2. Development of the automotive value chains in the Mekong subregion

The automotive industry, which covers all companies and activities involved in the manufacturing of automobiles, parts and components, is the largest global industrial sector with a total unit production of nearly 80 million in 2011 (OICA, 2012) and total sales of approximately US$ 2.2 trillion in 2008 (FPRI, 2012). Its final products, parts and components are the second most-traded manufactured goods in the world after electronic appliances and equipment, accounting for approximately 7.5 per cent of world trade in 2010.[iii] Automakers have adopted an expansion strategy in Asia, particularly given the maturing markets of the European Union, Japan and the United States, with growth coming particularly from Asian developing countries (FPRI, 2012).

Since the 1960s, Thailand has gradually emerged as the major production base of automobiles and intermediaries for both Japanese and Western automakers. Later, the 1980s and the 1990s saw a wave of assembly and supplier plant construction in Thailand and Viet Nam, respectively, as declining tariffs and transportation costs allowed for more flexibility in assembling vehicles and sourcing components from various countries. The establishment of assembly lines in Cambodia in the 2000s further strengthened this trend. Myanmar recently started the mass production of commercial vehicles. Presently, major suppliers have begun sourcing labour-intensive parts and components from Lao People's Democratic Republic.

Along the way, automakers have taken advantage of regional trade and investment liberalization, such as the ASEAN Economic Community [iv] to develop production facilities in South-East Asia and enhance the division of labour within the region in order to achieve greater market access and economies of scale (Kohpaiboon and Yamashita, 2011). [v] However, economic integration has also evolved beyond the geographical scope of ASEAN, building the formal economic partnership of ASEAN+6 with China, India, Republic of Korea, Australia, Japan and New Zealand. Table 1 summarizes regional trade agreements pertinent to ASEAN and thus the Mekong subregion.

Table 1: List of regional trade agreements including the Mekong subregion

Agreement	Coverage	Type	Date of entry into force	Current signatory	Composition of regional trade agreement	Subregion
ASEAN Free Trade Area (AFTA)	Goods	Free trade agreement	28 January 1992	Ten ASEAN countries	Plurilateral	South-East Asia
ASEAN Trade in Goods Agreement (ATIGA)	Goods	Free trade agreement	17 May 2010	Ten ASEAN countries	Plurilateral	South-East Asia
ASEAN - China	Goods and services	Partial scope agreement and economic integration agreement	Goods: 1 January 2005 Services: 1 July 2007	Ten ASEAN countries and China	Bilateral; one party is a regional trade agreement	East Asia and South-East Asia
ASEAN - Japan	Goods	Free trade agreement	1 January 2008	Ten ASEAN countries and Japan	Bilateral; one party is a regional trade agreement	East Asia and South-East Asia
ASEAN – Republic of Korea	Goods and services	Free trade agreement and economic integration agreement	Goods: 1 January 2010 Services: 1 May 2009	Ten ASEAN countries and the Republic of Korea	Bilateral; one party is a regional trade agreement	East Asia and South-East Asia
ASEAN - Australia - New Zealand	Goods and services	Free trade agreement and economic integration agreement	1 January 2010	Ten ASEAN countries, Australia and New Zealand	Plurilateral; one party is a regional trade agreement	Oceania and South-East Asia
ASEAN - India	Goods	Free trade agreement	1 January 2010	Ten ASEAN countries and India	Bilateral; one party is a regional trade agreement	South-East Asia and South Asia

Source: APTIAD (2012).

When looking at the current tariff schedules for automobiles and auto parts in the Mekong subregion (table 2), the countries in the subregion, except for Lao People's Democratic Republic and Myanmar, have provided preferential tariff rates within ASEAN, although automobiles and auto parts appear on the sensitive list under the ASEAN Trade in Goods Agreement (ATIGA). Lao People's Democratic Republic and Myanmar apply flat rates with 122 per cent and 30 per cent, respectively, on both completely-built units (CBU) and complete knock-down (CKD) kits regardless whether it involves imports from within or outside ASEAN. For the category of intra-ASEAN imports of CBUs, Viet Nam applies the second highest rate with 70 per cent whereas the tariff rates of Cambodia and Thailand are significantly lower, with 0 to 5 per cent and 0 per cent, respectively. If the imported CBUs originate from outside ASEAN, then Cambodia, Thailand and Viet Nam use a 35 per cent, 80 per cent and 70-82 per cent tariff, respectively. While the same tariff rate is in place for both CBUs and CKDs in Cambodia, Thailand and Viet Nam apply higher rates on CKDs from outside ASEAN (30 per cent and 65-78 per cent, respectively). The applied tariff rates for auto parts range from 0 per cent in Thailand, through 0 to 5 per cent in Cambodia to 5 per cent in Viet Nam if the parts come from another ASEAN country. Otherwise, Cambodia charges 7 to 15 per cent, Thailand 5 to 30 per cent and Viet Nam 0 to 30 per cent. It is thus clear that Lao People's Democratic Republic regulates automotive imports to the greatest degree, while Cambodia applies generally lower tariffs to open its automotive market.

Table 2: Tariff schedules for automobiles and auto parts in the Mekong subregion

			Cambodia	Lao PDR	Myanmar	Thailand	Viet Nam
Current Tariff Rates for Personal Cars in per cent (Engine capacity ≤ 2000 cc)	CBU	Within ASEAN	0-5	122	30	0	70
		Outside ASEAN	35	122	30	80	70-82
	CKD	Within ASEAN	0-5	122	30	0	0-30
		Outside ASEAN	35	122	30	30	65-78
Current Tariff Rates for Auto Parts in per cent	Within ASEAN		0-5	n.a.	n.a.	0	5
	Outside ASEAN		7-15	n.a.	n.a.	5-30	0-30

Source: Compiled from data in the 2012 Annual Report of the AMEICC Working Group on Automobile Industry.
Note: CBU stands for a completely-built unit, while CKD is a complete knock-down kit.

In addition to trade and investment liberalization, improvements in transport infrastructure and logistics development have contributed to the expansion of the automotive value chains in the Mekong subregion. A number of cross-border road connections and their linkages to seaports and airports within the subregion have been upgraded, a necessity in helping facilitate the movement of automotive parts and components (Ksoll and Brimble, 2012). Further, the signing of the Cross-Border Transport Facilitation Agreement (CBTA) by the five countries of the Mekong subregion and China in 1999 was a major step in helping to improve cross-border logistics. This agreement aims to facilitate and simplify procedures required for cross-border cargo transportation, including regulations and measures such as single-window customs

inspection, subregional road transport permits and “fast tracks” at border checkpoints (ADB, 2011).

Table 3 provides an overview of the automotive industry and market in the Mekong subregion. The recent value estimates of automotive trades in the Mekong subregion are over US$ 19.1 billion in exports and US$ 11.5 billion in imports. Thailand and Viet Nam are the first and second biggest trading countries for automotive products in the subregion. Production capacities demand and motorization rates in the subregion can also be seen in table 3. Thailand is by far the largest car market and vehicle producer in the subregion, while Viet Nam is the second-largest car market and producer, accounting for 8.2 per cent of total vehicle production in Thailand. It is important to note that car sales exceeded car production in the countries in the subregion, except for Thailand, where approximately half the volume produced was exported in 2010, mainly to South-East Asia, South Asia, Japan, the Middle East and Oceania. Regarding Myanmar, it can be assumed that the number of vehicles sold also exceeds the number of vehicles produced, as the sales number for Myanmar does not reflect the import of second-hand cars, which is the major source of automobile supply. Generally, the observation of this sales-to-production ratio indicates that opportunities for expansion still exist to serve consumer demand in this subregion.

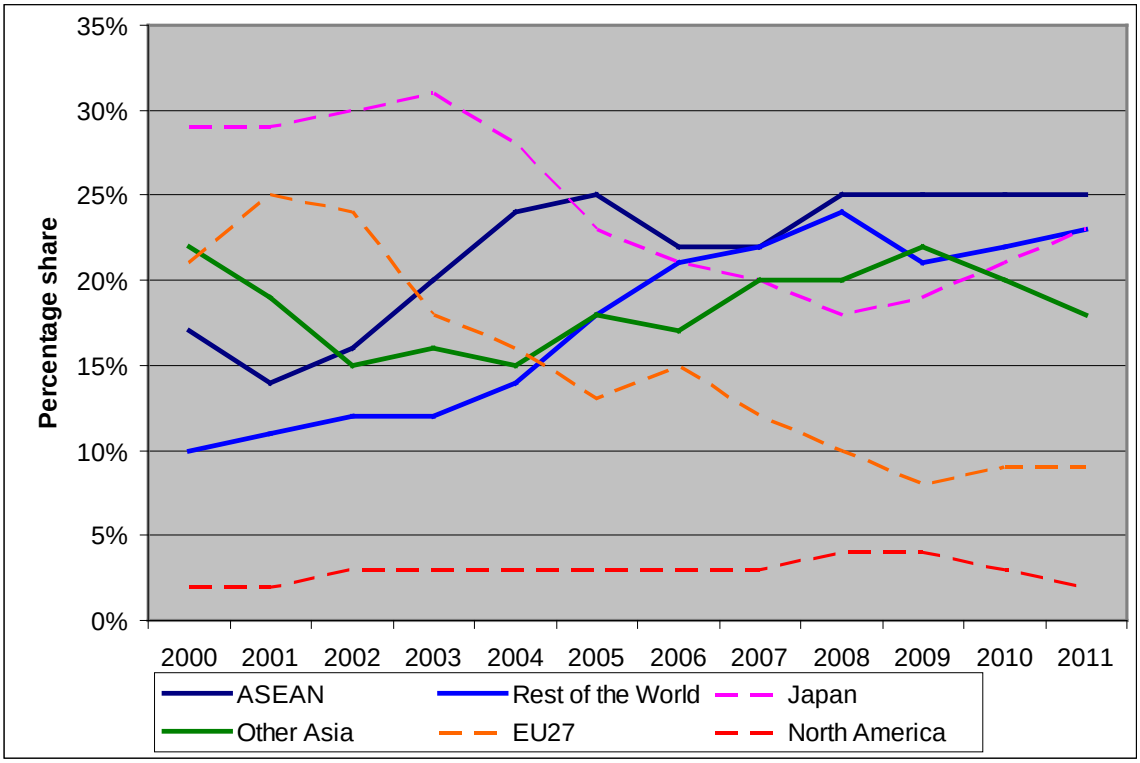
Table 3: Automotive industry in the Mekong subregion

Country	Population (million, 2011)[1]	Population growth (per cent/year)[1]	GDP per capita (current US$, 2011)[2]	Annual average GDP growth (per cent, 2006-2011)[1]	Export value of road vehicles (million US$, 2011, SITC Rev.2: 78)[3]	Import value of road vehicles (million US$, 2011, SITC Rev.2: 78)[3]	Total production in units (2011)[4]	Total vehicle sales in units (year)[4]	Sales as a percentage of production	Motorization as units per 1,000 population (year)[5]
Cambodia	14.3	1.2	854 (estimate)	8.2	298.1	416.8	6,300[6]	27,275 (2010)	433	18 (2005)
Lao People's Democratic Republic	6.3	1.3	1,320	9.6	7.6[8]	368.5[8]	0	85,000 (2011)	--	2 (2007)
Myanmar	48.3	0.8	824 (estimate)	5.5[7]	0.003 (2010)	156.8 (2010)	1,779	1,779 (2011)	100	5 (2009)
Thailand	69.5	0.5	5,395	3.6	18,043.4	8,317.9	1,457,795	794,081 (2011)	55	57 (2006)
Viet Nam	87.8	1.0	1,374 (estimate)	8.2	721.2 (2010)	2,288.9 (2010)	125,147	142,533 (2011)	114	13 (2007)

Sources: (1) World Bank (2012), World Development Indicators; (2) IMF World Economic Outlook Database (October 2012); (3) UN Comtrade (2012); (4) 2012 Annual Report of the AMEICC Working Group on Automobile Industry (AMEICC, 2012); (5) ESCAP (2012) The Statistical Yearbook for Asia and the Pacific 2012; (6) the author's interview with automakers in Cambodia; (7) estimate from the CIA (2012) The World Factbook for 2009-2011; and (8) International Trade Centre (2012), Trade Map, HS 4 Code 87 (vehicles other than railway, tramway).

Automotive production and supply linkages in the Mekong subregion through global value chains have been reflected in the increasing South-South trade flows of automotive products, such as parts, components, complete knock-down kits (CKD) and automobiles, at both regional and global levels. Figure 2 illustrates various regions' share of automotive product flows with the Mekong subregion, using SITC Rev. 2 (78 for road vehicles). During the 2000s the importance of South-South trade in automobiles and intermediates has increased, while the importance of advanced countries such as the European Union 27, Japan and North America declined or stagnated. In particular, the share of automotive product trades within South-East Asia and with the rest of the world have both increased.

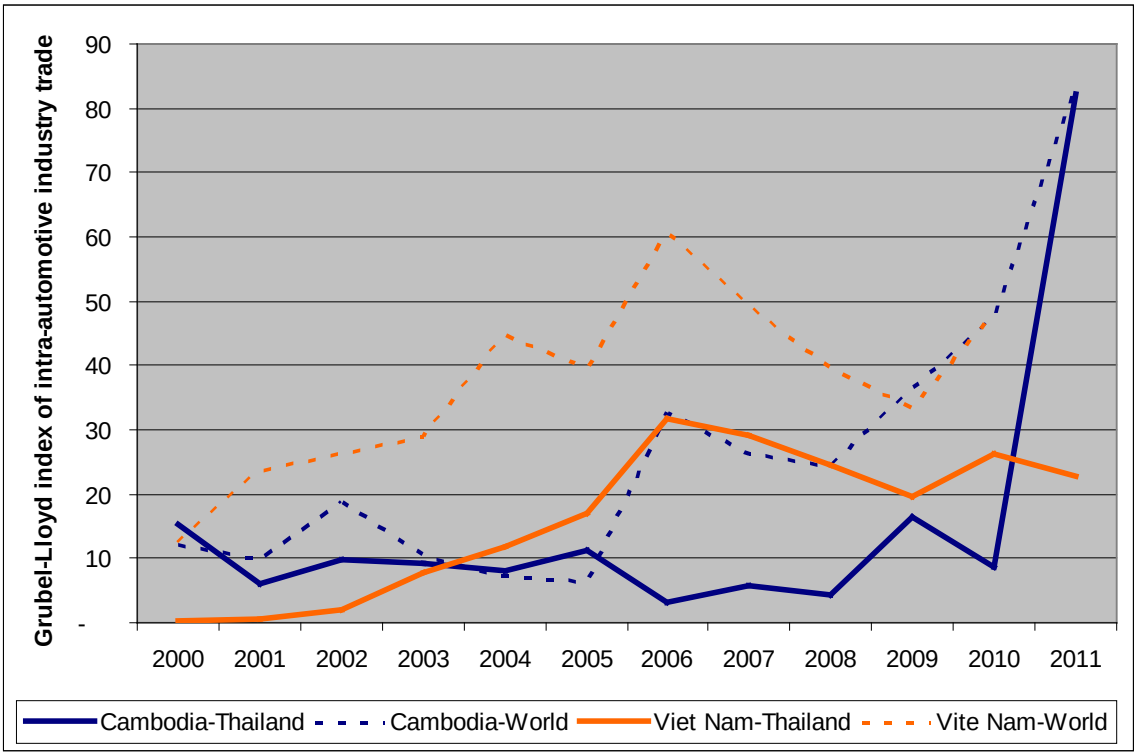
Figure 2: Share of automotive goods trade, Mekong subregion



Source: The author's calculation using data from the United Nations Comtrade.

Evidence of strengthened linkages within automotive value chains in the Mekong subregion is demonstrated by growing intra-industry trade, measured by the Grubel-Lloyd (GL) index (cf. Srivastava and Kumar, 2012). Figure 3 shows the GL index for automotive products between three countries in the Mekong subregion, namely Cambodia, Thailand and Viet Nam. Intra-industry trade as compared to inter-industry trade has increasingly characterized the trade of automotive products within the subregion during the 2000s. This means that there has been growing trade within the automotive value chains across borders, in this case, between Cambodia and Thailand as well as Thailand and Viet Nam. In addition, the GL index has also risen at the world level, indicating increasing integration of the Cambodian and Vietnamese automotive industries within the global automotive value chains. The trend highlights that these value chains have been strengthening both within and beyond the subregion.

Figure 3: Growth in intra-automotive industry trade 2000 to 2011



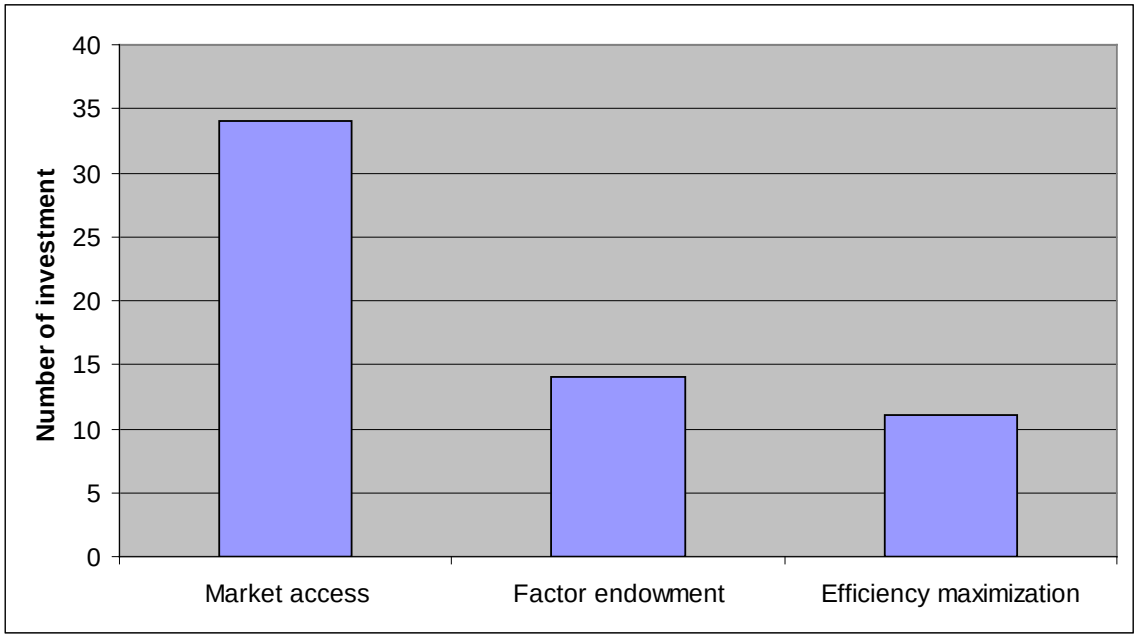
Source: ESCAP's calculation using the UN Comtrade database.

Notes: The degree of intra-automotive industry trade is measured by the Grubel-Lloyd index at the sectoral level (Grubel and Lloyd, 1975). Intra-industry trade is defined as the trade of goods between two countries within the same category of a standard industrial classification. The aggregated index is calculated as $GL_i = \left[1 - \frac{|X_i - M_i|}{(X_i + M_i)} \right] * 100$, where GL_i is the Grubel-Lloyd index of intra-industry trade in product category *I*, and X_i and M_i denote total exports and imports of the product category, respectively. GL_i takes value between 0 and 100. GL_i = 0 indicates that there is only inter-industry trade in the respective trade flows, while GL_i =100 is interpreted as there is only intra-industry trade within the product category. The higher the index, the more the intra-sector trade between the countries. For this case, SITC (Rev.2) two-digit code (i.e. 78 for road vehicles) was used. Export-side data, a single series of trade values, were taken as the base data except that Thailand's imports from Viet Nam were used due to the lack of Viet Nam export data in 2011. Total imports from the world were also taken as reported in the UN Comtrade.

Figure 4 presents the major motives for FDI in the automotive industry in the Mekong subregion. The main reasons for the expansion of the global automotive value chains can be grouped under three broad corporate strategies: (1) market access; (2) access to factor endowment; and (3) efficiency maximization. Firms are motivated to enter new markets for their further growth (Czinkota and Ronkainen, 2007). It is also natural that firms seek to access low-cost labour, scarce materials and advanced technologies across the globe (Handfield, 2007). They also aim to reduce costs within the overall value chain for higher productivity (Christopher, 2011), often through

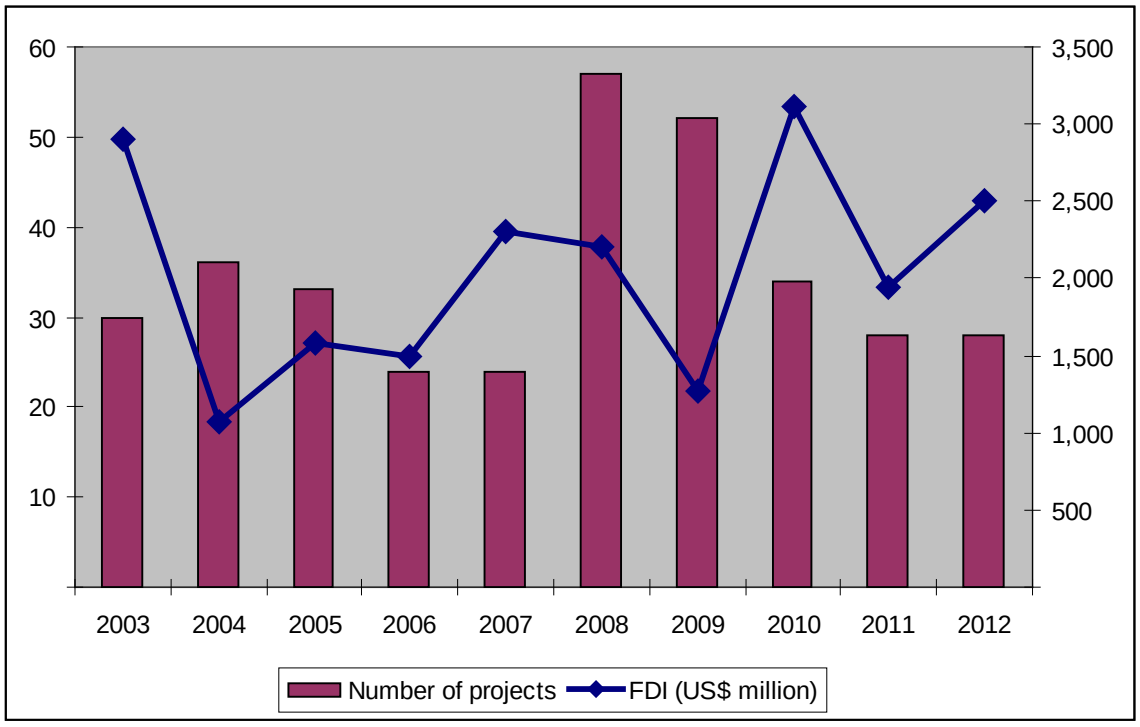
offshoring.[vi] While automakers and their suppliers seek resources and cost reduction by entering the subregion, a majority of automotive investors have aimed to access the markets in the subregion through their direct investment. Figure 5 also shows the trend of strong FDI inflows to the automotive industry in the subregion.

Figure 4: Major motives of FDI for the automotive industry in the Mekong subregion



Source: The author's compliance based on the data of Financial Times Ltd., fDi Intelligence (2013).

Figure 5: FDI inflows to the automotive industry in the Mekong subregion



Source: The author's compliance based on data from Financial Times Ltd., fDi Intelligence (2013).
Note: No FDI project for Lao People's Democratic Republic is reported during the period.