Economic Cooperation and Interdependence Between China and ASEAN: Two to Tango?

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1 Introduction

The Association of Southeast Asian Nations (ASEAN) was founded in August 1967 at the leaders' meeting in Bangkok, with Indonesia, Malaysia, the Philippines, Singapore and Thailand being the founding nations and Brunei becoming the sixth member in 1984. ASEAN has since expanded into ten member states when it was joined by Vietnam in 1995, Lao PDR and Myanmar in 1997 and Cambodia in 1999. The basic objectives of ASEAN are to promote regional cooperation in security and politics as well as closer economic integration, social progress and cultural development of the region. With the implementation of ASEAN Free Trade Agreement (AFTA) since 1993, especially the ambitious target of creating an ASEAN Economic Community (AEC) allowing goods, services, capital and skilled labour to move freely across borders by 2015, ASEAN will be the largest regional integration in the developing world.

China's trade and economic relations with the countries of ASEAN have been long-standing, especially since the early 1990s when China established diplomatic relations with all the remaining ASEAN states and formal ties were established between China and ASEAN. At the Fifth China–ASEAN Summit in Brunei in November 2001, China proposed the establishment of a China–ASEAN Free Trade Area (CAFTA) to promote intra-regional free trade and investment, which was regarded as an important pillar to deepen economic relations and integration between ASEAN and China. This agreement was signed off in 2002 and aimed to

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establish a free trade area by 2010 between China and the six original ASEAN member states, including Brunei, Indonesia, the Philippines, Malaysia, Thailand and Singapore, and eventually to include the remaining ASEAN states of the Laos, Cambodia, Myanmar and Vietnam by 2015. With the implementation of the CAFTA in 2010, the average tariff rate on Chinese goods exported to ASEAN fell from 12.8 to 0.6 %, while the tariff rate on ASEAN goods exported to China also fell from 9.8 to 0.1 %. By 2015 when the free trade agreement is fully implemented, it is expected that the CAFTA will not only shape the trade relations between China and ASEAN but also the existing regional production networks and economic integration in the region.

The rise of China as a large trading nation in recent years creates both challenges and opportunities to ASEAN. In recent years, driven by the rapidly growing Chinese economy, East Asia has been forging closer economic ties than ever before, led to a new form of international specialisation in the region, characterised by its intricate global production sharing and intra-regional network trade. These networks have allowed firms to exploit comparative advantage by slicing up long production processes and allocating the production blocks throughout the East Asian region, with China being the manufacturing centre mainly for assembly by lower-skilled workers and exports of finished products throughout the world (Kimura and Ando 2005; Athukorala 2010; Thorbecke and Smith 2010; De Grauwe and Zhang 2012). Within this context, it is essential to reassess the dynamic relations of trade and investment between China and ASEAN and examine the impacts of the CAFTA on both economies. The purpose of this paper is to examine the economic cooperation and interdependence between China and ASEAN through trade and flows of investment in the context of increasing significance of regional production fragmentation. In particular, we assess the dynamic development of China–ASEAN economic relations and examine the changes in bilateral trade flows and trade patterns between China and ASEAN. The paper further investigates more closely how the China–ASEAN Free Trade Agreement will eventually reshape production and trade relationships between China and the ASEAN member countries. It also sheds light on the opportunities and challenges brought forth to both parties for further development of economic relations and cooperation due to their structural similarity in trade and lack of economic complementarity.

The remainder of this paper is organised as follows. In Sect. 2, we review the trade relations and discuss the trade pattern and the economic interdependence between China and the ASEAN countries. Section 3 assesses the structures of the ASEAN–China trade and examines their revealed comparative advantage at industrial level, followed by an analysis of the recent development of cross-border direct investment. The final section contains some concluding remarks and implications for the future development of ASEAN–China economic interdependence.

2   Economic Relations and Interdependence Between China and ASEAN

Whether the economies of ASEAN and China compete or complement each other has been hotly debated, especially since China regained its WTO membership and officially proposed to set up the CAFTA in 2001, but yet conclusive (see, for instance, Zhang and Ow 1996, Ravenhill 2006, Park et al. 2008, Greenaway et al. 2008 and Aslam 2012). Most of the studies tend to agree that ASEAN–China economic and trade relations are dynamic and diversified and the benefits derived from closer economic integration between ASEAN and China hinges on the evolving dynamic economic relationship and what implications to individual countries. A closer look at their economic performance reveals that ASEAN and China are arguably the most dynamic economies in the world today, and both have experienced phenomenal growth in recent decades. As presented in Fig. 1, China has enjoyed an average growth rate of about 10 % over the past two decades, a rate which has never been achieved by any other economy in the world and almost doubled the average rate of ASEAN during the same period. It is also noted that both the East Asian financial crisis in 1997 and the global financial crisis (GFC) in 2008 have had a much profound impact on the ASEAN economies, which have caused the cyclical fluctuations of growth and led most of the ASEAN countries to recession. Despite of the debate over the complementary and competitive economic relations, one may have to agree that China's openness to the outside world and rapid economic expansion provide the world, especially ASEAN countries, with certain opportunities for expanded trade and greater outlets for their direct investment. The high degree of integration through the flows of trade and capital between ASEAN and China will further reshape the economic structure of each individual economy and contribute to the business cycle synchronisation and co-movements of real output. A number of recent studies have confirmed that China's growth
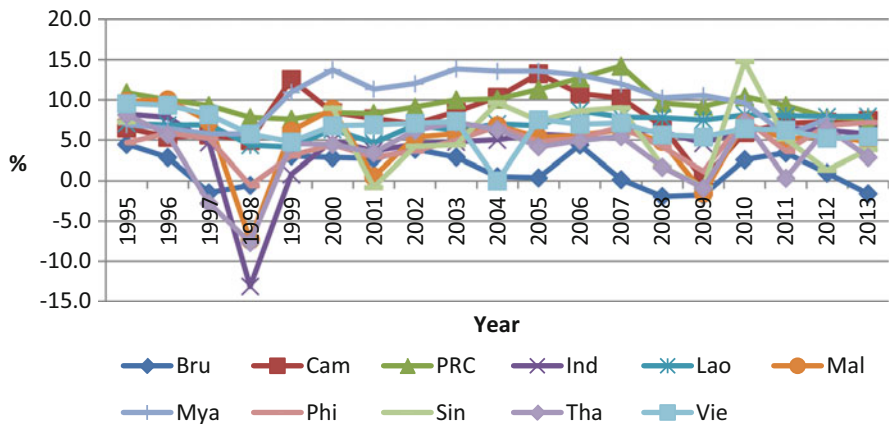

Fig. 1 Real GDP growth in ASEAN and China, 1995–2013

shocks have sizeable international spillovers and China's output co-movements with its East Asian neighbours have increased in recent years (see Sato and Zhang 2006, Sato et al. 2011 and Duval et al. 2014).

The economies of ASEAN and China differ markedly in economic size, system and development strategy at country level, and these differences have been acting both as a "pushing" force to stimulating the development of bilateral trade relations between ASEAN and China and also as a "resisting" force to limiting the trade expansion (Zhang and Ow 1996). Although ASEAN is a diverse group of economies, it has an aggregate economic size of US$2.3 trillion with an estimated GDP per capita of US$3745 and a combined population of 616 million in 2012. Geographically ASEAN is located at the heart of the Asia-Pacific region and situated across major trade routes with over US$5.3 trillion of global trade passes through its waterways each year. These are the strong pulling factors for goods and capital from China.

One most notable feature in the economic development of both ASEAN and China is the significant role played by foreign trade in driving their economic growth. Most of the ASEAN economies have traditionally been open and outward-looking, with foreign trade, technology and direct investment playing a crucial role in their economic growth. Singapore is arguably one of the most open economies in the world, with a trade/GDP ratio ranging from 311 to 440 % in 1990–2013. The trade/GDP ratios of other founding ASEAN countries are all above 100 % except Indonesia. Although the Chinese economy was traditionally closed and inward looking, China's over three-decade-long economic reforms have successfully transformed itself into an important trading nation and manufacturing centre in the world. China's trade/GDP ratio has gone up rapidly since its accession of WTO membership in 2001, peaked at about 70 % prior to the GFC. In 2009 China surpassed Germany and became the world's number one exporter and further surpassed the USA and became the world's biggest goods trading nation amounting to US$4.16 trillion in 2013. According to WTO, as the world's leading merchandise exporter since 2009, China's share of world exports climbed to over 11.74 % and its imports accounted for 10.32 % of the world total in 2013.

We report in Table 1 the changes of the trade pattern of ASEAN-6 and China in selected years from 1990 to 2013. Due to incomplete data and space limitation, we have excluded the four new member countries of ASEAN in the table. As it can be seen in Table 1, Both ASEAN and China have a very similar market structure of foreign trade. Traditionally the ASEAN countries were heavily dependent on the US, Japan and EU markets as an outlet for their imports and exports, and the emerging and developing countries, especially China, were relatively not so important to ASEAN. Since the late 1990s, especially since China's accession to WTO, there has been a dramatic change in their trade pattern, both ASEAN and China showing a steady decline in the shares of their imports from and exports going to the advanced countries but a steady rise in their trade share with the emerging developing countries, in particular, in terms of both intra-ASEAN and bilateral trade between ASEAN and China. It is interesting to note from Table 1 that, among the advanced economies, the Japanese market is particularly important for those

Table 1 ASEAN and China: percentage distribution of trade by major destination

		Advanced economies				Less developed economies		
		Total	USA	EU	Japan	EDCs	ASEAN	China
Exports								
Brunei	1990	75.47	3.41	0.24	58.10	14.06	20.93	0.14
	2000	74.46	11.96	3.62	40.67	17.99	23.16	1.76
	2010	79.33	0.15	0.09	45.21	19.23	10.53	7.04
	2013	72.74	0.15	0.10	42.15	21.21	19.29	2.71
Indonesia	1990	80.53	15.84	11.12	42.17	10.72	11.18	2.44
	2000	67.77	13.66	14.41	23.20	21.60	17.52	4.46
	2010	57.12	9.06	10.90	16.34	39.12	21.14	9.95
	2013	46.50	8.62	9.21	14.84	44.35	22.26	12.38
Malaysia	1990	60.56	16.95	15.52	15.31	16.47	29.45	2.10
	2000	62.88	20.54	14.01	13.02	18.70	26.56	3.09
	2010	47.39	9.55	10.78	10.46	39.21	25.37	12.53
	2013	43.98	8.09	9.08	11.09	42.01	28.05	13.45
Philippines	1990	88.64	37.87	18.54	19.79	8.39	7.27	0.75
	2000	80.04	29.85	18.11	14.68	11.78	15.65	1.74
	2010	61.80	14.71	14.42	15.22	23.94	22.47	11.09
	2013	67.37	14.51	11.44	21.16	25.14	15.96	12.19
Singapore	1990	62.26	21.25	15.64	8.75	37.68	22.35	1.51
	2000	59.66	17.31	14.00	7.54	40.18	27.36	3.90
	2010	45.37	6.53	10.01	4.66	54.62	30.26	10.36
	2013	42.29	5.84	7.86	4.29	57.69	31.38	11.78
Thailand	1990	75.13	22.72	23.38	17.21	16.78	11.92	1.17
	2000	67.69	21.32	16.30	14.74	22.92	19.34	4.07
	2010	49.56	10.47	11.18	10.51	45.45	22.93	11.11
	2013	45.00	10.07	9.71	9.73	49.35	25.95	11.92
China	1990	79.57	8.47	10.58	14.68	15.48	6.61	–
	2000	81.31	20.93	16.51	16.71	16.10	6.96	–
	2010	68.08	17.97	19.82	7.62	29.55	8.76	–
	2013	64.89	16.69	15.35	6.78	32.77	11.03	–
Imports								
Brunei	1990	53.27	15.28	18.09	14.57	2.70	62.57	2.70
	2000	35.10	10.78	15.78	4.72	1.18	57.64	1.18
	2010	30.27	4.36	13.84	5.25	12.89	56.35	12.89
	2013	33.45	7.24	21.12	1.97	22.08	43.36	22.08
Indonesia	1990	77.62	11.45	20.71	24.79	15.94	8.44	2.97
	2000	58.07	10.12	12.59	16.10	29.73	19.35	6.03
	2010	40.91	6.94	7.28	12.51	44.07	28.68	15.05
	2013	36.84	4.87	7.35	10.33	49.35	28.85	15.99
Malaysia	1990	73.65	16.95	16.07	24.18	11.37	19.07	1.92
	2000	65.42	16.63	11.04	21.08	18.40	24.02	3.94
	2010	49.22	10.64	10.24	12.58	38.84	27.10	12.55
	2013	42.86	7.85	10.86	8.68	43.99	26.64	16.37

Table 1 (continued)

		Advanced economies				Less developed economies		
		Total	USA	EU	Japan	EDCs	ASEAN	China
Philippines	1990	70.87	19.54	12.14	18.44	25.14	10.57	1.40
	2000	70.33	18.59	9.17	18.88	22.92	15.55	2.28
	2010	50.60	10.72	7.27	12.33	39.92	28.04	8.42
	2013	50.77	10.82	10.12	8.44	42.39	21.75	12.99
Singapore	1990	64.73	16.08	14.03	20.12	35.26	17.12	3.44
	2000	58.97	15.06	11.97	17.22	40.59	24.72	5.29
	2010	47.63	11.46	12.34	7.87	52.37	24.00	10.83
	2013	46.42	10.42	12.36	5.47	53.57	20.88	11.71
Thailand	1990	72.50	10.78	16.72	30.36	19.20	13.08	3.31
	2000	60.92	11.77	10.48	24.73	31.58	16.66	5.45
	2010	50.29	5.88	7.56	20.70	44.98	16.60	13.25
	2013	45.11	5.87	8.76	16.41	50.54	16.68	15.06
China	1990	81.76	12.25	18.27	14.23	15.02	5.82	–
	2000	73.00	9.94	13.70	18.44	21.51	9.85	–
	2010	57.21	7.31	12.09	12.65	31.87	11.07	–
	2013	54.58	7.54	11.27	8.32	34.55	10.20	–

Sources: IMF Direction of Trade, CEIC, with authors' calculations

countries, such as Brunei, Indonesia and the Philippines, endowed with rich natural resources, but has seen a steady falling share for the leading exporters of manufactured goods in ASEAN, such as Singapore, Malaysia and Thailand. The market share of Japan in China's total exports showed a steady increase in the 1990s, reached about 17 % in 2000, and since then experienced a rapid fall eventually to 6.78 % of China's total exports by 2013. In contrast, both the EU and the USA have seen a steady rise in the share of China's exports, almost doubled in 1990–2010, which explains to a certain extent the competition between ASEAN and China in the third market. The import pattern of both ASEAN and China appeared symmetrically to their export pattern during the period, with a declining trend of dependence on the advanced economies and increasingly on the emerging developing economies.

In contrast to the declining trend of trade relations with the advanced countries, intra-regional trade and economic ties between ASEAN and China have been strengthened and substantially deepened since the 1990s, thanks to the rising East Asian economic integration and rapid urbanisation and economic growth in China.

As seen in Table 1, the Chinese market is more important as a source of imports than as an outlet of exports to most of the ASEAN countries. The market share of China in their total exports showed a sharp increase in the 2000s, all reached about 12 % in 2013 with the exception of Brunei from around one per cent in 1990. As an important source of imports, China accounted for over 22 % of Brunei's global imports in 2013, rising from only about 2 % in the 1990s and similarly over 15 %

for Indonesia, Malaysia and Thailand and around 12 % for the Philippines and Singapore in 2013. ASEAN trade with China has in general been underestimated as the figures did not capture the volume of trade diverted to and transacted via third countries, especially through Hong Kong, as well as cross-border trade between China and its ASEAN neighbours such as Myanmar, the Laos and Vietnam.

Overall, since 1990, two-way trade between China and ASEAN-10 has grown at an annual average of close to 20 %, amounting to about US$443 billion in 2013. China has been ASEAN's largest trading partner since 2009, with more than 16 % of imports coming from China in 2013, while ASEAN continues to be China's third-largest trading partner since 2010. With CAFTA and further economic integration, bilateral trade between the two economic entities is expected to achieve US $500 billion by 2015 and $1 trillion by 2020.

To further assess the trade interdependence between ASEAN and China, we report in Table 2 the relative importance of bilateral trade in each other's total imports and exports. As seen in Table 2, trade and economic interdependence between ASEAN and China is rapidly increasing since 2000, especially after CAFTA was proposed and implemented, relative to their earlier trade with each other. Some recent empirical study also confirms that CAFTA leads to substantial and significant trade creation, especially in agricultural and manufactured goods, including chemical products and machinery and transport equipment (Yang and Zarzoso 2014). One can note from Table 2 that China has become increasingly an important economic partner for ASEAN, and China is much more important as a source of supply for imports of the ASEAN countries rather than as an outlet for ASEAN's exports. ASEAN as a whole shipped over 10–12 % of its total exports to China in 2010–2013, while it imported back about 14–16 % of its total imports from the Chinese market in the same period. This contrasts to an average 2 % of exporting to China and 2.8 % of imports from China during the early 1990s (Zhang and Ow 1996). China's dependence on the ASEAN market as the source of import supply has steadily increased from about 5 % in 1990 to about 8 % by 2013, while as an outlet for China's exports, ASEAN's share has increased to 9.3 % by 2013 from 7.6 % in 1990.

The process of asymmetric trade interdependence between ASEAN and China is even more radical at the country level. Without considering the size effect, one can note in Table 2 that almost all ASEAN member countries have experienced a dramatic increase in their dependence on the Chinese market as both an outlet for their exports and a source of imports, a result confirming how ASEAN can benefit from the closer integration with China, but China's relative dependence on ASEAN market is more or less staying the same. China has become the most important trading partner of almost every country. Malaysia, the Philippines, Singapore and Thailand each shipped only about 1–2 % of their exports to China in 1990, but by 2013 their shares of exports going to China climbed up to around 12 %. Market shares of these countries for China's exports have increased steadily, up from 1.3–3.4 % in 1990 to 16.4 % for Malaysia and 12 % in Singapore in 2013. The new ASEAN member countries are even becoming more dependent on the Chinese market. The proportion of Myanmar's exports to China increased sharply to about

Table 2 Relative trade interdependence between ASEAN and China (in percentage)

	1990	2000	2010	2011	2012	2013	1990	2000	2010	2011	2012	2013
	Exports to China as % of total Chinese imports						Exports to China as % of the exporting country's total exports					
ASEAN	4.893	7.273	8.151	8.141	7.823	7.815	1.824	3.836	10.863	11.501	11.377	12.066
Brunei	0.006	0.025	0.042	0.029	0.018	0.004	0.145	1.762	7.040	4.446	2.714	0.766
Indonesia	1.551	1.229	1.126	1.317	1.192	1.159	3.249	4.455	9.946	11.273	11.398	12.381
Malaysia	1.151	1.345	1.787	1.720	1.584	1.575	2.105	3.085	12.534	13.121	12.637	13.447
Philippines	0.115	0.295	0.409	0.350	0.339	0.338	0.754	1.736	11.086	12.702	11.846	12.195
Singapore	1.484	2.388	2.618	2.456	2.425	2.490	1.513	3.895	10.360	10.427	10.757	11.776
Thailand	0.499	1.246	1.541	1.491	1.469	1.375	1.165	4.069	11.108	11.792	11.717	11.921
Cambodia	0.000	0.011	0.005	0.009	0.010	0.014	0.386	1.738	1.163	2.306	2.333	3.033
Laos	0.011	0.003	0.037	0.042	0.039	0.048	9.083	1.492	23.267	23.360	21.455	23.280
Myanmar	0.062	0.050	0.063	0.088	0.065	0.131	8.144	5.730	13.536	18.335	14.288	24.484
Vietnam	0.014	0.682	0.524	0.639	0.682	0.680	0.308	10.608	10.468	11.978	11.181	10.469
	Imports from China as % of total Chinese exports						Imports from China as % of the importing country's total imports					
ASEAN	7.625	7.485	8.257	8.381	8.907	9.296	2.931	5.055	13.555	13.701	14.771	16.338
Brunei	0.043	0.007	0.026	0.043	0.067	0.085	2.702	1.184	12.893	12.784	21.337	22.081
Indonesia	1.040	0.811	1.294	1.380	1.433	1.350	2.967	6.033	15.055	14.773	15.330	15.994
Malaysia	0.894	1.299	1.310	1.303	1.452	1.526	1.922	3.938	12.555	13.189	15.139	16.369
Philippines	0.289	0.315	0.321	0.351	0.358	0.400	1.398	2.279	8.422	10.075	10.797	12.992
Singapore	3.338	2.855	2.133	2.002	1.912	1.976	3.436	5.286	10.829	10.386	10.315	11.709
Thailand	1.764	1.355	1.554	1.609	1.821	1.701	3.313	5.453	13.249	13.334	14.844	15.059
Cambodia	0.005	0.045	0.075	0.092	0.105	0.136	5.911	7.992	24.197	28.306	30.609	32.577
Laos	0.025	0.015	0.033	0.027	0.050	0.086	10.717	5.489	14.663	11.203	16.211	25.979
Myanmar	0.219	0.219	0.243	0.279	0.304	0.366	20.620	17.962	38.507	38.758	36.645	39.563
Vietnam	0.007	0.562	1.268	1.295	1.404	1.672	0.162	8.961	24.014	23.533	25.785	28.646

Sources: IMF Direction of Trade, CEIC, with authors' calculations

25 % in 2013 from 8 % in 1990, while its imports from China peaked at 40 % in 2013 from 20 % in 1990. A similar pattern can be noted for Cambodia, the Laos and Vietnam. In 1990, market share of Vietnam for China's exports was almost zero largely due to the border tension with China, but it has changed dramatically from 2000 onwards, reached about 29 % by 2013. These drastic changes in trade dependence of ASEAN countries on the Chinese market reflect both China's close engagement with the process of regional economic integration and industrial restructuring in the region, characterised by its intricate global production sharing and intra-regional network trade and the rapid rate of urbanisation and structural changes in China. Under the new international fragmentation of production and intra-regional networks, firms can exploit their comparative advantage by slicing up long production processes and allocating the production blocks throughout the region, with China being the manufacturing centre mainly for assembly by lower-skilled workers and exports of finished products throughout the world (Thorbecke and Smith 2010; De Grauwe and Zhang 2012). This conclusion is lent further support by looking at the result generated from the analysis of changes in comparative advantage and the flows of cross-border investment between ASEAN and China in the subsequent sections.

Studies in the past report that, besides the political and institutional factors (Yong 2013; Amrita 2013), similarity of trade structures between ASEAN and China is another crucial variable that limits the absorptive capacity of each other's products and obstructs to a certain degree the development of bilateral trade relations. We report in Tables 3 and 4 the export and import structures of ASEAN countries and China for selected years in 1995–2013 at the SITC two-digit level. With the exception of Brunei and also the new ASEAN members, it seems to be true that the other original ASEAN members within the broad trade structure of the classification all exhibit a high level of trade similarity with China, but a different pattern is rendered in their trade structure if one looks at the trade pattern at bilateral level (Tables 5 and 6). Traditionally most ASEAN countries were seen to export largely primary products in the 1970s and 1980s, ranging from 94 % in Malaysia and the Philippines to about 99–100 % in Indonesia and Brunei (Zhang and Ow 1996). As seen in Table 3, this export pattern has been changed remarkably since the 1990s, and exports of manufactured goods have grown rapidly in these countries, thanks to a series of macroeconomic policy adjustment adopted in these countries in favour of diversifying the composition of their exports. The export shares of manufactured goods peaked at 80.3 % in 1999 for Malaysia, about 92 % in 2002 for the Philippines, about 86 % in 1999 for Singapore and 76 % in 2005 for Thailand and began to fall thereafter. It is interesting to note that Brunei has diversified its sole export goods—fuels—to a share of about 12 % of manufactured exports in 2001, even though this share has declined continuously to 2 % in 2013. Of the manufactured exports, the traditional labour-intensive products and resource-based manufactures such as iron and steel (SITC 67) and textile fibres, yarn, fabrics and clothing (SITC 26 + 65 + 84) still account for a predominant share but with a declining trend in all countries (with the exception of Singapore, the Philippines and Malaysia) and some advances in machinery and

Table 3 Export structures of ASEAN and China (in percentage)

	All food items	Agricultural raw materials	Ores and metals	Fuels	Manufactured goods	Chemi. prod.	Of which	
							Machi. and trans.	Other machi.
SITC	(0+1+22+4)	[2 − (22+27+28)]	(3)	(27+28+68)	[(5 to 8) − (667 − 68)]	(5)	(7)	[6+8 − (667+68)]
Brunei								
1995	0.06	0.01	0.05	91.11	8.23	0.11	4.52	3.60
2000	0.04	0.01	0.03	89.34	10.45	0.05	4.00	6.40
2005	0.07	0.06	0.31	92.52	6.95	0.03	0.95	5.97
2010	0.10	0.05	0.18	97.71	1.82	0.03	0.65	1.14
2013	0.12	0.02	0.11	97.36	2.04	0.81	0.51	0.71
Cambodia								
1995	4.14	73.39	0.25	0.00	21.67	0.31	0.74	20.62
2000	1.34	4.32	0.23	0.00	93.50	0.05	0.49	92.96
2005	2.30	3.71	0.26	0.00	92.55	0.11	0.50	91.93
2010	3.33	3.96	1.83	0.00	89.61	0.25	3.71	85.65
2013	6.56	4.25	1.00	0.00	88.04	0.29	6.90	80.85
China								
1995	8.27	1.81	2.07	3.58	83.58	6.07	21.08	56.43
2000	5.44	1.13	1.84	3.15	87.98	4.85	33.15	49.98
2005	3.23	0.53	1.79	2.31	91.70	4.69	46.23	40.78
2010	2.80	0.47	1.36	1.69	93.44	5.55	49.51	38.39
2013	2.72	0.46	1.18	1.53	93.87	5.41	47.06	41.40
Indonesia								
1995	11.38	6.67	5.96	25.32	50.52	3.36	8.44	38.71
2000	8.89	3.60	4.90	25.26	56.68	5.10	17.33	34.25
2005	11.66	5.06	8.45	27.69	46.89	5.25	15.88	25.76

2010	16.24	6.55	9.79	29.64	37.01	5.17	12.44	19.40
2013	17.50	5.86	7.03	31.44	37.17	6.01	12.13	19.03
Laos								
1995	11.11	11.11	42.28	5.31	40.72	1.61	0.34	38.78
2000	7.64	7.64	31.71	1.36	56.88	0.20	17.49	39.19
2005	6.56	6.56	28.02	4.56	35.74	0.32	1.47	33.95
2010	7.38	17.04	44.09	13.85	17.58	1.24	2.22	14.13
2013	7.77	19.62	36.49	19.52	14.17	2.06	1.48	10.63
Malaysia								
1995	9.50	6.18	1.35	6.99	74.53	3.04	55.14	16.35
2000	5.54	2.62	1.04	9.62	80.32	3.83	62.52	13.97
2005	6.94	2.48	1.12	13.41	74.53	5.80	54.00	14.73
2010	11.88	2.65	1.95	15.85	66.99	6.37	43.93	16.68
2013	11.00	2.17	3.29	22.22	60.64	6.66	38.07	15.90
Myanmar								
1995	41.86	38.54	2.25	0.17	11.93	1.04	0.93	9.96
2000	20.04	22.19	3.31	6.05	46.75	0.49	1.32	44.93
2005	20.21	19.42	3.09	33.34	22.86	0.20	0.70	21.95
2010	17.28	9.35	0.79	33.90	4.83	0.02	0.05	4.77
2013	19.57	13.17	1.93	39.33	9.02	0.24	0.48	8.30
Philippines								
1995	12.83	1.25	4.27	1.51	40.81	1.96	2.18	16.67
2000	4.77	0.56	1.62	1.33	91.28	0.89	76.13	14.26
2005	6.07	0.54	2.27	1.88	89.04	1.34	74.39	13.31
2010	7.32	0.70	3.91	2.05	56.28	3.02	44.28	8.98
2013	10.82	1.08	6.38	3.94	77.18	4.57	54.59	18.01

Table 3 (continued)

	All food items	Agricultural raw materials	Ores and metals	Fuels	Manufactured goods	Chemi. prod.	Of which Machi. and trans.	Other machi.
SITC	(0+1+22+4)	[2 − (22+27+28)]	(3)	(27+28+68)	[(5 to 8) − (667 − 68)]	(5)	(7)	[6+8 − (667+68)]
Singapore								
1995	3.95	1.08	1.97	6.84	83.62	6.00	65.62	12.01
2000	2.24	0.46	1.12	7.36	85.26	6.96	67.41	10.88
2005	1.65	0.33	1.06	12.19	79.91	11.38	58.73	9.80
2010	1.95	0.29	1.18	16.12	72.10	11.29	51.05	9.76
2013	2.35	0.30	1.21	17.40	69.96	12.21	46.39	11.36
Thailand								
1995	19.26	5.38	0.62	0.72	70.93	4.41	33.66	32.86
2000	14.42	3.34	1.16	3.21	74.23	5.93	43.59	24.71
2005	11.64	4.54	1.24	4.33	75.69	8.09	44.68	22.92
2010	12.80	5.19	1.27	4.94	71.61	8.67	42.19	20.75
2013	12.85	4.81	1.29	6.26	72.20	10.66	41.74	19.80
Vietnam								
1995	30.22	3.13	0.47	17.96	43.68	1.06	7.03	35.58
2000	25.31	1.99	0.44	26.41	42.40	0.96	8.65	32.80
2005	20.24	3.12	0.57	25.76	49.79	1.64	9.65	38.50
2010	19.25	4.05	1.02	11.05	63.95	2.60	15.89	45.47
2013	16.83	3.39	0.80	11.14	67.75	3.22	22.78	41.75

Source: UNCTAD, with authors' calculations

Table 4 Import structures of ASEAN and China (in percentage)

	All food items	Agricultural raw materials	Ores and metals	Fuels	Manufactured goods	Chemi. prod.	Of which Machi. and trans.	Other machi.
SITC	(0+1+22+4)	[2 − (22+27+28)]	(3)	(27+28+68)	[(5 to 8) − 667 − 68]	(5)	(7)	[6+8 − (667+68)]
Brunei								
1995	13.57	0.61	3.30	0.18	81.84	6.36	38.98	36.50
2000	17.87	0.26	1.20	0.21	80.28	7.72	30.81	41.76
2005	19.91	0.32	1.57	1.24	76.81	9.35	29.40	38.06
2010	18.71	0.29	1.42	1.62	77.26	10.08	29.33	37.84
2013	15.02	0.20	1.38	7.50	75.07	7.98	36.68	30.42
Cambodia								
1995	23.82	1.62	7.65	8.96	56.32	5.87	34.22	16.24
2000	11.42	2.47	0.27	17.27	66.21	6.14	15.26	44.81
2005	10.09	1.43	0.38	10.75	75.77	6.94	16.42	52.41
2010	11.38	0.88	0.51	12.52	60.96	5.79	16.71	38.46
2013	12.43	0.59	0.83	17.25	66.73	7.10	19.78	39.86
China								
1995	6.99	5.20	4.44	3.88	78.11	12.90	39.80	25.40
2000	4.02	4.67	5.91	9.17	75.13	13.42	40.84	20.86
2005	3.26	3.58	8.43	9.69	74.40	11.78	44.01	18.61
2010	4.27	3.49	13.33	13.54	63.74	10.70	39.38	13.66
2013	5.06	3.43	11.75	16.16	57.66	9.72	36.45	11.49
Indonesia								
1995	8.41	5.35	3.56	6.15	75.32	14.08	42.00	19.25
2000	8.08	5.91	3.02	14.01	66.02	14.43	32.83	18.77
2005	6.55	2.92	2.84	23.45	61.54	12.38	32.76	16.40

(continued)

Table 4 (continued)

SITC	All food items (0+1+22+4)	Agricultural raw materials [2 − (22+27+28)]	Ores and metals (3)	Fuels (27 + 28 + 68)	Manufactured goods [(5 to 8) − 667 − 68]	Chemi. prod. (5)	Of which Machi. and trans. (7)	Other machi. [6+8 − (667 + 68)]
2010	8.36	2.86	3.15	19.86	63.43	11.74	34.64	17.05
2013	8.31	2.54	2.90	23.33	61.09	11.96	30.78	18.35
Laos								
1995	17.62	0.20	0.78	7.72	69.09	6.74	35.07	27.28
2000	15.79	0.65	1.02	11.59	68.82	6.34	35.35	27.13
2005	14.12	0.56	0.57	18.33	62.32	7.51	30.00	24.80
2010	10.95	0.43	0.75	19.52	67.20	6.28	33.80	27.12
2013	10.89	0.35	0.46	17.00	70.27	5.35	47.23	17.69
Malaysia								
1995	4.78	1.23	3.20	2.25	83.38	7.12	59.95	16.30
2000	4.34	1.33	3.00	4.85	83.74	7.23	62.64	13.86
2005	5.13	1.19	3.63	8.07	78.97	7.83	57.49	13.65
2010	7.77	1.99	5.18	9.97	73.21	9.10	49.50	14.61
2013	7.58	2.11	5.99	16.19	65.81	9.04	42.66	14.10
Myanmar								
1995	21.69	0.66	0.54	3.97	71.03	9.51	32.81	28.70
2000	11.60	0.43	0.66	15.00	71.60	11.59	27.13	32.88
2005	10.89	0.58	0.98	19.20	68.30	11.59	27.60	29.11
2010	7.27	0.38	0.78	19.63	59.43	10.01	24.01	25.42
2013	10.91	0.66	0.87	24.65	62.86	10.49	23.57	28.80

Philippines

Year								
1995	8.35	2.16	3.23	9.21	57.83	9.18	32.49	16.15
2000	7.02	1.37	2.47	11.07	77.91	8.04	56.53	13.33
2005	6.93	0.87	2.35	13.21	76.40	7.30	57.81	11.30
2010	11.03	0.64	3.79	16.94	66.80	9.55	47.07	10.18
2013	10.33	0.67	2.97	20.76	64.94	9.97	42.78	12.19

Singapore

Year								
1995	4.58	0.89	2.27	8.06	82.60	6.45	57.87	18.28
2000	3.24	0.40	1.57	12.05	81.30	5.73	60.73	14.83
2005	2.82	0.38	1.59	17.74	75.13	6.23	55.79	13.12
2010	3.15	0.34	1.52	26.11	64.71	6.67	46.31	11.74
2013	3.47	0.37	1.54	31.34	60.88	6.76	41.60	12.52

Thailand

Year								
1995	3.76	4.12	3.24	6.75	78.75	10.47	47.54	20.74
2000	4.32	2.92	3.05	12.19	74.36	11.02	45.01	18.34
2005	3.98	2.05	3.91	17.72	68.23	10.16	38.04	20.04
2010	4.71	1.86	4.67	17.36	66.47	10.91	35.25	20.31
2013	5.13	1.51	3.49	20.81	62.37	9.41	34.47	18.48

Vietnam

Year								
1995	4.95	2.40	1.98	10.30	75.88	16.68	28.31	30.89
2000	5.21	2.91	2.28	13.51	72.54	15.30	30.01	27.23
2005	6.29	3.68	2.99	14.60	69.67	14.39	25.07	30.20
2010	8.59	3.52	4.79	9.60	71.94	14.70	29.19	28.05
2013	7.80	2.55	3.31	12.10	73.48	14.32	30.34	28.82

Source: UNCTAD, with authors' calculations

Table 5 Structures of ASEAN's exports to China (in percentage)

	Primary commodities					Manufactured goods					Other manufactured goods		
SITC	Total (0+1 +2 +3 +4 +68)	All food items (0+1 +22 +4)	Agri. raw materials (2 – 22 – 27 – 28)	Ores and metals (27 +28 +68)	Fuels (3)	Total [5 to 8 – (667 +68)]	Chemical prod. (5)	Machi. and transp. equip. (7)	Electron excl. parts and components (751+752 +761+762 +763+775)	Parts and components for electrical and electronic goods (759 +764+772 +776)	Total [6+8 – (667 +68)]	Iron and steel (67)	Textile fibres, yarn, fabrics and clothing (26+65 +84)
Brunei													
1995	1.09	1.09	–	–	–	28.26	1.09	–	–	–	27.17	–	2.17
2000	99.56	–	0.08	0.07	99.41	0.43	–	0.02	–	–	0.41	0.01	0.02
2005	99.94	0.00	0.00	0.00	99.93	0.06	0.00	0.04	0.00	0.01	0.02	0.00	0.01
2010	99.86	0.65	0.03	0.07	99.10	0.14	0.00	0.07	0.00	0.01	0.07	0.00	0.03
2013	88.29	0.32	1.35	0.00	86.62	11.57	11.38	0.03	0.00	0.02	0.16	–	0.02
Cambodia													
1995	46.46	6.27	40.19	–	–	53.54	–	–	–	–	53.54	–	–
2000	13.59	2.49	11.10	0.01	–	86.41	0.01	0.07	–	–	86.33	–	4.00
2005	42.71	4.20	38.48	0.03	–	57.28	3.78	1.47	–	0.37	52.03	0.04	41.61
2010	68.53	2.64	64.81	1.07	–	31.06	1.07	1.59	0.01	0.08	28.40	–	27.68
2013	52.37	10.42	40.91	1.04	0.00	47.51	1.28	5.93	0.00	0.55	40.31	0.00	36.50
Indonesia													
1995	64.63	11.03	7.07	2.60	43.93	35.37	5.84	1.66	–	0.02	27.87	0.34	3.06
2000	62.10	7.85	16.35	0.76	37.14	37.90	12.36	2.88	0.24	1.64	22.66	0.27	4.58
2005	73.59	12.29	12.94	6.89	41.47	26.41	11.51	5.16	1.72	1.25	9.74	1.16	2.07
2010	82.21	17.93	14.64	11.26	38.38	17.79	8.08	3.97	1.26	1.13	5.74	0.14	1.97
2013	82.64	15.03	13.04	18.12	36.44	17.36	7.57	2.54	0.31	0.85	7.25	0.07	2.54

Laos													
1995	93.32	57.48	34.87	0.97	–	6.57	0.05	4.21	–	–	2.31	2.18	–
2000	98.56	24.19	73.89	0.48	–	1.44		–	–	–	1.44	–	0.04
2005	94.33	5.76	61.62	26.95	–	3.59	0.15	–	–	–	3.44	–	0.97
2010	99.25	4.29	20.45	74.08	0.43	0.75	0.44	0.05	–	0.04	0.26	0.00	0.12
2013	99.02	5.08	51.15	42.50	0.29	0.98	0.28	0.18	–	0.13	0.52	–	0.11
Malaysia													
1995	54.92	39.91	9.25	0.90	4.87	44.47	3.24	13.35	0.82	3.82	27.88	0.37	2.25
2000	34.05	12.00	8.80	2.28	10.97	65.05	9.16	43.20	3.97	34.12	12.69	1.39	2.30
2005	28.27	13.88	8.62	1.39	4.38	70.54	12.20	47.45	4.98	35.88	10.89	1.69	1.40
2010	28.02	14.13	5.38	1.94	6.56	71.70	8.40	53.11	9.68	39.61	10.19	0.53	0.85
2013	35.82	11.78	4.49	8.99	10.57	63.86	10.63	43.99	6.30	33.62	9.24	0.31	1.11
Myanmar													
1995	66.99	9.44	50.57	6.99	0.00	2.23	0.58	0.36	0.06	0.01	1.29	0.01	0.49
2000	91.02	14.96	67.27	8.79	–	2.28	0.06	1.76	–	1.67	0.46	–	0.10
2005	93.87	10.48	69.87	13.40	0.12	3.54	0.39	0.60	0.00	0.49	2.55	0.06	0.71
2010	60.76	27.41	26.61	6.75	–	1.38	–	0.02	–	–	1.36	–	1.14
2013	74.15	23.45	40.08	10.51	0.11	4.24	0.45	0.45	0.00	0.37	3.35	0.06	1.47
Philippines													
1995	85.86	16.28	1.73	20.86	46.99	9.70	3.15	4.39	0.07	1.29	2.16	0.10	0.88
2000	36.87	9.89	1.29	14.77	10.92	63.11	3.16	55.85	1.37	50.64	4.10		0.83
2005	9.39	1.30	0.49	4.28	3.32	90.59	0.78	87.87	15.35	67.59	1.95		0.45
2010	17.57	3.28	0.70	10.28	3.31	55.04	4.11	49.47	21.09	23.79	1.46		0.46
2013	34.92	7.89	1.49	21.55	3.98	64.97	4.05	55.80	17.00	20.54	5.12	0.11	0.74
Singapore													
1995	33.05	4.69	2.09	8.00	18.27	62.64	13.07	40.07	5.16	15.09	9.50	1.08	0.85
2000	16.15	0.96	1.36	2.03	11.80	81.52	14.66	57.57	10.32	34.95	9.29	0.33	0.77

(continued)

Table 5 (continued)

SITC	Primary commodities					Manufactured goods					Other manufactured goods		
	Total (0+1 +2 +3 +4 +68)	All food items (0+1 +22 +4)	Agri. raw materials (2 − 22 − 27 − 28)	Ores and metals (27 +28 +68)	Fuels (3)	Total [5 to 8 − (667 +68)]	Chemical prod. (5)	Machi. and transp. equip. (7)	Electron excl. parts and components (751+752 +761+762 +763+775)	Parts and components for electrical and electronic goods (759 +764+772 +776)	Total [6+8 − (667 +68)]	Iron and steel (67)	Textile fibres, yarn, fabrics and clothing (26+65 +84)
2005	10.59	0.97	0.70	1.16	7.76	88.23	14.97	65.45	10.99	45.35	7.81	0.26	0.30
2010	18.91	1.92	0.57	1.43	14.99	79.45	16.62	54.61	3.22	42.12	8.23	0.23	0.15
2013	15.16	1.78	0.69	1.12	11.57	82.22	18.59	54.57	2.70	42.24	9.07	0.25	0.17
Thailand													
1995	76.55	58.31	16.98	0.55	0.71	23.30	7.45	7.38	2.01	1.88	8.48	1.39	6.89
2000	40.90	9.63	14.81	1.14	15.32	58.27	11.88	35.16	0.98	26.11	11.23	2.04	3.95
2005	31.11	8.04	12.68	1.46	8.93	68.44	15.32	42.58	19.81	14.96	10.53	2.37	3.08
2010	30.13	7.40	15.21	1.03	6.48	69.80	18.26	38.79	19.92	11.44	12.75	0.54	1.86
2013	38.19	9.64	18.72	1.15	8.69	61.65	25.61	22.00	8.06	7.05	14.04	0.07	1.92
Vietnam													
1995	91.40	42.18	24.48	2.25	22.49	8.52	5.52	0.94	0.01	0.02	2.07	0.28	2.00
2000	94.37	31.79	7.32	1.47	53.79	3.57	1.58	0.52	–	0.36	1.47	0.01	0.73
2005	83.74	13.63	17.00	2.40	50.72	12.74	2.50	5.05	1.10	1.35	5.19	0.03	1.54
2010	57.97	12.52	20.47	2.65	22.33	37.16	6.26	13.65	4.10	5.84	17.25	1.21	6.38
2013	57.26	18.35	15.18	1.60	22.13	42.74	7.91	17.15	3.47	10.12	17.68	0.64	8.08

Source: UNCTAD, with authors' calculations

Table 6 Structures of ASEAN's imports from China (in percentage)

	Primary commodities					Manufactured goods					Other manufactured goods		
	Total (0+1 +2 +3 +4 +68)	All food items (0+1 +22 +4)	Agri. raw materials (2 – 22 – 27 – 28)	Ores and metals (27 +28 +68)	Fuels (3)	Total [5 to 8 – (667 +68)]	Chemical prod. (5)	Machi. and transp. equip (7)	Electron excl. parts and components (751+752 +761+762 +763+775)	Parts and components for electrical and electronic goods (759 +764+772 +776)	Total [6+8 – (667 +68)]	Iron and steel (67)	Textile fibres, yarn, fabrics and clothing (26+65 +84)
SITC													
Brunei													
1995	23.97	15.91	0.21	7.85	0.00	76.02	1.84	6.65	0.73	2.28	67.53	13.59	4.83
2000	20.16	17.60	0.25	2.29	0.02	79.84	2.09	7.14	2.73	0.66	70.61	6.29	37.01
2005	13.10	11.53	0.30	1.21	0.06	86.84	2.65	11.31	4.32	2.24	72.89	8.21	37.17
2010	13.07	10.66	0.23	2.10	0.08	86.92	4.17	13.43	4.80	3.32	69.33	13.29	30.11
2013	5.74	4.70	0.20	0.69	0.15	94.26	4.01	34.78	7.75	10.46	55.47	13.00	6.85
Cambodia													
1995	25.47	24.48	0.38	0.36	0.25	73.88	7.30	29.91	1.62	0.43	36.68	6.42	9.69
2000	5.64	5.15	0.11	0.17	0.21	94.27	2.97	17.30	4.47	1.70	74.00	8.31	50.54
2005	5.04	3.98	0.03	0.41	0.62	94.92	2.17	11.27	0.64	1.98	81.48	1.99	69.16
2010	2.54	1.41	0.28	0.35	0.50	97.45	2.04	20.62	0.39	6.19	74.79	2.06	60.25
2013	2.22	1.43	0.27	0.15	0.37	97.78	1.91	27.43	0.88	3.79	68.44	1.48	53.52
Indonesia													
1995	29.76	18.25	1.76	3.76	5.99	70.24	15.50	25.47	1.89	3.47	29.27	12.31	5.56
2000	27.80	12.27	3.62	1.76	10.15	72.18	11.14	36.01	7.12	5.36	25.03	4.39	10.14
2005	28.16	4.95	0.57	2.25	20.39	71.83	11.45	30.21	3.15	6.98	30.18	9.64	7.15
2010	15.77	6.83	0.68	1.85	6.42	84.21	10.27	45.25	7.63	11.98	28.69	4.67	9.65
2013	11.51	4.60	0.78	1.67	4.45	88.48	11.54	43.87	6.21	10.84	33.08	5.59	10.58

(continued)

Table 6 (continued)

SITC	Primary commodities					Manufactured goods					Other manufactured goods		
	Total (0+1 +2 +3 +4 +68)	All food items (0+1 +22 +4)	Agri. raw materials (2 − 22 − 27 − 28)	Ores and metals (27 +28 +68)	Fuels (3)	Total [5 to 8 − (667 +68)]	Chemical prod. (5)	Machi. and transp. equip (7)	Electron excl. parts and components (751+752 +761+762 +763+775)	Parts and components for electrical and electronic goods (759 +764+772 +776)	Total [6+8 − (667 +68)]	Iron and steel (67)	Textile fibres, yarn, fabrics and clothing (26+65 +84)
Laos													
1995	32.28	31.34	0.11	0.41	0.42	67.70	2.18	50.42	0.34	3.02	15.10	0.21	5.78
2000	6.77	5.55	0.33	0.28	0.61	92.82	3.86	55.83	0.95	10.28	33.14	2.07	17.22
2005	2.32	1.45	0.17	0.44	0.25	97.68	2.44	72.38	0.97	18.99	22.87	4.59	6.43
2010	5.17	3.03	0.07	0.75	1.32	93.69	2.37	41.13	1.10	10.60	50.20	3.03	29.48
2013	2.49	1.38	0.04	0.16	0.91	97.51	2.01	79.93	0.91	32.73	15.58	2.18	1.16
Malaysia													
1995	19.61	12.25	2.11	4.62	0.63	77.56	8.34	27.90	1.99	10.85	41.32	10.96	14.38
2000	20.56	15.05	2.00	2.68	0.84	77.72	6.34	51.40	2.35	34.53	19.98	2.47	6.26
2005	7.94	4.40	0.44	1.29	1.81	89.94	4.35	69.81	9.33	44.23	15.78	3.54	3.02
2010	9.70	5.54	0.69	2.75	0.72	89.59	8.38	60.00	8.68	32.09	21.22	4.25	2.87
2013	12.62	4.10	0.53	6.00	2.00	86.86	7.77	58.48	6.70	30.57	20.61	4.81	2.75
Myanmar													
1995	16.95	13.69	0.29	0.07	2.91	82.11	8.47	40.46	1.26	0.98	33.18	5.47	16.97
2000	11.17	5.65	0.44	0.13	4.95	88.24	10.54	34.98	3.59	1.91	42.72	6.13	24.18
2005	15.40	6.36	0.24	0.40	8.41	84.60	8.45	39.50	1.22	4.79	36.66	7.30	16.75
2010	2.88	1.07	0.25	0.29	1.28	97.12	4.78	39.03	2.34	3.07	53.32	15.62	16.33
2013	14.34	6.45	0.32	0.30	7.28	85.66	8.01	32.74	1.24	3.30	44.91	11.69	17.17

Philippines

Year													
1995	21.93	10.95	0.32	5.13	5.52	71.27	14.51	14.49	1.75	2.53	42.26	19.73	7.05
2000	25.49	16.71	0.98	3.05	4.75	74.50	11.58	24.70	3.66	11.08	38.22	3.86	13.94
2005	11.64	5.21	0.30	1.75	4.38	88.33	9.47	53.18	2.57	39.81	25.68	7.40	7.32
2010	13.70	6.25	0.40	2.59	4.45	86.30	13.25	46.11	4.54	27.16	26.93	6.12	4.64
2013	18.58	6.56	0.36	1.60	10.05	81.40	13.10	36.97	3.48	15.48	31.33	6.25	5.24

Singapore

Year													
1995	24.38	11.64	1.35	6.03	5.36	75.19	4.01	39.99	10.62	13.48	31.20	2.92	11.30
2000	16.14	3.98	0.43	3.64	8.09	83.64	2.91	60.96	14.91	32.14	19.77	0.78	5.81
2005	10.61	2.06	0.21	1.84	6.51	89.04	2.53	69.27	12.03	44.18	17.24	2.39	4.27
2010	14.81	1.86	0.23	1.22	11.51	84.29	3.73	62.26	13.11	35.86	18.31	2.83	2.72
2013	12.84	2.03	0.23	1.15	9.42	86.46	4.03	61.99	10.57	37.49	20.44	4.90	2.53

Thailand

Year													
1995	12.92	2.77	3.43	4.19	2.52	85.72	13.14	24.90	4.84	7.43	47.67	22.36	14.99
2000	11.29	3.74	2.48	2.45	2.62	88.11	9.28	48.29	4.97	26.78	30.53	4.87	14.29
2005	7.93	2.48	0.54	4.37	0.54	91.71	8.58	53.52	8.83	28.61	29.60	10.65	6.35
2010	8.25	3.04	0.62	3.73	0.87	91.62	10.94	53.19	9.03	23.81	27.49	5.13	5.62
2013	7.64	3.52	0.58	3.22	0.31	92.23	9.80	55.68	8.36	22.85	26.75	6.23	4.56

Vietnam

Year													
1995	9.59	4.41	0.77	2.69	1.72	90.38	12.84	26.09	1.24	1.44	51.45	11.85	11.72
2000	19.90	5.49	1.27	3.34	9.80	78.00	15.90	43.21	1.41	1.03	18.89	6.22	6.07
2005	23.15	3.82	1.48	1.95	15.90	74.62	13.11	22.63	1.62	4.27	38.87	13.29	14.78
2010	13.86	2.39	0.96	1.93	8.57	85.15	11.60	39.59	4.62	13.73	33.96	8.43	14.32
2013	13.30	2.28	0.93	1.86	8.24	86.67	12.54	41.25	4.76	16.86	32.88	6.95	15.16

Source: UNCTAD, with authors' calculations

transport equipment (mainly in electrical machinery and other consumer engineering products). It is interesting to note that the new ASEAN member countries, especially Cambodia and Vietnam, show a rapidly increasing trend of exports in labour-intensive products and resource-based manufactures, while the original ASEAN members are the major exporters of parts and components and their reliance on exports of traditional labour-intensive products has significantly been reduced. Malaysia, the Philippines, Singapore and Thailand are playing an increasingly important role as exporters of parts and components (SITC 759 + 764 + 772 + 776) in the machinery and equipment industry though the share of these products in their total exports shows a steadily declining trend since the early 2000s.

In comparison, China possesses a quite similar commodity composition of its exports to that of ASEAN and has also experienced dramatic structural changes, from largely an exporter of primary products to increasingly an exporter of manufactured goods over the past two decades. As it can be seen in Table 3, there has been a very dramatic decline in the primary goods and food and agricultural goods in China's exports over the last two decades, falling respectively to less than 10 % and 3 % by 2013, while the share of manufactured goods increased to about 94 % of China's total exports, indicating China has emerged to be a manufacturing powerhouse and an important global growth engine. The most notable change in the composition of manufactured exports is the sharp increase in the exports of machinery and transport equipment (SITC 7), rising from 21 % of China's total exports in 1995 to more than 47 % in 2013. In particular, the share of parts and components exports rose from 5.7 % of the total in 1995 to 18 % in 2013. This further confirms that China has become the world's major manufacturing base as an assembler and producer of parts and components and may also imply that China is an export rival for ASEAN in these industries in third-country markets.

Overall the import structures of ASEAN countries show a cyclical trend of growing importance of fuels and metals as well as manufactured products, but mostly a steadily declining share of food and agricultural raw materials (Table 4). China has a quite similar picture in comparison with ASEAN's import pattern. The proportion of China's imports of ores, metals and fuels grew steadily over time from around 8 % in 1990 to about 28 % in 2013, and the share of food and agricultural raw materials declined steadily from, respectively, 7 % and 5.2 % in 1990 to 5 % and 3.4 % in 2013. Of the manufactured imports, machinery and transport equipment rose from 40 % in 1990 to about 47 % in 2003 and then declined steadily to about 36.5 % in 2013, and chemical products also declined from 13 % in 1990 to 9.7 % by 2013. This dynamic pattern of trade reflects China's emergence as a global manufacturing powerhouse on one hand and its efforts to move up the value chain in the high end while growing its businesses throughout the manufacturing value chain on the other hand. That also explains why the rise of the Chinese economy has been viewed as a rival or threat to ASEAN economies, especially in the world export markets of labour-intensive goods.

However, when we look at the trade pattern between ASEAN and China at bilateral level, some of the rivalry concerns are no longer so important. As it can be seen in Tables 5 and 6, with the exception of resource-rich countries such as Brunei

and Indonesia as well as the new ASEAN members where the patterns of trade with China are mostly complementary, the rest show an increasing importance of intra-industry trade with China predominantly in manufacturing, thanks to the rapid economic integration in the region which had led to the new form of international fragmentation of production in East Asia. Hence, the nature of international trade has been changed from trade in goods to trade in tasks. With advances in transportation and communications technology, components and unfinished goods can be moved quickly and cheaply, and firms can take advantage of factor cost disparities in different countries with "offshoring" of both manufacturing tasks and other business functions, which can generate shared gains for all domestic factors (Grossman and Rossi-Hansberg 2008; Baldwin and Robert-Nicoud 2014). As it is evidenced in Tables 5 and 6, the increasing fragmentation of value chains has led to a steady increase of trade flows in intermediate goods, especially in the manufacturing sector, between China and these ASEAN countries. Trade in intermediate goods, especially in parts, components and accessories (ISIC $759 + 764 + 772 + 776$), is the most dynamic sector of international trade with China, rising from 3.8 % of Malaysia's total exports to China and about 11 % of its imports from China in 1995 to, respectively, about 34 % and 31 % in 2013, from about 1.3 % of the Philippines' exports and 2.5 % of its imports in 1995 to, respectively, 21 % and 15.5 % in 2013 and from 15 % of Singapore's exports and 13.5 % of its imports in 1995 to, respectively, 42 % and 37.5 % in 2013. For Thailand, exports of parts, components and accessories to China was less than 2 % in 1995 and peaked at 27 % in 2001 and then experienced a steady decline to 7 % by 2013, while its imports of parts, components and accessories from China shows a similar pattern, rising from 7 % in 1995 to about 30 % in 2003 before falling to 23 % in 2013. In contrast to the conventional trade theory, what one can observe is that, in an integrated region such as ASEAN and China, a country's comparative advantage of completing a specific task along the global value chain rather than the final goods determines its specialisation. Such increasing trade of intermediate goods and services due to the widespread emergence of offshoring promotes specialisation of each economy and leads to more trade in tasks with new value added along the production chain (see, for instance, Grossman and Rossi-Hansberg 2008 and Baldwin and Robert-Nicoud 2014 for the theoretical underpinnings). The fragmentation of production in East Asia is the major contributor to its economic integration through increasing intra-regional direct investment and trade, while China's recent shift to consumption-led growth will offer new opportunities to ASEAN and fuels further regional economic interdependence and closer regional integration.

3 Changes in Comparative Advantage

To further comprehend the analysis of the ASEAN–China economic relations and interdependence, we now turn to evaluating how their comparative advantage changes over time. The theory of comparative costs as a means of explaining the location of production has well been documented, but not much has been done to apply the theoretical concept of comparative advantage in empirical analyses, especially in analysing trade performance. This is largely due to the difficulties in empirically defining the autarkic variables in the notion of comparative advantage theory. Given that the relative prices under autarky are not observable, the Balassa Index of Revealed Comparative Advantage (RCA) proposed by Balassa (1965) has been widely used empirically to identify structural trade-related patterns across countries and to approximate countries' sectorial specialisation at both regional and global levels as well as bilateral level (see, for instance, Vollrath 1991, Dimelis and Gatsios 1995, Ferto and Hubbard 2003, Hinloopen and Van Marrewijk 2004 and Svaleryd and Vlachos 2005). Using X to denote exports, i a specific country, j a specific commodity or industry, t is the total exports of that commodity or industry and n the reference country (or countries), the Balassa Index can be written as

$$\text{RCA}_{ij} = \left(X_{ij}/X_{it}\right)/\left(X_{nj}/X_{nt}\right) = \left(X_{ij}/X_{nj}\right)/\left(X_{it}/X_{nt}\right) \tag{1}$$

The Balassa Index basically measures a country's normalised export share of an industry with respect to the exports of the same industry in a group of reference countries. If RCA is larger than unity, it indicates that the country has a "revealed" comparative advantage in this commodity/industry, and if the index is less than unity, the country is said to have a comparative disadvantage. When the index is equal to unity, it is said that the country has a neutral comparative advantage. The Balassa Index has been under critique for its incomparability across time and space and bias due to the omission of imports, especially when country size is important. Vollrath (1991) proposed three alternative specifications of measuring a country's revealed comparative advantage, namely, the relative trade advantage (RTA), the logarithm of the relative export advantage (RXA) and revealed competitiveness (RC). Vollrath's RTA is defined as

$$\text{RTA}_{ij} = \text{RXA}_{ij} - \text{RMA}_{ij} = \left(X_{ij}/X_{it}\right)/\left(X_{nj}/X_{nt}\right) - \left(M_{ij}/M_{it}\right)/\left(M_{nj}/M_{nt}\right) \tag{2}$$

where M represents imports, RXA is the equivalent to the original Balassa Index and RMA is its counterpart, the relative import advantage. The revealed competitiveness can be written as follows:

$$\text{RC}_{ij} = \ln\text{RXA}_{ij} - \ln\text{RMA}_{it} \tag{3}$$

One may note that Vollrath's second and third measures of a country's revealed comparative advantage are both in logarithmic form. The advantage of expressing

these two indices in logarithmic form is that they become symmetric through the origin. Positive values of these indices reveal a country's comparative/competitive advantage and vice versa, and negative values indicate comparative/competitive disadvantage.

In this paper we apply the Balassa Index and Vollrath's three alternative measures of revealed comparative advantage to the analysis of economic relation between ASEAN and China. Since we are interested in the competitiveness of China in ASEAN, we calculate these indices on bilateral levels. Following Krause (1982), Tyers and Phillips (1984) and Zhang and Ow (1996), we divide commodities at SITC 3-digit level into five groups according to their intensities in the five factors, i.e. agricultural resources, mineral resources, labour, technology and human capital. This classification permits a more accurate investigation of the structure of ASEAN and Chinese exports, as both are primarily natural resource based, and the possible trends in economic interdependence. Although all products embody multiple factors in the production processes, each can be classified according to its dominant factor that used most intensively and/or that which determines the location of production.

Table 7 reports the mean and standard deviation for the four RCA indices computed for China's trade with selected ASEAN countries over the period 1993–2013 (with Vietnam from 2001 to 2013 and Myanmar from 2006 to 2013) depending on data availability. It is interesting to note that the Balassa Index and Vollrath's three alternative RCA measures present a similar pattern of revealed comparative advantage for some categories with some countries but inconsistently for others. As it can be seen in Table 7, all the four indices show that China has a revealed comparative advantage over Indonesia in the production of technology- and human capital-intensive goods, with Malaysia in agricultural resource-based and human capital-intensive products; with Myanmar in unskilled labour-intensive products; with the Philippines in agricultural resource-based, unskilled labour-intensive and human capital-intensive products; and with Thailand in the human capital-intensive goods. There is no a clearly predicted revealed comparative advantage over Singapore and Vietnam based on the four indices, though the Balassa Index indicates a revealed comparative advantage in natural resource- and technology-based goods over Singapore and in agricultural and natural resource-based as well as unskilled labour-intensive goods with Vietnam. The changes in comparative advantage over the past two decades indicate that commodity mix complementarity exists in certain goods categories and with individual countries. The revealed comparative advantage suggests a wide scope for the future expansion of ASEAN–China bilateral trade. This includes that China shall enlarge its imports of agricultural and mineral resource-intensive products from those resource-rich ASEAN economies while exporting in turn more labour-intensive and human capital-intensive goods. From this, it should not be surprising to observe a dynamic economic relationship between ASEAN and China, interacting both competitively and complementarily. This appears to accord with what the standard neo-factor proportion paradigm implies as a result of high economic development and structural changes. The evolution of the RCA indices over time and the

Table 7 Revealed comparative advantages of China with respect to selected ASEAN countries by commodity group, 1993–2013

Commodity group	Indonesia Mean	SD	Malaysia Mean	SD	Myanmar Mean	SD	Philippines Mean	SD	Singapore Mean	SD	Thailand Mean	SD	Vietnam Mean	SD
(a) Agricultural resource intensive														
RCA	1.60	0.38	1.37	0.24	0.78	0.34	1.49	0.30	0.57	0.18	0.87	0.28	1.19	0.20
RTA	−0.74	0.75	0.01	0.65	−7.78	3.54	1.12	0.33	0.42	0.22	−0.29	0.41	−0.53	0.65
lnRXA	0.46	0.28	0.30	0.18	−0.32	0.37	0.38	0.23	−0.61	0.29	−0.19	0.33	0.16	0.17
RC	−0.47	0.32	0.09	0.46	−2.36	0.30	1.65	0.75	1.40	0.62	−0.31	0.41	−0.31	0.43
(b) Mineral resource intensive														
RCA	1.60	0.34	0.52	0.16	1.47	0.22	0.98	0.17	1.00	0.21	0.87	0.25	1.77	0.45
RTA	−0.28	0.67	0.04	0.25	−0.53	0.88	0.30	0.59	−0.22	0.26	0.39	0.40	−1.79	1.32
lnRXA	0.46	0.30	−0.70	0.30	0.37	0.14	−0.04	0.18	−0.02	0.21	−0.18	0.29	0.53	0.27
RC	−0.19	0.32	0.11	0.55	−0.23	0.50	0.62	0.78	−0.22	0.25	0.71	0.78	−0.54	0.47
(c) Technology-intensive goods														
RCA	1.04	0.15	1.07	0.08	0.93	0.10	0.90	0.09	1.05	0.08	1.09	0.09	0.75	0.08
RTA	0.76	0.24	−0.02	0.09	0.78	0.12	−0.18	0.27	−0.06	0.15	−0.14	0.30	0.37	0.24
lnRXA	0.03	0.15	0.07	0.07	−0.08	0.13	−0.12	0.10	0.04	0.08	0.09	0.08	−0.29	0.12
RC	1.37	0.45	−0.02	0.09	1.87	0.32	−0.14	0.32	−0.05	0.14	−0.10	0.20	0.93	0.67
(d) Unskilled labour intensive														
RCA	0.96	0.16	0.98	0.17	1.03	0.22	1.23	0.20	0.94	0.27	0.80	0.19	1.45	0.33
RTA	−0.66	0.57	0.14	0.57	0.11	0.87	0.81	0.36	0.71	0.23	−1.10	0.78	−3.19	2.26
lnRXA	−0.04	0.21	−0.04	0.17	0.01	0.19	0.19	0.17	−0.11	0.35	−0.25	0.23	0.34	0.26
RC	−0.63	0.25	0.35	0.74	0.35	0.83	1.27	0.65	1.42	0.30	−0.82	0.32	−0.96	0.60
(e) Human capital intensive														
RCA	1.36	0.33	1.15	0.24	0.78	0.35	1.33	0.28	0.88	0.20	1.13	0.38	0.65	0.21
RTA	0.69	0.54	0.40	0.52	0.14	0.71	0.48	0.80	−0.60	0.57	0.27	0.65	−2.12	1.11
lnRXA	0.30	0.34	0.12	0.20	−0.33	0.39	0.26	0.21	−0.15	0.21	0.07	0.31	−0.49	0.34
RC	0.82	0.58	0.52	0.62	1.37	1.53	0.79	0.95	−0.50	0.44	0.38	0.60	−1.42	0.57

Note: the mean and standard deviation of the RCA indices for Vietnam were calculated over the period 2001–2013 and for Myanmar over the period from 2006 to 2013. *SD* stands for standard deviation

relatively high standard variation for Vollrath's three alternative RCA measures also indicate that China is likely to follow the general industrialisation paradigm in shifting and composing its export structures.

4   Bilateral FDI Flows Between China and ASEAN

Since the reform and opening up in the end of the 1970s, especially after Deng's southern tour in the early 1990s, China has achieved remarkable success in attracting foreign direct investment (FDI) and become one of the top destinations in the world for FDI since 2003. According to UNCTAD World Investment Report 2004, FDI inflows to China in 2003 reached $53.5 billion making China the world's largest recipient of total FDI but the world's second-largest recipient when the US FDI figure was revised to US$56.8 billion in its World Investment Report 2005. By 2013, the utilised FDI in China has reached US$118.7 billion. The recent UNCTAD report shows that China became the top destination for inward FDI again in 2014, with an estimated amount of over US$128 billion of FDI received, despite concerns of China's economic slowdown. This has drastically changed the economic geography in the Asia-Pacific region and is often viewed as a threat to the ASEAN countries. There has been a serious concern about FDI diversion from these countries to China.

However, one notable feature observed in recent years is that foreign investment into China's traditional manufacturing has experienced a rapid decline but rising in the Chinese service sector. This change in sectorial distribution reflects largely the response of MNEs towards the slowing down of China's economic expansion and a transition of its economic structure. This implies that the main engine of the economy in China is no longer manufacturing but the service sector and domestic consumption. Due to the rapid increases in labour costs, China's traditional advantage in the manufacturing sector is decreasing, especially in comparison with some of the ASEAN countries. This has become one of the important factors explaining the decline of FDI inflow into the manufacturing and also the driving force behind the steadily increase in China's outward FDI in recent years.

In contrast to the strong trade links between ASEAN and China, investment flows between the two are relatively weak. Figure 2 presents the bilateral direct investment flows between ASEAN and China. China used to be a receiver of foreign direct investment rather than a source in the world, particularly in ASEAN in the 1980s and the 1990s. As it can be seen in Fig. 2, the role played by ASEAN as an important source of FDI to China has been steadily decreasing during the period 1997–2012, while increasingly ASEAN has become an important destination for China's outward investment. One may note that since 2005 the share of FDI flowing in from ASEAN to China has increased from 4.3 % in 2005 to 6.3 % in 2012, but still far below the share of 9.3 % in 1998. As it can be seen in Table 8, Singapore is the largest investor in China, followed by Malaysia, Brunei, Indonesia, the Philippines and Thailand. The new ASEAN members are not an important
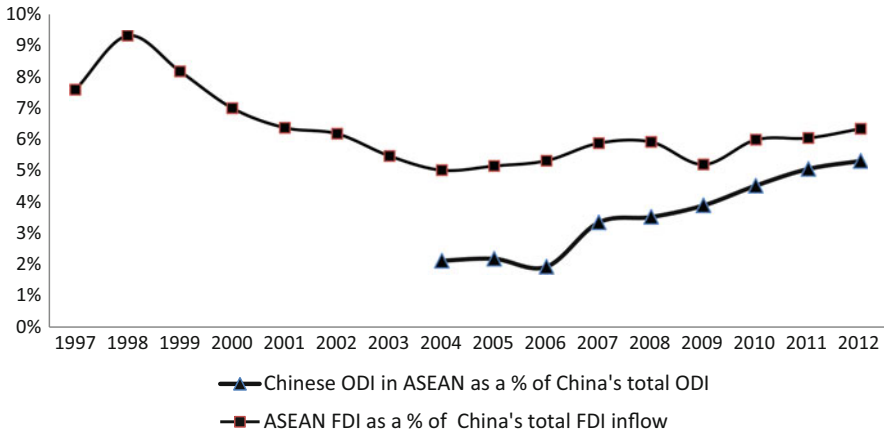
Fig. 2 Bilateral FDI flows between ASEAN and China, 2003–2012. *Source*: China's Ministry of Commerce, Statistical Bulletin of China's Outward Foreign Direct Investment 2007–2012 and the Chinese Financial Yearbook, with authors' own calculations

source of FDI to China. This finding is consistent with the conclusion of Cheong and Plummer (2009) that ASEAN countries increased their FDI stock in each other after the Asian financial crisis, and there was no evidence of FDI competition with China before 2006.

With China's rapidly integrating with the global economy, its outward FDI has picked up rapidly in recent decades, especially since China's WTO entry in 2001, to make overseas acquisitions to gain technology and market access and international experience. China has transformed into a major source country of FDI in the world and become the third-largest source of foreign direct investment after the USA and Japan since 2012. According to the recent UNCTAD report, China's annual FDI outflow amounted to US$87.8 billion in 2012 and US$101 billion in 2013. ASEAN has become the second-largest recipient of China's outward FDI in the recent years, especially since the ASEAN–China Investment Agreement was signed in 2009. China's cumulative FDI flows into ASEAN amounted to just $631 million dollars from 1995 to 2003, less than 0.2 % of the region's total global inflows. In 2012, ASEAN emerged to be the third-largest destination for China's outward investment, only after Hong Kong and European Union, and the third-largest source of FDI inflow in China. China's outward FDI in ASEAN grew at an average annual rate of 68 % in 2003–2012, and its outward FDI stock increased to US$28.2 billion in 2012 from US$587 million in 2003 (see Tables 9 and 10). As it can be seen in Table 10, Singapore has been the most popular destination for China's outward FDI in the region, followed by Indonesia, Myanmar, Cambodia, Thailand, the Laos, Vietnam, Malaysia, the Philippines and Brunei.

Table 11 and Fig. 3 report China's FDI flows and stocks in ASEAN by sector. In 2012, 45.8 % of China's FDI flows went into mining and energy-related business, over 22 % went into the services industries, 16.2 % went into manufacturing and

Table 8 ASEAN utilised FDI in China (in US$ millions)

	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
1995		1.31	111.63		259		105.78	1851.2	288.24	28.3
1996		7.44	93.54		459.95	0.58	55.51	2243.6	323.31	1.45
1997	0.09	5.45	79.98	0.39	381.83	2.68	155.63	2606.4	194	1.54
1998	1.83	2.9	68.97	1.12	340.49	5.11	179.27	3404	205.38	14.14
1999	0.18	2.48	129.17		237.71	11.01	117.28	2642.5	148.32	0.13
2000		1.94	146.94	3.07	202.88	2.3	111.12	2172.2	203.57	0.56
2001	0.1	9.3	159.64	1.04	262.98	2.26	209.39	2143.6	194.21	1.48
2002	17.36	13.74	121.64	5.15	367.86	16.76	186	2337.2	187.72	2.51
2003	52.6	12.52	150.13	0.4	251.03	3.51	220.01	2058.4	173.52	3.31
2004	96.05	20.69	104.52	4.25	385.04	8.78	233.24	2008.1	178.68	1.14
2005	160.39	2.76	86.76		361.39	3.74	188.9	2204.3	95.9	1.27
2006	294.21	2.12	100.68		393.48	7.36	134.34	2260.5	144.82	13.66
2007	376.88	6.34	134.41	3	397.25	3.26	195.32	3184.6	89.48	0.73
2008	340.42	2.92	167.25	6.7	246.96	3.3	126.87	4435.3	129.21	2.07
2009	348.12	13.37	111.72	2.43	428.74	3.39	111.01	3604.8	48.66	5.92
2010	309.56	10.35	76.84	9.45	294.33	3.52	138.06	5428.2	51.34	2.03
2011	255.82	17.37	46.07	5.88	358.28	10.21	111.85	6096.8	101.2	1.29
2012	151.09	16.6	63.78	2	317.51	3.84	132.21	6305.1	77.72	3.16
2013	133.19	22.51	126.23		280.53	5.85	67.26	7228.7	483.05	
2014					157.49		97.07	5826.7		

Sources: CEIC

Table 9 China's outward FDI, by region, 2012 (in US$ billions)

Economies	Flows			Stock	
	Amount	Growth rate (%)	Share (%)	Amount	Share (%)
Hong Kong	51.238	43.7	58.35	306.372	57.60
European Union	6.120	−19.1	6.97	31.538	5.93
ASEAN	6.100	3.3	6.95	28.238	5.31
USA	4.048	123.5	4.61	17.080	3.21
Australia	2.173	−31.3	2.47	13.873	2.61
Russian Federation	0.785	9.6	0.89	4.888	0.92
The rest of the world	17.340	28.6	19.75	129.952	24.43
The world	87.804	17.61	100	531.941	100.00

Source: China's Ministry of Commerce and UNCTAD, with authors' calculations

Table 10 China's outward FDI in ASEAN, 2003–2012 (in US$ millions)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Values of China's outward FDI flows										
ASEAN	*119*	*196*	*158*	*336*	*968*	*2484*	*2698*	*4405*	*5905*	*6100*
Brunei	–	–	2	–	1	2	6	17	20	1
Cambodia	22	30	5	10	64	205	216	467	566	560
Indonesia	27	62	12	57	99	174	226	201	592	1361
Laos	1	4	21	48	154	87	203	314	459	809
Malaysia	2	8	57	8	−33	34	54	164	95	199
Myanmar	–	4	12	13	92	233	377	876	218	749
Philippines	1	–	5	9	5	34	40	244	267	75
Singapore	−3	48	20	132	398	1551	1414	1119	3269	1519
Thailand	57	23	5	16	76	45	50	700	230	479
Vietnam	13	17	21	44	111	120	112	305	189	349
Values of China's outward FDI stocks										
ASEAN	*587*	*956*	*1256*	*1764*	*3954*	*6487*	*9579*	*14,358*	*21,469*	*28,245*
Brunei	–	–	2	2	4	7	17	46	66	66
Cambodia	59	90	77	104	168	391	633	1130	1757	2318
Indonesia	54	122	141	226	679	543	799	1150	1688	3098
Laos	9	15	33	96	302	305	536	846	1276	1928
Malaysia	101	123	187	197	275	361	480	709	798	1026
Myanmar	10	20	24	163	262	500	930	1947	2182	3094
Philippines	9	10	19	22	43	87	143	387	494	593
Singapore	165	233	325	468	1444	3335	4857	6069	10,603	12,383
Thailand	151	182	219	233	379	437	448	1080	1307	2127
Vietnam	29	160	229	254	397	522	729	987	1291	1604

Source: China's Ministry of Commerce and UNCTAD

about 10 % went into construction. Within the services sector, 11.2 % went into the wholesale and retail trade and 7.2 % into business services, while finance and transportation and storage each absorbed 1.5 % of China's FDI flows. The sectoral distribution of China's FDI stocks showed a similar pattern, except in the finance

Table 11 Industrial distribution of China's outward FDI to ASEAN, 2012 (in US$ millions)

Industries	Flows	Share (%)	Stock	Share (%)
Production and supply of electricity, gas and water	1081.79	17.7	5119.96	18.1
Mining	1714.34	28.1	4033.28	14.3
Wholesale and retail trade	682.88	11.2	3558.30	12.6
Leasing and business service	440.41	7.2	3387.69	12.0
Manufacturing	988.21	16.2	3347.56	11.9
Finance	93.99	1.5	2577.48	9.1
Construction	600.94	9.9	2216.39	7.9
Transport, storage and post	93.19	1.5	2098.15	7.4
Agriculture, forestry, husbandry and fishing	299.71	4.9	996.67	3.5
Scientific research and technical service	24.64	0.4	452.41	1.6
Real estate	44.53	0.7	182.06	0.6
Information transmission, computer services and software	6.28	0.1	120.03	0.4
Resident service, repair and other services	12.02	0.2	74.78	0.3
Lodging and catering services	12.41	0.2	29.30	0.1
Culture, sports and entertainment	3.08	0.1	17.84	0.1
Others	2.02	0.1	25.64	0.1
Total	6100.44	100.0	28237.54	100.0

Source: Ministry of Commerce of People's Republic of China, "2012 Statistical Bulletin of China's Outward Foreign Direct Investment"

sector and transportation and storage sector where the former accounted for 9.1 % of the FDI stocks and the latter for 7.4 %. It is also interesting to note from Fig. 3 that the investment pattern and sectoral distribution of China's outward FDI do not change substantially over time, reflecting largely the underlying motives of Chinese MNEs, namely, seeking market to expand/defend its overseas trade market, securing resources such as oil and minerals, securing advanced technologies and knowledge as well as strategic distribution channels and securing efficiency and competitiveness through production relocation to cheaper resources and input. The diversity in developmental stages of the ASEAN economies and complementarity of the regional production system provides Chinese firms with promising economic opportunities for trade and investment and fosters a new form of regional division of labour and specialisation with the rapid increases of trade in tasks between ASEAN and China. This provides further empirical support to our early discussion that increasingly it is a country's comparative advantage of completing a specific task along the regional value chain that determines the patterns of its trade and specialisation.

Closer economic ties between ASEAN and China will create new business opportunities for both economies. ASEAN offers a great diversity of consumer markets and investment opportunities for the Chinese firms, especially in the areas of natural resources, agriculture, electronics, large consumer markets and rapidly
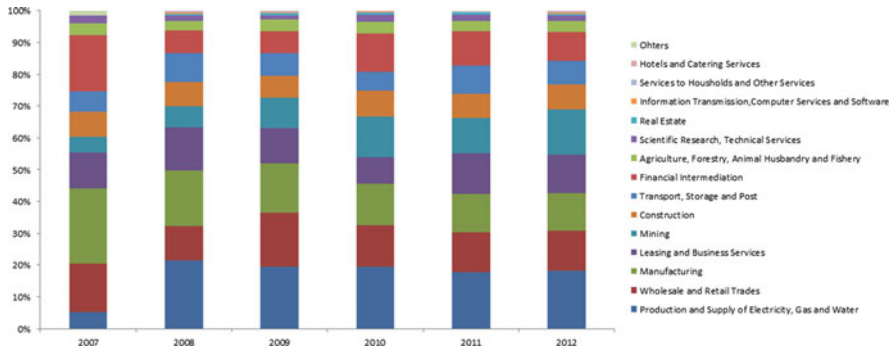
Fig. 3 China direct investment flow in ASEAN by sector (in percentage). *Source*: Ministry of Commerce of People's Republic of China, Statistical Bulletin of China's Outward Foreign Direct Investment 2007–2012, with authors' calculations

developing infrastructure projects. China's rapid urbanisation and shifts from export-led growth to domestic consumption-led growth based on technology innovation have also resulted in strong demand for both consumer goods and commodities and capital goods from the world. As we have early analysed, ASEAN economies have benefited from China's strong domestic demand since the recent global recession, in particular for commodities and capital goods. Rapid urbanisation and the rise of middle-class families in China will change consumer lifestyles and have sizeable implications for imports of quality and luxury products and services. ASEAN could still benefit from China's urbanisation process and shifts towards consumption-led growth by integrating themselves along the regionally integrated production chain or supply chain centred in China.

Recently China has proposed the "Belt and Road" initiative for the purpose of promoting and enhancing highly efficient allocation of resources and deep integration of markets, regional policy coordination, financial integration and trade liberalisation across countries along the Belt and Road. The "Twenty-First Century Maritime Silk Route Economic Belt" (also called "the Maritime Silk Road") is a complementary initiative aimed at investing and fostering collaboration in Southeast Asia, Oceania and North Africa. Partly to complement and support the Belt and Road's development, two regional institutions, Asian Infrastructure Investment Bank (AIIB) and New Silk Road Fund (NSRF), are to be established. The implementation of this initiative will offer opportunities for new complementarities and further reshape the patterns of trade, investment and infrastructure development in the region.

5   Concluding Remarks

China's trade and economic relations with the countries of ASEAN have been long-standing, despite the debate over the complementary and competitive economic relations between them. In this paper, we have examined the economic cooperation

and interdependence between China and ASEAN through trade and flows of investment in the context of the increasing significance of regional production fragmentation. It has been shown that China has become increasingly an important economic partner for ASEAN and is much more important as a source of supply for imports of the ASEAN countries rather than as an outlet for ASEAN's exports. China has been ASEAN's largest trading partner since 2009, with more than 16 % of ASEAN's imports coming from China in 2013, while ASEAN continues to be China's third-largest trading partner since 2010 with the implementation of the CAFTA. The process of asymmetric trade interdependence between ASEAN and China is even more radical on the country level, especially for the new ASEAN member countries. Trade in intermediate goods, especially in parts, components and accessories, has become the most dynamic sector of ASEAN's international trade with China. This lends supports to the proposition that the nature of international trade in this region has been changed from trade in goods to trade in tasks. Driven by the rapidly growing Chinese economy, the region has formed a new format of international specialisation, characterised by its intricate global production sharing and intraregional network trade. It is therefore a country's comparative advantage of completing a specific task along the global value chain, rather than the final goods, that determines its specialisation. The increasing fragmentation of value chains has led to a steady increase of trade flows in intermediate goods, especially in the manufacturing sector, between China and these ASEAN countries. The changes in revealed comparative advantage over the past two decades suggest a wide scope for the future expansion of ASEAN–China bilateral trade, which further confirms that commodity mix complementarity exists in certain goods categories and on the country level.

It has also been shown that in the past decades China has transformed from one of the largest FDI recipients into a major source country of FDI in the world to gain technology and market access and international experience. ASEAN has become the second-largest recipient of China's outward FDI in the recent years, with Singapore being the most popular destination for China's outward FDI in the region. It is found that China's outward FDI flows into ASEAN are largely focused on mining and energy-related sectors, services industries and manufacturing and construction. With the rising labour costs, Chinese outward FDI increasingly moved into offshoring production into the new ASEAN members. It is believed that China's rapid urbanisation and recent shifts towards consumption-led growth as well as the "Belt and Road" initiative will offer opportunities for new complementarities and further reshape the patterns of trade, investment and infrastructure development in the region.

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