

# Production-Sharing in East Asia

## Implications for India

*Despite beginning the industrialisation process ahead of most of east Asia, India's manufactured exports as a whole have stagnated when benchmarked against east Asia. While its east Asian neighbours have been able to move rapidly from manufactured labour-intensive commodities, India has largely been left out of the production-sharing process. If India is to become a manufacturing powerhouse like China and most of the other middle-income countries in east Asia, it needs to take steps to integrate more effectively and intensively with the rest of east Asia and become an important participant in the regional and global division of labour.*

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Intraregional trade in east Asia is increasingly characterised by 'production sharing', defined as the decoupling of previously integrated goods into their constituent parts, components and accessories (PCAs) which in turn are distributed across countries on the basis of comparative advantage.<sup>1</sup> Other terms sometimes used in the international economic literature to describe this phenomenon include 'intra-product specialisation', 'international product fragmentation', 'delocalisation', 'disintegration of production', 'Heckscher-Ohlin (HO) plus production fragmentation', 'slicing the value chain' and 'super-specialisation'.<sup>2</sup> International business literature has used terms such as 'global commodity chains' or 'fragmentation of value chains' to describe this phenomenon. This sort of cross-border multi-staged production process has in turn been facilitated immensely by major improvements in transportation, coordination and information communication technologies (ICTs).

While production-sharing has been used extensively in commodity trade (consumer goods like garments, footwear, toys, handicrafts) for decades,<sup>3</sup> it is now being applied more intensively to trade in airlines, computers, semiconductors, automobiles, and many other products.<sup>4</sup> This said, there are some important distinctions between 'old' or 'buyer-driven' production sharing and 'new' or 'producer-driven' production-sharing (Table 1).

Table 2 reveals that growth of PCA trade involving developing economies has

outpaced growth in manufactured trade in general and aggregate trade as well. Thus PCA exports involving developing economies rose from 13.2 per cent of total exports in 1981-90 to 18.5 per cent in 1990-2000. The share of developing economies in global PCA exports increased from a mere 4 per cent in 1981 to 21 per cent in 2000. As noted by the World Bank,<sup>5</sup> developing economies' involvement in global production networks has offered them the opportunity to raise their share of the world's fastest-growing export products (transistors and semiconductors, computers, and computer and office machine parts) from 2.4 per cent in 1980 (about the same as the share of those products in global exports) to 16.3 per cent by 1998 (almost 7 percentage points higher than the share of such products in global exports).

Nonetheless, trade of PCAs involving developing economies is highly concentrated, far more than total trade or manufactured goods trade in general (Figure 1). According to the World Bank,<sup>6</sup> nine of the top 10 developing economies are from east Asia (Brazil being the exception). South Asia, sub-Saharan Africa and west Asia and North Africa together account for only 2 per cent of developing economies' PCA exports (and two-thirds of that involves just two countries, India and South Africa), compared with 11 per cent of developing economies' total manufactured exports.

To a large extent this concentration of PCA trade in a handful of countries in east Asia is not altogether surprising, being a reflection of the concentration of export-oriented foreign direct investment (FDI)

in core countries. After all, production-sharing has been facilitated immensely by the expansion of the global operations of transnational corporations (TNCs) and consequent FDI. According to the UNCTAD,<sup>7</sup> global markets increasingly involve competition among production systems that are organised by TNCs. As it notes:

While retaining their core competencies, TNCs are setting up international production systems on the basis of corporate strategies that seek to obtain the optimal configuration of their production process by spreading production to locations that offer significant advantages in production costs and access to third markets (p 141).

This is not to suggest that cross-border production sharing always requires TNCs. In cases where there are no obvious benefits from 'internationalisation', outsourcing could also be conducted at 'arm's length' between independent actors, i.e. separation of ownership. TNCs play a major role in production-sharing involving semiconductors, automobiles and the like, while arm's length transactions are more common in the case of textiles and footwear and related products (Table 1).

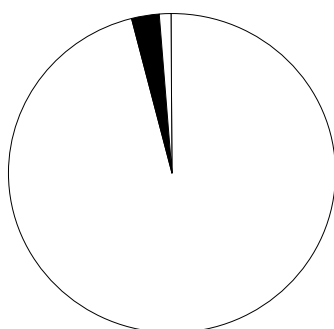
The importance of production-sharing is that by reducing the costs of production of a product it makes the entire set of countries that participate in the integrated production system more attractive as export markets and investment destinations - a win-win arrangement for all participants. Lower income developing economies are not only able to gain a comparative advantage in lower-end light industries, but also in the lower-end production stage of higher-tier industries. Middle and higher income developing countries are able to graduate to higher ends of the value added chain, i.e. more advanced stages of the Original Equipment Manufacturing (OEM) and eventually into Original Design Manufacturing (ODM). Countries could also move horizontally, e.g. improve product quality and serve higher value added market segments. This so-called Original Brand Manufacturing (OBM) essentially involves moving from selling under a foreign label to developing and selling under their own label, hence allowing them to capture brand name rents. Hong Kong has done this effectively in the case of apparels, with many labels being produced by Hong Kong brands. Other economies in the Asia-Pacific region are developing their own 'brand names' in computers and electronics.

On the plus side, the splitting of goods into finer sub-parts which are then

**Figure 1: Developing Countries' Share of Global Parts, Components and Accessories, 1981 and 2000**

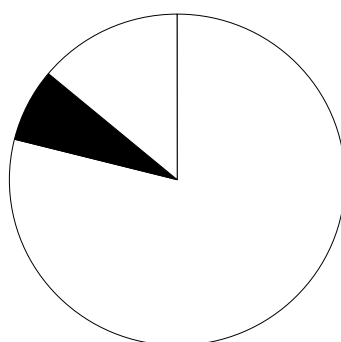
(As a per cent of total trade)

Per cent share of PCA trade, 1981



- High income countries (96 per cent)
- Developing east Asia (3 per cent)
- Other developing countries (1 per cent)

Per cent share of PCA trade, 2000



- High income countries (79 per cent)
- Developing east Asia (7 per cent)
- Other developing countries (14 per cent)

Source: World Bank, *Global Economic Prospects and the Developing Countries 2003*, The World Bank, Washington, DC, 2003, Chapter 2.

outsourced is a means of including more countries in the production network (i.e., multiplication of supplier networks). On the minus side, in view of the footloose nature of such production, there are well-founded concerns that small variations in costs could lead to large swings in comparative advantage thus necessitating large and sudden domestic adjustments.<sup>8</sup> Jagdish Bhagwati<sup>9</sup> refers to this phenomenon as 'kaleidoscope' or 'knife-edge' comparative advantage. Countries therefore need to be ever aware of their relative cost-competitiveness in the short run as well as ensure constant industrial upgrading over time so as to remain important cogs in the larger regional or global production system. As the UNCTAD notes:<sup>10</sup>

In locational decision-making... production costs are always evaluated relative to the efficiency and productivity of a location. This point is often overlooked in discussions of comparative costs, but it is particularly crucial in that a major focus of TNCs' geographic allocation of value-chain activities is to achieve systemic efficiencies across their entire international production systems. A given location, therefore, is judged by how cost-efficiently it performs a given function in coordination with

functions located elsewhere, and not merely in isolation (pp 124-25).

### Importance of Regional Trade Arrangements (RTAs)

The growing significance of production-sharing emphasises the need for governments seeking export-oriented FDI "to go beyond trade and FDI policies and assess their locational advantages in the international production system context".<sup>11</sup> It is in this sense that regional integration efforts that lower the costs of cross-border

transactions can be an especially attractive tool to promote trade, FDI and technological progress.<sup>12</sup> Indeed, it is not surprising that Japanese and other businesses have been among the most enthusiastic proponents of the ASEAN Free Trade Area (AFTA) and ASEAN Investment Area (AIA).

To be sure, such regional trade agreements (RTAs) are clearly second-best solutions, multilateral trade liberalisation being first best. Given the second best nature of RTAs, neither theory nor empirics is able to offer definitive insight into whether there are any net benefits from a country being a member of such trade alliances. Nonetheless, it is almost certain that a country that is *not* a participant in any of the new RTAs will be adversely impacted due to trade and investment diversion and possible adverse movements in their terms of trade. Thus, there is a strong case for joining RTAs for 'defensive reasons'.<sup>13</sup> In other words, "RTAs are like street gangs: you may not like them, but if they are in your neighbourhood, it is safer to be in one".<sup>14</sup> It is therefore imperative that developing economies that are hitherto not part of the new regionalism look to consciously establish such linkages with other high-income countries. For such liberalising economies, 'open' RTAs with higher income liberal trade partners may strengthen the hand of exporters and other pro-trade forces, and thus the political

**Table 2: Growth of Exports of Parts, Components and Accessories Involving Developing Economies, 1981-2000**

(Average annual percentage change in US dollars)

Type of Export	1981-90	1990-2000
Manufactured exports	10.6	7.2
PCA exports	12.1	9.6
Memo:		
Share of PCA in total exports	13.2	18.5

Source: World Bank, *Global Economic Prospects and the Developing Countries 2003*, The World Bank, Washington, DC, 2003, Chapter 2.

**Table 1: Main Characteristics of Producer-Driven versus Buyer-Driven Production-Sharing**

	Producer-Driven Production-Sharing	Buyer-Driven Production-Sharing
Drivers	Industrial capital	Commercial capital
Core competencies	R and D, production	Design, marketing
Barriers to entry	Economies of scale	Economies of scope
Economic sectors	Consumer durables, intermediate goods, capital goods	Consumer non-durables
Typical industries	Automobiles, computers, aircraft, semiconductor	Apparel, footwear, toys
Ownership of manufacturing firms	TNCs	Local firms, predominantly in developing economies
Main network lines	Investment-based	Trade-based
Predominant structure	Vertical	Horizontal

Source: Based on Gereffi, 'Shifting Governance Structures in Global Commodity Chains, with Special Reference to the Internet', *American Behavioural Scientist*, 44, 2001, pp 1616-37.

support for further liberalisation.

At the very least, such RTAs should be geared towards trade facilitating measures such as streamlining and standardising customs procedures and providing timely and relevant information on cross-border trade and investment opportunities. Trade facilitation has been among the more significant areas of economic cooperation pursued by the Asia Pacific Economic Cooperation (APEC) Forum.<sup>15</sup> It is important that India pay equal attention to such trade facilitation measures. From the perspective of promoting trade, FDI and overall development, APEC should be encouraged to open membership to other countries like India which have shown a willingness to enhance their degree of integration with the global economy in a market-consistent manner. Unfortunately, this appears unlikely in the near-term in view of the self-imposed moratorium on new members by APEC.<sup>16</sup> Absent this alternative, India's current focus on becoming a full-fledged member of the ASEAN-Plus-Three grouping as well as a series of bilateral and sub-regional RTAs with like-minded east Asian countries (Thailand, Singapore and others) is especially critical and should be pursued with conviction.

### Concluding Remarks

Production sharing is not limited to trade in goods as TNCs have fragmented and dispersed various services functions worldwide to take advantage of marginal differences in costs, resources, logistics and markets. In the Asia-Pacific region, Singapore and India have benefited significantly as many TNCs have used the former as a regional headquarter (RHQ) given the city state's excellent infrastructural quality, political stability, low tax regime and strategic location; while they are increasingly using the latter for their backroom and related operations in view of the ready availability of excellent, low cost, high quality skilled labour.<sup>17</sup>

However, despite beginning the industrialisation process ahead of most of east Asia, India's manufactured exports as a whole have stagnated when benchmarked against east Asia. While its east Asian neighbours have been able to move rapidly from manufactured labour-intensive commodities, India has largely been left out of the production-sharing process.<sup>18</sup> If India is to become a manufacturing powerhouse like China and most of the other middle-income countries in east Asia, it needs to take steps to integrate more effectively and intensively with the rest of east Asia and

become an important cog in the regional and global division of labour. **PPV**

### Notes

- 1 The term 'production-sharing' was coined by F Ng and A Yeats, 'Production Sharing in East Asia: Who Does What for Whom, and Why?', Policy Research Working Paper No 2197, The World Bank, 1999.
- 2 For references, see R Rajan, 'Economic Globalisation and Asia: Trade, Finance and Taxation', *ASEAN Economic Bulletin*, 18, 2001, pp 1-11 and R Rajan, *International Economic Policy Issues in Asia: Essays on Globalisation, Finance and Trade*, Singapore: World Scientific Press, forthcoming, 2003.
- 3 For instance, see G Gereffi, 'International Trade and Industrial Upgrading in the Apparel Commodity Chain', *Journal of International Economics*, 48, 1999, pp 37-70 and G Gereffi, 'Shifting Governance Structures in Global Commodity Chains, with Special Reference to the Internet', *American Behavioural Scientist*, 44, 2001, pp 1616-37.
- 4 In line with the increasing significance of production sharing, there is a growing body of analytical literature on the subject. See the collection of papers in S Arndt and H Kierzkowski (eds), *Fragmentation: New Production Patterns in the World Economy*, Oxford University Press, New York, 2003.
- 5 World Bank, *Global Economic Prospects and the Developing Countries 2003*, The World Bank, Washington, DC, Chapter 2.
- 6 *ibid.*
- 7 UNCTAD, *World Investment Report 2002*, Oxford University Press, New York and Geneva, 2002.
- 8 After all, the whole basis of production sharing has been to exploit factor price differentials.
- 9 J Bhagwati, 'The Global Age: From a Sceptical South to a Fearful North', *The World Economy*, 20, 1997, pp 259-83.
- 10 UNCTAD, 2002, op cit.

- 11 Quoted in UNCTAD, 2002, op cit.
- 12 This issue is explored analytically by S Arndt, 'Regional Enterprise in Preference Areas' in W Fuchs and O Horvath (eds), *Wirtschaftsstandort Oesterreich: Von der Theorie zur Praxis*, Ministry for Economic Affairs and Labour, Vienna, 2001, and S Arndt, 'Production Networks in an Economically Integrated Region', *ASEAN Economic Bulletin*, 18, 2001, pp 24-34.
- 13 This issue is elaborated upon in J Whalley, 'Why Do Countries Seek Regional Trade Agreements?' in J Frankel (ed), *The Regionalisation of the World Economy*, Chicago University Press, Chicago, 1996.
- 14 Quoted in J Crawford and S Laird, 'Regional Trade Agreements and the WTO', *North American Journal of Economic and Finance*, 12, 2001, pp 193-211.
- 15 For instance, see J Wilson, C Mann, Y P Woo, N Assanie and I Choi, 'Trade Facilitation: A Development: Perspective in the Asia Pacific Region', mimeo, October 2002.
- 16 This of course runs counter to APEC's much-touted goal of 'open regionalism'.
- 17 For a discussion of India's emerging strength in information and communication technologies (ICT) services, see R Rajan and R Sen (2003). 'India's Decade Long Trade Reforms: How Does It Compare with Its East Asian Neighbours?' in R Rajan, *Economic Globalisation and Asia: Essays on Finance, Trade and Taxation*, World Scientific, Singapore, forthcoming, 2003, and R Rajan and R Sen, 'A Decade of Trade Reforms in India: How It Compares with East Asia', *World Economics*, 3, 2002, pp 1-14. For a discussion of Singapore's services sector, see C F Findlay and A Sidorenko, 'Opportunities and Challenges in Singapore's Services Trade' in R Rajan (ed), *Sustaining Competitiveness in the New Global Economy: A Case Study of Singapore*, Edward Elgar, Cheltenham, forthcoming, 2003.
- 18 See R Rajan and R Sen, 2003, op cit, and R Rajan and R Sen, 2002, op cit.