



**THEME:
RESILIENCE
AND GROWTH
IN A CHANGING
WORLD**

1 Staying the Course: Resilience and Growth in a Changing World

1 The thematic chapter of AREO 2017 traced the ASEAN+3 region's evolution in each of the two decades after the AFC and the policy lessons learnt for the future. Economies recovered robustly from the AFC through adopting more flexible domestic policy frameworks, rebuilding their balance sheets, strengthening their macroeconomic fundamentals, and engaging in greater financial cooperation within the region against external shocks. Besides firm policy actions in domestic structural reform, the region's commitment and openness to global trade, FDI and capital flows have also enabled the economies to reap benefits from the growth in global trade. Even as external demand from advanced economies was subdued after the GFC, the emergence of China as the

global production base and growing regional integration continued to offer benefits from trade and investment integration (AMRO, 2017).

2 Building on last year's theme, this thematic chapter considers how the region can maintain its resilience and growth in the face of fundamental global forces of change in trade, production networks, and technology. These forces are putting the economies' "manufacturing for exports" growth strategy to the test. This chapter first sketches out the mutually reinforcing growth dynamics between exports, manufacturing, productivity and growth, then assesses the adjustments that may be needed. It ends with policy recommendations for the region.

2 "Manufacturing for Exports" Growth Strategy: Still Viable?

3 Integration into the global economy via trade has underpinned virtually all ASEAN+3 economies' growth and development in the past decades. For large and small developing economies alike, exporting goods to meet external demand has helped to overcome constraints imposed by the size of their domestic markets given their low incomes, enabling them to reap economies of scale, establish and gain export competitiveness, and bring in much-needed FDI and foreign exchange earnings to import capital goods. Moreover, the inward FDI has brought technology transfer and positive spillovers to the wider economy.

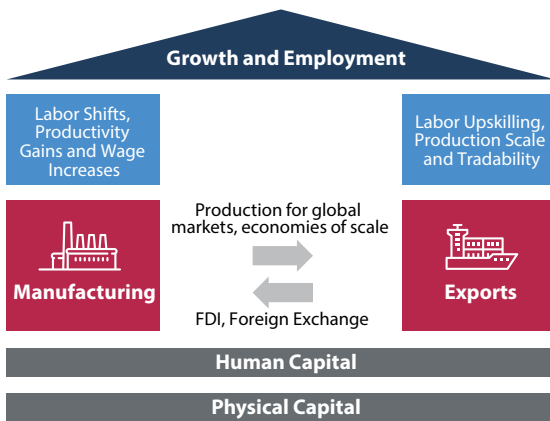
4 This "manufacturing for exports" strategy has created strong, self-reinforcing dynamics to raise economic growth, productivity and wages in ASEAN+3 economies (Figure 2.1). As the manufacturing sector has generally been the fastest growing sector and the one with the highest productivity in the economy, the boost to manufacturing capacity by exports and FDI has pulled up overall productivity in the economy. In terms of employment, the "manufacturing for exports" strategy has been facilitated by availability of labor to move from lower-productivity sectors such as agriculture, to manufacturing. Not only have jobs been created in the manufacturing sector, real wages have been pulled up along with productivity. This economic transformation has contributed to rapid growth in real wages in the region,

particularly in China, which is well above the world average (Figure 2.2).

5 This strategy has propelled income convergence of ASEAN+3 economies towards advanced economies. The "first wave"⁴² of economies – Japan, Korea, Hong Kong and Singapore – successfully followed this strategy in the 1960s and 1970s. They have long exited the phase where low labor costs were a significant competitive advantage and moved on to higher-value exports including services. The "second wave" economies – China and the large ASEAN economies of Indonesia, Malaysia, the Philippines, Thailand and Vietnam – entered this transformation later in the 1980s and 1990s, and have already reaped large benefits from export-oriented FDI that built up manufacturing capacity. These economies also have the added advantage of large populations, especially China and Indonesia, which incentivizes inward FDI not only to set up export-oriented production bases, but also to meet growing domestic consumer demand as incomes grow over time. The "third wave" of economies, which include resource-dependent economies – Cambodia, Lao PDR, Myanmar and Brunei – have begun the process of trade integration through manufactured goods exports, or are in the process of diversifying their economies away from agriculture and mining towards manufacturing.

⁴² First wave (current per capita income above USD35,000): industrialized economies of Japan and Korea, and financial centers of Hong Kong and Singapore; Second wave (per capita income between USD2,000 and USD10,000): China and the large ASEAN economies of Indonesia, Malaysia, the Philippines, Thailand and Vietnam; and Third wave (per capita income below USD2,000): Cambodia, Lao PDR and Myanmar, as well as Brunei, with much higher capita incomes but at an early stage of developing the breadth and sophistication of their manufacturing and services sectors.

Figure 2.1 Growth Dynamics of “Manufacturing for Exports” Strategy



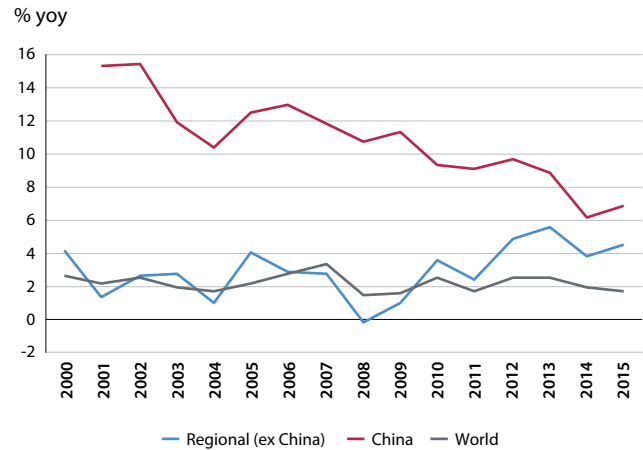
Source: AMRO

6 While “manufacturing for exports” has been an effective strategy so far, this chapter explores how global forces in trade and production networks and technology may necessitate adjustments. Although these trends in some aspects have reinforced growth dynamics between exports, manufacturing, productivity and growth, they may also have had offsetting effects.

7 Section 3 of this chapter examines the key features and contributions of GVCs, which have been an increasingly important driver of intra-regional trade, particularly with the emergence of China as a global production base. In earlier years, the formation and proliferation of GVCs might have lowered the technological entry threshold for regional economies, especially developing ASEAN economies, to benefit from the “manufacturing for exports” strategy. Instead of having to produce entire manufactured products for export, economies can instead participate in GVCs through exports at intermediate stages of production (WTO, 2017). In this way, GVCs made the ASEAN+3 region more resilient as a whole in terms of competitiveness through specialization and leveraging on the comparative advantage of each economy. However, with manufacturing processes and the products themselves having become more high-technology over time, it has become more difficult for EMEs to join GVCs and become more competitive within GVCs. Most recently, rising trade tensions have also raised the prospect of external shocks being transmitted and magnified, along whole supply chains. In this context, the region’s growing intra-regional final demand, especially since the GFC, has partly cushioned the impact of the collapse in external demand from outside the region and allowed the region to sustain a relatively high level of growth.

8 Section 4 of this chapter goes on to examine the nature of accelerating technological advancements, and how this poses growth-generation and job-creation challenges for the first, second and third wave ASEAN+3 countries in different

Figure 2.2 Average Annual Real Wage Growth by Region



Note: Data for Regional (ex China) is calculated as the simple average of annual wage growth of the economies. Data is not available for Myanmar. Sources: ILOSTAT, AMRO staff calculations

ways. It recognizes that the strategy of manufacturing for exports, while still working, faces both short-term headwinds and longer-term challenges. Technology, conventionally seen as a plus for economic development, is proving to be double-edged. Technological gains have helped to lift both the manufacturing and services sector. However rapid changes in technology and their impact on the manufacturing sector, the increasing role of the services sector as well as expansion of cross-border trade are also posing challenges to EMEs in different regions including ASEAN+3. They are increasing the capital intensity of several manufacturing sub-sectors, altering the nature of the services sector, placing greater demands on higher-quality human capital, and requiring more advanced infrastructure and supporting ecosystems. Economies may be caught unprepared in the process of pursuing growth catch-up and greater resilience, and in creating sufficient jobs for young expanding populations. In this regard, compared to “first wave” economies, “second wave” and “third wave” economies may see their manufacturing sectors’ contribution to employment peak at lower levels. The peak could occur well before they have reached high-income status and before they acquire the technological base and capacity for a high level of economic development.

9 Section 5 of this chapter further looks into the increasingly key role of the highly diverse services sector as an enabler of manufacturing and as a growth driver itself, and how there is scope for more services sub-sectors to become the new driver of employment and productivity. It posits that across most segments of manufacturing and services, countries will find it increasingly challenging to reap demographic dividends to create jobs and sustain growth. The conclusions of the Chapter will be supported by case studies illustrating how the various forces and challenges are already playing out in different sectors across ASEAN+3 countries, and they then form the basis for the concluding Section 6 on policy recommendations for the region.

3 "Manufacturing for Exports" Strategy: Reinforced by Global Value Chains (GVCs) and Growing Intra-regional Demand, Threatened by Protectionism

10 The formation of GVCs and cross-border production networks is an important driver of global and intra-regional trade. While the increase in global trade has kept pace with world GDP growth (Figure 3.1), the share of global trade (in value-added terms) accounted for by GVCs increased significantly from 2000 onward, even with the dip during the 2008-9 GFC period (Figure 3.2). Not only has GVC trade grown, GVCs have deepened. The share of global trade accounted for by complex GVCs – which involve intermediate goods crossing two or more borders before assembly into final goods – has risen more quickly than the share accounted for by simple GVCs. Given the well-established linkages between trade, growth and employment, especially for EMs, there was a synchronized acceleration then dip in growth, labor productivity, and wage increases across EM regions in Asia, Latin America, and emerging Europe.

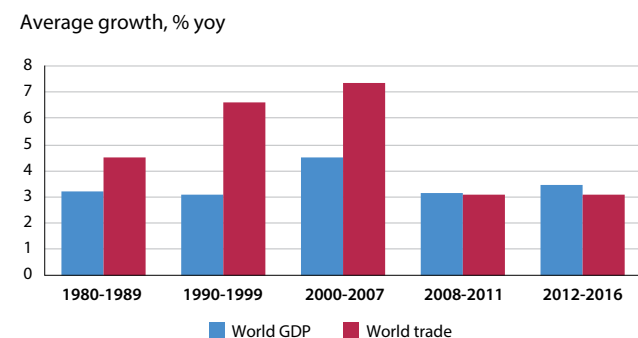
11 China exemplifies the benefits of integration into the world economy for a large economy, spurring the formation of GVCs that boosted intra-regional trade. China's trade and economic growth experienced a pronounced liftoff from the early 2000s onward with its accession to the World Trade Organization (WTO), following years of reform to establish a market-based economic system. From its accession in 2001 to 2007, just before the GFC, China's exports grew sharply as it became a global manufacturing hub (WTO, 2017). From the start, GVCs feeding into this production hub, with imported inputs from the region, were critical to the regional supply chain. This gave regional trade a substantial boost. Other economies in the region, which had benefitted similarly from integration into world trade, received an

additional boost with the increase in intra-regional trade and investment.

12 GVCs have facilitated the integration of developing economies in ASEAN+3 into global and regional trade and production networks. Although GVCs do not account for nearly all of global production or trade, several ASEAN+3 countries' trade has involved GVCs to a far greater degree (Figure 3.3), and benefitted from the trade.

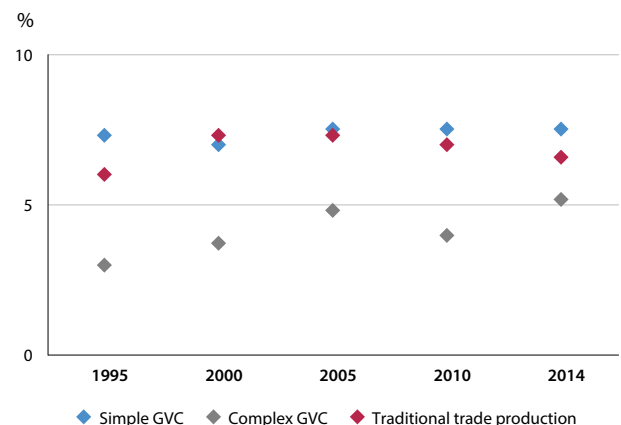
- a. GVCs have provided opportunities for economies without the technological knowhow to produce entire manufactured products, which are competitive enough for export, to still pursue export-led growth by participating in certain stages of production, and then gradually diversify their production and exports.
- b. With GVCs centered initially on trade in intermediate manufactured goods, the formation of GVCs has spurred the development of the manufacturing sector. Within ASEAN+3 and also outside the region, greater participation in GVCs has been correlated with larger proportions of GDP accounted for by manufacturing value-added (Figure 3.4). Plugging into GVCs has

Figure 3.1 Global Trade Growth and GDP Growth



Sources: IMF, AMRO staff calculations

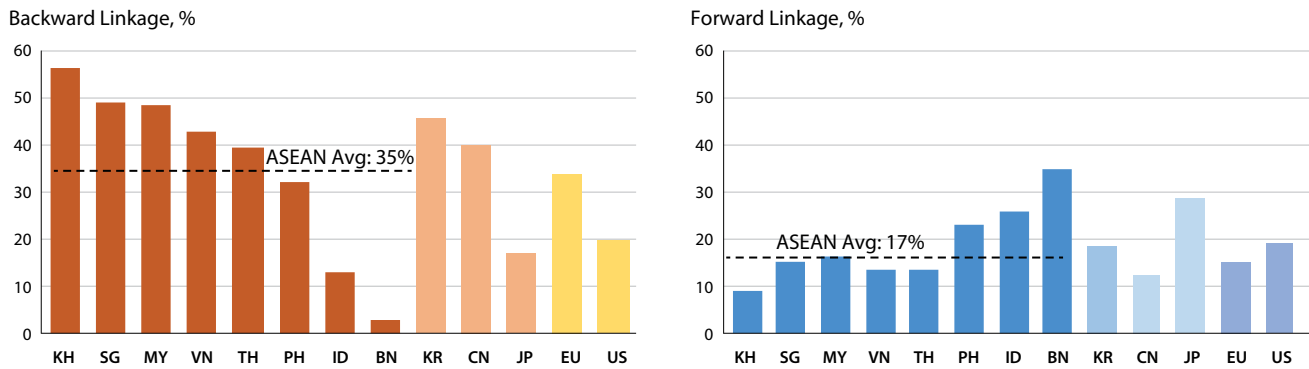
Figure 3.2 Share of Global Production (in VA Terms) Accounted for by GVCs



Note: Simple GVCs involve domestic value-added crossing national borders for production only once, while complex GVCs involve domestic value added crossing the border at least twice and are used by the partner country to produce intermediate or final product exports either for re-export to the home country or for re-export to other countries. The remainder is value-added that does not involve trade and is accounted for by pure domestic production.

Source: WTO

Figure 3.3 GVC Participation: Selected ASEAN+3 Economies and Comparator Countries



Note: To assess an economy's participation in the GVCs, two major indicators, backward and forward GVC participation, are taken as indicators. Both of these measures are expressed as shares of the reference country's exports. The backward GVC participation captures the extent to which domestic firms use foreign intermediate value added for exporting activities in a given country. The forward GVC participation captures the extent to which a given country's exports are used by firms in partner countries as inputs into their own exports. They also measure different forms of engagement in GVCs. For example, a country that is predominantly assembling products into final goods and subsequently exporting these will have a strong backward participation but a small forward participation measure. Conversely, a country which predominantly supplies intermediates to an assembler will have a highly developed forward participation indicator but a small backward participation measure. These participation measures therefore give us a metric of engagement in the form of buying from (backward participation) and selling (forward participation) to GVCs or the demand and supply sides of the value chain activity. Data is as of latest available (2011). Source: OECD's Trade in Value Added database (TIVA), International Trade Center's FDI statistics, AMRO staff calculations

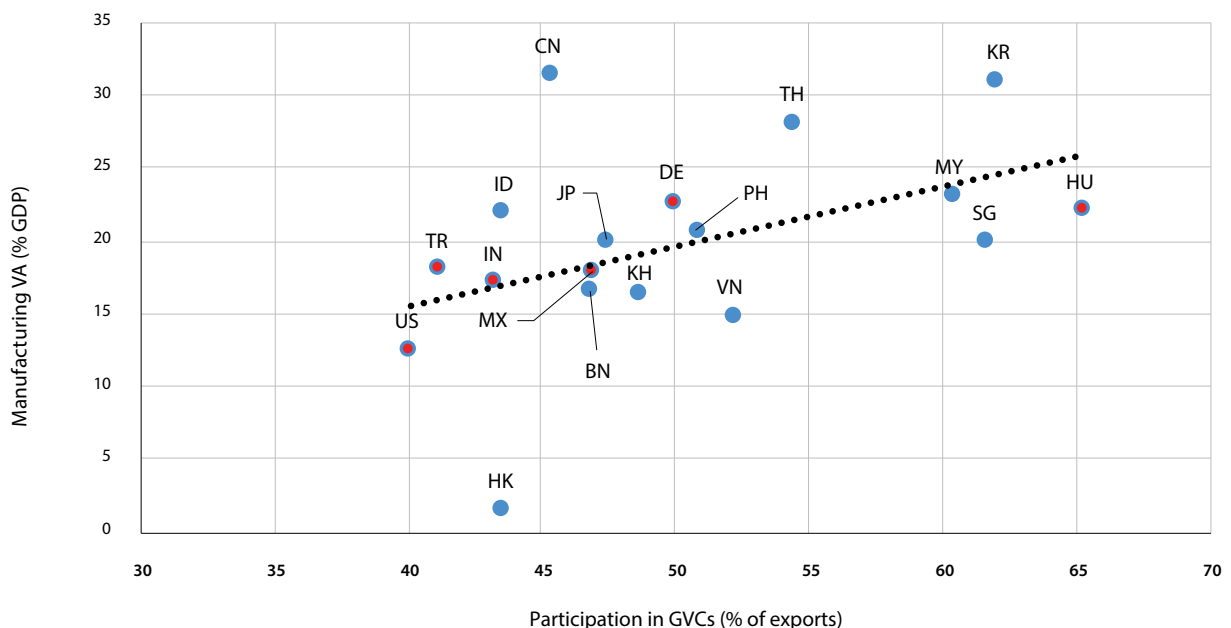
enabled countries to deepen their technological knowhow, upgrade the skills profile of their labor force, and spur the building of infrastructure. All these have helped to raise exporting countries' capacity to perform more sophisticated functions in the value chain.

are used in the production of other countries' exports (e.g. chemicals). In contrast, manufacturing export-oriented ASEAN countries (notably Singapore, Malaysia, Thailand and Vietnam), tend to have higher backward linkages which reflect greater reliance on imported goods for their manufacturing exports.

13 The unevenness of GVC participation by ASEAN+3 countries reflects diversity in economic resources and structures (Figure 3.3). Resource-rich countries such as Brunei and Indonesia exhibit greater degrees of forward linkages, in which their exports (e.g. palm oil, coal, and oil)

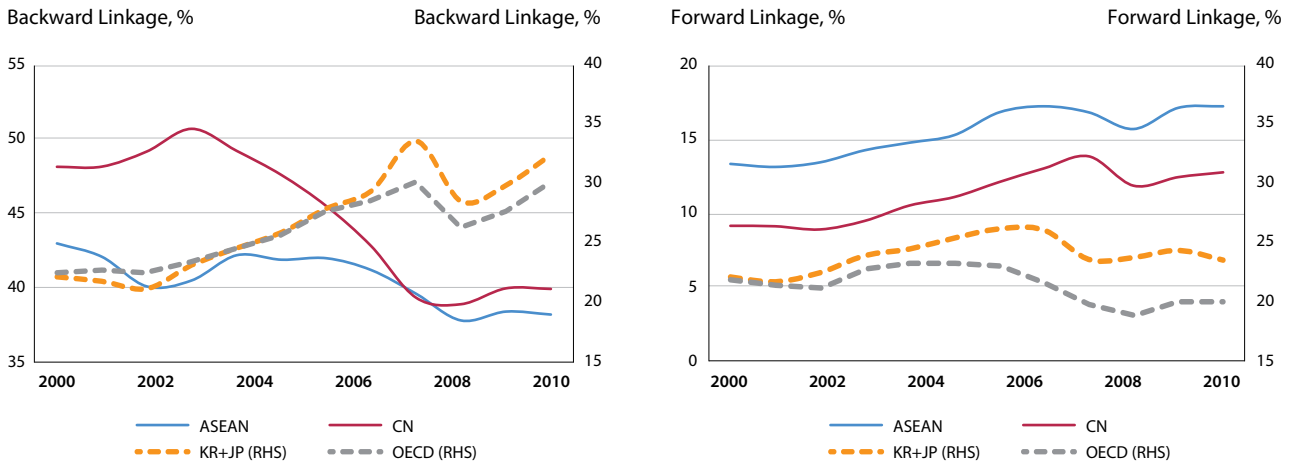
14 Technological advances have been critical enablers for deeper GVC participation and upskilling of workforces, globally and especially in ASEAN+3 countries. From about the mid-1990s onwards, for a prolonged period of time, continuing technological advances

Figure 3.4 Centrality of Manufacturing to Growth and Depth of GVC Integration: Selected ASEAN+3 Countries and Comparators



Note: Participation in GVCs is calculated as the sum of forward and backward participation. Data is as of latest available (2011).

Figure 3.5 Forward and Backward Linkages of Selected Regions and Economies



Note: Interpretation of “forward linkages” and “backward linkages” is as for Figure 3.3. Data as of latest available (2011).
 Source: OECD’s TIVA database

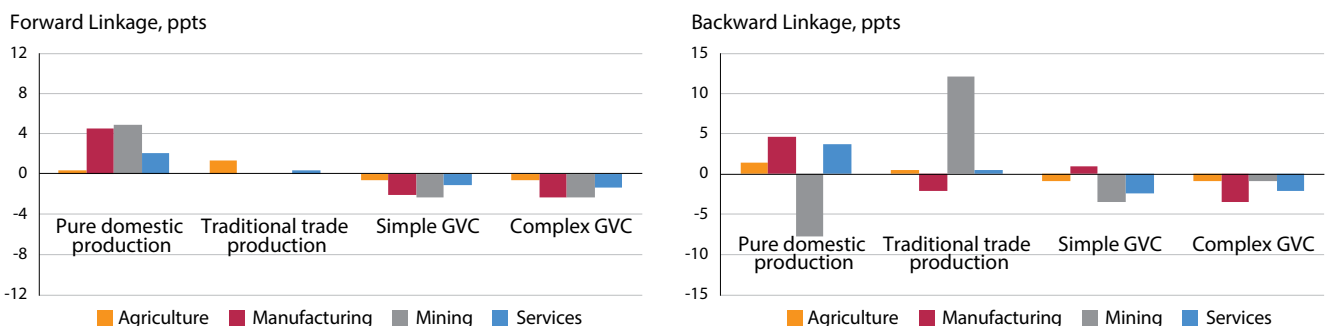
such as computerization, internet, and wireless mobile telecommunications played a key role in facilitating international fragmentation of production (IFP). They reduced production costs and transportation costs, and boosted labor productivity. This allowed new entrants, and enabled countries already in GVCs to participate to a greater degree. Most countries have benefitted from these developments, resulting in deeper GVC linkages and a more highly skilled workforce over time (Figure 3.4). China and Indonesia, for example, saw dramatic improvements in labor upskilling although base effects played a part too. Notably, low-skilled jobs have been adversely affected, especially in advanced economies where wages are higher, reflecting in part the labor-substituting effect of newer technologies.

15 However, as early as the late-2000s, GVC participation was showing signs of plateauing (WTO, 2017). In tandem with a lacklustre global trade environment, several factors explain the moderation in GVC activities. First, a combination of slower pace in tariff reductions and rapid rise in NTBs slowed the momentum of GVC participation. In the early 1990s, trade liberalization efforts facilitated the

expansion of GVCs via sizable declines in tariff rates, which made offshoring an attractive strategy to foreign MNCs. Meanwhile, implementation of new NTBs was also relatively moderate. However, by the late-2000s, the decline in average global tariff rates had become more gradual, while the number of new NTBs increased substantially. Second, in more recent years, with manufacturing processes and the products themselves having become more high-technology, it has become more difficult for EMEs – including those in the ASEAN+3 region – to join GVCs and become more competitive within GVCs. Third, most recently, rising trade tensions have also raised the prospect of external shocks being transmitted and magnified along whole supply chains.

16 Indeed, this global trend of a tapering in GVC participation is also seen in the ASEAN+3 region after a period of strong growth earlier. Figure 3.5 shows that backward linkages have declined for ASEAN-4 and China, while forward linkages have risen gradually. These developments could be partly attributed to the constant upgrading of the manufacturing sector and the development of supply clusters by domestic suppliers, helped by sustained FDI

Figure 3.6 Structural Changes in Different Types of VA Creation Activities: China



Note: Data refers to the difference between share in 2015 and 2011 linkages.
 Source: WTO Global Value Chain Development Report (2017)

inflows. For example, over the past decade, MNCs from advanced countries, including Japan and Korea from the region, have been establishing production bases in emerging ASEAN+3 economies for exports and to meet domestic demand in the host countries, thereby helping to facilitate industry upgrading and the development of domestic suppliers. This has contributed to declining demand for imported intermediate goods for production, as ASEAN-4 economies and China are increasingly able to source them domestically.

17 Looking ahead, one key uncertainty is whether more advanced or larger economies might develop greater capacity to site more production processes onshore as well as greater commercial incentives to emphasize speed-to-market over savings from producing in other lower-cost locations. China is a prime example, appearing to have increasingly used domestically-produced intermediate inputs instead of imported intermediate goods. While the empirical evidence is mixed, there does seem to have been a slight fall in China's GVC trade as a proportion of its total trade (in VA terms) in recent years (Figure 3.6) (WTO, 2017). Such a development is consistent with communication technology lowering coordination costs disproportionately more for domestic fragmentation rather than international fragmentation, as well as greater likelihood of more advanced technology and more highly-skilled human capital being found within countries (Fort, 2014). This trend of using domestically-sourced inputs instead of imports could have been the case in China's

manufacturing industries such as computers, electronics, optical equipment, electrical machinery and apparatus (World Bank, April 2016).

18 China's local content of processing exports had also been rising steadily in the past decade, at the same time period when backward linkages in GVCs were declining (Figures 3.7 and 3.5). From the viewpoint of ASEAN-4 as exporters to the world, including to China, empirical estimates⁴³ suggest a decline in long-run elasticity of export volumes to global demand since the early 2000s, which may have partly reflected less absorption of ASEAN-4 intermediate or primary exports to China among other countries (Figure 3.8). This structural upgrading in China and its use of domestically-sourced inputs is set to continue, but the downside impact on its imports of intermediate inputs from the region may be offset by its increasing imports of consumer goods and services from the region for final consumption, as discussed later in this section.

The protectionist challenge may be partially cushioned by growing intra-regional demand.

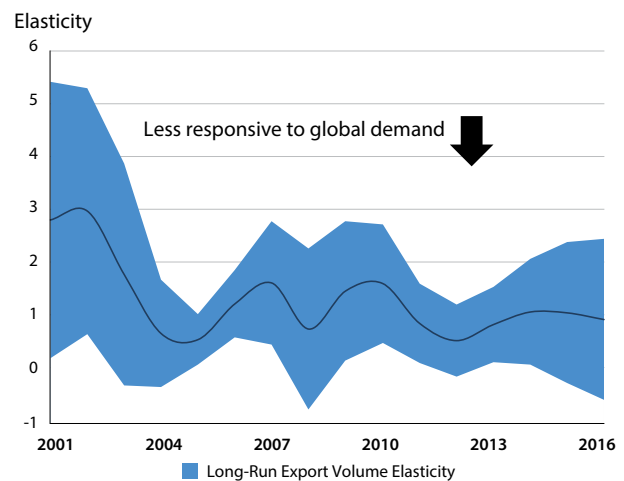
19 Rising protectionist sentiment could also weigh on the region's GVC participation and labor market prospects. While GVCs have made the ASEAN+3 region more resilient as a whole in terms of competitiveness as a regional production base, they may have also accentuated the transmission of external shocks, such as trade protectionism, along the whole supply chain. Actual or anticipated trade protectionism could affect GVCs in two ways. First, protectionism makes imported

Figure 3.7 Share of Local Content in China's Processing Exports



Source: China's Customs Statistics

Figure 3.8 ASEAN-4 Output Elasticity of Export Volume (Rolling Estimates, 2001-2016)



Note: The shaded area shows the 90 percent confidence bands. Time variation of the coefficients are estimated over a rolling 6-year window sample. Sources: OECD's TiVA database, World Development Indicators, AMRO staff estimates

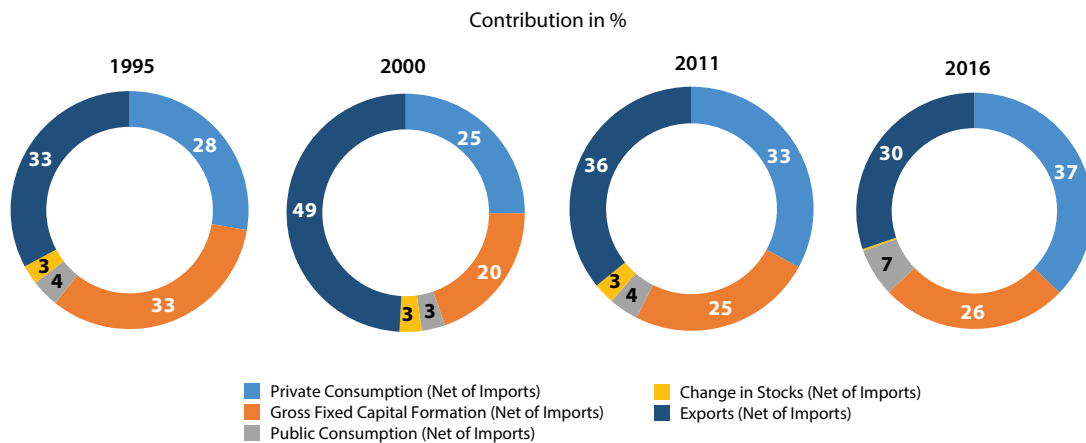
⁴³ The long-run elasticities of ASEAN-4's export volume to global GDP and relative price are estimated under a panel error correction model of the form: $\Delta \ln(Export_{i,t}) = \alpha + \beta \ln(Export_{i,t-1}) + \gamma \ln(GlobalGDP_{i,t-1}) + \delta \ln(RelativePrice_{i,t-1}) + \eta \Delta \ln(GlobalGDP_{i,t}) + \theta \Delta \ln(RelativePrice_{i,t}) + \varepsilon_{i,t}$ where the long-run elasticities to global GDP and relative price are $-\gamma/\beta$ and $-\delta/\beta$ respectively. The data includes Malaysia, Thailand, Indonesia and the Philippines, ranging from 1995 to 2016. The relative export price refers to the ratio of countries' export price to global export price

intermediate and capital goods more expensive due to higher tariffs – reducing the incentive to locate production abroad or triggering a reshoring of manufacturing activities. Second, by introducing greater investment uncertainty or business uncertainty, the threat of protectionism causes investors to adopt a wait-and-see approach. Moreover, trade measures targeted at certain countries or renegotiation of key trade agreements will invariably affect other countries due to the linkages through the extensive supply chain in the region. Disorderly adjustments in supply-chain linkages will also have adverse implications on the region’s trade performance with spillovers to growth and employment in the economy.

20 The region’s growing intra-regional final demand and absorption of regional exports can help to cushion

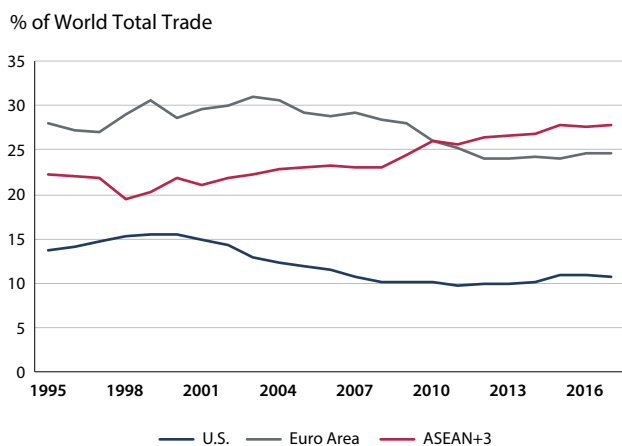
the impact of protectionism on GVCs oriented towards demand outside the region. This process has already begun in the past decade. Weaker global demand from outside the region following the GFC and the European sovereign debt crisis has compelled regional economies to rebalance growth drivers in order to be less dependent on final demand from major advanced economies. Even though exports have continued to be an important driver of growth, their contribution has declined (Figure 3.9), and the region is diversifying away from traditional export markets (Figure 3.10), and leveraging on the burgeoning regional demand amid growing affluence and the rise of the middle class, particularly in China. Figure 3.11 shows that VA exports destined for final demand in the region have grown to nearly half of total regional value-added exports in 2016.

Figure 3.9 Contribution in % to Real GDP Growth: ASEAN-4 & VN (Import-adjusted Method)



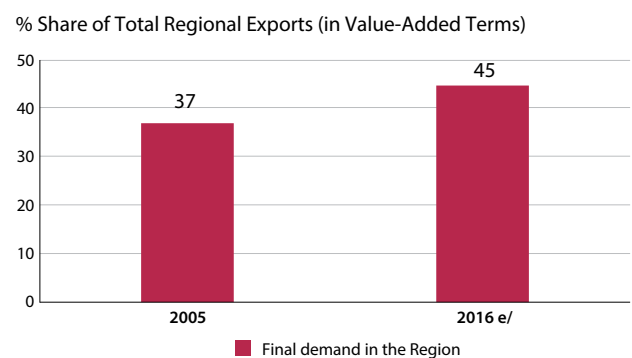
Sources: National Authorities, AMRO staff estimates

Figure 3.10 Share of World Trade Accounted for by ASEAN+3 Trade



Sources: National Authorities, IMF DOTS database

Figure 3.11 Share of Total Regional VA Exports Accounted for by Regional Final Demand



Sources: OECD’s TiVA database, AMRO staff estimates

4 Technology: A Double-edged Sword

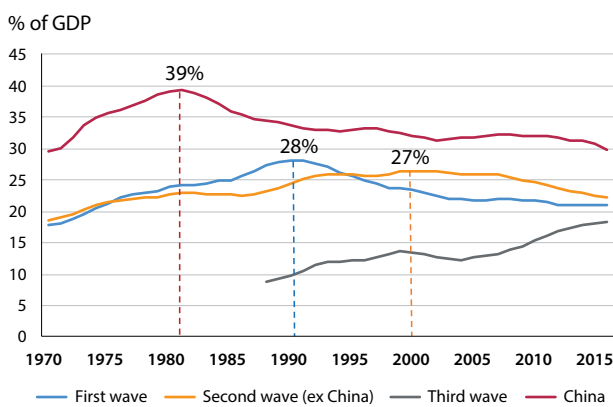
Employment gains from manufacturing-for-exports are likely to be more muted

21 The strategy of manufacturing for exports, while still an important growth driver, faces near-term headwinds from trade protectionism, and also longer-term challenges from changes in production structures and GVCs, and the impact of technology on employment. For several years, continuing technological shifts and reconfigurations of GVCs have increased the capital intensity of most manufacturing sub-sectors and placed greater demands on higher-skilled labor as a prerequisite for manufacturing. For many ASEAN+3 countries, the manufacturing sector's contribution to growth and employment has already slowed for some years, and it has become more challenging to sustain buoyant growth while continuing to move up the value chain. While the "first wave" and "second wave" of economies managed to expand manufacturing sectors to 25-30 percent of GDP during their development (a few decades apart), most "third wave" economies' manufacturing sectors, though still rising, seem likely to peak at 15-20 percent of GDP (Figure 4.1).

22 Over the past 15 years or so, different "waves" of ASEAN+3 countries have had different experiences with the pace at which manufacturing has contributed to employment relative to the pace at which it has contributed to economic growth. This is due to several factors such as the stage of economic development, attained level of labor productivity, and more broadly, overall technological sophistication. The "first wave" countries had already

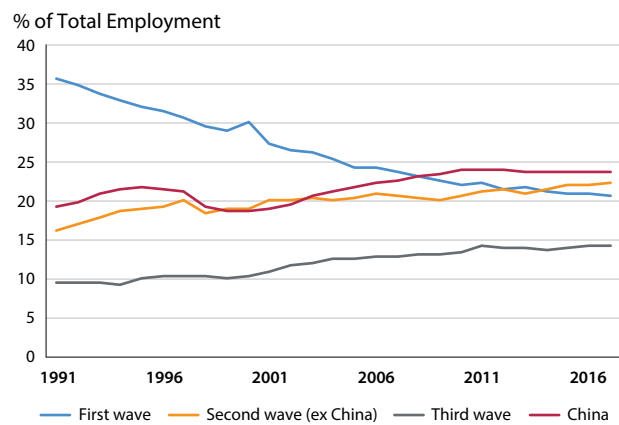
achieved fairly high levels of productivity by the turn of the century and they then continued with further productivity drives in the manufacturing sector – which also shifted labor to the services sector. The "second wave" countries and "third wave" followed a similar path and also attained consistently high economic growth rates over the past 15 years, although they have had less success than the "first wave" countries in lifting labor productivity further. (Figure 4.2). While "first wave" economies used manufacturing to generate up to 40 percent of total employment and then managed a largely gradual easing to about 25 percent, "second wave" and "third wave" economies may see their respective peaks of manufacturing employment at lower levels, in fact at levels near to the trough for the "first wave" economies. Alongside this, technology, by making a wider range of services more attractive to domestic consumers and more tradable, has also diminished manufacturing's contribution to growth. Overall, technological advancement is positive. However, when this is wide-ranging and rapid, it can lead to important sectoral shifts in GDP and employment patterns, and there will be winners and losers. The Special Feature of the Monetary Authority of Singapore (MAS)' April 2018 Macroeconomic Review (MAS, 2018) is a recent study which highlights this key challenge brought about by digitalization. In the context of the ASEAN+3 region, this sectoral shift – for both GDP and employment – has occurred well before most "second wave" and "third wave" economies have reached high-income status, and before they acquire the technological base and capacity for a high level of economic development. These trends mirror

Figure 4.1 Share of GDP Accounted for by Manufacturing



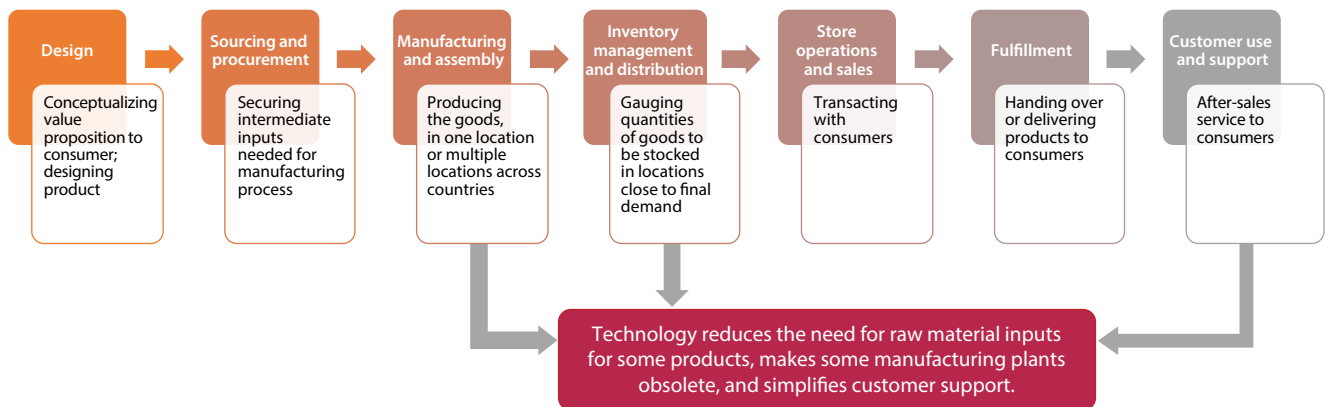
Sources: World Bank, AMRO calculations

Figure 4.2 Share of Employment Accounted for Manufacturing and Resources Sectors



Note: Available data combines manufacturing and resources sectors. Source: World Bank

Figure 4.3 Typical Value Chain and Impact of Technology



Sources: Deloitte (2016), AMRO

the experiences of EMEs in other regions, and authorities have started developing other sectors to support growth and jobs.⁴⁴

23 Looking ahead, a wide range of technologies is expected to disrupt different economic sectors, further challenging all ASEAN+3 countries and especially third-wave countries to sustain the manufacturing sector's contribution to jobs creation and wage gains – which must ultimately underpin countries' continued economic growth. With automation, artificial intelligence (AI) and 3D printing just to name a few technologies, production will become more complex, and even lines between conceptualization and production, as well as between different stages of production, will become increasingly blurred. Digital technologies, along with enabling infrastructure, will shorten GVCs (Figure 4.3) (Deloitte, 2016.) Manufacturing labor intensity will fall more quickly with robotics and AI. As technological advances are rapid, the speed at which infrastructure and supporting industries are reconfigured to support manufacturing production will also have to pick up. The combined impact will favor advanced countries

over EMEs, globally and within the ASEAN+3 region. Compressed production processes for more customized goods increase economic incentives for (re-)agglomeration of production. More advanced countries, by virtue of having higher quantities of skilled labor and engineers and physical capital, better infrastructure, and international connectedness, will hold an advantage over EMEs which tend to have substantial gaps in one or more of these areas. "Third wave" ASEAN+3 countries, if unprepared, risk being "locked" into low value added tasks or as providers of commodities at the beginning of GVCs (WTO, 2017).

24 The following two case studies of the automobile and TCF sectors provide comparative outlines of the experiences of two important manufacturing industries in the region and how technology has shaped these industries and the employment outlook. They suggest that countries which lag too far behind in developing skilled workforces and ramping up capacity to absorb and apply new technologies would be most adversely affected in the pursuit of sustained growth and resilience.

⁴⁴ For example, Cambodia has made moderate progress in diversifying into construction and tourism, while both Lao PDR and Myanmar have continued to develop their agriculture sector and resources sector.

Box G.

The Automobile Sector: How Disruptive Technologies are Working Against Less Advanced Economies

The automobile sector is an important sector in terms of economic activity and employment.

The automobile sector is important for the ASEAN+3 region. The Plus-3 countries are major producers on a global scale, while for several ASEAN countries, production helps to meet domestic demand as well as to generate employment. China and Korea figure among the top 10 producers of motor vehicles globally, while there are also significant nodes of production in Thailand and Indonesia, and smaller-scale production, mainly for domestic sales, in Malaysia, Vietnam and the Philippines (Figure G1). While almost all of China’s automobile production is to meet domestic demand, the fact that China alone accounts for a large share of global demand and nearly one-third of worldwide production, means that China can be considered a global player even though most of the vehicles are produced by foreign car manufacturers based in China. The story is more nuanced for Japan and Korea, with about half of their production destined for export. Moreover, most of the Korean and Japanese automakers have production plants in the U.S., China and other locations to reduce costs and to be closer to the markets. As for the smaller ASEAN economies, Indonesia and Malaysia produce automobiles largely to meet domestic demand, while Thailand, a regional hub for automobile production, exports just over half of the vehicles it produces. The automobile sector is a big source of employment in middle-income ASEAN countries. The ILO reports employment of 800,000 people

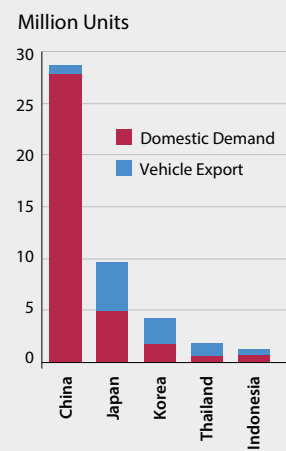
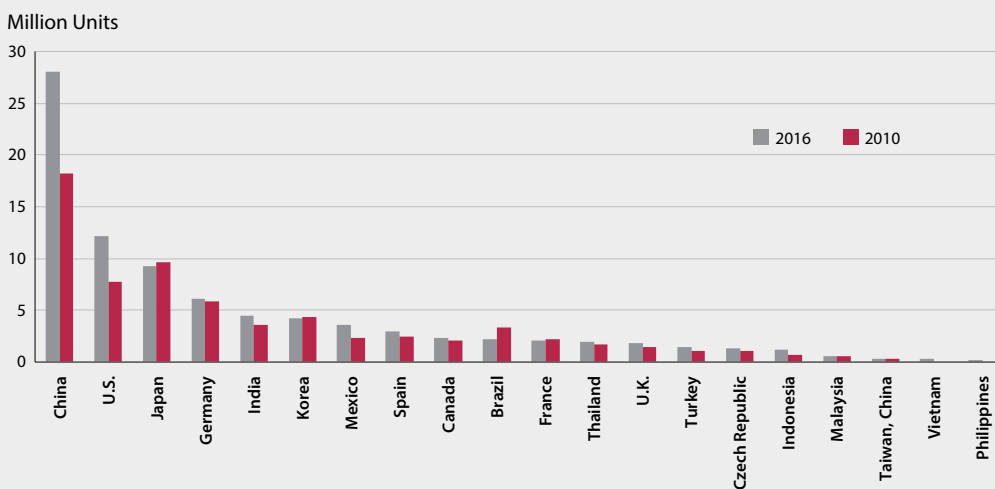
in the automobile sector in ASEAN, most of which are in Thailand and Indonesia (Figure G2).

Increasing capital intensity and rapid technological change threaten less advanced countries.

Around the world, automobile production is becoming increasingly capital- and technology-intensive. Indeed, the automobile sector is seen as more exposed to the deployment of technologies such as industrial robots, the “internet of things” in factories, and technologies such as 3-D printing. The stock of industrial robots is concentrated in the transport and automobile sectors. The International Federation for Robotics estimates that the automobile sector in Korea leads in industrial robots, followed by the U.S., and Japan. China lags behind, but is catching up rapidly (Figure G3). Meanwhile, there are also developments in terms of the materials that are used in production, with an ongoing trend towards more lightweight materials to improve fuel efficiency, which involve a more complicated production process. The nature of automobiles produced is also changing. Vehicles are becoming more complex and sophisticated – with many more features and greater use of digital technology.

The nature of technology shifts in the automobile sector is working against less advanced countries offering low-cost labor as a primary competitive edge or value proposition. The business model which has developed over the past

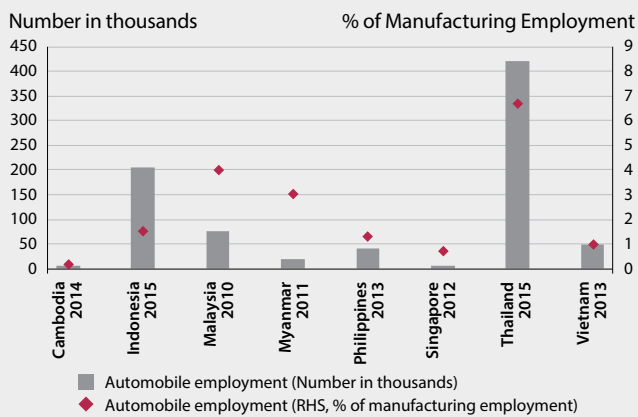
Figure G1. Automobile Production



Source: www.oica.net

Note: Plus 3 countries (data as of November 2017), Indonesia 2016, Thailand 2014
Sources: www.oica.net, www.indonesia-investments.com, Thailand Board of Investment

Figure G2. Employment in Automobile Sector



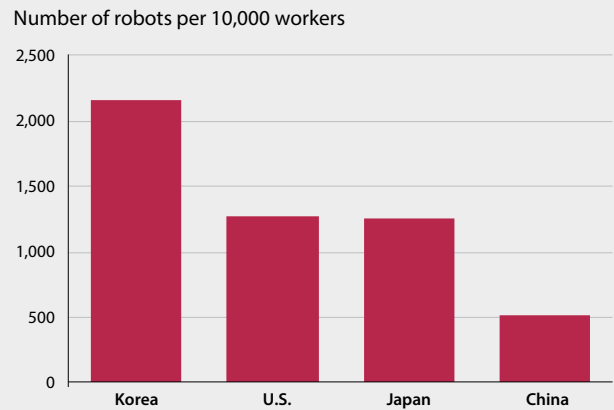
Source: ILO

decades has been for research and development (R&D) and design functions to be carried out in advanced economies while the more labor-intensive production functions are undertaken in lower-cost economies. However, the World Bank notes that robotization threatens the location of this labor-intensive assembly in low cost countries, given that automobiles, electronics, and heavy machinery are ecosystem-intensive industries, which require closely clustered suppliers which can provide just-in-time delivery of parts and services. These developments will thus affect less advanced countries in two ways. First, reducing the automobile sector’s generation of jobs; and second, heightening the risk of relocation of production activities to advanced countries or near final-demand markets.

“First wave” ASEAN+3 countries are well-placed but ASEAN countries need to boost capacity.

China, Japan and Korea are relatively well-placed, as they have proven capacity to undertake advanced, sophisticated production which is capital intensive and operates at scale. The new technology and business models are likely to create a bigger challenge for the ASEAN producers, such as Indonesia, Malaysia, Philippines and Vietnam – and Thailand to a lesser extent. Their productions are smaller in scale, and therefore their marginal costs are higher. More importantly, their ability to compete in the domestic market is based mainly on lower costs of domestic labor and high tariffs against automobile imports.

Figure G3. Robot Density in Automobile Sector



Source: IFR World Robotics 2017

As the automobile sector continues to move towards new types of vehicles (electric and, over time, autonomous vehicles), ASEAN producers will need to improve their capability and capacity in terms of technology and human capital in order to remain competitive. OEMs (original equipment manufacturers) like Toyota or Hyundai are under pressure to upgrade their production platforms in order to make more technologically sophisticated cars. This will require increasing investment in new capital as well as the availability of new skills, such as analytics and advanced engineering.⁴⁵ Looking ahead, there is a strong consensus within the industry as well as in recent World Bank and ILO studies that automation and other emerging technologies are likely to cause substantial disruptive change in the automobile sector across the world. The move to increasingly sophisticated and capital-intensive modes of production will constrain jobs creation and place new demands on labor quality and firm capability. These and the increased importance of clustering, proximity to customers and transport infrastructure, will also have an impact on the nature of GVCs in the sector, raising the prospect of production being more agglomerated than before. ASEAN producers will have to improve their capacity in terms of technology and human capital in order to survive the competition.

⁴⁵ This is happening in some countries. For example, Thailand is one of the larger purchasers of industrial robots, and is looking to build electric car capability.

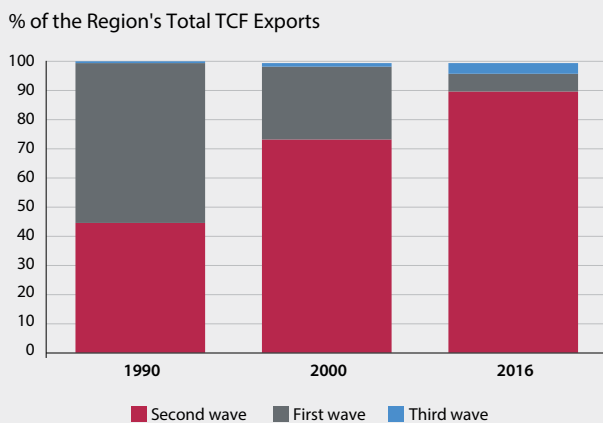
Box H.

The Textiles, Clothing and Footwear (TCF) Sector: Its Importance as a Growth Engine for Emerging Countries and a Window of Opportunity for Capacity Upgrading

The TCF sector has been a key economic engine for emerging ASEAN+3 countries.

The TCF sector has served as an important economic development engine for emerging countries including ASEAN+3 countries, generating jobs and providing openings for potentially moving up the skills and income ladder. Production within the region is heavily dominated by second-wave and third-wave countries (Figure H1). China is by far the largest exporter of TCF in the ASEAN+3 region, exporting over USD320.0 billion in 2017 (as well as large production for domestic consumption). Vietnam is a distant second in terms of absolute numbers (USD40.0 billion in 2016), but the sector accounts for about 30 percent of the country's merchandise exports. In comparison, Cambodia's TCF exports are even smaller in absolute terms, at about USD10.0 billion, but account for a very large 90 percent of its manufactured exports.⁴⁶ In terms of employment, the ILO estimates that TCF accounts for over 9.0 million jobs in ASEAN, with the sector employing more than 3.5 million workers in Indonesia, more than 2.5 million workers in Vietnam, and 605,000 workers in Cambodia.

Figure H1. Exports of Textiles, Clothing and Footwear (TCF) Sector: ASEAN+3 Region



Sources: World Integrated Trade System, World Bank, AMRO calculations

New technologies, alongside changing consumer preferences, are pressuring low-cost models.

A variety of technologies, together with changing consumer preferences, are placing pressure on the low-cost model of TCF production in ASEAN+3 countries. For example, automated cutting, robot-based sewing, 3D printing of shoes, as well as changing preferences around environmental properties of the clothing and mass customization. In parts of the TCF sector, "fast fashion" and speed to market are becoming important factors.

Currently, there are limits on the extent to which the TCF sector can be automated or disrupted by technology (because of technological constraints and economic incentives), and there is a window of opportunity for countries with lower-skilled workers and weaker technological readiness to upgrade their capacity. Indeed, the current penetration of industrial robots for TCF is the lowest among manufacturing subsectors according to the World Bank (2018),⁴⁷ at less than 0.1 robots per 1,000 workers compared to about 50 robots per 1,000 workers for the automobile sector. Automation remains at an early stage, and some relatively basic functions (for example, inserting shoelaces, still require human labor.

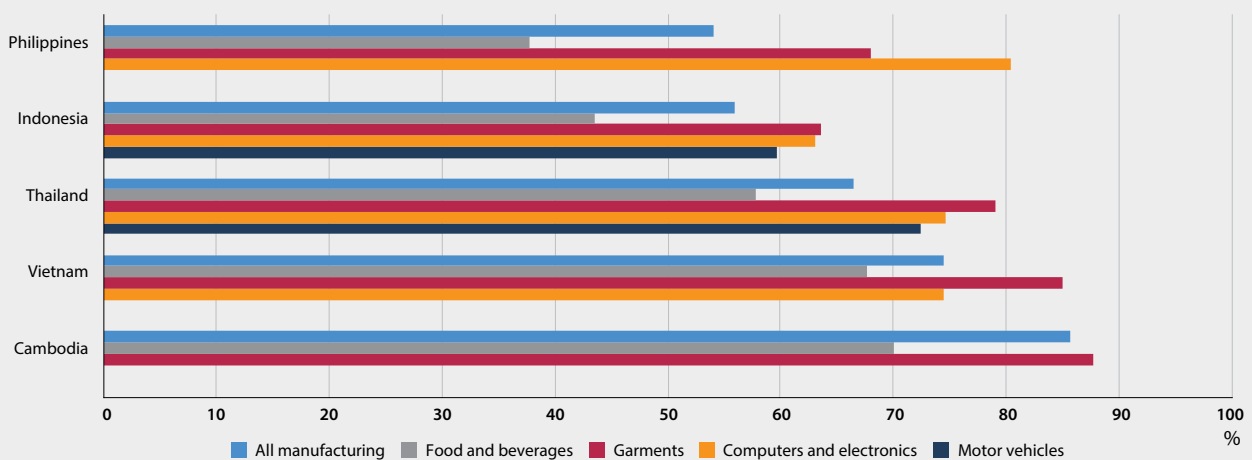
However, there is widespread concern that newer technologies will increasingly have disruptive effects on the TCF sector, with the potential to undermine the third-wave ASEAN+3 countries' strategy of first providing lower-cost labor, upskilling gradually, and then diversifying their economic development base. For example, workers may be displaced by custom cutting of materials as well as technologies which automate sewing processes. China is already investing heavily in automation to respond to rising cost pressures, and the relocation of TCF production from China to lower-cost locations in the ASEAN+3 region may not be as strong in the future as it has been in the past. According to ILO estimates, automation will impact large shares of TCF workforces in many ASEAN countries, most notably Cambodia (Figure H2). Furthermore, emerging

⁴⁶ Outside of Vietnam, Cambodia, and China, TCF exports of ASEAN+3 countries are not increasing strongly - suggesting that TCF's importance as growth engine has tailed off in most cases.

⁴⁷ Sources: *Trouble in the Making? The Future of Manufacturing-led development*, World Bank, 2018

changes in business models by TCF companies in developed markets are likely to lead to a reduction in the amount of production that is located in lower-cost countries.⁴⁸ As with other sectors, more automated production techniques and the importance of speed to market are likely to weaken the attractiveness of low-cost but distant production locations. These technologies will reduce the contribution that the TCF sector makes to many emerging countries, including those in the ASEAN+3 region. This could weaken “third-wave” ASEAN+3 countries’ strategy of using the TCF sector to attract FDI, create jobs, and generate gradual wage increases and upskilling.

Figure H2. Share of TCF Sector Employment at Risk from Automation: Selected ASEAN+3 Countries



Note: The ILO provides estimates to gauge the extent to which these at-risk workers could be replaced with automation and affected by rapid advances in engineering. These “worst-case” estimates tend not to materialize assuming that policymakers will take preventative and proactive steps to strategically transform these groups of workers to keep up with technology’s advancement and implementation. In successfully doing so, these economies could even “leap frog” over others and gain a new competitive edge. For the current purpose, impact on garments manufacturing is taken as a good estimate of impact on TCF manufacturing.

Source: ILO (2016)

⁴⁸ As one example, Adidas has established two ‘speed factories’ (in Germany and the U.S.), which use 3D printing for athletic footwear, that can each produce 500,000 pairs of shoes annually. The transfer has eliminated 1,000 jobs in Vietnam’s workforce and will create 160 technician jobs each in Ansbach and Atlanta. While this is more of an experiment at this stage than something done at scale, it points to the need to prepare for future technology disruptions associated with a mass customization environment.

25 At the risk of oversimplification, the technology challenge would be how countries can build capacity for technology absorption quickly, yet manage the pace of technology adoption judiciously, so that economic gains from productivity ramp-up do not override the adverse impact on employment and income. This is critical for countries which are further away from the technology frontier and have populations which are young, expanding,

and still in the relatively early phases of upskilling. The complexity of this process may be affected partly by a country's economic structure, including (as the contrasting nature of the automobile sector and the TCF sector has illustrated) the extent to which major sectors of the economy have a window to shift gradually from labor-intensive and low-technology production to more capital-intensive and high-technology production.

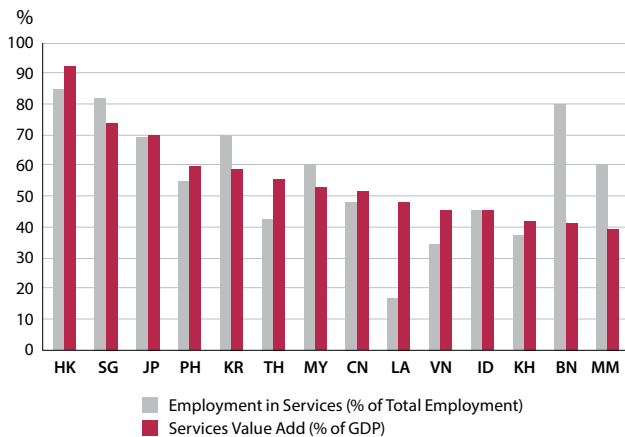
5 Services Sector: The New Engine of Growth and Employment?

Services' contribution to ASEAN+3's growth and employment is large and rising.

26 With technology posing challenges to the manufacturing-for-exports strategy, economies are turning to services as an alternative engine for growth and employment. As a whole, the services sector's contribution has been rising rapidly over time, and it now accounts for more than half of both GDP and employment in many ASEAN+3 countries (Figure 5.1). This is broadly consistent with global trends, whereby trade in services is growing and has been accounting for an increasingly large share of total global exports since the 1980s (Figure 5.2). Based on WTO and OECD data, while services as a share of total world gross exports have remained at around 20 percent since 1980, in VA terms, they have increased from below 30 percent to more than 40 percent (WTO, 2017). Looking at selected ASEAN+3 economies (Figure 5.3), the service VA content of gross exports ranges from 30 to 50 percent.

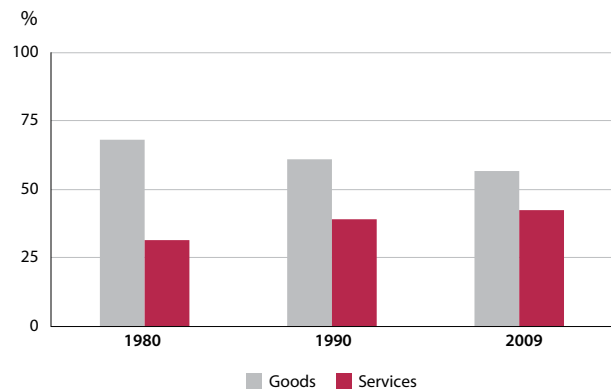
27 A key traditional concern about the services sector is that while it absorbs labor, it is not a high-productivity sector compared to manufacturing. Although the services sector is highly diverse, many services sub-sectors are widely perceived to be characterized by low quality jobs, with low productivity and wages; with limited opportunities for upskilling, and little mobility within and across sectors (ILO, 2016). Examples include manual cleaning services, security guards, receptionists and sales jobs, and delivery services. Growth in the services sector is not associated with overall productivity growth, but rather, driven by rising demand for services relative to goods supported by a shift in available labor from manufacturing to services. The price-inelastic nature of demand for services, combined with lower productivity of the services sector, can potentially pose a drag on the economy's overall productivity and growth (Baumol, 1967).

Figure 5.1 Services' Share of GDP and Employment: ASEAN+3 Countries, 2016



Note: Japan's services share of GDP data is 2015.
Source: World Bank

Figure 5.2 Value-Added (VA) Global Exports of Goods and Services

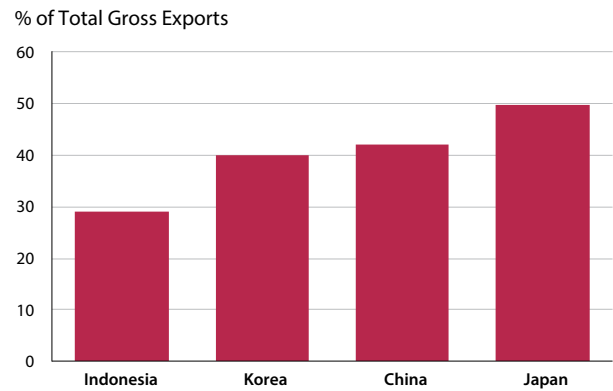


Source: WTO Global Value Chain Development Report (2017)

Commoditization and “uberization” raise productivity of services.

28 The low productivity of the services sector is partly due to its mainly non-tradable and non-standard nature, which means it is not subject to international competition and economies of scale for standardized production. Technology is however making services more tradable and commoditized, with potential gains for productivity. The Information, Communications and Technology (ICT) revolution over the past few decades, for example, has made the growth of the business process outsourcing (BPO) service industry possible. Telecommunication costs have fallen sharply, allowing such services to be provided more cheaply from abroad by countries with lower labor cost, which has benefited frontier and emerging economies with labor force of the requisite skills. Services in call centers, accounting, and other types of professional services, which previously could only be provided domestically – either for cost reasons or because face to face contact was important – can now be provided across borders and subject to international competition. Box I on the BPO sector in the Philippines illustrates the opportunities created through technology making BPO services tradable, with the important prerequisite of a skilled labor force in the Philippines able to join this service industry.

Figure 5.3 Services Value-added (VA) Content of Gross Exports: ASEAN+3 Countries, 2011



Source: OECD's TiVA database

Box I.

Business Process Outsourcing (BPO) and Services in General: How the Philippines' Experience Suggests Upskilling is Needed for Future Competitiveness

The ICT revolution has broadened the set of tradable services.

The Philippines has benefited tremendously from the ICT revolution with services now accounting for about 40 percent of total exports (similar to India) largely driven by the BPO sector (Figure I1). BPO employs more than 1 million workers with wages 3-5 times higher than the national average; and over the past decade, it has broadened from call centers to a broader set of functions and more complex services.⁴⁹

The value proposition of the Philippines' BPO sector is being undermined by disruptive technology.

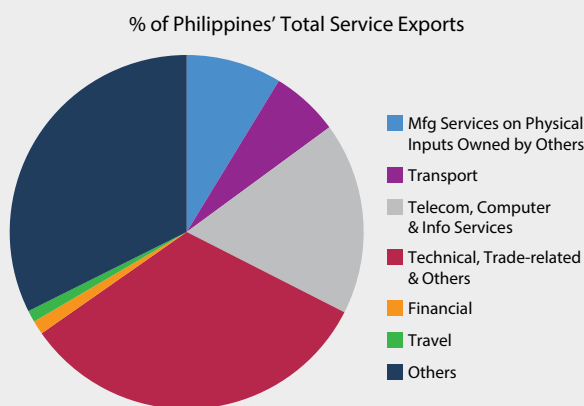
Business services like BPO are also exposed to technological disruption. While the BPO sector is still growing quite well in the Philippines, there are challenges on the horizon, with technology eroding aspects of the current value proposition. New technologies are poised to eliminate many call-center jobs and transform others. Artificial intelligence (AI)-enabled softwares or robots can perform tasks quickly, work around the clock, and produce high-quality output. This technology can enable and incentivize firms to move away from an outsourcing model, and cost-effectively bring these functions back inside their firms. As with automation technologies in other sectors, the greatest threat is to routine repetitive jobs. The ILO (2016) estimates that up to

90 percent of jobs in the BPO sector in the Philippines are at risk of disruption from automation, while the remaining jobs will require higher-order skills.

But rapid technological advances can also create opportunities for the Philippines and others.

However, rapid technological advances in the services sector can also give rise to opportunities, though new skills will need to be developed to provide higher VA services. For example, the emergence of cloud technologies which support Business Process as a Service (BPaaS) is a growth opportunity, opening up the SME market (as it can take a more tailored approach to purchasing BPO services, with reduced fixed costs). And technology also allows BPO providers to offer new services to guard against the erosion of their existing business. As a case in point, the ILO notes that some firms are "shifting their services towards knowledge process outsourcing (KPO)", such as "fraud analytics, data integration, project management, R&D, mergers and acquisitions valuation, and medical image analysis". More likely than not, the way ahead for both advanced and emerging countries within the ASEAN+3 region must involve rapid upskilling of human capital and innovation by businesses to provide new types of services which will be in demand.

Figure I1. Breakdown of the Philippines' Service Exports



Source: National Authority

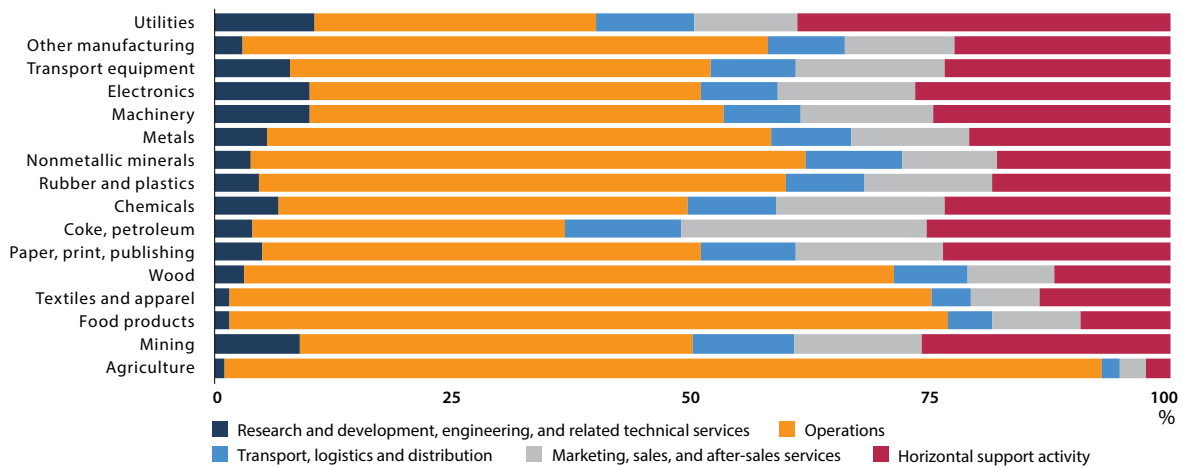
⁴⁹ These include back office support, data transcription, animation and software development.

29 Technology has also facilitated market-driven identification of services in great demand, then use of technology to deliver these more efficiently, cheaply and predictably to consumers. This so-called “uberization” of services, while potentially disruptive to current service providers, introduces competition in domestic markets and hence raises productivity. Examples can range from taxi services to tourist accommodation. In addition, by offering customized goods and services for end-use consumers, “uberization” can create new demand for services and support the growth of small and medium enterprises. A recent example cited in the literature is that of smaller manufacturers, including companies which were previously unable to enter the manufacturing sector due to cost barriers, renting equipment and buying a range of services in an uber-like manner to produce highly-customized products for consumers. (See, for example, Sheng, 2017.) Alongside this, the application of digital technologies, for example in big data analytics, can help manufacturing firms in several areas of their operations, ranging from forecasting demand and adjusting inventories to identifying production bottlenecks and reducing wastage (MAS, 2018). Across various sectors of the economy, start-ups can grow to become large companies. For example, European budget airline Ryanair to Indian mobile service provider Airtel are companies with business models that exploit new technology to eliminate outdated purchase or usage experience, or eliminate a superfluous major expense category (Ersek, Keller and Mullins, 2015).

30 Supported by new technology, a more efficient and competitive services sector also has positive spillovers to the manufacturing sector and reinforces the manufacturing for exports strategy (WTO, 2017). Examples of service industries that support manufacturing exports are R&D, transport and logistics, operations, and marketing and sales (Figure 5.4). The service sector employment created here is skilled employment, with productivity driving wages, which is a step up from the traditional conception of service sector employment as low-productivity with low wages.⁵⁰

31 Similar to the manufacturing sector, the services sector increasingly requires a numerate and literate workforce, with low-skilled jobs also at risk of being automated away by technology. ILO estimates show that a high share of services sector jobs in hotels, banking retail trade and call centers could be at risk of being automated away (Figure 5.5). Maximizing the potential gains from developing the services sector as a growth and employment driver therefore requires investment in human capital to upskill of the labor force. This is the path that has enabled “first wave” countries such as Japan to improve productivity in the services sector in tandem with extensive automation, although it is acknowledged that there is more room for improvement in some services industries such as the retail industry.

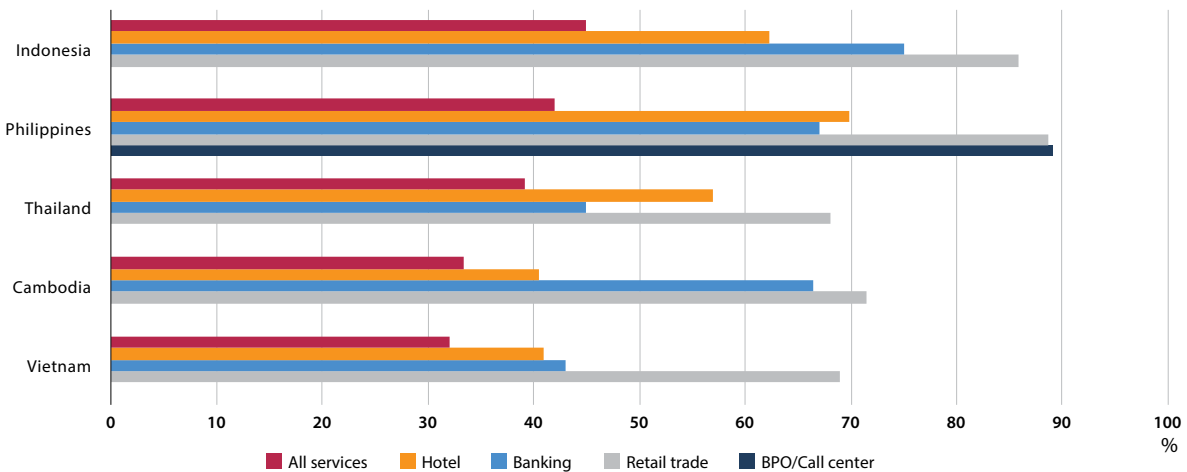
Figure 5.4 Jobs Embodied in Manufacturing Exports: by Industry and by Business Functions



Source: Miroudot (2016)

⁵⁰ Technology has also led to the creation of non-standard employment, or “gig-economy” jobs, which on the one hand creates more employment opportunities, but on the other hand brings challenges of employment security and coverage under social security arrangements compared to standard employment (ILO, 2017).

Figure 5.5 Share of Wage and Salaried Employment in Services Sub-sectors at High Risk of Automation



Note: The ILO provides estimates to understand the extent to which these at-risk workers could be replaced with automation and affected by rapid advances in engineering. These “worst-case” estimates tend not to materialize assuming that policymakers will take preventative and proactive steps to strategically transform these groups of workers to keep up with technology’s advancement and implementation. In successfully doing so, these economies could even “leap frog” over others and gain a new competitive edge.

Source: ILO (2016)

Growing intra-regional demand can drive demand for services.

32 Similar to the role played by growing intra-regional demand in spurring regional exports, growing demand for services (such as tourism) can also spur the development and upgrading of various services sub-sectors within the region. One important growth sector is tourism, boosted by intra-regional flows of tourists, in particular outbound tourists from China in recent years (AMRO, 2017). As highlighted in the first chapter of this report, outbound tourism activities by Chinese nationals in the region have grown rapidly, providing an impetus to service sector development and an important source of foreign exchange earnings particularly to developing ASEAN economies. This observation is consistent with common expectations that the travel and tourism sector will account for significant shares of many ASEAN+3 economies’ services

exports in the years ahead. Box J explores the potential for tourism as a growth and employment driver in the region. With promotion efforts from the authorities, the tourism sector could become a strong engine of growth, jobs and wage incomes for the “third wave” economies in ASEAN+3 that are well-endowed with natural and cultural tourist attractions. It could create service employment at a time when its labor force is still growing, and add to the economies’ resilience by providing an additional engine of growth even while these economies are starting to integrate into manufacturing GVCs in the region. The sector also offers a continuum of value-added and positive spillovers to the rest of the economy, with the tourist sector in Thailand as a prime example. The growing demand for quality tourist services, alongside rapid technological advancements, has also led to upgrading, expansion and professionalization of the tourist sector in the region.

Box J.

Tourism as a Growth Driver in ASEAN+3 Countries: Evolution and Challenges

This box considers how global macro trends over the past two decades have helped several ASEAN countries develop the tourism sector as an increasingly important growth driver and jobs generator, and prospects for enhancing the sector's contribution further. The economic contribution of travel and tourism to the global economy has widened in scope and risen in importance over the past two decades. Overall, the total contribution of the sector to both global GDP and global employment has been estimated at more than 11 percent⁵¹ (Figure J1).

The tourism sector has evolved for “first wave” and “second wave” ASEAN+3 countries.

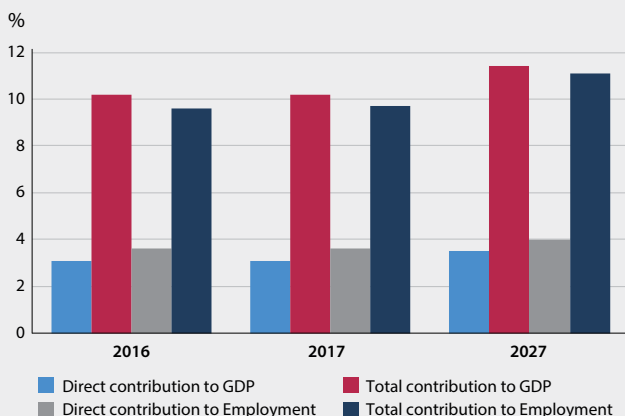
Globally, a few macro trends have jumpstarted and sustained the buoyant development of tourism: a rising global middle class, changing consumer preferences, improved connectivity, and a pressing need to create jobs.

Despite the impact of the GFC and European sovereign debt crisis, there has been a notable rise of the global middle class and shift in consumer preferences. The global middle class has doubled in size between 2000 and 2015, and its consumption expenditure is projected to rise from about USD35.0 trillion in 2015 to USD64.0 trillion by the 2030 (Figure J2) (Kharas, 2017). Disposable incomes have risen to levels which enable more people to travel (Global Tourism Economy Research Centre, 2016; and others).

Alongside buoyant increases in outbound travel from Asia and the Pacific since 2009, intra-regional travel has ramped up more sharply than travel to destinations outside the region (Figure J3). Consumer preferences have also been changing, with many studies in the literature (e.g. Kharas, 2017; World Travel and Tourism Council; Best, 2015; and TravelRave, 2013) suggesting that new middle class entrants from EMs and ageing persons from advanced countries alike, are seeing a shift in demand from basic goods and standardized services to new experiences and customized services as part of these experiences.

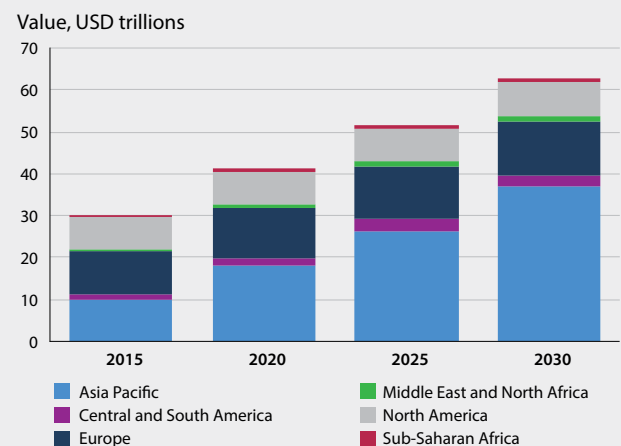
Vast improvements in domestic infrastructure and cross-border connectivity (Figure J4) have been a key enabling factor. Air, rail and road transport have all become much more efficient and comfortable, costs have kept falling partly due to competition and partly due to technology. With transportation networks becoming denser both across and within countries, traveling has become much more attractive than before. These developments have made tourism a natural avenue for the growth in income to be channeled towards satisfying these new consumer preferences. At the same time, the need to create jobs for large populations has been pressing across several ASEAN+3 countries, as indeed it has been in other regions across the world.

Figure J1. Projected Economic Contribution of the Global Travel and Tourism Sector



Sources: World Travel and Tourism Council 2017

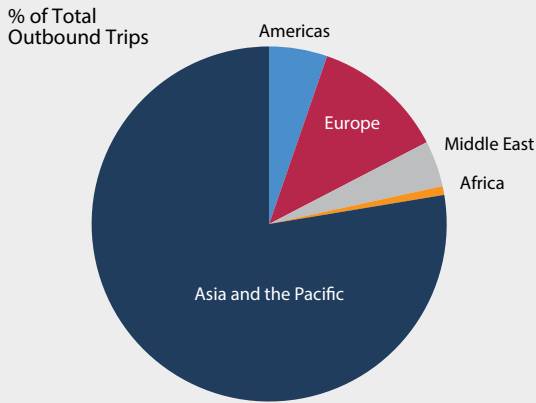
Figure J2. Projected Global Middle Class Consumption Expenditure (PPP, constant 2011 USD trillions)



Source: Kharas 2017

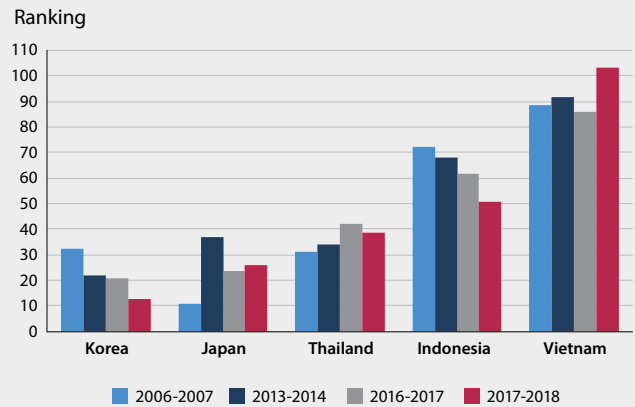
⁵¹ Key elements of direct contribution include accommodation, transport, entertainment, food and beverage services, and retail trade; while key elements of indirect contribution include private investment spending and public sector investment spending, purchases from suppliers, and even knock-on demand by tourism sector workers for food, clothing and housing.

Figure J3. Composition of Outbound Trips: Asia and the Pacific (2016)



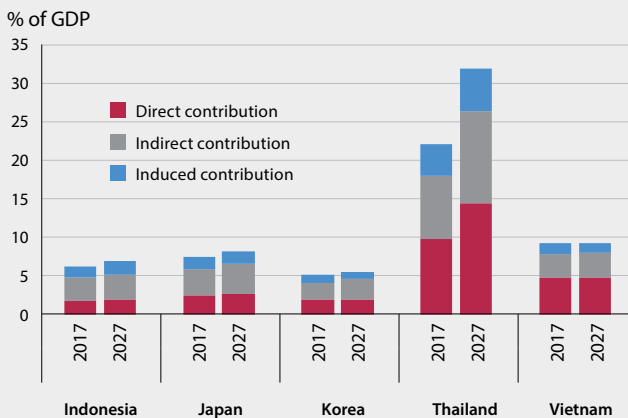
Source: Global Tourism Economy Research Centre (2017)

Figure J4. Quality of Domestic Infrastructure and Air Transport Infrastructure: Selected ASEAN+3 Countries



Note: Ranking for 2006-2007 (out of 125 countries), 2013-2014 (148 countries), 2016-2017 (138 countries), 2017-2018 (137 countries)
Source: World Economic Forum

Figure J5. Travel and Tourism Sector's Contribution to GDP: Selected ASEAN+3 Countries



Notes: Indirect contribution includes travel and tourism (T&T) investment spending, government collective T&T spending, impact of purchases from suppliers. Induced contribution includes food and beverages, recreation, clothing, housing and household goods.
Source: World Travel and Tourism Council 2017

Figure J6. Travel and Tourism Sector's Contribution to Employment: Selected ASEAN+3 Countries



Source: World Travel and Tourism Council, 2017

“Second wave” countries have done well in using tourism to spur growth.

Despite lagging behind “first wave” countries in infrastructure and connectivity, “second wave” countries have done well in using tourism to spur growth: creating jobs, lifting incomes, spawning other economic sectors, and lifting growth overall (Figure J5). Both demand- and supply-side factors have been at work. On the demand side, tourists seek leisure, attentive service and new experience. This often means little or no pressure to use advanced technology or highly productive labor to churn output. On the supply side, many ASEAN+3 countries’

demographics have been an important enabling factor. Thailand is a good example: it has excellent attractions, it has done exceptionally well in marketing its hospitality offerings; and it is not as labor-constrained as some other countries in the region. The tourism sector accounts for a much larger share of total employment in Thailand than it does in other ASEAN+3 countries (Figure J6). Indeed, in the “second wave” countries, the young growing populations have included sizable segments of low- or semi-skilled workers who are willing to take up service jobs in the tourism sector in return for decent pay such as tourist guides, masseurs, receptionists and waiters.

Technological advancements have already played a key enabling role.

Besides drastically improving domestic infrastructure and cross-border connectivity, technology has also enabled more cities in Asia to become “smart cities”. For the travel and tourism sector, this has meant a big boost due to higher degrees of comfort, greater ease of searching for food and entertainment options, lower costs – for a range of services including accommodation, leisure activities and healthcare, and greater ease of payments (with more travelers shifting from cash and credit cards to digital/mobile payments). The ramp-up in demand for a whole range of services has in turn generated employment in both the services and manufacturing sectors of countries across the region.

Development opportunities are rich, and greater regional collaboration can play a key role.

Looking ahead, there are rich opportunities for developing the tourism sector further, provided that “second wave” countries keep upgrading their human capital, technology and ecosystems. Although the tourists of the future may not necessarily want “high tech” experiences, they are likely to generate large demand for experiences which are most efficiently delivered by having skilled human capital applying high-technology methods. One example is air travel, where preferences are growing for more complete inflight experiences including customized meals and

fresher entertainment – which are likely to raise demand for more highly-skilled workers behind the scenes. Another example is dining experiences, where there is a need to produce high-quality meals and reduce order-to-delivery times. A third example is “medical tourism”, where the experience sought may cut across many areas ranging from advice from physicians and treatment administered by physiotherapists to entertainment during waiting periods and after-treatment counselling services. These examples illustrate how, developing the tourism sector as a strong driver of growth and jobs is likely to require much more advanced technology readiness, higher-quality human capital and a more efficient ecosystems.

Greater intra-regional collaboration can play a key role in developing the competitiveness of the tourism sector across ASEAN+3 countries. ASEAN countries have already come together to take some joint policy actions for boosting the attractiveness of the region for tourist experience. The Tourism Strategic Plan 2016-2025 is wide-ranging in its coverage, with priorities including the development of ASEAN sub-regional corridors, attracting investments to boost tourism infrastructure, implementing a mutual recognition framework for tourism professionals, facilitating intra-region air travel, and even raising responsiveness to environmental protection and climate change.

6 Policy Recommendations: Building Resilience through Multiple Engines of Growth

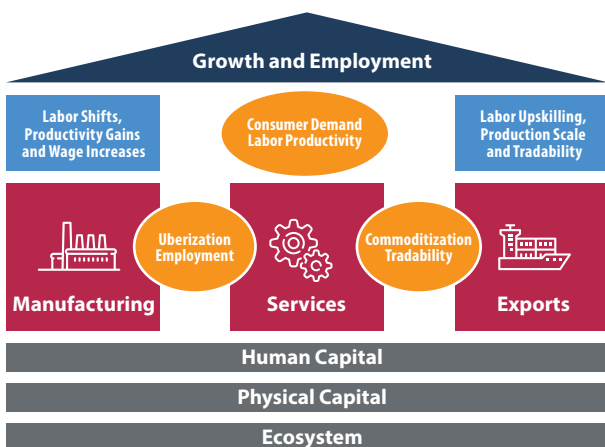
33 For an individual economy in ASEAN+3, given the challenges of changes in trade, production and technology, the key recommendation is to build resilience through multiple engines of growth, including through the growing services sector. While the “manufacturing for exports” strategy has been the mainstream strategy for development in most ASEAN+3 economies over the past decades, the experiences of other economies in the region have shown that other strategies can also make important contributions to growth, especially for newly-emerging economies. The experiences of the Philippines in adopting a services-based growth model and the experiences of Lao PDR, Brunei and Indonesia in concentrating on their resources sectors point to the viability of growth strategies that are more broad-based and diverse than those focused exclusively on developing a manufacturing base. The resource sector will continue to be important in some economies in the region, for example in Indonesia, Lao PDR and Myanmar. The challenge is to build resilience in the economy against swings in global commodity prices, for example, or protectionism against certain manufacturing sectors. The analysis suggests economic diversification, and in particular building a vibrant services sector to augment the growth strategy (Figure 6.1).

34 Economic diversification, through growing the services sector and harnessing technology, requires policymakers to take an “ecosystem” perspective in order to deal with the complexity and interaction among various economic sectors. For example, while low wages may be the single most important factor to attract FDI into a manufacturing sub-sector such as garments, diversifying

into other sectors such as tourism requires policy focus on a suite of policies. On this, the World Bank (2018) notes that “the importance of low wages in determining low unit labor costs is increasingly giving way to more demanding ecosystem requirements”. If some of the traditional sources of advantage become less effective, then there is a need to invest in other areas that make the country competitive as well as attractive to foreign investment. The World Bank’s ease of doing business index reveals some key issues for several ASEAN+3 countries (Figure 6.2). These include customs procedures, quality and capacity of ports and airports; quality of business environment; transport and communications infrastructure. These areas need to be addressed comprehensively through a mix of trade, fiscal and social policies.

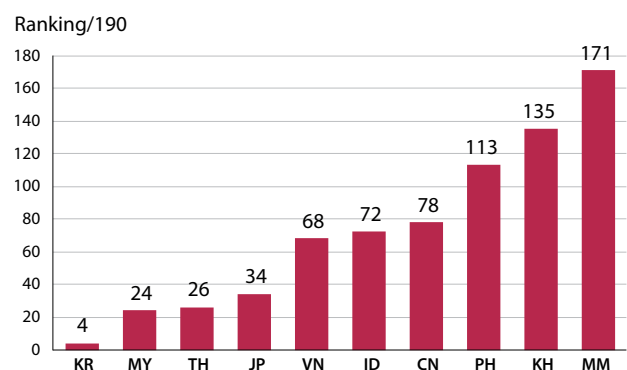
35 For ASEAN+3 economies as a region, the key recommendation is to strengthen intra-regional connectivity and integration. Strengthening intra-regional connectivity through improving physical infrastructure and trade facilitation would improve the competitiveness of GVCs that have already formed within the region. This would make the whole network of intra-regional GVCs more resilient against shocks, so that the region can continue to maximize benefits from the “manufacturing for exports” strategy. In addition, increased intra-regional connectivity would facilitate more trade in goods and services to meet growing intra-regional final demand. While the region remains open to global trade and investment, leveraging on intra-regional demand would improve the resilience of the region as a whole against external shocks such as protectionism.

Figure 6.1 Schema of ASEAN+3 Countries’ Augmented Growth Model



Source: AMRO

Figure 6.2 World Bank’s Ease of Doing Business Index: Selected ASEAN+3 Countries



Source: World Bank Ease of Doing Business, 2018

Figure 6.3a Costs to Clear Customs: ASEAN+3 Countries and Selected Comparators, 2014

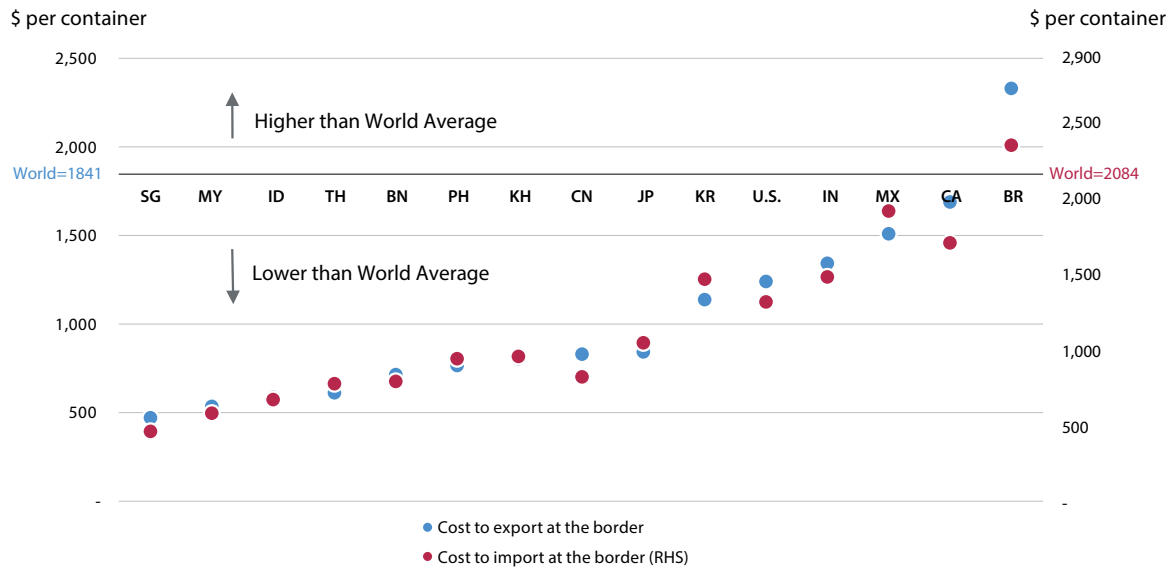


Figure 6.3b Number of Documents to Clear Customs: ASEAN+3 Countries and Selected Comparators, 2014

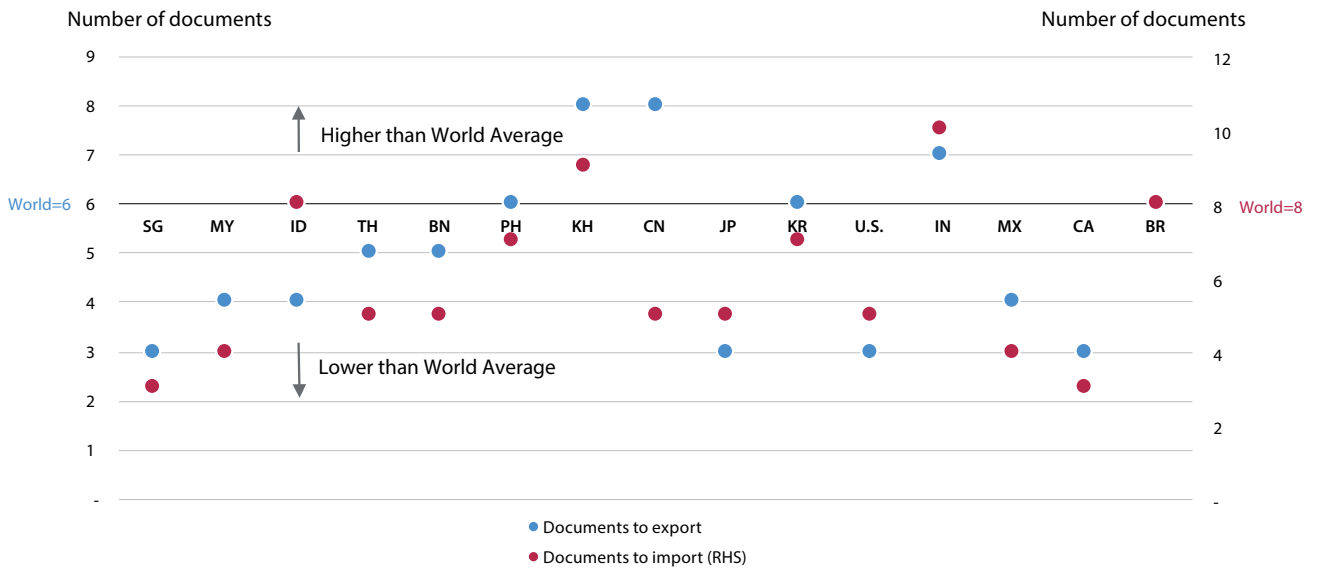
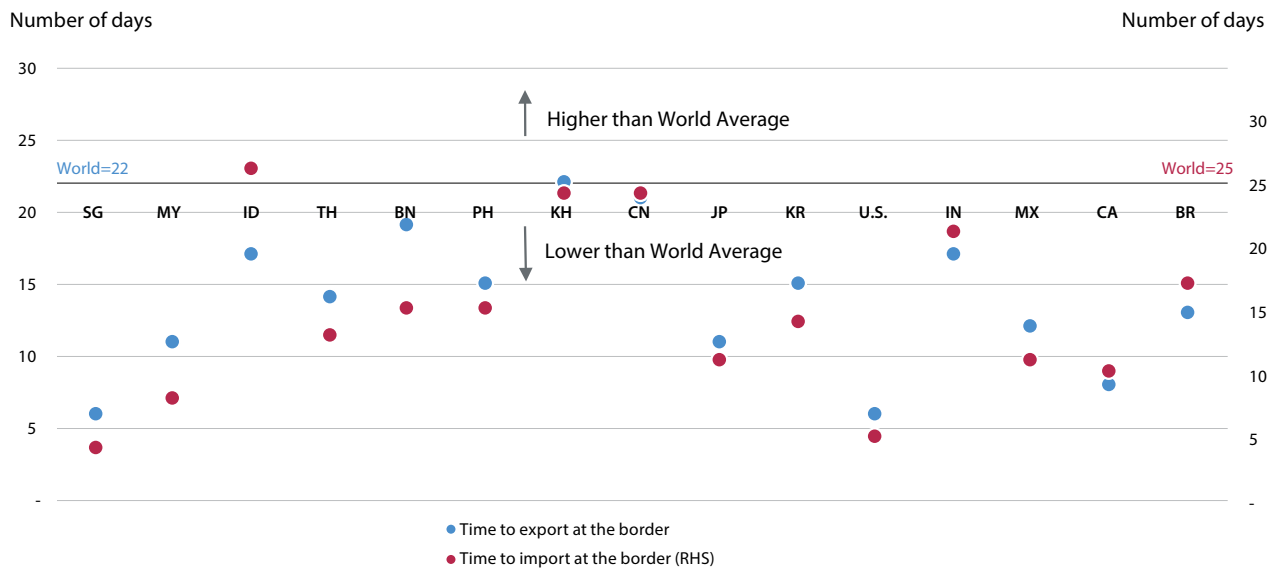


Figure 6.3c Number of Days to Clear Customs: ASEAN+3 Countries and Selected Comparators, 2014



Source: WTO (2016)

36 In implementing these recommendations, the ample resources and diversity in development within the ASEAN+3 region can be a source of strength. The “first wave” economies – Japan, Korea, Hong Kong and Singapore – are important investors in the region. China, Malaysia and Thailand, in the “second wave” of economies, are also emerging as major FDI investors in the region. China, through its BRI, is financing the building of much-needed infrastructure (see Box K), and Thailand is a regional hub in the Mekong region. For these economies, the ASEAN+3 hinterland has allowed relocation of production bases from their home countries as costs increase, to the neighboring countries. These recommendations are elaborated below.

Strengthening intra-regional connectivity and integration

Trade Facilitation and Special Economic Zones

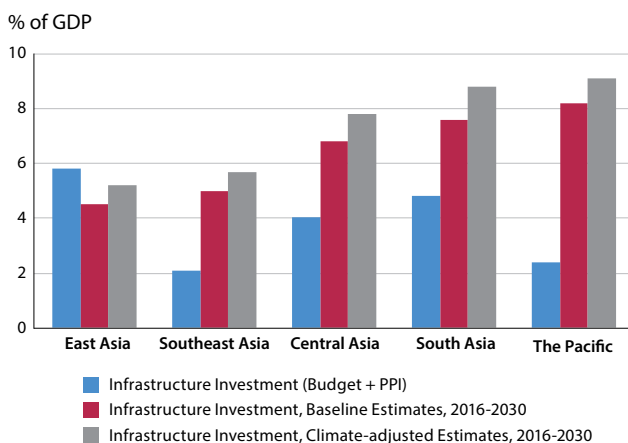
37 Although the ASEAN+3 region has reduced costs of trading through tariff reductions, there is still room for trade facilitation efforts to reduce trade costs and customs procedures. ASEAN+3 economies are among the lowest-cost compared to other emerging markets, in terms of indicators such as costs to export or import at the border, and numbers of days to clear customs. However, there is still room for improvement, for example in terms of number of documents to submit at customs (Figure 6.3). These efforts would also help maximize the gains from trade, in particular for economies in GVCs, where trade facilitation would

reduce the cost and time involved in intermediate inputs crossing national borders.

38 For GVC integration, reducing costs of imported inputs is as important as export promotion, and the establishment of Special Economic Zones (SEZs) in the region could facilitate imported inputs for processing into exports. These SEZs could provide an important avenue into integration into GVCs for the “third wave” countries in the region. Cambodia, Lao PDR, Myanmar and Thailand have designated SEZs and industrial parks close to their borders. Examples include Dawei in Myanmar-Kanchanaburi in Thailand, Mukdaharn in Thailand-Savannakhet in Lao PDR, Poi Pet O’Neang in Cambodia-Srakeaw in Thailand, Chiang Rai in Thailand and the Kyaukphyu SEZ in Myanmar, which is close to Yunnan province China. Given its geographical location, Yunnan has plans to become China’s transport hub connecting to South Asia and Southeast Asia.⁵² These are aimed at promoting and facilitating the development of regional value chains, between heavy industries in Thailand and Guangxi and their suppliers operating in labor-intensive industries in the neighboring countries.

39 Improving infrastructure and connectivity, both within borders and across borders, is critical to export competitiveness. The infrastructure gap is large. The ADB estimates in 2017 that over the period 2015-2030, climate-adjusted infrastructure investment needs amount to 5.7 percent of GDP per annum for Southeast Asia and 5.2 percent per annum for East Asia (Figure 6.4). Within these estimates, lower-income countries’ needs would be a few times as large as those of high-income countries.

Figure 6.4 Infrastructure Investment Needs: Asia and the Pacific



Note: In this case, East Asia comprises China, Hong Kong, Taipei, China, Korea and Mongolia; Southeast Asia comprises Indonesia, Malaysia, Thailand, the Philippines, Singapore, Brunei, Cambodia, Lao, Myanmar and Vietnam.

Source: ADB (2017)

40 The ASEAN+3 region has ample resources to invest in intra-regional connectivity, with China’s BRI being a prime example. As outlined in Box K below, there are several channels through which countries across the ASEAN+3 region can benefit from BRI. Firstly, considering the still large developmental needs in many ASEAN countries, these economies can benefit from BRI’s focus on infrastructure investment, in terms of improved energy supply, more efficient transportation, and better connectivity, facilitating further regional integration. Secondly, through helping to fill the infrastructure investment gap in the region, BRI is also expected to have second-order positive impact through crowding in private investment. Thirdly, the distribution of China’s ODI in BRI countries will likely reflect the resource endowments and comparative advantages of each BRI country, thus helping to plug gaps and augment strengths.

⁵² Policies to develop the province’s logistics infrastructure, economic and technological development zones as well as a border economic cooperation zone in the province are in the pipeline, with the aim of promoting cross-border economic activity and transforming the province into an export-oriented processing base for South Asia and Southeast Asia and to promote cross border economic activity in the south of China.

Box K.

China's Belt and Road Initiative: Growing Outward Investment and Implications for ASEAN Economies

The BRI, unveiled by President Xi in 2013, is a major initiative by China aimed at strengthening intra-regional integration between China and countries in Eurasia and beyond. Geographically, the BRI refers to the Silk Road Economic Belt (land route) along the traditional Silk Route from China to Central Asia, West Asia and then through Eastern Europe into Europe. The Maritime Silk Road (maritime route) refers to the maritime side of the Silk Road from the coastal regions in China to Southeast Asia, Indian Ocean, Middle East and Eastern Africa and then to Europe. The land and maritime belt and road will involve around 70 countries, making up 60 percent of the world's population and 30 percent of global gross domestic product.⁵³ This Box aims to examine the impetus behind China's growing ODI, and the implications for emerging and developing ASEAN economies.

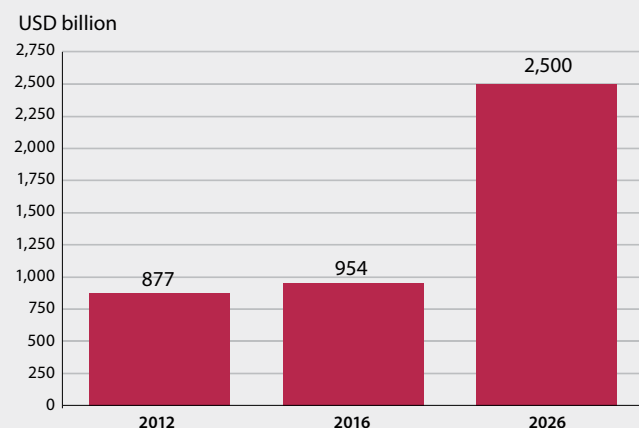
China's trade with BRI countries has grown significantly over the years, and will continue to gain traction. Figure K1 shows that China's trade with countries involved in the BRI is just under USD1.0 trillion in 2016 (or 25.7 percent of China's total trade). At the 2015 Boao Forum for Asia Annual Conference, President Xi indicated that he expected this figure to surpass USD2.5 trillion⁵⁴ within a decade due to improved trade interconnectedness and market access. The top 10 BRI trade partners with China are Vietnam, Thailand, Singapore, United Arab Emirates, Russia, Indonesia, Philippines, India,

Malaysia, and Saudi Arabia, six of which are in ASEAN+3 (Figure K2).

After 40 years of reforms and opening up, China has accumulated vast resources, both in terms of expertise and financial resources, to invest overseas. Given its large domestic savings, China can benefit from channeling its savings towards productive investment, both within and outside the region. For the first time in 2016, China's ODI exceeded inward FDI. According to estimates, China's BRI-related ODI is set to pick up, with USD600.0-800.0 billion investments expected for the next five years.⁵⁵

Following the principle of extensive consultation, joint contribution and shared benefits, China is now cooperating with BRI countries and organizations to mobilize funding for BRI projects. So far, more than USD270.0 billion has been allocated to various development projects. China Development Bank has granted USD168.0 billion worth of loans for more than 600 projects since BRI was unveiled, and the Export and Import Bank of China has made BRI-related loans of around USD100.0 billion.⁵⁶ The newly established Silk Road Fund, backed by China's government, has also lent USD4.0 billion of funds. The China-led Asian Infrastructure Investment Bank (AIIB), launched in early 2016, has granted USD1.7 billion of loans for nine projects so far.

Figure K1. China's Trade with BRI Countries



Sources: Belt and Road Portal, Reuters

Figure K2. Top 10 Largest BRI Trading Partners of China



Source: IMF DOT

⁵³ Chin, H., & He, W. (2016). The Belt and Road Initiative: 65 Countries and Beyond. Hong Kong: Fung Business Intelligence Center.

⁵⁴ Boao Forum for Asia Annual Conference 2015, in Boao, south China's Hainan Province, China. 29 March, 2015.

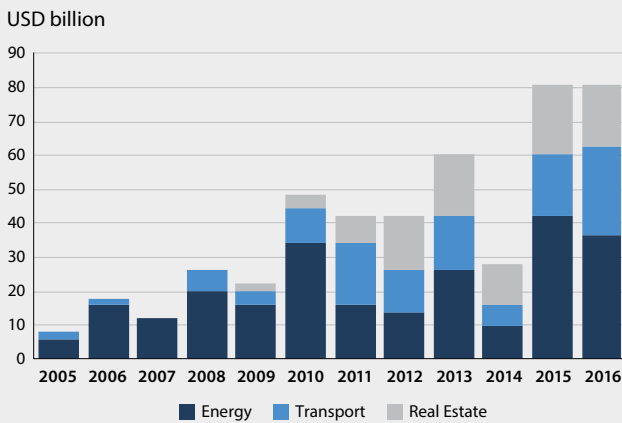
⁵⁵ Yi, H. (2018). Singapore Summit 2018 - Connectivity and Inclusive Development under the "Belt and Road" Initiative. [online] Singapore Summit.sg.

⁵⁶ UOB. (2017). "China: Belt and Road Initiative and What it Means."

Enhancing Regional Integration with Emerging and Developing ASEAN Economies

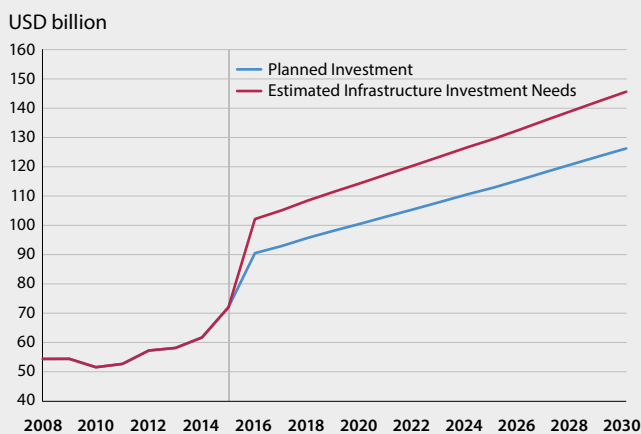
Considering the still large developmental needs in ASEAN, these economies are poised to benefit from the BRI, in terms of improved energy supply, infrastructure and connectivity, facilitating further regional integration. China's total ODI is mainly concentrated in the energy, transportation and real estate sectors, with China's investment and construction contracts in these three sectors cumulatively accounting for

Figure K3. China's Investment and Construction Contracts in ASEAN Economies (by Sector)



Note: ASEAN in this context excludes Singapore. Investments here are the sum of both investments and construction contracts defined by American Enterprise Institute and The Heritage Foundation.
Source: American Enterprise Institute and The Heritage Foundation

Figure K5. Infrastructure Development Needs in ASEAN Economies (2017-30)

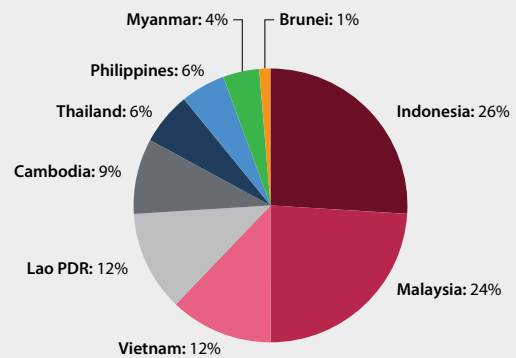


Note: Data refers to emerging and developing ASEAN economies, excluding Lao PDR and Vietnam. Data after 2015 refers to estimates.
Source: Global Infrastructure Hub

74 percent of China's ODI in ASEAN economies from 2005 to 2016 (Figures K3 and K4).

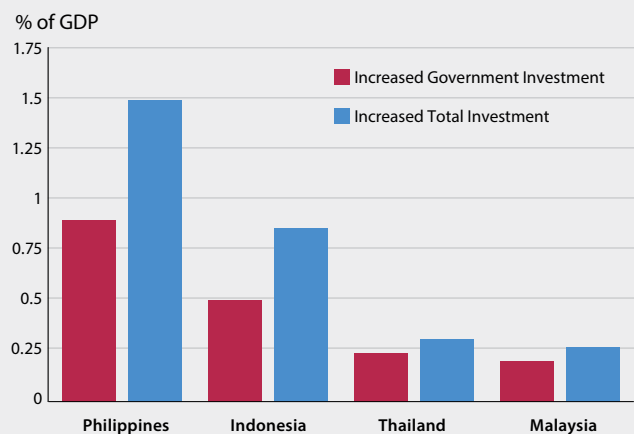
Through helping to fill the infrastructure investment gap in the region, the BRI is also expected to have second-order positive impact through crowding in private investment. Figure K5 shows that the estimated annual infrastructure investment needs in emerging and developing ASEAN economies amounted to USD15.0 billion on average, from

Figure K4. Distribution of Chinese Investment and Construction Contracts in ASEAN Economies (Cumulative 2010-2015, Share)



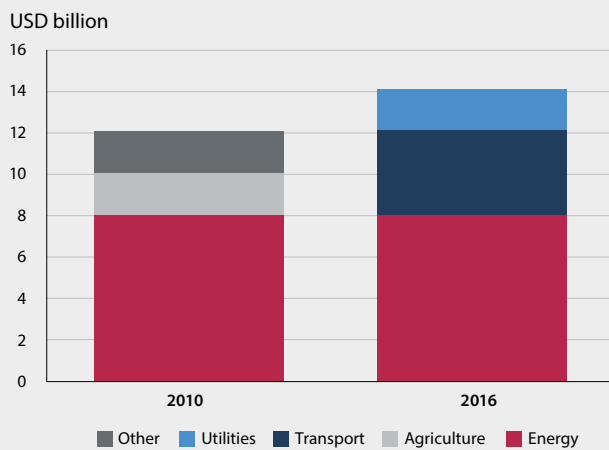
Note: Investments here are the sum of both investments and construction contracts defined by American Enterprise Institute and The Heritage Foundation.
Source: American Enterprise Institute, The Heritage Foundation

Figure K6. Impact of Total Investment and Crowding in of Private Investment in ASEAN-4, Change over 2019 to 2020 (Simulation)



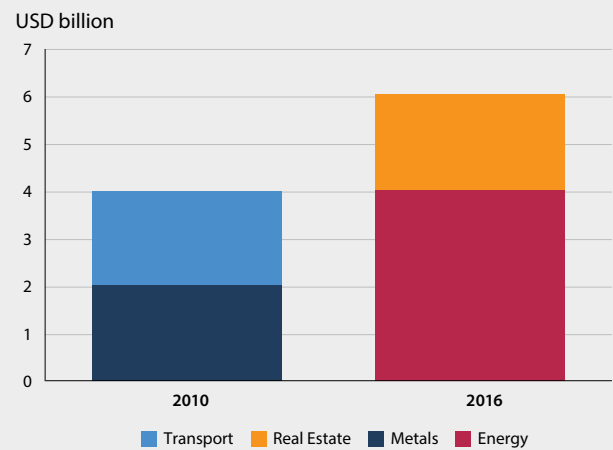
Notes: We assume that due to the BRI, government investment in these countries will exceed the investment gap shown in Figure K5 by 20 percent. This in effect, narrows the total investment gap by 20 percent. As shown by the red bar, Philippines and Indonesia have high gaps and their public investment, as a percentage of GDP will increase the most. The higher government investment will then push up private investment and GDP in the following period. The blue bars show the effect on total investment within the first two years.
Sources: Oxford Economics and ARMO staff estimates.

Figure K7. Chinese Investment and Construction Contracts in Lao PDR



Note: Investments here are the sum of both investments and construction contracts defined by American Enterprise Institute and The Heritage Foundation.
 Source: American Enterprise Institute, The Heritage Foundation

Figure K8. Chinese Investment and Construction Contracts in Myanmar



Note: Investments here are the sum of both investments and construction contracts defined by American Enterprise Institute and The Heritage Foundation.
 Source: American Enterprise Institute, The Heritage Foundation

2017-2030. Simulations show that the BRI-related public investment will crowd in private investment, especially for countries with large gap in investments. Assuming that BRI investment would help fill up 20 percent of the infrastructure investment gap, simulations based on the Oxford Economics' model estimates that this could crowd in private investment by as much as 0.3 percent of GDP within the next two years⁵⁷, with the crowding-in effect most pronounced in the Philippines and in Indonesia, whose investment gaps are also the largest in the ASEAN-4 economies (Figure K6).

The distribution of China's ODI in BRI countries also reflects the resource endowments and comparative advantages of each BRI country. For example, China's ODI in Lao PDR is focused on the hydropower sector and the transport sector (Figure K7), with the construction of a new high-speed rail line running from southern China through Laos to Thailand's industrial eastern coast.⁵⁸ In Vietnam, the main sectors are coal and electricity. In Myanmar, the main sector is energy – for example the cross-border gas pipeline into the southeastern part of China (Figure K8).⁵⁹

Maximizing Mutual Benefit from BRI Projects

Given that most ASEAN economies are still in the catch-up phase, there is a developmental need for sustained FDI. Nevertheless, there are challenges for both the Chinese and the BRI participating economies, which could be managed with appropriate coordination and prioritization by national authorities.

- First, while it is noted in the Belt and Road Vision document that development of the BRI is a flexible process that will differ in implementation from place to place, China will need to cooperate with other countries along the route to work out relevant timetables and roadmaps, and align national development programs and regional cooperation plans. This requires close and continuing coordination among the various national authorities and relevant agencies.
- Second, to ensure sustainability, social and environmental safeguards according to international best practices would be observed during implementation of the BRI projects.
- Third, on China's side, there is increased exposure of Chinese financial institutions to BRI countries and these risks would have to be managed through appropriate contractual safeguards or other risk management tools, such as hedging of financial risks.
- Fourth, on the side of participating economies, the BRI project funding is mainly in the form of loans for medium to long term projects. This requires careful assessments of project viability at the start, so as to ensure that these projects can generate sustainable returns that can be used to pay back the loans. Any fiscal guarantees or co-financing needed would also need to be carefully managed by the participating country for fiscal sustainability.

⁵⁷ As the Oxford Economics' model uses supply-side factors to determine GDP in the long-run, but we only shock the demand-side factors, therefore, we only use the dynamics in the first two years to study the crowding-in effect of BRI investment.
⁵⁸ China has made a new pledge to Lao PDR for the construction of a USD6 billion railway project linking Lao PDR's capital Vientiane to China's southern Yunnan province by 2020.
⁵⁹ The pipeline is now operational and can carry up to 22 million tons of oil each year, equivalent to nearly 6 percent of China's total imports in 2016.

Economic Diversification with a Vibrant Services Sector, and Harnessing of Technology Advances

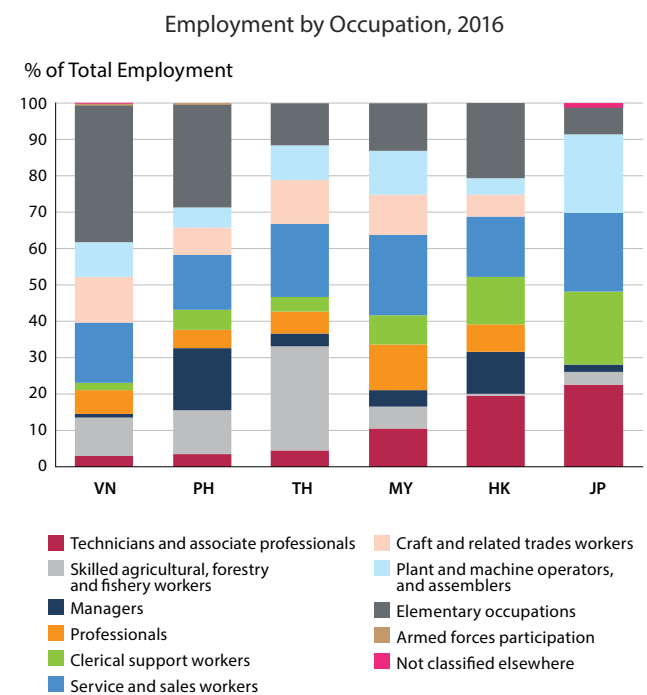
41 Developing a vibrant services sector would require a set of dedicated policies, starting with review of policies that may have disadvantaged the services sector relative to the manufacturing sector. Historically, services have been accorded less priority than manufacturing and export promotion in goods. The policy response needs to be broader than adapting the services sector to support the changing needs of the manufacturing sector. As the sectoral shares of employment and GDP change, a greater focus on levelling the playing field for the manufacturing and services sector in areas such as trade promotion, fiscal incentives and wage policies would be appropriate. As pointed out in the context of commoditization and uberization of services, innovative SMEs could be the first to harness new technology to become competitive in the services sector. These SMEs may need policy support – or at least a removal of unnecessary policy restrictions – in order to grow in the services sector.

42 Liberalizing and opening up the services sector to international competition would improve productivity, and technology is likely to force this liberalization against vested interests. For trade, liberalization of services has typically lagged that of manufacturing, including in the ASEAN+3 region (WTO, 2017). Even without policy efforts, technology is already forcing this liberalization through making services more tradable than before. One example is the BPO sector, where technology has made it possible to move these activities from higher-cost economies to lower-cost economies. While protectionism may slow this process down, the pull factors of cost savings may still overcome the barriers to trade in services.

43 As human capital and skilled labor are closely linked to the highest value-added segments of the services sector, leveraging on the availability of human capital across the ASEAN+3 region through supportive workforce and immigration policies would be appropriate. The current distribution of human capital in the region is highly uneven (Figure 6.5). A more economically rational distribution, through workforce or immigration policies that enhance labor mobility, could be a win-win solution in alleviating job creation pressures in home countries and help to fill skills gaps in other economies. This would be a near-term response to skilled labor shortages, while concurrent policy efforts continue in education and skills training that would yield long-term dividends in a more skilled labor force.

44 These trends in the growing importance of services and disruptive technologies imply that large adjustments may be necessary in the labor market and the labor force, which should be supported by social policies. In the context of estimates having put the size of the digital economy at about 15 percent of global GDP (MAS, 2018), it is clear that disruptive technologies will increasingly accentuate demand for human capital to have, firstly, skills specifically required to apply new methods of production (or service delivery), and second, the ability to move across economic sub-sectors. Labor market flexibility and life-long training programs will be much more important than before. Depending on the national context, social policies and insurance to provide a safety net for displaced workers would ease the adjustment. At the same time, technology can also assist in easing shifts in the labor force, especially in the first and second wave economies in ASEAN+3 that are undergoing rapid demographic change and rapid ageing in their labor force. With appropriate supportive policies, these economies can tap on technology and automation to raise productivity in their economies even as their labor forces start to shrink in the coming decades.

Figure 6.5 Distribution of Human Capital for Different Economic Sectors across Selected Countries in the ASEAN+3 Region



Source: ILO