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Services Productivity and Trade Openness: Case of ASEAN

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Abstract*: Using fixed effect and Generalised Method of Moments (GMM) estimations, this paper analyses the impacts of trade on the labour productivity of the services sector (at the four key sub-services sector levels: (i) wholesale, retail, and hotel; (ii) transport, storage, and communications; (iii) finance, insurance, and real estate; and (iv) community, social, and personal sectors) for five ASEAN countries—Indonesia, Malaysia, the Philippines, Singapore, and Thailand—from 1990 to 2005. The results show that more exposure to exports will improve labour productivity in the services sector in these countries. Based on input–output relationships, services play an important role as inputs in the manufacturing sector, which is notable in Indonesia, Malaysia, Singapore, and Thailand.*

Keywords: ASEAN, Services Sector, Labour productivity, Free Trade Agreement, Input-Output
JEL Classification: F14, F15, F16

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1. Introduction

Several studies highlight the importance of more 'openness' in the services sector for industrial development due to its complementary effects on the manufacturing sector through intermediate input linkages and, hence, overall productivity improvements in the economy (Hoekman, 2006; Eswaran and Kotwal, 2002). Burgess and Venables (2004) highlight the importance of services sector liberalisation for growth through the increase in the variety of services 'inputs' that support specialisation, creation and diffusion of knowledge, and exchange of goods and services. For example, the role of financial services in channelling savings to productive investments tends to increase the allocative efficiency in the economy (Goldsmith, 1969; Levine, 1999). In fact, Levine (1999) highlights the important functions of financial activities in reducing transactions cost in terms of risk diversification, allocation to productive investments, monitoring moral hazard activities, mobilising private and public savings through financial innovation, and facilitating the exchange of goods and services. Other services, such as telecommunication services that facilitate trade and enhance the diffusion of technology and knowledge across borders, also have a greater impact on investment and growth in the economy. The more open the telecommunications services sector is, the lower the costs of cross-border trade and contributes to the better exchange and specialisation of production activities.

Other than telecommunications and financial services, we expect to see other key services enabling and facilitating trade with and across borders, such as the innovation in transport services which should reduce the cost of shipping of goods and movement of workers within and between countries. More open business services, such as accounting, engineering, consulting, and legal services, reduces transaction costs and diffuses better management and human resource practices across countries, thus, improving production processes and productivity. Innovation and improvements in retail and wholesale distribution services are a vital link between producers and consumers, thereby affecting the effectiveness of the global supply chain. Health and education services are key inputs into the flow and stock of human capital. Another dimension is that services are frequently direct inputs into economic activities, and thus determinants of the productivity of the 'fundamental' factors of production – labour and capital – that generate knowledge, goods, and other services. Education, research and development, and health services are examples of inputs into the production of human capital. Since most services are intermediate inputs

for manufacturing and services production, these are important components of the production process and productivity of the economy. Thus, more openness in such services creates economies of scale and scope for greater specialisation (fragmentation) and improvements in the global and regional production value and supply chains. It is also suggested that outsourcing and fragmentation of production activities in manufacturing and services will provide positive impacts on the growth of productivity in the services sector (Oulton, 2001).

The other stylized fact of the services sector is that the share of services to GDP and employment increases as per capita income increases. Services increase with the growth of middle-income households in the domestic economy (their income elasticities of demand tend to exceed one) and their desire for more specialised services increases as their income grows (Hoekman, 2006). Employment tends to shift towards the services sector from the manufacturing sector as per capita income increases and the economy moves to more developed levels.

One critical issue in economic development is that the productive contribution of the services sector to the overall economy is limited due to their limited potential growth for investment and the technological capacity (Baumol, 1967).

The pace of opening up services for trade and investment was slow in Southeast Asia, but it has quickened in the last two decades. Over the same period, there has been a sharp increase in free trade agreements (FTAs) in Southeast Asia, which have opened the ASEAN[1] economy to trade and investment. The first major FTA for Southeast Asian countries was the ASEAN Free Trade Area (AFTA) enacted in 1992. ASEAN member countries also began to actively establish bilateral and regional FTAs. Indeed, ASEAN has established five ASEAN+1 FTAs with its six main trading partners—China (ACFTA), Japan (AJCEP), Korea (AKFTA), India (AIFTA), and Australia–New Zealand (AANZFTA). One of the main objectives of FTAs is to promote trade in goods and services among FTA members.

One question that arises is how trade and trade policy affect economic performance. In our case, we shall focus on the impacts of trade and trade policy on the productivity of the services sector in ASEAN. A recent study of the Global Value Chain highlights the importance of services links and trade as an important component for the growth of value-chain activities in the region (Asian Development Bank, 2012). In particular, it highlights

[1] The 10 ASEAN countries are Brunei Darussalam, Cambodia, Indonesia, the Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam.

the important role of producer services such as transport, communication, distribution, and business services in linking and supporting supply-chain activities at every level leading to greater integration and growth of value-added activities in both the region and the global economy. Services play an important role at every stage of production and consumption from design and branding at the manufacturing stage to consumer marketing, selling, and after-sales services such as consumer training and technical assistance and maintenance. However, the services sector seems to be lagging behind the manufacturing sector in terms of opening up to foreign competition in ASEAN (Thangavelu and Lim, 2011).

This paper aims examine the impacts of the share of exports to trade and regional integration which is represented by the ASEAN Free Trade Area (AFTA) on the labour productivity of the services sectors for selected ASEAN countries, Indonesia, Malaysia, the Philippines, Singapore, and Thailand, from 1990 to 2005. We focus our analyses in four key services sectors: (i) wholesale, retail, and hotel; (ii) transport, storage, and communications; (iii) finance, insurance, and real estate; and (iv) community, social, and personal sectors. The results indicate that openness of the services sector creates significant linkages within the domestic economy and supports the manufacturing sector in the regional and global production supply chain. The results of the paper are also relevant for Regional Cooperative Economic Partnership (RCEP) Agreement among ASEAN plus 6 countries (Australia, China, India, Japan, Korea, and New Zealand). The RCEP negotiations provide ample opportunities to liberalise the services sector and increase market access across the ASEAN plus 6 countries. The results of the study also highlight the importance of the complementary effects between manufacturing and services liberalisation, as these will be important considerations for deeper liberalisation in the key services sectors that could smoothen the process of trade in goods and investment in the region.

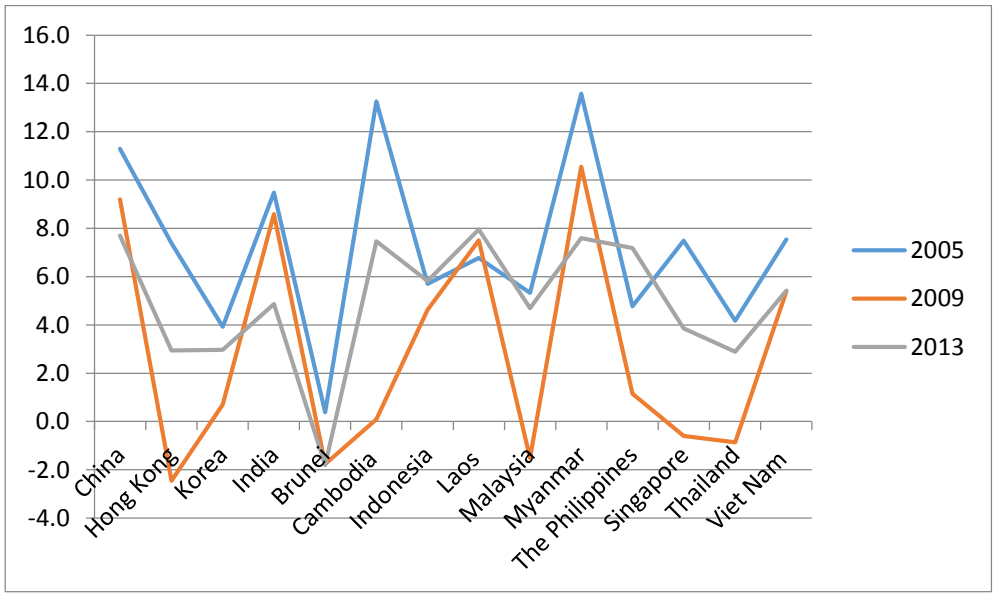
The structure of the paper is as follows. Section 2 discusses the labour productivity of the selected ASEAN countries. Section 3 discusses the linkages between manufacturing and services sector. Section 4 presents an empirical findings on the impact of trade on labour productivity in the services sector. Section 5 concludes.

2. Labour Productivity in ASEAN

2.1. Macroeconomic recent trends of ASEAN countries

Figure 1 presents the key macroeconomic trends of the selected Asian countries. It illustrates the real GDP growth across from 2005 to 2013. Generally, we can observe that most Asian countries were affected by the global financial crisis. However, we also see that there was a strong recovery across the countries, apart from the larger economies such as China and India which were not affected by the global shocks but are adjusting to domestic structural changes.

Figure 1: Real GDP Growth Rate of Selected Asian Countries, 2005–2013



Source: Authors' calculations based on Asian Development Bank Statistics Database.

Table 1 describes the shares of agriculture, industry, and services sectors of the total value-added from 2000 to 2013. The share of the agricultural sector is declining for most Asian countries. We also observe a rising share of industry for Cambodia, Lao PDR, Viet Nam, and Thailand from 2000 to 2013, and a declining share of industry for Malaysia, the Philippines, and Singapore over the same period. This reflects adjustments to the global financial crisis for the mature economies of Malaysia and Singapore. An interesting trend is the emerging services sector across the selected Asian countries. We observe a rising share of services for the larger economies of China and India and for the ASEAN economies of

Cambodia, Indonesia, Lao PDR, Malaysia, the Philippines, Singapore, and Viet Nam. This indicates that there is a general shift in industrial structure towards services activities for most Asian and ASEAN economies.

Table 1: Share of Agriculture, Industry, and Services Sectors to GDP for Selected Asian Countries, 2000–2013

	Agriculture		Industry		Services	
	2000	2013	2000	2013	2000	2013
China	15.1	10.0	45.9	43.9	39.0	46.1
Hong Kong	0.1	0.1	12.6	7.0	87.3	93.0
Korea	4.4	2.3	38.1	38.6	57.5	59.1
India	23.4	18.4	26.2	24.7	50.5	57.0
Brunei	1.0	0.7	63.7	68.2	35.3	31.0
Cambodia	37.9	33.8	23.0	25.7	39.1	40.5
Indonesia	15.6	14.4	45.9	45.7	38.5	39.9
Laos	48.5	30.0	19.1	30.0	32.4	40.0
Malaysia	8.3	9.4	46.8	41.0	44.9	49.6
Myanmar	57.2	36.9	9.7	26.5	33.1	36.7
The Philippines	14.0	11.2	34.5	31.1	51.6	57.7
Singapore	0.1	0.0	34.8	25.1	65.1	74.9
Thailand	8.5	10.6	36.8	40.1	54.7	49.3
Viet Nam	24.5	18.4	36.7	38.3	38.7	43.3

Source: Asian Development Bank Statistics Database.

Table 2 shows the key trends in the share of exports and imports of goods and services to GDP for selected Asian countries from 1990 to 2013. We observe its rising trend across the Asian economies, particularly for the larger economies of China and India. We also observe a rising trend in exports for the newly growing economies such as Cambodia and Viet Nam. The rising share of exports is also matched by a rising share of imports of goods and services for the Asian countries.

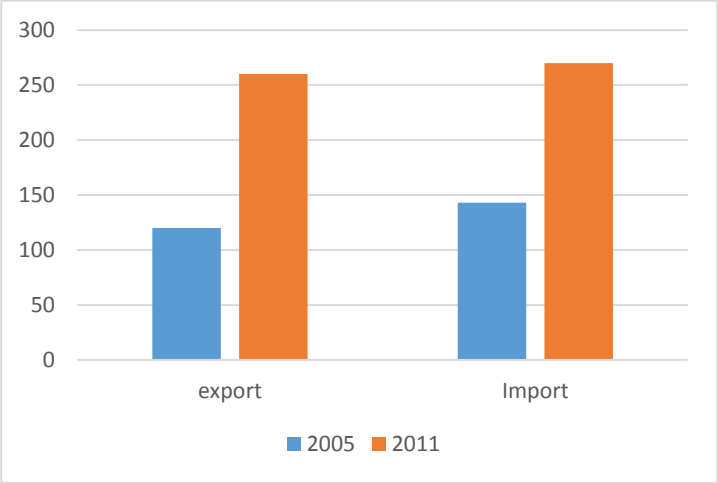
Table 2: Share of Exports and Imports of Goods and Services to GDP for Selected Asian Countries: 1990–2013

	Exports of Goods and Services				Imports of Goods and Services			
	1990	2000	2010	2013	1990	2000	2010	2013
China, People's Rep. of	19.0	23.3	29.4	26.2	15.6	20.9	25.6	23.8
Hong Kong	130.6	141.8	219.4	229.6	122.0	137.4	213.5	228.7
India	7.1	13.2	21.9	24.9	8.5	14.1	26.3	28.8
Korea, Rep. of	27.6	35.0	49.4	53.9	28.3	32.9	46.2	48.9
Brunei Darussalam	61.8	67.4	81.4	76.2	37.3	35.8	32.9	32.5
Cambodia	2.4	49.9	54.1	55.0	8.4	61.7	59.5	59.0
Indonesia	25.3	41.0	24.6	23.7	23.7	30.5	22.9	25.7
Malaysia	74.5	119.8	93.3	82.9	72.4	100.6	76.3	74.0
Myanmar	1.9	0.5	0.1	0.2	3.6	0.6	0.1	0.2
Philippines	27.5	51.4	34.8	27.9	33.3	53.4	36.6	32.0
Singapore	177.2	189.2	199.3	190.5	167.1	176.9	172.8	167.5
Thailand	33.1	64.8	66.6	67.0	40.6	56.5	61.0	61.0
Viet Nam	26.4	55.0	72.0	83.9	35.7	57.5	80.2	79.8

Source: Asian Development Bank Statistics Database.

Figure 2 illustrates that trade in the services sector in ASEAN has been expanding over the years. Exports of services of ASEAN increased from US$120 billion in 2005 to nearly US$260 billion in 2011. At the same time, imports of services of these countries increased from US$143 billion in 2005 to nearly US$270 billion in 2011. Among the services, transport, travel, and other business services account for major components of overall trade in services. The transport service sector is the key service import with nearly 40 percent of total value of service imports, followed by business services of nearly 24 percent, and travel of 18 percent in 2011.

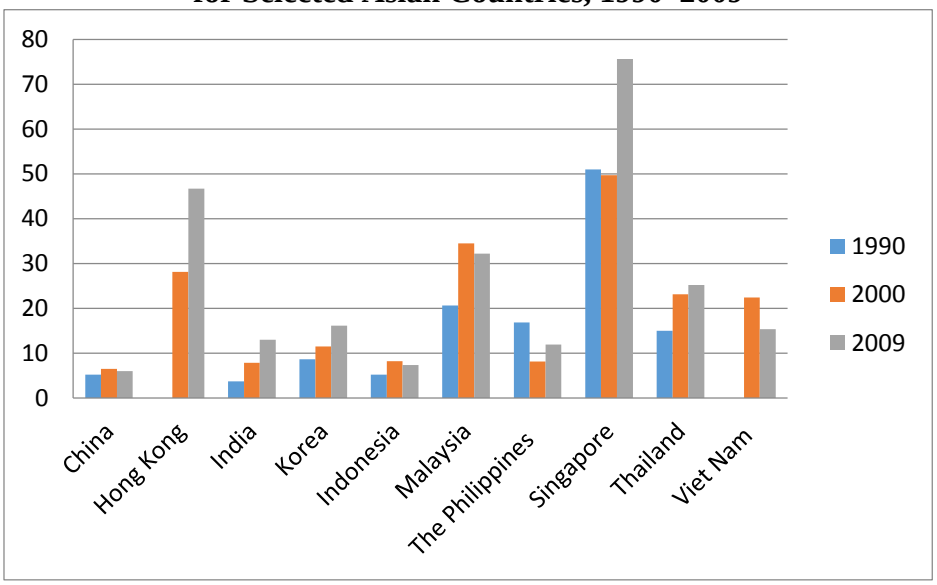
Figure 2: Exports and Imports of Services for ASEAN: 2005–2011 (US$ billion)



Source: ASEAN Secretariat.

Figure 3 presents the share of exports of services to the total value-added of the services sector for selected Asian countries from 1990 to 2009. Export of services is rising for Asian countries in general, in China, India, Korea, Hong Kong, the Philippines, Singapore, Thailand, and Viet Nam. It is interesting to observe that the smaller economies of Hong Kong and Singapore rely heavily on the exports of services to drive their economic growth. The larger economies of China and India have a share of services exports of less than an average of 10 percent of value-added of the services sector from 1990 to 2009.

Figure 3: Share of Services Exports to Value-Added of Services Sector for Selected Asian Countries, 1990–2009



Source: Authors' calculations, reconstruction from Park and Shin, 2012.

2.2. The FDI Trends in the Service Sectors in ASEAN

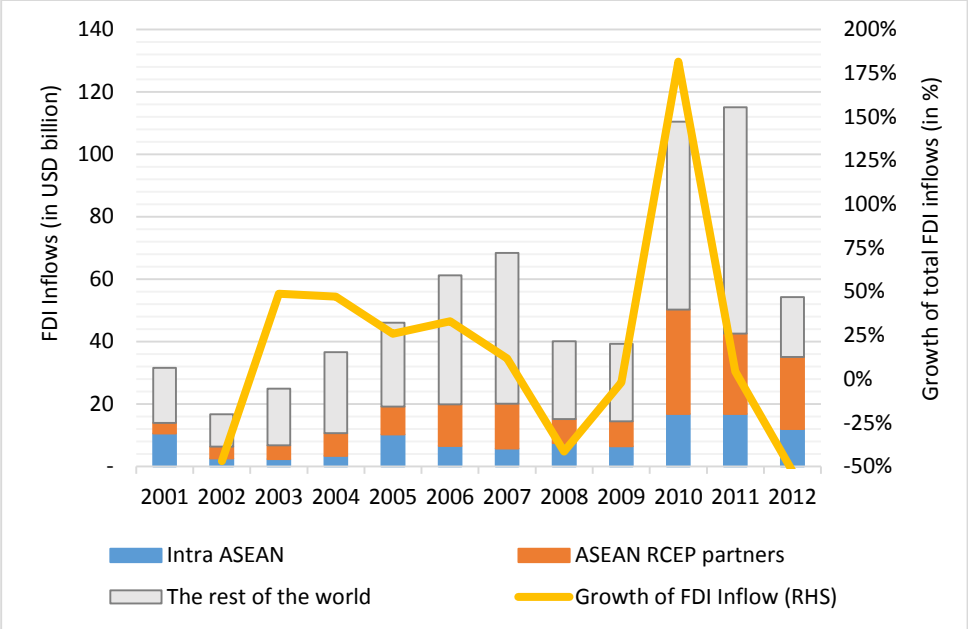
Unlike other regional associations such as the European Union (EU), ASEAN could not be more diverse in its economic and institutional framework. In 1992, ASEAN forged a deeper economic understanding in the region through the conclusion of an agreement to set up the ASEAN Free Trade Area (AFTA). This agreement aimed to attract more intra-ASEAN foreign direct investment (FDI) through active liberalisation of restrictions within ASEAN countries. In 1998 the ASEAN Investment Area was formed and is now considered to be the most significant attempt by ASEAN at liberalising FDI restrictions in the region (Plummer, 2009).

To create stronger regional economic integration, ASEAN decided to create a single market with the formation of the ASEAN Economic Community (AEC) in 2015. Through the formation of the AEC, ASEAN is aiming to achieve a single market and production base in a highly competitive economic region with equitable economic development and one which is fully integrated into the global economy. ASEAN aims to build on past agreements, such as the AFTA and ASEAN Investment Area, and work towards achieving a free and open investment regime in the AEC to further attract both intra- and extra-ASEAN FDI (ASEAN 2010a). ASEAN's continued emphasis on liberalising FDI restrictions in the last two decades thus emphasises the importance of FDI to the economic progress of the region.

Figure 4 shows the key FDI trends from 1995 to 2009. Between 2002 and 2007, FDI in the region expanded from US$17.3 billion in 2002 to US$73.9 billion in 2007. This

increasing trend was then disrupted by the 2008 global financial crisis, but the FDI inflows have rebounded in more recent years to the pre-global financial crisis level (ASEAN 2010b). The rebound was not uniform across and within ASEAN countries, however. The FDI inflows are non-ASEAN countries, while intra-ASEAN FDI inflows contributed at moderate level and relatively did not change much.

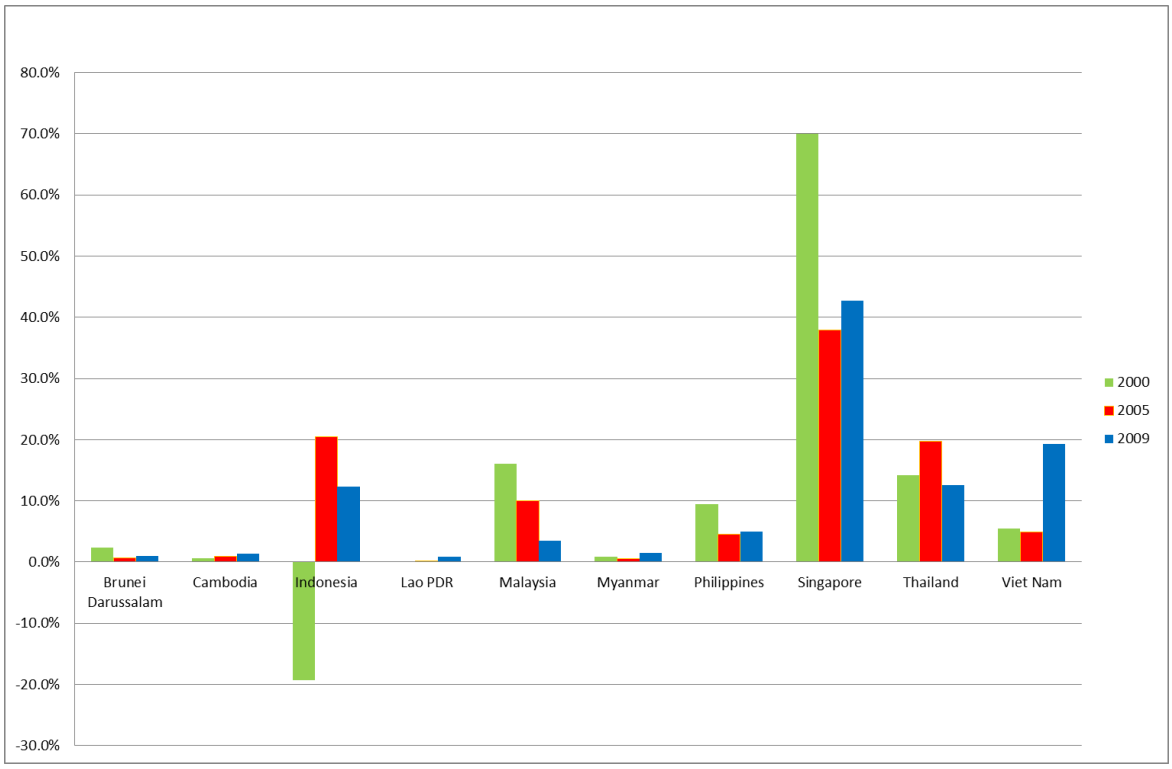
Figure 4: FDI Inflows into ASEAN (1995–2009)



Note: The full data are available for Cambodia, Lao PDR, Myanmar, Philippines, and Thailand; for Brunei Darussalam except 2001-2006, 2009, and 2012; for Indonesia except from 2001 to2003; for Malaysia except 2007; for Singapore except 2012; and for Viet Nam except from 2001 to2010.
Source: Authors' calculation

Figure 5 shows the trends of FDI inflows into ASEAN by country. Singapore, Thailand, and Viet Nam are the key countries attracting significant FDI inflows into the region. In recent years, we also observed rising FDI inflows into Indonesia particularly after key structural reforms following the Asian financial crisis. With greater economic openness and reforms in the CLMV (Cambodia, Lao PDR, Myanmar, and Viet Nam), we are expecting to see further growth in FDI inflows into the region.

Figure 5: Share of FDI Inflows by ASEAN Countries (%), 2000–2009

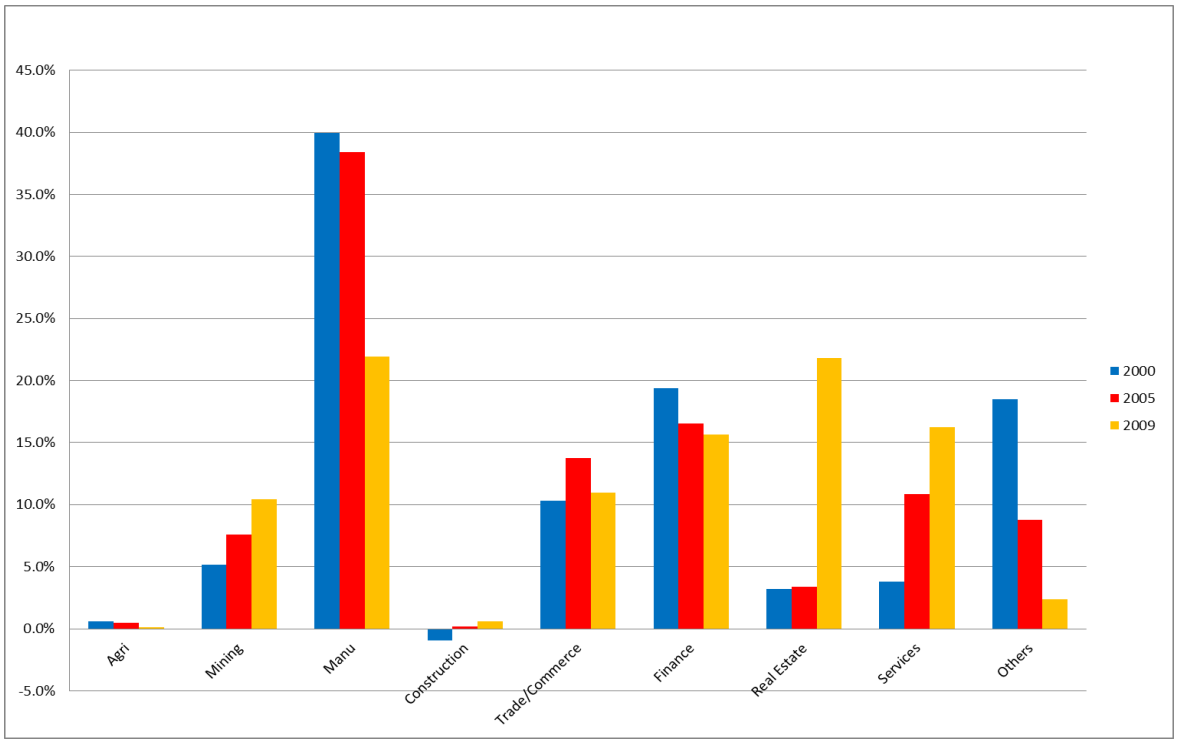


Source: ASEAN Secretariat, 2010b.

Figure 6 presents the share of FDI inflows into ASEAN by key sector. It is clear that multinational activities are concentrated in the manufacturing sector in ASEAN. The share of FDI inflows into manufacturing accounts for nearly 40 percent in 2000 and 2005. However, this share has been declining over the years to less than 25 percent in 2009. In contrast, the share of FDI inflows into the services sector is rising especially in the financial, real estate, logistic, and aviation services sectors. It also shows a rising share of FDI in the mining sector mainly due to the rising demand for resources which resulted in increasing prices of a number commodities.

In recent years the share of global FDI inflows into ASEAN has been showing a declining trend. ASEAN's share of global FDI inflows from 1980 to 2009 dropped from a pre-Asian crisis peak of 8.8 percent in 1991 to only 3.3 percent in 2009. ASEAN's share since 2000 is also notably lower than in the 1980s. This alarming trend indicates that a shift in multinational activities in ASEAN, whereby multinationals may be consolidating their key activities in the region.

Figure 6: FDI Inflows into ASEAN (%) by Sectors, 2000–2009



Source: ASEAN Secretariat, 2010b.

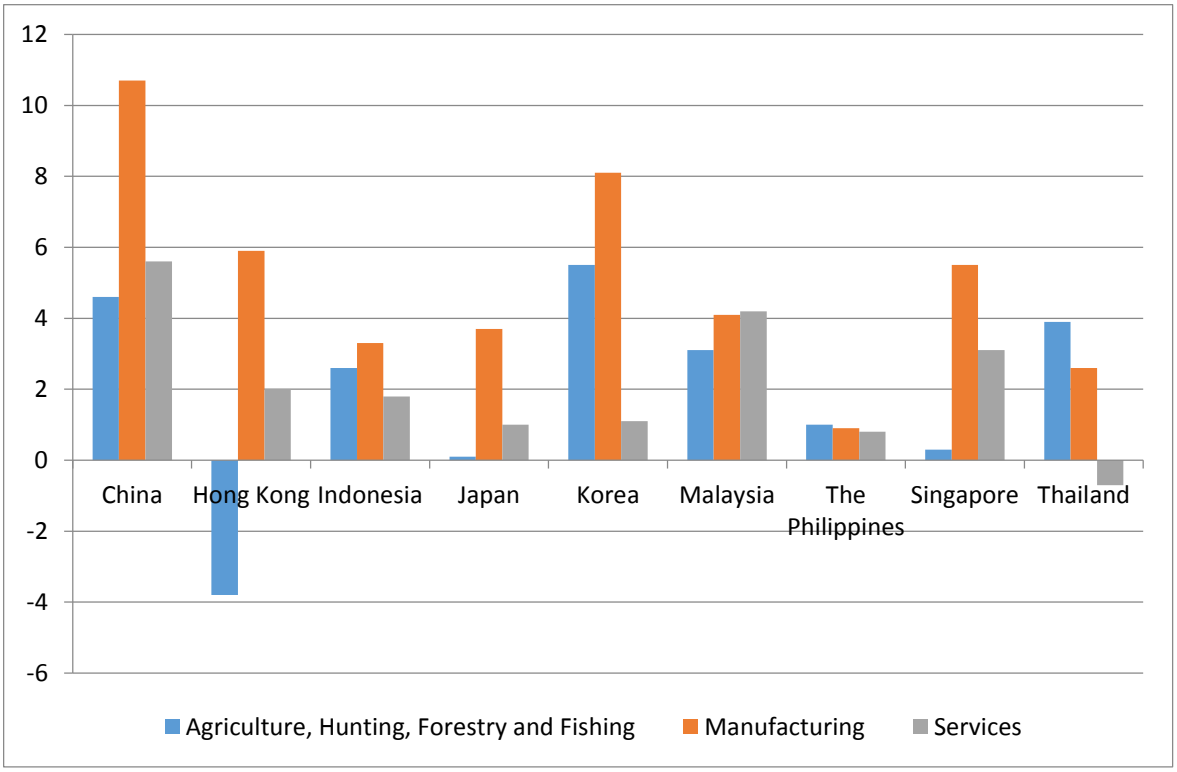
ASEAN recognises these concerns and its members have taken several active steps aimed at keeping the region attractive to FDI activities. Besides taking conclusive steps in forming the AEC, ASEAN has also recently concluded all five of its external free trade agreements (FTAs), including the investment agreement between ASEAN and China in 2010. These agreements could allow ASEAN and its partners to exchange favorable FDI conditions that would contribute to increasing extra-ASEAN FDI inflows. Of these the ASEAN–China FTA (ACFTA) and the ASEAN–Korea FTA (AKFTA) are the only ASEAN+ 1 FTAs with existing investment agreements.

3. Linkages and Productivity of Services in ASEAN

This section explains the linkages across sectors and productivity of the services sectors in selected ASEAN countries (Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Viet Nam). The labour productivity of selected ASEAN countries is shown in Figure 8. It is measured as real GDP per number of workers.

Figure 7 shows that the growth of labour productivity of the services sector is lower than that of the manufacturing sector for the selected Asian countries as expected from the literature. These low levels of service labour productivity growth are likely to impede the overall average productivity growth of the economy. Thailand has experienced a negative growth of labour productivity in the services sector. Among the Asian countries, only Malaysia's productivity growth rate in services was slightly higher than that of its manufacturing sector.

Figure 7: Labour Productivity Growth of Selected Asian Countries, 1995–2005

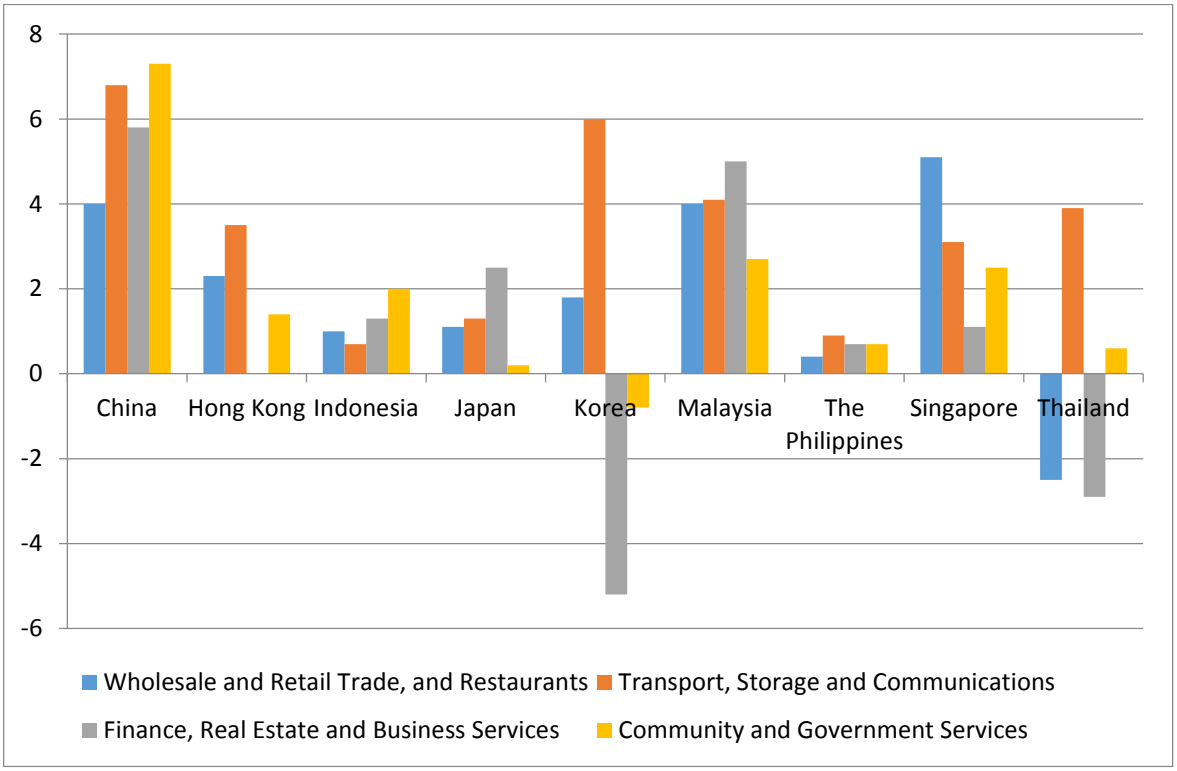


Source: Groningen Growth Developing Centre (GGDC), 2013.

The labour productivity growth of selected services sectors for selected Asian countries is illustrated in Figure 8. We observe that sectors that are more open for trade—such as transport, storage, and communications and finance and business services—tend to have a higher labour productivity growth. In particular, we observe that the transport, storage, and communication services sector has a high labour productivity growth across ASEAN countries especially for Malaysia, Singapore, and Thailand. However, the finance, insurance, real estate, and business service sector has relatively low labour productivity growth among ASEAN countries, except for Malaysia.

Figure 8: Labour Productivity Growth by Service Sector for Selected Asian

1990–2005



Source: Groningen Growth Developing Centre (GGDC), 2013.

We also explore the linkages of services with trade and within the domestic economy by examining input–output relationships using the I-O tables based on the Asian Development Bank Statistics Database. The share of various imports to total imports by key sectors for selected ASEAN countries is shown in Figure 9. Clearly, the manufacturing sector has greater intra-industry imports, as these are mostly from overseas manufacturing sectors. [2]

The figure also shows high levels of manufacturing imports into the services sector, reflecting the importance of the services sector for the growth of the manufacturing sector as a part of regional and global production supply chains. The role of the services sector as an engine of growth in the regional supply chain is clear from this strong relationship. However, we do not see a strong services import into the manufacturing sector, which generally indicates the slow rate of opening up of the services sector compared to the

[2] Input-Output model could be constructed to study the change in the output resulting from changes in the final demand. Output coefficients represent the scale of output of each sector to total output of the respective industry. Input coefficients represent the scale of raw materials and intermediate inputs used in each sector to the total inputs of the respective industry.

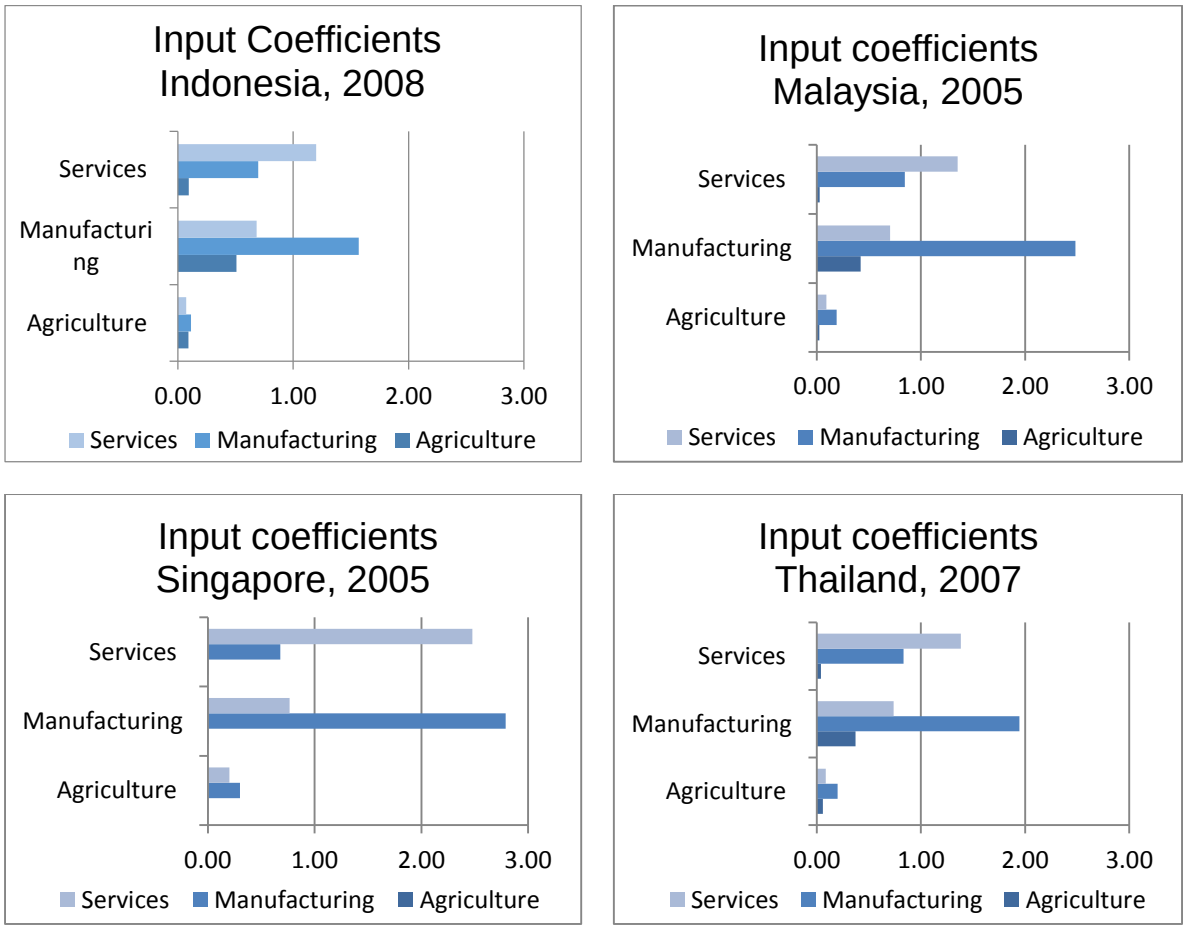
manufacturing sector in ASEAN, and hence its low level of support for the manufacturing sector's activities. This clearly indicates a need for greater openness in the services sector and, hence, the potential for growth of regional and global supply-chain activities in ASEAN in the near future.

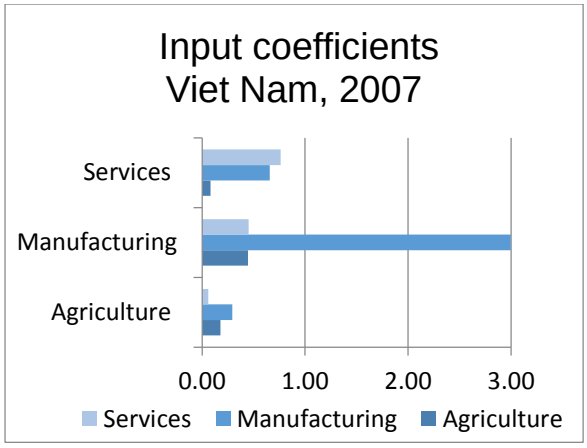
Figure 9: Input-and Output Relationships for Imports by Sector for Indonesia, Malaysia, Thailand, and Viet Nam

Source: Authors' calculation based on Input-Output Database for Imports.

We also explore the input and output relationship between services and manufacturing sectors as illustrated in Figures 7.10a and 7.10b. This shows strong linkages between the services and manufacturing sectors in the selected ASEAN countries. The services sector provides strong linkages for the manufacturing sector across the selected ASEAN countries. The services inputs are relatively strong for the manufacturing sector for Indonesia, Malaysia, Singapore, and Thailand. However, we do not see a strong services input into Viet Nam's manufacturing sector and this reflects the potential for services sector growth in Viet Nam's domestic economy.

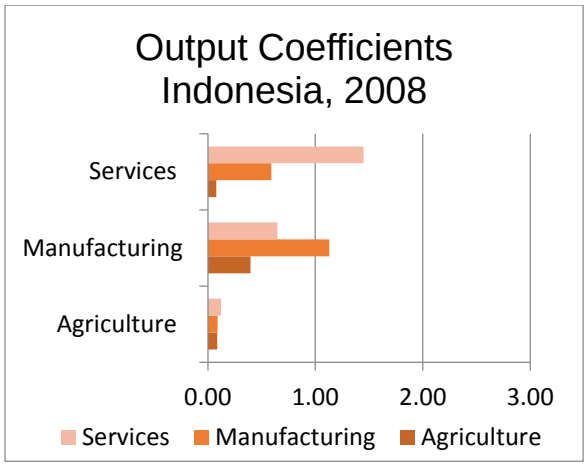
Figure 10a: Input and Output Relationships for Indonesia, Malaysia, Singapore, Thailand, and Viet Nam

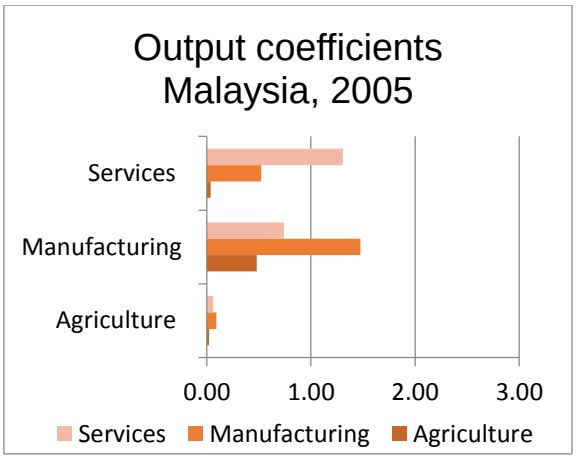


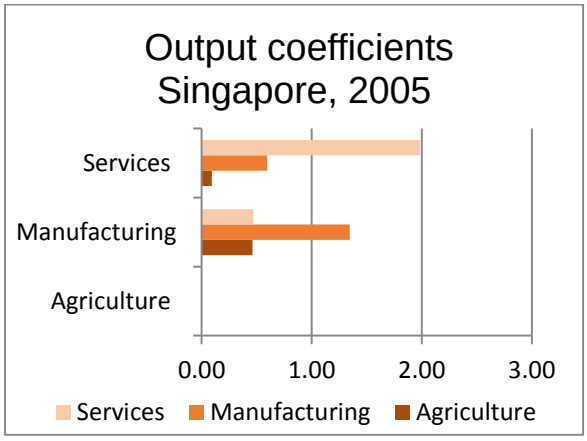


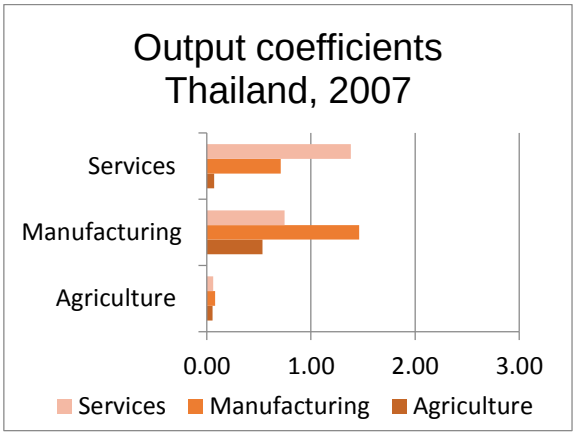
Source: Authors' calculation based on Input-Output Database.

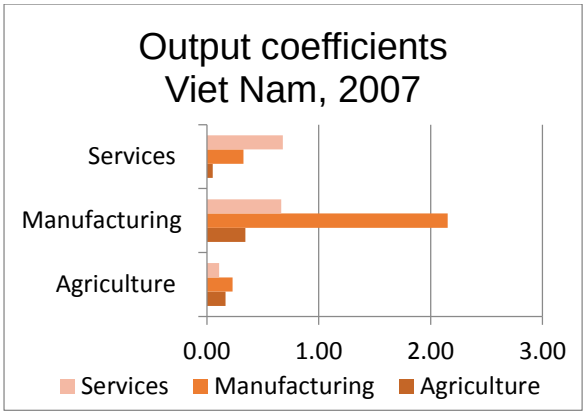
Figure 10b: Input and Output Relationships for Indonesia, Malaysia, Singapore, Thailand, and Viet Nam











Source: Authors' calculation based on Input-Output Database.

4. Impacts of Trade on Productivity of the Services Sector in ASEAN: Empirical Analysis

This section explores the impact of exports on the productivity of the services sector. The sectoral data for the services sector are from the Groningen Growth Developing Centre (GGDC) 10-sector database, which provides annual data on value-added (at both current and constant prices) and employment data from 1990 to 2005 (Timmer and de Vries, 2009). The GGDC data provide disaggregated data consisting of 10 sectors, as defined by the ISIC Revision 2. Productivity is defined as output per worker. In this case it is value-added per worker for the respective services sectors of (i) wholesale, retail, and hotels and restaurants; (ii) transport, storage, and communications; (iii) finance, insurance, real estate, and business services; and (iv) community, social, and personal services. The data are in real values at the 2000 prices in US dollars.

The data cover five ASEAN countries, namely, Indonesia, Malaysia, the Philippines, Singapore, and Thailand. We have also incorporated country-specific data for human capital (the average years of schooling), the share of exports to total trade (the share of the value of exports of goods and services to the total value of exports and imports of goods and services), a dummy representing the ASEAN Free Trade Area (AFTA) (1992–2005 = 1) and a dummy for the Asian financial crisis (1997–2005 = 1) from the respective country statistical data. We create panel data by pooling across the above countries for each key sector.

We adopt the dynamic fixed effect and Generalised Method of Moments (GMM) estimations to examine the impact of the share of exports of services to total exports on

services labour productivity as presented in Tables 7.3, 7.4 and 7.5. Table 3 presents that human capital is not statistically significant in affecting labour productivity in services in most of key services sectors. The share of exports to total trade tends to have significant impacts on the transport, storage, and communication sector. The AFTA dummy, beginning in 1992, has a statistically significant impact on labour productivity in the services sectors except for the non-tradable community, social, and personal services sector. As there might be some endogeniety issues with labour productivity having a reverse impact on trade, we re-estimated the model by including the lags of variables of labour productivity, the share of exports to total trade, and human capital (Arellano and Bond, 1991). This issue is corrected in the estimations presented in Table 4.

Table 3: Empirical Results of Trade on Services Labour Productivity in Key Services Sector for Indonesia, Malaysia, the Philippines, Singapore, and Thailand (1990–2005)

Fixed Effect Estimation (Dependent variable: Ln_labour Productivity)

	Wholesale, Retail, and Hotel	Transport, Storage, and Communications	Finance, Insurance, and Real Estate	Community, Social and Personal
Human capital	0.464*	0.228	0.383	0.283
	(1.930)	(1.050)	(1.150)	(1.450)
Share of export to total trade	15.175***	21.609***	7.775*	18.904***
	(4.070)	(4.850)	(1.800)	(4.840)
AFTA dummy	8.700*	11.880**	9.870**	5.627
	(1.700)	(1.990)	(1.980)	(1.100)
Lag labour productivity	-	-	-	-
Lag share of export to total trade	-	-	-	-
Lag of human capital	-	-	-	-
Asian financial crisis dummy	Yes	Yes	Yes	Yes
R-Square	0.062	0.093	0.080	0.115
No of observations	80	80	80	80

Note: t-test in parentheses
***significant at 1%, **significant at 5%, *significant at 10%

Table 4 presents the results of the dynamic labour productivity analysis. It reveals that there is a significant dynamic effect of the share of exports to total trade on the labour productivity of the services sectors. The dynamic impacts of the lag variables significantly improved the overall fit of the analysis (higher R-square). Human capital (including the lag

of human capital) is statistically significant and positive. This indicates that developing human capital in ASEAN is an important factor in improving the productivity of the services sector and the overall aggregate productivity of the respective ASEAN countries; hence, the overall productivity of ASEAN.

The lag of the share of exports to total trade is also statistically significant, which indicates the dynamic effects of trade on labour productivity in the services sector. This indicates that exports should be expected to improve the role of services in providing the varieties of intermediate inputs (increasing the varieties of services) and creating greater linkages with the manufacturing sector. This has important implications for regional and global supply-chain production. We also observe that AFTA has a statistically significant impact on the labour productivity of the respective services sectors. This suggests that increased openness to trade will significantly impact across the services sector and the overall economy due to the linkages created by the services sector across industries.

Table 4: Empirical Results of Trade on Services Labour Productivity for Indonesia, Malaysia, Philippines, Singapore, and Thailand (1990–2005)

Fixed Effect Estimation (Dependent variable: Ln_labour productivity)

	Wholesale, Retail, and Hotel	Transport, Storage, and Communications	Finance, Insurance, and Real Estate	Community Services, Social and Personal
Human capital	6.060***	6.164***	4.499***	5.591***
	(14.420)	(14.872)	(15.350)	(11.620)
Share of export to total trade	-10.708	-2.054	-2.388	-6.970
	(-1.101)	(-0.220)	(-0.690)	(-0.720)
AFTA dummy	12.720***	9.634***	3.020**	12.780***
	(6.150)	(6.080)	(2.050)	(5.410)
Lag labour productivity	-1.524***	-1.232***	-1.390***	-1.450***
	(-17.290)	(-17.670)	(-2.978)	(-12.800)
Lag share of export to total trade	7.803**	5.981**	8.354***	7.459**
	(2.300)	(1.970)	(2.850)	(2.270)
Lag of human capital	0.267**	0.208*	2.902***	0.2640
	(1.980)	(1.740)	(19.480)	(0.160)
Asian financial crisis dummy	Yes	Yes	Yes	Yes
R-square	0.155	0.208	0.842	0.264
No of observations	80	80	80	80

Note: t-test in parentheses
***significant at 1%, **significant at 5%, *significant at 10%

To address the endogeniety issues in the estimation, GMM estimations are used. The results are presented in Table 7.5. Based on the GMM estimation results, both the share of exports to total trade and human capital are statistically significant and have positive impacts on the labour productivity of services sector. It shows positive impacts of export activities on (i) transport, storage, and communications and (ii) finance, insurance, and real estate for the ASEAN countries. The ASEAN FTA dummy (AFTA) is positive for all the services sectors particularly on the transport, storage, and communications sector. This clearly indicates that logistic connectivity and infrastructure will be crucial in improving the labour productivity of the services in the region.

Table 5: Empirical Results of Trade on Services Labour Productivity for Indonesia, Malaysia, Philippines, Singapore, and Thailand (1990–2005)

Generalised Method of Moments Estimation (Dependent variable: Ln_labour Productivity)

	Wholesale, Retail, and Hotel	Transport, Storage, and Communications	Finance, Insurance, and Real Estate	Community Services, Social and Personal
Human capital	0.375**	2.056***	1.499*	1.596***
	(1.970)	(5.190)	(1.950)	(4.170)
Share of export to total trade	3.867*	13.105***	12.629*	1.890**
	(1.880)	(4.270)	(1.950)	(2.070)
AFTA dummy	4.663***	13.094***	8.220*	6.803**
	(2.500)	(3.880)	(1.960)	(2.200)
Lag labour productivity	-0.670***	-0.599***	-0.633**	-0.732***
	(-12.880)	(-9.810)	(-8.680)	(-11.220)
Lag share of export to total trade	1.747**	0.245*	1.633***	0.459
	(2.170)	(1.960)	(4.560)	(0.270)
Lag of human capital	2.465***	2.083***	2.902***	1.983***
	(18.170)	(11.350)	(11.810)	(5.160)
Asian financial crisis dummy	Yes	Yes	Yes	Yes
R-square	0.701	0.163	0.390	0.411
No of observations	80	80	80	80

Note : t-test in parentheses
***significant at 1%, **significant at 5%, *significant at 10%

5. Policy Recommendations

The results show that rising levels of human capital and growth in export activities will improve labour productivity in the services sector, and that the services sector provides significant inputs for the manufacturing sector in the region. Thus, more openness in the services sector will provide positive impacts on the development of manufacturing and the regional supply chain for ASEAN.

However, levels of openness of the services sector in ASEAN were still relatively low (Thangavelu and Lim, 2011). This highlights that developing economies within ASEAN, such as Cambodia and Viet Nam, tend to have a more open policy towards foreign investments compared to economies with more developed and mature industries such as Malaysia, Indonesia, and Thailand.

ASEAN faces several challenges in improving the productivity of the services sector. In this respect, the RCEP negotiations should consider the impact of services liberalisation on the overall manufacturing and economic activities of ASEAN and the region. The current ASEAN plus one agreements are limited in services liberalisation; RCEP could be important to increase the market access and commercial presence of services activities in the region.

First is to improve the innovation and competition in the services across the region.[3] In this case, the trade facilitation and behind-border-issues are key to increase innovation and competition of the services sector through better national treatment and greater foreign ownership in the key domestic services sector.

Second, there are still infrastructure gaps in ASEAN, particularly in the services sector. Both hard and soft infrastructure are important tools to enable trade and develop the services sector in the region. A number of quick wins, for example, improvement in the management systems in ports could reduce dwell time; and the development of information and communications technology (ICT) and infrastructure will improve links for trade and movement of goods that will enhance services trade. RCEP could focus on improving ASEAN connectivity across ASEAN plus 6 countries.

Third, there is a strong need to accelerate human capital development. Some countries have made tremendous improvements in human capital development; however, more need to be done. While CLMV countries need to address issues on basic education,

[3] There are relatively high levels of regulatory burden in particular cases of state-owned enterprises in the services sectors (Thangavelu and Lim, 2011; Park and Shin, 2012).

more mature economies such as Indonesia, Malaysia, the Philippines, Singapore, and Thailand need to improve the skills and training of their workers to maintain the relevance and contribution of their labour force in the economy. Human capital and labour mobility are crucial for the development and openness of the services sector in the region. In this respect, the movement of natural persons has been always a sensitive and lagging issue in ASEAN plus one negotiations, which could be a critical issue in discussing the RCEP framework. As the results of the study highlight, human capital development and mobility of skilled workers will increase the impact of services productivity and the contribution of services sector to the overall growth of both domestic and regional economies.

Last, there is a huge data gap in the services sector in the region in terms of quality of data and information which can be used to understand the key issues and guide policy discussions on relevant topics such as productivity, innovation, and linkages of the services sector and services trade in the region.

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Appendix 1

Table 7.A.1: Real GDP Growth of Selected Asian Countries, 2005-2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013
China	11.3	12.7	14.2	9.6	9.2	10.4	9.3	7.7	7.7
Hong Kong	7.4	7.0	6.5	2.1	-2.5	6.8	4.8	1.5	2.9
South Korea	3.9	5.2	5.5	2.8	0.7	6.5	3.7	2.3	3.0
India	9.5	9.6	9.3	6.7	8.6	8.9	6.7	4.5	4.9
Brunei Darussalam	0.4	4.4	0.2	-1.9	-1.8	2.6	3.4	0.9	-1.8
Cambodia	13.3	10.8	10.2	6.7	0.1	6.0	7.1	7.3	7.5
Indonesia	5.7	5.5	6.3	6.0	4.6	6.2	6.5	6.2	5.8
Lao PDR	6.8	8.6	7.8	7.8	7.5	8.1	8.0	7.9	8.0
Malaysia	5.3	5.6	6.3	4.8	-1.5	7.4	5.1	5.6	4.7
Myanmar	13.6	13.1	12.0	10.3	10.6	9.6	5.6	7.6	7.6
Philippines	4.8	5.2	6.6	4.2	1.1	7.6	3.7	6.8	7.2
Singapore	7.5	8.9	9.1	1.8	-0.6	15.2	6.1	2.5	3.9
Thailand	4.2	4.9	5.4	1.7	-0.9	7.4	0.6	7.1	2.9
Viet Nam	7.5	7.0	7.1	5.7	5.4	6.4	6.2	5.2	5.4

Source: Asian Development Bank Statistics Database.

Table 7.A.2: Share of Agriculture, Industry, and Services to Total Value-Added for Selected Asian Countries, 2000-2013

	Agriculture			Industry			Services		
	2000	2010	2013	2000	2010	2013	2000	2010	2013
China	15.1	10.1	10.0	45.9	46.7	43.9	39.0	43.2	46.1
Hong Kong	0.1	0.1	0.1	12.6	7.0	0.7	87.3	93.0	93.0
South Korea	4.4	2.5	2.3	38.1	38.3	38.6	57.5	59.3	59.1
India	23.4	18.2	18.4	26.2	27.2	24.7	50.5	54.6	57.0
Brunei Darussalam	1.0	0.8	0.7	63.7	66.8	68.2	35.3	32.5	31.0
Cambodia	37.9	36.0	33.8	23.0	23.3	25.7	39.1	40.7	40.5
Indonesia	15.6	15.3	14.4	45.9	47.0	45.7	38.5	37.7	39.9
Lao PDR	48.5	30.6	31.0	19.1	29.8	30.0	32.4	39.6	39.0
Malaysia	8.3	10.5	9.4	46.8	41.6	41.0	44.9	48.0	49.6
Myanmar	57.2	36.9	36.0	9.7	26.5	26.0	33.1	36.7	38.0
Philippines	14.0	12.3	11.2	34.5	32.6	31.1	51.6	55.1	57.7
Singapore	0.1	0.0	0.0	34.8	27.6	25.1	65.1	72.3	74.9
Thailand	8.5	10.6	10.6	36.8	40.1	40.1	54.7	49.3	49.3
Viet Nam	24.5	18.9	18.4	36.7	38.2	38.3	38.7	42.9	43.3

Source: Asian Development Bank Statistics Database.

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