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VALUE ADDED INTRA-INDUSTRY TRADE
BETWEEN ASEAN5 AND CHINA

This study looks at and analyses value added in ASEAN5-China bilateral trade for manufacturing products under Standard International Trade Classification, SITC-7 four-digit code from 1993 to 2009. The decomposition-type threshold method is utilized to compute the index for vertical intra-industry trade which reflects the quality of the products traded between ASEAN5 and China. The analysis has identified the products where value-adding by ASEAN5 countries are consistently possible in their bilateral trade with China. In addition, ASEAN5 must note the reducing number of products traded through intra-industry in recent years as China continues to grow in capacity and capability internally.

Keywords: bilateral trade, intra-industry trade, ASEAN5, China, value added.

Чень-Чень Юн, Муй-Инь Чинь, Сей-Юн Ю
ВНУТРІШНЬОГАЛУЗЕВА ТОРГІВЛЯ
МІЖ КРАЇНАМИ АСЕАН І КИТАЄМ

У статті досліджено двосторонню торгівлю згідно Міжнародної стандартної торгової класифікації між країнами АСЕАН і Китаєм з 1993 по 2009 рік. В аналізі використано пороговий метод для обчислення індексу вертикальної внутрішньогалузевої торгівлі, який відображає якість продукції в розглянутій торгівлі. Виявлено список продуктів, на які може бути нарахована додана вартість у країнах АСЕАН при двосторонній торгівлі з Китаєм. Країнам АСЕАН необхідно розширити асортимент товарів, оскільки Китай продовжує нараощувати внутрішній потенціал і можливості.

Ключові слова: двостороння торгівля, внутрішньогалузева торгівля, АСЕАН, Китай, додана вартість.

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МЕЖДУ СТРАНАМИ АСЕАН И КИТАЕМ

В статье исследована двусторонняя торговля продукцией согласно Международной стандартной торговой классификации между странами АСЕАН и Китаем с 1993 по 2009 год. В анализе данных использован пороговый метод для вычисления индекса вертикальной внутриотраслевой торговли, который отражает качество продукции в рассматриваемой торговле. Выявлен список продуктов, на которые может быть начислена добавленная стоимость в странах АСЕАН при двусторонней торговле с Китаем. Странам АСЕАН необходимо расширить ассортимент товаров, так как Китай продолжает наращивать внутренний потенциал и возможности.

Ключевые слова: двусторонняя торговля, внутриотраслевая торговля, АСЕАН, Китай, добавленная стоимость.

1. Introduction. The expansion of intra-industry trade (IIT) in the 1990s has changed the landscape of international trade (Lancaster, 1980; Falvey, 1981; Krugman, 1981; Greenaway and Milner, 1983; Balassa and Bauwens, 1987; Fontagne

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and Freudenberg, 1997; Hu and Watkins, 1999; Fontagne, Freudenberg and Gaulier, 2005; Schott, 2003 and Turkcan, 2010). The increasing bilateral trade between ASEAN5 and China over the past 2 decades revealed a high degree of IIT occurring between ASEAN5 and China. The total bilateral trade between ASEAN5 and China was about USD 3,130.6 bln in 2000. This has increased to USD 15,422.8 bln in 2009 (Figure 1). The largest contributor to this bilateral trade is the machinery and transport equipment sector (SITC-7) (United Nations (UN) Comtrade database). Since 2000, trade of manufactured goods in SITC-7 dominated the ASEAN5 members' bilateral trade with China, i.e. about 30% for Indonesia, 40% for Malaysia, 80% for Philippines, 60% for Singapore and 50% for Thailand. With such dominance, SITC-7 is therefore the focal point for this bilateral trade analysis.

Source: (UN Comtrade database)

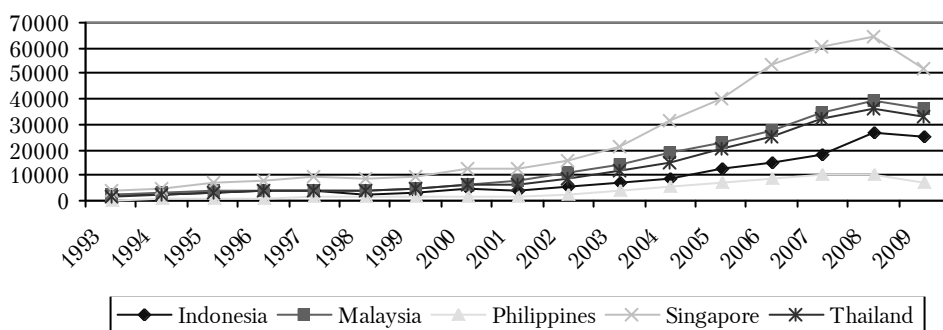


Figure 1. **Bilateral Trade between ASEAN5 and China, 1993 to 2009** (in USD mln)

The interest in IIT research has grown compared to inter-industry trade (Greenaway and Milner, 1983). IIT is growing faster in East Asian developing countries compared to advanced countries in 1996–2000 (Fukao et al., 2003) and the composition of exported and imported goods has converged in many East Asian countries (Ando, 2006). Trade deficits of ASEAN5 (except the Philippines) with China in SITC-7 became wider since 1991 (UN Comtrade database). China has developed as the products supplier to ASEAN5 rather than an important channel for ASEAN exports (Wong and Chan, 2003). Holst and Weiss (2004) reported that ASEAN had lost some of their market shares in the US and Japan, to China. The exports value from China to ASEAN has been stagnant in the range of 2–4% in China's total trade from 1993 to 2009 (UN Comtrade database). McKibbin and Woo (2003) found that the accession of China to WTO has negatively affected Malaysia, Thailand, Indonesia and the Philippines due to deindustrialisation based on the simulation study for the period of 1999 to 2070. The bilateral IIT between China and Malaysia, Thailand, Indonesia, the Philippines is relatively competing rather than complementary as IIT is more intensive in similar countries where they tend to use similar factor proportions in production. The trend and size of trade balance resulting from changes in trade structure due to the global production network and stages of economic development reveals very little about bilateral trade performance. Changes in trade balance are highly dependent on the competitiveness of price and

quality of traded goods. As such, trade deficit could serve as a healthy indicator if it could foster borrowing to finance long-term investment, building investment confidence along with growing income and secure employment. For instance, reverse engineering on imported goods provide an avenue for the use of improved imported inputs in production at low price.

Due to similarity of factor endowments within the ASEAN5-China region, the vast development of production networks create value chains in enhancing and sustaining their bilateral trade. This paper attempts to analyze the intra-industry trade between respective ASEAN5 and China for SITC-7 from 1993 to 2009. The analysis include the examination of the nature of their IIT (i.e., horizontal vs. vertical IIT) and further decomposed vertical IIT (referred to as VIIT thereafter) into high and low VIIT (referred to as HVIIT and LVIIT respectively) to provide some insights on the quality of bilateral trade between ASEAN5 and China for SITC-7.

This paper is organized as follows: Section 2 presents the analysis of ASEAN5 and China bilateral trade in SITC-7; Section 3 describes the methodology; Section 4 provides the results and discussions; while Section 5 concludes the paper.

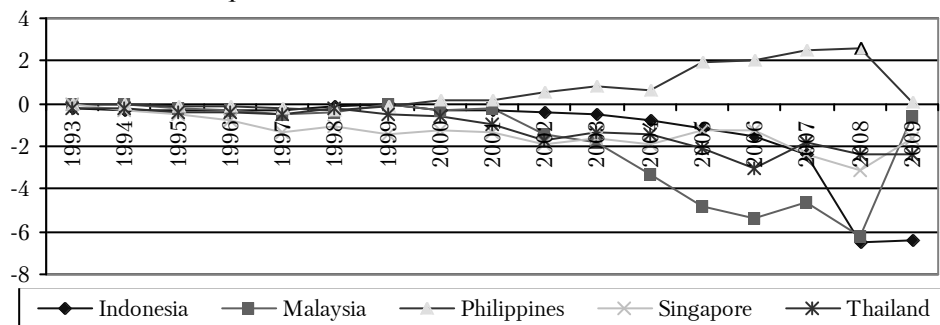
2. Trade between China and ASEAN5 in SITC-7. ASEAN5 and China are dependent on developed countries purchasing up to 40% of their exports (Holst and Weiss, 2004). This dependence has created vulnerabilities to external shocks such as the sovereign debt crisis and the deteriorating US and global economic growth in their economies.

The increase of China's trade share in ASEAN5 total trade is in tandem with the emergence of China as a major trading partner for ASEAN5 (UN Comtrade database). The trade volume between ASEAN5 and China was small before 1991 due to the similarity of trade structures and low complementarity of goods (Liu and Luo, 2004; Zhang and Hock, 1996). China's trade share has increased 11.83% annually from 2000 to 2009. The role of China in facilitating trade in ASEAN region is evidenced by the growing bilateral trade volume between ASEAN5 and China after the 1997 Asian financial crises.

The rapid growth of bilateral trade between ASEAN5 and China for SITC-7 sub-sector is in tandem with the growth of intra-industry trade in East Asia (Fukau et al., 2003; Ando, 2006; Tong and Lim, 2009) and the change of traded products from primary to secondary goods (Wong and Chan, 2003). With the exception of the Philippines, the trade deficit has been increasing in China's favour for SITC-7 (Figure 2). Based on UN Comtrade statistics, Indonesian trade deficit with China has surged by more than 20 from USD 292 mln in 2000 to USD 6,440 mln in 2009. On the other hand, the Philippines trade surplus with China has surged by approximately 17 from USD 154 mln in 2000 to USD 2,618 mln in 2008. Singapore's trade deficit with China is quite stable with the average of 10% annually during 2000 to 2009. The trade deficit for Malaysia-China and Thailand-China has increased by 2 folds and 4 folds respectively from 2000 to 2009.

Figure 2 shows that in 2000 for SITC-7, Singapore has the highest trade deficit with China at USD 1.24 bln, followed by Thailand (USD 0.64 bln), Malaysia (USD 0.36 bln) and Indonesia (USD 0.29 bln). 5 years later, Malaysia topped the list with the highest trade deficit with China at USD 4.79 bln followed by Thailand (USD 2.08 bln), Singapore (USD 1.28 bln) and Indonesia (USD 1.17 bln). However, there is a

drastic change in trade deficit between Indonesia and China during 2007–2008 and Malaysia and Singapore with China during 2008–2009. Indonesian trade deficit with China has expanded by 171% from USD 2.41 bln in 2007 to USD 6.55 bln in 2008. On the other hand, the trade deficit for Malaysia and Singapore with China has been reduced by 90% (from USD 6.23 bln to USD 0.62 bln) and 48.4% (from USD 3.16 bln to USD 1.63 bln) respectively during 2008–2009. The changes in trade deficit for Thailand-China is quite stable from 1993 to 2009.



Source: (UN Comtrade database)

Figure 2. Trade Balance for ASEAN5 with China on SITC-7 for 1993–2009 (in USD bln)

The Philippines, on the other hand, is experiencing trade surplus with China since 2000. Two structural changes in trade balance between the Philippines and China have been detected, in 2004 and 2008. After 2004, trade surplus between the two has been uplifted to a higher level while in 2009, it fell below the par value of the 2004 trade surplus.

After 2008, the trade relationship between ASEAN5 and China started rocking especially for the Philippines and Indonesia. The deteriorating trade balance for these two countries with China might be due to the intense competition in labour-intensive manufactured goods (Tongzon, 2005; Park, 2007).

3. Methodology. Inter-industry trade, which is emphasized by the trade theories of Heckscher-Ohlin and Ricardian, focused on factor endowments and comparative advantages, when a country specialises in producing a few variety of goods in large quantities rather than a wide variety of goods in smaller quantities, which is traded for other goods has led to the emergence of IIT (Carbaugh, 2009, Yarbrough and Yarbrough, 2006). IIT is also referred to as two-way trade for goods in the same industry due to resource reallocation within industries, between two countries. Depending on the nature of production network, IIT can occur horizontally or vertically. Where there are economies of scale (Krugman, 1979, 1981; Yarbrough and Yarbrough, 2006) and transportation costs efficiencies (Carbaugh, 2009), horizontal IIT (HIIT) will be intensified. Cost efficiency stimulates simultaneous exports and imports of goods that are in the same industry with similar quality, capital/labor techniques, but are different in technological specifications or characteristics. Vertical IIT (VIIT) is most likely to occur when there is a change of bilateral trade structure from labour-intensive goods to non-traditional capital intensive goods (Wong and Chan, 2003). Unlike HIIT, VIIT involves simultaneous exports and imports of goods in the same industry

with different quality, factor intensity and average production costs. The trade model developed by Falvey (1981) and Greenaway, Milner and Elliott (1999) emphasised that relatively capital-abundant countries tend to specialise and export high quality manufactured goods within the same industry. In contrast, labour-abundant countries tend to specialise and export low quality manufactured goods within the same industry. Ando (2006) revealed that due to the nature of VIIT, value-added are embedded in trade classified as VIIT. In addition, Schott (2003) also highlighted that different intermediate goods has been traded within the same industry at various stages of production between different countries. IIT can be distinguished through indices.

This study utilises the IIT index developed by Fontagne and Freudenberg (1997) to capture different levels of IIT, based on the decomposition-type threshold method. The IIT index firstly distinguishes between intra-industry and inter-industry trade based on equation (1), and VIIT and HIIT-based on equation (2).

$$\frac{\min(X_{kzijt}, M_{kzijt})}{\max(X_{kzijt}, M_{kzijt})} \geq 0.1, \quad (1)$$

$$\frac{1}{1.25} \leq \frac{UVX_{kzijt}}{UVM_{kzijt}} \leq 1.25, \quad (2)$$

where X , M , UVX and UVM refer to exports, imports, unit value of exported and imported goods respectively for product k in industry z between respective ASEAN country (i) and China (j) at time t . Product k is involved in IIT if equation (1) holds and it is involved in inter-industry trade if otherwise.

The IIT of product k is considered as HIIT if equation (2) holds, and for VIIT if otherwise. The VIIT is then decomposed into HVIIT and LVIIT to capture the quality of goods k in industry z by comparing the export and import prices of goods based on equations (3) and (4) respectively. The method is based on differences in prices as prices reflect the quality of traded goods.

$$\frac{UVX_{kzijt}}{UVM_{kzijt}} > 1.25, \quad (3)$$

$$\frac{UVX_{kzijt}}{UVM_{kzijt}} < \frac{1}{1.25} \quad (4)$$

Equations (3) and (4) indicate the gap in product development. If the relative unit export price to unit import price exceed 1.25, there is an implied value added embedded in the goods exported from ASEAN5 to China. Therefore, this product provides synergy in strengthening trade relationship between two countries. As such, trade deficit/surplus in bilateral trade could be viewed as a result of product fragmentation where production platform could be reshuffled easily from one country to another in cushioning external risks.

The aggregate IIT, VIIT, HIIT, HVIIT and LVIIT indices for ASEAN bilateral trade with China in SITC-7 manufacturing industry can be calculated based on equation (5):

$$S_{zjt}^q = \frac{\sum_{k=1}^n (X_{kjt}^q + M_{kjt}^q)}{\sum_{k=1}^n (X_{kjt} + M_{kjt})}, \quad (5)$$

where S_{zjt}^q refers to either IIT, VIIT, HIIT, HVIIT and LVIIT and q indicates one of the categories depending on the corresponding type of trade.

This study examines IIT between ASEAN5 and China for four-digit SITC-7 manufacturing products from 1993 to 2009 based on the data from SITC, Revision 3, UN Comtrade database. The period of study is identified based on the availability of data. The total of 17,935 observations have been extracted from the database under the study period where the number of products available for Indonesia, Malaysia, Philippines, Singapore and Thailand are 212, 214, 208, 211 and 210 respectively. After data screening, the number of products that are consistently available throughout the study period are 162, 108, 117, 107 and 141 for the respective ASEAN5 country. Hence, this study analyses the total of 10,795 observations.

4. Results. The results in Table 1 show the IIT values between ASEAN5 and China in SITC-7 industry. Taking the ratio of Equation 1 as reflecting the intensity of IIT, the level of IIT in SITC-7 industries between Indonesia and China is low (with the ratios below 0.5 throughout the study period). Malaysia on the other hand shows consistently high intensity of IIT and is on a general increasing trend throughout the study period with the IIT ratio reaching 0.884 in 2009. This reflects the increasing integration of the SITC-7 industry of Malaysia with that of China. The Philippines, Singapore and Thailand show a rising trend in IIT intensity until just after the 1997 crisis before showing a general falling trend till 2009.

Table 1. IIT between ASEAN5 and China for SITC-7 (1993–2009)

Year	Indonesia	Malaysia	Philippines	Singapore	Thailand
1993	0.024	0.351	0.074	0.410	0.273
1994	0.029	0.631	0.103	0.328	0.316
1995	0.092	0.57	0.211	0.558	0.411
1996	0.232	0.736	0.466	0.542	0.321
1997	0.18	0.515	0.233	0.443	0.752
1998	0.249	0.62	0.818	0.538	0.798
1999	0.487	0.875	0.853	0.688	0.853
2000	0.493	0.91	0.575	0.687	0.793
2001	0.456	0.942	0.449	0.74	0.783
2002	0.448	0.837	0.327	0.698	0.724
2003	0.494	0.808	0.416	0.7	0.878
2004	0.455	0.752	0.795	0.575	0.861
2005	0.404	0.754	0.302	0.595	0.668
2006	0.453	0.738	0.317	0.47	0.654
2007	0.342	0.856	0.163	0.404	0.639
2008	0.313	0.734	0.735	0.387	0.495
2009	0.238	0.884	0.562	0.43	0.566

Source: Authors' calculations.

In terms of the number of product categories of SITC-7 engaging in intra industry trade between ASEAN5 and China, we found that over the period of 1993 to 2009, the percentage ranges for Singapore, Malaysia, Thailand, the Philippines and Indonesia are 60–70%, 40–60%, 40–50%, 20–40% and 20–30% respectively. The product profiles of IIT involvement for SITC-7 for various years are shown on Table 2. Over the study period, Singapore is the country that is engaged in the broadest range of products in IIT with China, followed by Thailand and Malaysia. It is noted that the number of SITC-7 products in horizontal IIT is increasing over time for all

the countries. This reflects the increasing importation of products from China into ASEAN5 countries for the ASEAN5 market as substantiated by the favour of the trade balance with China. However, the number of SITC products traded through VIIT far exceeds those in HIIT. The number of products engaged in the higher value-added, HVIIT products for Malaysia, Singapore and Thailand is consistent over time except for the fall in number since 2005. The drop in this number is consistent throughout 5 ASEAN5 countries, reflecting a change in the sources of supplies. It is likely that the products for the vertically-linked industries are now moving more towards internal sourcing by Chinese-based assembly plants and this trend is left unchecked will result in the move of supporting product supplies from ASEAN5 to China. Unless there is a change in cost structure or efficiency balance between the two trading partners, the trend is expected to continue and ASEAN5 countries will have to move to their own area of competence and productivity.

Table 2. Percentage of SITC-7 products for each IIT category in respective ASEAN bilateral IIT with China in 1993, 1999, 2005, 2009

1993	Indonesia	Malaysia	Philippines	Singapore	Thailand
HIIT	0(0)	2(5.1)	1(11.1)	6(8.2)	2(4.9)
HVIIT	3(60)	29(74.4)	7(77.8)	61(83.6)	30(73.2)
LVIIIT	2(40)	8(20.5)	1(11.1)	6(8.2)	9(21.9)
Total IIT products	5	39	9	73	41
1999					
HIIT	4(9.1)	3(4.7)	1(3.1)	11(15.5)	6(9.4)
HVIIT	36(81.8)	44(68.8)	25(78.1)	50(70.4)	45(70.3)
LVIIIT	4(9.1)	17(26.5)	6(18.8)	10(14.1)	13(20.3)
Total IIT products	44	64	32	71	64
2005					
HIIT	2(5.1)	9(16.3)	5(13.9)	22(28.9)	15(22.7)
HVIIT	32(82.1)	36(65.5)	29(80.6)	47(61.9)	43(65.2)
LVIIIT	5(12.8)	10(18.2)	2(5.5)	7(9.2)	8(12.1)
Total IIT products	39	55	36	76	66
2009					
HIIT	1(4)	8(17)	5(17.8)	14(21.2)	8(12.3)
HVIIT	24(96)	26(55.3)	22(78.6)	47(71.2)	45(69.2)
LVIIIT	0	13(27.7)	1(3.6)	5(7.6)	12(18.5)
Total IIT products	25	47	28	66	65

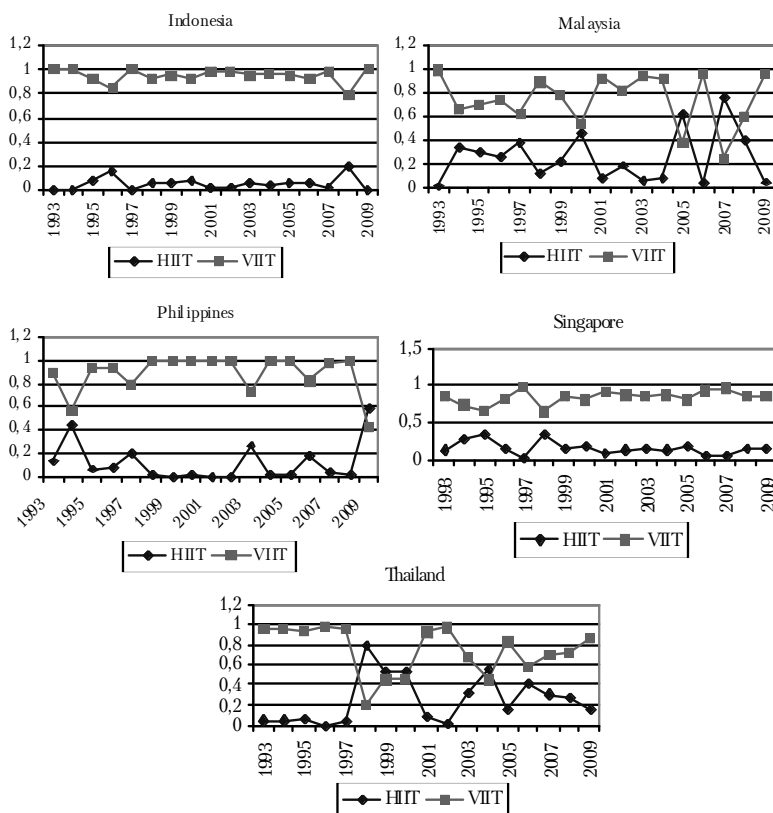
Source: Authors' calculations. Percentages are in parentheses.

The results of the decomposition of IIT into HIIT and VIIT for ASEAN5 countries with China from 1993 to 2009 are shown in Figure 3. HIIT and VIIT should be analysed with caution as the extents of IIT trade are different for the respective ASEAN countries' bilateral trade with China. For the case of Indonesia and the Philippines, it is expected that the values of VIIT and HVIIT are relatively high as compared to other countries with China. This is due to the low number of products involved in IIT (Table 2) which reflects that Indonesia and the Philippines are highly involved in inter-industry trade rather than IIT with China. This provides the explanation of high VIIT and HVIIT value with small range of IIT products.

Generally, the VIIT value in ASEAN5-China bilateral IIT is relatively high during the study period which is in line with the findings of Fukao et al. (2003) where IIT in East Asian countries is dominated by VIIT particularly in the machinery interme-

diate goods (Ando, 2006). It is noticeable that VIIT and HIIT have similar trends to HVIIT and LVIIT respectively (Figure 4). This portrays the importance of value added products (HVIIT) which has contributed to strengthening bilateral processing trade (VIIT) between ASEAN5 and China.

The percentage of products that contributed to value added bilateral IIT with China are 11.7%, 16.7%, 13.7% 33.7% and 16.3% for Indonesia, Malaysia, Philippines, Singapore and Thailand, respectively. In 1998 and 1999 the value added embedded in VIIT for the Philippines was relatively low as the HVIIT value is below 0.5 with VIIT value approaching 1.0 (Figures 3 and 4). Both VIIT and HVIIT values are approaching 1.0 from 2000 onwards. However, there is a sharp reduction in VIIT value from 0.993 in 2008 to 0.418 in 2009. Hence, the sharp fall of trade surplus of the Philippines with China in 2009 might be due to the inflationary pressures which cause the unit export price exceed the unit import price of the Philippines in reflecting the quality of exported goods.



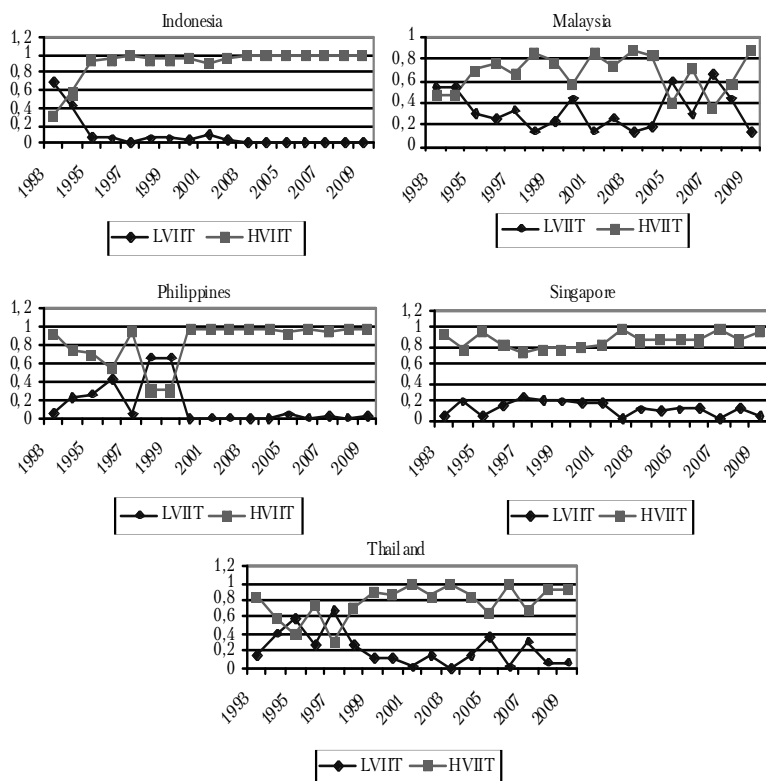
Source: Authors' calculations.

Figure 3. HIIT and VIIT Value between ASEAN5 and China for SITC-7 (1993–2009)

The VIIT values for Malaysia rose from 1993 to 2009 except for 2005 and 2007. The VIIT values slipped to 0.38 and 0.25 in 2005 and 2007 respectively from 0.91 and

0.96 a year earlier (Figure 3). Meanwhile, the HVIIT values fell to 0.4 and 0.34 in 2005 and 2007 respectively from 0.82 and 0.72 a year earlier (Figure 4). This reveals that the value added constituted in Malaysia-China bilateral IIT is highly dependent on processing activities. This implies relatively weak processing trade collaboration between Malaysia and China arising from the fast pace of technology development in China which narrowed the gap of product development between the two countries. This implies that the volume of VIIT in addition to value-added traded products is essential to strengthen the trade ties between Malaysia and China.

Both HVIIT and VIIT in Singapore-China bilateral IIT exceed the value of 0.8 from 2000 onwards (Figures 3 and 4). Due to their different levels of industrial development, China-Singapore bilateral trade is more complementary in nature (Zhang and Hock, 1996).



Source: Authors' calculations.

Figure 4. LVIIIT and HVIIT between ASEAN5 and China for SITC-7 (1993–2009)

For the case of Thailand, it is noticeable that increases in HVIIT in 1998, 1999, 2006 and 2008 correspond with the increased VIIT for the subsequent year (Figures 3 and 4). It is believed that the aftermath of the crisis has provided valuable lessons for Thailand to rethink their value added supply chain which has led the processing trade activity to get back on track. Cai (2003) reported that the 1997 Asian financial crisis which started in Thailand and spread to East Asia had served as the catalyst to boost bilateral trade between ASEAN5 and China.

To counter variances arising from business cycles and price changes, we have identified the products which are traded as HVIIT in most of the years during 1993–2009, particularly during the crises period. The consistent relatively high unit export prices over unit import prices reflect the quality of exported goods from the respective ASEAN5 country to China. In the view of the consistency of their occurrence, these products, as listed by countries (Table 3), have the potential to generate new sources of growth for trade sustainability between the two regions.

From the products identified with HVIIT linkage to China, Indonesia's IIT is in mechanical and basic electrical and electronics products. Malaysia's IIT with China with high value added is in machine tools and radio and broadcasting electrical and electronics products while that for the Philippines are in food processing and office machineries. Singapore's HVIIT is more sophisticated and include pumps and equipment and more advance electronics and the number of products is also broader than other ASEAN5 countries. Finally Thailand's HVIIT with China are in machine tools, moulds and dies and electrical machineries.

Table 3. HVIIT products traded between ASEAN5 with China

Country	Product code
Indonesia	7161, 7431, 7456, 7483, 7492, 7526, 7527, 7529, 7638, 7649, 7723, 7725, 7761, 7763, 7764, 7781, 7783, 7786, 7788
Malaysia	7212, 7247, 7281, 7314, 7315, 7316, 7331, 7436, 7442, 7471, 7621, 7622, 7628, 7638, 7641, 7642, 7711, 7843
Philippines	7272, 7284, 7413, 7415, 7419, 7429, 7438, 7499, 7519, 7599, 7712, 7723, 7725, 7731, 7783, 7786, 7843
Singapore	7132, 7133, 7138, 7165, 7233, 7234, 7247, 7252, 7313, 7314, 7315, 7316, 7317, 7339, 7415, 7421, 7422, 7424, 7425, 7426, 7427, 7431, 7434, 7435, 7436, 7442, 7444, 7447, 7448, 7453, 7523, 7527, 7529, 7731, 7758, 7939
Thailand	7139, 7169, 7271, 7285, 7313, 7351, 7359, 7415, 7427, 7438, 7469, 7491, 7499, 7649, 7722, 7724, 7725, 7726, 7728, 7731, 7732, 7783, 7786, 7788, 7843

Note: Authors' analysis. The SITC, Rev.3 product description can be obtained from UNCTAD website <http://unstats.un.org/unsd/cr/registry/regcst.asp?cl=14>

Table 4. List of Products with HVIIT between ASEAN5 and China. Bilateral Trade Throughout the Study Period

Indo Mal	Indo Phil	Indo Sing	Indo Thai	Indo Phil Thai	Mal Sing	Mal Phil Thai	Phil Thai	Phil Sing Thai	Sing Thai
7638	7723	7431 7527 7529	7649 7788	7725 7783 7786	7247 7314 7315 7316 7436 7442	7843	7438 7499	7415 7731	7313 7427

Note: Authors' analysis. Indo, Mal, Phil, Sing, Thai indicate Indonesia, Malaysia, Philippines, Singapore and Thailand respectively.

Some products have created mutual benefit among ASEAN5 countries in enhancing ASEAN5-China bilateral trade (Table 4). This indicates that the intense competition for labour-intensive products between ASEAN5 and China has led to trade reconfiguration and niche product development. Thus, China-ASEAN Free Trade Agreement (CAFTA) will likely provide depth and breadth for bilateral trade between ASEAN5 and China in creating contested market spaces that make competition relevant (Wong and Chan, 2003; Mckibbin and Woo, 2003; Lee et al., 2004; Chirativat, 2002).

5. Conclusion. Value added in exported goods has come under scrutiny in ASEAN5-China bilateral trade, particularly now that their factor endowment gaps are closing. Trade networking and processing trade have increased vertical intra-industry trade and ASEAN5-China high volume of bilateral trade and the high bilateral trade between China with advanced countries have caught the attention of researchers. VIIT, which features high value adding to sustain trade relationship between ASEAN5 and China and to cushion global uncertainties is becoming increasingly important. Fluctuating HVIIT values give very evident signs of a synchronized narrowing of the product development gap of the traded products between ASEAN5 and China for SITC-7 products. However, certain products have thus far been sustained by strong unit export price over unit import price. The identified products could serve as a window of opportunity that ASEAN5 could grasp to foster bilateral trade ties with China.

The tandem trend of HVIIT with VIIT reveals that processing activities had induced value adding in the bilateral IIT between Malaysia and China. The VIIT for Thailand and China is resilient and return to the path of growth, fostered by increases in HVIIT. The relatively high and consistent values of IIT, VIIT and HVIIT further support the complementary trade relationship between Singapore and China in the past studies. Indonesia and the Philippines have relatively high and consistent VIIT and HVIIT values in a small range of IIT products as these countries are more engaged in inter-industry trade with China.

The analysis concluded that the fluctuation of HVIIT could be due to 3 possible outcomes. First, the contraction of trade surplus due to the easing of monetary policies indicates that prices of exported products from the Philippines might be subject to inflationary pressure. Secondly, the outward investment from Thailand and Malaysia to China in expanding their exports industry through subcontracting has narrowed the gap of product development. Thirdly, Malaysia and China might prompt to horizontal trade with low value-added if bilateral investment between the two has narrowed the gap of product development which in turn reduced the trade activities. To sustain the momentum of value-added bilateral IIT between ASEAN5 and China, ASEAN5 need to supply products that China needs the most. In addition, cost-saving initiatives, coherent investments, production capacity enhancement and consumer and investor confidence are important to drive long-term margin improvement along with growing domestic income and job opportunities which further enhance the bilateral trade collaboration. More importantly, ASEAN5 and China should continue to develop trade in lucrative niche products through CAFTA to mitigate the impact of external vagaries on their economies.

ASEAN5, on the other hand must make note that China's sourcing for VIIT inputs may now be moved back to China resulting in loss of opportunities for ASEAN5 countries. This is evident from the reducing number of products identified for SITC-7 in the recent 5 years as China's capacity and capability continue to advance.

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