69 71 72 73 82 84 85 87 90 94 96
Philippines	02 03 09 11 12 17 25 26 27 28 29 30 32 33 38 39 40 41 42 48 51 52 53 54 55 56 58 59 61 62 63 68 69 71 72 73 78 79 84 85 87 89 91 93 94 96
Singapore	02 03 05 07 08 09 10 11 12 13 14 17 25 26 27 28 29 30 32 34 37 38 40 41 42 48 51 52 53 54 55 56 57 58 59 60 61 62 63 68 69 71 72 73 75 76 78 81 82 84 85 87 91 94 96
Thailand	02 03 05 07 08 09 10 11 12 13 14 25 26 27 28 29 30 32 33 38 40 42 50 52 53 54 55 56 57 59 60 61 62 63 69 71 72 73 75 78 79 81 82 84 85 87 93 94 96
Vietnam	02 03 07 08 09 10 11 13 14 17 25 26 27 28 29 30 32 33 34 38 39 40 41 42 48 50 51 52 53 54 55 57 58 59 60 61 62 63 68 69 71 72 73 76 78 79 81 82 84 85 87 88 89 94 96

***Source*:** Author's calculations based on UN (2013) COMTRADE Database.

Table 7: ASEAN+5' Comparative Advantage vis-a-vis India

HS 2-digit Level Sectors

Country	ASEAN+5
Australia	01 02 03 04 05 07 08 09 10 11 12 15 16 17 18 19 20 21 22 23 25 26 27 28 29 30 31 32 33 35 36 38 39 40 41 44 47 48 51 69 70 71 72 73 74 75 76 78 79 81 82 83 84 85 87 89 90 95
Cambodia	03 11 15 24 25 40 44 49 55 60 61 62 63 64 65 69 87 94
China	02 03 04 05 07 08 09 10 11 12 13 14 15 16 19 20 21 22 23 25 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 76 78 79 80 81 82 83 84 85 86 87 88
Japan	03 05 12 15 16 21 22 25 26 27 28 29 30 32 34 35 37 38 39 40 41 48 49 51 52 54 55 56 58 59 60 65 68 69 70 71 72 73 74 75 76 79 80 81 82 83 84 85 87 88 89 90 91 92 93 95 96
Korea Rep.	03 07 11 12 13 16 18 19 20 21 22 27 28 29 31 32 35 37 38 39 40 41 48 49 52 54 55 56 58 59 60 61 62 63 64 65 67 68 69 70 71 72 73 74 75 76 79 81 82 83 84 85 86 87 88 89 90 92 95 96
Malaysia	01 03 04 07 08 11 14 15 16 18 19 21 22 24 25 26 27 28 29 31 32 33 34 37 38 39 40 44 48 52 54 55 56 60 61 64 65 68 69 70 71 72 73 74 75 76 78 79 80 81 82 83 84 85 87 90 91 92 94 95 96
Myanmar	02 03 04 05 07 08 12 14 19 25 26 27 28 39 40 41 44 52 62 63 64 67 71 89 90 96
New Zealand	01 02 03 04 05 06 07 08 11 12 15 16 17 18 19 20 21 22 23 24 25 26 28 29 30 32 34 35 38 39 41 42 43 44 45 47 48 49 51 52 55 56 57 58 59 60 61 62 63 65 68 71 72 73 74 76 78 80 82 83 84 85 87 88 89 90 94 97
Philippines	03 04 05 08 12 13 15 16 17 19 20 21 22 23 24 25 26 27 28 29 31 32 33 34 36 38 39 40 42 43 44 46 47 48 52 53 56 58 60 61 62 63 64 65 67 68 69 70 71 72 73 74 78 80 81 83 84 85 87 90 91 93 94 95 96
Singapore	01 03 04 05 08 09 11 14 15 18 19 21 22 27 28 29 30 32 33 34 35 37 38 39 40 41 42 44 48 49 54 58 59 61 63 70 71 72 73 74 76 78 80 82 83 84 85 87 88 89 90 91 95 96 99
Thailand	03 04 05 07 08 10 11 12 14 15 16 17 19 20 21 22 23 25 26 27 28 29 30 33 34 35 36 38 39 40 41 42 44 46 47 48 49 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 67 68 69 70 71 72 73 74 76 80 81 82 83 84 85 87 88 89 90 91 92 93 94 96
Vietnam	03 04 05 07 09 10 11 14 15 16 17 19 20 21 22 23 24 25 26 27 28 29 31 33 34 35 38 39 40 42 44 46 48 50 51 52 53 54 55 56 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 81 82 83 84 85 87 88 90 91 92 94 95 96
Indonesia	02 03 04 05 07 08 09 11 12 13 14 15 16 17 18 19 20 21 23 24 25 26 27 28 29 31 34 38 39 40 41 44 46 48 51 52 53 54 55 56 57 59 60 61 62 63 64 67 68 69 70 71 72 73 74 75 76 78 80 81 82 83 84 85 87 90 92 94 95 96

***Source*:** Author's calculations based on UN (2013) COMTRADE Database.

Table: 8 Trade Complementarity Identified through IIT between India and ASEAN+5

Country	HS 2-digit Sectors
Australia	03 06 11 12 15 17 21 22 25 27 28 29 30 32 33 35 38 39 40 42 44 48 51 56 58 59 60 69 70 71 72 73 74 76 78 80 84 85 87 88 89 90 94 99
Cambodia	19 20 22 29 33 39 40 44 48 72 73 76 84 87 89
China	05 11 18 21 22 28 30 33 34 36 41 48 49 52 64 65 69 71 73 96
Indonesia	08 12 21 25 28 29 30 32 33 34 39 40 41 44 48 49 55 56 58 59 64 68 70 72 73 76 80 83 84 85 86 87 90 94 95 96
Japan	05 06 12 15 21 26 28 29 33 34 35 38 39 40 41 48 49 51 52 53 54 55 56 58 69 70 73 74 75 76 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 94 96
Korea Rep.	03 05 06 07 21 25 26 29 32 33 34 38 39 40 41 44 48 49 51 52 53 54 55 56 57 58 59 60 66 68 70 71 72 73 74 76 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 96
Malaysia	05 06 08 09 19 20 21 22 23 25 26 27 28 29 30 32 33 34 35 36 38 39 40 41 44 45 48 49 51 52 54 55 56 57 58 59 60 63 64 65 68 69 70 71 72 73 74 76 78 79 80 82 83 84 85 86 87 88 89 90 91 92 94 95 96 99
New Zealand	05 11 13 17 20 21 25 28 29 30 34 36 38 39 40 43 44 45 48 51 52 56 58 60 62 64 68 71 72 73 74 76 78 83 84 85 86 87 88 90
Philippines	06 08 19 21 22 25 28 29 33 34 39 40 44 52 54 58 59 64 68 69 70 72 73 76 83 84 85 87 90 92 94
Singapore	05 08 09 12 13 15 19 21 22 23 25 26 27 28 29 30 32 33 34 35 36 38 39 40 41 43 44 45 48 51 52 53 54 55 56 58 59 60 63 64 67 68 69 70 71 72 73 74 76 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96
Thailand	03 06 08 09 17 20 23 25 26 28 29 33 34 38 39 40 41 42 43 44 46 48 49 53 54 55 56 58 59 60 64 65 66 68 69 70 71 72 73 76 79 80 81 82 83 84 85 86 87 89 90 91 92 94 96
Vietnam	05 06 07 08 09 13 21 22 25 26 28 29 33 34 35 38 39 40 41 44 45 48 53 58 62 67 68 69 70 72 73 74 76 79 83 85 87 88 89 90 91 92 94 96 99

***Source*:** Author's calculations based on UN (2013) COMTRADE Database.

It was observed earlier, that India's FDI outflows to ASEAN+5 are greater than inflows from it, however, quite concentrated vis-à-vis Singapore and Japan. It is noticeable from Table 9 that there exists rich potential for tapping two-way FDI complementarity between India and the ASEAN+5. Sectors amenable to India's outflows include various segments of agriculture, industry and services. For FDI inflows, these are primarily in various services such as construction, telecommunications, software, hotel and tourism and manufacturing such as computer hardware, drugs and pharmaceuticals, chemicals, automobiles, and metallurgy. The sectors are identified with secondary sources and more disaggregated projects for mutual FDI possibilities need to be identified in due course, especially with a view to diversify the FDI interactions between the two sides.

Table 9: FDI Complementarity

Sectors amenable to FDI Outflows from India to ASEAN+5	Sectors amenable to FDI Inflows from ASEAN+5 to India
Agriculture And Mining	Services Sector
Community, Social And Personal Services	Construction Development:
Construction	Telecommunications
Electricity, Gas And Water	Computer Software & Hardware
Financial, ,Insurance And Business Services	Drugs & Pharmaceuticals
Manufacturing	Chemicals (Other Than Fertilisers)
Miscellaneous	Automobile Industry
Transport, Storage And Communication Services	Power
Wholesale, Retail Trade, Restaurants and Hotels	Metallurgical Industries
	Hotel & Tourism

Source: For FDI inflows: Ministry of Commerce & Industry, Department of Industrial Policy & Promotion, GOI. ; For FDI outflow: RBI.

Note: Since the sources are different for inflows and outflows, there are serious data limitations for comparison-sake.

FDI in the Context of Infrastructure Sector Development Needs in India

To promote regional economic exchanges between countries belonging to the region, building of appropriate connecting infrastructure will only be an enabling factor (Zhong, 2010). The importance of basic infrastructure facilities available at a cost effective price, to encourage and maintain India's growth trajectory, cannot be overemphasised. Cooperation in infrastructure projects as a means for achieving regional development have been previously explored (Kumar, 2007) and could effectively aid in meeting the developmental goals. Though in most developing countries including India there is high domestic demand for quality infrastructure facilities but there also exists a serious shortfall in domestic resources to meet this demand. In fact it has been estimated that India needs investment for urban infrastructural upgradation to the tune of around US $ I Trillion over the next 20 years (GOI, Approach to 12th Plan). Thus, clearly there is room for supplementing domestic investible resources with FDI in this sector. This is particularly important as good infrastructural facilities are instrumental in attracting FDI to different sectors in the economy.

The Indian government has followed a 'liberal approach' in granting permission to FDI in infrastructure sectors. In its FDI circular (2013) the sectors of construction development and airports have allowed FDI up to 100 per cent through the automatic route, while in the telecommunications sector the FDI ceiling has been raised to 74 per cent with up to 49 per cent allowed through the automatic route. This is reflected by the fact that over the period from April 2000 to December 2013, sectors such as construction development, telecommunications and power together comprised 21 per cent of the total FDI inflows (DIPP Factsheet on FDI, December 2013).

In cognisance of these sectors' importance in its contribution to total FDI inflows which amounted to 18 per cent for the financial year 2011-12, the GOI has promoted many PPP initiatives. This is

evident as India alone accounted for almost half the investment in new Private Participation in Infrastructure (PPI) projects implemented in developing countries (GOI, Economic Survey 2013). Despite a fall in the FDI flows to these sectors in 2010-11, the overall picture indicates a recovery in the year 2011-12 (Table 10) and FDI inflows are noticed in a whole gamut of infrastructural sectors such as Power, Non-conventional energy, Petroleum & natural gas, Telecommunications, Air transport, Sea transport, Ports and Railway-related components. These the sectors wherein several ASEAN+5 countries have both the FDI resources and capabilities such as Japan, Singapore, Australia and Malaysia in transport, construction sectors to name a few.

Table 10 : FDI Flows to Infrastructure Sectors

(US$ million)

Sector	2009- 10	2010-11	2011-12
Power	1,437.30	1271.77	1652.38
Non-conventional energy	497.9	214.4	452.17
Petroleum & natural gas	272.1	556.43	2029.98
Telecommunications	2554	1664.5	1997.24
Air transport	22.6	136	31.22
Sea transport	284.9	300.51	129.36
Ports	65.4	10.92	0
Railway-related components	34.2	70.66	42.27
Total (of above)	5,168.40	4,225.19	6,334.62

***Source*:** Government of India, *Economic Survey* 2012-13.

7
Projection of Mutual Trade Gains

Having made an assessment of welfare and trade gains with the help of Computable General Equilibrium (CGE) model and having identified economic complementarities both in the realms of trade in goods and FDI, including broad sectors and disaggregated products, we further make projection of gains for the years 2025, 2030, 2040, and 2050 in mutual trade between India and ASEAN+5 countries in a partial equilibrium framework by using the augmented gravity model. This is particularly important as India's economic presence in the East Asian region need not be viewed in a static sense rather it must be placed in adynamic setting.

An augmented gravity model to project the potential trade gains has been widely used in the literature. The initial application of the gravity equation to evaluate international trade was done by Tinbergen (1962), Linnemann (1966), Aitken (1973) and Sapir (1981). These earlier studies played the crucial role of bringing the idea of using gravity technique from physics to the economic theory but only a ceremonial application was observed in the pioneering work by Anderson (1979). Further theoretical enhancement and empirical experiment have been done by some other seminal works like Bergstrand (1985), Deardorff (1998), Baier and Bergstrand (2001), Eaton and Kortum (2002), and Anderson and van Wincoop (2003). The work by Plummer and Troger (2007) pointed out the biasedness in the estimates due to the presence of time invariant variables. Following these as background, there is enormous number of applied work that has been done in the

entire literature to compute trade patterns through gravity model and make projections. Bruger *et al.* (2009) and Anderson (2011) are the few of the recent works which elaborate the importance of gravity as an important tool to analyze international trade and their projections.

The augmented gravity model used for projection is specified:

$$ln\,EX_{ijt} = \alpha_{ij} + \beta_1 lnGDP_{it} + \beta_2 lnGDP_{jt} + \beta_3 lnD_{ij} + \beta_4 lnF\,DI_{it} + \beta_5 RT\,A_{ijt} + \beta_6 lnCT\,E_{it} + \beta_7 Dc_{it} + \mu_{ijt}$$

Apart from the traditional variables, this augmented gravity model includes net inflows of FDI as a per centage of GDP of the reporting country. To capture the impact of indicators for trade facilitating variables we consider cost of export and the volume of paper work (C T E_{it} and Dc_{it}) of the reporting country. The variable RTA_{ijt} capturing India's RTAs with ASEAN+5 is taken as a dummy variable which is equal to 1 if there exists any regional or bilateral trade agreement and zero otherwise.

Bilateral export data has been obtained from UN COMTRADE for each of the member countries of ASEAN+5. The reference period of the analysis is 2007-2012. Considering country pair as cross section units with time element we have done a panel data estimation. However, the data has certain limitations in terms of its availability, since data on export for all possible country pairs at each point in time is not available.

One of the important features of panel data is that it allows us to control for unobserved variables and account for entity-wise heterogeneity. In our case, we choose a particular pair of country as an entity. At the beginning one must determine whether a fixed effect (FE) or the random effect (RE) model would be suitable for the given panel data. Fixed effect models are useful when the data structure contains variables which changes over time. Our data contains some time invariant variables like distance and the dummy variable on trade agreements. These variables are unique to a certain entity within a panel and should not be correlated

with other characteristics. It is quite likely that error terms can be correlated with these time-invariant variables and thus give us a reason not to choose fixed effects. It is also notable that our panel contains a large numbers of entities (more than 180 individual pairs of countries). Therefore, it would be rational to assume that panel level effects across these entities are random. The Hausman test for choosing fixed or random effect would not be suitable due to the presence of time-invariant variables and as a result the matrix of covariance obtained from both the models will be different in dimension.

In case of random effects model, unlike the fixed effects, the variation across the entities is assumed to be random and uncorrelated with the independent variables. It is already argued that there is a possibility that differences among the panel entities can affect the dependent variables. Hence, following Green (2008) we can apply random effect to estimate the gravity model. The assumption of uncorrelated errors (with panel entities) allows time invariant variable as a separate dependent variable. So we need to re-specify the augmented gravity model by the following equation:

$$ln\,EX_{ijt} = \alpha_{ij} + \beta_1 lnGDP_{it} + \beta_2 lnGDP_{jt} + \beta_3 lnD_{ij} + \beta_4 lnF\,DI_{it} + \beta_5 RT\,A_{ijt} + \beta_6 lnCT\,E_{it} + \beta_7 Dc_{it} + \varepsilon_{ij} + \mu_{ijt}$$

Where $\mathcal{E}_{ij}$ is between-entity error and μ_{ijt} would be within-entity error. Let us assume that X denotes the matrix of all independent variables then as per the assumption of random effect model corr $(X, \mathcal{E}) = 0$ is true.

Results are presented in Table 11. We present results for both the models i.e. random effect and fixed effect. The results show that fixed effect model fails to estimate time invariant variable i.e. distance, as was highlighted earlier, only justifying the focus on random effects model. We later provide the justification for using the other processes such as AR(1) models.

Table 11: Augmented Gravity Model for Exports: Estimation Results

Independent variables		Dependent Variable: lnexp			
Ind.Var.	FE	RE	AR (1)	GLS	GLS-AR adj.
lngdpexp	1.35***	1.29***	1.26***	1.02***	1.10***
	(7.11)	(16.28)	(15.94)	(68.12)	(45.22)
lngdpimp	1.64***	1.18***	1.12***	0.85***	0.93***
	(8.94)	(15.24)	(14.38)	(79.45)	(48.54)
lndist	–	-0.98***	-0.94***	-0.76***	-0.72***
	-	(-4.98)	(-5.04)	(-36.26)	(-20.49)
lnfdi1	0.05*	0.04*	0.03	0.03	0.00
	(2.56)	(2.27)	(1.67)	(1.18)	(0.34)
rta	–	1.00*	0.90*	0.51***	0.49***
	-	(2.55)	(2.41)	(13.97)	(8.25)
lncte	0.22	0.36*	0.35*	-0.34***	0.08
	(1.37)	(2.37)	(2.26)	(-5.74)	(1.21)
dc	-0.17***	-0.21***	-0.17***	-0.20***	-0.17***
	(-4.48)	(-6.07)	(-4.88)	(-25.62)	(-14.68)
Constant	-72.39***	-52.33***	-50.23***	-32.87***	-40.89***
	(-19.59)	(-17.16)	(-16.12)	(-42.66)	(-33.49)
Observations	909	909	909	909	909
R-squared	0.46				
Number of id	156	156	156	156	156
Adj. R-squared	0.35	.	.	.	.

Source: Author's calculations.

The results for FE model show that most of the variables turn out to be significant. However, at the first place Breusch and Pagan Lagrangian multiplier test has been performed to confirm the suitability of random effect over ordinary least square. The test shows the $\chi 2$ value at DF=1 is as high as 2043.88 and rejects the OLS estimation. We then move to check whether the selected variable shows any serial autocorrelation with the within-entity

error as suggested by Woolridge (2002) using a simulation test on the idiosyncratic errors. For testing the null hypothesis of no autocorrelation a Wald-statistics has been constructed by Woolridge. The calculated value F (1,143) statistics across the panel takes a value equal to 3.85 and shows a possibility of autocorrelation at 10 per cent level of significance. Therefore, a separate random effect model with an AR(1) disturbance is estimated. The estimated autocorrelation coefficient takes a value of 0.32 and account for the minimal presence of autocorrelation and bifurcates the variance across the panels. So the problem of autocorrelation through the AR(1) disturbance adjustment process has been tackled.

Going back to estimates of FE model, we perform a Modified Wald test to identify the presence of heteroskedasticity. The null hypothesis of constant variance has been rejected as the obtained $\chi 2$ at DF=7 (since we have seven independent variables) turns out to be 42.77 and consequently the probability of constant variance takes a zero value. This also indicates the possibility of presence of heteroskedasticity in the augmented gravity model. To test for heteroskedasticity in the augmented gravity model we ran GLS model twice. In the first case, we assume heteroskedasticity across the panel and then in the second case we assume constant variance. We compare both the estimates by assuming homoscedasticity nested in heteroskedasticity. Since both the restricted and unrestricted model have been estimated by maximum likelihood method which allows us to perform a likelihood ratio test to check whether heteroskedasticity constraint should be accepted or not. Since we have net 156 different panel entities therefore $\chi 2$ have 156 degrees of freedom. The resulted LR $\chi 2$ at DF= 156 is equal to 1232 and corresponding probability equal to zero indicates the strong presence of heteroskedasticity in the augmented gravity model. Given these we further run two different models and the results are given in last two columns. The first model accounts for heteroskedasticity and the final model considered for both the autocorrelation as well as for the heteroskedasticity.

It can be observed from the estimated results that coefficients in general meet the significance criteria. For example, the basic components of gravity model i.e. GDP and distance are strongly significant in all cases with expected signs. However, there are few cases, for example, FDI which shows insignificant coefficient in the improved models. This could be explained as most of India's FDI are domestic-market-seeking rather than export-oriented. Indicator of trade facilitation is also coming significant in almost all cases. What is most important is that RTA has turned out to be significant in all the models.

We have further used this gravity model estimates to project trade gains. We have undertaken two sets of forecast of trade over few decades, for estimating minimum and maximum forecast levels. In the first case, we use a simple one step time trend forecast of exports from India to ASEAN+5, imports into India from ASEAN+5 and volume of total bilateral India-ASEAN+5 trade.

The first set is the business-as-usual scenario which captures the bottom end of future growth in trade. This forecast is based on CAGR on the real trade data for the period 2007-2012. We use simple time plot method on the log values of bilateral trade data given by the following equations.

$$\log(\text{export}) = \alpha+\beta*t+\varepsilon \quad \text{.....(i)}$$

$$\log(\text{import}) = \alpha+\beta*t+\varepsilon \quad \text{.....(ii)}$$

$$\log(\text{trade}) = \alpha+\beta*t+\varepsilon \quad \text{.....(iii)}$$

For all the three cases we use ordinary least square to estimate α and β and the coefficient β represents the CAGR values over the period of six years. To make it clear we first use the actual trade data to estimate the gravity model and using its coefficients we predict for 2007-2012values, which in turn are projected for future time-points. We then assume same growth trend will persist for the forecast period i.e. 2050.

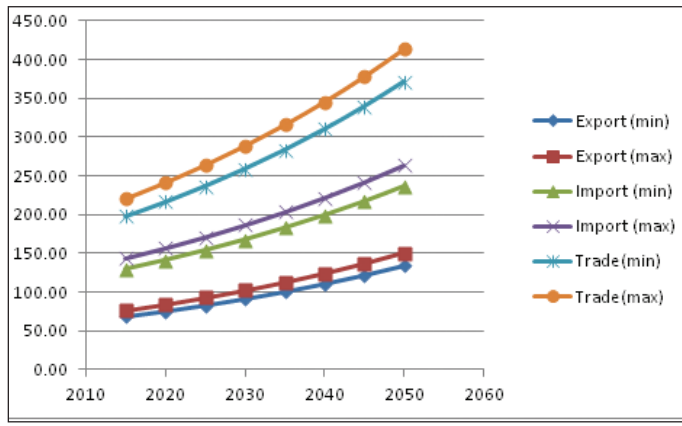
The second set of methodology gives us the upper band of the trade forecast. In this method, we use predicted value of the estimates obtained earlier in this section by gravity model. We consider the estimates of random effect model after adjusting the serial autocorrelation component. As in the gravity model we have taken bilateral trade data we therefore consider the predicted value of export of India and the export of rest of the ASEAN+5 nations as India's import.

Trade 12: Forecast (US$ Billion)

Year	Export (min)	Export (max)	Import (min)	Import (max)	Trade (min)	Trade (max)
2015	68.65	76.49	129.38	144.156	198.03	220.64
2020	75.58	84.22	141.03	157.134	216.61	241.35
2025	83.22	92.72	153.72	171.281	236.94	264.00
2030	91.63	102.09	167.56	186.701	259.19	288.79
2035	100.88	112.40	182.65	203.509	283.53	315.91
2040	111.07	123.76	199.09	221.830	310.17	345.59
2045	122.29	136.26	217.02	241.801	339.31	378.06
2050	134.65	150.03	236.55	263.569	371.20	413.59

Source: Author's calculations.

Figure 4: Projected Trade Potential between India and ASEAN+5



Source: Author's calculations.

The projections obtained by the gravity model as presented in Table 12 indicate us the growing possibility of trade between India and ASEAN+5 countries in future. This is borne out by the results obtained through the two sets providing us with minimum and maximum values of potential exports and imports of India vis-a-vis ASEAN+5 and total bilateral trade (see also Figure 4). The high trade potential also suggests setting in place adequate policy mechanisms for stronger trade in goods relationship among these nations. The range of results also suggest if any FTA which is negotiated with *substantial trade coverage* and *faster and deeper tariff liberalisation* coupled with removal of *Non-Tariff Barriers* could help achieve the maximum levels of bilateral trade as projected, otherwise the actual future trade gains may be well below the maximum potential.

Summing up, it may be mentioned that India and ASEAN+5 countries can have mutually beneficial trade gains in future, although the extent of gains vary from methodology to methodology.

8

Importance of India's RTAs with ASEAN+5

The preceding analysis projects the growing pattern of trade among ASEAN+5 countries. We focus on the various factors that may positively affect the growth of trade in goods, especially from India's perspective for the region. It is important as trade may result in higher economic growth.

At this juncture it is necessary to study the nature of trade and pattern of trade more deeply. More precisely, measurement of product-wise comparative advantages of all the included nations would be an important tool to create value chain networks. In this section of our study we use the Grubel-Lloyd's Index for intra industry trade (IIT) to assess the nature of trade and revealed comparative advantage (RCA) to capture what a particular country has to offer to rest of the ASEAN+5 countries. In this context, we will also discuss how India could be an important player.

It is important here to study the relationship between the calculated values of RCA and IIT to find out the theoretical justification for the growing trend of trade in this region. The Hecksher-Ohlin model explains trade as per the comparative advantages. However, as we know this theory could not explain the dominant pattern of IIT which emerged subsequently. This was explained by Krugman's new theory of trade. More recently, IIT has been divided into vertical IIT (explained by the comparative advantage theory) and Horizontal IIT (explained by the New Trade Theory).

We examine how IIT relates with RCA in quadratic form and postulated through an inverted-U shaped curve. We postulate a model which assumes IIT as a function of RCA with positive first derivative. This accounts for the fact that as RCA increases IIT also increases. IIT is also assumed to be a function of square of RCA with negative second derivative. This captures the fact that after attaining the peakedness this relationship over turns and more trade can be explained only IIT. It can be argued that IIT can partly be captured by H-O model but as the degree of product differentiation grows up then Krugman's model explains trade more suitably.

The above argument has been analyzed by using an econometric specification. We specify the model by the following equation.

$$lnIIT_{it} = \alpha_0 + \beta_1 lnRC\ A_{it} + \beta_2 \left(lnRCA_{jt}\right)^2 + \mu_{it}$$

Since our primary focus is to discover India's role as a major trade partner among the group of all ASEAN+5 countries, we fit these models from the Indian trade perspective. In order to fit this model we have used HS 6-digit level export data of India for the time period, 2007 to 2011. Total export to world for each of the product has been used to calculate RCA index. However, G-L index for IIT has been calculated using bilateral trade data of both export and import of India vis-a-vis ASEAN+5 countries. The selected products are those which have positive RCA value for India's export and which also has intra-industry trade.

The dataset contains IIT index and RCA index for 900 different products over a time period of five years. Each product is considered as a separate entity and along with the presence of time component a panel data analysis is conducted.

Though this model is suitable for panel level analysis, OLS estimates have been carried out for two basic purposes. First, to check whether the specified model is complete or there is a possibility of omitted variable. To check this, we have done a Ramsey RESET test using the power of the fitted values of the

dependent variable. The model satisfies the null hypotheses of no omitted variable as the F (3, 12215) statistics takes a value equal to 1.99, which makes the probability of accepting the null significantly greater than zero. Given the nature of our data we use panel regression technique to estimate the model. It is a very large panel dataset as we have around 900 products over five time points, with large number of panel entities, thus a random effect model is more suitable for the analysis. To confirm this, we fit both a fixed and random effect model and perform the Hausman test on the results.

The resulted $\chi 2$ (which is equal to 13.20 at two degrees of freedom) shows the coefficients of random effect model are consistent. We also did a Lagrangian multiplier test to make a similar comparison between the estimates of random effect model and OLS estimates. This was yet another reason for estimating the equation by OLS. The result rejects the null hypothesis and shows that the random effect model is more consistent than OLS estimates. However, the model shows presence of both autocorrelation as indicated by the Woolridge test and heteroscedasticity identified through modified Wald test. These lead us to estimate the model again after controlling for these issues.

Our proposition is corroborated by the regression results presented in Table 13. For all the alternative cases coefficients are found to be significant and the signs are similar as predicted.

What do these mean? The results obtained from the present model help us draw some interesting inferences. As the preceding sections showed, India and ASEAN+5 countries have potential for two-way trade at HS 6-digit level of trade classification, in the realms of both RCA and IIT, creating a win-win situation through trade linkages with India's active trade integration with the rest of ASEAN+5. While RCA is an indicative potential, calculated on the basis of global trade profiles of both India and ASEAN+5, potential identified through the IIT index, is relatively more real, as this calculated on the basis of actual bilateral trade flows of the intra-industry variety.

Moreover, the intra-industry type of trade flows also assume relevance in the arena of production fragmentation framework with which the region is characterised with and India has been somewhat not yet in its mainstream activities. The results obtained by the above-mentioned model and econometric estimation need to be viewed in this backdrop. The results confirm an inverted-U type relationship between IIT and RCA, suggesting that a part of IIT, i.e. the vertical IIT, proxied here by RCA, reaches a limit in determining the overall actual IIT flows between India and ASEAN+5 countries (see also Das and Dubey, 2014). While at the theoretical level, this has important implications in terms of the traditional trade theories hitting a ceiling beyond which they cannot explain the IIT type trade flows, at the operational level, it also poses the question as to what should be the policy response to address this situation, whereby horizontal IIT type trade flows could be sustained. While the New Trade Theories explain the phenomenon of horizontal IIT, they shed little or no light on how to sustain such trade flows in a bilateral and regional context. It is this question that we address in the following section.

A paper by Menon and Dixon (1996) theoretically elaborates the issue of intra-industry trade promotion through regional agreements. Bojnec (2001) studied the east and central European agricultural intra-industry trade and the role of regional agreements as propelling factor. Zhang and Thorpe (2005) is one of the recent empirical treatments which studies the determinant of IIT in East Asia and also underscore the requirement of RTAs. Lee and Okabe (2010) make an attempt to document the profusion of FTAs in this region. The other Asia-centric studies by Bhattacharya (2005), Ando (2006) Xing (2007) focus upon the determinants of trade pattern through IIT. Veeramani (2002) brings India into debate of intra industry trade and studies the impact of liberalisation in industrial growth. Sawyer *et al.* (2010) is another attempt in this direction which investigate the growing trade due to RTAs at very micro level among some of the Asian countries.

Table 13: Analyzing Determinants of IIT in Terms of Vertical IIT (RCA) and Horizontal IIT

	OLS	FE	RE	AR	GLS	AR-GLS
VARIABLES	ln(IIT)	ln(IIT)	ln(IIT)	ln(IIT)	ln(IIT)	ln(IIT)
ln(RCA)	0.0342518***	0.1461251***	0.0643292***	0.0601681***	0.0467868***	0.0422898***
	(0.010)	(0.028)	(0.015)	(0.015)	(0.006)	(0.006)
ln(RCA)2	-0.0492997***	-0.0420169***	-0.0497997***	-0.0495931***	-0.0525701***	-0.054083***
	(0.005)	(0.009)	(0.006)	(0.006)	(0.003)	(0.003)
Constant	-1.5591874***	-1.5391802***	-1.5487875***	-1.5513356***	-1.3322534***	-1.4261149***
	(0.016)	(0.019)	(0.027)	(0.027)	(0.010)	(0.011)
Observations	12,215	12,215	12,215	12,215	12,215	12,215
R-squared	0.01101	0.00860				
Adj.R-squared	0.01085	-0.23940	.	.	.	.
Number of ids		2,443	2,443	2,443	2,443	2,443

Source: Author's calculations.

Note: Standard errors in parentheses;***p< 0.001, **p < 0.01, *p< 0.05.

Though our model is highly motivated by this work but we have overcome the static nature of Sawyer *et al.* (2010) as its limitation. Our model is peculiar because in the direction of modeling IIT determinants we are also considering the time aspect of those factors and the role of RTAs. Our model is dynamic considering index of intra-industry rather than export or volume of trade as an independent variable.

In this context, we now postulate an augmented gravity model that determines IIT - which emerges as a propulsive factor for economic integration and has come to be viewed as a tool to develop value chains. The Grubel-Lloyd (GL) index of IIT is taken as the dependent variable. We consider all possible bilateral pairs not only between India and individual ASEAN+5 countries but also bilateral pairs within the ASEAN+5 group. We then use the bilateral data on import and export to calculate G-L IIT index. Among the independent variables the first is relative difference of the size of two countries, where size of an economy is represented by its GDP. A smaller gap in GDP between two countries indicates similar market size and a high potential for IIT due to overlapping demand. This relative difference in GDP following Sawyer *et al.* (2010) is measured by the following:

$$dgpd_{ijt} = 1 + \frac{Xln(X) + (1-X)\ln(1-X)}{ln2}$$

Where, $X = \frac{GDP_{it}}{GDP_{it}+GDP_{jt}}$

The next variable captures the difference in purchasing power over the differentiated products between two countries. This can be measured by per capita GDP gap. Countries with similar per capita GDP may reflect higher IIT. Per capita GDP gap has been calculated using a similar formula. Expenditure on education as percentage of GDP is taken to control effect of human capital on the productivity level. Manufactures exports as a percentage of

merchandise exports and trade as a per centage of GDP as a proxy of openness are also assumed to be positively associated with IIT. In manufacturing sector, the scope of product penetration is generally higher and with lower trade barriers (i.e openness) this seems to be a realistic proposition. We also include distance between countries as geographical proximity affects trade via transportation cost. Literature is replete with the assertion that one of the major determinants of IIT is FDI as a percentage of GDP, which is also included in the model. Trade agreement is taken as a dummy variable, we would revert to its implications later. It takes a value equal to one whenever any pair of countries has a trade agreement and zero, otherwise. The dummy variable of RTA is the only variable that is purely exogenous in the sense that it indicates policy regime and tries to capture trade integration through an FTA providing an impetus to IIT type trade flows. The model specification thus is given as the following:

$$IIT_{ijt} = \alpha_1 DGDP_{ijt} + \beta_2 DP\ CGDP_{ijt} + \beta_3 DIST_{ij} + \beta_4 EDU_{it} + \beta_5 OPEN_{it} + \beta_6 MANU_{it} + \beta_7 FDI_{it} + \beta_8\ RTA + \varepsilon_{ij} + \mu_{ijt}$$

Our panel entities are country-pairs with IIT index values for each of the products at HS 6-digit level of classification. Since the panel includes a large number of such entities with more than million records, making the database very large, the usual panel regression technique may produce inconsistent estimators. Let us explain this briefly. As the dependent variable, i.e. IIT index belongs to a closed set (i.e. values 0-1) and therefore does not have as much variability as the exogenous or independent variables, this may adversely affect the asymptotic properties of the estimates (Green 2004). Therefore, the usual panel regression technique may produce inconsistent estimators. Since the dependent variable is truncated therefore fitting a panel Tobit model would be a preferable one to deal with the expected inconsistencies within the regression estimators (Sawyer *et al.* 2010). The Tobit model has been thus fitted on the assumption of random panel effect without a constant term in order to control the effect of time

invariant variables in the model. The estimation results are given in Table 14.

In the table we are present two set of results obtained by applying Tobit model. The first result is based on the IIT index calculated at HS 6-digit level and the second set is for comparison when we aggregate IIT at four-digit level. This has been done because IIT is sensitive to level of aggregation.

From Table 14 it is evident that model is a good fit for IIT at HS 6-digit level as almost all the variables are showing significance and the signs are coming out as expected. However, the coefficient of RTA though significant, is not positive. Since IIT index lies between 0 and 1 and for a huge number of observations our examination of the dataset reveals that it is skewed toward its lower bound with average equal to 0.3. This is quite expected as IIT is sensitive to aggregation and the greater the disaggregation, lower would be the value of IIT. However, RTA is a dummy variable and in most of the cases due the presence of regional agreements the value of one is frequent. Hence, it makes the numerical correlation negative with such a gigantic data set. For the purpose of analysis its statistical significance is more important and the coefficient should be understood in absolute terms.

Observations such as above provide the justification for estimating the model for IIT aggregated from HS 6-digit level to HS 4-digit level. However, in this alternative model among the independent variables, the significant ones with expected signs are the GDP gap, Manufacture exports as per cent of merchandise exports and the RTA dummy. This only highlights that RTA, which is a policy variable, has important role in determining IIT type of trade flows among the sample of countries. An important inference of this result is that an FTA among ASEAN+6 countries which includes India has the potential to sustain IIT type trade flows, an aspect, comparative advantage-based considerations fail to achieve as was observed in the preceding section. At HS 4-digit, some variables are insignificant due to aggregation of IIT because

they are operational and effective only at the disaggregated level. One such example is FDI which is actually a firm-level and product level phenomenon rather than industry level, least so when industry is defined at HS 4-digit level. Similarly, per capita GDP gap is also in operation in terms of demand at a much disaggregated level.

Table 14: Determinants of IIT: Tobit Model

Variables	IIT at HS 6-digit	IIT at HS 4-digit
dgdp	-0.0665888*	-0.9217239*
	(0.037)	(0.426)
dpcgdp	-0.2182372***	0.0869443
	(0.031)	(0.357)
edu	0.0719525***	0.0447237
	(0.010)	(0.112)
open	0.0009261***	0.0006660
	(0.000)	(0.001)
manu	0.0126515***	0.0090022*
	(0.000)	(0.004)
fdi4	0.0053716**	-0.0061020
	(0.002)	(0.037)
rta	-0.0684168**	0.5813954*
	(0.024)	(0.252)
dist	0.1734450***	0.3924959***
	(0.007)	(0.081)
lnsig2u	1.4891817***	-0.8883259***
	(0.011)	(0.088)
Observations	479,664	5,681
Number of id	101,614	4,857

Source: Author's calculations.

Note: Standard errors in parentheses;***p< 0.001, **p < 0.01, *p< 0.05.

In sum, what emerges from the analysis presented in this section is immensely relevant in the context of what Indian economic dynamism means for the rest of ASEAN+5. This is particularly highlighted by the fact that there exists enormous potential for two-way trade between India and ASEAN+5 region. This is borne out by the fact that this is the possibility in the realms of both RCA and IIT. Given that RCA is indicative potential and not on the basis of actual bilateral trade flows, IIT becomes quite important for the estimated potential. As it was argued and econometrically demonstrated that a part of IIT which is of the vertical IIT type is proxied by RCA, however there is a limit for RCA to sustain IIT beyond a point. To unshackle this problem we explored into the determinants of IIT with the help of a Tobit model according to which one of the most important determinants of IIT is an RTA among ASEAN+6 countries in which India's RTAs play an important role. It is in this sense India has the potential to contribute to trade augmentation not only between India and individual ASEAN+5 countries but also help propel IIT among the ASEAN+5 countries by becoming an integral part of the regional production networks, facilitated by a region wide FTA in goods under RCEP.

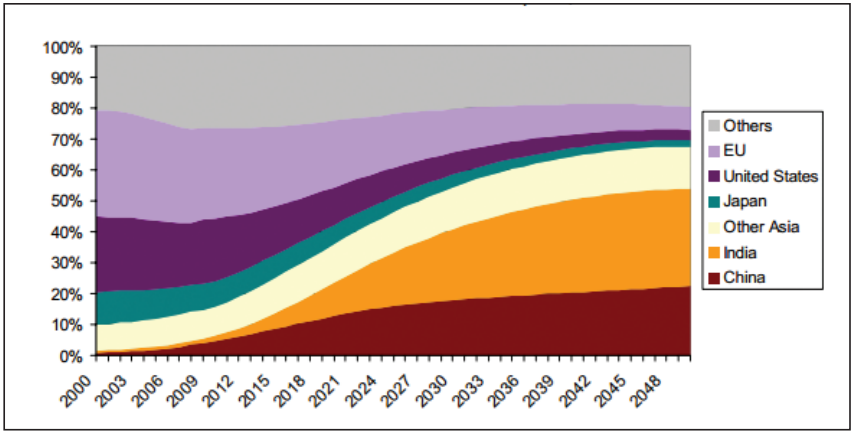
9

Market Size and Market Access

By defining global middle class as all those living in households with daily per capita incomes of between US$ 10 and US$ 100 in PPP terms, Kharas (2010), based on household survey data with growth projections for 145 countries, shows that Asia accounts for less than 25 per cent of current middle class. However, according to his analysis and projections, by 2020, the share could double. Consequently, well over 50 per cent of the world's middle class would belong to Asia. This is expected to make Asian consumers account for over 40 per cent of global middle class consumption.

In this scenario, India's growth in middle class would be enormous. In terms of market size, India's middle class has surged in recent years and its growing purchasing power has been a major determinant of India's growing market size. In fact, as per the projections of Kharas (2010), it appears that India would be one of the largest markets in the region and would offer tremendous opportunities to absorb import supplies from other countries in East and south East Asia (see Figure 5). Thus, it is important to recognise India's growing purchasing power emanating from its huge middle class, the incumbent effect that it would have on the market size of India and therefore the imperatives of India's pro-active participation in an FTA configuration of the ASEAN+6 type.

Figure 5: Shares of Global Middle Class Consumption, 2000-2050



Source: Kharas (2010).

Given the potential of India's market size growth and as highlighted earlier, in the context of the new manufacturing and industrial policy the potentials for Indian manufacturing growth can be assessed by estimating to what extent Indian imports of machinery and parts and components from East Asia would provide market access to the latter. This is due to the fact that in general imports are a function of GDP and market size.

Table 15: India's Import of Parts, Components and Machinery Products from ASEAN+5 and World

Year	ASEAN+5 (US$ Billion)	World (US$ Billion)
2007	8.51	19.99
2008	11.2	24.63
2009	12.5	25.55
2010	14.4	28.09
2011	20.3	37.26

Source: Based on UN, COMTRADE Database (2013).

Box 2: Parts & components: HS (2007) Six-digit codes

840140, 840290, 840390, 840490, 8406, 8407, 8408, 8409, 8410, 8411, 8412, 8413, 8414, 841520,
841590, 8416, 8417, 841891, 841899, 841990, 842091, 842099, 842123, 842129, 842131, 842191,
842199, 842290, 842390, 842490, 8431, 843290, 843390, 843490, 843590, 843691, 843699,
843790, 843890, 843991, 843999, 844090, 844190, 844240, 844250, 844391, 844399, 8448,
845090, 845190, 845240, 845290, 845390, 845490, 845590, 8466, 846791, 846792, 846799,
846890, 8473, 847490, 847590, 847690, 847790, 847890, 847990, 8480, 8481, 8482, 8483, 8484,
8486, 8487, 8503, 850490, 8505, 850690, 8507, 850870, 850990, 851090, 8511, 8512, 851390,
851490, 851590, 851690, 851770, 851840, 851850, 851890, 8522, 852352, 8529, 853090, 8531,
8532, 8533, 8534, 8535, 8536, 8537, 8538, 8539, 8540, 8541, 8542, 854390, 8544, 8545, 8546,
8547, 8548, 8607, 8706, 8707, 8708, 870990, 8714, 871690, 8803, 8805, 9001, 9002, 9003, 900590,
900691, 900699, 900791, 900792, 900890, 901090, 901190, 901290, 9013, 9014, 901590, 901790,
902490, 902590, 902690, 902790, 902890, 902990, 903090, 903190, 903290, 9033, 9104, 9110,
9111, 9112, 9113, 9114, 9209

Source: Kimura and Obashi (2010).

The recent scenario of Indian economy is featured with growing market size and high demand of parts and components and related finished products (Table 15). India is emerging as big importer of around 422 products classified at HS 6-digit level (Box 2) covered under this category from ASEAN+5 countries. With the rise of India's GDP its market size has also gone up.

Over time, demand for automobile and related product could rise enormously. Though India's automobile manufacturing sector is growing rapidly, it still not sufficiently serving the domestic demand. Also, many international auto producers have set up assembly lines and this is one of the reasons that causes high import of parts and components. Thus, India is a major importer of parts and components. Almost 50 per cent of India's imports comes from ASEAN+5 countries (Table 18).

Table 16: Import Forecast of Part and Components (US$ Billion)

Year	Import
2015	33.1032
2020	38.87101
2025	47.23729
2030	59.37246
2035	76.97471
2040	102.5065
2045	139.5405
2050	193.2583

Source: Author's calculations.

As market size of India is projected to grow faster in future the imports would also be expected to grow. We use simple model to project the future of trade in parts and components. In this regard we use time component OLS model that relates import as a function of GDP represented by following equation

$$\log(\text{import}) = \alpha*\log(GDP)+\beta*t+\varepsilon \quad \ldots(1)$$

Note that we are only considering import of parts & components and finished machinery products which fell in this category. (Table B Appendix) We obtain the estimates of these coefficients by applying OLS technique. The model does not contain any constant term. This is assumed because in extreme case if GDP falls to zero then there will be no import at all. The coefficients

α and β represents the combined CAGR of import adjusted with growth of GDP. We also need a GDP forecasting for projection period. We therefore also forecast GDP by simply fitting it on time. We ran a simple OLS model for GDP also given by the following equation

$$\log(GDP) = \alpha_1 + \beta_1 * t + \varepsilon_1 \ldots..(2)$$

The coefficients use to project India's GDP till 2050. We use the exogenously projected GDP of India in the equation 1 to further project the import of parts and components of India till 2050. The projection is made for logarithmic value of import variable. We take the anti- logarithmic of the forecast to conclude.

It is evident from Table 16 that India is going to be an important destination for parts and components especially produced and exported by ASEAN+5. It would get further boost if India is part of an FTA among ASEAN+6 or the RCEP. Most East Asian countries have effectively utilised intra-industry trade within production networks in the region. Further, in recent times, production networks are being seen as a tool for effectively utilising the 'uneven economic integration' in a region (Kimura, 2008). Since, East Asian countries were able to capitalise on trade through these networks to prosper as a region, scope for accommodating India in these networks needs to be explored.

10

India As a Hub in Knowledge-intensive and Hi-tech Sectors

What India brings to the rest of ASEAN+5 region cannot be limited to that perception that India is just another country for East Asian economic integration. India's presence and economic integration with the rest of East Asian economies need to be viewed in a broader perspective and by taking into account new features of the Indian economy.

First, India's geographical location makes it amenable to becoming a hub for ASEAN+5 countries for accessing the market of South Asia, Central Asia, West Asia and especially the Eastern Cost of Africa from north to south.

Secondly, India has emerged as the potential hub in knowledge-intensive and hi-tech sectors like the IT, Automobile Designs, Chip designing, Chemicals and Pharmaceuticals, Bio-informatics, Refined Petroleum etc. (see also Box 3). The two-way linkages between India and East Asian countries in terms of trade, FDI, technology and movement of natural persons thus need to be assessed and recognised.

Box 3: Panasonic to make India regional hub: Will Service South Asia, Middle East, Africa

India may be reeling under growth pangs and severe structural issues but that hasn't stopped Japanese electronics giant Panasonic from putting India bang at the centre of its global strategy. The Osaka-based, $76-billion company has decided to make India its regional hub to service the subcontinent, Middle East and Africa.

Box 3 continued...

Box 3 continued...

It is also moving one of its top honchos — Yoshihiko Yamada — to be headquartered in New Delhi to directly take care of these regions as also create synergies between India, Asean and China.

Besides, India will now be developed as the hub for product development, R&D, business solutions and would also serve as the global sourcing base for mobile phones, the production of which has been discontinued lately in Japan, as part of a global restructuring.

"India will be the second version of Panasonic Corporation as it has a huge potential and is the most promising country from future growth perspective because markets in the US, Europe and Japan have matured. We look at India from two perspectives, one from a capability creation and the other from a region perspective. India, Asean and China have been categorised as strategic regions and we see India on the top now from a business perspective," Kazuhiro Tsuga, global president of Panasonic Corporation, told TOI in an exclusive interview, unveiling what is being seen as the second chapter of both its India story and its global business. The company describes the first version as the process of its formation in 1918, when its founder encountered the same conditions in Japan that are prevalent in India today.

The new region headquartered in India would be only Panasonic's sixth such region globally. India was earlier housed under the Asia-Pacific, Middle East and Africa region.

Though present in India for about 40 years now, with a clutch of seven companies manufacturing an entire range of electric equipment from TVs to batteries, the interest has been rather sporadic. Tsuga, who is now restructuring the global operations after spiraling losses, said that India by 2015 will contribute 3.5 per cent to the global turnover, up from 2 per cent now.

As part of the global restructuring, which came on the back of $15 billion in losses over the last two financial years, Tsuga — who has been at the helm for a similar period about two years now — will transform the company globally from a consumer maker to a supplier for other businesses. In effect, this means that the focus globally will shift from B2C to B2B. "However, the focus in India would continue to be on consumer products," Tsuga said.

Box 3 continued...

Box 3 continued...

As part of this global restructuring, he pulled out of the smartphone business in Japan, trimmed circuit boards businesses and sold semi-conductors, and got out of plasma TVs too. The company has also decided to close down businesses which do not throw up operating margins above 5 per cent. The restructuring appears to have yielded results already after Panasonic posted a third quarter profit recently, which was 68 per cent higher than analyst estimates. The company's stock also surged the most since 1974.

In India, too, the focus has been beneficial. Panasonic has increased its market share in the AC segment to 15 per cent and in TVs to 9 per cent, making it the third and fourth largest player in the industry, taking on entrenched and aggressive Korean competition.

Earlier this year, Panasonic set up the India business development centre to focus on the challenges in rural India like clean water, food issues, remote services like tele-education and telemedicine, and providing power to off-grid population. The centre would develop products and services which could be adopted globally.

The company now plans to be an aggressive player in India, focused on expanding existing portfolio and creating a strong line-up of entry products, including smartphones for which it would create robust products focused on local needs and insights. Besides, Panasonic also wants to target the lifestyle segment and B2B businesses, including security and surveillance solutions. It sees 4G services as a catalyst for offering security services to homeland security.

Source: Excerpted from *The Times of India*, 15 March 2014

Information Technology (IT) & ITES Sector

It is well–known that one of the leading sectors in the Indian economy today is Information Technology. This sector has shown phenomenal growth in recent times. The Indian IT, sector has been quite instrumental in driving the nation's economy onto the rapid growth curve. It not only contributes around 6 per cent to the total GDP but employs close to 2.2 million professionals.

Further, by the end of fiscal year 2012, the IT and BPO industries have brought in foreign exchange revenues approximately worth US$ 95 billion. Thus, registering a growth of 47 per cent, with a domestic market equal to US$ 40 billion and exports expected to cross US$ **55** billion, it is anticipated that the IT sector will be one of the fastest growing sectors in India in future.

This sector can be divided into four segments: IT services, BPO, Engineering services, R&D. The primary cause of the high growth rates this sector recorded is due to the dominance in software related services. These include Custom Application Development and Maintenance (CADM), System Integration, IT Consulting, Application Management, Infrastructure Management Services, Software testing, Service-oriented architecture and Web services.

Compared with several countries, India is abundant in skilled labor possessing the additional qualities of English language proficiency and technical education. According to the Department of Electronics and Telecommunications, Government of India among 28 low-cost countries, India accounts for around 28 per cent of IT and BPO talent.

A number of suburbs, fully devoted to IT, BPO and KPO firms, have developed around cities of Delhi, Hyderabad and Bangalore. These suburbs also have public and private funded institutes which train personnel in technical and soft skills. Many IT firms which are incurring massive financial loss in the post subprime crisis era are now moving eastwards and are finding India to be a haven for the export driven model of business.

A Nasscom Report (2013) has predicted that India's IT and BPO sector exports will grow by 12-14 per cent and in absolute terms, will be in the range of US$ 84-87 billion, in 2014.

Further, taking cognisance of the growing importance of this sector, the Indian government has started various initiatives to provide a positive, enabling economic and political environment to this sector. The foremost among these schemes have been the Export Oriented Units (EOU), Software Technology Parks (STP),

and Special Economic Zones (SEZ). Though the SEZ scheme is similar to the STP scheme in most respects, the key ground on which it differs is the period for which an income tax holiday is granted. While the STP scheme grants a 100 per cent exemption from income tax on export profits, the SEZ scheme offers a gradual reduction in the exemption from income tax.

India is getting equipped with scaling up its technical growth in the IT sector by providing cost competitive conditions for the outsourcing and off-shoring business. In the telecom sector, India is now covering even its rural areas by adopting 3G technology. Projects such as NOFN (National Optical Fibre Network) aim at providing Broadband connectivity to all the 2,50,000 Gram panchayats (i.e., village level institutions) across the country. This will help strengthen basic communication services and extend broadband access to the rural masses and particularly, the youth and thus, bridge the existing rural-urban divide in terms of access.

Multinational companies like Capegemini, Oracle, and Intel have their centers in major Indian IT hubs. They are attracting a lot of business both from the Indian market as well as abroad. The NSDC's Report on the IT and ITES Services (2013) captures the bright future of this sector and estimates that the Industry would record approximately US$ 220 billion in exports and US$ 60 billion domestically by the year 2022.

Chip Design

The semiconductor industry in India has been established at least five decades ago. The recent growth in IT technologies provides a further boost to this industry. The Indian semiconductor sector comprises pre-fabrication, fabrication and post-fabrication plumbs. Chips are required into all kinds of traditional and modern electronic items and India was a gross importer of semiconductor in the past. However, after the government initiatives India is now equipped with any fabrication units of semiconductor. The total market size of semiconductors in India is estimated around 7.5 billion US$ by the Indian Semiconductor Association.

However, India is a major importer of this product to with an average yearly consumption of 7 billion US$. This figure is expected to rise up to 55 billion US$ by 2020.

The scope for latest scientific technologies like nanotechnologies, biotechnology, remote sensing etc are also dependent upon the growth of semiconductor industry. India is able to facilitate required atmosphere as per the modern yardstick for the establishment of this industry. India possesses immense potential to emerge as a global hub. With many major domestic firms operational in the country there are many firms belongings to top segments of global industry.

Box 4: Chip Fabrication in India

Samsung, LG may set up chip-making units in India

South Korean multinational conglomerates Samsung and LG are considering setting up units to manufacture electronic chips in India, following the government's clearance to build two such semiconductor units. Semiconductor, or electronic chip, is the main hardware component that is key to the functioning of devices such as mobiles and computers as well as hi-tech defence equipment. These components are vital for cybersecurity too as they can used to manipulate functions in a product or for spying purposes. Demand for electronic products in India is expected to rise about 10 times to reach $400 billion by 2020.

As per market research firm Gartner, Samsung was among top 5 semiconductor companies in terms of revenue in 2012. The worldwide semiconductor foundry market totaled $34.6 billion in 2012. Samsung was ranked 5th with market share of 3.7 per cent at revenue of $1,295 million. Israel-based Tower Jazz and US-based IBM, which are investing in India, were ranked 6th and 7th in terms of revenue in global market, as per Gartner.

India has announced it would provide 25 per cent subsidy on capital expenditure and tax reimbursement under Modified Special Incentive Package Scheme Policy and exemption of basic

Box 4 continued...

Box 4 continued...

customs duty for non-covered capital items for companies setting up semiconductor plant(s). In addition, investing companies will be eligible for 200 per cent deduction on expenditure on research and development under Section 35 (2AB) of the Income Tax (IT) Act and investment-linked deductions under Section 35AD of the IT Act. The government will also provide interest free loan up to some limit to each facility.

India invites Japanese firms to take part in two chip FAB facilities

India invited Japanese companies to take part in two proposed semi-conductor Wafter Fabrications (FAB) manufacturing facilities. The Cabinet recently gave in-principle approval to set up the two FAB manufacturing facilities and announced subsidy scheme for the same.

The two projects are said to be worth US $ 4.5 billion each. The government will also hold 11 per cent stake in each project, while technology providers are required to hold 10 per cent stake.

Source: Excerpted from *The Times of India*, 18 February 2014; *Business Standard*, 24 January 2014

As a major policy reforms Indian government has taken several initiatives. Many international cell phone manufactures like Nokia, Samsung, Motorola etc. are setting up their units in India (see Box 4). With increased local manufacturing of branded cell phones demand of semiconductor as an intermediate product has gone up drastically. Government also provides tax incentive & for companies that are starting chip manufacturing operations in the country. Many special economic zones has been devoted by government to the IT hubs and semiconductor industry. The FabCity in Andhra Pradesh is one of the best examples of government initiatives. The sustainable growth of allied sectors like IT, communication and auto industry will drive the growth of semiconductor industry further.

Since India is able to create huge opportunity of business in semiconductor industry, India is also equipped with skilled labour in all the related fields. With flexible FDI policy India can

be projected as both exporter and importer of semiconductor products.

Chemicals

One of the oldest industries in India is Chemical industry and relates to products like fertilisers, petrochemicals and variety of externally consumable items. It accounts for manufacturing 14 per cent of the entire domestic industry. Chemicals industry largely serves as raw materials for many end products and hence many other industries are largely dependent on this sector. Apart from this, India has a large petrochemical industry, which serves as one of the leading export segments. The chemical sector has witnessed growth of 13-14 per cent in the last 5 years while petrochemicals have registered a growth of 8-9 per cent over the same period.

The rate of urbanisation and living trends increases the demand for modern consumable items like toiletries, paints and textiles and provide a sustainable growth path for this industry. The presence of downstream industries in all segments leads to further expansion of these sector. According to the Annual Report 2013 of the Ministry of Chemicals and Ferlisers, GOI India has a strong trade potential in the chemicals sector.

Chemical industry has been identified as a key for the growth of Indian economy. Government introduces new policies to boost these sectors. In terms of investment it is fully flexible since 100 per cent FDI is permissible. Simplified process causes ease to both investors and the manufacturing units of all sizes with respect to this sector.

In the 12th Five Year Plan (2012-17) government committed to take several steps to help grow this sector with the goal of making it as one of the leading export sectors. Some of the initiatives include setting up of technology up gradation fund (around 80 million US$), chemical innovation fund (100 million US$) to encourage business oriented R&D in this sector. As per the Plan, this industry will have bio-based raw materials and dependency will be less on crude oil in future. With integrated chemical

legislation quality control would be focused. Indian chemical and products will be much safer in terms its use and its friendliness towards human health and environment protection.

Refined Petroleum

At the beginning of liberalisation period, India was facing continuously rising gap between demand and supply of energy products. But after introducing New Exploration Licensing Policy (NELP) during 1997-98, the sector started meeting the investment need essential for this sector both from foreign and domestic sources. After this many policy reforms have been introduced for a smooth growth of various segments of oil and gas industry. The FDI policy is hundred per cent flexible for petroleum products, natural gas, pipelines, and refineries. During 2011 British Petroleum made the biggest deal of investment of US$ 7.2 billion with Reliance Industries for exploring offshore gas services.

According to the latest reports of the government agencies on India's petroleum and natural gas, the refining capacity has increased significantly. During the FY 2010-11 total refining capacity was 187.38 metric million tone per annum which became 213.06 metric million tone by FY 2011-2012. This shows a growth of around 13.07 per cent. The international market depicts a regular variation in crude oil prices but the India imports remained stable due to large market size and demand. However, investment in this sector strengthen the refinery sector much above the expectations and that resulted in higher exports of petroleum products. Though the global slowdown adversely affected the export growth it is found that total exports of petroleum products valued US$ 58.9 billion during 2012-13. Indian imports of crude petroleum products during the same period were close to 12.5 billion US$ and marked a decrease by 0.47 per cent.

Pharmaceuticals

Pharmaceuticals is one of the emerging sectors in India as it has shown average growth rate of nearly 12-15 per cent in the last one decade. It is speculated by several studies that the double

digit growth will continue for at least next one and half decades and fetch India its position among the first five countries. India's branded generics account for 75 per cent of the retail market. The local market is highly competitive and prices are low. Despite many challenges currently India stands at tenth position as per market size, but in terms volume the position is third globally.

The scope of further growth in this sector attracts a lot of FDI. Major international Pharma companies are present in India. Domestic players are also looking forward to increase their participation while some have emerged big. Government's drug price control order policies ensure low price compared to global prices. Fully flexible FDI policies ease the entry for big companies and also provide investments in small and mid size firms. Government has sound Intellectual Property (IP) regime in place.

As a consequence of these policies the industry has started becoming high valueadding. To meet the global standards firms have increased their investment in R&D. As a result of the various measures adopted in past India pharmaceutical industry is offering various medical product brands to the global market. Branded generics not only yield better margins than generics but also provide competitive edge.

With the existing growth of pharmaceutical market, it is speculated that in this sector India will occupy a market size of around US$ 55 billion by 2020. Trade potential in pharmaceutical and related products (including related chemical, medical equipments and other products) India will emerge as a global provider of health facilities.

India owns a huge amount of medical infrastructure which matches with the international standards. It has been observed that wealthy patients from developing countries had to travel to countries like the USA, Europe and other developed nations for various treatments. However, India is the new destination for health tourism as it can now provide same standards of health care. The cost of treatment in India is considered to be cheaper even in Asia, as compared to other countries like Thailand, Indonesia,

Singapore and Hong Kong. Other than cost effectiveness India is also equipped with highly qualified doctors. India is also able to mitigate language gaps to patients from different countries. The cheaper medical facility also attracts lesser wealthy patients too.

Growing pharma and medical industry also increases the demand for many technologies. India largely imports health equipments and machinery from many nations including ASEAN+5. This provides scope of creating value chain network even in pharmaceutical and medical sector among India and ASEAN+5 countries.

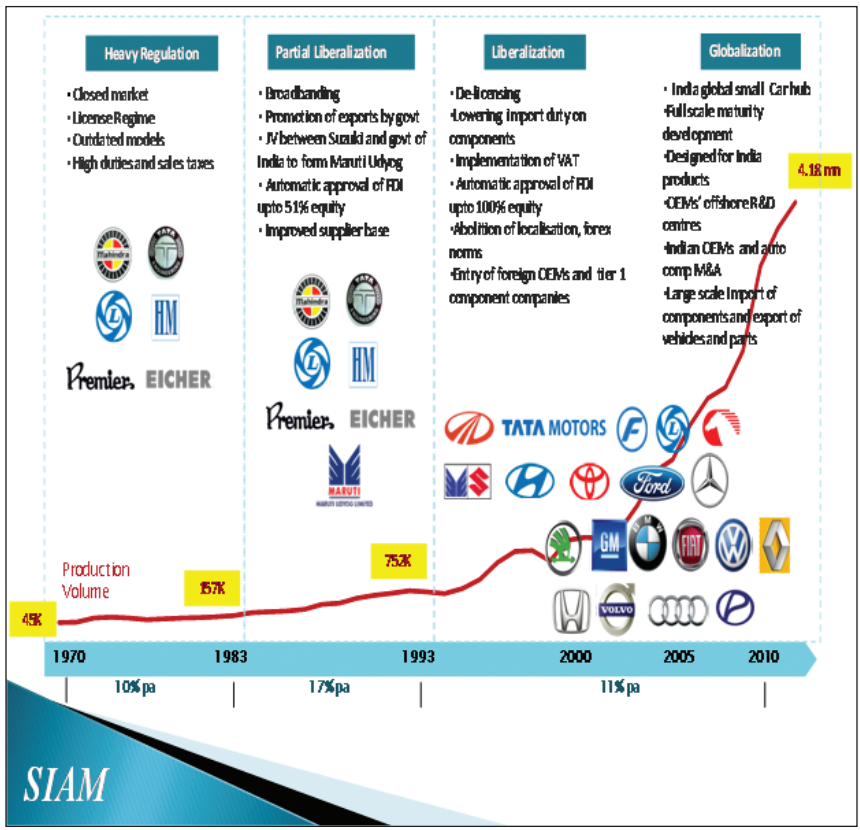
Automobile

With rapid urbanisation and increasing commercial activities the demand for transport facility has also increased a lot in India. This demand prevails in all modes of transport but one of the leading segments is automobile sector. As compared to the earlier era of licensing when only three car manufactures existed in India, in a small market-size, the recent phase of liberalised regime has brought a lot of change in domestic market. Apart from the major domestic players like Tata Motors, HM and Maruti Suzuki, foreign giants like Toyota, BMW, Mercedes, Honda, Audi, Volkswagen, NISSAN etc. are also operating on equal footing (see Figure 6). The current size of US$ 4.18 billion market is projected to grow at a fast pace. Post-2000 demand for foreign brands of cars has grown so much that many of them have already set up their units in India. In 2000, India was at the fifteenth position but currently it is on the sixth position at the global production rank 2012.

The latest policies allow 100 per cent FDI and scope for higher R&D to manufacture cars as per the consumers' tastes and preferences. Total share of auto manufacturing industry has grown rapidly and accounts for 7 per cent of GDP and 22 per cent of manufacturing (2012). The total turnover during the last financial year was around US$ 80 billion and the FDI in this sector is close to 4.3 per cent of India's total FDI. The growth of auto manufacturing industry has also resulted in a significant increase in employment.

Total sales of all variety of automobiles has increased manifold during the post liberalisation period. For the period 2004 to 2013, the CAGR of total sales of automobile is around 10 per cent. In the category of two and three wheelers India stands at the first position in the world in terms of total sales. In case of commercial vehicles, India stands at the fifth position and at the sixth position in the sales of private vehicles. India is emerging as a big player in this sector as the total exports has gone up several folds during the same time period. Despite the economic slowdown exports have grown significantly. The total CAGR of vehicle export growth between 2004 and 2013 is 21 per cent.

Figure: 6 Evolution of Auto Industry in India



Source: SIAM (2014).

Bio-Informatics

India possesses highly skilled labour force and has been climbing the technology ladder. The Indian biotechnology sector is one of the fast growing knowledge-based sectors. India has a strong potential to back it up by facilitating R&D, knowledge and skill with growing education levels at the tertiary level.

Related to this is the emergence of the bioinformatics sector. For the period 2007 to 2013, the bioinformatics sector has grown at an average around growth of 12.3 per cent and constitutes a market size of US$ 4.3 billion (2013). This has taken form of an export-oriented sector during the last couple of years and total exports of bioinformatics and related products is equal to US$ 2.3 billion. Both private and public funding on R&D has gone up over the time.

Agricultural is the sector in which use of bioinformatics has grown by nearly 14 per cent in past five years. The other leading segments where bioinformatics dependency has gone up enormously are medical biotechnology, environmental biotechnology, animal biotechnology, marine biotechnology and forensic biotechnology.

The other important factor contributing to the growth of these sectors in India is services related to bioinformatics and management tools.

The products and services segment of the bioinformatics industry in India has been majorly driven by the bioinformatics services. The bioinformatics services have grown at a CAGR of 14.2 per cent during 2007-2013. The bioinformatics knowledge management tools generated a major part of the revenue from the sequence analysis tools over the years. Apart from these, Pharmacogenomics segment which grew at a CAGR of 12.4 per cent during 2007- 2013, genomics, transcriptomics and molecular phylogenetics are the major new activities. Some of the major players with large market share include Strand Life Sciences, Ocimum Biosolutions and Molecular Connections. Many IT firms

are also collaborating in these sectors. The profitability along with policy reforms are attracting a lot of investment in this sector. Many Biotech firms from west are investing as the FDI policies are now quite supportive.

In nutshell, India is poised to link the ASEAN+5 in most of the above-mentioned sectors, with the South-Central-West Asia and North South coastal regions of Eastern and Southern Africa. In other words, India can serve as a hub for ASEAN+5 to these other developing regions through trade in goods, trade in services, FDI, technology development and movement of natural persons on temporary basis. These need to be further explored and evoled.

11
Commercial Implications of India's Soft Power for Asia

Any analysis of what India means in economic terms for East Asia often leaves the aspect of India's potential to contribute through its 'soft power'. Moreover, the economic and commercial aspects of India's soft power are missed out completely from any such analysis. Some of the aspects are covered in this section.

XI.I. Development Partnership

While still a recipient of ODA e.g. from Japan, India has also been focusing on development cooperation with other developing countries. This has included development assistance in the forms of concessional loans without conditionalities, capacity building, technical assistance, humanitarian assistance, in various areas and on different occasions, on a sustained basis (see Boxes 5, 6 and 7). This is an important feature of India's soft power which India brings to the developing countries, including in the East and South East Asian region, along with other benefits mentioned above. This is one value-adding dimension of India's economic presence in the East Asian region that is often missed out.

The ASEAN+6 region has been characterised by enormous developmental asymmetries manifested in variable like GDP and per capita GDP levels, their growth rates, growth rate volatilities, unemployment and inequality levels, physical infrastructure and social infrastructure like health and education (see Das, 2009). Thus, it is important to help poorer countries of the region to take advantage of the market access opportunities in an open

regional and global trading system by helping them enhance their developmental capabilities. They need to be assisted in other areas as well. One of the most important implications of India's development partnership is in terms of addressing developmental asymmetries in ASEAN+6 region.

In this context, it may be appropriate to mention that India's development cooperation or partnership with other developing countries is distinct from a doner-donee relationship as in the case of India it is primarily demand-driven and not imposed by India on other fellow developing countries. In fact, India's development partnership programme has been viewed as a *mutually beneficial partnership* (see Saran, 2014) rather than claims of charity. It is in the spirit of sharing of developmental experiences and knowledge-dissemination, coupled with elements of development-oriented financing and project-based cooperation.

One of the flagship programmes of India has been its programme viz. Indian Technical and Economic Cooperation (ITEC), through which India provides fully-funded capacity-building opportunities to professionals, officials, media-persons and others in a number of diverse institutions in India, both in the realms of civil and military institutions. More than 1,000 ITEC scholarships are offered per annum to the ASEAN countries in various disciplines.

India also contributes to institution-building in various countries. One such relevant example is the financial contribution which India made towards ERIA as a gesture to promote high-quality research on economic cooperation issues in ASEAN and other parts of the region. RIS of India has been a founder member-institution amidst the network of institutions of the ERIA.

Therefore, this is yet another area which India brings to the comity of nations in the region and which gives it a distinct place within ASEAN+6 economic integration process and development-oriented partnerships along with similar approaches adopted other countries like Japan (see also Chaturvedi 2011).

Box 5: Indo-ASEAN Development Cooperation

ASEAN-INDIA Science& Technology Development Fund, AISTDF

AISTDF is a multilateral fund between India and ASEAN member states supported by Department of Science & Technology (DST) and Ministry of External Affairs (MEA) of the Government of India. To realise the objectives of the ASEAN-India partnership for peace, progress and shared prosperity, a joint statement was issued on 6th November 2006 by Indian S&T Minister and the Head of ASEAN delegation to the 12th Technology Summit and Technology Platform, held in India. Among other points, it was mentioned that India and ASEAN shall undertake collaborative R&D and technology development in areas of common interest including biotechnology and pharmaceuticals, agriculture for food security and advanced materials through creation of a common ASEAN-India S&T Development Fund. To initiate the actions in this regard, Ministry of External Affairs and Department of Science and Technology, India have contributed US$ 500,000 each (totalling US$ 1 million) and deputed Global Innovation & Technology Alliance (GITA) for managing this fund.

Activities under ASEAN-India S&T Development Fund

- Partnership Development Activities
- Collaborative R&D
- Training and Short Course in S&T and Innovation
- Other activities as approved by the Governing Council

Source: ASEAN-India Virtual Institute for Intellectual Property (2012-13).

ASEAN-India Cooperation Fund and ASEAN-India Green Fund

At the 7th ASEAN-India Summit in October 2009, India announced a contribution of US$ 50 million to ASEAN-India Cooperation Fund to support implementation of the ASEAN-India Plan of Action 2010-15, which envisages cooperation in a range of sectors in the political, economic and socio-cultural spheres for deepening and intensifying ASEAN-India cooperation. This was in addition to the ASEAN-India Science & Technology Fund set up in 2007 with an initial corpus of US$1 million and the ASEAN-India Green Fund also established in 2007 with US$5 million for funding pilot projects to promote adoption and mitigation technologies in the field of climate change.

Source: GOI, MEA (2013). http://mea.gov.in/Portal/ForeignRelation/India-ASEAN_Relations.pdf

Box 5 continued...

Box 5 continued...

Entrepreneurship Development Centres in CLMV Countries

In demonstration of its strong commitment to the Initiative for ASEAN Integration (IAI), India had set up Entrepreneurship Development Centres (EDCs) in the CLMV countries during the period 2004 to 2009. All these centres have been handed over to the host countries. India has also established Centres for English Language and Training (CELTs) in CLMV countries. At the ASEAN-India summit held in Thailand in October 2009, Prime Minister of India announced that India would be happy to increase the number of Centre for English Language Training (CELT)s & Entrepreneurship Development Centre (EDC)s in CLMV countries. Following this, the requests for additional CELTs in Kampongcham in Cambodia; Luang Prabang and Sawanakhet in Lao PDR; Yangon and Nay Pyi Taw in Myanmar; and at the National Defence Academy of Vietnam in Ha Noi are also under active consideration of the Indian Government. In examining these requests, a team from India visited Cambodia, Lao PDR and Vietnam in May-June 2013. India has agreed to continue financial support for another two years to the Vietnam-India Centre for English Language Training Centre (VICELT) in Da Nang.

Financial Assistance to ERIA

India has also been extending financial assistance to the Economic Research Institute for ASEAN and East Asia (ERIA) in Jakarta, which is involved in undertaking policy research on topics of interest to the ASEAN Member States that can contribute to bridging the development gap within ASEAN.

Scholarships under ITEC programme

Under the Indian Technical and Economic Cooperation (ITEC) programme, India has been offering 1102 scholarships annually to the ASEAN Member States for a large number of short-term training programmes in various sectors. Additionally, India also provides around 200 scholarships to ASEAN students every year for bachelors, masters and doctoral programmes in premier Indian Institutes every year under the Indian Council for Cultural Relations (ICCR)'s scholarship scheme. So far, 294 space scientists from ASEAN Member States have benefited from the training programmes at the Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) in Dehradun, India.

Box 5 continued...

Box 5 continued...

Training Programmes

Since 2006, the Foreign Service Institute of India (FSI) has been conducting, annually, a special training course for around 50 ASEAN diplomats. A new addition to the programme is the inclusion of three officials from the ASEAN Secretariat since 2011. FSI held the last course during from 21st November to 20th December 2012. The 8th Special Course for ASEAN Diplomats will be conducted by FSI, New Delhi, from 13rd November to 13rd December 2013. The Centre for Public Policy (CPP), Indian Institute of Management (IIM), Bangalore has proposed to hold an "Executive Programme in Public Policy and Management" for 20 ASEAN civil servants. The programme would be divided into capsules of academic programmes including case analysis, internal travel and dissertation purposes.

Capacity Building in The Agricultural Sector

In the area of capacity building and transfer of technology, a number of trainings had been organised, namely Training on Agricultural Equipment for Productivity Enhancement; Training on Processing and Value Addition of Soy Products and Coarse Cereals; and Training on Production and Processing Technology for Value Addition of Horticultural Products in 2012.

Source: ASEAN-India (2013).

Cambodia

- Archeological Survey of India has contributed towards the restoration of the iconic Angkor Wat temple to its pristine glory.
- On Cambodia's request, India is also undertaking the restoration and conservation of the Ta Prohm temple in Siem Reap.
- The Indian Mission supports the Cambodia-India Entrepreneurship Development Centre (CIEDC) by providing literature, education scholarships, and ITEC training slots for CIEDC's students and staff.
- India contributed close to US$ 2 million to construct the MGC Asian Traditional Textiles Museum in Cambodia.

Vietnam

- Aptech, the IT & Multimedia training institute, has the largest market share in Vietnam. The Ho Chi Minh Computer Association (HCA) presented it with the ICT Gold Medal & Top ICT Training Cup for its pioneering efforts in IT training.

Box 5 continued...

Box 5 continued...

Myanmar

- The Kaladan Multi Modal Transit Transport Project connects the Sittwe Port in Myanmar with Ports in India, along with riverine transport and roadways to Mizoram
- The Indian based Industrial Training Centres in Pakkoku and Myingyan provide training for industrial development through basic and practical training courses, fortifying the skilled and semi-skilled work force in Myanmar.

Box 6: Financing Programmes

A. Lines of Credit

To promote bilateral and regional commercial relations, Exim Bank India extends Lines of Credit (LOCs) to governments, parastatal organisations, financial institutions, commercial banks and regional development banks to support export of eligible goods on deferred payment terms. As on September 16, 2013, operative LOCs covering the CLMV region extended by Exim Bank India, at the behest of Government of India include:

Cambodia: Three LOCs amounting to US$ 65.2 million have been extended to the Government of Cambodia for the following purposes:

• Electricity transmission line • Water development projects

Lao PDR: Four LOCs amounting to US$ 153.8 million have been extended to the Government of Lao PDR for the following purpose:

• Electricity transmission line • Irrigation projects • Hydropower projects

Myanmar: A total of seven LOCs amounting to US$ 247.4 million were extended to Myanmar Foreign Trade Bank for a range of projects, including railway infrastructure, manufacturing of vehicles, upgradation of petrochemical complex, telecommunication, refinery assembly plant, hydropower project and transmission lines. During Indian Prime Minister's visit to Myanmar in May 2012, an MOU for LOCs aggregating to US$ 500 million was signed between Exim Bank India and Myanmar Foreign Trade Bank. Under this MOU, 16 ongoing irrigation schemes, 2 irrigation projects, project for procurement of rolling stock, equipment and upgradation of three major railway workshops in Myanmar are covered.

Vietnam: Three LOCs amounting to US$ 91.5 million extended to the Government of Vietnam covering, among others, the following sectors:

• Hydropower projects • Exports of textile machinery and equipment

Box 6 continued...

Box 6 continued...

B. Supporting Project Exports

Exim Bank India extends both funded and non-funded facilities for overseas turnkey projects, civil construction, supplies as well as technical and consultancy service contracts across various sectors of the economy. As on March 31, 2013, 21 project contracts valued at Rs. 5,918.9 crore supported by the Bank were under execution in the CLMV countries. Out of these, 16 contracts valued at Rs. 1,551.9 crore are under Government of India supported LOCs.

Cambodia

- Stung Tasal Water Resources Development Project and Construction of electric transmission line between Kratie and Stung Treng

Lao PDR

- Development of irrigation schemes in the Champassack Province
- Equipment/ goods/ services for Construction of 230 KV and 115 KV Transmission Line and Associated Sub Station in conformity

Myanmar

- Design & engineering, supply of the equipments and supervision of erection of equipments
- Contract for design, procurement and construction of 205 kms gas pipeline from Kyaukphyu main station in South Myanmar to KP 205 block valve station in central Myanmar
- Bentonite Bore Pile Equipment
- Renovation of Thanbayakan Petrochemical Complex
- Oakshitpin -- Taungup 230 KV Transmission Line and Substation project, as well as Taungup - Maei - Ann - Mann 230 KV Transmission Line and Substation project

Vietnam

- Supply of complete electro-mechanical equipment and technical services for Nam Chien Hydropower project.

Box 6 continued...

Box 6 continued...

C. Finance for Joint ventures

With a view to support Indian companies in their endeavour to globalise their operations, Exim Bank India operates a programme to support overseas investments by Indian companies through Joint ventures (JVs)/ Wholly Owned Subsidiaries (WoS). Such support includes loans and guarantees, equity finance and in select cases direct participation in equity along with the Indian promoter, to set up such ventures overseas. As on March 31, 2013, Exim Bank India has provided finance to 5 Indian companies for setting up ventures in Vietnam, with sanctioned amount of 129 crore. Companies supported include:

- Vallabhdas Kanji Limited • Ngon Coffee Company Limited
- Vietnam Abresives Company Limited
- Tufropes Vietnam company Limited
- NGON Coffee Company Limited

***Source*:** EXIM Bank (2013). http://www.eximbankindia.in/sites/default/files/Full%20OP/CLMV%20OP%20NEW%20REVISED.pdf

Box 7: Assistance and Capacity Building

Cambodia

- For the purpose of capacity building, India has set up in Phnom Penh Cambodia-India Entrepreneurship Development Centre (CIEDC) in February, 2006 and Cambodia-India Centre for English Language Training (CICELT) in August, 2007.
- Cambodia is a major recipient of India's Indian Technical and Economic Cooperation (ITEC) Programme and has utilised around 1000 civilian training slots and about 100 defense training slots till date.
- An Indian expert in water management was deputed for one year period from June 2009 to June 2010 under ITEC to assist APSARA Authority at Siem Reap.
- In the last few years, there has been a steady enhancement of defense cooperation between the two countries.

Lao PDR

- Under human resource development, the Government of India has been providing over 210 scholarships to Lao nationals through ITEC Programme, the TCS Colombo Plan, the Mekong-Ganga Cooperation Scholarship Scheme and the General Cultural Scholarship Scheme. In 2010-11 the GOI provided over 161 scholarships to Lao nationals under the above categories. So far, under ITEC, GOI has trained about1000 Lao nationals.

Box 7 continued...

Box 7 continued...

- The LICELT [Lao India Centre for English Language Training] was set up in Vientiane in June, 2007 under the India-ASEAN Cooperation framework, and is one of the assistance projects in the direction of capacity-building and self-sustaining capability of Lao PDR.
- The LIEDC (Lao - India Entrepreneurship Development Centre) was set up under India-ASEAN Fund and inaugurated in November, 2004. LIEDC trains Lao entrepreneurs for setting up small and medium scale business.• Restoration work of Vat Phou Temple, the most ancient symbol of Hindu civilisation in the region, by ASI Team is in progress as per MoU signed by India and Lao PDR in 2007.

Myanmar

India is actively involved in a number of developmental projects in Myanmar, by way of implementation, and technical and financial assistance for several projects in infrastructural and non-infrastructural areas. These include:

- Setting up of a national centre of excellence-the Myanmar Institute of Information Technology (MIIT) being set up at Mandalay
- Setting up of an Advanced Centre for Agricultural Research and Education (ACARE) along with a Rice Bio Park at Yezin Agriculture University Nay Pyi Taw
- Implementation of various connectivity projects including the :
- Kaladan Multimodal Transit Transport Project, building/ upgrading 71 bridges on the Tamu-Kalewa-Kalemyo road
- Construction/ upgradation of the Kalewa-Yargyi section of the trilateral highway (which envisages seamless connectivity between India, Myanmar and Thailand by 2016)
- Setting up of an India-Myanmar Industrial Training Centre in Pakokku with the assistance of Government of India, with a second centre is being set up in Myingyan
- Setting up of Myanmar-India Centre for English Language (MICELT), and a Myanmar-India Entrepreneurship Development Centre (MIEDC) with the assistance of Government of India
- Setting up and upgradation of the India-Myanmar Centre for Enhancement of IT Skills (IMCEITS) with state of the art equipment with Government of India assistance
- Setting up a Language Laboratories and E-Resource Centre at the Ministry of Foreign Affairs in Yangon and Nay Pyi Taw
- Other projects include restoration of the Ananda Temple in Bagan, upgradation of the Yangon Children's Hospital, Sittwe General Hospital along with proposed upgradation of Monywa General Hospital.

Box 7 continued...

Box 7 continued...

Vietnam

- India has set up the Vietnam-India Entrepreneurship Development Centre and Vietnam-India Center for English Language Training, providing technical assistance to the Government of Vietnam, as part of its support to the Initiative for ASEAN Integration.
- In the Information and Communication Technology (ICT) sector, India has set up the Vietnam-India Advanced Resource Centre in Hanoi. The Centre provides a wide range of training in ICT, application of e-learning technology in education, infrastructure for digital library, for web-portal creation and service and for GIS Application development. India is also providing a PARAM Supercomputer to Vietnam.
- A joint venture between FPT, Vietnam and India's APTECH to establish training centre for Vietnam's IT professionals in India.
- Vietnam has been a key recipient of training programmes under ITEC Programme and other scholarship schemes. In 2011, India offered 75 slots under ITEC and 6 slots for post-graduate courses under General Cultural Scholarship Scheme (GCSS). Vietnam has also been utilising 20 scholarships under CEP and since 2006, 10 slots for undergraduate courses funded by Mekong Ganga Cooperation (MGC) programme.
- Under the ASEAN framework India would provide assistance in the opening of a new Vietnam-India Centre for English Language Training at the Diplomatic Academy of Vietnam. A proposal to set up a Centre for Tracking and Data Reception and an Imaging facility in Vietnam under ASEAN-India Cooperation mechanism is under consideration. This Centre will be fully funded by India.

***Source*:** GOI, Ministry of External Affairs (2013).

XI.II. Demographic Dividend

The issue of demographic dividend which is expected to be reaped by India with adequate skill formation also provides new insights and avenues for potential two-way human resources flows, given the complementary nature of such flows vis-à-vis aging economies in the East Asian region and also those that are expected to face skill shortages. This has been demonstrated by inter-country comparisons of Dependency Ratio across ASEAN+5 and by matching skill shortages in ASEAN+5 with similar skill availability in India.Dependency ratio is defined as the ratio of dependents i.e. people younger than 15 and older than 64, to the working-age population i.e. those aged 15-64. This is expressed in percentage (Table 17).

Table 17: Dependency ratio

Year	Australia	Brunei	Cambodia	China	India	Indonesia	Japan	S. Korea	Laos
2010	48.00	42.20	55.51	38.21	55.06	48.34	56.36	38.08	62.31
2015	51.33	40.98	50.38	37.41	51.83	45.72	63.11	37.86	53.32
2020	55.25	41.72	48.16	40.07	50.09	43.41	67.14	42.12	48.67
2025	58.56	40.29	46.09	41.81	48.41	42.83	68.36	49.99	45.93
2030	60.79	40.92	44.06	44.54	47.05	43.56	69.71	58.38	43.85
2035	61.39	40.72	41.90	50.90	46.21	45.43	73.32	65.99	41.52
2040	62.66	43.36	40.17	57.25	45.91	47.94	81.21	72.41	39.86
2045	63.45	46.06	37.95	59.07	46.37	50.88	86.47	76.00	39.55
2050	66.09	46.78	42.11	61.82	47.38	54.17	89.27	80.08	41.32

Table 17 continued...

Table 17 continued...

Year	Malaysia	Myanmar	New Zealand	Philippines	Singapore	Vietnam	Thailand
2010	54.10	44.44	50.40	64.14	35.91	42.06	41.69
2015	51.49	41.15	53.02	59.90	34.96	40.52	40.24
2020	50.16	41.02	56.46	56.88	39.19	41.43	40.79
2025	50.97	41.35	59.78	55.65	47.34	41.75	43.59
2030	52.18	41.79	63.44	54.51	55.33	42.80	47.45
2035	52.43	42.72	64.89	53.13	63.15	44.63	52.11
2040	52.34	44.91	65.46	51.74	66.03	48.04	56.17
2045	52.28	47.26	64.48	50.95	67.57	52.36	59.51
2050	53.02	50.45	65.11	50.83	68.77	58.68	62.31

Source: Based on World Bank (2014) database

Table 18: Skill Complementarties between India and ASEAN Countries

Country	Skills required/personnel required	Skills Available in India*
Malaysia	Engineers and geologists qualified to work in the Energy sector, High skilled workers in ICT and Electronics industry, professionals in healthcare and financial services, Call centre professionals Sectors that will hire: Oil, gas and energy sectors, ICT, financial services, Healthcare, Electronics and electrical ***Source:*** Employment Outlook (2012).	Engineers (chemical, metallurgy, mining and industrial), Physicians and Surgeons, Electrical and electronic engineers
Thailand	Sales professionals, Engineers and IT professionals, HR, and Marketing professionals Sectors that will hire: Trading, Industrial, IT, Services and Energy ***Source:*** Employment Outlook, 2012, Thailand.	
Singapore	Engineers, technicians, licensed aircraft engineers, healthcare professionals, private banking relationship managers and priority and Corporate bankers; Architects and related professionals; Software Developers and engineers; System/Business Analysts; Solutions Architects; Enterprise Architects; Information Security Consultants Sectors that are Hiring: Electronics, Chemicals, Aerospace ***Source:*** Employment Outlook, Singapore, 2012.	Aircraft Engineers and Technicians; Corporate managers, working proprietors, directors; Architects, technologists, surveyors and town planners
Indonesia	Technicians, Marketing and sales professionals, HR and financial professionals ***Source:*** Indonesia Job Market, Monroe Consulting group. Sectors that will hire: Petrochemical Industry, textiles and textile products, Footwear Industry; Food beverage and Tobacco Industry ***Source:*** Employment Outlook, Indonesia, 2012.	Overseers and Technicians

Table 18 continued...

Table 18 continued...

Philippines	Communication and Computer technicians, Electronic and maintenance engineers/technicians and network technicians, Supply of IT personnel (project managers, program designers, system consultants and system analysts) ***Source:*** Technical Education and Skills Development Authority (2014).	Electrical and electronic engineers
Cambodia	Doctors, Pharmacists, Nurses, software engineers, telecommunications engineers, project managers ***Source:*** *The Phnom Penh Post* (2007).	Physicians and Surgeons(all fields); Nursing, Sanitary and Other Medical and Health Technicians
Laos	Shortage in traditional sectors of carpentry, plumbing, electrical and automotive industry ***Source:*** ADB (2011).	Production workers: Artisans-carpenters, stone cutters, Blacksmiths, tool makers and operators etc; Production workers: Plumbers, Welders, Sheet Metal and Structural metal preparers and Erectors
Myanmar	Engineers, dentists, IT technicians, accountants ,architects and geologists ***Source:*** Eleven Myanmar (2013). Sectors that have a shortage of manpower: ICT industry ***Source:*** Oxford Business Group (2013).	Architects, technologists, surveyors and town planners
Vietnam	Engineers, mid and senior level managers, skilled manual trade workers, laborers Sectors that have a shortage of manpower: telecommunications, Retail, Construction, Transport, Chemicals/fertilisers ***Source:*** Going Global (2013).	Civil Engineers, Electrical and Electronic engineers, Mechanical engineers, Other engineers
Brunei Darussalam	Sectors that have a shortage of manpower: construction industry, ***Source:*** *The Brunei Times* (2012).	
Sources: Various documents. ***Note:*** * From a study by Sasikumar and Karan (2010) on Skill Mapping in the Indian labor market		

Demographic dividend balancing could be brought about by matching surplus and deficit sectors in terms of skilled workers as well as intra-sectoral temporary flow of natural persons/ professionals, in different sectors. These have been given in Table 18 with India's potential skill availability and the concomitant skill-requirements in individual country of the ASEAN region, for which information could be collated. These include a range of skills encompassing engineers in various disciplines, architects, technologists, physicians, surgeons, health technicians, among others. In terms of the countries for which skill-complementarities could be mapped include the whole of ASEAN, as the table reveals. This may be further extended to other countries in the region, too.

XI.III. Audio Visual Services

The audio visual services is one sector in India which has enormous potential in terms of offering collaborative ventures East Asian countries in the fields of film-production, music, radio (especially in rural areas), television content, animation and mobile software, among others. This potential needs to be assessed in terms of business propositions.

The Indian media and entertainment industry has a huge outreach with more than 600 television channels, 100 million pay-TV households, 70,000 newspapers and 1,000 films produced annually. Factors such as rising demand, high volumes of consumption and economic liberalisation have ensured the presence of many of the world's media giants in the Indian market for more than two decades. But it is only recently that the country has witnessed a renewed surge in investments by global corporations owing to high rates of growth and a fast-growing middle class.

Trends and Projections of the Indian Entertainment and Media Industry

The Indian entertainment and media industry showcased impressive growth with revenues increasing from about 805

billion INR (US$ 12.88 billion) in 2011 to 965 billion INR (US$ 15.44 billion) in 2012, representing a year-on-year increase of about 20 per cent (Table 19). Even though there has been a relative slowdown in the economy, the robust growth that has been achieved projects the buoyancy of the media industry. The details of the growth trends in each of the sub-sectors are discussed below:

Table 19: Projected Revenues of E&M Sectors, 2012-2017

(US$ Billion)

	2012	2013E	2014E	2015E	2016E	2017E	CAGR (2012-2017) (in %)
Television	6.128	6.992	8.464	10.208	12.048	13.952	17.9
Film	1.792	2.128	2.416	2.72	2.96	3.184	12.2
Print	3.392	3.68	4.08	4.464	4.864	5.296	9.3
Radio	0.24	0.272	0.304	0.352	0.432	0.512	15.6
Music	0.208	0.24	0.272	0.32	0.368	0.416	15.1
Gaming	0.288	0.336	0.432	0.528	0.608	0.672	18.8
Internet Access	2.736	2.368	5.632	7.616	9.024	10.096	29.8
Internet Advertising	0.368	0.496	0.64	0.832	1.072	1.344	29.4
OOH	0.272	0.304	0.336	0.384	0.416	0.464	11.2
Total E&M sector	15.44	18.384	22.56	27.424	31.792	35.92	18.4

Source: Based on PWC report, India Entertainment and Media Outlook, 2013.
Note: Using Exchange Rates as on: 20/1/2014.

Television

The Indian television industry showcased a growth of around 13 per cent increasing from 340 billion INR (US$ 5.44 billion) in 2011 to 383 billion INR (US$ 6.12 billion) in 2012. Some of the key trends in this industry include growing number of HD and other premium channels, increasing trend of the TV advertising market with expected growth in advertising revenues, and steady growth in pay TV subscribers.

Films

Revenues of the Indian film industry represented a growth of 17 per cent increasing from 96 billion INR (US$ 1.53 billion) in 2011 to 112 billion INR (US$ 1.79 billion) in 2012. The year 2012 proved exceptional for the film industry owing to a steady increase in audiences and sustained pricing power. Promoting and marketing of films via internet and social media, growing acceptance of content driven films, continuing growth in box-office performance of Hollywood releases and large releases of movies enabled by digitisation are some of the significant features of the Indian film industry (PWC 2013).

Print

With growing readership and circulation of newspapers and magazines owing to increasing literacy levels, India's print industry is quite developed. Comparing this growth with markets worldwide, Indian print industry continues to show resilience. Of the total revenues of this sector, newspapers accounted for 197 billion INR (US$ 3.15 billion) whereas consumer magazines contributed about 16 billion INR (US$ 0.26 billion) in 2012.

Wired and mobile internet access

With only modest increase in the total number of broadband connections (13.4 million in Dec 2011 to 15.0 million in Dec 2012) India lags behind both developed and many developing countries in terms of wired internet and broadband penetrations. Having realised the immense significance of this sector, broadband penetration has been attracting some policy attention recently.

Wired and mobile internet advertising

Fast growing number of internet users is among the primary reasons for expecting robust growth in this sector. The overall internet advertising revenues (wired and mobile) was estimated at 23.1 billion INR (US$ 0.369 billion) in 2012 with wired internet advertising dominating the market (PWC 2013). In order to achieve full growth potential of this sector it is of paramount importance to

have higher broadband penetration and access. The key features of this sector include a rise in mobile advertisement owing to increasing number of smart phone availability and adoption. In addition, with growing usage of social media, advertising on such networks is likely to grow.

Gaming

India's strong mobile subscriber base follwing China, rising adoption of smart phones as well as mobile internet and availability of a wide variety of games will continue driving consumer interest and usage. The Indian video games market encompasses console gaming, mobile gaming, PC gaming and online gaming. Together this sector generated revenues of about 17.9 billion INR (US$ 0.28 billion) in 2012. India has a large mobile subscriber base and with increasing adoption of smart phones, mobile gaming is expected to grow significantly. In addition, availability and easy accessibility of vast variety of games ensures increased consumer interest placing this sector on an upward growth trajectory.

Radio

Despite of a global slowdown, Indian radio sector is one of the few sectors to have remained unaffected. It witnessed an upsurge in revenues by about 10 per cent increasing to 15.3 billion INR (US$ 0.24 billion) from 13.9 billion INR (US$ 0.22 billion) in 2011 (including revenues of All India Radio).

Music

The Indian music industry has witnessed a structural transformation with rising digital sales outstripping the physical sales. Increasing usage of mobile phones, laptops and computers together with changing consumer behavior are major determinants for this change. Digital music sales (including mobile VAS and internet) contributed 8.5 billion INR (US$ 0.13 billion) out of total industry revenues of 13.1 billion INR (US$ 0.21 billion) in 2012 whereas physical music sales accounted for only 2.3 billion INR (US$ 0.036 billion)

Popularity of Indian Cinema in Asia

Indian films are widely watched in South Asian countries, including Bangladesh, Nepal, Pakistan and Sri Lanka. Many Pakistanis watch Bollywood films, as they understand Hindi (due to its linguistic similarity to Urdu). They are popular in Afghanistan due to the country's proximity to the Indian subcontinent and cultural perspectives present in the movies. A number of Bollywood movies were filmed inside Afghanistan while some dealt with the country, for instance Kabul Express, Khuda Gawah, Escape From Talibanetc. Hindi films have been popular in Arab countries, including Palestine, Jordan, Egypt and the Gulf countries. Imported Indian films are usually subtitled in Arabic upon the film's release. Since the early 2000s, Bollywood has progressed in Israel. Special channels dedicated to Indian films have been displayed on cable television. Bollywood films are popular in Southeast Asia (particularly in Maritime Southeast Asia) and Central Asia (particularly in Uzbekistan and Tajikistan).

They are widely appreciated in East Asian countries such as China, Japan, South Korea and etc. Several older Hindi films have a cult following in Japan, particularly the films directed by Guru Dutt. Some Hindi movies that had success in China, South Korea and Japan in the 1940s and 1950s are popular till today. The most popular Hindi films in that country were Dr. Kotnis Ki Amar Kahani (1946), Awaara (1951) and Do Bigha Zamin (1953).

Hindi films significantly declined in popularity in China, until the Academy Award nominated Lagaan (2001) became the first Indian film to have a nation-wide release there in decades. The Chinese filmmaker He Ping was impressed by Lagaan, especially its soundtrack, and thus hired the film's music composer A. R. Rahman to score the soundtrack for his film Warriors of Heaven and Earth (2003).

Co-Production Treaties

Against the backdroped of popularity of Indian culture, aesthetics and films, various co-production treaties and arrangements for cooperation have been forged between India and other countries (e.g. Box 8). These have several advantages resulting in commercial propositions of earning from fee for film-shooting, development of local film and music industry, positive impact on event management and advertising business, tourism revenue generation etc.

Box 8: Cultural collaboration between India and Indonesia

India and Indonesia to bond more and co-produce films

India will engage Indonesia with co-production of films and training of personnel, giving a boost to tourism and the entertainment business, as Asia's two large nations come closer on the people front. The two countries committed to building on their close historical and cultural links after talks between Indian Prime Minister Manmohan Singh and Indonesian President Susilo Bambang Yudhoyono in Jakarta in October 2013. Recognising the popularity and impact of films in bringing the two people closer and promoting tourism, both sides agreed to encourage cooperation in production and post-production between their film industries. "Both (countries) would explore joint production. Indonesians would also be trained at the Film and Television Institute of India (Pune) and the Institute of Animation in Hyderabad," Commerce and Industry Minister Anand Sharma told IANS. Shooting of films in both countries would also be explored as this would promote two-way tourism. Countries such as Australia, Malaysia, Mauritius, Singapore and South Africa have all been locationsfor Indian films and have registered a significant rise in tourist footfalls.

"India-Indonesia tourism is very small. It can benefit a lot from this kind of engagement, a new area of cooperation," says Indian Ambassador Gurjit Singh, given the huge popularity of Bollywood films which have been a part of the everyday lives in the archipelago nation. Indonesia offers "virgin" locations that are much cheaper

Box 8 continued...

Box 8 continued...

than those in many other countries of the world. Mari Pangestu, Indonesia's minister for creative economy and tourism, has said the government will help international filmmakers by setting up a one-stop clearing house for the permits they need for shooting. Ahman Sya, director general of arts and creative economy, corroborates this, saying Indonesia is creating a single window for clearance of foreign shooting teams to promote the country as a film destination. The film industry of Indonesia grew at over 7 per cent last year and there are plans to add thousands of new screens in the coming years. The industry produces 80 to 100 movies a year for commercial release. But in comparison to its Southeast Asian neighbours, Indonesia falls behind Thailand and Singapore as a production and post-production hub. Commercial Indian films were first imported into Indonesia by the allied armies in 1945, after independence, as entertainment for the Indian troops, who were part of the British army.

Under Indonesia's first president Sukarno, Hollywood films were banned for their "explicit" political and sexual content, and this helped Bollywood to dominate the popular imagination. And that popularity has not subsided since then. Indonesia has a thriving community of Bollywood fans, many of whom have formed clubs dedicated to individual stars. Sanggar Mohabbatein, a dance studio in Jakarta, teaches children and adults dances from popular Bollywood movies. Sociologists say the sensibilities of Indian cinema emphasise family ties, traditional values and humanity more than in Western cinema, and thereby touches a chord in the audience. The love for Bollywood films lies in their ability to evoke strong emotions.

"People really enjoy seeing people they can identify with, emphathise with," said an Indonesian official this IANS correspondent met at Istana Merdeka, the presidential secretariat during Manmohan Singh's recent visit. Also, Indian storytelling traditions, such as the Ramayana, resonate throughout the country. Garin Nugroho, an Indonesian director, has directed Opera Jawa, a modern interpretation of the Ramayana. Film historians say Indian films served as an important model for Indonesian films in the 1950s. And it was during the 1990s with

Box 8 continued...

Box 8 continued...

the wide spread of television in the country that Bollywood films moved from cinema halls to living rooms and saw what Bettina David calls a "dynamic upward mobility" in Indonesia's public culture. It was the successful run of the ShahRukh Khan starrer, "Kuch Kuch Hota Hai" in 2001, which revived the Indian films' market among the Indonesian upper class. Moreover, production houses and TV channels run by immigrant Sindhi families have helped forge linkages with the Indonesian entertainment industry.

And now, following the agreement between the two countries, it is expected that substantive collaboration between the two film industries will take off, maturing Indonesia's love affair with Bollywood.

Source: Excerpted from South Asia Mail, October 2013

India and Japan

India and Japan signed a co-production treaty to expand co-operation in the films sector particularly in animation films. The agreement was signed by the Indian Minister for Information and Broadcasting, Manish Tewari and visiting Japanese Minister for Economy, Trade and Industry (METI), Toshimitsu Motegi in New Delhi on 12th September 2013. In order to make use of the untapped potential, the two countries agreed to form a Joint Working Group in areas such as films and animation, skill development, exchange programs between training institutes and other areas which are mutually beneficial to both sides. At the same time, the Japanese expertise was welcomed for developing special training courses at the Film and Television Institute of India, Pune and the Satyajit Ray Film and TV Institute (SRFTII), Kolkata. (Jagranjosh,2013)

India and New Zealand

New Zealand and India have signed the film co-production agreement which was under negotiation since 2007. The agreement will allow filmmakers in both countries to have their films given co-production status, easing the path

for staffing and equipment on films in both countries. Film New Zealand executive Gisella Carr welcomed the signing, saying the Indian screen industry is "a worldwide phenomenon" equal to the US industry, and "any strategy that brings New Zealand into contact with such a juggernaut" will be of long-term benefit to the country. The increased exposure of New Zealand scenery via Indian cinema is expected to further boost tourism numbers, adding to the 30,000 Indians who have visited New Zealand in the past year, a figure that has doubled since 2004. Bollywood movies are considered instrumental in the increase in tourism numbers. A noticeable spike occurred after release of the blockbuster I Hate Luv Stories, which was partly filmed in New Zealand. "In the wider sense of economic and cultural value for New Zealand, having New Zealand looking gorgeous on the feature screens and television sets of millions of Indians can't help but be good for us," Carr said. (Film Auckland,2011)

India and China

Taking into consideration the fact that Indian films are already extremely popular in China, the two countries have agreed to set up a joint working group for film and television. The working group will look at options for co-production agreements between India and China to facilitate the shooting of films in each other's countries, exchange of trained personnel and exchange of more movies and television shows.

According to (the then) Indian Minister for Information and Broadcasting, Manish Tewari, "An audio-visual agreement would not only promote our shooting locations, but will also boost film-related tourism between the two countries and hence pave the way for more vibrant people-to-people contact". (*Hollywood Reporter* 2013)

India and Australia

India and Australia have agreed to sign a film co-production treaty soon With the aim to streamline some of the administrative and funding issues around such cooperation.

This agreement will bring in a number of benefits to both countries in terms of funding and tax benefits, , simplified immigration requirements for the entry of skilled personnel, and duty-free importation of equipment for use in co-productions. In addition, national treatment would be imparted by both countries to those projects which officially get approved under the treaty. Indian films have huge presence in Australia with as many as 200 being shot there. This treaty would also encourage projects throwing light on both cultures. Quite a few Australians are employed on Indian films in both Australia and India. " (*Business Standard*)

Contributes to local film making industry

Making use of foreign locations for shooting films proves extremely beneficial for the tourism industry. With a large number of global audiences appreciating to Indian cinema, the popularity of the place where films have been picturised increases. For instance, in addition to providing work for Thai film crews and extras (including the Royal Thai Army), films that use Thailand as a location help Thailand promote itself as a tourist destination. As a result, the Tourism Authority of Thailand is keenly interested in attracting production companies to make films in the Kingdom.

A significant advantage is getting subsidies to shoot in a particular country. These can range upto almost 40 per cent cost of a film. In addition to subsidies, a lot of other incentives are offered to the producers to cash in on tourism. These includetax rebate, free stays, visa facilitation, and in certain cases, they even bear the cost of production. For instance, the Fiji government recently announced it would offer 47 per cent of the production cost for films being shot there. Tourism boards of many countries, such as Switzerland and UK, have offered benefits in past but the trend has taken off in a big way now. In order to take advantage of this trend, Indian producers try to film in exotic foreign locations such as Maurtius and are willing to even alter the script to accrue the huge benefits resulting from it. More countries are recognising the strength of films in this aspect. Although the

countries which promote film shootings should ensure that they have adequate equipment and junior artists and technicians to facilitate the visiting film production crew creating ample short term employment opportunities. (*Business Standard* 2012)

Collaboration with International Studios

International film studios such as Warner Bros., Disney, Fox and Dream works have entered collaborations with local film production houses to develop Hindi and regional movies. Walt Disney, who earlier held a 50 per cent stake in UTV, has now acquired a controlling stake in UTV Software Communications. Viacom18 has also entered a deal with global movie company Paramount Pictures to market and distribute the latter's movies in India, Bangladesh and Sri Lanka. It has already ventured into production of Hindi language movies, and the new deal is expected to help it create a distribution network. Local film production can leverage the experience of these international studios to expand their international reach and incorporate enhanced project planning and cost controls. A case in point is the film 'My Name is Khan', which was distributed in unexplored markets, with innovations such as taking the lead actors to the NASDAQ stock exchange. (Ernst & Young 2012)

The success of the movie demonstrates the potential of Indian films abroad. The media and entertainment Industry is poised to witness momentous growth. The examples of achievements and opportunities given above amply demonstrate the numerous possibilities that exist, which can nurture a fruitful collaboration between Hollywood and Bollywood on the one hand and India and ASEAN+5 on the other, by a methodical approach.

XI.IV. Traditional Medicines, Yoga and India Way of Life

This is yet another area for cooperation between India and the East Asian countries. A detailed commercial assessment of it is carried out in this section.

Indian spices, recipes and food culture

India, one of the primary producers of spices in the world, has an ancient link with spices from as early as around 6000 BC. The age-old tradition of spice production and consumption has made India the largest producer as well as consumer of spices in the world. India, commonly referred to as "The Home of Spices", has earned itself the reputation for the only country which produces almost all kinds of spices.

Spices are nothing but aromatic products used for enhancing the taste and food flavours. They are used in various forms such as fresh, dried, powdered, oils etc. Along with the nutritional values, some of them encompass certain medicinal properties having health benefits as well as having other uses such as perfumery, cosmetic products, and religious rituals. Spices act as a fabulous medium for developing countries such as India to earn foreign exchange. India has vivid agro-climatic zones which act as a blessing for spice production. As of now, India exports spices to 120 countries. Enjoying a dominant position in spice production and exports, India leads the world market with a 46 per cent share by volume and 23 per cent share by value. The statistics show that India accounts for 25-30 per cent of world's pepper production, 35 per cent of ginger and about 90 per cent of turmeric production constituting a major portion of the country's total export earnings. A look at the state-wise data reveals that Kerala leads in pepper production (96 per cent), Cardamom (53 per cent) and Ginger (25 per cent) production in the country whereas Andhra Pradesh leads in Chilly and Turmeric production in the country with 49 per cent and 57 per cent respectively. Rajasthan is the lead producer in coriander, cumin and fenugreek production in the country, with 63 per cent, 56 per cent and 87 per cent share, respectively.

However, there exists untapped potential in this sector given the ever increasing demand in the international market and a developing country such as India needs to capitalise on the production of spices. By making use of advanced technology such as irradiation etc. for spice processing, India can increase its export

earnings tremendously, for which technologies from ASEAN+5 could be exported to India.

India also showcases a very rich food culture with vast regional varieties. Indian cuisine is dedicated to flavour and the highlight is the spices adding zest and wholesomeness to the dishes. It has managed to make vegetarian food taste consistently great. Indian cuisine is getting widespread attention worldwide with more and more Indian restaurants getting opened in different countries and chefs from all around the world being interested in learning and trying their hand at Indian recipes. Events such as Indian Food Festival have been taking place across various countries to generate interest in Indian cuisine. For instance, in 2012, a food festival was organised in Bangkok by the Indian Embassy in Thailand. Currently, such events are being organised in ASEAN countries by the Indian Union Ministry of Culture. These may lead to an upswing in the food, beverages and restaurant segments of ASEAN+5 economies.

Traditional Clothing

With the abundant raw material resources to its advantage, the Indian Textile Industry is one of the leading textile industries in the world. The country is a treasure house to resources such as cotton fibre, polyester, silk, viscose, etc. along with being the largest producer of cotton yarn in the world.

Apart from agriculture, textile industry is the largest source of employment in the country. It plays a major role in the economic growth of the country by contributing around 14 per cent to industrial production and 17 per cent to the export earnings. According to the Apparel Export Promotion Council (AEPC), exports of Indian garments increased by 19 per cent during July 2012–July 2013 to touch US$ 1.27 billion on account of increased demand in the developed economies such as US and UK. In the same period, India has also witnessed significant growth in the cloth production and cotton yarn production. India's textile industry is attracting more attention abroad with its new innovative range of

man-made fibres (MMF). Around 95 per cent of the world's hand woven fabric comes from India and the demand for the same is increasing exponentially.

Indian clothes like sarees, salwar kameez, kurta-pyjama, jodhpuri, dupatta, churidar, dhoti, etc are now being offered in prominent stores in the west. Indian clothing brand Fabindia has stores across Italy, Dubai and Singapore which shows more and more people across the world are embracing ethnic Indian cultures and clothing. Another indigenous Indian brand Nalli Silks famous for its traditional wear has set up branches in Singapore and California. Such stores offer good quality authentic outfits and designs which form part of their uniqueness. These (designs) become their biggest selling points as overseas audiences thrive on them.

Indian textile industry has grown by leaps and bound in the past few years but there is still room for improvement to outgrow its current share of 4.5 per cent in the world trade. Facing tough competition from countries such as China, Bangladesh and Thailand, India is yearning itself high share in the global market. This is yet another area where technology upgradation in this sector in segments like computer-aided designing (CAD) and computer-aided manufacturing (CAM) can be export propositions for ASEAN+5.

There is enormous scope for India to develop a niche in traditional clothing trade with ASEAN countries since the demand for articles of apparel and textiles in these countries is growing rapidly. Data at HS 2-digit level indicates evidence of an increasing bilateral trade in articles of apparel and accessories.

In order to promote niche handloom and handicraft products a number of marketing initiatives have been taken up in the form of numerous events, workshops, seminars and symposiums all over the country which attract foreign delegates in large numbers. Government of India has taken several initiatives in form of technological upgradation and marketing interventions in order to enhance the trade opportunities and further promote

the industry. These need a fresh orientation towards ASEAN+5 countries.

Traditional Medicines, Ayurveda and Herbs

India has earned itself a reputation for its tremendous store of ancient knowledge and assets. Among its many rich cultural assets, Ayurveda is of prime importance. Ayurveda, a medical science using herbs in harmony, originated in the Indian subcontinent around 5,000 years ago.

India, famously known as the "Botanical garden of the world" is the third largest exporter of medicinal herbs and aromatic plants. Being blessed by 15 agro-climatic zones, it is the house to 47000 different valuable plant species and 15000 medicinal plants. Ayurveda market in India has an impressive worth with over 8,500 licensed pharmacies, approximately 7,000 manufacturers and more than four hundred thousand registered Ayurveda practitioners. This showcases the dominance of Ayurveda in the Indian health care system. The trade value of medicinal plants in India is reported to be around US$ 5.5 billion and is expanding rapidly.

According to World Health Organization, around 90 per cent of the Indian population and 80 per cent of the world population use traditional medicine for their primary health needs because of their efficacy, lesser side effects and reasonable cost.

In today's world, the need to further explore the arenas of traditional medicine has grown since modern medicine is showcasing certain limitations. The benefits of these medicinal herbs are not just limited to healing and preventive medicine. They are widely used in the cosmetics industry in form of natural cosmetics which are less harmful for the skin. Other than that, they are used as air fresheners, disinfectants, insect repellents, pot pourri and as herbal drinks such as teas.

The Indian state of Kerala is soon to be declared as the first 'Ayurveda-accessible' state in the country enabling affordable treatment to increased number of people in the state. The

ongoing Global Ayurveda Festival (GAF) 2014 organised by the Government of Kerala along with Centre for Innovation in Science and Social Action and the Ayurveda fraternity of Kerala is expected to attract a large crowd of two hundred thousand people and over 4,000 delegates.

The outreach of Ayurveda is such that not only in India, but worldwide it has been gaining a lot of popularity. In order to protect certain medicinal plants such as Neem, the ASEAN countries have decided to place it in their negative items list. They fear that with such increased popularity, this highly beneficial medicinal plant require conservation. Many countries across the globe have started embracing the benefits of traditional medicine. For instance, in Mauritius, Ayurveda has been fully incorporated into their medicinal system. The international market of herbal products is growing rapidly with great demand for natural products including pharmaceuticals, food supplements and cosmetics in both domestic and international markets.

The size of the total global herb market is US$ 62 billion of which India's contribution is a mere one billion dollar showcasing that India's share is not upto the mark. Herbal remedies and traditional medicines are becoming increasingly popular especially in developing countries and India with its biodiversity has significant potential to tap this market. In other words, India is sitting on a gold mine of age-old knowledge of Ayurveda giving it massive scope to be the world leader.

This only points to the fact that in this segment of India's soft power there is ample scope for collaborative ventures in ASEAN+5, including China, which has similar strengths. Modalities for this need to be worked out. A corollery of these is to build collaboration to promote health-tourism with adequate policy focus.

Yoga

Yoga has been deeply infused in Hindu traditions and spiritual texts since 3000 BC in the Vedas and Upanishads. Yoga is defined as the physical, mental, and spiritual practices or disciplines with the ultimate aim to reach "Kaivalya" (freedom). The word yoga,

with its birthplace being ancient India, comes from the Sanskrit root "yuj" which means to join or to yoke. It's an ancient classical art with a view to attain a state of permanent peace of mind in order to experience one's true self.

The practice of yoga not only helps in maintaining a healthy lifestyle and staying fit but it also improves the functioning of the respiratory, circulatory, digestive, and hormonal systems. It brings about emotional and mental stability. Medical experts are realising its importance in the prevention of diseases and health promotion as a person is in a much more attuned state.

In today's world, Yoga has become a part and parcel of our everyday lives and is no longer restricted to hermits, saints, and sages. The science of Yoga has been regenerated in order to better suit the modern lifestyles. Evolution of yoga has taken place in such a manner that it is defined by variety, accessibility, mindfulness, and fitness, allowing for different styles serving different people's needs.

The spiritual sport 'Yoga' has transformed into a multi-million dollar industry worldwide. Indians treat such cultural assets as aspects of community heritage and do not see commodifying it as an opportunity. But with changing times and the huge worldwide reach of yoga, there is tremendous opportunity for Indian youths to study and promote this valuable asset of Indian culture. There is growing number of people who can and are willing to pay for it i.e. the market, not only domestic but international as well, is expanding by leaps and bounds. Celebrities have brought out yoga DVDs to popularise the art and have a huge outreach. With celebs showing the way, it is a matter of time before health-conscious Indians embrace the healing power of yoga in a big way. The Council for Scientific and Industrial research has come up with patent formats of 900 yoga asanas.

The Indian state of Jharkhand has advanced in this particular field so much so that instructors from this state are in huge demand abroad. Many of them are working in multinational firms with huge pay packages. According to latest reports,

there are more than 50 yoga instructors from this state training in countries such as China, Vietnam, Cambodia and Thailand. In 1989, the Jawaharlal Nehru Indian Cultural Centre was established in Jakarta providing lessons on Indian culture, as well as promoting art such as Yoga, Indian music and dance.

India, being an active partner, has the capability of bringing cultural and spiritual dimension via yoga contributing to the economic well being of the ASEAN+5 countries and strengthening economic ties with them.

Overall, there are several facets of the very 'Indian Way of Life' and these combined with 'soft power' could create commercially-viable win-win situtations between India and ASEAN+5 if proper policy and modalities for harnessing these are worked out.

12

Agenda for Domestic Economic Reforms

The preceding sections have amply demonstrated that the Indian economic dynamism encompassing potential for strengthening trade, investment, technology, human capital linkages along with India's soft power for provide important insights for mutually beneficial cooperation between India and ASEAN+5. However, to facilitate these, India's domestic economic reforms would prove to be critical, apart from other regional policy initiatives. Some of these are highlighted in this section.

Fiscal Consolidation

Fiscal prudence needs to be strengthened that will lead to fiscal consolidation and discipline. Tax-to-GDP ratio needs to be improved and non-tax revenues increased. Fiscal deficit will have to be around moderate limits without hurting the social and development expenditure.

Infrastructure Development

Good infrastructure is one of the primary requisites for attracting FDI and export promotion. This will improve the supply chain in transporting goods within the country and across countries. Urgent need to revamp India's railway system, pace of reforms and implementation in sectors such as telecommunications, ports, roads and power needs to be stepped up.

FDI

While Indian FDI regime is quite open and efforts have been made to improve the ease of doing business, more efforts are required in terms of Single Window Facility, timeliness and incentives to advance technology-related FDI, among other issues.

Competition Reforms

Competition reforms and existence of an effective competition regime can help growth, increase governance and curb inflation. More and effective competition can generate new innovations which is a major driver of economic growth. Though India has Competition law in place which is an essential tool for enforcement against anti-competitive practices but competition policy is much larger and is essential to tackle entry barriers that are inbuilt in the systems.

Introduction of Goods and Services Tax (GST)

Key challenge facing current taxation system in India is one of exclusion of Services from state taxation. This has posed difficulties in taxation of goods supplied as part of a composite works contract involving a supply of both goods and services. GST would streamline the tax administration, avoid harassment of the business and result in higher revenue collection both for the Centre and the States.

Skill Development

India has been facing the issue of skill management for years. The last decade has made matters worse, especially with newer skills being in demand. The new government will have to focus on this area and look at development of vocational skills as a key agenda. Harnessing of demographic dividend in the international context of cooperation with ASEAN+5 needs to be linked with skill development initiatives, reforms and implementation.

Research and Technology Advancement

We need cutting edge frontier research in both sciences and social services along with technology advancement to gain

competitiveness in the global economy. R&D expenditure needs to be increased. Focus on R&D institutes also needs to be increased in a bid to improve India's research and development (R&D) capabilities and infrastructure. Collaboration with other countries to gain access to their technologies would be crucial, especially in ASEAN+5 countries.

Land Acquisition

The new Land Acquisition Act is considered very restrictive and acts as a stumbling block for projects. The new bill wants more notices to be given out, more studies to be commissioned and stipulates long periods for communities to respond to these notices acting as a barrier to major infrastructure projects. These need to addressed as this would also help attract FDI.

In sum, the Indian domestic reforms agenda needs to be implemented at a faster pace on issues mentioned above along with other issues not covered here including labor law reforms, e-governance, to make Indian economy even more dynamic, facilitating more meaningful cooperation with East Asia and other parts of Asia, so that India could become a hub of economic acitvities.

13
Major Findings and Conclusion

India's economic performance in recent times is heralded as a success story inasmuch it has shown high growth dynamism, has remained one of the top few economies of the world in PPP terms and has been able to double its per capita GDP in less than a decade. It has been ranked very high as important FDI destination. This economic dynamism needs to be harnessed by increasing its presence in the East and South-east Asian region in a mutually beneficial manner.

Against this backdrop, the study sets its basic objective as one which would demonstrate as to what does Indian economic dynamism bring to the ASEAN+6 process, including its developmental implications. It also aimed to highlight how India's soft power has not only cultural and ethical dimensions but also crucial economic significance to its integration within Asia.

The study first analyzed the macro level trade and FDI linkages between India and ASEAN+5 countries that provided interesting insights. In terms of trade linkages there is an element of dynamism observed in both exports and imports along with a semblance of stability overtime, however the coefficient of variation suggest a greater degree of stability when India's trade with ASEAN+5 is taken as a proportion of India's total trade with world. Same is not true with regard to trade of ASEAN+5 with India as a proportion of former's trade with the world. At the sectoral level sectors such as food products, minerals and machinery and electricals

show potential for further export-augmentation from India to ASEAN+5.

The two-way FDI linkages between India and ASEAN+5 countries suggest that India's outflows have been greater than FDI inflows and in both respects the flows are concentrated primarily vis-à-vis Singapore and Japan, notwithsanding the data limitations preventing adequate comparisons.

One of the aspects explored in the study was to compare different countries', including India's, the various strategies of growth adopted as a component of their overall development paradigm. The most prominent strategies followed by various countries have been export-led growth strategy and Domestic Demand-Led growth strategy. However, India presents an important case in point which has pursued not only these two strategies but also adopted the import substitution-led growth strategies and growth-led export strategy, often one in conjunction with the other. In this sense, India brings with herself, along with other countries of the ASEAN+5 important lessons for adopting growth strategies as part of unique development paradigm specially relevant for the LDCs and other developing countries of the ASEAN+5 region.

Further, in order to find out more concretely the welfare and trade gains, Computable General Equilibrium (CGE) modelling for different scenarios and alternative configurations of regional economic integration was undertaken. It has been found that ASEAN+6 based efforts towards RCEP, including India, comes out with greater welfare and trade gains for ASEAN+6 countries as compared to TPP, when the same model was applied under similar scenarios.

The country pairs with maximum potential for complementarities for exports from India to a partner (μ) include Indonesia, Singapore, Cambodia, Australia and the Philippines. On the other hand, complementarities of exports from ASEAN+5 region to India (λ) are high in the case of Japan, Philippines, Myanmar, Vietnam, among others. By the measure of the relative

indicative trade potential with respect to India's export capacity, most of the sectors show high degree of potential for exports from India to ASEAN+5 in sectors such as Food products, Fuels, Chemicals, Textiles and Clothing, Machinery and Electricals and Transportation, except Minerals.

Moving from HS 2-digit level of identification of potential sectors for two-way trade between India and ASEAN+5, the study undertakes a more detailed disaggregated level analysis of identifying trade potential that is mutually beneficial. This is based on RCA methodology at HS 6-digit level. Results are presented for India's potential sectors for exports to ASEAN+5 and vice versa at HS 2-digit level sectors, derived from HS 6-digit level RCA. This potential is identified for country-wise bilateral pairs for two-way trade. Identification of items at HS 6-digit level are based on three conditions of feasibility, consistency and dynamism in RCA.

From comparative advantage-based identification of items and sectors for potential trade interaction the study moves to Intra-Industry realm of trade complementarity with the calculation of Grubel–Llyod (GL) Index over the available trade data at HS 4-digit classification. This was done due to the fact that while RCA is a notional potential since it is calculated not for the actual bilateral trade data, the IIT is the actual bilateral trade flow of the intra-industry variety. Once again the study finds enormous potential for bilateral country-pair-wise intra-industry trade for a large number of items and industries, pronouncing India's trade-relevance both as a demandeur and supplier of products.

It was observed that India's FDI outflows to ASEAN+5 region are greater than inflows from it, however, quite concentrated vis-à-vis Singapore and Japan. The study finds rich potential for tapping two-way FDI complementarity between India and the ASEAN+5 region. Sectors amenable for India's outflows include various segments of agriculture, industry and services. For FDI inflows, these are primarily in various services such as construction, telecommunications, software, hotel and tourism and manufacturing such as computer hardware, drugs and

pharmaceuticals, chemicals, automobiles, and metallurgy. The sectors are identified with secondary sources and more disaggregated projects for mutual FDI possibilities could be identified, especially with a view to diversify the FDI interactions between the two sides. The study also amplifies India's needs of investment for urban infrastructural upgradation to the tune of around US $ I Trillion over the next 20 years and the existing potential for FDI inflows from the ASEAN+5 such as Japan, Singapore, Australia and Malaysia in transport, construction sectors, to name a few. Especially in the backdrop of India's FDI policy regime opening to infrastructural sectors and emphasis by the government on PPP and Private Participation in Infrastructure (PPI) these may serve as opportunities to tap Indian economic dynamism.

Having made an assessment of welfare and trade gains with the help of Computable General Equilibrium (CGE) model and having identified economic complementarities both in the realms of trade in goods and FDI, including broad sectors and disaggregated products, we further make projection of gains for the years 2025, 2030, 2040, and 2050 in mutual trade between India and ASEAN+5 countries in a partial equilibrium framework by using the augmented gravity model. This is particularly important as India's economic presence in the East Asian region need not be viewed in a static sense rather it must be placed in a dynamic setting. At the technical level this was done by addressing the biasedness in estimates due to time invariant variables that pose special problems while estimating a gravity model.

The projections obtained by the gravity model indicate the growing possibility of trade between India and ASEAN+5 countries in future. This is borne out by the results obtained through the two sets providing us with minimum and maximum values of potential exports and imports of India with ASEAN+5 region. The high trade potential also suggests setting in place adequate policy mechanisms for stronger trade in goods relationship among these nations. The range of results also suggest if any FTA

which is negotiated with *substantial trade coverage* and *faster* and *deeper* tariff liberalisation coupled with removal of Non-Tariff Barriers could help achieve the maximum levels of bilateral trade as projected, otherwise the actual future trade gains may be well below the maximum potential.

The study further finds an inverted-U type relationship between IIT and RCA, suggesting that a part of IIT, i.e. the vertical IIT, proxied here by RCA, reaches a limit in determining the overall actual IIT flows between India and ASEAN+5 countries. While at the theoretical level, this has important implications in terms of the traditional trade theories hitting a ceiling beyond which they cannot explain the IIT type trade flows, at the operational level, it also poses the question as to what should be the policy response to address this situation, whereby horizontal IIT type trade flows could be sustained. While the New Trade Theories explain the phenomenon of horizontal IIT, they shed little or no light on how to sustain such trade flows in a bilateral and regional context. It is this question that the study subsequently addresses.

To unshackle this problem the study explored into the determinants of IIT, which is very relevant from the point of view of production fragmentation pursuits in the region, with the help of a Tobit model according to which one of the most important determinants of IIT is an RTA among ASEAN+6 countries in which India's RTAs play an important role. It is in this sense India has the potential to contribute to trade augmentation not only between India and individual ASEAN+5 countries but also help propel IIT among the ASEAN+5 countries too by becoming an integral part of the regional production networks, facilitated by a region, wide FTA under RCEP.

The study also dwells into India's growth in middle class and its implications for the rest of the region. In terms of market size, India's middle class has surged in recent years and its growing purchasing power has been a major determinant of India's growing market size. In fact, it appears that India would be one of the largest markets in the region and would offer

tremendous opportunities to absorb import supplies from other countries in East and South East Asia. Thus, it is important to recognise India's growing purchasing power emanating from its huge middle class, the incumbent effect that it would have on the market size of India and therefore the imperatives of India's pro-active participation in an FTA configuration of the ASEAN+6 type.

Given the potential of India's market size growth and in the context of the new manufacturing and industrial policy, the potentials for Indian manufacturing growth is assessed in order to estimate to what extent Indian imports of machinery and parts & components from East Asia would provide market access to the latter. The fact that in general imports are a function of GDP and market size, it would get further boost if India is an active partner of an FTA among ASEAN+6 under the RCEP.

What India brings to the rest of ASEAN+5 region cannot be limited to the perception that India is just another country for East Asian economic integration, the study emphasises. India's presence and economic integration with the rest of East Asian economies need to be viewed in a broader perspective and by taking into account new features of the Indian economy. This is done in the study by highlighting that India's geographical location makes it amenable for becoming a hub for ASEAN+5 countries for accessing the markets of South Asia, Central Asia, West Asia and especially the Eastern Cost of Africa from north to south. Secondly, India has emerged as the potential hub in knowledge-intensive and hi-tech sectors like the IT, Automobile Designs, Chip designing, Chemicals and Pharmaceuticals, Bio-informatics, Refined Petroleum etc. The two-way linkages between India and East Asian countries in terms of trade, FDI, technology and movement of natural persons thus need to be assessed and recognised in this new context.

Any analysis of what India means in economic terms for East Asia often leaves the aspect of India's potential to contribute through its 'soft power'. Moreover, the economic and commercial

aspects of India's soft power are missed out completely from any such analysis. The study highlights this on various dimensions.

The ASEAN+6 region has been characterised by enormous developmental asymmetries manifested in variables including GDP and per capita GDP levels, their growth rates, growth rate volatilities, unemployment and inequality levels, physical infrastructure and social infrastructure like health and education . Thus, it is important to help poorer countries of the region to take advantage of the market access opportunities in an open regional and global trading system by facilitating enhancement of their developmental capabilities. They need to be assisted in other areas as well. While still a recipient of ODA e.g. from Japan, India has also been focusing on development cooperation with other developing countries. This has included development assistance in the forms of concessional loans without conditionalities, capacity building, technical assistance, humanitarian assistance, in various areas and on different occasions, on a sustained basis. One of the most important implications of India's development partnership is in terms of addressing developmental asymmetries in ASEAN+6 region. In this context, it may be appropriate to mention that India's development cooperation or partnership with other developing countries is distinct from a doner-donee relationship as in the case of India it is primarily demand-driven and not imposed by India on other fellow developing countries. It has been in the spirit of sharing of developmental experiences and knowledge-dissemination, coupled with elements of development-oriented financing and project-based cooperation. India also contributes to institution-building in various countries. One such relevant example is the financial contribution which India makes towards ERIA as a gesture to promote high-quality research on economic cooperation issues in ASEAN and other parts of the region.

The issue of demographic dividend which is expected to be reaped by India with adequate skill formation also provides new insights and avenues for potential two-way human resources

flows, given the complementary nature of such flows vis-à-vis aging economies in the East Asian region and also those that are expected to face skill shortages. This has been demonstrated by inter-country comparison of Dependency Ratio across ASEAN+5 and by matching skill shortages in ASEAN+5 with similar skill availability in India.

Apart from these, other aspects of India's soft power and distinct presence in ASEAN+5 region that have been highlighted in the study include trade in Audio-Visual services, traditional medicines, yoga and other dimensions of the Indian way of life. Overall, this study underscores the need for India to undertake domestic economic reforms that can help it make more dynamic. Additionally, India needs to play a more pro-active role in the unfolding economic integration scenario in East Asia. But most importantly, the East Asian economies must also look at India as a source of tremendous economic dynamism with economically strategic geographical location.

The above only highlight the imperative of devising adequate policies to make India's presence in ASEAN+6 a mutually advantageous one.

14
Policy Recommendations

Policies for Addressing Developmental Asymmetries

Regional comprehensive economic development and cooperation strategy in Asia could well provide an answer to narrowing the development gaps as per the rationale and empirical evidence presented in this study's preceding sections. However, it has been noticed in various regional integration schemes that when cooperation efforts are spread over a multitude of dimensions and executed in multifarious ways they often dissipate and become less effective. Hence, evolving focused policy-strategy is crucial that could include the following:

a) Broadening and Deepening Regional Economic Integration in Asia: Trade and Investment Cooperation, Liberalisation and Facilitation

Given the potential of regional economic integration, especially in the realms of trade and investment cooperation to help narrow the development gaps and bring about convergence in levels of development, the proposal of an Asian Economic Community bringing together all major sub-regions of the continent following a building bloc approach assumes importance. These may initially cover trade and investment liberalisation, cooperation and facilitation across sectors as recommended by the Comprehensive Economic Partnership of East Asia (CEPEA) Track II Study under the East Asia Summit process and taken up more cohesively by the RCEP process of ASEAN+6 within the agreed timeline.

A road-map for achieving a pan-Asia economic community may prepared.

b) According Special and Differential Treatment to Less Developed Countries

A regional economic integration scheme bringing together highly advanced economies like Japan, South Korea, Australia, and New Zealand, developing economies like China, Thailand, the Philippines, Indonesia, Singapore and India, and least developed countries like Cambodia, Laos, Myanmar and Vietnam, obviously has to recognise the differences in the capacities of partner countries and incorporate special and differential treatment (S&DT) to enable the relatively poorer countries to participate in the regional economic integration process according to their capacities.

A Programme of Action in this regard with a time schedule may be finalised.

c) Cooperation in Appropriate Technology and Human Resources for Bridging Development-Gaps

Cooperation in the domains of information and communication technologies (ICTs) to bridge digital divide could be given greater emphasis in Asia to bring about development convergence besides trade liberalisation under an FTA. Technology capabilities with the help of capacity building modules and proper diffusion infrastructure need to be focused upon. Similar potential exists in the areas of biotechnologies for pro-poor growth along with adequate bio-safety provisions. Cooperation in medicines and public health for instance through joint R&D is yet another area of priority in order to bring about development convergence. Similarly, sharing of experience for skill development and trade in educational services has rich potential for bridging development gap in the region. This could cover a whole range of skill formation across sectors and movement of service providers across countries.

In this regard, a detailed study may be undertaken in the context of India serving as a hub for ASEAN+5 countries, connecting them South Asia, Central Asia, West Asia and the eastern coast of Africa.

d) *Harnessing Indian Economic Dynamism and India's Soft Power*

Policy efforts need to be made to take advantage of Indian economic dynamism from both the angles of India being a demandeur and supplier of goods, services, FDI, technology or knowledge-intensive products and services, human resources etc. India's development partnerships, demographic dividends through skill-development planning and areas such as traditional medicines, audio-visual services, yoga, cuisine, clothing, among others, need to be adequately harnessed by adequate policy initiatives across the ASEAN+6 configuration.

Efforts shout be made to identify the specific modalities of cooperation in these areas.

e) *Undertaking Domestic Economic Reforms*

It would be important for India to deepen its domestic reform efforts in several areas that may include fiscal consolidation, improving manufacturing and value addition, employment generation, infrastructure development, labour market reforms, skill development and so on, in order to make its economic dynamism even more relevant for the East Asian economic integration process.

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Annexure

Table A: Trade and Welfare Gains in RCEP with India's Presence

S. No.	Dimensions of Economic Gains	TTP without India	TTP with India	RCEP without India	RCEP with India
1.	Welfare Gains (US $ Million)	488724	562460	574589	640132
2.	Welfare Gains (% of GDP)	2.16	2.36	5.12	5.14
3.	Trade Gains (US $ Million)	245649	286563	361704	411021
4.	Trade Gains (% of GDP)	1.09	1.20	3.14	3.23
5.	Welfare gains accounted for by Trade gains (%)	50.26	50.95	62.95	64.21

Source: Author's estimates based on CGE simulations (GTAP 8.0)

Note: The results pertain to the final scenario which included tariff liberalization; trade facilitation; reduction in transaction costs; and productivity gains.

Table B:Description of HS 2-digit Codes

HS2	Description
01	Live animals
02	Meat and edible meat offal
03	Fish, crustaceans, molluscs, aquatic invertebrates nes
04	Dairy products, eggs, honey, edible animal product nes
05	Products of animal origin, nes
06	Live trees, plants, bulbs, roots, cut flowers etc
07	Edible vegetables and certain roots and tubers
08	Edible fruit, nuts, peel of citrus fruit, melons
09	Coffee, tea, mate and spices
10	Cereals
11	Milling products, malt, starches, inulin, wheat gluten
12	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes
13	Lac, gums, resins, vegetable saps and extracts nes
14	Vegetable plaiting materials, vegetable products nes
15	Animal,vegetable fats and oils, cleavage products, etc
16	Meat, fish and seafood food preparations nes
17	Sugars and sugar confectionery
18	Cocoa and cocoa preparations
19	Cereal, flour, starch, milk preparations and products
20	Vegetable, fruit, nut, etc food preparations
21	Miscellaneous edible preparations
22	Beverages, spirits and vinegar
23	Residues, wastes of food industry, animal fodder
24	Tobacco and manufactured tobacco substitutes
25	Salt, sulphur, earth, stone, plaster, lime and cement
26	Ores, slag and ash

27	Mineral fuels, oils, distillation products, etc
28	Inorganic chemicals, precious metal compound, isotopes
29	Organic chemicals
30	Pharmaceutical products
31	Fertilizers
32	Tanning, dyeing extracts, tannins, derivs,pigments etc
33	Essential oils, perfumes, cosmetics, toileteries
34	Soaps, lubricants, waxes, candles, modelling pastes
35	Albuminoids, modified starches, glues, enzymes
36	Explosives, pyrotechnics, matches, pyrophorics, etc
37	Photographic or cinematographic goods
38	Miscellaneous chemical products
39	Plastics and articles thereof
40	Rubber and articles thereof
41	Raw hides and skins (other than furskins) and leather
42	Articles of leather, animal gut, harness, travel goods
43	Furskins and artificial fur, manufactures thereof
44	Wood and articles of wood, wood charcoal
45	Cork and articles of cork
46	Manufactures of plaiting material, basketwork, etc.
47	Pulp of wood, fibrous cellulosic material, waste etc
48	Paper and paperboard, articles of pulp, paper and board
49	Printed books, newspapers, pictures etc
50	Silk
51	Wool, animal hair, horsehair yarn and fabric thereof
52	Cotton
53	Vegetable textile fibres nes, paper yarn, woven fabric
54	Manmade filaments

55	Manmade staple fibres
56	Wadding, felt, nonwovens, yarns, twine, cordage, etc
57	Carpets and other textile floor coverings
58	Special woven or tufted fabric, lace, tapestry etc
59	Impregnated, coated or laminated textile fabric
60	Knitted or crocheted fabric
61	Articles of apparel, accessories, knit or crochet
62	Articles of apparel, accessories, not knit or crochet
63	Other made textile articles, sets, worn clothing etc
64	Footwear, gaiters and the like, parts thereof
65	Headgear and parts thereof
66	Umbrellas, walking-sticks, seat-sticks, whips, etc
67	Bird skin, feathers, artificial flowers, human hair
68	Stone, plaster, cement, asbestos, mica, etc articles
69	Ceramic products
70	Glass and glassware
71	Pearls, precious stones, metals, coins, etc
72	Iron and steel
73	Articles of iron or steel
74	Copper and articles thereof
75	Nickel and articles thereof
76	Aluminium and articles thereof
78	Lead and articles thereof
79	Zinc and articles thereof
80	Tin and articles thereof
81	Other base metals, cermets, articles thereof
82	Tools, implements, cutlery, etc of base metal
83	Miscellaneous articles of base metal

84	Nuclear reactors, boilers, machinery, etc
85	Electrical, electronic equipment
86	Railway, tramway locomotives, rolling stock, equipment
87	Vehicles other than railway, tramway
88	Aircraft, spacecraft, and parts thereof
89	Ships, boats and other floating structures
90	Optical, photo, technical, medical, etc apparatus
91	Clocks and watches and parts thereof
92	Musical instruments, parts and accessories
93	Arms and ammunition, parts and accessories thereof
94	Furniture, lighting, signs, prefabricated buildings
95	Toys, games, sports requisites
96	Miscellaneous manufactured articles
97	Works of art, collectors pieces and antiques
99	Commodities not elsewhere specified

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ERIA was established in June 2008 based on the agreement by the East Asia Leaders during the third Summit held in Singapore in November 2007. East Asia Summit consist of National Leaders of ASEAN Member States, Australia, China, India, Japan, Republic of Korea, and New Zealand.

ERIA is an independent international organization based in Jakarta, Indonesia which conducts various research activites working closely with a network of research institutions in The East Asia region. ERIA studies focus on deeepening regional integration, narrowing the development gap, and engendering sustainable development in the region.

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About Research and Information System for Developing Countries (RIS)

Research and Information System for Developing Countries (RIS), a New Delhi based autonomous think-tank under the Ministry of External Affairs, Government of India, is an organization that specializes in policy research on international economic issues and development cooperation. RIS is envisioned as a forum for fostering effective policy dialogue and capacity-building among developing countries on international economic issues. The focus of the work programme of RIS is to promote South- South Cooperation and assist developing countries in multilateral negotiations in various forums. RIS is engaged in the Track II process of several regional initiatives. RIS is providing analytical support to the Government of India in the negotiations for concluding comprehensive economic cooperation agreements with partner countries. Through its intensive network of policy think tanks, RIS seeks to strengthen policy coherence on international economic issues.

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About the Report:

The Report emphasizes on harnessing Indian economic dynamism by increasing its presence in the East and South-east Asian region in a mutually beneficial manner by focusing on manufacturing, trade in goods & services, FDI, R&D, and demographic complementarities. It makes some recommendations towards creating a pan-Asian comprehensive economic integration framework, including RCEP, through a pro-active Indian commercial presence, along with other ASEAN+5 countries.

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