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Trade in Developing East Asia: How It Has Changed and Why It Matters

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East Asia, for long the epitome of successful engagement in trade, faces serious challenges: technological change that may threaten the very model of labor intensive industrialization and a backlash against globalization that may reduce access to important markets. The analysis in this article suggests that how East Asia copes with these global challenges will depend on how it addresses three more proximate national and regional challenges. The first is the emergence of China as a global trade giant, which is fundamentally altering the trading patterns and opportunities of its neighbors. The second is the asymmetric implementation of national reform – in goods trade and investment versus services – which is affecting the evolution of comparative advantage and productivity in each country. The third is the divergence between the relatively shallow and fragmented agreements that regulate the region's trade and investment and the growing importance of regional and global value chains as crucial drivers of productivity growth.

Keywords: Trade Policy, Goods Trade, Services Trade, China, Trade Agreements, Global Value Chains

JEL Classification: F13, F14, F15, F6

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I. INTRODUCTION

East Asia has for long been a paragon of successful engagement in trade. Dramatic growth in exports, stimulated by openness to foreign investment, has rapidly expanded incomes and shrunk poverty. Sustaining this success, however, faces challenges. Some of these are global, notably technological change that may threaten the very model of labor intensive industrialization, and a backlash against globalization that may reduce access to some of the most important markets. How East Asia copes with these global challenges will depend on how it addresses three more proximate national and regional challenges, which are the focus of this paper. The first is the emergence of one East Asian country, China, as a global trade giant – accounting for nearly one-seventh of global exports and one-tenth of global imports – which is fundamentally altering the trading patterns and opportunities of its neighbors. The second is the asymmetric implementation of national reform – remarkable openness to goods trade and investment that coexists with relative restrictiveness of services policies – which is affecting the evolution of comparative advantage and productivity in each country. The third is the divergence between the relatively shallow and fragmented agreements that regulate the region's trade and investment and the growing importance of regional and global value chains as crucial drivers of productivity growth.

Developing East Asia's trade growth has been impressive in the aggregate but uneven across countries and sectors and over time. The region today accounts for about 15 percent of world trade, up from 6 percent in 1995. China, of course, stands out, with a 70 percent share today of the group's international trade. However, countries' trade performance diverged in the 2000s. First China's and then Vietnam and Cambodia's impressive growth in manufacturing exports, contrasted with the slower growth of earlier dynamos, Malaysia, Thailand and Indonesia, and there are now signs that China's manufacturing growth itself may be reaching a plateau. Mining products have dominated the trade growth of Mongolia and Myanmar (and to a lesser extent, Indonesia). Services trade growth has been impressive only in the Philippines, and services account on average for less than 20 percent of the region's total exports.¹

Even though East Asia remains vulnerable to global developments, the stake in trade within the region is growing. East Asia outperformed the growth of the rest of the

¹ Services other than travel accounted on average for about 8 percent of developing East Asia's total exports in 2015, significantly less than the corresponding figure for the world, which was 17 percent.

world, but the region has not been spared by the global trade slowdown that started in 2012. At the same time, regional trade among developing East Asian economies has progressively increased. Intra-developing East Asia trade was about 5 percent of world trade in the early 1990s and is close to 20 percent today. This trend reflects the shift towards China as the center of gravity of trade for these economies. For countries in the region, the share of exports to China ranges between 10 and 30 percent, and for Mongolia it is as high as 80 percent.

The countries in the region have taken divergent paths in response to China's emergence, depending on their stage of development and pattern of comparative advantage. Most of the relatively industrialized countries – Malaysia, Thailand, the Philippines and even Indonesia – have been hurt by direct competition at home and abroad from China in manufactured goods. But countries have also benefited: from increased Chinese demand, especially for services (e.g. Philippines, Thailand and the Lao People's Democratic Republic) and commodities (Indonesia, Myanmar, Lao PDR and Mongolia); from integration into China-linked value chains (Malaysia, Vietnam); and from relocation of Chinese production (Vietnam and Cambodia). Going forward, further integration with China will increase competitive pressures in final goods markets, but also provide better access to imported inputs and a growing demand for commodities and services. Moreover, as Chinese manufacturing competitiveness declines due to higher labor costs, developing East Asian countries can be expected to gain market shares in third markets and see an increase in the relocation of production from China.

The paths taken by individual countries have also been determined by the pattern of national reform. In the most dynamic – China itself, as well as Vietnam and Cambodia – WTO accession induced a move away from state-owned monopolies to more competitive private provision of telecommunications, financial, transport and a range of other services. Even though their services regimes are still not fully open, the radical reform has delivered dramatic improvements in services productivity and access, international connectivity and manufacturing productivity. In the less dynamic – Indonesia, Thailand, Myanmar, and even Malaysia and the Philippines – initial regimes were less closed but the approach to reform has been more lethargic. The irony is that countries that built their manufacturing success on the back of openness to FDI have resisted similar opening in services, sacrificing productivity not just in services but also in manufacturing. A key conclusion of this paper is that further services reform is vital for continued growth, because it will affect productivity in services and in other sectors, including by influencing the evolution of comparative advantage and

participation in global value chains.

In fact, the increased fragmentation of production across the region has been an important factor in trade and productivity growth. Developing East Asian countries have the highest share in the world of foreign value added in gross exports – a measure of backward specialization in global value chains. Traditionally, most of the intermediate inputs used in production would come from advanced economies. But today the increasing backward participation in global value chains by countries like Vietnam is in part the result of China's growing exports of sophisticated intermediate inputs. The rise of both global and regional value chains has been an important driver of productivity growth for developing East Asian countries. The reason is that GVCs lead to technology spillovers, learning externalities, better inputs and a more efficient international division of labor. On average, a 10 percent increase in the backward GVC participation of manufacturing sectors has increased labor productivity by 1.4 percent, according to analysis presented in the subsequent sections.

Differently from other areas in the world such as Europe and North America, much of the rise of trade, investment and global value chains in East Asia took place despite the presence of relatively shallow trade agreements. These agreements lowered tariffs but led to relatively weak commitments in areas such as services, investment and intellectual property rights. All countries are now members of the World Trade Organization (WTO). The most recent accessions include Cambodia (2004), Vietnam (2007) and Lao PDR (2013). ASEAN - the Association of East Asia Nations – which includes all East Asian developing countries except for Mongolia and China – has progressively widened its scope and signed new agreements with third countries such as Australia, New Zealand, India and the Republic of Korea in the 2000s. But these agreements are still relatively shallow and efforts are underway to negotiate deeper trade rules on investment, services, competition, intellectual property rights protection, and government procurement, as in the context of the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP). A second key conclusion of this paper is that sustaining future growth in trade, investment and GVC participation, and hence productivity growth, will require deeper integration through a more coherent set of trade rules within the region and with the rest of the world.

The rest of the paper is organized as follows. Section 2 establishes stylized facts on the trade landscape of East Asian developing countries. Section 3 focuses on four issues: the rise of China and its economic rebalancing; asymmetric trade opening and restrictions on services trade; the rise of global value chains; and the importance of

deep trade agreements. Section 4 concludes.

II. THE EVOLUTION OF DEVELOPING EAST ASIA'S TRADE

East Asia's developing countries account today for about 15 percent of the world trade – up from 6 percent in 1995 – and for 8 percent of the global FDI stock – up from 5 percent in 1995. There are currently 10 countries in the East Asia region that are classified as developing by the World Bank namely China, Mongolia, and eight of the Association of Southeast Asian Nations (ASEAN) members: Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand and Vietnam. These countries collectively traded 6.3 trillion USD in 2015 and hosted almost 2 trillion USD of the global FDI stock, due in great part to the contribution of China which accounted for 70 percent of the international trade in goods and services of the developing East Asian group and for 62 percent of its FDI stock. The group's dynamism over time is noteworthy, especially when it comes to exports of goods and services, which have tripled as a share of world trade since 1995.

There is considerable heterogeneity in the trade performance of the developing East Asian countries. The trading patterns and specialization focus of the countries in the region show divergent paths, depending on their stage of development, pattern of comparative advantage, and approach to reform. The big changes have been the emergence of China and the rise in global and regional value chains. In this section, we document these developments.²

1. Uneven trade growth

The trade performance of developing East Asian countries has been more dynamic than that of the rest of the world. Indeed, the group's trade growth has generally outperformed global trade growth for the past 3 decades. Yet, the trade slowdown affecting global trade volumes since 2012 has not spared developing East Asia.³ Thus,

² The statistics reported in this section are in part displayed in the charts and tables included in Constantinescu, Mattoo and Ruta (2018) - the working paper version of this article - and in the Excel file that accompanies it.

³ "The recent trade slowdown" refers to the post-2012 sluggishness in the growth of global trade volume relative to the past rates and to real GDP growth. After bouncing back in 2010 from the historic low of the Great Recession, world trade grew by 7.0 percent in 2011, slowed to 2.8 percent

the group's trade volumes have slowed from a yearly average growth rate of 13 percent during 1987-2007 to 3.8 percent since 2012. The decline is smaller, yet still apparent when China is excluded from the aggregate, with the growth rate falling from 9.8 percent during 1987-2007 to 4 percent after 2012. In contrast with the global trends, which point to a resilience of services trade growth relative to goods trade growth during the Great Recession and the recent trade slowdown, developing East Asia's exports of goods and trade in services have grown at comparable rates in the past decade (abstracting from the recent surge in China's travel imports).

Three periods showing divergent paths can be identified in the growth experience of developing East Asian countries. During the period that preceded the Asian Financial Crisis, goods exports were growing at comparable rates for most countries in the group. Services exports were relatively more dynamic than goods exports, yet of significantly smaller magnitude (except in the cases of Thailand and the Philippines) and were mostly accounted for by travel exports (except for the Philippines, where other business services already had a significant contribution to services exports).

The 2000s brought a major split in the ranks. China's goods exports accelerated markedly, driven by rapid growth in manufacturing, and a switch in focus from apparel to electronic equipment. Vietnam followed in China's footsteps, replicating its neighbor's earlier emphasis on apparel. Cambodia, too, grew its exports based on apparel products. Thailand, Malaysia and Indonesia stayed broadly at the same levels of goods exports growth as in the earlier period, while the Philippines experienced a deceleration. Indonesia, Myanmar and Mongolia focused on commodity exports, reaping benefits from the rise of China's imports. For most countries, goods exports growth increased relative to services exports growth, one notable exception being the Philippines, which continued its focus on other business services exports.

Finally, after the Great Recession, growth rates in export values throughout the region have been burdened by two developments: the global trade slowdown and the decline in the commodity prices (particularly accelerated for fuels in 2014 and 2015). Yet many of the previous patterns remained and some accentuated. Thus, manufacturing exports grew faster in Vietnam and Cambodia, diverging significantly from the growth

in 2012 and remained around 3 percent until 2016. This 3 percent is less than half the average yearly trade growth of 7 percent during period 1987-2007. Moreover, it is in line with the GDP growth of the recent years, whereas before the crisis, and especially in the 1990s, trade was growing two and even three times faster than real GDP (Constantinescu et al., 2015).

patterns of the old guard (Malaysia, Thailand, Indonesia). Export values of Indonesia, Myanmar and Mongolia were hit more severely by the commodity price shock. The Philippines continued to rely on services via other business services, while the services performance of Thailand, Cambodia, Myanmar and Lao PDR remained tied to tourism.

2. Changing specialization

(1) Trade in goods and services

The specialization patterns within goods trade differ across countries. China, Malaysia, the Philippines, Thailand and Vietnam experienced increasing specialization in manufacturing – relative to the rest of the world – over the previous decades. Mongolia and Myanmar continued to focus mostly on mining exports. For Indonesia, the share of manufacturing in total merchandise exports has increased from less than 10 percent in 1980 to more than 40 percent in 2015, yet mining products still dominate the country's export basket. Manufacturing as a share of goods trade grew significantly during the 1980s and 1990s and then stayed broadly at the same level in countries like China, Indonesia, Malaysia, Philippines, and Thailand. In contrast, Vietnam experienced an increase of about 30 percentage points, between 2005 and 2015.

Within manufacturing, there is evidence of significant heterogeneity in exporting patterns across countries and over time. Some countries have been and still are focused on light manufacturing (for example, Cambodia, with 47 and 52 percent of goods exports accounted for by apparel in 2000 and 2015, respectively) while others have started upgrading to more sophisticated manufacturing (for example Vietnam, with 27 percent of goods exports accounted for by radio, tv and communication equipment in 2015, up from 3.6 percent in 2000). Countries that have begun industrialization earlier are currently trading heavily in electronics and transport industries (for example, Malaysia, Thailand, Philippines, where these industries accounted for 52, 50 and 73 percent, respectively, of the goods exports in 2015). China has moved over time from apparel, textiles and leather (34 percent of goods exports in 1996) to electronics, machinery and equipment (52 percent of goods exports in 2015).

Services represent a relatively small share of trade for the East Asian developing countries. With the exception of the Philippines, the shares of services exports in total exports are particularly low for most East Asian developing countries relative to

countries of similar income in the world, when “travel” or tourism are excluded.⁴ This points to the untapped potential of services – especially other than tourism – in developing East Asian economies.

The composition of services exports in the developing East Asian economies varies by country and over time. For most developing East Asian countries (Indonesia, Cambodia, Lao PDR, Myanmar, Malaysia, Philippines and Thailand), travel services exports have been at around 50 percent of total services exports or higher, since 2000. For China and the Philippines, exports of services other than transport and travel accounted for 50 and 75 percent, respectively, of the total services exports in 2015, up from 26 and 62 percent in 2005, reflecting growth of “other business services”.

(2) Integration in global value chains

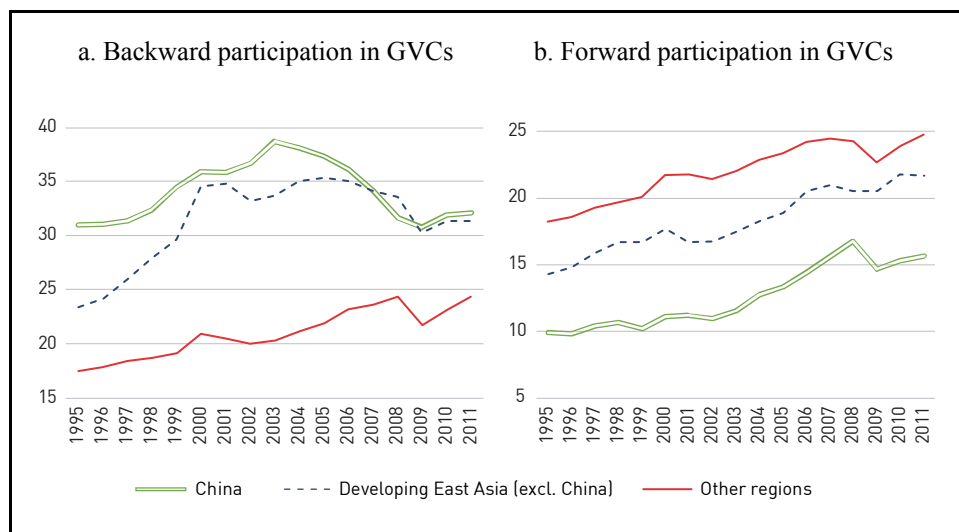
Trading in the context of GVCs is associated with multiple border-crossing by intermediate products and services. The GVC-related trade has two features that set it apart from conventional trade: (1) the significant presence of foreign value added in a country’s total or sectoral gross exports, and (2) the significant presence of domestic value added produced by a country or its sectors in the gross exports of all other countries. The first feature reflects backward participation in GVCs, which occurs when countries specialize in downstream, often low-skilled, stages of the process of production, using imported parts, components and other processed intermediates to produce output that is then exported. The second feature is associated with forward participation in GVCs, typical of countries that offshore labor-intensive stages of the production process while specializing in upstream high-skilled stages of production such as design, research and development.⁵ This method of identification is not always foolproof, especially in the case of forward participation, which can be confounded with conventional trading of oil and other raw materials.⁶

⁴ Services exports (excluding travel) accounted for 25 percent of the 2015 total exports in the Philippines, and for 10 percent or less in the case of other developing East Asian countries. Services value added represented 59 percent of the 2015 GDP in the Philippines, the largest share among developing East Asian countries.

⁵ Calculation of both backward and forward participation in GVCs involves applying Leontief’s approach to inter-country input-output tables (Hummels, Ishii and Yi, 2001; Koopman, Wang and Wei, 2014; Leontief, 1936).

⁶ Indeed, output exported by oil and commodity producers tends to be found in exports of multiple countries that use raw materials as intermediate inputs embodied in their output. Consequently, the

Figure 1. GVC Participation of Developing East Asian Countries Relative to the Other Regions of the World (Percent of Gross Exports)



Source: Authors' calculations based on OECD Trade in Value Added (TiVA)

Notes: Backward participation is measured as the share of foreign value added in the total gross exports of a country. Forward participation is a country's domestic value added that is reexported by other countries, as a share of the country's exports.

Developing East Asian countries are among the most integrated into global value chains (GVCs). Their integration is mostly occurring via backward participation in GVCs – that is, via using imported intermediate inputs in their exports (Figure 1a). OECD Trade in value added (TiVA) data indicate that the share of foreign value added in gross exports in China and the other developing East Asian economies was higher than the aggregate for other regions during 1995-2011. The levels of forward participation (intermediate exports used in other countries' exports) are lower than backward participation and also lower than forward participation of other regions (Figure 1b).

There are important differences in GVC participation between developing East Asian countries. Within developing East Asia, the share of foreign value added in gross exports ranges from high for Malaysia (about 40 percent in 2011, up from about 30

forward participation of oil and commodity producers can be high even when the producers themselves may not be engaged in GVCs.

percent in 1995) to low for Indonesia (around 10 percent in both 1995 and 2011). In terms of dynamism, interesting patterns emerge for three countries. Vietnam's backward participation in GVCs has increased steadily over time and especially in recent years (from slightly more than 20 percent in 1995 to above 35 percent in 2011 (with a 5-percentage point increase between 2004 and 2007), reflecting its deeper engagement into GVCs. In contrast, the Philippines saw a decline in the backward participation (from 40 percent in 2004 to about 23 percent in 2011) – possibly reflecting a retreat from GVCs, rather than an upgrade to more value added-intensive activities (World Bank, 2017). Finally, for China, the share of foreign value added in gross exports has been declining since the mid-2000s (from around 37 percent in 2004 to around 32 percent in 2011), reflecting the substitution of domestically-produced inputs for imported inputs. At the same time, China has gradually increased its forward participation in global value chains (from 10 percent in 1995 to 15 percent in 2011) due to its moving up the value chain (more domestic value added going into exports).

3. Shifting partners

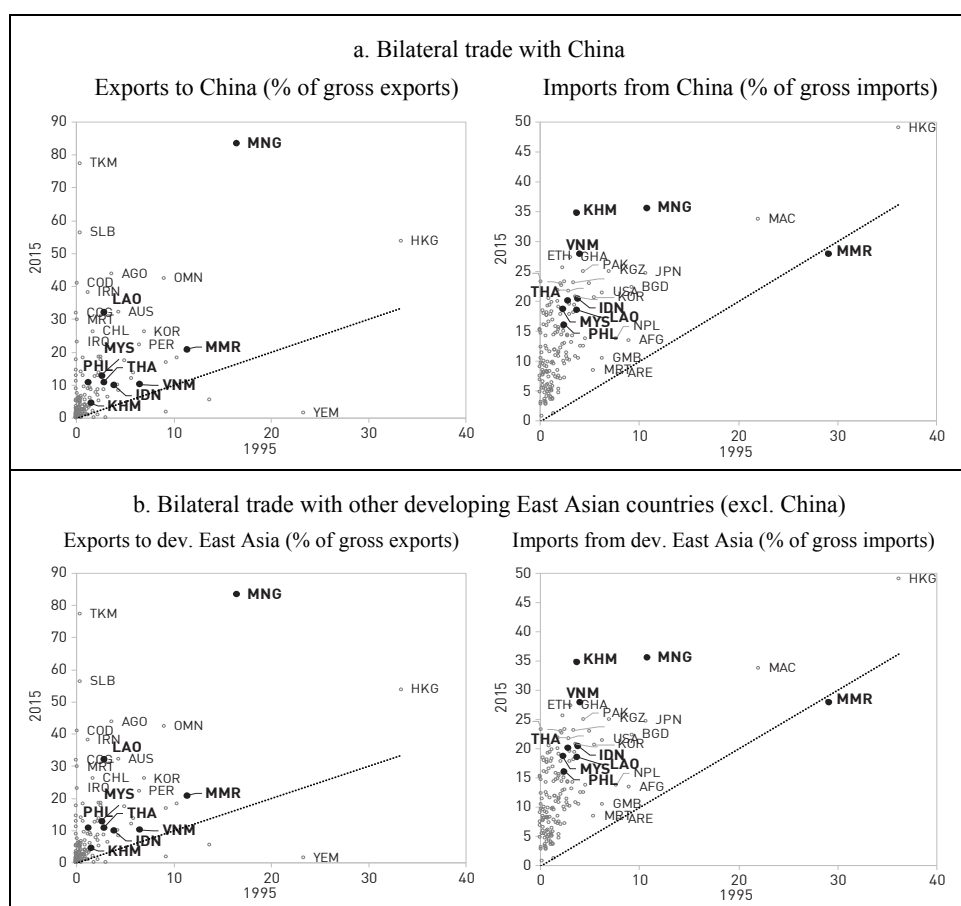
Close to 50 percent of developing East Asian countries' trade is with countries outside the region. Several composition-related trends are noteworthy. First, intra-developing East Asian trade increased from around 5 percent in the early 1990s to 18 percent by 2016. Second, the share of other East Asian countries has gradually declined, notably since the late 2000s.⁷ Third, while trade with other advanced economies remained roughly stable, trade with other developing countries outside the region increased, particularly in the late 2000s.

The center of gravity for developing East Asian countries has shifted toward China. Figure 2 presents the regional trading patterns for the 10 developing East Asian countries in 1995 and 2015. The most striking development is the increase in exposure to China, both as an origin for goods imports and as a destination for goods exports. Other developing East Asian countries have also gained in importance as trading partners. Yet the opposite seems to be true of the other East Asia group. Even though the absolute traded values have generally expanded over time (there are exceptions, for example during crisis years), the goods trade of developing East Asian countries has been gradually shifting towards China. In 2015, Mongolia and Lao PDR were the

⁷ Other East Asia includes Brunei; Hong Kong SAR, China; Korea; Japan; Macao SAR, China; Singapore; and Taiwan, China.

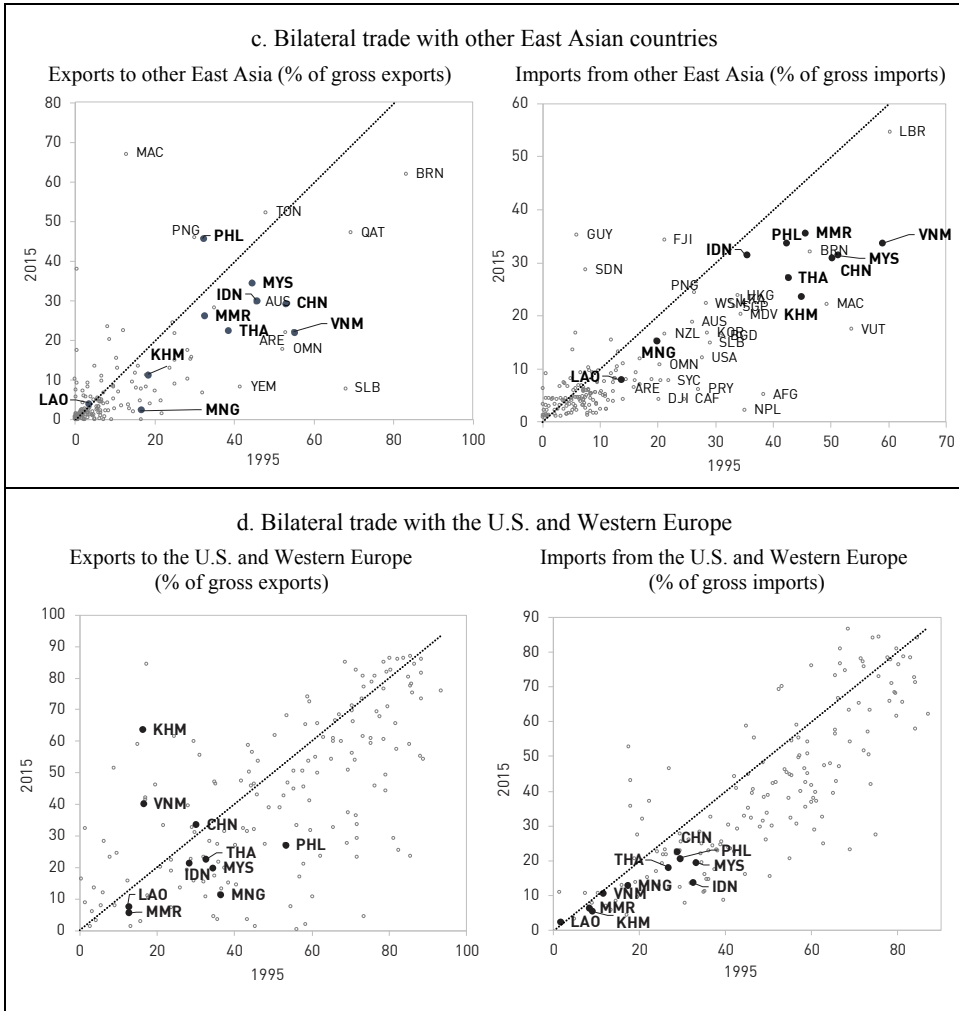
most exposed developing East Asian countries to intra-regional trade. Mongolia sent 80 percent of its goods exports to China, while Lao PDR traded almost exclusively with developing East Asian countries, although within this group, it traded relatively less with China. Malaysia, Indonesia and Thailand were the least exposed to China, as they traded relatively more with other East Asia. Vietnam and Cambodia's trading patterns suggest engagement in GVCs via triangular trade: importing from China and other developing East Asian countries and exporting overseas to the US and Western Europe.⁸

Figure 2. Bilateral Trade in Goods of Developing East Asian Countries, Selected Partners



⁸ Similar patterns emerge when examining bilateral trade in value added instead of bilateral gross trade.

Figure 2. Continued



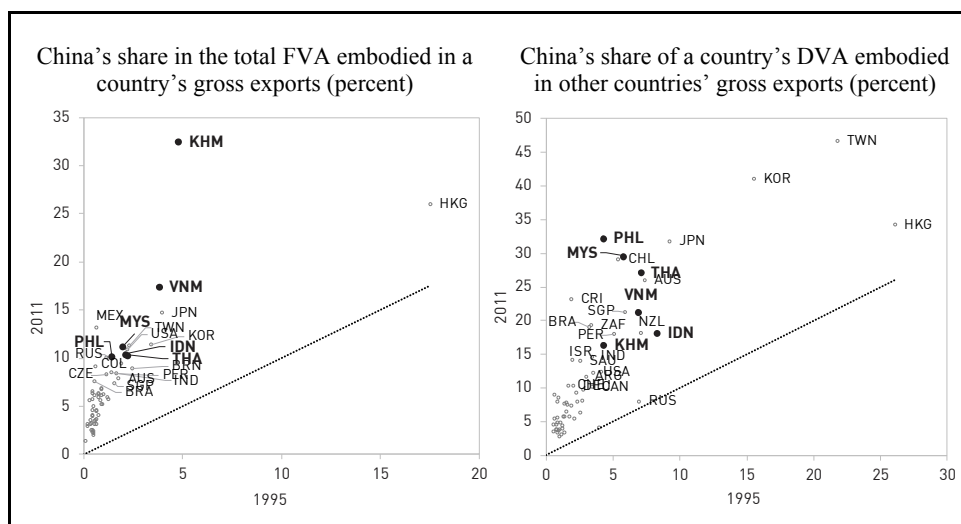
Source: IMF DOTS and authors' calculations.

Notes: 45-degree line shown as dotted line. Labels indicate developing East Asian countries and other selected countries.

Much of the rise of China as a trade partner of developing East Asian countries has to do with its larger role in GVCs both as relates to backward and forward participation. Figure 3 depicts the backward linkages with China, as the Chinese foreign value added embodied in the other countries' gross exports of goods and services, and the forward linkages with China, as the domestic value added produced in various countries that is

re-exported by China.⁹ Developing East Asian countries collaborate more closely with China on these two aspects of GVC participation relative to most other countries in the world, but different countries have different roles. Vietnam and Cambodia have a high content of Chinese value added in their gross exports (Vietnam in its exports of electrical and optical equipment and Cambodia in its exports of garments), an indication of downstream positioning relative to China in a triangular trade to destinations overseas. Malaysia, Philippines and Thailand, which are not highly dependent on China in the bilateral gross trade charts, have more than 40 percent of their forward participation in the electrical equipment industry accounted for by China. This suggests that the three countries are heavily integrated in global value chains, upstream of China, as its suppliers of parts and components.

Figure 3. China's Role in Developing East Asia's Participation in GVCs



Source: OECD TiVA and authors' calculations.

Notes: Trade refers to both goods and services. 45-degree line shown as dotted line. FVA stands for "foreign value added"; DVA stands for: "domestic value added." Labels indicate developing East Asian countries and other selected countries.

⁹ Note that country availability is restricted to the coverage in the OECD TiVA Database. For example, Mongolia, a country with high gross trade exposure to China, is not included.

III. THE IMPLICATIONS OF AND THE POLICY RESPONSE TO THE CHANGING TRADE PATTERN

This section addresses four questions associated with the changing trade trends outlined in Section 2. The first pair of questions relates to China's emergence and the appropriate national policy response. What are the trade effects of the growth of China on other developing East Asian countries? And how has the asymmetric opening of goods and services trade affected the productivity and comparative advantage of developing East Asian economies? The second pair relates to the emergence of GVCs and the appropriate response in terms of international cooperation. How does the increasing fragmentation of production across borders affect developing East Asian countries' productivity? And how far are the international agreements negotiated by developing East Asia fostering the growth of GVCs and deeper international integration? We will investigate these issues in turn.

1. The heterogeneous impact of China

The inclusion of China in the global trade system has had a significant impact on developing East Asian countries. This section provides an assessment of the effect on trade flows. As discussed in Section 2, the rise of China as a major player in world trade has changed the nature of intra-regional and extra-regional trade for developing East Asian countries. China's share of world exports increased between 1995 and 2015 from about 2 percent to 11 percent. In light of this change, a number of studies (most notably, Autor et al., 2013) have investigated the impact of the China (supply) shock on other countries. At the same time, China grew as an importer, notably of agricultural and mining products where its share of world imports increased from 2 percent in 1995 to 10 percent in 2015. This China (demand) shock also affected its trade partners, altering their trade patterns. China's supply and demand shocks have contrasting effects on East Asian developing countries that ultimately depend on their production and trade structures and the similarity of their export destinations with China. An empirical investigation is required to quantify these various channels.

Econometric analysis in Bastos (2018) points to a heterogeneous impact of China-related trade shocks on exports of developing East Asian countries. Bastos (2018) examines empirically the effect of supply and demand shocks associated with China's trade dynamics on multilateral exports of the Belt and Road Initiative (BRI) countries

– a group that includes, but is not limited to developing East Asian countries. It finds a significant negative effect for the supply trade shock and a significant positive effect for the demand trade shock for the average BRI country, as well as heterogeneous impacts by country and period, for both types of trade shocks.¹⁰

In addition, Bastos (2018) finds that supply shocks may have intensified in the past decade compared to the previous, a result that also applies to developing East Asia countries. Thus, the positive effects associated with the rise in Chinese imports may have offset China's competition pressure on developing East Asian countries in external markets, but not consistently throughout the past decades.

Further integration with China will affect developing East Asian countries differently and the extent of this impact will depend on the ongoing rebalancing of the Chinese economy.¹¹ In recent years, China has been engaged in a number of regional processes, the Belt and Road Initiative (BRI) and the Regional Comprehensive Economic Partnership (RCEP), which are likely to further reduce trade costs within East Asia because of improved transport infrastructure and reduced trade policy barriers. Based on this analysis, the impact of further integration with China will have asymmetric effects on developing East Asian countries. On the one hand, for Vietnam, Malaysia, the Philippines, Thailand and Indonesia, who source a large share of imports from China and have similar export structure and export destinations, further integration with China will increase the competitive pressures in final goods markets. But firms involved in value chains with China will benefit from the access to cheaper inputs. On the other hand, for Myanmar and Mongolia, who source a sizable share of imports from China and have an export structure that differs from China, further integration with China will have small effects on domestic competition and bring benefits from further specialization according to these countries' comparative advantage. The risk will be that they will be even more exposed to domestic economic and policy shocks in China.

¹⁰ Intuitively, China-related supply or competition shocks are associated with China's rising global exports, and may pose a competition challenge especially for countries with an initial export structure that is similar to China's. In contrast, China-related demand shocks are associated with China's rising imports, and may represent an opportunity for countries with initial export profiles matching China's import structure.

¹¹ See Lardy (2012), Pettis (2014) and Constantinescu, Mattoo and Ruta (2016) for an analysis of the implications of China's rebalancing.

At the same time, the gradual rebalancing of the Chinese economy, away from investment and industrial production and towards consumption and services, will imply that further integration in East Asia in the next decade may look quite different from the past decade. For instance, as Chinese competitiveness declines due to higher labor costs, countries like Vietnam, Cambodia and Indonesia will gain market shares in third markets. As Chinese demand for services increases, services export opportunities for countries like Malaysia (utilities and finance), the Philippines (business services) and Thailand (tourism and health) will surge. Resource exporters like Myanmar and Mongolia will still supply large shares of their exports to China and other industrializing countries, but probably not at the rising growth rates of past years.

2. Asymmetric market opening in services and goods

One striking aspect of East Asian reform is the contrasting attitude to the liberalization of goods and services trade which has meant foregone benefits. A region that has grown dramatically through manufacturing exports stimulated by foreign direct investment has shown a relative reluctance to be as open to foreign trade and investment in services. This reluctance is a puzzle because growth theories have for long emphasized that trade in intermediate goods and services generally improves the allocation of capital and labor across sectors and countries (Jones, 2011).

Services reform, of which trade liberalization is one important component, can contribute significantly to inclusive growth. The conceptual case for this assertion is spelt out here, and some of the relevant evidence is presented below (for example, in footnote 13). Services shape both overall economic performance and help people to engage productively in the modern economy. An efficient and well-regulated financial sector leads to the efficient transformation of savings to investment, ensuring that resources are deployed wherever they have the highest returns, and facilitates better risk-sharing in the economy. At the same time, improved access to finance improves household welfare and income growth, by allowing consumption smoothing and investment in assets that enhance longer-term productivity. Improved efficiency in telecommunications allows the dissemination and diffusion of knowledge and connects firms and individuals to economic opportunity – witness the spread of the internet and the dynamism that that has lent to economies around the world. Similarly, transport services help goods to move where they are most wanted and people to where they are most productive. Business services such as accounting and legal services are

important in reducing transaction costs both for firms and individuals. Education and health services enhance the quality of lives and human capital, allowing people to engage productively in the modern economy.

In this section, we focus first on how services trade has an impact on two key aspects of economic performance: the growth of productivity and the evolution of comparative advantage. Improved access to finance, communications, transport, and other services, either through general reform or reform of trade and FDI policies, enhances firms' productivity and other aspects of the performance of firms. The development of domestic services sectors and access to foreign services can also shift the pattern of comparative advantage. However, these benefits do not automatically follow from services liberalization, and a successful reform program will also need strengthened regulation and mechanisms to improve access to services, which is briefly discussed in the third part of this section.¹²

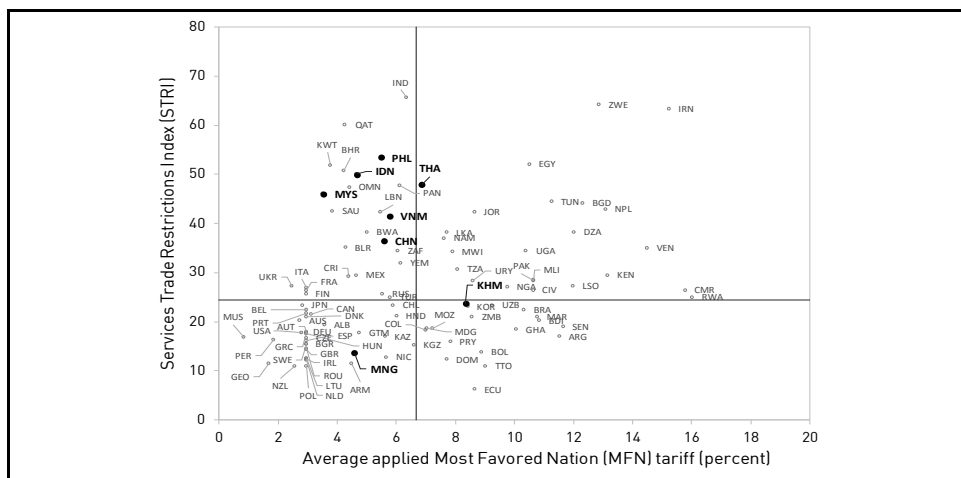
(1) Asymmetric trade policy liberalization

Figure 4 depicts the asymmetric trade-opening in goods and services in East Asia. On the horizontal axis is a measure of tariff protection, while on the vertical axis is a measure of services protection – as measured by the Services Trade Restrictions Index, which takes values from 0 for completely open regimes to 100 for completely closed. Apart from Cambodia and Mongolia, all the countries in the study inhabit the top left quadrant, signifying that their levels of tariff protection are lower than the global median while their levels of services protection are higher than the global median.

Even though many of the larger East Asian countries are now similarly situated, the pace of reform has been strikingly different over the last two decades. Even though their regimes are still not very open, in China, Vietnam and Cambodia, WTO accession induced a move away from state-owned monopolies to more competitive private provision of telecommunications, financial, transport and a range of other services. In Indonesia, Thailand, Malaysia and the Philippines regimes at the turn of the century were less closed but the approach to reform has been more gradual and not always towards greater openness.

¹² Added urgency is lent to services reform by the deepening interlinkages between manufacturing and services sectors, manifested as the so-called “servicification” of manufacturing, whereby services are increasingly embodied in manufactured goods. See Hallward-Driemeier and Nayyar (2018) for a discussion of the trends and the implications of this phenomenon.

Figure 4. Protectionism in Goods Trade versus Services Trade



Sources: UNCTAD TRAINS (via WITS), World Bank Services Trade Restrictiveness database (Borchert et al., 2012) and authors' calculations.

Note: The applied MFN tariff rate is distinct from the MFN tariff rate legally bound at the WTO, and from the preferential tariff rate extended through unilateral or reciprocal preferential trade agreements. We do not include the latter because existing databases do not adequately capture these tariffs.

The World Bank Services Trade Restrictions Database reveals interesting policy patterns in East Asia. Although public monopolies are now rare, and few services markets are completely closed, numerous restrictions remain on entry, ownership, and operations. Even where there is little explicit discrimination against foreign providers, market access is often unpredictable because the allocation of new licenses remains opaque and highly discretionary in many countries. Regulatory discretion is accentuated by a lack of accountability in a number of countries where regulators are not required to provide reasons for rejecting a license application or where foreign providers do not have the right to appeal regulatory decisions.

While tariffs on goods are transparent, a closer look at the key services sectors – finance, telecommunications and transport – helps us to see how developing East Asian countries restrict trade in services. Bank sector policies in Thailand, Philippines, Malaysia, and Vietnam restrict greenfield entry and operations. In Thailand, the limit on foreign ownership in a “local bank” was 49 percent, and there was a limit on operations: the number of branches and ATMs allowed per subsidiary was 20. In the Philippines, greenfield entry was not possible since the license limit of 10 had been

reached, and for acquisition, the foreign ownership limit was 60 percent. In Malaysia, with the enactment of the Financial Services Act 2013 and the Islamic Financial Services Act 2013 in June 2013, there was a comprehensive modernization and streamlining of Malaysia's regime on licensing and foreign equity limits in the banking and insurance sectors (conventional and Islamic). In both conventional and Islamic finance, application for a license is now based on the prudential and "best interest of Malaysia" criteria. Similarly, the acquisition of a significant foreign equity interest in Malaysian banks and insurance companies could be up to 100 percent, subject to meeting the aforementioned criteria. In the context of the CPTPP negotiations, Malaysia promised to phase in further liberalization in the financial sector. Vietnam allowed wholly foreign-owned subsidiaries but imposed a limit on the acquisition of banks. To acquire existing banks, the foreign ownership limit was 30 percent for aggregate foreign investment and 20 percent for a single foreign credit institution.

Most developing East Asian countries limited foreign investment in fixed and mobile telecommunications services. The limit on foreign ownership was 49 percent in Indonesia and Malaysia, and 40 percent in the Philippines. But Malaysia is progressively removing foreign equity limits in the telecom sector; currently the foreign equity limit is 70 percent for network facilities providers and 100 percent for applications service providers. The limit was a more relaxed 70 percent in Vietnam, but foreign majority control required government approval, and in Thailand foreign majority owned or controlled providers could only offer services on a resale basis. In the context of the CPTPP negotiations, Vietnam has promised to relax or eliminate foreign equity restrictions over the same time frame. A number of countries allowed full foreign ownership in private companies, but restricted foreign ownership in state-owned telecom operators. Thus, the Philippines did not allow acquisition of a state-owned entity, whereas Cambodia, and Lao PDR allowed only a minority foreign share in state entities. In Vietnam, the state held a dominant share in telecommunications service providers with network infrastructure. However, in the context of the CPTPP, Vietnam has pre-committed to further liberalization.

Transportation services were relatively restricted in developing East Asian countries as they were in other parts of the world. Thailand, Vietnam, Philippines, and Malaysia had restrictions on foreign ships carrying government cargo but no limitations on private cargo. On commercial presence (mode 3), for the types of transport covered by the World Bank Services Trade Restrictions Database (maritime, air, road, and rail), the majority of developing East Asian countries mentioned that the control must be

held by local companies. In air transport, all ASEAN member states signed the ASEAN Multilateral Agreement on Full Liberalization of Air Freight and Air Passenger services. It was difficult to assess how much more openness the regional air services agreements offered beyond the existing Bilateral Air Services Agreements (BASAs).

(2) Services openness and productivity

Research on several developing countries offers examples of the significant impact of openness to services on manufacturing productivity. Reforms in these countries visibly transformed services sectors, with greater openness and improved regulation leading to dramatic growth in domestic and foreign investment. Local manufacturing firms were no longer at the mercy of inefficient public monopolies but could now source services from a wide range of domestic and foreign providers operating in an increasingly competitive environment. As a result, they had access to better, newer, more reliable, and more diverse business services. These improvements enhanced firms' ability to invest in new business opportunities and better production technology, to exploit economies of scale by concentrating production in fewer locations, to efficiently manage inventories, and to coordinate decisions with suppliers and customers.¹³

An example of the power of services reform is offered by Indonesia. Duggan,

¹³ Several studies show that access to low-cost and high-quality (domestic or foreign) producer services can promote productivity and economic growth (Hoekman and Mattoo, 2008). Beverelli et al. (2017) find that decreasing services trade restrictiveness has a positive impact on the productivity of manufacturing sectors that use services as inputs in production, and that the impact is stronger in countries with high institutional quality. Arnold et al. (2016) collected detailed information on the pace of reform across Indian services sectors, with a focus on entry and operational restrictions. The results suggest that procompetitive reforms in banking, transport, insurance, and telecommunications boosted the productivity of both foreign and locally owned manufacturing firms. Using firm-level data for the Czech Republic for 1998–2003, Arnold, Javorcik and Mattoo (2011) find a positive effect on the productivity of domestic firms in downstream manufacturing as a result of services sector reforms leading to greater FDI. Using the annual manufacturing survey of Chilean firms, Fernandes and Paunov (2012) find a positive effect of substantial FDI inflows in producer services sectors on the total factor productivity of Chilean manufacturing firms. Their findings also suggest that services FDI fosters innovation in manufacturing and offers opportunities for laggard firms to catch up with industry leaders. These benefits arise not just from foreign investment but also from cross-border trade in services. For example, Amiti and Wei (2009) find that services offshoring by high-income countries tends to raise their manufacturing sectors' productivity.

Rahardja and Varela (2013) examined the extent to which policy restrictions on foreign direct investment in the Indonesian service sector affected the performance of manufacturers over the period 1997-2009. They used firm level data on manufacturers' total factor productivity and the OECD's foreign direct investment Regulatory Restrictiveness Index, combined with data from Indonesia's input-output tables regarding the intensity with which manufacturing sectors use services inputs. Controlling for firm-level fixed effects and other relevant policy indicators, they find, first, that relaxing policies toward foreign direct investment in the service sector was associated with improvements in perceived performance of the service sector. Second, they found that this relaxation in service sector foreign direct investment policies accounted for 8 percent of the observed increase in manufacturers' total factor productivity over the period. The total factor productivity gains accrued disproportionately to firms that are relatively more productive, and gains are related to the relaxation of restrictions in both the transport and electricity, gas, and water sectors. Total factor productivity gains were associated, in particular, with the relaxation of foreign equity limits, screening, and prior approval requirements, but less so with discriminatory regulations that prevent multinationals from hiring key personnel abroad.

(3) Services openness and comparative advantage

A large part of goods trade includes embodied services, because services are important inputs in the making and trading of goods. Therefore, the development of the domestic services sector and access to imported services inputs can be expected to influence comparative advantage in manufacturing trade. The impact of services development on manufacturing trade is not straightforward. Since services are used as inputs in the production of manufactured goods, their development can increase manufacturing production. But since services and manufacturing compete for resources, the development of services can be at the expense of manufacturing. For example, the development of the services sector has drawn resources away from manufacturing not just in industrial countries like the United States and the United Kingdom, but also in developing countries like India and possibly the Philippines (see, for example, Kochar et al., 2006).

Some early studies examined the link between services as inputs in manufacturing and the pattern of manufacturing exports using single national input-output tables. For example, Francois and Woerz (2008) find significant and strong positive effects of

increased business services openness (greater imports) on some industries. More recently, Stehrer, Foster and de Vries (2012), Timmer et al. (2013) and Liu et al. (2017) used the newly constructed international input-output tables to measure more precisely the embodied services and indirect trade through other sectors.

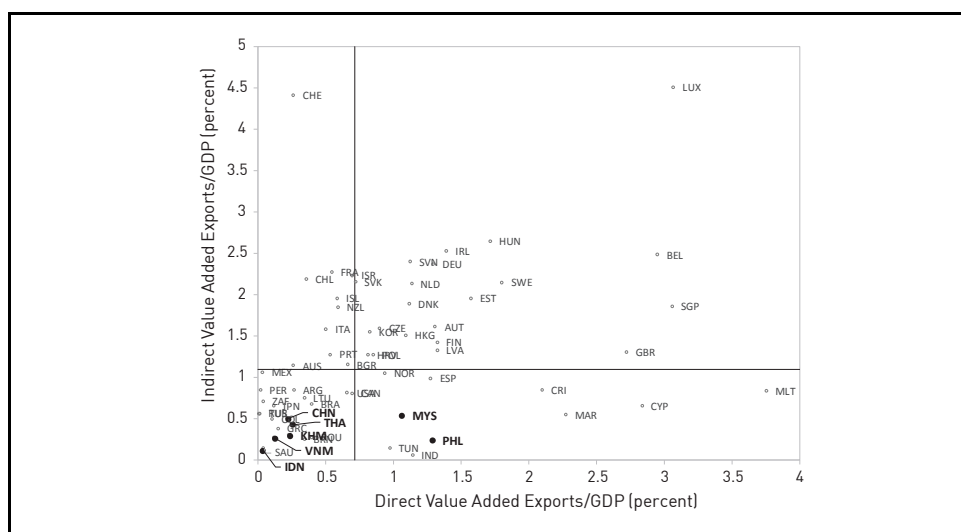
Liu et al. (2017) focus on two key services sectors – financial services and business services – to show that domestic services development has a mixed effect on the revealed comparative advantage (RCA) of manufacturing exports. More specifically, they find that services development reduces the RCA of manufacturing exports in manufacturing sectors with low embodied services (basic and fabricated metals) but increases it in sectors with a high degree of embodied services (food, beverages and tobacco). Liu et al. (2017) also consider the role of services imports in overcoming the limitations of domestic services markets. In countries with less developed services, manufacturing exports benefit more from access to foreign services inputs. Such an effect is also discussed in a theoretical model by Ju and Wei (2010), which derives the conditions for financial globalization to serve as a substitute for reforms of domestic financial systems. These results suggest that lower services trade barriers can help developing countries bypass inefficient domestic services provision and promote their manufacturing exports through intersectoral linkages.

The patterns across East Asian developing countries of their direct and indirect domestic value-added exports of services reveals the current state and potential evolution of their comparative advantage in services. In Figures 5 and 6, developing East Asian countries are placed in the context of other countries for which value-added trade data are available. The horizontal axis measures direct value-added exports of services and the vertical axis measures indirect domestic value-added exports of services (the value-added exports of services embodied in exports of goods). Lines representing the median shares divide the countries into groups occupying four quadrants.

For financial services, Figure 5 shows that there is heterogeneity across developing East Asian countries. In the bottom left quadrant is Indonesia. The low competitiveness of financial services is reflected in the low share of direct exports and the low level of embodied exports – which could reflect the low financial services intensity of goods production, the reliance primarily on imported financial services, or both. In the top left quadrant are China, Vietnam and Thailand, which are not yet sufficiently competitive to export financial services directly, but which do export a significant share indirectly. That goods sectors in these countries rely significantly on domestically produced financial services could be because financial services in these countries have reached

an intermediate level of development at which they can compete in the domestic market but not yet internationally. It could also be that restrictions on cross-border imports in these countries oblige goods producers to use domestically produced services. In the top right quadrant is Malaysia, whose more developed financial services sector exports both directly and indirectly. Finally, in the bottom right quadrant are Cambodia and less clearly, the Philippines, along with such “mature deindustrializers” as Britain and the United States, where the domestic tangible industries have shrunk in importance and financial services are mostly exported directly. The Philippines is too similar to Vietnam to be treated as qualitatively different, and Cambodia’s presence may merit further exploration.

Figure 5. Direct and Indirect Value Added Exports of Financial Services as Shares of GDP, 2011

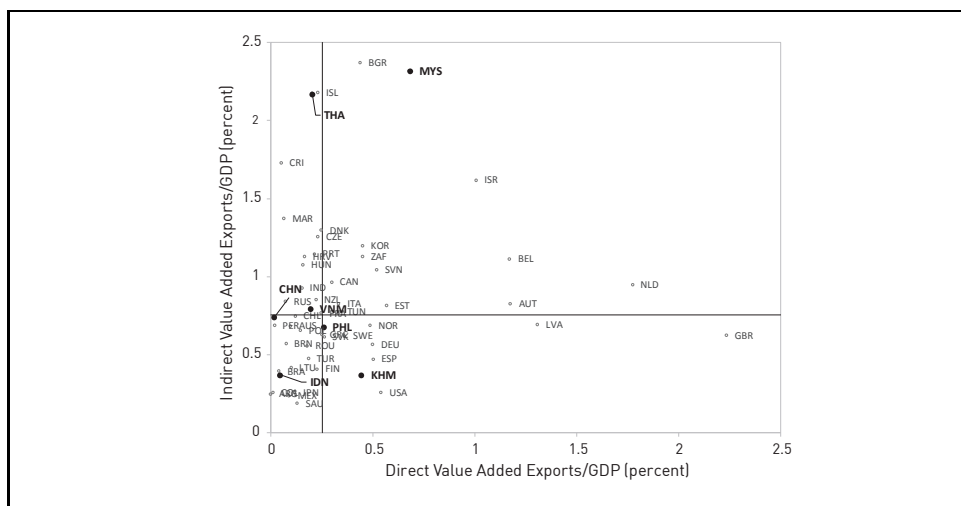


Source: OECD TiVA and authors' calculations.

For business services, Figure 6 shows interesting differences with developing East Asia. Given the greater cross-border tradability or openness to trade of business services, there is less scope for an intermediate stage (for countries to populate the top left quadrant). When a country is not competitive in producing these services, it neither exports them nor do its goods sectors import them. When a country is competitive, it exports both directly and indirectly. Most countries in the region inhabit the bottom

left hand quadrant, where both direct and indirect exports of business services are low, reflecting the relative weakness of this sector. In the bottom right quadrant are Philippines, and surprisingly, Malaysia, and along with the “premature deindustrializer,” India, where direct exports of business services are high but indirect exports are low. In the case of the Philippines, the explanation is the relative strength of business services and the relative weakness of goods sectors, but the Malaysian case deserves closer inspection.

Figure 6. Direct and Indirect Value-added Exports of Business Services as Shares of GDP, 2011



Source: OECD TiVA and authors' calculations.

(4) Challenges in services reform

The significant benefits of services openness cannot be achieved by a mechanical opening of markets. Flawed reform programs can substantially reduce gains from liberalization (World Bank, 2002; chapter 3). While precise recommendations require detailed analysis of each service sector in each country, three broad types of action are likely to be desirable: emphasizing competition, strengthening the regulatory environment, and creating mechanisms to improve access to essential services in the poorest areas. Regional cooperation and international support could help in each of these respects.

The largest gains come from eliminating barriers to entry and *enhancing competition*. Some East Asian developing countries like Malaysia and Thailand have given priority to a change in ownership from public to private or national to foreign hands, while retaining limitations on new entry. These restrictions can lead to a transfer of rents not just to domestic firms but also to foreign firms at the expense of consumer welfare. It is sometimes suggested that unrestricted entry is not always desirable, and in areas like banking might threaten bank viability and financial stability. But such concerns are ideally addressed through effective prudential regulation and there must be a strong presumption in favor of eliminating barriers to entry.

Effective regulation ranging from prudential regulation in financial and professional services to pro-competitive regulation in telecommunications and other network-based services is critical to the success of liberalization (Mattoo and Sauv  , 2003). While regulatory capacity is limited in some countries in the region like Lao PDR and Myanmar, regulatory design is a challenge even for the more advanced countries in the region and the world. Rapid changes in services technology and business models are rendering redundant old models of regulation. Conventional communication is being disrupted and displaced by platforms like Facebook and WeChat, conventional financial services by fintech and providers like the Ant Financial Services Group (formerly Alipay), and conventional transport by Uber and Didi Chuxing.

Regulatory institutions that can address conventional concerns *and* emerging issues can be costly and require sophisticated skills. Regional cooperation may enable a reduction of costs and a pooling of skills and help to develop regional solutions to problems. A key problem is that improvements in domestic standards are often needed to export services, but standards that are too high can hurt domestic access to services or competitiveness in other markets. For example, in the case of professional services, low standards and disparities in domestic training and examinations can become a major impediment to obtaining foreign recognition; but too high standards make these services unaffordable for the poor and small firms. A concrete example of the dilemma: the Philippines initially enacted national privacy legislation in order to ensure continued access to the EU data processing market; but the result was that many Philippines-based US firms found it difficult/costly to operate in the Philippines and suspended investment plans; whereupon the Philippines government was obliged to reversed course. Striking an appropriate balance in these cases is a challenge and a regional approach may help countries create locally appropriate standards without segmenting markets – and also enhance the region’s influence on the evolution of international

standards in these new areas.

Liberalization often requires complementary policies to help improve *access to essential services* for the poor, but these policies have not always been put in place even in the more advanced countries. In certain poor countries, and certain regions within all countries, improvements in services policy and regulation will not be sufficient to ensure access to essential services and therefore special mechanisms are needed. The effectiveness of international assistance could be increased by allocating it in a manner similar to that used domestically by countries like Chile and Peru to achieve wider access to services ranging from telecommunications to education (Mattoo, Nielsen and Nordas, 2006). For instance, once a region or group within a country has been identified as needing assistance – because the market is not delivering affordable services – funds could be pooled and allocated through international competitive tenders to the firm which offers to provide the necessary infrastructure at least cost. Providing poorer countries assistance in meeting the costs of the programs could increase the benefits of and sustain liberalization by ensuring that the gains are distributed widely.

3. Participation in GVCs and productivity growth

A key feature of developing East Asian countries has been their increasing participation in regional and global value chains. Section 2 has documented the changing nature of East Asian trade with the rise of production fragmentation across borders. The focus of this section is to investigate how GVC participation has affected productivity growth in the region.

GVC participation can increase labor productivity through two main channels. Recent theoretical models have shown that productivity gains associated with offshoring and participation in GVCs may accrue from the finer international division of labor, which is isomorphic to factor-augmenting technical change (Grossman and Rossi-Hansberg, 2008). In addition to specialization, GVC participation can boost productivity growth through greater diversity in input varieties, learning externalities and technology spillovers (Li and Liu, 2014; Baldwin and Robert-Nicoud, 2014).¹⁴ The latter effects may be especially important for developing countries with backward participation in

¹⁴ Trade in general can lead to productivity gains through multiple channels that are the object of a large body of research - see IMF (2016), Chapter 2, for a brief survey.

GVCs, stemming from the engagement with firms in technologically advanced countries.

In this section, we investigate whether the pattern of productivity growth for developing East Asian countries can in part be explained by the changes in GVC participation. We proceed by examining briefly the general trends in labor productivity based on country-specific data from The Total Economy Database. As for the trends in backward and forward GVC participation of the developing East Asian countries, we refer the reader to the discussion in Section 1. Second, we check whether labor productivity and backward GVC participation are associated at country-sector level, for the average country in the sample generally, and for the average developing East Asian country specifically. Third, we subject this association to more rigorous scrutiny, to see whether it is robust to controlling for other obvious drivers of labor productivity.

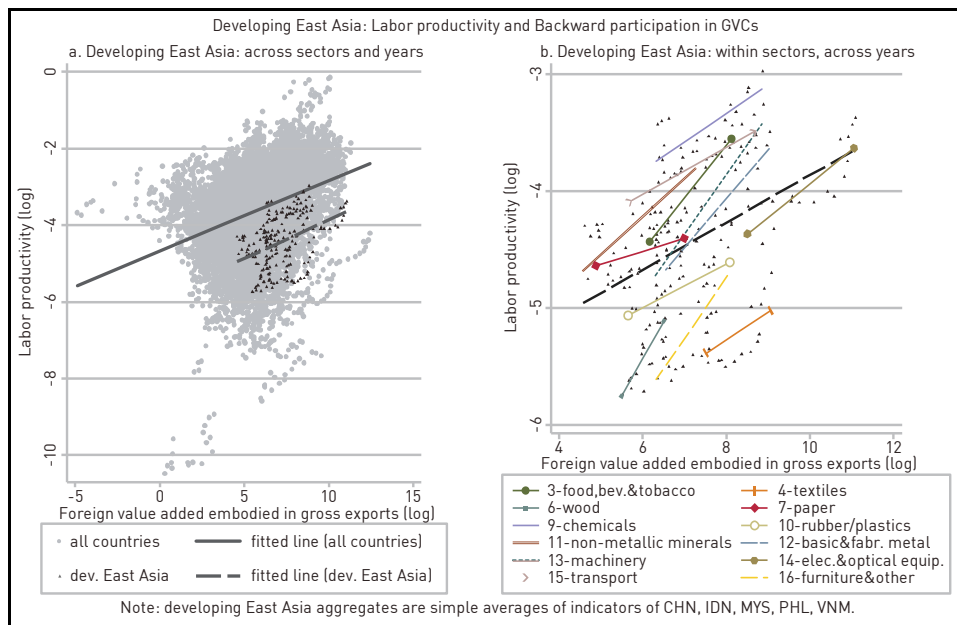
Labor productivity growth rates in developing East Asia are among the highest in the world but some of the countries have seen declines in the past two decades. In level terms, labor productivity in the developing East Asian countries is yet to catch up with developed countries. The 2015 rankings range from 48/123 for Malaysia to 113/123 for Cambodia, with China being ranked 83/123 and Vietnam 102/123. However, the picture is completely different as relates to labor productivity growth: the 2015 rankings range from 2/123 for Vietnam to 28/123 for Thailand. Labor productivity growth in the countries of focus has been consistently above the averages of the mature economies, and, with few exceptions, also above the world and the emerging market averages. There has been plenty of discussion about the average world productivity being sluggish in recent years, particularly since the Great Recession (World Bank, 2018). Slower productivity growth in the 2010s relative to the 2000s seems to also affect some of the developing East Asian countries, most notably China, Malaysia and Myanmar.

Prima facie evidence indicates a positive correlation between backward GVC participation and productivity growth for developing East Asian countries. For the average country in the world, sectors with larger growth in backward GVC participation tend to also have larger growth in labor productivity (Constantinescu, Mattoo and Ruta, 2017). In Figure 7, we explore the time variation in the TiVA data (yearly from 1995-2011) and find that, for the average developing East Asian country-sector combination, the level of labor productivity and the level of backward GVC participation are positively associated.¹⁵ The strength of this association is heterogeneous across

¹⁵ For this step, we use OECD Inter-Country Input-Output (ICIO) tables (2016 edition) to compute the backward GVC participation indicator. OECD ICIO, which is the underlying data source for

country-sector combinations, but it displays a consistent upward path.¹⁶

Figure 7. Developing East Asia: Correlation Between Labor Productivity and Backward GVC Participation in Manufacturing Sectors, by Country (1995-2011)



Econometric analysis allows us to identify rigorously the effect of backward GVC participation on productivity growth. Labor productivity has a multitude of

OECD TiVA, covers 63 countries and 34 goods and services sectors and spans period 1995-2011. The following developing East Asian countries are included in the database: China, Indonesia, Malaysia, Philippines, Thailand and Vietnam. For labor productivity by country and sector, we use data on value added from OECD TiVA and on employment from OECD STAN, WIOD (Release 2013) and UNIDO INDSTAT2.

¹⁶ The left chart in Figure 7 plots the country-sector-year combinations of the developing East Asia group against all the country-sector-year combinations in the sample. The y axis indicates the position of a country relative to the rest, as concerns the level of labor productivity. The x axis indicates the same for the degree of GVC participation, but the ranking in this case is less accurate due to the scale effects (being more to the right may indicate that a country simply exports more than the others). The right chart in Figure 7 zooms in on the sector-year combinations of the country in focus and indicates for each sector the strength of the association between the level of labor productivity and the level of backward GVC participation.

drivers. To investigate whether GVC participation is among the significant ones in the context of the developing East Asian countries, we apply the econometric framework in Constantinescu, Mattoo and Ruta (2017) in extended form to data on value-added, output and trade from the OECD Inter-Country Input-Output (ICIO) tables and on employment and capital from OECD STAN, WIOD (Release 2013) and UNIDO INDSTAT2. The resulting data set covers 55 countries, 12 sectors and period 1995 through 2011. It includes the following developing East Asian countries: China, Indonesia, Malaysia, Philippines and Vietnam. Estimations are restricted to manufacturing sectors (excluding manufacturing of coke, refined petroleum and nuclear fuel).

We estimate the impact of GVC-related trade and non-GVC-related trade on labor productivity for the average country in the world, and then use interaction terms to investigate whether a differential effect exists for the developing East Asian group. The estimation equation (Eq. 1) is derived from a production function that relates value added $VA_{c,s,t}$ in industry s in country c and year t to capital, $K_{c,s,t}$, labor, $L_{c,s,t}$, and a technology shifter $A_{c,s,t}$. The technology shifter is driven in part by a range of trade-related determinants $(\theta_1, \theta_2, \theta_n)$, that capture both traditional trade and trade occurring in a GVC context. These are our variables of interest, of which the most important one is the proxy for backward GVC participation. The reduced form of the equation is obtained by dividing both sides of the production function by $L_{c,s,t}$, taking logs and adding fixed effects. Differently from Constantinescu, Mattoo and Ruta (2017), Eq. 1 allows for interactions of the technology shifter with a dummy variable for the developing East Asia denoted as dEA , to assess whether the impact of trade on labor productivity differs for developing East Asian countries compared to the average country in the world.

$$\ln(LP)_{c,s,t} = \alpha + \beta * \ln\left(\frac{K}{L}\right)_{c,s,t} + \sum_{i=1}^n \gamma_i * \ln(\theta_{i,c,s,t-1}) + \sum_{i=1}^n \delta_i * \ln(\theta_{i,c,s,t-1}) * dEA + FE_{c,s} + FE_{c,t} + FE_{s,t} + \varepsilon_{c,s,t} \quad (1)$$

Labor productivity – computed as nominal value added divided by employment – and the nominal capital stock per employee are denoted by LP and K/L , respectively.¹⁷ The GVC variable of interest – one of elements of vector $(\theta_1, \theta_2, \theta_n)$ – is captured by

¹⁷ Price deflators by country, sector and year are unavailable, so we use nominal indicators.

the foreign value added embodied in gross exports (backward GVC participation).¹⁸ The trade-related variables are lagged by one period as their effect on labor productivity may not be instantaneous and to alleviate reverse causality. A range of unobserved determinants, such as, for instance, labor market reforms, global technology shocks, and time-invariant technology differences across countries and industries, are captured by three types of fixed effects (*FE*): country-industry, country-year and industry-year.

Equation (1) is estimated using three specifications, depending on the configuration of the technology shifter $A_{c,s,t}$. We start with trade indicators of broad scope and work our way towards specifications that allow for greater focus on the GVC-related trade. The first specification includes overall imports and exports of goods and services. In the second one, we split imports and exports into: imports of final goods, imports of intermediates, exports of final goods and exports of intermediates. The third and final specification focuses on imports, and splits them into imports of final goods, imports of intermediates that are absorbed domestically and imports of intermediates that are embodied in the exports. The latter component is the GVC-related trade measuring the backward participation in GVCs. The first two specifications are estimated using OLS, while for the third we employ IV estimation to identify the causal effect due to backward GVC participation.¹⁹

The analysis shows that GVC participation has been a significant driver of productivity growth for developing East Asian economies. Results are presented in table 1. For the average country/sector in the world, they confirm the findings in Constantinescu, Mattoo and Ruta (2017) that total imports and total exports influence productivity (specification 1), that the imported input channel is relatively more important (specification 2), and that imported inputs matter for productivity whether or not they are related to GVCs (specification 3).

The coefficients of the interacted terms which aim to capture differential impact for developing East Asian countries relative to the average country/sector in the world are generally not significant. Gross final imports are negatively associated with productivity at the 5 percent level, suggesting that the positive effect of international competition

¹⁸ See section 2b for details on measurement of participation in GVCs.

¹⁹ While all trade variables included in the regressions have endogeneity concerns associated with them, our focus is on identifying the causal effect due to backward GVC participation, for which we were able to find a plausible instrument. Backward GVC participation of sector s in country c is instrumented by the average value added from the United States, Japan and Germany embodied in the exports of industry s of three countries in the sample that are closest in income to the country c .

may be outweighed by the resulting contraction in the scale of production. Our GVC results suggest that, on average, a 10 percent increase in the backward GVC participation of manufacturing sectors in developing East Asian countries corresponds to a 1.4 percent increase in labor productivity, other things being equal. In other words, developing East Asia also sees a productivity boost from GVC-related imported inputs or backward linkages, and the magnitude is not significantly different from the global average.

Table 1. Labor Productivity and Trade

Dependent variable	Specification	Regressors	Average effect	Differential effect for developing East Asia
			(1)	(2)
log of labor productivity	1	log of gross imports	0.0752*** (0.0212)	-0.0483 (0.0632)
		log of gross exports	0.0838*** (0.0172)	-0.0541 (0.0606)
	2	log of gross final imports	-0.0185 (0.0128)	-0.0917** (0.0382)
		log of gross intermediate imports	0.141*** (0.0238)	0.0847 (0.0768)
		log of gross final exports	0.0161 (0.0198)	-0.131* (0.0689)
		log of gross intermediate exports	0.0429** (0.0214)	0.0395 (0.0654)
	3	log of gross final imports	-0.0266* (0.0161)	-0.107** (0.0496)
		log of FVA embodied in domestically-absorbed output	0.0879*** (0.0182)	0.0622 (0.0518)
		log of FVA embodied in exports (GVC backward part.)	0.140** (0.0581)	0.138 (0.183)

Notes: FVA stands for “foreign value added”. Specification 1 relates labor productivity to gross imports and gross exports. Specification 2 relates labor productivity to gross imports and gross exports by type of product (final and intermediates). Specifications 1 and 2 are estimated using the Ordinary Least Squares (OLS). Specification 3 relates labor productivity to three components of gross imports. It is estimated using Instrumental Variables (IV) estimation, where GVC backward participation is instrumented by the average value added originating from Germany, Japan and the United States that is embodied in the exports of three countries in the sample that have the most similar per capita income to the country in question. Regressions are run at the country-sector-year level and include controls for the log of capital stock per employee as well as the following fixed effects: country-industry; country-year and industry-year. Column (1) displays coefficients of trade indicators (denoting average effect across countries, sectors and years) from regressions that do not account for a differential effect for developing East Asia. Column (2) displays coefficients of trade indicators interacted with developing East Asia dummy variable from regressions that account for a differential effect (average effects from these regressions are similar to average effects reported in column (1). Standard errors indicated in parenthesis; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Number of observations ranges between 8,368 and 8,700. R-squared: approx. 0.98, depending on the specification. Sample is restricted to manufacturing sectors excluding manufacturing of coke, refined petroleum and nuclear fuel.

4. Shallow and fragmented trade agreements

The trade policy framework in which developing East Asian countries operate has changed over time. By 2013, with the entry of Lao PDR, all developing East Asian countries had become members of the WTO. Indonesia, Malaysia, Myanmar, the Philippines and Thailand have been members since the start in 1995, followed by Mongolia in 1997. China entered the WTO in 2001, Cambodia in 2004 and Vietnam in 2007. In addition, as further documented below, developing East Asian economies are members of several preferential trade agreements (PTAs). The combination of multilateral, regional and (often) unilateral trade policy reforms has dramatically reduced applied tariffs in the region. However, even though the number of trade agreements has grown, they remain relatively shallow and fragmented in nature.

Developing East Asian countries are involved in a growing number of preferential trade agreements. The “noodle bowl” of Asian trade agreements has become denser in the last decade. Developing East Asian countries have signed a total of 36 PTAs.²⁰ Since some of these agreements involve several countries, such as the Association of East Asian Nations (ASEAN), each developing East Asian country has on average an agreement with 8 partners. While the proliferation of overlapping trade agreements has certainly contributed to the reduction of tariffs and other non-tariff restrictions to trade, it also creates multiple, and possibly inconsistent, trade rules. The risk is that divergent trade rules may create costs for businesses and lower the efficiency of global and regional value chains (Baldwin and Kawai, 2013).

The content of East Asian trade agreements has also changed over time. ASEAN provides a good example of this evolving content. The free trade area, liberalizing goods trade among ASEAN economies, was established in 1992. Subsequent protocols covering services and intellectual property rights were added in 1995, an investment agreement and dispute settlement mechanism was included in 1996, and a framework agreement for the mutual recognition of standards was signed in 1998. In some cases, the new set of rules are of a legally binding nature, as for investment (WTO, 2011). For other policy areas, such as intellectual property rights protection, cooperation is only on a best-endeavor basis, as the ASEAN Framework Agreement on Services reflects. The extent of commitments in the agreement is limited, but the agreement

²⁰ In addition, developing East Asian countries are also members of 6 partial scope agreements that cover only a limited number of products.

does make references to schedules of commitments (Art. X) and a few more specific concessions.

International agreements have not played a significant role in driving regional services reform. Drawing on surveys of applied policies in the key services sectors of ASEAN countries, Gootiiz and Mattoo (2017) assessed the impact of the ASEAN Framework Agreement on Services (AFAS) and the ambitious ASEAN Economic Community Blueprint, which envisaged integrated services markets by 2015. The analysis finds that over this period, ASEAN did not integrate faster internally than vis-à-vis the rest of the world: policies applied to trade with other ASEAN countries were virtually the same as those applied to trade with the rest of the world. Moreover, the recent commitments scheduled under AFAS did not produce significant liberalization and, in a few instances, services trade policy actually became more restrictive. The two exceptions are in areas that are not on the multilateral negotiating agenda: steps have been taken toward creating regional open skies in air transport, and a few mutual recognition agreements have been negotiated in professional services. These findings suggest that regional negotiations have added the most value when they were focused on areas that are not being addressed multilaterally.

Trade rules in East Asia appear to be patchy and trade agreements remain relatively shallow. Table 2 provides an overview of the policy areas that are covered by developing East Asia countries' trade agreements. Some of the policy areas that are covered by the WTO agreements are absent from most East Asian PTAs, including public procurement (covered by a plurilateral WTO agreement), subsidies and state trading enterprises. Since all developing East Asian economies are members of the WTO, multilateral rules apply to them. However, PTAs in other regions tend to go beyond multilateral rules in these areas, indicating that regional disciplines may be weaker in ASEAN than in other regions. Coverage of policy areas that are not regulated by the WTO, such as competition policy, intellectual property rights²¹, movements of capital, visa and asylum, is even patchier. These gaps indicate that the trade agreements signed by developing East Asian countries are shallow relative to other regions with comparable shares of intra-regional trade such as North America and Europe. Initiatives such as the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) and the Regional Comprehensive Economic Partnership (RCEP)

²¹ "Intellectual property rights" refers to accession to international treaties not referenced in the TRIPs agreement of the WTO, including intellectual property policies.

may help fill these regulatory gaps.²² But, as trade agreements deepen, they may also risk creating regulatory fragmentation within the region and between the region and other key trading partners. This indicates the importance of ensuring “open” regionalism in East Asia, i.e. rules should aim at being non-discriminatory or minimize their discriminatory component.

Table 2. Content of Developing East Asian Countries’ Preferential Agreements

	ASEAN FTA	China - Costa Rica	China - Peru	Malaysia - Australia	New Zealand - Malaysia	Chile - China	ASEAN - Korea	Australia - Thailand	Iceland - China	China - New Zealand	Thailand - New Zealand	Switzerland - China	ASEAN - Australia - New Zealand	Pakistan - Malaysia	Japan - ASEAN	Japan - Philippines	Japan - Viet Nam	China - Singapore	Japan - Indonesia	Japan - Malaysia	Japan - Thailand	India - Malaysia	Chile - Malaysia	Chile - Viet Nam	China - Pakistan	China - Macao, China	ASEAN - India	China - Hong Kong	China - ASEAN
CONTENT																													
WTO Plus																													
FTA Customs	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
FTA Agriculture	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
AD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Customs	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
CVM	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
GATS	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓	✓	✓
SPS	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TBT	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TRIPS	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TRIMS	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
State Aid	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Export Taxes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
STE	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Public Procurement	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
WTO Extra																													
Investment	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
IPR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Competition Policy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Movement of Capital	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Visa and Asylum	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Environmental Laws	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regional Cooperation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Information Society	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Education and Training	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Research and Technology	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Labour Market	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Regulation	✗	✗	✗	✓	✓	✓	✗	✗	✓	✓	✓	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
SME	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Agriculture	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Consumer Protection	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cultural Cooperation	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Industrial Cooperation	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Innovation Policies	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Economic Policy	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dialogue	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Data Protection	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mining	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Public Administration	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Source: “Content of Deep Trade Agreements” World Bank database, Hofmann et al. (2017).

Notes: Includes FTA and FTA&EIA notified to the WTO before November 2015, when the “Content of Deep Trade Agreements” stops (hence the difference of 7 agreements up to the total of 36 non-PSA agreements reported by the WTO). FTA stands for Free Trade Agreements; EIA for Economic Integration Agreements, PSA for Partial Scope Agreements; ASEAN FTA stands for Association of Southeast Asian Nations free trade area; Table lists policy areas covered in at least 3 agreements.

²² It should be noted that, as it currently stands, RCEP is a less ambitious agreement relative to CPTPP in areas such as regulatory coherence and services, among others.

Deepening trade agreements in East Asia can promote further GVC integration and support productivity growth. The shallow and fragmented nature of trade agreements in East Asia, and the resulting inadequacy and inconsistency of trade and investment rules within East Asia can be a stumbling block to further GVC integration and, hence, negatively affect productivity growth. Recent research shows that the depth of trade agreements is positively correlated with GVC integration (Ruta, 2017). Specifically, Laget et al. (2018) find that signing deep PTAs doubles trade in parts and components and increases re-exported value added by about 22 percent. Intuitively, better protection of foreign investment and intellectual property rights, a more competitive environment safeguarded by competition policy and the regulation of state owned enterprises, greater freedom of movement of people and capital across borders, and other deep provisions embedded in PTAs contribute to promote GVCs. Such a policy environment will be even more relevant as developing East Asian countries aim to specialize not only through low value-added tasks like product assembly but aim to participate increasingly in the production of more sophisticated goods and services. Ongoing trade negotiations within East Asia and with the rest of the world will, therefore, have important consequences for the future of GVC integration and productivity growth of developing East Asian countries.

Analysis of the CPTPP shows that the agreement would have positive trade and income effects for developing East Asian countries, notably for Vietnam. Maliszewska et al. (2018) estimate the economic and distributional impacts of CPTPP using a global dynamic computable general equilibrium (CGE) model. By 2030, CPTPP members' income is estimated to be on average 0.87 percent higher than in the baseline. Vietnam is expected to reap the largest gains from CPTPP, ranging between 2.8 to 4.4 percent of income. The gains are determined mainly by three factors: reduction in tariffs, lower trade costs associated with changes in non-tariff measures, and the importance of CPTPP members as trading partners. Vietnamese sectors that benefit the most are food, beverages, and tobacco; wearing apparel and leather, and textiles. Most services sectors would also expand faster than in the baseline. Increases in output are mostly driven by higher exports. CPTPP is expected to reduce the poverty rate in Vietnam, but higher-skilled workers are likely to benefit more. CPTPP is estimated to lift from poverty (at PPP\$5.50 a day) 0.6 million people in 2030, relative to baseline conditions. Although all income groups are expected to benefit, people at higher ends of the income distribution benefit proportionately more than the poor, because the agreement creates more economic opportunities for skilled workers.

IV. CONCLUSION

The world is changing in ways that developing East Asian countries cannot predict or control. Looking back, we have demonstrated how countries in the region have forged a remarkable development path, taking advantage of technologies that favored labor intensive manufacturing and access to foreign markets that was secured by trade agreements. We also showed how their trade and development prospects have been profoundly affected by the emergence of China.

None of these largely external developments can simply be extrapolated into the future. The window for continued labor-intensive industrialization is defined by a race between two prices: how fast the real wage in China increases relative to how fast the price of robots falls. That race will determine whether companies like Foxconn shift production from China to Cambodia or automate. The scope and speed of technological change has always been impossible to forecast. Aging and rebalancing in China favor a faster increase in real-wages, but initiatives like the Belt and Road could awaken the relatively underdeveloped interior of China to prolong its hold on large scale, low wage manufacturing. It is also hard to assess whether the backlash against globalization in its erstwhile strongest proponents, the EU and US – provoked in part by the pain of adjusting to East Asia's remarkable success – will be dissipated in political rhetoric or translate into a serious retreat from legally bound openness.

Even though the evolution of the world economy is mostly beyond developing East Asia's control, the countries of the region still have significant power to mold their own economic destiny. National reform in services, especially telecommunications, transport and finance, would equip East Asian citizens and firms with the connectivity and capital needed for productive and inclusive engagement in a technologically dynamic global economy. International cooperation through deeper agreements that are open to all trade partners would create a more secure policy environment to exploit the gains from an ever-finer international division of labor and from reaping economies of scale and scope in large, integrated markets. These two major recommendations of this paper will have a significant development pay-off regardless of which state of the world prevails.

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