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# Deep and Shallow Integration in Asia: Towards a Holistic Account

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## 1 Introduction

We live in a world of increasing specialisation and division of labour. In the corporate world, firms are globally outsourcing non-core activities, and specialising in core competences. This repositioning allows firms to increase productivity and generate appropriate economic rents. The danger is that firms lose perspective on the determinants of systemic efficiency in their value chains, and on the determinants of dynamic competitive advantage that may include externalities not seen by individual firms. An analogous process can be observed in the research community. We develop increasingly sophisticated and rigorous disciplinary and regional specialties, but in the process lose a holistic perspective on the complex interactions which determine real-world events.

The challenge that we as researchers confront is to operate at a variety of levels, to take advantage of the benefits of specialisation without foregoing the insights arising from a multidimensional perspective. In particular we need to find ways of integrating economy wide and macroeconomic investigation with meso- and micro-level production, household and geopolitical analysis. This is a widely recognised challenge, but one which seldom results in substantive and integrated analyses.

This article has two objectives. The first is empirical, to determine the evolving patterns of regional and global integration within which the Asian Driver economies operate. The second is to develop ways of understanding these emerging trends, drawing on a multilevel and multidisciplinary analysis, and setting out a methodological agenda for future research not just

on the Asian Driver economies, but also on other regional and global issues.

We begin in Section 2 with the empirical agenda describing the evolving integration patterns of the Asian economy. In Section 3, we situate this empirical reality in two analytical frameworks: the economic analyses of shallow and deep integration, and meso/micro analysis of regional clustering and global value chains. In Section 4, we draw together these two strands, posing challenges for a more holistic analysis of the continued dynamism of the Asian Driver economies.

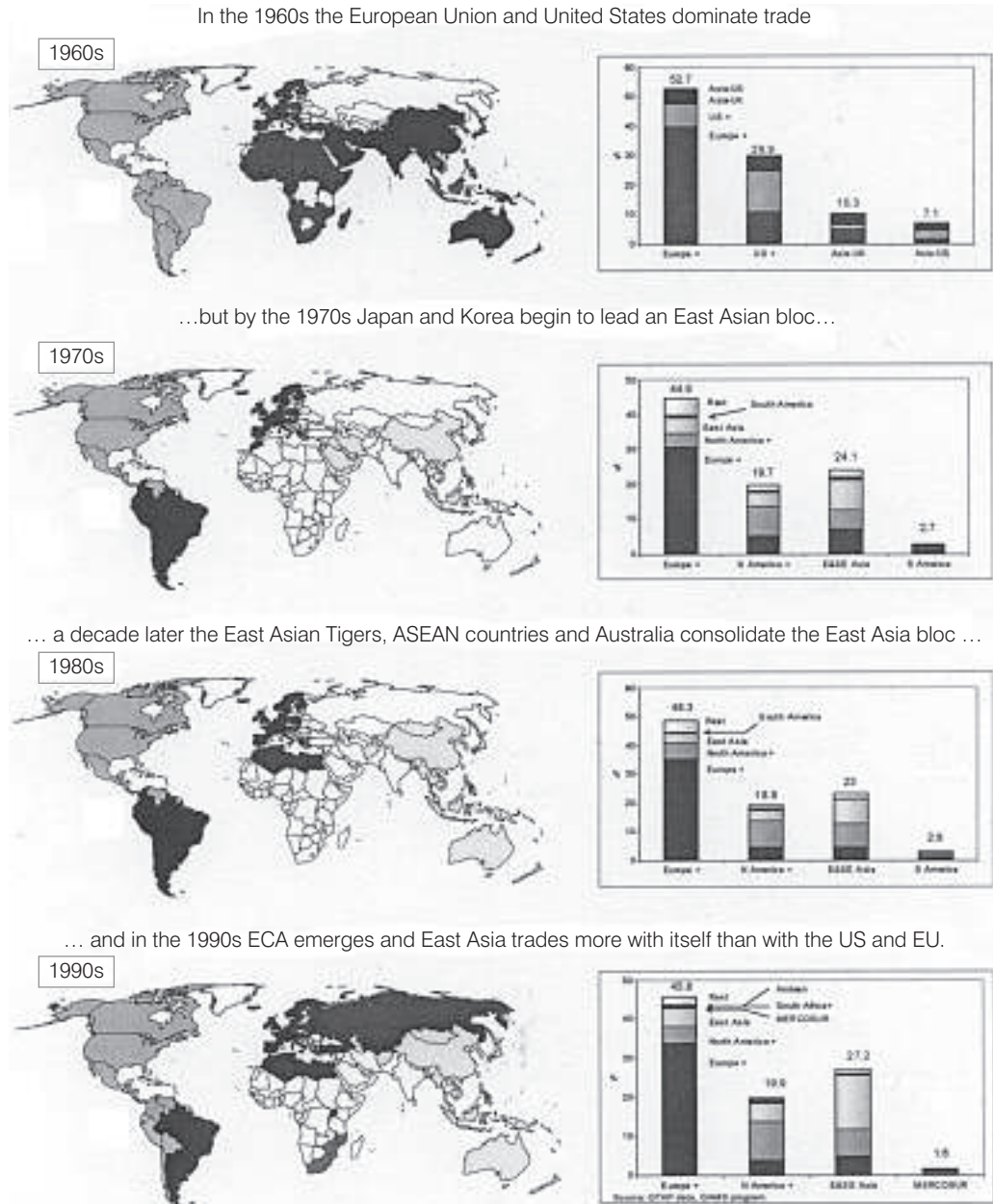
## 2 Asian Drivers in the world economy

Developing countries have experienced sharply different engagement with the world economy in the post World War II period, arising partly from global trends beyond their control and partly from different choices of development strategies. Out of this heterogeneity in economic performance, the Asian Drivers have emerged with a distinct role in the world economy with respect to their composition of trade, integration into regional and global markets (including financial markets as well as factor and product markets) and the role of foreign direct investment. Trends in the world economy relating to regional integration were surveyed last year by the World Bank (World Bank 2005) and we summarise some of their findings below.

### 2.1 Changes in trade patterns in the postwar period

In the past 60 years, there have been major shifts in patterns of world trade, with the emergence of new trading blocs and changes in the relationships

**Figure 1: Mapping the evolution of trading blocs (the data in the boxes denote the share of total world exports)**



**Table 1: Consolidation and diversification: the 1990s**

Europe+	North America+	Mercosur	E&SE Asia	Rest
Switzerland	Central America &	Argentina	Australia	South Africa+
Rest of EFTA	the Caribbean	Brazil	New Zealand	Malawi
Hungary	Colombia	Uruguay	China	Mozambique
Poland	Venezuela	Paraguay+	Hong Kong	Zimbabwe
Rest of USSR	North America		Japan	Peru
Turkey			Korea	Rest of Andean
Rest of North Africa			Taiwan	Chile
Uganda			Indonesia	Bangladesh
EU-15			Malaysia	India
			Philippines	Sri Lanka
			Singapore	Rest of South Asia
			Thailand	Rest of MENA
			Vietnam	Tanzania
			Rest of the world	Zambia
				Rest of South Africa
				Rest of SSA

EFTA – European Free Trade Association; MENA – Middle East North Africa; SSA – Sub-Saharan Africa.

between developing and developed countries. We analyse the trends using trade flows by country of source and destination–trade matrices (World Bank 2005: Ch. 2). An entry in such a trade matrix shows the exports from a country along a row to countries in the columns. Average trade matrices are constructed using three-year averages of trade flows for the late 1960s, 1970s, 1980s and 1990s.<sup>1</sup> The matrices cover all world trade and include 66 “countries”, some of which are regional aggregates. The data is expressed as trade shares by country, i.e. shares of total exports to other countries and shares of total imports from other countries.

A “trade bloc” is defined as a group of countries which trade “more” with one another than with countries outside their group. A mathematical procedure is used to analyse the trade-share data to find groups of countries that have large trade shares within the group, and low trade shares with countries outside the group, using a weighted average of export and import shares.<sup>2</sup> The procedure used finds clusters of countries that have the largest possible average trade share within the cluster and lowest possible shares between clusters – the addition of any other country will lower the average within-cluster trade share and/or raise the average between-cluster trade share. Economically,

considering a “cluster” as a trade “bloc” requires judgement about the size and economic importance of the within-cluster trade relative to trade with other countries. A simple criterion is that, if within-cluster trade is larger than trade with any other cluster, then the cluster can be viewed as a trade bloc. The application of this clustering procedure resulted in the identification of natural trading blocs for each decade from the 1960s to the 1990s. Figure 1 maps the evolution of these trade blocs, and Table 1 provides a list of the countries/regions in the major blocs in the 1990s.<sup>3</sup>

From Figure 1, it is evident that the world trading system in the 1960s reflected a bipolar world, with Europe and the US forming blocs with some of their close neighbours, former colonies, and/or Cold War partners; and with hub-and-spoke links to the rest. Europe and the US dominate their blocs; the other countries both within their blocs and in the two Asian groups trade far more with the US or Europe than among themselves. It was a world characterised by “dependency” between the developed centre and the underdeveloped periphery.

In the 1970s, a realignment of world trade began. The clustering analysis found three distinct blocs and two other clusters, with more fragmentation in trading arrangements. In summary, the 1970s

**Table 2: Macro-totals, world economy, 2001**

	<b>GDP</b>	<b>Regional imports</b>	<b>Regional exports</b>	<b>Import share of GDP (%)</b>	<b>Export share of GDP (%)</b>
Europe	954.7	100.1	103.7	10.5	10.9
North America	1181.1	113.2	76.4	9.6	6.5
Mercosur	80.7	10.7	9.4	13.2	11.7
China	128.4	42.5	48.6	33.1	37.9
Rest of E&SE Asia	589.8	34.9	32.4	6.6	9.6
India	46.4	7.1	6.2	15.3	13.3
Rest of world	122.6	34.9	32.4	28.5	26.4
World	3103.6	347.3	333.3	11.2	10.7
Shares of world totals (%)					
Europe	30.8	28.8	31.1		
North America	38.1	32.6	22.9		
Mercosur	2.6	3.1	2.8		
China	4.1	12.2	14.6		
Rest of E&SE Asia	19.0	11.2	17.0		
India	1.5	2.0	1.9		
Rest of world	3.9	10.0	9.7		
World	100.0	100.0	100.0		

Source: From a global Social Accounting Matrix SAMG based on the GTAP dataset 2001.

Units: US\$bn, 2001. Regional imports and exports, and import/export shares, do not include intra-bloc trade, and include trade in goods and non-factor services.

were characterised by the splintering of the earlier European and US-centred blocs, and increasing diversification of trade by countries formerly closely linked to them. Both the European and North American blocs became more focused on their core countries and immediate peripheries. East and South-East (E&SE) Asia emerged as a new trade bloc; a major force in world markets, with a larger share of total world trade than North America.

In the 1980s, the realignment of world trade continued and the various trade blocs solidified. As in the 1970s, the clustering analysis found three blocs and two less distinct clusters. In addition to the EU and North America, the new E&SE Asian bloc expanded and solidified, with growing links to the US. The within-bloc trade shares for Europe and North America rose, while the European bloc expanded by one region to include Mediterranean countries in North Africa (“rest of MENA”). The North American bloc did not change composition.

The E&SE Asia bloc, however, both consolidated, increasing the share of within-bloc trade, and expanded membership, adding Australia and New

Zealand in the region. The within-bloc trade share remained high, even with increased membership. Its export share shifted toward the US (Figure 1). It also represented a growing share of total world trade.

Detailed analysis of country trade data in the 1980s shows two new blocs starting to form. First, Argentina, Brazil, Paraguay and Uruguay increased their trade shares, anticipating the development of Mercosur. Second, there was increased trade with South Africa by its near neighbours, Malawi and Zimbabwe, indicating the evolution of a Southern Africa bloc centred on South Africa. While the appearance of these two nascent blocs is evident in the data, no other significant blocs seem to be forming within Latin America, Africa, or Asia.

While the European bloc has expanded to include more of its periphery, the North American bloc is essentially stable, and has been since the 1970s. By the 1990s, the bipolar world of the 1960s evolved into a tri-polar world, with the emergence of the E&SE Asia trading giant. This bloc accounts for a larger share of world trade than North America, and diversified its exports over time away from the

**Table 3: Export shares by region, 1998**

	Europe	North America	Mercosur	E&SE Asia	Rest	Total
Europe	73.5	9.3	1.2	10.8	5.2	100.0
North America	19.3	49.4	2.5	24.1	4.6	100.0
Mercosur	27.5	20.9	22.7	16.3	12.6	100.0
E&SE Asia	17.9	25.0	0.9	51.2	4.9	100.0
Rest of world	33.1	20.3	2.2	34.7	9.8	100.0
China	19.3	22.3	1.2	51.8	5.4	100.0
India	34.7	22.1	0.8	28.0	14.4	100.0

Source: GTAP dataset for a three-year average for 1997–9. Per cent shares of exports by destination, including within the bloc, so rows sum to 100.

US. The membership of the 1990s blocs are shown in Table 1.

The emergence of the E&SE Asia trading bloc in a tri-polar world trading system does not signify that the world is evolving into three disparate, autarchic trading blocs. In the 1990s, even with the emergence of a new major trading bloc, between-bloc trade was very large. The emergence of Mercosur and a bloc centred on South Africa indicates that the process of segmentation and new bloc formation in world trade is still evolving. One hypothesis that emerges from this analysis of trading blocs is that the E&SE Asia trading bloc may expand further as India and China grow, with increased trade between them. If South Asia manages to overcome its history of conflict and economic isolation, one might well see an expansion of the E&SE Asia bloc to incorporate South Asia.

The E&SE Asia trading bloc that had emerged by the 1990s can be put into a broader statistical context by comparing gross domestic product (GDP) and trade performance using the regional breakdown as shown in Table 1 above. This is done in Tables 2 and 3:

From Table 2, the tri-polar world shows clearly in terms of shares of global GDP, with Europe and North America receiving 30 per cent and 38 per cent, respectively in 2001, while E&SE Asia, including China, has 23.1 per cent. E&SE Asia and China have strong export surpluses (in goods and non-factor services), while North America has a large deficit. Europe has large extra-regional trade shares compared with North America and E&SE Asia. China has much larger trade shares than India, i.e. over double.

The pattern of inter- and intra-regional trade shows up clearly in Table 3. Europe has by far the largest intra-regional trade, a reflection of the extent of deep integration within the European Union. E&SE Asia has a comparable share of intra-regional trade to North America. China trades the most with its partners in the E&SE Asia region (51.8 per cent), with the rest split largely between Europe and North America. India has a markedly lower share of trade with E&SE Asia compared with China. India's trade is diversified, with the largest share going to Europe, but no strong regional or bloc preference.

## 2.2 Regionalism and regionalisation in Asia

Regional integration has differed enormously across the world in ways that affect trade patterns. We distinguish two patterns of regional integration. The first is that driven by formal government-to-government agreements (e.g. as in the EU or North American Free Trade Agreement – NAFTA), which we term “regionalism”. The second is a less “constructed” and market-driven form of integration, which we refer to as “regionalisation”.<sup>4</sup>

East Asia has followed a regional strategy based on most-favoured-nation (MFN) liberalisation, but without any formal cooperation agreements throughout most of the period. The Asia-Pacific Economic Cooperation (APEC) agreement embodies the principles of a non-discriminatory non-preferential approach to trade liberalisation. This trajectory is closer to regionalisation than regionalism (as defined above).

East Asia's increasing trade and investment linkages are due in part to unilateral reforms, which

started earlier than in other regions, and the fragmentation and relocation of production processes that has arisen since the mid-1980s. East Asia's regional liberalisation strategy led to lower average tariff rates than most of the other regions throughout the period. In addition, the periods of relocation of production processes coincided with periods of increased foreign direct investment (FDI) into the countries of relocation. East Asian net inflows of FDI as a per cent of GDP are higher than any region from the mid-1980s until the late-1990s.

Even without the support of formal regional trading agreements, countries in East Asia achieved lowered barriers to intra-regional trade, and a "virtuous circle" or synergistic interaction between open development strategies, increased trade both within the region and with world markets, diversification of production and trade, increased FDI and growth.

South Asia reflects a somewhat different trajectory from East Asia, with a greater emphasis placed on formal agreements ("regionalism") than market-driven integration ("regionalisation"). It adopted highly protectionist regimes upon its independence in the late 1940s, limiting trade. Unilateral liberalisation and domestic reforms that were gradually introduced, along with a rapid expansion in garment/textile exports, led to high growth rates for exports in the 1990–2000 period and an increasing share of exports in GDP, but from a very low base. South Asian exports as a share of the world trade have remained low throughout the 1980–2000 period.

South Asia has maintained high levels of average applied tariffs, even compared with the import-substitution industrialisation period of other regions. The region is also not integrated in world capital markets. Net inflows of FDI, although higher than the early 1980s, is the lowest of all the regions.

Recently, political considerations, as well as concern about the expansion of trading arrangements in other regions, have led to an increase in the number of trade agreements in the region, the latest of which is the South Asia Free Trade Area (SAFTA) Agreement (January 2004). In the 1980–2000 period however, these trade agreements have had a minimal impact on regional trade, given continuing high levels of protection, a lack of meaningful concessions, domestic political problems and hostility between India and Pakistan.

In summary, the differences between India and

China are significant. China is a strong member of the E&SE Asia bloc, with high intra-bloc trade shares, while India is not linked to a particular bloc and has lower trade shares. These differences reflect the fact that India lags China in opening to world trade, but also that India has not sought to join regional trade agreements or to engage in the kinds of informal deep integration evident in E&SE Asia.

### 3 Empirical reality through a theoretical lens

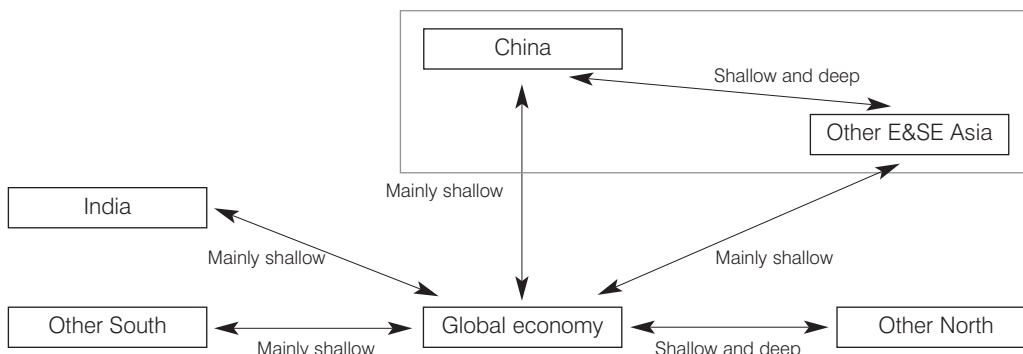
What theoretical lens can we use to view this empirical reality of growing trading blocs and distinctive patterns of regionalisation and regionalism in Asia? We suggest that three sets of literature provide insights into this process. Each is drawn from a different tradition and works at different levels. Each brings particular insights to the analysis. Collectively, they provide a more holistic framework than any single literature.

#### 3.1 Shallow and deep integration

Recent years have seen a series of trade and macroeconomic analyses which have drawn attention to what has been termed "intra-industry trade" (Finger 1975), "vertical specialization" (Hummels *et al.* 1998) and "trade disintegration" (Feenstra 1998). Based on detailed analysis of trade trends, it has zeroed in on the faster rate of growth of trade in intermediates than in final products.

One way to measure the role of imported intermediates in trade is to use an index of vertical specialisation, which measures the share of the cost of an export accounted for by imported intermediate inputs; either directly as imported inputs in the exporting sector or indirectly through the use of imported inputs in the domestic production of intermediate goods used by the exporting sector.<sup>5</sup> The data indicate the increasing importance of "production chains", whereby production processes are fragmented and divided across countries. Intermediate inputs are traded and transformed into more processed intermediate inputs, which are moved across borders to the next stage in production. Sometimes this trade occurs within a single firm with plants in many countries, and sometimes at arm's length, with separate firms specialising in particular parts of the production process. This phenomenon is especially important in East Asia, especially in intra-regional trade, and least important in South Asia and sub-Saharan Africa (SSA).

**Figure 2: Shallow and deep integration**



Vertical specialisation is one aspect of a broader process of “deep” integration, in contrast to “shallow” integration. By shallow integration, we mean integration that is characterised by the lowering of barriers (mainly tariffs) to the flow of goods and services across international borders, through either unilateral liberalisation, a regional trade agreement (RTA), or global negotiations under the auspices of the World Trade Organization (WTO). By deep integration, we mean the creation of a “common marketplace” across countries, that permits enterprises to operate easily across national borders and to integrate production in regional value chains. In addition to lowering tariffs, deep integration involves harmonising market institutions, standards and legal norms such as commercial practices, administrative and contract law and regulation of labour markets and financial investment. Such integration can be part of a formal trade agreement, usually an RTA, or evolve informally as economies deepen trade relations. A key characteristic of deep integration is a potential synergy between increased trade, increases in productivity, and growth.<sup>6</sup>

The different roles of the Asian Drivers, in terms of shallow and deep integration, are shown schematically in Figure 2. China is depicted as linked through both shallow and deep integration to other countries in E&SE Asia. As a whole (including China), the E&SE Asian region is linked to the global economy through shallow integration. In contrast to China, India’s regional and global links are mainly through shallow integration. The other North region is linked through shallow integration (e.g. US and the EU), while the EU as a bloc is characterised by deep integration.

### 3.2 Clustering, externalities and increasing returns to scale<sup>7</sup>

The observed reality of much economic dynamism in the postwar period has been as much about regions (Emilia Romagna in Italy; the M4 Corridor in the UK; Jutland in Denmark; Route 28 in Boston; and Silicon Valley in California are some examples) as about economies. In developing an understanding of this regional dynamism, economists, such as Krugman, drew on the work of Alfred Marshall’s earlier analysis of nineteenth century British industrialisation (Krugman 1991). The explanation of the reality of clustered industrial districts was largely explained in terms of positive externalities, spillovers, in factor (especially labour) and product markets. Much of economic analysis has ignored these positive locational spillovers.

More recently, it has come to be recognised that the economic dynamism of clustered industries reflected not only unintended externalities between enterprises, but also the conscious attempts by firms and by supportive agencies to foster collaboration in a competitive environment. Schmitz, for example, argued that the sustainable dynamism of local clusters often depended on what he termed “collective efficiency”, that is: the supplementation of locational externalities with purposeful coordinating and cooperative ventures by local firms, local governments and other agents in the regional system of integration (Schmitz 1998; Braczyk *et al.* 1998). More recently, it has come to be recognised that innovation, particularly in knowledge-intensive activities, requires face-to-face contact so that technological change is often driven as much by locality (innovators like to live

in pleasant regions such as Silicon Valley) as being a consequence of technological advance (see Storper and Walker 1989 for an early development of this idea). A common culture and language matter as well, decreasing imperfections in communication.

The clear message which comes from this literature is that locality matters for reasons of efficiency. Co-located enterprises, working with some form of coordination, and interacting with effective regional systems of integration, provide powerful external economies and foster rapid innovation. In a world of rising energy prices and communication systems that are often beset by congestion and security problems, it is likely that these locational economies will be sustained in the future.

### 3.3 Production integration in global value chains

The “internationalisation” of the late nineteenth century reflected a growth in trade in complementary products. The role of low-income economies in this division of labour was as a provider of commodities and material inputs. In contrast, the “globalisation” of the second half of the twentieth century saw a division of labour based on the ever-finer decomposition of production into a series of components, sub-components, sub-sub-components and services (Kaplinsky 2005).

The recognition of this latter phase of globalisation began with the work on the New International Division of Labour, emerging during the 1970s (Helleiner 1973; Frobel *et al.* 1980) and the role which global buyers were playing in facilitating access to global markets. But, more recently, the growth of these integrated production systems has been more clearly recognised in relation to the advance of global value chains (Gereffi and Kaplinsky 2001). These chains not only involve a series of input-output relationships, but more importantly, are subject to chain-coordination and governance (Humphrey and Schmitz 2001). Key firms in the chain, sometimes major buyers in “buyer-driven chains”, at other times technology-holders in “producer-driven chains”, take responsibility for the establishment and running of very sophisticated global value chains involving many firms in many different countries.

These chains are probably most complex in the auto and electronics industries, but are pervasive in many consumer goods sectors such as clothing and toys. In a more recent development, global

value chains often involve what Gereffi refers to as ‘triangular production networks’ (Gereffi 1999). These are global production networks which are coordinated by chain governors in one economy, for lead-buyers in a second economy. The major drivers of these chains have been in Hong Kong and Taiwan, predominantly organising production in China and in its region, for buyers in the US and the EU. Allied to this has been the growth of contract manufacturers in the East Asian region, working within industry-defined standards, and this has been especially important in the electronics industries (Sturgeon 2002).

Much of Asian manufactured exports emerge from these regional chains, often coordinated by triangular production coordinators in Hong Kong and Taiwan. Thus, what often emerges from China as a “Chinese product” is in fact a product assembled in China, using capital goods from Japan or Korea, and involving intermediate inputs from throughout the region. As a consequence of these imports of raw materials, equipment and intermediate inputs (much of which is processed for exports to other regions), China’s trade deficit with East Asia grew from US\$4bn in 1990 to US\$40bn in 2002, and the region’s share of China’s merchandise imports grew from 55 to 62 per cent in the same period (Lall and Albaladejo 2004).

The work on “regional” externalities and value chains indicates that potential externalities from regional integration extend to include collections of countries.<sup>8</sup> Deep integration across trade blocs (such as the EU, North America and the E&SE Asia bloc) is important for the participants largely because of potential links to productivity gains that go beyond standard analysis of comparative advantage, to include beneficial synergy between increased trade, increases in productivity and growth. There are a number of potential “causal chains”, whereby deep integration might generate externalities and productivity increases. Standard trade theory analysis looks for efficiency gains through better allocation of resources to capitalise on the comparative advantage. In contrast, the process of deep integration appears to generate beneficial externalities, facilitating potential returns to scale arising from fine specialisation. These gains are “Smithian” in that they arise from expanding the extent of the market facing firms. Deep integration yields three different sorts of such scale economies or Smithian productivity gains through:



- trade-driven market expansion
- specialisation within value chains
- externalities arising from harmonising standards, regulations and market institutions.

The potential gains from regional integration and proliferation of value chains are clearly significant, but difficult to study. They are outside the domain of analysis of the core of modern trade theory, including multi-country trade models that are based on neoclassical or neoclassical-structuralist general equilibrium theory. While “new trade theory” and “new regionalism” attempt to incorporate some of these linkages, there is as yet no widely agreed theoretical framework in economics for analysing these mechanisms. In this environment, it is best to proceed by approaching the issues at many levels of analysis, including assembling case studies, and widening the analytic net to include more than the main body of standard economics.

#### 4 Towards a holistic account

We have observed a complex empirical world of locational agglomeration. Since the end of World War II, a number of regional blocs have evolved. It began with the US and the EU blocs dominating trade in the 1960s, and thereafter with a growing presence of an Asian trading bloc. Most recently, this Asian trading bloc has been driven by two newly dynamic and very large Asian Driver economies, China and India. Within this Asian trading bloc, we can observe two very different models: the market-driven deep integration of China and its trading partners, and the more internally integrated shallow-integration production system emanating from India.

This picture shows up at the economy wide and macro-level, as summarised in Section 2 above. The determinants of these patterns of regional integration, and the source of their dynamism in global markets, can be better understood by linking the analysis of deep integration as described with the meso-level clustering studies and the micro-level global value chain approach adds an understanding of the dynamics driving much of this regional integration. It explains why it is that China shows up as an exemplar of deep integration; its integration in regional value chains, often coordinated by triangular production networks based in Hong Kong and Taiwan, and lubricated

by multinational corporations sourcing from the East Asian region as a whole rather than China as an economy. By contrast, India appears to be a much more standalone production platform. Its participation in global product markets (in the manufacturing sector at least) appears to be much more like the internationalisation through trade in complementary products of the nineteenth century than in the fragmented globalised value chains of the late twentieth century.

The illumination provided by multi-level research is not a one-way street of micro- and meso-level analysis informing macro-level analysis. The unravelling and analysis of the macro trends provides important insights into the more detailed primary analysis, not just showing where the empirical investigation is best focused, but also how larger regional dynamics are likely to affect the future flows of productive resources. Moreover, the benefits of cross-disciplinary and multi-level analysis do not end here. Missing from our story has been the role played by geopolitical and cultural factors. For example, to what extent does the rivalry between China and Taiwan on the one hand, and India and Pakistan on the other, influence the rate and nature of their participation in their subregional economies? How important are ethnic ties in the construction of deep integration; to what extent are Chinese ethnic minorities involved in the construction of regional value chains?

The economic performance of E&SE Asia is impressive, and associated with expanded and deeper regional integration. In addition, India's improved economic performance is also clearly associated with opening to world markets and expanding the role of international trade – although whether the links are causal, and which way causation runs, are still controversial issues.<sup>9</sup> The potential benefits of deep integration are evident, but we far from understand how best to achieve them.

The insights of an holistic and integrative analysis are not limited to the research agenda, but have relevance to the policy environment as well. There are many questions that need to be addressed, and knowledge gaps that require research. What initial conditions are required to achieve deep integration, and ensure that it is beneficial? Deep integration requires supportive institutions, including political and legal systems – elements of good governance. It also requires levels of infrastructure, including

transport and communications that facilitate the emergence of production segmentation, value chains, and associated increases in productivity. Market organisation matters, in order to ensure that the gains in productivity accrue to the country or region, rather than just to downstream producers and distributors. Whether the poorest countries can successfully engage in deeper integration, with associated benefits, and how quickly, are also important research questions.

Finally, the restructuring of the world trading

system that is accompanying the emergence of the Asian Drivers has serious impacts on other developing countries. Markets are expanding, but many countries are losing markets in the restructuring. Trade is not a zero-sum game, with every winner implying a loser, but the benefits of trade are not distributed equally, and there are losers. An important part of any work programme studying the impact of the emergence of the Asian Drivers must focus on the adjustments required in the rest of the world, especially the poorer countries.

## Notes

1. The data came from the UN COMTRADE system. The data have been assembled and cleaned by the Global Trade and Analysis Project (GTAP) at Purdue University as part of their work to develop a comprehensive data bank of world trade.
2. The mathematical procedure specifies bloc classification as a problem in integer programming. The procedure determines optimal zero-one assignment of countries to different trade blocs, maximising within-bloc trade shares and minimising between-bloc shares. The method was developed and implemented in the GAMS programming language by Alex Meeraus and Sherman Robinson.
3. See Ch. 2 of World Bank, *Global Economic Prospects* (2005).
4. See Schiff and Winters (2003) and Anderson and Blackhurst (1993) for discussions of regionalism.
5. Given data limitations, measures of vertical specialisation are imperfect and are not independent of the level of

disaggregation used. For example, a sector which produces both for exports and domestic markets, which is common given the aggregation available for sectoral data, is assumed to have the same production technology, particularly use of imported intermediates, for goods sold in either market. Even with these limitations, the measures provide a picture of the changing role of trade in intermediates. See World Bank (2005) for a discussion of these measures and presentation of the results for a selection of countries for which there are data.

6. For a discussion of deep integration and how “new trade theory” considers it, see Burfisher *et al.* (2004). Also see Evans *et al.* (2005) and Keller (2002).
7. For a helpful brief summary of this literature, see Schmitz (2004).
8. See Burfisher *et al.* (2004) and Evans *et al.* (2005).
9. See Winters (2004) and Baldwin (2003) for surveys of this issue.

## References

- Anderson, K. and Blackhurst, R. (eds), 1993, *Regional Integration and the Global Trading System*, New York: St Martin's Press
- Baldwin, R., 2003, 'Openness and growth: what's the empirical relationship?' National Bureau of Economic Research, *Working Paper* w9578
- Braczyk, H.J., Cooke, P. and Heidenreich, M. (eds), 1998, *Regional Innovation Systems*, London: UCL Press
- Burfisher, M., Robinson, S. and Thierfelder, K., 2004, 'Regionalism: old and new, theory and practice', in G. Anania, M.E. Bohman, C.A. Carter and A.F. McCalla (eds), *Agricultural Policy Reform and the WTO: Where Are We Heading?*, Northampton, MA: Edward Elgar
- Evans, D., Gasiorek, M., Holmes, P., Iacovone, L., Jackson, K., Robinson, S. and Rollo, J., Department of Economics, University of Sussex European Institute, University of Sussex, 2005, 'A framework for evaluating regional trade agreements involving developing countries', draft report to DFID, March
- Feenstra, R.C., 1998, 'Integration of trade and disintegration of production in the global economy', *Journal of Economic Perspectives*, Vol 12, No 4: 31–50
- Finger, J.M., 1975, 'Tariff provisions for offshore assembly and the exports of developing countries', *The Economic Journal*, June: 365–71
- Frobel, F., Heinrichs, J. and Kreye, O., 1980, *The New International Division of Labour*, Cambridge: Cambridge University Press
- Gereffi, G., 1999, 'International trade and industrial upgrading in the apparel commodity chain', *Journal of International Economics*, Vol 48 No 1: 37–70
- Gereffi, G. and Kaplinsky, R., 2001, 'The value of value chains: spreading the gains from globalisation', *IDS Bulletin*, Vol 32 No 3: 30–40

- Helleiner, G.K., 1973, 'Manufactured exports from less-developed countries and multinational firms', *The Economic Journal* 83: 21–47
- Hummels, D., Ishii, J. and Yi, K.M., 1998, 'Vertical specialization and the changing nature of world trade', *Economic Policy Review*, New York: Federal Reserve Bank: 79–99
- Humphrey, J. and Schmitz, H., 2001, 'Governance in global value chains', in G. Gereffi and R. Kaplinsky (eds), 'The value of value chains: spreading the gains from globalisation', *IDS Bulletin*, Vol 32 No 3: 19–29
- Kaplinsky, R., 2005, *Globalization, Poverty and Inequality: Between a Rock and a Hard Place*, Cambridge: Polity
- Keller, W., 2002, 'Trade and the transmission of technology', *Journal of Economic Growth*, Vol 7 No 1: 5–24
- Krugman, P., 1991, *Geography and Trade*, Cambridge, MA: MIT Press
- Lall, S. and Albaladejo, M., 2004, 'China's competitive performance: a threat to East Asian manufactured exports?', *World Development*, Vol 32 No 9: 1441–66
- Schiff, M. and Winters, A.L., 2003, *Regional Integration and Development*, Washington, D.C.: World Bank
- Schmitz, H., 2004, 'Globalized localities: Introduction', in H. Schmitz (ed.), *Local Enterprises in the Global Economy: Issues of Governance and Upgrading*, Cheltenham: Edward Elgar
- Schmitz, H., 1998, 'Collective efficiency and increasing returns', *Cambridge Journal of Economics*, Vol 23 No 4: 465–83
- Storper, M. and Walker, R., 1989, *The Capitalist Imperative: Territory, Technology and Industrial Growth*, Oxford: Basil Blackwell
- Sturgeon, T., 2002, 'Modular production networks: a new American model of industrial organization', *Industrial and Corporate Change*, Vol 11 No 3: 451–96
- Winters, L.A., 2004, 'Trade liberalization and economic performance: an overview', *The Economic Journal*, 114 (February): F4–F21
- World Bank, 2005, *Global Economic Prospects, 2005: Trade, Regionalism, and Development*, Washington, D.C.: World Bank