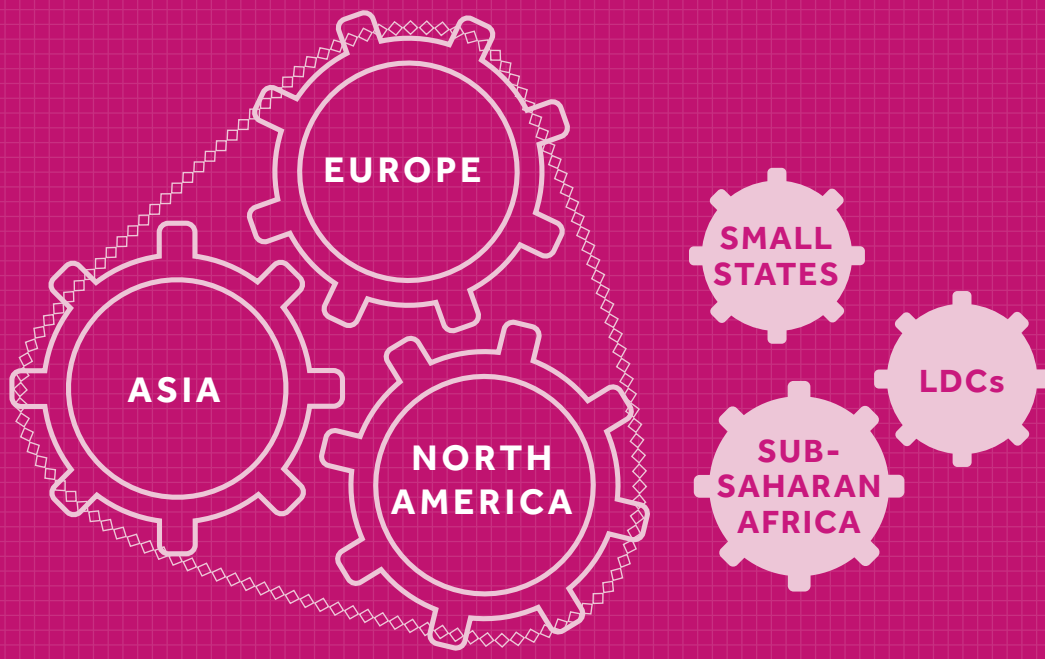
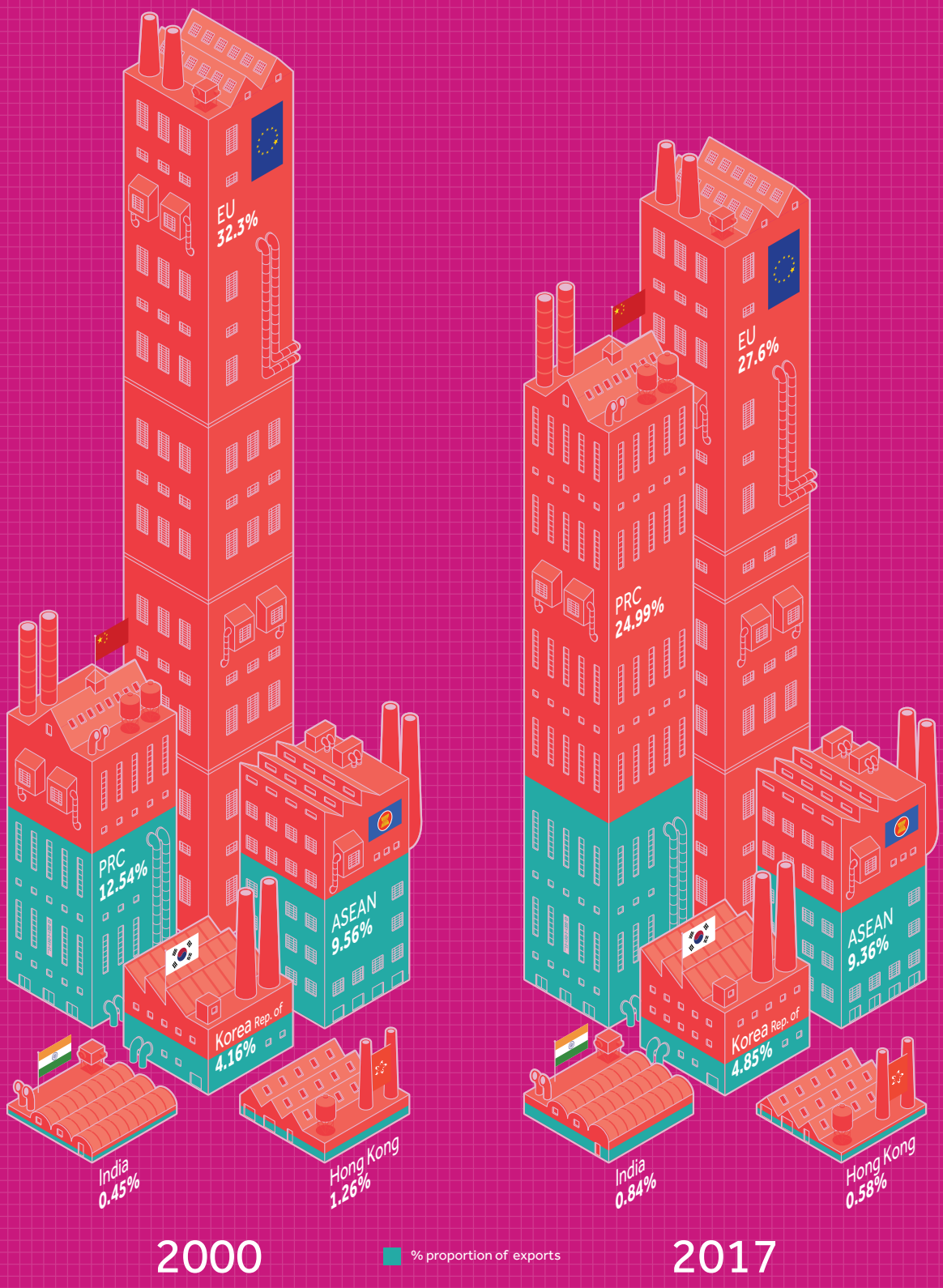
Section 1: Global Developments




EU
32.3%
PRC
12.54%
ASEAN
9.56%
Korea Rep. of
4.16%
India
0.45%
Hong Kong
1.26%
2000
% proportion of exports
EU
27.6%
PRC
24.99%
ASEAN
9.36%
Korea Rep. of
4.85%
India
0.84%
Hong Kong
0.58%
2017

Chapter 1

Slowdown in Asia's Global Value Chains and Industrial Latecomers

Ganeshan Wignaraja[1]

1.1 Introduction

The rich industrial history and trade performance of the economies of developing Asia during the past several decades have been associated with global value chains (GVCs), a novel form of industrial organisation. The emergence of GVCs in developing Asia during the 1980s powered the region's ascent and its integration into global production networks, resulting in rapid gross domestic product (GDP) growth. Two decades of unprecedented prosperity followed for the region. However, slowing global trade growth since the 2008–09 global financial crisis (GFC) has begun to cast a shadow on the dynamism of developing Asia's GVCs and has prompted a review of the effectiveness of the region's cherished trade-led growth model. This chapter examines the recent slowdown in developing Asia's trade and GVC participation by focusing on the following questions:

- What explains the rise of GVCs in Asia?
- Why have Asia's trade and GVCs slowed since the crisis?
- What are the prospects for latecomers?
- What affects firms in Asia joining GVCs?
- What public policies support GVCs?

1.2 The rise of 'Factory Asia'

GVCs are sometimes called 'production fragmentation', 'global production networks' or 'global supply chains', but these terms essentially refer to the same basic concept, with subtle differences. This type of sophisticated industrial organisation is different from the simple textbook notion of a single, large, vertically integrated factory situated in a country. It involves the geographical location of stages of production (e.g. design, production, assembly, marketing and service activities) in a cost-effective manner (Baldwin and Gonzalez 2014). Different production stages are increasingly located in different countries, linked by a complex web of trade in intermediate inputs and final goods. A lead company, often a multinational corporation such as Apple, Samsung or Toyota, co-ordinates the various production stages.

For example, the Toyota Prius – a hybrid electric mid-size hatchback car – for the US market was designed and assembled in Japan. However, some parts and components for the Prius are made by industrial suppliers in the People's Republic of China (PRC), Thailand and other regional economies, with Toyota co-ordinating the process. Toyota also undertakes global branding, marketing and after-sales service activities for the Prius.

GVCs have been an important feature of the world economy for decades. This pattern of international specialisation is intertwined with the international integration processes of globalisation and regionalisation. It is also underpinned by the corporate strategies of

multinational firms, technological advances (e.g. information, communications and transport technologies), developments in logistics, and falling barriers to trade and investment.

GVCs in the developing economies of Asia probably emerged during the 1980s in the clothing and electronics sectors, and have since penetrated a wide range of industries across the region, including consumer goods, food processing, automotives, electronics and machinery. The role of services in GVCs in East Asia, including engineering services, information technology services and professional services, is increasingly important but has been underestimated as a result of serious data problems.

A combination of factors influenced the spread of GVCs in developing Asia. One was the Plaza Accord of 1985, an agreement among advanced economies to manipulate exchange rates by depreciating the US dollar relative to the Japanese yen and the German Deutschmark. Its intention was to correct trade imbalances between the USA and Germany and the USA and Japan. Rising wages and other industrial costs in Japan induced its multinationals to use advanced manufacturing process outsourcing and 'just-in-time' manufacturing to create GVC production that criss-crossed East Asia. The Republic of Korea, Taiwan, Singapore and Hong Kong were part of the first wave of GVC activity. Other states in Southeast Asia soon followed suit.

A second factor that influenced the spread of GVCs was that developing East Asian economies pursued outward-oriented development strategies, taking advantage of cheap and literate labour, a booming world economy and a strategic geographical location. Central to such strategies was attracting export-oriented foreign direct investment (FDI), using incentives and export processing zones alongside gradual import liberalisation in the domestic manufacturing sector.

The third and probably the most important factor was the PRC joining the World Trade Organization (WTO) in 2001. WTO membership helped to consolidate and lock in the PRC's gradual economic reforms, which it had begun making in 1991 in an attempt to shift towards a more market-oriented economy. The rapid industrialisation of the PRC and its emergence as a regional manufacturing hub led to increased demand for parts and components from the rest of East Asia.

The structural transformation of developing East Asia from a poor, less developed, agricultural periphery region to a wealthy global factory is considered an economic miracle. The extent of developing East Asia's participation in GVCs is significantly greater than that of the rest of Asia and has spurred the region's global rise to coveted 'Factory Asia' status, with rapid economic growth over a long period (Athukorala 2011).

A simple and convenient proxy to illustrate GVC trade over time is share of world production network exports. Table 1.1 shows the shares of world production network exports of the advanced economies, developing Asia and other groupings of developing economies.

Developing Asia's share of world production network exports rose from an annual average of 28.5 per cent in 2001–04 to 41.4 per cent in 2009–2013 (Wignaraja 2016). The PRC is the leading player within developing Asia, with its annual average share rising from 13 per cent to 25 per cent between 2001–04 and 2009–2013. In the same period, the Republic of Korea's share rose from 4.2 per cent to 4.9 per cent, and the share of the ten member countries of the Association of Southeast Asian Nations (ASEAN) remained at just above 9 per cent. India and the rest of South Asia also saw an increase between the two subperiods, but their shares were less than 1 per cent in 2009–2013.

Table 1.1 Share of world production network exports, 2001–2013 (% averaged over subperiods)

	2001–2004	2005–2008	2009–2013
World	100	100	100
Advanced countries	**54.29**	**48.79**	**42.49**
United States	10.61	8.04	6.80
EU 28	32.30	30.90	27.60
Japan	11.12	9.61	7.90
Australia and New Zealand	0.26	0.24	0.19
Developing Asia	**28.48**	**35.49**	**41.40**
PRC	12.54	19.20	24.99
Hong Kong, China	1.26	0.96	0.58
Korea, Rep. of	4.16	4.89	4.85
ASEAN	9.56	9.31	9.36
India	0.45	0.60	0.84
Rest of South Asia	0.50	0.50	0.74
Central Asia	0.01	0.03	0.04
Latin America	**5.14**	**4.62**	**5.56**
Eastern Europe	**3.20**	**4.25**	**5.26**
Africa	**0.77**	**0.71**	**0.81**
Rest of the world	**8.12**	**6.14**	**4.48**

Note: PRC = People's Republic of China, ASEAN = Association of Southeast Asian Nations, EU = European Union.
Source: Author's calculations based on United Nations Comtrade (accessed October 2014). Production network exports is defined as trade in parts and components using the gross trade approach of Athukorala (2011).

Developing Asia's figure for 2009–2013 puts the region on a par with the advanced economies, which saw a fall in their share from 54.3 per cent to 42.5 per cent. All the advanced economies saw falling shares during the 2000s, but the EU, with 27.6 per cent, had the largest share of world production network exports in 2009–2013, while Japan had 7.9 per cent and the USA 6.8 per cent. Japan's figure seems understated, as Japanese firms are involved in GVCs in other developing Asian economies. Interestingly, developing Asia's share in 2009–2013 was significantly higher than those of Latin America, Eastern Europe and Africa.

1.3 Slowing trade and global value chains in Asia

Trade-led growth, partly through GVCs, has powered developing Asia's economic growth and prosperity in the past several decades. At the same time, increased connectivity through participation in GVCs has made countries and firms more economically interdependent, with implications for developing Asia's performance in GVCs. There is an increased risk that unexpected global, national and even local events could disrupt GVCs and cause a domino effect, leading to system-wide failure (OECD 2013).

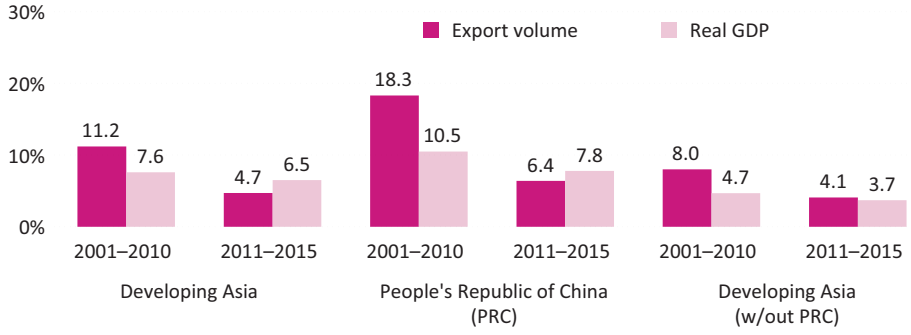
A structural break in the relationship between trade and GDP in developing Asia seems to have occurred recently. Developing Asia's trade grew faster than its GDP until the 2008–09 GFC, after which trade growth slowed such that it is at a lower rate than growth in GDP. As Figure 1.1 shows, the ratio of developing Asia's real export growth to real GDP growth halved from 1.5 in 2001–10 to 0.7 in 2011–15. The ratio for the PRC fell from 1.7 to 0.8, while that for developing Asia excluding the PRC fell from 1.7 to 1.1. Projections suggest that the ratio of developing Asia's real export growth to real GDP growth is likely to fall further to 0.3 in 2016.

The export slowdown is pervasive across developing Asia. Of 36 developing economies in Asia for which data were available, 20 had slower export volume growth in 2011–15 than in 2001–2010. This includes most of the region's largest traders: the PRC, the Republic of Korea, India, Kazakhstan, Malaysia, Pakistan, Singapore, Thailand, Taipei (China) and Hong Kong (China). Meanwhile, Cambodia, Indonesia, the Philippines and Viet Nam showed stronger export growth.

We need to comprehend why developing Asia's trade has slowed. A popular explanation is the lingering effects of a shock in external demand. Lingering weak import demand in advanced countries for developing Asian goods, related to sluggish domestic investment, partly explains developing Asia's trade slowdown. There are differences in demand for Asian imports among advanced economies. Annual real growth in US imports from developing Asia picked up modestly from 5.1 per cent in 2001–10 to 5.8 per cent in 2011–15, indicating recovery in the US economy. Meanwhile, growth in Japan's imports from developing Asia slowed from 8.1 per cent in the earlier period to 1.2 per cent in the later, and that of the EU slowed from 7.2 per cent in 2007–2010 (a shorter period because of a lack of import price indexes) to 0.7 per cent in 2011–15. A slightly weaker than expected recovery in advanced countries, especially lacklustre growth in Europe, adds to the headwinds hitting Asia's trade. This effect seems to be temporary and likely to be reversed as the advanced economies recover.

Macroeconomic or cyclical factors clearly explain part of the export slowdown in developing Asia, but they are not the whole story. Several structural factors with a more permanent effect are notable, but so far it is difficult to disentangle these factors and

Figure 1.1 Export and GDP growth



Note: Developing Asia refers to the Asian Development Bank (ADB) developing regional members.Developing Asia's volume of exports were estimated using annual weights of exports of goods and services in constant 2005 US dollars.
Sources: ADB estimates are based on data from the International Monetary Fund (IMF) World Economic Outlook (April 2016), the World Bank World Development Indicators (WDI) online database (accessed 2016), and the ADB Asian Development Outlook 2016 (2016).

establish their individual influence on Asia's export slowdown.

First, after years of extraordinary growth, the PRC is naturally arriving at a new normal growth pattern that is less dependent on investment and exports. This structural shift in the PRC is linked to rising wages and industrial costs, real exchange rate appreciation and a declining working-age population, among other factors. The PRC's demand for primary commodity imports and intermediate imports for its factories has fallen, causing ripples throughout developing Asia and the global economy.

Second, FDI flows to developing Asia – much of which has historically gone into the tradeable goods sector – have slowed. FDI has recently contributed less to the investment ratio in developing Asia than in previous years and may be less of a catalyst for domestic investment in the same fields. FDI inflows as a percentage of gross fixed capital formation in developing Asia fell from 9.9 per cent per year in 2001–10 to 6.4 per cent per year in 2011–14. Furthermore, the region risks being deprived of critical ingredients for productivity and trade, including technology, skills and connections to overseas markets. The slow in FDI flows is linked to the PRC's falling attractiveness as an investment destination, rising industrial costs and a bout of risk aversion in relation to emerging markets.

A third, closely related, reason is slowing growth of GVCs, affecting trade in intermediate goods in the region. Imports of parts and components as a proportion of manufacturing exports – a crude proxy for GVC trade – fell in developing Asia from 66.6 per cent in 2000 to 51.0 per cent in 2015 (see Table 1.2). This reflects a fall in the PRC's figure from 62.5 per cent to 37.8 per cent and the Republic of Korea's from 49.5 per cent to 39.6 per cent, as well as a rise for other regional economies from 62.9 per cent to 73.4 per cent. These include Hong Kong (China), the ASEAN countries, India and the rest of South Asia. Developing Asia is highly reliant on the PRC as the main regional assembly hub in GVCs, particularly in automotives, electronics and machinery. Some other regional economies, however, are starting to play an increasing role in GVCs.

Table 1.2 Imported intermediate goods as a proportion of manufacturing exports (%)

	2000	2015
Developing Asia	60.6	51.0
Developing Asia (excluding the PRC)	60.0	73.4
Developing Asia (excluding the PRC and the Republic of Korea)	62.9	73.4
PRC	62.5	37.8
Hong Kong (China)	55.9	73.7
Korea, Republic of	49.5	39.6
India	56.9	91.5
ASEAN countries	67.6	64.9

Source: Author's calculations

Fourth, trade protectionism has been rising in the post-crisis era. Decades of trade liberalisation has resulted in historically low import tariffs in developing Asia, averaging 7.9 per cent in 2014. However, there has been a rise in murky non-tariff measures such as anti-dumping duties, safeguards, pre-shipment inspection, sanitary and phytosanitary measures, technical barriers to trade, and export subsidies. The number of non-tariff measures imposed on developing Asia by outsiders more than tripled, from 2,263 in 2000 to 7,190 in 2015. In the same period, the number imposed by developing Asia more than quadrupled, from 534 to 2,217.

1.4 Prospects for latecomers in global value chains

While developing Asia's exports and GVCs have slowed, heightened economic pessimism about this trend seems misdirected. A gradual recovery in the advanced economies

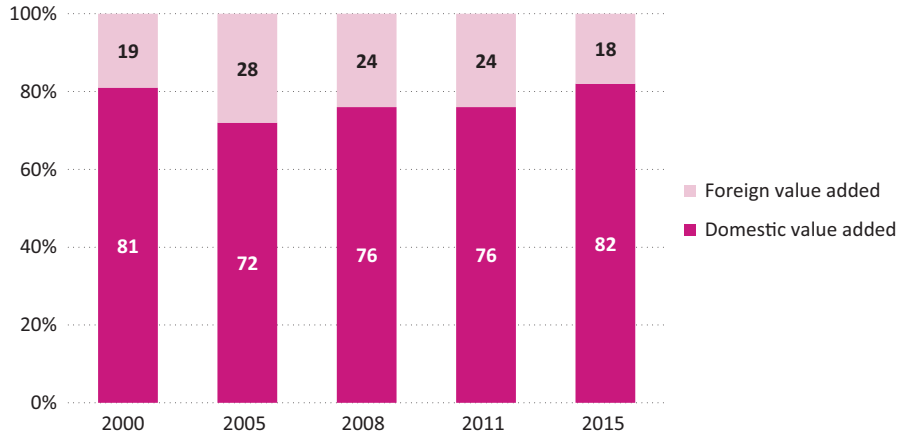
could stimulate new sources of export and GVC growth in developing Asia. Likewise, rebalancing in the PRC will open up new trading opportunities for that economy and the region's other dynamic economies. Several developments could encourage new sources of export growth.

One is that industrialisation in the PRC is deepening and GVCs are growing local roots. Rising wages and other factor costs are encouraging a deepening of industrialisation in the PRC, one aspect of which is GVCs growing more local roots. Structural shifts have occurred in the value-added content of gross exports since 2000. After an initial fall, there was a steady rise in domestic value added, indicating that more intermediate goods are being produced domestically rather than imported. As Figure 1.2 shows, the domestic value added as a proportion of gross manufacturing exports fell from 81 per cent to 72 per cent between 2000 and 2005, following the PRC gaining membership of the World Trade Organization in 2001. Between 2008 and 2015, this figure rose from 76 per cent to 82 per cent.

The industrial deepening now visible in the PRC and reflected in higher value added and the building of innovation capability was first seen in Asia in Japan, and subsequently in the Republic of Korea. This implies the development of more technologically sophisticated regional value chains and related services in East Asia, which could propel a new phase of regional and global trade growth. The spread of robotics, advances in miniaturisation of technology, developments in internet connectivity, process-centred research and development, and various organisational innovations are increasingly likely to feature in GVCs in this new phase of trade growth.

Another development is that some developing economies are well positioned to benefit from growth moderation and structural shifts in the PRC. Rising costs have eroded the PRC's formidable export competitiveness as a manufacturing centre for low-cost production. Since about 2007, wages in the manufacturing sector have been rising across the PRC in response to a tightening labour market. Diminished worker preferences for factory work (for example, with increased demand for leisure), subsidies making agricultural work more attractive and diminishing differences between the PRC's west and east, the growth of medium-sized cities and a decline in the working-age population all underlie this trend. Furthermore, the real exchange rate

Figure 1.2 Value added as a proportion of gross manufacturing exports in the PRC



Source: ADB Multi-Regional Input Output Table Database, 2016 (accessed 30 August 2016).

has appreciated, further eroding the country's export competitiveness. As a result, it is becoming more difficult for the PRC to compete on wages against lower-cost economies in labour-intensive low-skilled manufacturing sectors such as clothing and textiles (Deloitte 2014). Some of the PRC's GVC production – particularly in labour-intensive segments – is beginning to shift to lower-cost countries such as Viet Nam, Thailand, Cambodia, India and Bangladesh (Abiad *et al.* 2016). These Asian economies are increasingly open to export-oriented FDI and offer relatively low wages with reasonably good labour productivity.

Furthermore, services are the largest sector in most economies in developing Asia and trade in services is growing. However, trade in services may not be properly reflected in international trade statistics because they are difficult to measure. For instance, one problem in relation to GVCs is how much trade in services is reflected in value added in goods trading, for which there is a paucity of evidence. In addition, the potential for faster growth in trade in services is limited by trade restrictions, skills gaps and problems with internet connectivity. GVC-related services, digital trade, professional services and financial services are areas with potential for trade growth. The PRC is likely to further expand its role as an exporter and importer of services (Constantinescu *et al.* 2016). Over time, the PRC is likely to develop as a regional GVC-related services hub alongside its role as a regional manufacturing and assembly hub in GVCs. India is also likely to expand its trade in information technology services and witness the emergence of GVC-related services and other commercial services exports. ASEAN and South Asian economies have opportunities to further develop GVC-related services, tourism and other commercial services exports.

To realise these trading opportunities in GVCs, firms in latecomer countries will need to adjust business strategies and governments will need to develop supportive national policies. Developing Asia's rich development experience offers some insights into these issues, and these are considered below.

1.5 Entry of firms into global value chains

The role of firms in GVCs in developing Asia is a new frontier in economics. While there are insightful case studies of the organisational aspects of individual firms in GVCs in developing Asia, little research attempts to generalise the findings of case studies to multiple firms though econometric analysis. The recent availability of microdata from enterprise surveys has enabled the identification of characteristics of firms that have successfully joined GVCs in developing Asian economies.

A recent study conducted econometric analysis on about 6,000 firms in ASEAN economies to examine the factors affecting firm-level entry into GVCs (Wignaraja 2015). It underscored the notion of firm heterogeneity in GVCs (i.e. that firms are considered different in terms of efficiency and fixed and variable costs when involved in GVCs). Several different models were estimated, including one for all manufacturing firms. The findings indicate that some firms are better placed than others to join GVCs and that these differences are linked to various factors.

One is that the size of a firm affects the probability of its joining a GVC. This is indicated by the coefficient on firm size being positive and significant in the all-manufacturing firms model. Being a big firm naturally creates advantages to participating in supply chains, due to a larger scale of production, better access to technology from abroad, and the ability to pay higher wages for skilled labour and to spend more on marketing. Firm growth and working with large firms are key for participating in GVCs. Therefore,

smart business strategies, such as mergers, acquisitions and forming business alliances with multinationals or large local business houses, are rational approaches.

Another factor is that, under some circumstances, nimble small and medium-sized enterprises (SMEs) can also join GVCs. Adding a size squared variable in the all-manufacturing firms model was useful in clarifying the size effect. The coefficient on size squared is negative and significant, implying a non-linear relationship. By clubbing together in industrial clusters, SMEs can overcome some of the disadvantages of being small and rely on the benefits of interdependence. Small firms located in clusters can jointly finance a training centre or a technical consultant to upgrade skills. Business associations can facilitate clustering by mitigating trust deficits to encourage co-operation between SMEs, and by co-ordinating collective actions for cluster formation. For instance, major industrial clusters are located in Viet Nam, near Hanoi and Ho Chi Minh City, where large firms are surrounded by thousands of SME suppliers and subcontractors making garments, agricultural machinery and electronics goods. To overcome the disadvantages of firm size, SMEs can also embark on niche market strategies.

However, firm size is not the whole story of entry into GVCs in ASEAN economies. Efficiency and access to finance also influence the probability of joining GVCs. This is indicated by positive and significant coefficients on the variables capturing technology, skills and access to credit in the all-manufacturing firms model. Firms that have acquired higher levels of technological capabilities are more likely to succeed in GVCs. This requires firms to undertake conscious investments in skills and information to operate imported technologies, rather than simply 'learning-by-doing'. Having higher levels of human capital, particularly literate secondary-level educated workers and tertiary-level educated managers, helps with technology absorption and formulating effective business strategies. In the presence of capital market imperfections, well-organised firms with collateral and an established record with commercial banks are more likely than others to join GVCs.

1.6 Public policies for global value chains

A peculiar feature of GVC trade is that intermediate goods can cross many national borders for processing before final assembly occurs. Overall trade costs largely determine entry into GVCs and public policies influence such costs. Successful entry of firms into GVCs in developing Asia was typically supported by outward-oriented, market-friendly development strategies that provided a business environment with low trade costs.

While there are subtle differences in the strategies pursued in developing Asia, successful economies commonly emphasised attracting export-oriented FDI, along with gradually liberalising imports. An essential ingredient was an FDI strategy based on proactive investment promotion (including overseas representative offices), competitive investment incentives (including tax holidays) and export processing zones (EPZs). FDI brought capital, marketing connections and technology transfer.

Investing in world-class and cost-competitive physical infrastructure – ports, roads from EPZs to ports, airports and a reliable electricity supply – is another success factor. Hard infrastructure was complemented by soft infrastructure (e.g. efficient trade facilitation, modern customs procedures and logistics) to keep trade costs low.

Investing in education and training at all levels, including tertiary technical education and firm-level training, improved labour productivity. The coverage and quality of

business support services was also important. Better and more affordable types of technical, marketing and professional services facilitated firm growth and entry into GVCs (especially for SMEs). A comprehensive financial system (with specialist products and institutions geared to industry) ensured access to finance at reasonable interest rates. Macroeconomic management was improved and the authorities intensified the use of macroprudential policies and strengthened oversight of corporates and financial institutions.

More controversial perhaps is resorting to industrial policies to support the entry of particular sectors or firms into GVCs. A few governments, particularly in East Asia, supported designated sectors through industrial policies (e.g. import restrictions, local content rules, directed credit and export subsidies). While industrial policies sometimes encourage technological development and joining GVCs, costly failures have been cited in the literature. Some examples include the Republic of Korea's Heavy-Chemical Industry Drive, Malaysia's National Car Project (Proton) and the PRC's home-grown 3G mobile technology (TD-SCDMA). Much debate still surrounds the circumstances under which industrial policy has created GVCs in East Asia.

1.7 Conclusions

While trade and GVCs in developing Asia have slowed since the financial crisis, it seems premature to write off the region's trade-led growth model centred on GVCs. Some modification of the model seems inevitable, however, in a sluggish world economy characterised by lacklustre recovery in advanced economies, growth moderation in the PRC and rising protectionism. It will be some time before the future contours of the region's modified growth model become visible.

GVC activity will remain important in developing Asia's new growth model. New technologically sophisticated regional value chains and related services in East Asia are likely to propel a new phase of regional export growth. In addition, some well-positioned developing economies may replace the PRC in segments of GVCs as global demand rises for products ranging from clothing to consumer electronics. Furthermore, GVC-related services, digital trade and other commercial services are potential areas for regional export growth.

Developing Asia's rich GVC experience offers valuable lessons for industrial latecomers in the developing world. First, participating in GVCs offers a fast-track means to attain higher levels of economic development. Second, it is crucial to focus on the role of firms in joining GVCs. The spotlight needs to be turned on mergers and acquisitions for firm growth, industrial clustering for SMEs, the process of building technological capabilities, and improving access to industrial finance. Third, continuity with deep policy reforms provides a supportive business environment for GVCs.

Developing Asia's experience underlines that there is no 'one-size-fits-all' approach to helping latecomers to join GVCs. Smart business strategies, facilitating business associations and supportive national policies are all useful ingredients, while firms and governments working together is essential to tailor these ingredients to national circumstances. Mainstreaming GVCs into policy dialogues with aid donors and multilateral development banks will help to generate development finance for policy reforms and infrastructure development.

Note

1 Advisor, Economic Research and Regional Cooperation Department, Asian Development Bank. The views expressed here are solely those of the author and should not be attributed to the Asian Development Bank.

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