Chapter 9

ASEAN+1 FTAs and Global Value Chains in East Asia: The Case of the Philippine Automotive and Electronics

Maureen Ane D. Rosellon
Philippine Institute for Development Studies

Erlinda M. Medalla
Philippine Institute for Development Studies

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CHAPTER 9

ASEAN+1 FTAs and the Global Supply Chain in East Asia: The Case of the Philippine Automotive and Electronics Sectors

MAUREEN ANE D. ROSELLON

Philippine Institute for Development Studies

ERLINDA M. MEDALLA[1]

Philippine Institute for Development Studies

How are the ASEAN+1 free trade agreements facilitating the flow of goods in the supply chain in East Asia? This chapter looks at the experience of the Philippine automotive and electronic sectors – two sectors that are well integrated into the supply network in East Asia. Using firm interviews, the study outlines the firms' segment of the supply chain and identifies impediments at points critical for firms, particularly in relation to free trade agreements. FTA utilization and awareness, trade facilitation, logistics and government support are some of the issues that come to light.

[1] Research Associate and Senior Research Fellow, respectively, Philippine Institute for Development Studies.

1. Introduction

ASEAN in recent years signed free trade agreements (FTAs) with China, Japan, Korea, India, Australia and New Zealand. ASEAN--China (ACFTA) entered into force in 2005, ASEAN--Japan Comprehensive Economic Partnership (AJCEP) in 2008, ASEAN--Korea (AKFTA) in 2010, ASEAN--India (AIFTA) in 2010 and ASEAN--Australia--New Zealand (AANZFTA) in 2010. As in other free trade agreements that have been forged between countries, the objective is to reduce barriers to exchange of goods and services, in terms of tariffs, quotas, technical standards or regulations (domestic or international) that hinder trade.

In East Asia, trade in parts and components has been getting some attention. This is attributed to the rise in production sharing – sometimes referred to as international production fragmentation or slicing the value chain – which has increasingly characterized world trade during the past decades. Production sharing involves breaking up of the production process into vertically separated stages carried out in two or more countries. This started with the electronics and garments industries and was later picked up by other industries such as automotive (Athukorala, 2010).

Multinational companies from countries including the US, Germany and Japan, recognized locational advantages of countries in East Asia and set up subsidiaries or affiliate companies or manufacturing plants to distribute parts of the production process in different sites/countries in the region. A part or component of a product may be manufactured in one country then sent to another country for component assembly or further processing, then again to another country for final assembly or finishing. A supply chain is established and one which passes through two or more countries.

FTAs, which aim for reduced barriers to trade between countries, e.g. in the form of reduced tariff rates and trade facilitation measures, can facilitate the flow of goods in the supply chain. In this regard, certain aspects of FTAs are crucial. This would include rules of origin and the corresponding documentation as requirements for availing of preferential tariff rates, as well as non-tariff measures (e.g. product standards). It is also important for the domestic environment to complement as well as

facilitate the use of FTAs, and to address the possible impact of these FTAs on the domestic industry.

The Philippines takes part in this production sharing. The country is home to some multinational companies (MNCs) from Japan, the US and the EU or an affiliate or subsidiary which has set up parts manufacturing plants or sub-contracted local firms, to take up a slice of the supply chain, especially in East Asia. As a member of ASEAN, the Philippines is party to the ASEAN+1 FTAs and therefore receives the privilege of FTA provisions, e.g. preferential tariff rates (reduced or zero tariff) and trade facilitation. The question that is often asked is, does the Philippines benefit from these FTAs? How are the 'Plus 1' FTAs facilitating the Philippines' participation in the product fragmentation in the East Asian region? Are there aspects of these FTAs that hinder the free flow of goods, i.e. parts and components, in the supply chain in the region?

In this chapter, we look in particular at the experience of Philippine businesses as far as the ASEAN+1 FTAs and the respective supply chains are concerned in the automotive and the electronic sectors. This chapter aims to view the firms' segment of the supply chain and identify impediments at critical points for the firms, especially in relation to the free trade agreements. To achieve this, interviews of firms were conducted to collect relevant and necessary information. Firms from the automotive and electronics sector were chosen.

The automotive and electronics sectors in the Philippines are alike and different in some ways. Both are participant to and dependent on trade fragmentation and the supply chain in ASEAN and East Asia, but they differ in size and circumstances. The automotive sector is relatively small in terms of share in total Philippine exports, while the electronics sector is a major contributor. The electronics sector is almost four times bigger than automotive in terms of the number of establishments. Despite its size and performance, the government continues to support the efforts to develop and improve the competitiveness of the automotive sector because of its deep forward and backward linkages and potential for technological spillovers. Moreover, the automotive sector is a protected sector with its high tariffs before the FTAs, while electronics even without FTAs has already low or almost zero tariffs. It would be interesting to compare and

contrast the experience of these two sectors as regards supply chain issues and associated FTA concerns.

The chapter is organized as follows. Section 2 discusses FTAs and implications for the supply chain. Section 3 gives a background on the structure of the two case sectors – the automotive and electronics sectors. Section 4 presents the economic and trade performance of the two sectors, and discusses FTA utilization of firms in the Philippines. Section 5 outlines the supply chain of individual firms interviewed, followed by a summary of the impediments at critical points along the chain as encountered by these firms. The last section concludes.

2. Overview of FTA Implications for the Supply Chain

FTAs aim for freer flow of goods and services within the free trade area. With FTAs, production fragmentation and its consequent supply network would be expected to prosper for several reasons. These include the expected facilitation of trade between countries which would improve logistics; reduced tariffs which would lessen costs; and increased market access which would benefit businesses in terms of profitability. In this regard, certain aspects of FTAs are essential. This includes rules of origin (ROOs) and the corresponding documentation as requirements for availing of preferential rates, as well as non-tariff measures (e.g. product standards). At the same time, the domestic environment should complement as well as facilitate the use of FTAs, and also address the possible impact of these FTAs on the domestic industry.

In facilitating the efficient flow of supply chains, cross-border cooperation is imperative – state institutions such as trade or industry ministries and customs agencies play a significant role in the efficiency and efficacy of the supply chain (Banomyong, 2010). The environment in which the supply chain operates – logistic operations, ports and service providers (forwarders, customs brokers) are likewise crucial.

Potential gains from fragmentation of production or slicing of the value chain can be magnified with fewer trade restrictions (i.e. lower tariff or quota restrictions), since the activities across countries involved in the chain have narrow margins, making the

flow of goods highly sensitive even to small tariffs (Athukorala, 2003). In this sense, reduced barriers such as lower tariffs in FTAs facilitate the opportunity for increased benefits for participants in the supply chain.

However, in practice, the process is not always this straightforward. For instance, firms have to go through the customs process, which without enough trade facilitation, could incur additional costs associated with administrative delays. Studies on ROOs have indicated how delays in obtaining certificate of origin (CO) discourage the firms' usage of FTAs.

In addition, in order to avail of lower tariffs or the preferential rates, there are FTA rules on eligibility.[2] For example, a basic ROO criterion usually used for eligibility is local (or regional) content of the product that is to be exported or imported. For instance, a product has to have a minimum value content coming from local suppliers or from the FTA area to establish originating status. The challenge then comes in the documentation to satisfy requirements for obtaining a CO to acquire eligibility of a preferential tariff. Paperwork would include documentation on the origin of the input or raw materials, therefore involving acquiring information from suppliers. Furthermore, the procedure in obtaining origin certification from customs or other authorized agencies, and how and where to get relevant information are some concerns with regard to services provided to assist businesses in taking advantage of preferential tariff rates in FTAs.

With eligibility settled, goods (e.g. parts and components) arrive in the country of destination for further processing or assembly with reduced tariff or zero tariffs. Particularly when eventually most goods will be traded with zero preferential tariffs, establishing originating status supported by proper documentation will be one major concern for businesses, both exporters and importers, and the border agencies (customs).

It would be of interest to see how businesses are coping with rules in FTAs and how these are affecting the flow of goods from suppliers and to customers. For this case study, the Philippine automotive and electronics sectors are examined – two sectors which have been trading in parts and components.

[2] See Medalla and Rosellon in Chapter 6 for more detailed discussion on the nature of ROOs.

3. Sector Structure

3.1. Automotive Sector

The automotive sector in the Philippines has two sub-sectors: the vehicle assemblers (passenger cars, commercial vehicles[3] and motorcycles) accounting for about 17 percent of the total industry players, and the parts and components manufacturers which account for more than 80 percent of the firms in the automotive sector.

3.1.1. Automotive Assemblers

Of the 52 manufacturers of passenger cars, commercial vehicles and motorcycles in the industry, 14 are car assemblers. Five Japanese companies dominate vehicle assembly, namely, in order of market share – Toyota, Mitsubishi, Honda, Isuzu and Nissan. There is one American company – Ford, and one Korean company – Hyundai which has been increasing its market share in recent years.

With about 35 percent of the market share in 2009, Toyota remains the industry leader in automotives in the Philippines. In the 10 years to 2009, the company achieved its highest share in 2006-07 at 38 percent. Coming in consistently second in terms of market share is Mitsubishi, with Honda following at third, among vehicle assemblers.

3.1.2. Auto Parts and Components

The Philippine automotive industry is composed of 256 firms that manufacture auto parts and components, of which: 124 are first-tier suppliers (of the domestic automotive assemblers); and 132 are second- and third-tier suppliers (of the first-tier manufacturers), mostly small and medium enterprises (Aldaba, 2008). The firms are engaged in metalworking, rubber, seats and trims, plastics, and electrical systems for automotives. The products they manufacture include:[4]

- suspension: tyres, steel rims, aluminium wheels, leaf and coil springs
- interior: carpets and seats

[3] Refer to utility vehicles; sports utility vehicles; Asian utility vehicles; Philippine utility vehicles; pick-ups; commuter vans; light, medium and heavy trucks and buses; and special purpose vehicles.
[4] Aldaba (2007); Raymundo (2004).

- electrical system: wiring harnesses, batteries, lamps and relays
- pressed components: mufflers, radiators, seats, frames, seat adjusters, oil and air filters, pedals
- rubber and plastic components: fan belts, rubber hoses and small plastic parts
- mechanical parts: transmission, engine parts, etc.
- cast and forged components: gear blanks, brake disks, brake drums.

Among the parts and components manufacturers, there are 100 percent Filipino-owned firms; small and medium enterprises (SMEs) which are mostly Filipino firms; and firms that are affiliated with MNCs. The last relate to the mother firm exercising vertical integration. For instance, firms from Japan have brought in affiliates or sister firms to supply parts and components to the mother firm (e.g. car assembler) in the country, to Japan or another country. Major auto parts and components manufacturers include: Yazaki-Torres Manufacturing Corp. (wiring harness), United Technologies Automotive Phils. (wiring harness), Temic Automotive (Phils.) Inc. (anti-brake lock system), Honda Engine Manufacturing Phils., Inc. (engines), Asian Transmission Corp. (automotive transmissions), Toyota Autoparts Phils. (automotive transmission), Fujitsu Ten Corp. of the Phils. (car stereos) and Aichi Forging Co., Inc. (forged parts) (source: Aldaba, 2007).

3.1.3. Participation in the Global Production Network

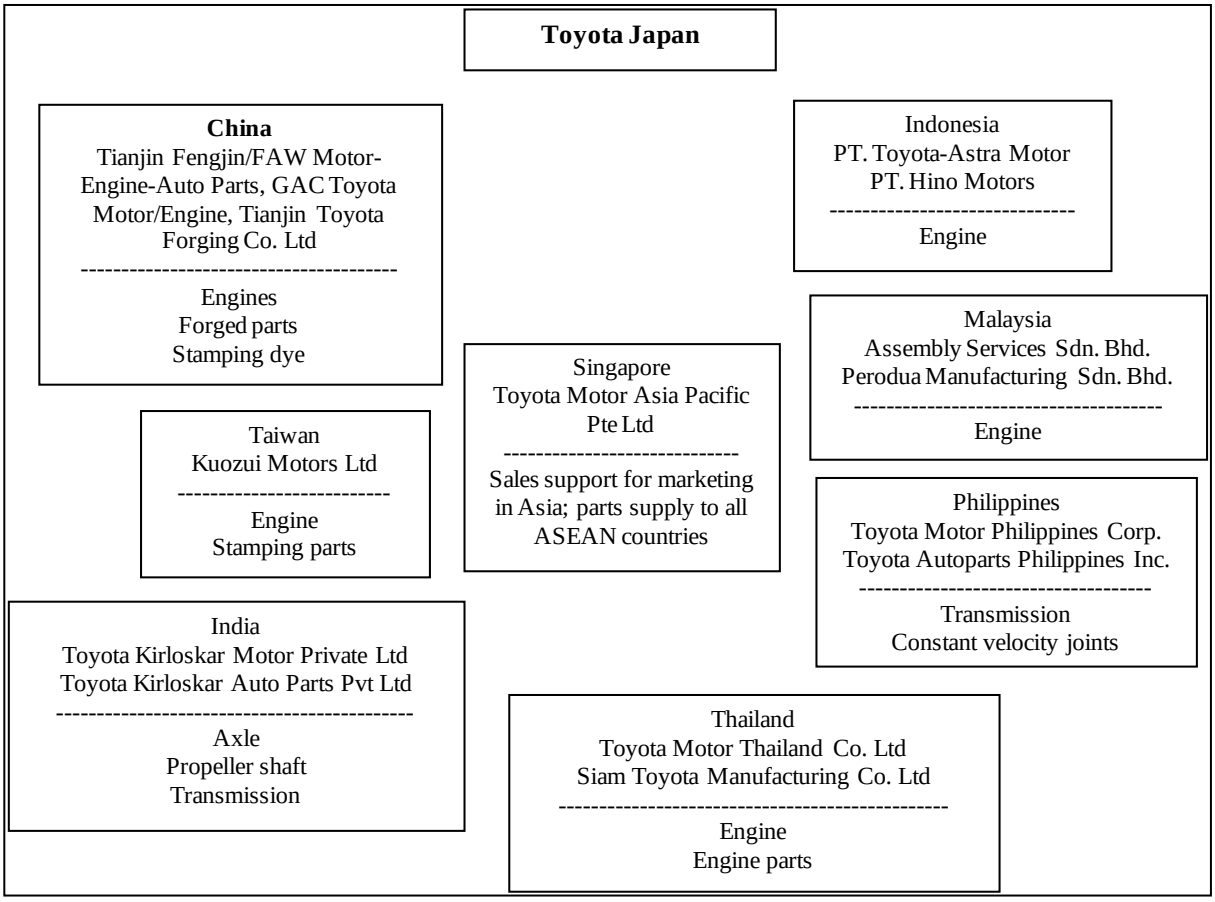
The Philippines is involved in a regional component flow (automotive parts and components) in the ASEAN and East Asia. For instance, Honda Motor Co. Ltd, a Japanese assembler of vehicles and manufacturer of car parts, has plants in Indonesia, Malaysia, Philippines and Thailand. Honda Malaysia produces constant velocity joints (drive shaft), Honda Philippines manufactures intake valves, Honda Indonesia produces engine parts, and Honda Thailand manufactures body and stamping parts. Thailand, as its biggest market in South-East Asia is the company's production base. ASEAN Free Trade Area (AFTA) is said to have changed the firm's business strategy, such that there is exchange of models and engine parts between markets (Raymundo, 2004). For instance, exchange of the Accord from Thailand with the Stream from Indonesia.

One of the automotive MNCs located in the Philippines is the Ford Motor Company. Ford Motor is the Philippines' only exporter of CBU (completely built-up unit) vehicles to ASEAN countries. Within the AFTA framework, the company exports the Ford Focus, Ford Escape, Mazda Tribute, and Mazda 3 sports utility vehicles (SUVs) to Thailand and Indonesia. Ford Motor Philippines previously joined the ASEAN Industrial Cooperation (AICO) scheme but they terminated their involvement in this with their use of the AFTA. Ford launched its export programme in 2002. Under this programme, the company produced 15,000 units,[5] of which 10,000 units were exported. The programme also involves sourcing more parts and components from local suppliers. In Asia, Ford Motor operates with both assembly and engine plants in China and India; assembly in the Philippines, Thailand and Vietnam; and transmission plants in Japan.

Another MNC, Toyota Motor Corp., has two companies – Toyota Motor and Toyota Auto Parts operating in the Philippines. The Toyota Motor plant assembles Innova and Vios, while Toyota Auto Parts manufactures transmissions and constant velocity joints which are exported to Indonesia, Malaysia and Thailand. These two manufacturing firms are part of the many manufacturing companies of Toyota Motor Corporation (Japan) overseas. In terms of parts and components manufacture in Asia, the Japanese corporation operates plants in China, Taiwan, India, Indonesia, Malaysia, Philippines, Thailand, and Singapore which handles sales support for marketing in Asia. Figure 1 presents Toyota Motor Corp.'s operations in automotive parts and components in Asia. It shows that in the ASEAN region, the Philippines is the only supplier of transmissions.

[5] This is about 40 per cent of the plant's optimum capacity (36,000 units a year).

Figure 1. Toyota's Parts and Components Framework in Asia



Source: Toyota Motor Corporation website

3.2. Electronics Sector

The electronics sector set into motion in the mid-1970s when the Philippines was one of the third world countries where industrialized nations relocated their production facilities to control/cut the rising cost of production. The Philippines was said to be an ideal location – not only was it cost competitive, it had an English-speaking labour force, a convenient geographical location, and had attractive government incentives (Board of Investments [BOI], 2011). The sector continues to grow rapidly and has been the top exporting industry since the mid-1990s.

Figure 2 presents the sub-sectors of the electronics industry in the Philippines. Leading manufactures are of semiconductors/components which is about 70 percent of the total exports in the electronics sector, followed by computer peripherals (21%), telecommunications (almost 4%) and consumer electronics (almost 2%). The country is

home to some of the world's biggest semiconductor and electronics companies, and the majority of the sector's output is sold to these parent companies as exports. Mostly consumer electronic products are traded in the domestic market.

There are 936 firms in the sector. Of this, 72 percent have foreign ownership and 28 percent are Filipino owned. The sector is dominated by MNCs, some of which have set up offices/plants in the Philippines, including Intel and Texas Instruments from the US; Continental Temic and NXP (formerly Philips) from Europe; Sony, Toshiba, Hitachi and Fujitsu from Japan; Samsung from South Korea; and Acer and OSE from Taiwan (BOI, 2011). On the other hand, the Filipino-owned firms are described as third-party contractors.

Each sub-sector has multiple players and it has been observed that there is a growing base of components suppliers (BOI, 2011). This is said to complement the sector as it offers a wide variety of products and services from integrated circuits (IC) packaging and printed circuit board (PCB) assembly through to full product assembly. The sector is said to be the most entrenched in the regional/global production network among manufacturing industries in the Philippines (Macasaquit, 2010). Filipino electronic firms are widely accepted to have expertise in back-end semiconductor operations and in assembly and test manufacturing. These are labour-intensive activities that the Philippines is involved in and that are considered to be a small fraction of the semiconductor value chain (Macasaquit, 2010). The country is at the lower tier of the production chain but in recent years has been involved in turn key production. There are firms that are now engaged in Electronics Manufacturing Services (EMS) and a few Filipino SMEs in Original Design Manufacturing (ODM).

Figure 2. Philippine Electronics Industry Sub-Sectors

(1) Semiconductors and Other Components

This is the biggest sub-sector of the electronics industry consisting of companies manufacturing integrated circuits (ICs), transistors, diodes, resistors, capacitors, coils, transformers, printed circuit boards (PCBs) and other components. Major players in this sub-sector are the subsidiaries of some of the world's biggest semiconductor companies such as Texas Instruments, Philips, Amkor, Fairchild Semiconductor, etc.

(2) Electronic Data Processing (EDP) Equipment

This sub-sector consists of companies engaged in the manufacture of computers, peripheral storage and input/output devices. Among the finished products are laptops, desktop PCs, printers, computer monitors, drives: hard disk, optical, ZIP and CD-ROM. Companies engaged in the manufacture of EDP are Toshiba, Wistron Infocomm (formerly Acer), Epson, Fujitsu, Ionics and Sampo Technologies. The Philippines proudly supplies 50 per cent of world demand for 2.5' hard disk drive (HDD) and 10 per cent of world demand for 3.5' HDD.

(3) Office Equipment

This sub-sector includes companies which produce photocopiers, fax machines and electronic calculators. Companies in this sub-sector include Matsushita Business Machines, Sharp and Seiyo Electronics.

(4) Telecommunications Equipment

Included in this sub-sector are companies producing telephone sets, modems, copper communication cables and fibre-optic cables. Manufacturers include ETSI Technologies, Eupen Cable and NEC Technologies.

(5) Communications and Radar

Companies in this sub-sector comprise mainly manufacturers of cellular phones, pagers, closed circuit television (CCTV), citizen's band (CB) transceivers, radar detectors, marine and land mobile radios. Leading players include Matsushita Communication, Uniden, Casio and Euro CB.

(6) Control and Instrumentation

This sub-sector refers to test and measuring instruments such as oscilloscopes, signal generators, ammeters, voltmeters, ohmmeters, cross talk meters, etc. Philippine-based companies in this sub-sector consist of manufacturers of PCB assemblies for instrumentation/testing equipment, digital thermometers, microscopes, automotive test equipment and multi-testers. Players include Precision Microcircuits, Sara Digital Network, Phil Makoto Corp., and Insung Phils. Electronics.

(7) Medical and Industrial

This sub-sector covers equipment used for X-ray and other medical applications, railway signalling, security and fire alarms. Philippine-based companies are involved in the production of spiro analysers and smoke detectors. One of the leading players is P. Imes Corp.

(8) Automotive Electronics

Companies in this sub-sector comprise mainly manufacturers of car stereos, anti-skid brake systems (ABS), and car body electronics (CBE). Major players include Temic Automotive, Fujitsu Ten, Muramoto Audio-Visual Phils., and Clarion Mfg.

(9) Consumer Electronics

Consumer electronics manufacturing in the country primarily consists of TV sets, VCR players, electronic games, radio cassette players and karaoke machines. Major players include Panasonic Manufacturing Philippines Corporation (PMPC), Sony, Sharp, LG–Collins and JVC.

(10) Solar/ Photovoltaics

This emerging sub-sector of the electronics industry consists of devices that make use of solar cells in producing electricity for practical use. The presence of big international companies such as Sun Power Manufacturing Ltd. (SPML) and Solaria Corporation helps in positioning the Philippines as a solar manufacturing hub in Asia.

Source: Philippine Electronics Industry Profile, 23 February 2011, prepared by Other Industries Division - Special Programs Department, Board of Investments.

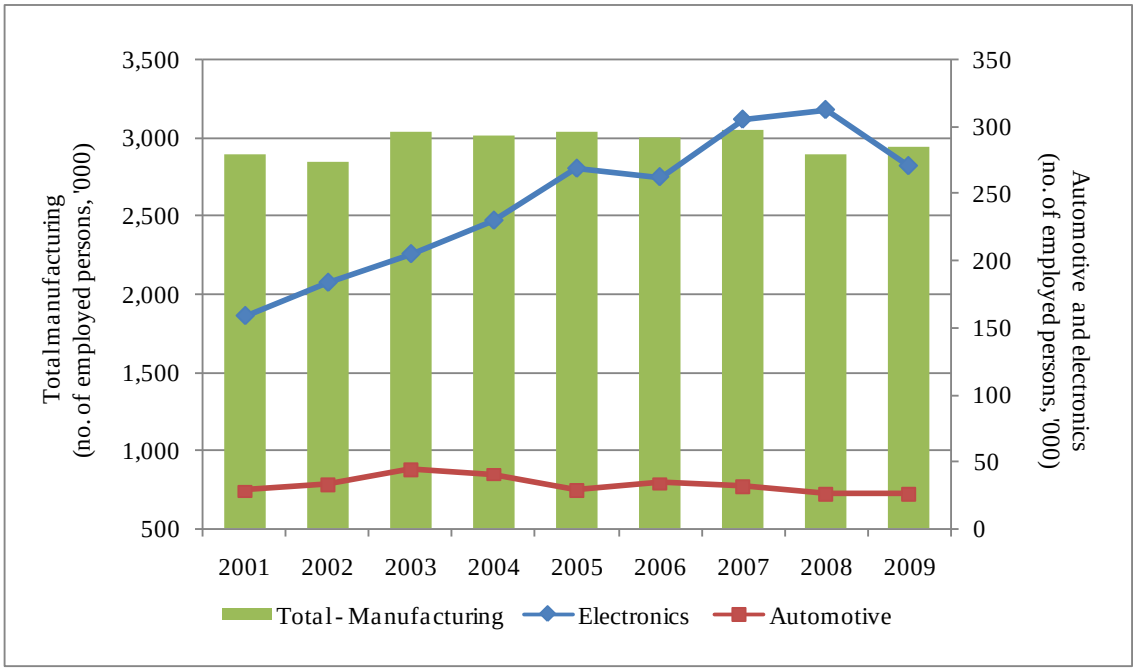
4. Economic Performance of the Two Sectors

As far as size is concerned, the electronics sector has always been ahead of automotive, for instance, with respect to employment and value added. In terms of employment in 2001-09, the electronics sector accounted for an average of 8 percent of total employment in the whole manufacturing sector, while the automotive sector on average composed 1 percent.

As shown in Figure 3, employment in the automotive sector from 2001-09 ranged from 26,000 to 44,000 employed persons out of the manufacturing sector total of about

3 million on average.[6] From 2004 to 2009, the sector mostly experienced a decline in employment, the largest in 2005 (28.3%) and in 2008 (17.4%).

Figure 3. Employment in the Philippine Automotive and Electronics Sectors, 2001-09



Source: National Statistics Office (NSO) Labour Force Survey

Electronics is a different story. Employment, which ranged from 159,000 to 313,000 employed persons in 2001-09, has been increasing steadily except in 2006 and 2009. From 2001-05, employment in the sector increased by 69 percent, and during the eight years from 2001 to 2008, employment almost doubled with a growth rate of 97 percent. One factor contributing to this would be the increasing investments in the electronics sector.

In terms of sectoral value added,[7] the electronics sector accounted for about 13 percent of total manufacturing value added from 2001 to 2008 (Figure 4). During this period, its contribution to manufacturing value added was highest in 2001 (22 percent),

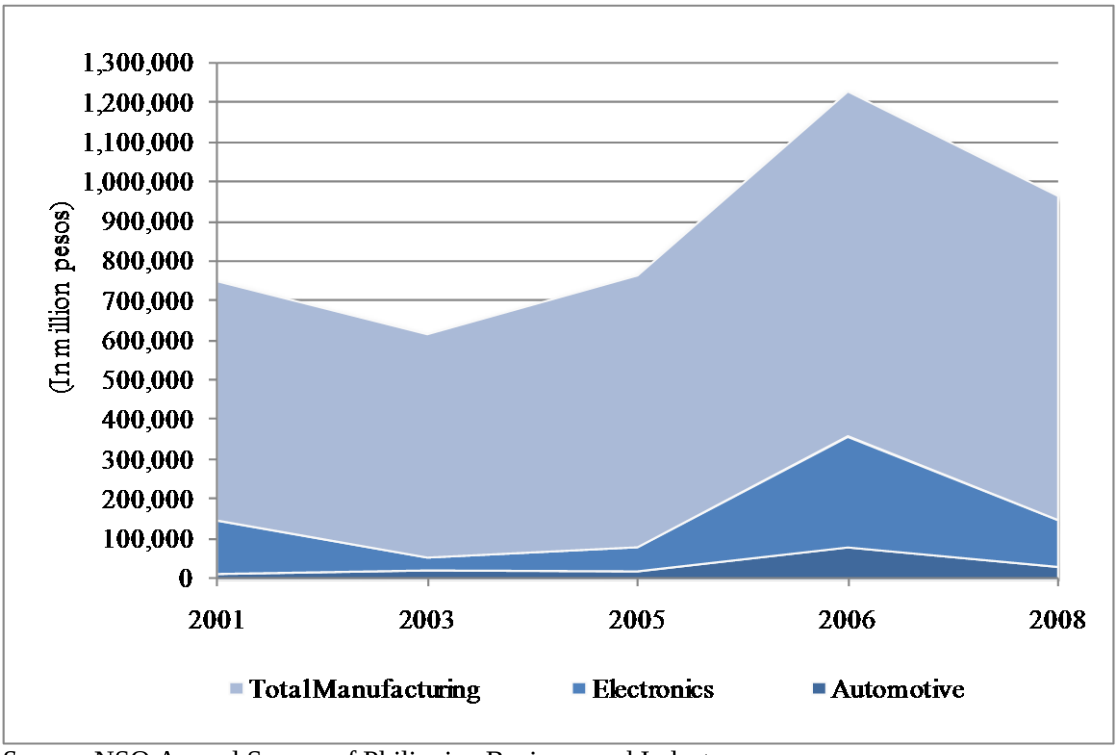
[6] Manufacturing sector employment was on average 9 per cent of total employment in the Philippines in 2001-09.

[7] Based on the Annual Survey of Philippine Business and Industry, a survey of manufacturing establishments with total employment of 20 and over.

but declined to 6 percent in 2003, slowly rising to 14 percent in 2008. On the other hand, the automotive sector share was steady at around 3.5 percent over the period 2001-08.

The automotive sector experienced a gradual increase to 119 percent from 2001 to 2008, except for a 10 percent decline in 2005 and a more than 200 percent increase from 2005 to 2006, which primarily came from the manufacture of bodies for motor vehicles and manufacture of motor vehicles. In contrast, value added in the electronics sector dropped a whopping 75 percent in 2003, but managed to pick up with an 88 percent increase in 2005 and 94 percent increase in 2008. The 2008 value added, however, was 13 percent lower than the 2001 value added. Of the electronics value added, semiconductor devices and other electronic components composed 70 percent in 2008.

Figure 4. Value Added in Automotive and Electronics and Total Manufacturing, Selected Years 2001-08

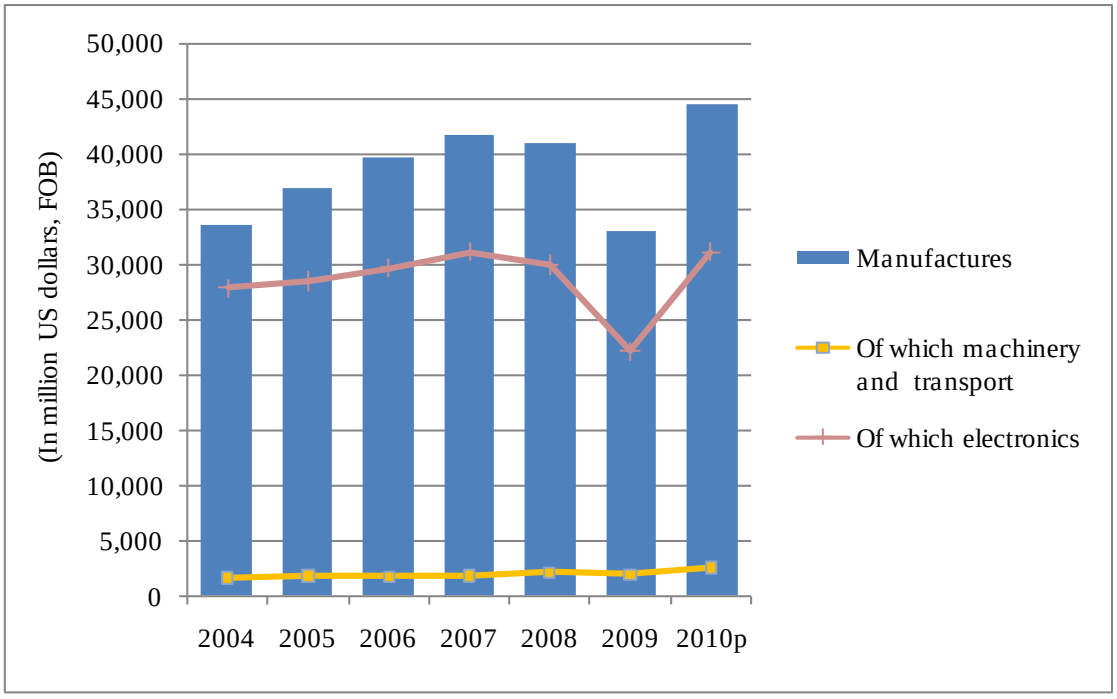


Source: NSO Annual Survey of Philippine Business and Industry

4.1. Trade Performance

Looking at trade in the two sectors, electronics is a top exporting sector in the Philippines, with semiconductor devices and electronic components as the top exported products. From 2004-10, electronics exports composed a big chunk of total manufacturing exports at about 64 percent, and Figure 5 shows how in the series the two variables follow the same trend.

Figure 5. Exports in Automotive, Electronics and Total Manufacturing, 2004-10



Source: National Statistics Office

Exports in electronics had a rather slow rise, growing by 11 percent between 2004 and 2010, with exports declining by 26 percent from 2008 to 2009 following the global financial crisis. However, after the crisis, the sector demonstrated resilience and managed to recover with the value of exports in 2010 (preliminary) catching up with the value of exports in 2007 which was the highest in this period. It was in 2007 and 2010 when investments in the electronics sector were highest.

On the other hand, exports of machinery and transport on average accounted for only 4 percent of total manufacturing in the last decade, way below the value of exports of electronics. However, while the electronics sector experienced slow growth in

exports, the machinery and transport sector paced up at a rate of about 17 percent annually, except for drops in 2006 and 2009. From 2004-10, machinery and transport exports increased by 60 percent.

Looking closely at each of the commodity groups in the automotive sector, motor vehicle parts exports dominated the exports of automotive products, with an average share of 95 percent of total automotive exports from 2006 to 2010, as shown in Table 1. Exports of motor vehicles were a very distant second with an average share of 3 percent. Exports of motor vehicle parts had an annual average increase of about 22 percent, except in 2009. These exports fell by 25 percent in 2009, but managed to recover in 2010.

Table 1 also presents imports of automotive products. The data in the table indicate that the Philippines has been exporting more automotive parts than it has been importing. As had been written in previous studies, the Philippines has relatively low production as well as exportation of vehicles. In recent years the country has been increasing importation of vehicles. This is suggested in the net export figures for motor vehicles from 2006 to 2010, the lowest among automotive merchandise.

Table 1. Automotive Imports and Exports by Commodity (US$ million FOB)

		2006	2007	2008	2009	2010
Motor vehicle parts	Exports	2,439	2,981	3,502	2,605	3,319
	Imports	527	441	462	429	578
	Net-X	1,912	2,539	3,041	2,176	2,741
Motor vehicles	Exports	92	64	96	96	128
	Imports	666	1,011	1,256	1,270	2,000
	Net-X	-574	-947	-1,160	-1,175	-1,872
Motorcycles and parts	Exports	30	29	33	26	33
	Imports	336	411	387	378	319
	Net-X	-306	-382	-354	-352	-286
Trailers/Trucks/etc. and parts	Exports	7	6	6	5	6
	Imports	98	19	23	25	37
	Net-X	-91	-13	-17	-19	-31

		2006	2007	2008	2009	2010
Bicycles/Carriages	Exports	29	38	26	18	26
and parts	Imports	16	25	16	16	26
	Net-X	13	14	10	2	0
Total	Exports	2,596	3,118	3,664	2,750	3,511
	Imports	1,642	1,906	2,144	2,117	2,960
	Net-X	954	1,212	1,520	632	551

Source: National Statistics Office; Department of Trade and Industry; Authors' calculations.
Note: Net-X means net exports (exports less imports)

On the electronics side, the data indicate that semiconductors (components and devices) dominate the exports in electronics, with an average of 70 percent of total electronics exports from 2006 to 2010 (Table 2). This is followed by computers and peripherals which comprised an average of 23 percent. Data indicate that exports of electronics were generally affected by the global financial crisis in 2008 as indicated by the decline in exports, but was able to recover in 2010.

Table 2. Electronics Imports and Exports by Commodity (US$ million FOB)

		2006	2007	2008	2009	2010
Semiconductors	Exports	18,445	18,517	16,688	11,951	18,159
(Components and devices)	Imports	19,428	19,615	15,173	11,035	13,994
	Net-X	-983	-1,098	1,515	916	4,165
Computers	Exports	5,748	5,463	5,218	4,938	5,497
and peripherals	Imports	3,112	3,234	2,740	2,234	2,441
	Net-X	2,636	2,229	2,478	2,704	3,057
Telecommunications	Exports	722	895	971	744	967
	Imports	968	1,042	1,093	1,039	1,014
	Net-X	-246	-147	-122	-295	-46
Consumer electronics	Exports	598	251	296	349	517
	Imports	368	349	348	281	338
	Net-X	231	-98	-52	68	179

		2006	2007	2008	2009	2010
Others	Exports	291	410	404	310	299
	Imports	396	474	258	234	251
	Net-X	-105	-65	146	76	48
Total	Exports	25,804	25,535	23,577	18,291	25,440
	Imports	24,270	24,714	19,612	14,822	18,038
	Net-X	1,534	821	3,965	3,469	7,402

Source: National Statistics Office; Department of Trade and Industry; Authors' calculations
Notes: Net-X means net exports (exports less imports); Others: Office Equipment, Scientific/ Laboratory Apparatus, Security/Safety/Control Apparatus, Measuring /Checking Instruments

In terms of imports, semiconductors and computers/peripherals are also the largest categories with an average of 77 percent and 14 percent of total electronics imports, respectively, in 2006 to 2010. As in the case of exports, importation of electronic products declined in 2008. Moreover, net exports figures indicate that the Philippines is exporting more than importing electronics products, especially for semiconductors and computer/peripherals which may suggest that there exists a strong supplier base for manufacturing these products in the country with less importation.

4.1.1. Top Markets, Top Automotive and Electronic Products

For automotive products, Japan was the Philippines' top source of inputs in 2009, as shown in Table 3, followed by Thailand and Indonesia. Its top five suppliers come from ASEAN and FTA partners. The top export destination was also Japan, receiving 23 percent of total exports, with the other destinations being ASEAN and other FTA partners – Thailand, Indonesia, Australia and China. Outside of the region, Germany and the US were the top export destinations.

For electronics, Japan was the top supplier of inputs in East Asia (the largest supplier globally being the US). On the other hand, the top East Asian destination for products was again Japan in 2009, taking 11.5 percent of total electronics exports. Outside the region, Hong Kong, Netherlands and the US join Japan and Singapore as the five top importers for the Philippines.

Table 3. Top Philippine Markets for Automotive and Electronics Imports and Exports, 2009

Top import suppliers	% Share	2009 Rank	Top export destinations	% Share	2009 Rank
Automotive					
Japan	41.2	1	Japan	22.9	1
Thailand	22.3	2	Thailand	11.5	4
Indonesia	9.5	3	Indonesia	3.0	6
China	7.1	4	Australia	2.4	7
Singapore	3.1	5	Malaysia	2.3	8
Electronics					
Japan	15.6	2	Japan	11.5	4
Singapore	11.1	3	Singapore	10.2	5
China	10.5	4	China	8.2	6
Korea, Rep. of	7.8	6	Korea, Rep. of	5.6	8
Thailand	3.7	8	Malaysia	2.9	10

Source: National Statistics Office; Department of Trade and Industry; Authors' calculations.

Trade in key automotive and electronic products specified at the six-digit Harmonised System (HS) level is presented in Tables 4 and 5. In the automotive sector, exports of lead-acid batteries (of a kind used for starting engines) go mainly to Malaysia, among the East Asian nations. The product has a net trade ratio (NTR) of 1.0, indicating a high level of trade competitiveness. NTR is a measure that can be used to indicate trade competitiveness.[8] Large positive NTRs indicate a high level of trade competitiveness, while relatively lower or negative NTRs indicate lower trade competitiveness (Raymundo, 2004). From the rest of East Asia, the Philippines is predominantly an importer of lead-acid batteries, as shown in Table 4.

In terms of insulated wiring sets, the Philippines has a very high NTR with both Indonesia and Japan, at close to one. Similarly, the country has a high NTR with China for parts and accessories of bodies not elsewhere specified (n.e.s.) for motor vehicles; and with Indonesia and Singapore for gear boxes. In contrast, for the country's largest exports by value – parts and accessories of motor vehicles not elsewhere specified or

[8] Net trade ratio is computed by taking the difference between exports and imports of specific parts or components, divided by the sum of exports and imports of the same parts or components (Raymundo, 2004).

included (n.e.s.o.i.), NTR is relatively low compared to other products. With the exception of China and Malaysia with NTRs of more than 0.7, the rest of the trading partners have NTRs below 0.6, indicating a relatively lower level of trade competitiveness with these countries.

Unlike the automotive sector, the top export in the electronics sector also has the highest NTR in all trading partners, as shown in Table 5 – NTR is either 0.99 or 1.0 for electronic ICs. As has been mentioned in previous studies and claimed by the industry, the Philippines prides itself as a leading producer and exporter of electronic ICs in the region, and even the world, and as can be seen in Table 5, ICs dominate the top electronics exports. Moreover, only in ICs does the Philippines have a positive NTR, the rest are either low or negative, if not highly negative, suggesting that although the Philippines still exports other electronic products, it also imports them to a significant degree. Furthermore, the data validate the suggestion that the Philippines has captured a niche in the electronics market in the production and exportation of electronic ICs.

Table 4. Automotive Imports, Exports, Net Exports and NTR between the Philippines and Selected East Asian Countries, 2009

HS Code	Product Description		ASEAN	Indonesia	Malaysia	Singapore	Thailand	China	Japan	Korea
850710	Lead-acid batteries of a kind used for starting engines	Exports	20,838	0	19,440	979	0	1	20	0
		Imports	9,652	6,919	40	586	956	636	500	309
		Net-X	11,186	-6,919	19,400	393	-956	-636	-480	-309
		NTR	0.37	-1.00	1.00	0.25	-1.00	-1.00	-0.92	-1.00
854430	Insulated wiring sets for vehicles, ships, aircraft	Exports	9,992	1,401	14	471	502	5,252	294,365	176
		Imports	5,531	26	76	1,280	1,464	1,313	2,357	900
		Net-X	4,461	1,376	-63	-809	-962	3,939	292,008	-724
		NTR	0.29	0.96	-0.70	-0.46	-0.49	0.60	0.98	-0.67
870829	Parts and accessories of bodies nes for motor vehicles	Exports	6,389	145	0	0	6,244	13,063	49,506	1,060
		Imports	2,856	167	101	61	2,525	169	7,405	145
		Net-X	3,534	-22	-101	-61	3,719	12,894	42,101	914
		NTR	0.38	-0.07	-1.00	-1.00	0.42	0.97	0.74	0.76
870840	Gear boxes for motor vehicles	Exports	139,073	14,565	0	5,418	115,172	129	23,862	0
		Imports	3,445	1,207	17	42	2,179	23	13,702	38
		Net-X	135,628	13,359	-17	5,376	112,993	106	10,161	-38
		NTR	0.95	0.85	-1.00	0.98	0.96	0.69	0.27	-1.00
870899	Parts and accessories of motor vehicles nesoi	Exports	254,227	44,596	20,896	6,108	153,706	26,568	138,551	135
		Imports	83,322	12,410	2,857	5,930	60,586	3,802	89,808	3,731
		Net-X	170,906	32,186	18,040	178	93,120	22,766	48,744	-3,596
		NTR	0.51	0.56	0.76	0.01	0.43	0.75	0.21	-0.93

Source: UN Comtrade; Authors' calculations.

Notes: Export and import values in US$1,000; ASEAN is Indonesia, Malaysia, Singapore, Thailand and Vietnam; Net-X - net exports (exports less imports); NTR - net trade ratio; nes - not elsewhere specified; nesoi - not elsewhere specified or included.

Table 5. Electronics Imports, Exports, Net Exports and NTR between the Philippines and Selected East Asian Countries, 2009

HS code	Product Description		ASEAN	Indonesia	Malaysia	Singapore	Thailand	China	Japan	Korea
853224	Electric capacitors, fixed, ceramic, multilayer	Exports	557	0	0	557	0	2,559	11	378,845
		Imports	11,174	1	8,959	2,191	23	9,993	27,312	97,230
		Net-X	-10,617	-1	-8,959	-1,634	-23	-7,434	-27,302	281,615
		NTR	-0.91	-1.00	-1.00	-0.59	-1.00	-0.59	-1.00	0.59
854211	Monolithic integrated circuits, digital	Exports	404,370	3	504	403,716	148	35,745	5,903	14,802
		Imports	437,185	2,976	99,553	295,703	38,862	22,765	152,445	432,850
		Net-X	-32,815	-2,974	-99,049	108,013	-38,714	12,980	-146,542	-418,048
		NTR	-0.04	-1.00	-0.99	0.15	-0.99	0.22	-0.93	-0.93
854219	Monolithic integrated circuits, except digital	Exports	125,010	13,963	29,568	69,595	9,539	19,635	2,588	94,197
		Imports	841,284	1,281	91,271	620,610	127,373	637,533	1,212,867	239,911
		Net-X	-716,274	12,682	-61,703	-551,015	-117,833	-617,898	-1,210,278	-145,713
		NTR	-0.74	0.83	-0.51	-0.80	-0.86	-0.94	-1.00	-0.44
854280	Electronic integrated circuits/ microassemblies nes	Exports	1,711,583	10,681	389,781	1,244,506	64,942	842,644	779,573	347,227
		Imports	1,309	50	203	825	232	48	4,067	76
		Net-X	1,710,274	10,631	389,578	1,243,681	64,711	842,596	775,506	347,151
		NTR	1.00	0.99	1.00	1.00	0.99	1.00	0.99	1.00
854290	Parts of electronic integrated circuits and microelectronic elements	Exports	87,195	8,858	25,374	39,218	13,742	46,949	115,875	67,281
		Imports	1,206,989	6,477	283,912	597,563	318,301	562,346	403,793	440,887
		Net-X	-1,119,795	2,381	-258,537	-558,345	-304,559	-515,397	-287,917	-373,606
		NTR	-0.87	0.16	-0.84	-0.88	-0.92	-0.85	-0.55	-0.74

Source: UN Comtrade; Authors' calculations.

Notes: Export and import values in US$1,000; ASEAN is Indonesia, Malaysia, Singapore, Thailand and Vietnam; Net-X - net exports (exports less imports); NTR - net trade ratio; nes - not elsewhere specified.

4.1.2. Intra-Industry Trade with FTA Partners

Having shown the key products imported and exported, as well as their markets, we take a simple assessment of the intra-industry trade between the Philippines and its (or ASEAN) FTA partners. Intra-industry trade (IIT) is defined as a two-way exchange of goods within a standard industrial classification (OECD, 2002). IIT is commonly measured using a Grubel-Lloyd index based on commodity group transactions.[9] This index calculates overlap between exports and imports in all the trade in a given industry. A minimum value of zero indicates there are no products in the same class that are both imported and exported, while a maximum value of 100 indicates that all trade is intra-industry (exports equal imports). The value between 0 and 100, which is considered as the overlap in trade, is considered to be intra-industry trade, the rest (subtracting from 100) being inter-industry trade.

Tables 6 and 7 present Grubel-Lloyd indices for automotive parts and electronics components traded between the Philippines and selected East Asian countries. The data indicate that the extent of the Philippines' intra-industry trade with these countries is lower in the automotive sector than the electronics sector. More specifically, since the products used here are parts and components, the indices indicate that the two-way trade in intermediate goods is higher in the electronics sector than the automotive sector.

In the automotive sector, the extent of IIT was highest with Japan (44 percent on average), declining between 2005 and 2008 but starting to recover in 2009. Product classes with a high extent of IIT include 8536, 8512, 8708 and 8483.[10] The next highest over the period was Singapore (37 percent on average), which also declined in 2006 but

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[9] Grubel-Lloyd index is calculated by: $$IIT_{i,AB} = \left[\frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)}\right] \cdot 100 \qquad (1)$$

$$IIT_{AB} = \sum_i \left[\frac{(X_i + M_i) - |X_i - M_i|}{(X_i + M_i)}\right] \cdot \left[\frac{(X_i + M_i)}{\sum_i (X_i + M_i)}\right] \cdot 100 \qquad (2)$$

Where *i* is the product class, A and B are the partner countries. The second equation calculates bilateral indices for intra-industry trade between country A and country B for total manufacturing trade as the weighted average of the indexes in Equation (1) for all product classes *i* with weights given by the share of total trade of *i* over total trade in *i*.

[10] 8536 – electrical apparatus for switching or protecting electrical circuits or for electrical connection; 8512 – electrical lighting or signalling equipment, windscreen wipers, defrosters and demisters of a kind used for cycles or motor vehicles; 8708 – parts and accessories for motor vehicles of headings 8701 to 8705 (motor vehicles for transport of persons, goods; tractors, special purpose vehicles); 8483 – transmission shafts, bearings, gears, universal joints.

has been increasing since. Following third was Indonesia (33 percent on average). With ASEAN, the Philippines had an IIT in the automotive sector of about 41 percent in 2009, and adding China, Japan and Korea on the list gives only a 1 percent difference. As for Australia and New Zealand, IIT was lower than 5 percent, but was slowly increasing from 2005 to 2009.

Table 6. Intra-Industry Trade Index for Automotive Parts Trade Between the Philippines and ASEAN/FTA Partners

Partner country	2005	2006	2007	2008	2009
Indonesia	30.0	40.2	30.7	38.9	26.6
Malaysia	25.7	20.3	17.0	9.5	16.1
Singapore	37.5	34.4	34.4	39.8	38.6
Thailand	16.8	19.3	20.3	16.2	36.4
Vietnam	1.5	9.3	18.3	17.2	22.7
ASEAN	27.1	33.6	32.1	32.1	41.4
China	37.4	33.1	34.4	22.5	22.9
Japan	55.6	48.7	38.7	36.9	38.1
Korea, Rep.	54.0	43.1	20.3	17.6	16.0
East Asia	46.3	46.7	39.1	36.1	40.4
Australia	2.9	2.9	5.8	1.8	4.0
New Zealand	1.0	0.9	1.5	2.1	2.1

Source: Authors' calculations based on UN Comtrade data at HS four-digit level
Note: East Asia includes China, Japan, Korea, and selected ASEAN countries in this table.

Table 7. Intra-Industry Trade Index for Electronic Components Trade Between the Philippines and ASEAN/FTA Partners

Partner country	2005	2006	2007	2008	2009
Indonesia	50.0	81.9	80.0	38.0	63.1
Malaysia	53.5	42.2	76.5	81.9	94.7
Singapore	72.6	73.8	87.9	74.9	72.5
Thailand	68.5	46.5	62.8	60.0	36.7
Vietnam	0.0	0.3	0.2	2.7	17.9
ASEAN	66.4	74.0	94.5	83.1	86.0
China	37.4	17.3	41.2	42.0	87.9
Japan	43.0	63.3	64.6	79.9	90.4
Korea, Rep.	44.6	27.7	48.2	45.6	66.0

Partner country	2005	2006	2007	2008	2009
East Asia	57.4	54.2	94.4	88.6	92.9
Australia	28.0	33.8	42.5	43.3	28.3
New Zealand	2.4	65.8	15.9	11.9	4.5

Source: Authors calculations based on UN Comtrade data at four digit level
Note: East Asia includes China, Japan, Korea, and selected ASEAN countries in this table.

On the electronics side, the extent of IIT was highest in Singapore with an average of 76 percent in 2005-09, to a large extent occurring in the 8542 product class (electronic ICs and micro assemblies; parts thereof), which is one of the top exports of the Philippines. This was followed by Japan with an average of 68 percent, with a high IIT for the same product class 8542 as well as 8533 (electrical resistors [not heating resistors]). In 2009 though, Malaysia was highest with 94.7 percent IIT, again extensively due to product class 8542. Of all of the Philippines' partner countries in the list, the extent of IIT has been greatly increasing in 2005-09, except for Thailand, Australia and New Zealand.

4.1.3. FTA Utilization in the Philippines

With the elimination of tariffs and other barriers, FTAs are expected to facilitate the flow of goods, services and investment within the partner countries. Trade occurs with more ease and with less risk and costs. Furthermore, if industries in partner countries are involved in a production network, provisions in the FTAs should be able to promote the value/supply chain, hence firms should take advantage. Have Philippine firms capitalized on preferential provisions in FTAs?

Using different measures of AFTA utilization, studies have shown relatively low AFTA usage for the Philippines, especially in recent years if compared with other ASEAN countries. In 1998-99, Baldwin (2007) found that the Philippines had 4-7 percent AFTA utilization rates (measured as the percentage of intra-ASEAN imports that used the preferential tariff) which was at that time higher than other ASEAN countries. Meanwhile, a relatively low level of AFTA usage for the Philippines was found in a survey of Japanese-affiliated firms operating in the ASEAN by Hiratsuka et al. (2009), with the percentage of firms using AFTA as a measure. Together with Vietnam, the Philippines had relatively low usage compared to the rest of the ASEAN

in terms of both export and import operations (Table 8). Usage of AFTA by exporting firms was around 15 percent in 2006-07, and declined to 11.8 percent in 2008, although this drop was hypothesized to be part of the business cycle (Medalla and Balboa, 2009).

Table 8. Utilization of FTA* by Japanese-Affiliated Companies

	Exporting companies			Importing companies		
	2006	**2007**	**2008**	**2006**	**2007**	**2008**
ASEAN (total)	19.7	19.3	23	16	16.7	19.7
Indonesia	18.5	14.7	35.9	20.8	17.7	28.7
Singapore	32.5	27.3	43.2	…	…	…
Thailand	18.2	18.8	22.5	17.7	14.9	25.3
Philippines	15.2	15.7	11.8	10.8	11.4	8
Vietnam	6.6	14.3	9.4	9.5	24	12.5
Malaysia	26.8	23	23.8	15.7	19.3	20

Source: Hiratsuka et al. (2009)
Notes: *ASEAN as FTA partner; … results not presented

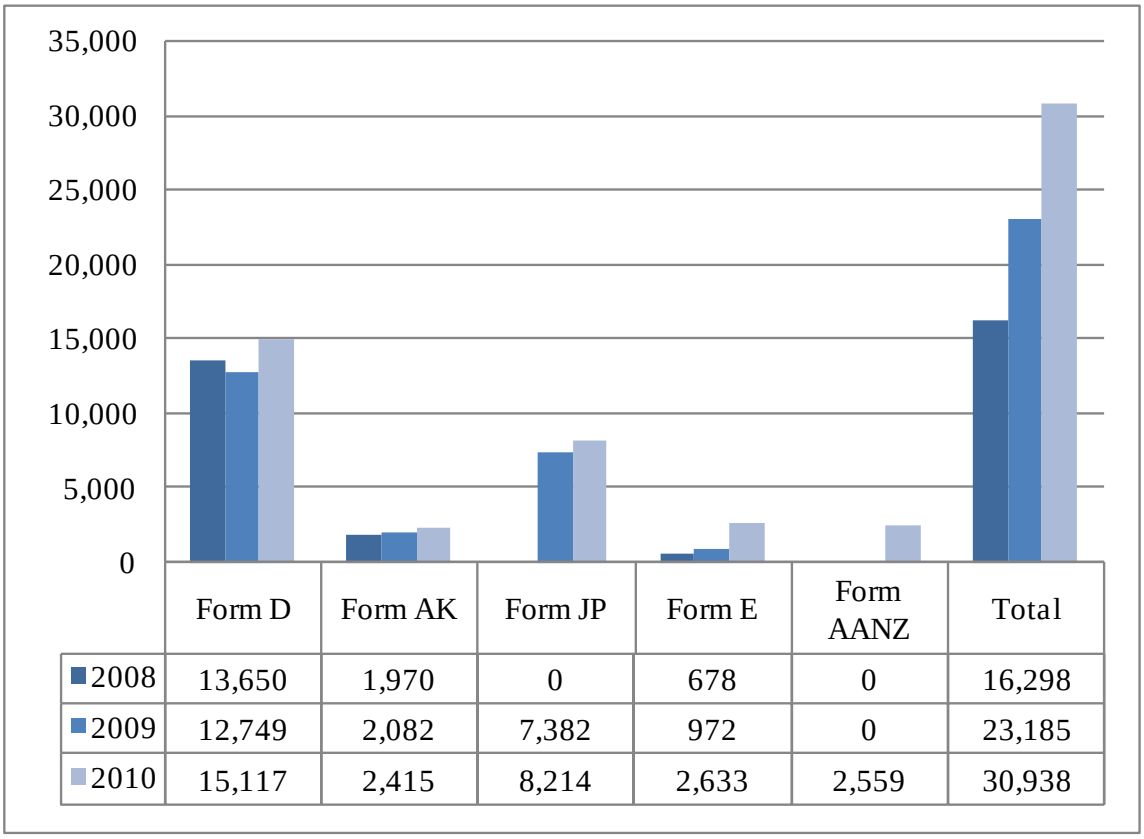
Some studies have measured AFTA utilization in terms of CO issuances. Avila and Manzano (2007), using as a measure the amount indicated in AFTA--Common Effective Preferential Tariff (CEPT) COs issued in the Philippines over the value of Philippine trade with ASEAN, reported an AFTA utilization rate of 15 percent for exporters and 19 percent for importers in the Philippines, with users mostly in the transport sector. Medalla and Balboa (2009) using 2007 data on COs used by Philippine exporters, found a 17 percent usage of the CO for AFTA--CEPT out of the total COs issued.[11]

Looking closely at the number of FTA COs issued in recent years, data from the Philippines' Bureau of Customs from 2008 to 2010 suggest an increasing use of FTAs. The data in Figure 6 indicate an increase in total CO issuances for FTAs, from 16,298 to 30,938 or about 90 percent. Of the different FTAs, CO issuances are highest in the ASEAN Trade in Goods Agreement (ATIGA) (Form D), followed by the Philippines-Japan Economic Partnership Agreement (Form JP) and then AKFTA (Form AK).[12]

[11] CO issuances include those for the Generalized System of Preferences (GSP), the ACFTA and the General/White CO. ACFTA COs composed 0.7 per cent of total CO issuances.
[12] AANZFTA entered into force in 2010, thus there were no issuances in 2008 and 2009. The same is true for the Philippines--Japan Economic Partnership Agreement (PJEPA) for 2008.

ACFTA (Form E) started relatively low in the number COs issued but had the highest increase in 2009-10 of about 170 percent.

Figure 6. Number of CO Issuances by Type of CO Form, 2008-10



	Form D	Form AK	Form JP	Form E	Form AANZ	Total
2008	13,650	1,970	0	678	0	16,298
2009	12,749	2,082	7,382	972	0	23,185
2010	15,117	2,415	8,214	2,633	2,559	30,938

Source: Exports Division, Bureau of Customs

A recent survey by Wignaraja et al. (2010) covering 155 Philippine firms from the transport, electronics and food sectors found that 20 percent of these firms used AFTA, with 41 percent planning to use AFTA or recently/soon-to-be-signed FTAs. Findings further revealed high AFTA utilization rates in the transport sector, in the domestic firms, and in the large firms.

Looking more closely into the transport and electronics sectors, 39 percent of firms that use AFTA were from transport and 11.8 percent from electronics. The high margin of preference, i.e. the margin between the MFN tariffs and the FTA preferential tariffs (5-43 percent) in transport products, and successful implementation of the AICO

scheme[13] are believed to explain high AFTA utilization in the transport sector. By contrast, in the electronics sector, low or zero MFN tariff rates and investment schemes available in export processing zones (e.g. duty-free importation and tax and non-tax incentives) where a lot of electronics firms are located, deter the use of AFTA preferential rates. Furthermore, for most firms, costs and delays associated with compliance to the ROOs is one of the reasons for low utilization or non-usage of AFTA.

Looking at the impact on the operation of business, AFTA's preferential rates allowed user firms to import cheaper raw materials and components, hence reducing their production costs. The Wignaraja et al. survey also revealed that Philippine firms view FTAs as a means of increasing market access and so have shown interest in ASEAN's FTAs with China, Japan, Korea and the EU.

Some similar findings in the Wignaraja et al. study, particularly for the transport and electronics sectors as well as all firms in general, were also found in the firm interviews plus further insights on the utilization of FTAs in relation to the supply chain. These issues raised can be considered as critical points along the supply chain and will potentially impact on its efficiency.

5. Outline of the Firms' Supply Chain

Selected firms from the automotive and electronics sectors were interviewed in order to find out about the supply chain the firms belong to, and the impediments they encounter, in view of participating in FTAs. Questions were asked with the aim of illustrating the firms' segment in the supply chain, and of discussing issues and problems they face at critical points within the chain (e.g. import and export points). Table 9 presents a profile of firms interviewed – three firms from the automotive sector and one firm from the electronics sector.

[13] The AICO scheme is an industrial cooperation programme in the ASEAN that aims to promote joint activities between ASEAN-based manufacturing firms. A major advantage from this scheme is that AICO products can enjoy preferential tariff rates of 0-5 per cent. Honda Cars Philippines, Toyota Motor Philippines, Philippine Auto Components, Inc. and Ford Motor Company have received special preferential rates of 0-5 per cent from AICO arrangements (Wignaraja et al., 2010).

5.1. Profile of Firms

Of the six firms, three were foreign owned, and three locally owned (100 percent Filipino). One automotive firm was an assembler of vehicles; two automotive firms were first tier suppliers, that is, they supply directly to assemblers; and the three electronics firms were second/third tier suppliers. One firm, Firm A, was a small enterprise based on the number of employees; while the rest were, under the same classification, considered large firms. All firms were exporters of at least 60 percent of their production (with ASEAN as one of the markets), as well as importers of inputs/raw materials.

Table 9. Profile of Firms Interviewed

Firm	Sector	Product	Tier	Ownership	% Exports	% Imported inputs	No. of regular employees
	Automotive	wheels	First tier	Australian	60%	40%	29
B	Automotive	motor vehicles	Assembler	MNC-American	70%	60%	610
C	Automotive	electronic and mechanic components	First tier	MNC-German	100%	> 90%	620
D	Electronics	components for HDD	Second/Third Tier	Filipino	100%	50%	850
E	Electronics	semiconductor and microwave components and modules	Second/Third Tier	Filipino	100%	90%	400
F	Electronics	multi-chip packages and modules	Second/Third Tier	Filipino	100%	95%	1,000

Source: Interview of firms

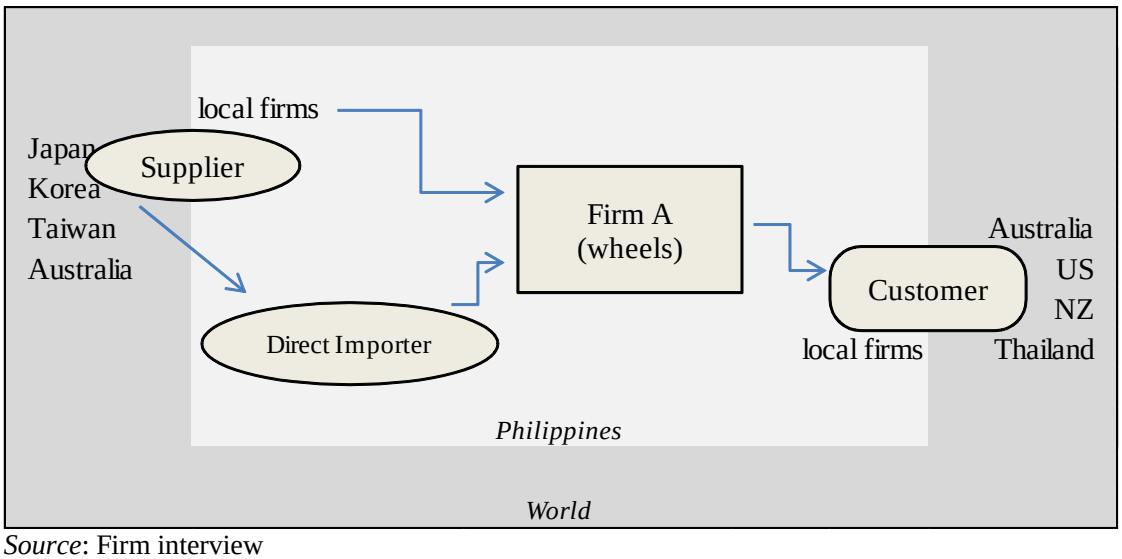
5.2 A Description of the Firms' Supply Chains

Firm A, an Australian-owned automotive firm, designed and manufactured wheels. In the manufacture of wheels, Firm A's main input was steel. Steel composed the biggest component of the raw materials imported from Taiwan, Japan, Korea and Australia (40 percent of imported inputs). The firm however did not directly import the raw materials but bought them from a local firm/trader which was the one importing from the above-mentioned countries. For the steel, this local firm/trader performed cutting and preliminary processing before delivering to Firm A. As for the rest of the inputs, 60 percent came from the local suppliers and were mainly chemicals.

The firm exported 50 percent of production to the firm's mother company in Australia and 10 percent went to the US, New Zealand and Thailand (minimal). Firm A took its request orders from the mother company in Australia. Firm A's customers in the Philippines included Mitsubishi, Nissan and Toyota, where 40 percent of production is sold.

Firm A had just recently known about the AANZFTA, as informed by its mother company in Australia The firm had started using this FTA.

Figure 7. Firm A (automotive)



Source: Firm interview

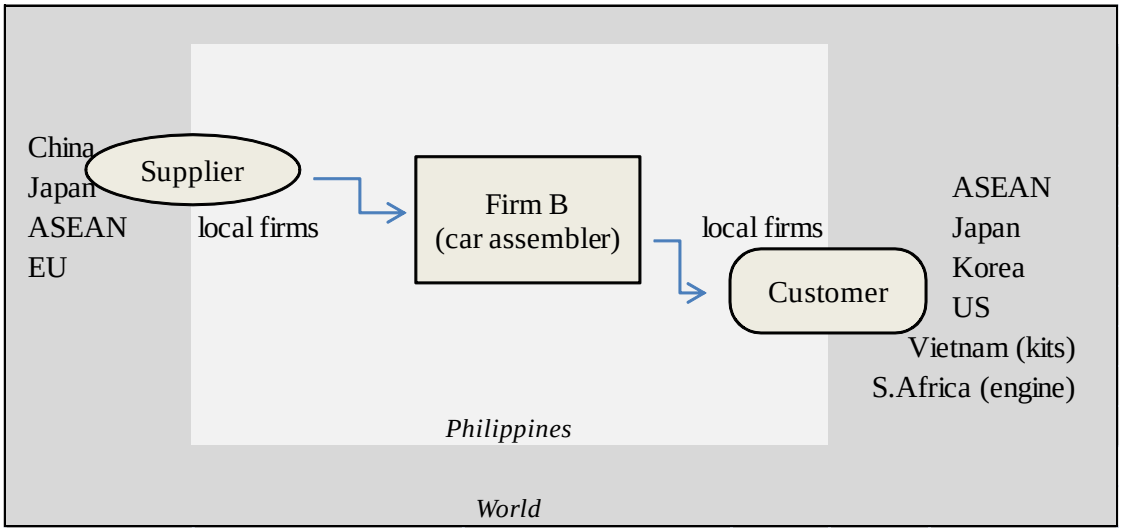
Firm B, a multinational company, assembled motor vehicles (completely built-up [CBU]). The firm also assembled engines and produced vehicle kits and parts for

assembly abroad. In the assembly of vehicles, its main operation, the firm imported 60 percent of its inputs from ASEAN,[14] China, Japan and Europe, and the rest (40%) of inputs were procured locally.

Firm B exported CBUs to ASEAN (Thailand, Malaysia and Indonesia), US, Japan and Korea. Exports of CBUs composed 70 percent of exports. The firm also exported kits and parts to Vietnam (where the kits were assembled into vehicles), and assembled engines for export to South Africa.

Firm B used ATIGA, AFTA and Philippines-Japan Economic Partnership Agreement (PJEPA) and had previously participated in the AICO scheme.

Figure 8. Firm B (automotive)



Source: Firm interview

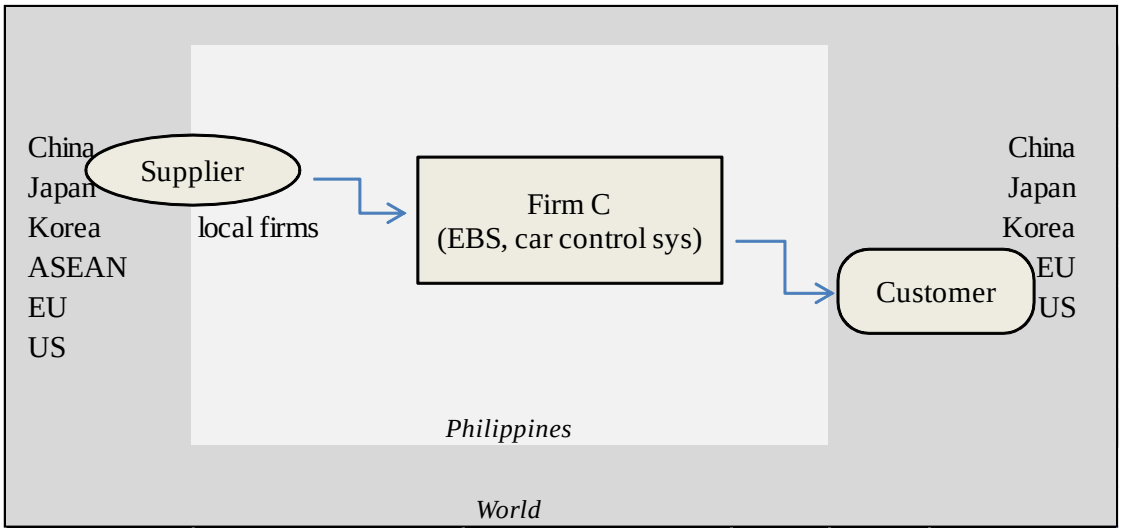
Firm C, a multinational company, produced electronic braking systems, body and security systems (seat control, door control, roof control and access control), and original equipment spare parts. The firm imported electronic parts and equipment parts from different parts of the globe – ASEAN, China, Japan, Korea, the EU and the US. Of its imports, 60 percent came from the EU, US, Japan, China and Korea, which they classified as high-cost countries; while 40 percent came from ASEAN (a small percentage from the Philippines), which they classified as best-cost countries.

[14] Of the imported inputs, 2-5 per cent came from ASEAN.

The firm exported to Japan, China, Korea, the US, Germany and Belgium, basically to the firm's counterpart in these countries (inter-firm trade). The automotive parts/applications that were manufactured in the Philippines were exported to another location of the MNC, for instance, in China or Germany, where further processing was done, i.e. other parts attached to the parts manufactured in the Philippines. For example, an electronic braking system produced in the Philippines would be sent to Germany to attach a hydraulic part, after which the by-product would be sold to car companies.

Firm C utilized the ACFTA, AKFTA and PJEPA. The firm would be studying AIFTA and AANZFTA to assess potential benefits.

Figure 9. Firm C (automotive)



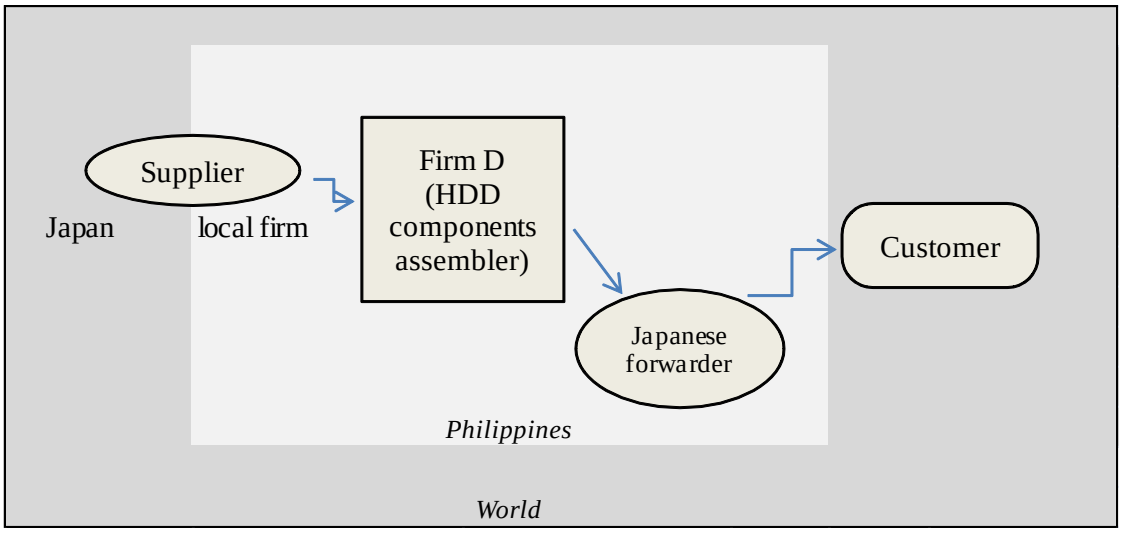
Source: Firm interview

Firm D, a 100 percent Filipino-owned firm, has been engaged in the assembly of hard disk drive (HDD) components. Their inputs came from Japan (50 percent), which were imported directly; and the Philippines (50 percent), through a Japanese firm. Their suppliers were basically dictated by their customers. The firm exported 100 percent of its production, but indirectly via a Japanese firm located in the Philippines, which then forwarded HDDs globally.[15]

[15] The interviewee preferred not to disclose any further information.

Firm D had not used any FTA nor were aware of its provisions. However, the firm would be eager to learn about FTAs as it could be relevant to an upcoming electronics product that they were going to launch.

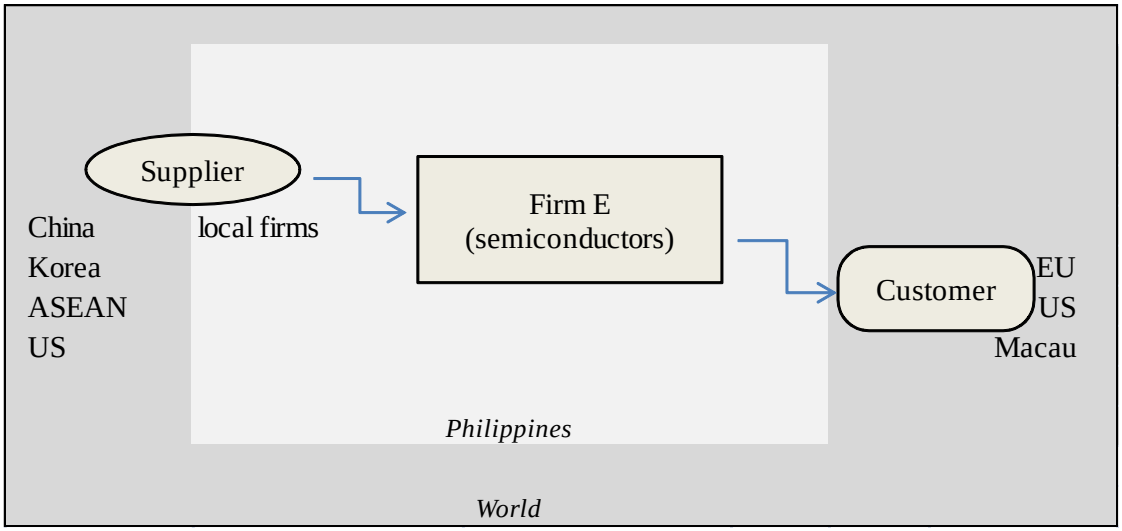
Figure 10. Firm D (electronics)



Source: Firm interview

Firm E, an electronics firm, manufactured semiconductor and microwave components and modules which were used in computers, telecommunications, consumer as well as automotive products. The firm imported inputs from Singapore, Malaysia, Korea, and the US and China (minimal). Local supplies composed 10 percent of total input purchases. The firm exported to the US, Europe and Macau (all production is for export). The firm had not used FTAs, as it was not required by their customers.

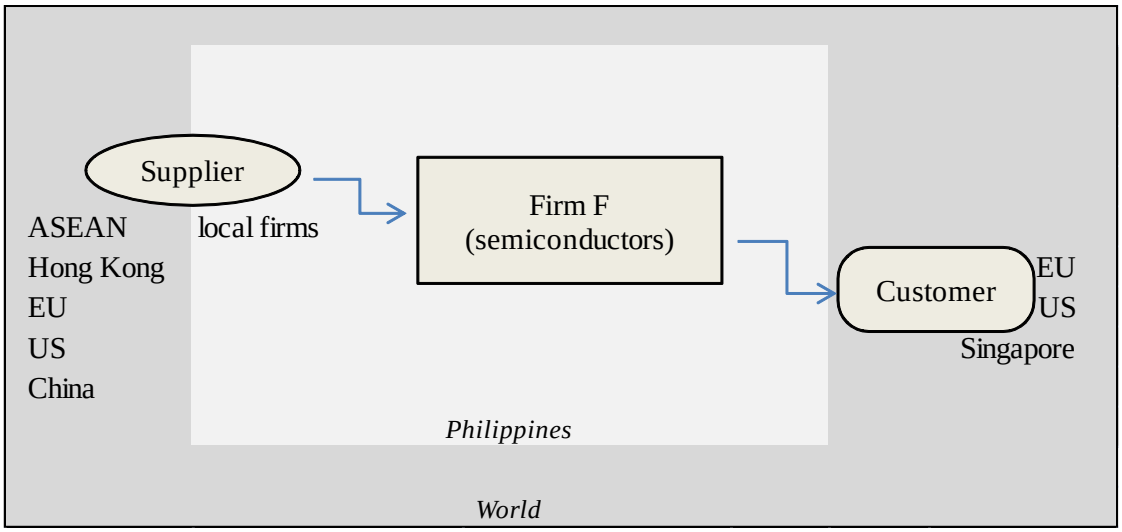
Figure 11. Firm E (electronics)



Source: Firm interview

Firm F, an electronics company, has been engaged in the production of multi-chip packages and modules used in electronic gadgets and equipments. The firm imported inputs from the US, Europe and Asia – Singapore, Hong Kong and China (minimal). About 5 percent of its inputs were locally sourced. All of its production was for export. The firm exported to the US, Europe and Singapore. They had not used FTAs as their customers did not require it.

Figure 12. Firm F (electronics)



Source: Firm interview

5.3. Critical Points in the Supply Chain

The automotive and electronics firms interviewed said that the supply chain they belonged to was already established and running smoothly. Particularly for the Philippines, suppliers as well as customers have been established by a sister/mother firm or affiliate of MNCs. For the others, their continued participation was attributable to the quality of products and good reputation. There are, however, points that need improvement as discussed below, that if addressed will motivate firms to capitalize on benefits of exploring a wider market via the FTAs.

5.3.1. Supply Base in the Philippines

The three automotive firms interviewed all mentioned lack of supply of raw materials in the domestic market. One firm related how behind the Philippines is compared to the roughly 1,000 suppliers in Thailand. Another firm further opined that there is also a need for suppliers to develop their products as acceptable to the sector, and that, as there are not enough suppliers in the domestic market, there is no choice but to import from other countries. This vehicle assembler interviewed pointed out that this makes the cost of inputs more expensive than if they were sourced from the domestic market, because for instance, there would be no freight costs and other costs related to importing. This automotive firm added that, compared to Thailand, it is more expensive to produce cars in the Philippines –a difference of US$1,500-2,000 per unit.

In the Philippines, formal policies for the automotive sector have been issued since the 1970s, but the sector was not able to establish a good number of players, especially suppliers, and volume in production, as compared with its ASEAN neighbours such as Thailand. In 1987, the car development programme was aimed to develop a viable automotive parts manufacturing industry. However, the car programmes in general seemed to aim more at attracting the MNCs to invest and set up production in the Philippines (Quimba and Rosellon, 2011). These car programmes allowed entry of foreign car companies to establish assembling facilities in the country but missed out on developing a base of domestic suppliers.

The electronics industry, on the other hand, is characterized by a supply base of components assembly and testing, and can be considered to be at the lower part of the supply chain, i.e. major products having low value added. What is also apparent in the

country is that the mother firms from a foreign country would put up a subsidiary or an affiliate that will supply raw materials, in the same location or at least near the firms' manufacturing plant.

5.3.2. Logistics

In the automotive and electronics firm interviews, exportation was said to be smooth, especially for those located in an economic zone, where the administrator assists and facilitates the smooth movement of goods. One firm only relates the forwarders' lack of knowledge or education with respect to compliance to FTAs. It was observed that forwarders were not attending trade forums/seminars.

On the importation side, the issue of logistics would be mentioned almost instantly in the firm interviews. There appeared to be a continuing problem of congestion in the ports, causing delay in the delivery of goods and therefore adversely affecting business operations. The interviewed firms that shared this experience suggested giving the needed attention in improving the process and system in the ports of entry in the country. The firms felt that the rate of improvement was not on a par with the industry requirement that is the cause of the problems on the logistics side – importation in particular.

5.3.3. Fiscal Incentives, FTA Preferential Rates

Fiscal as well as non-fiscal incentives[16] are offered by the government to firms as a way of attracting more investments from existing firms and new investments from potential firms. In the Philippines, these incentives are normally given if the firm is registered with the Board of Investments (BOI), or economic zone authority such as the Philippine Economic Zones Authority (PEZA), i.e. located in a special economic zone. Outside economic processing zones, there are tax holidays given to customs

[16] Fiscal incentives include income tax holidays or exemption from corporate income tax for four years after which a special 5 per cent tax on gross income in lieu of all national and local taxes could be availed of; duties and tax exemption on imported capital equipment, spare parts, supplies and raw materials; domestic sales allowance equivalent to 30 per cent of total sales; exemption from wharfage dues and export taxes and fees. Non-fiscal incentives include permanent residence status for foreign investors and immediate family members; employment of foreign nationals; simplified import and export procedures.

manufacturing bonded warehouses. A lot of manufacturing and exporting automotive and electronics firms enjoy these incentives.

Wignaraja et al. (2010) find little interest in the utilization of FTAs for firms where these incentives are available. This is possibly because they make their activity profitable enough such that there is less need to search for more measures especially if such efforts entail additional costs. But perhaps more importantly, the electronics sector already enjoys low or zero MFN tariffs and reduced tariffs from the Information Technology Agreement (ITA) of the World Trade Organization.

The automotive firms interviewed, who were all users of FTAs, were quick to say that the fiscal incentive schemes of the government and the FTA provisions complement each other. As one firm put it, fiscal incentives are there to invite investors to the country and to keep existing investors; while preferential tariff rates are there to encourage and motivate firms to produce or expand production for foreign markets. These statements imply that although fiscal incentives were already in place and help reduce some costs for firms, the FTAs were still needed as they provide incentive for firms to explore potential foreign markets for their products.

Fiscal incentives such as income tax holidays, duty-free importation of capital equipment and raw materials, exemption from export taxes and fees can be availed of only by firms registered with the BOI, PEZA and other special economic zones such as those located in the municipalities of Subic and Clark. In general, export-oriented firms are eligible (those exporting at least 70 percent of their output). A report by the Philippine Exporters Confederation (Philexport) acknowledges a declining trend in exports of many firms, mostly[17] SMEs – on account of global recessions that hit the country and the increasingly competitive environment in global trade. Unless the export sales criterion is lifted (which Philexport is pushing for), then firms that export below the cut-off will, for instance, fail to benefit from a duty-free importation of raw materials and/or export tax exemption which could have helped them be competitive with their foreign counterparts. For these firms, preferential tariff rates in FTAs (especially where MFN rates are high) can be seen as a possible substitute for the local fiscal incentives.

[17] One respondent firm, a small Australian autoparts firm, declared that it has only been able to export around 60 per cent of sales in past years.

However, preferential rates would be a complement to local fiscal schemes, as mentioned above. It would also appear that preferential tariff rates would be irrelevant if a firm's import duties are already zero, but on a wider perspective, FTAs signify greater potential market access and relaxed entry barriers for firms, especially for SMEs or for emerging exporters. One important benefit of FTAs that firms identify, according to the survey of Wignaraja et al., is increased export sales due to greater market access. Wider market access also implies access to new markets. One automotive firm interviewed said it was studying the possibility of importing from/exporting to the Philippines/ASEAN's new FTA partners of India, Australia and New Zealand. This firm was located in an economic zone, therefore benefiting from fiscal incentives, but was still keen to know what potential market the newly-signed FTAs could offer.

What FTAs do, especially for SMEs, is give a signal that trade barriers are relaxed (especially with reduced tariff rates), and as such a push to exploit (if an existing market) and explore (if a new, potential market). Large firms have resources to study the market or go on trade missions abroad to promote their product. For small exporters, this can be a problem. The government in fact has designated agencies that handle international trade expositions and missions, as well as export and trade promotion for the Philippines. These agencies need to be even more active now especially because the FTAs are building up the competition. As it is, Philippine trade shows are said to be not as popular and well-funded by government as those in neighbouring countries.[18]

5.3.4. Customs Procedure

Previous studies of FTA utilization (e.g. Medalla and Balboa, 2009; Wignaraja et al., 2010) have found that the costs and delays related to the administrative procedures are one of the impediments to the use of FTAs. As it appears from the firm interviews, it is fairly easy to get a CO especially for compliant and long-time exporters, and more so for big exporters. However, going through the process can be costly. One firm interviewed – a small, long-time exporter – said it was able to complete documents and could obtain COs easily but it did not come cheap. Two other firms interviewed which

[18] Edu Lopez, 'Philexport bats for lifting of export sales requirement on SMEs', Manila Bulletin online article, 19 May 2011, <http://mb.com.ph/node/319030/philexport-bat>.

were big exporters with an efficient system in terms of CO applications, went though the bureaucracy but declared that they did not have to spend very much or incurred no significant additional cost. These firms preferred not to disclose the cost in total or percentage terms of going through the red tape, but apparently for a small firm it is a big part of its costs.

The small firm said that the paperwork involved, for example, in origin documentation, can be burdensome for a small enterprise like them, and so they hired a broker to take care of such transactions. On the other hand, the two large firms mentioned that they had designated staff that took care of customs matters. As was inferred in Wignaraja et al. (2010), the large firms have their own export or logistics department or staff handling documentation requirements for FTA compliance, and this translates to ease in complying with FTA documentation and thus one reason that encourages use of FTAs.

Most of the interviews indicated that documentation was not difficult to accomplish, a firm will just have to follow the required documents. The firms were also aware of the implementation of an electronic filing system to facilitate the filing of documents – wherein some documents may be sent electronically, and after evaluation a CO may be issued. Some of the firms however pointed out that there have been frequent instances of breakdown in the system. From one firm's observation, the system was not yet robust and the customs personnel concerned were not very knowledgeable with the system such that repairs could not be made immediately. The firm posited that capability and responsibility need attention, and that careful planning would have been needed at the onset.

5.3.5. ROOs in FTAs

The three firms that use FTAs shared the same view that harmonization of ROOs would be beneficial. For instance, a regional value content (RVC) rule for all, with a lower RVC content, would be preferred. Although these firms are able to comply with the 40 percent RVC (those that face this rule of origin), a lower percentage was still favourable. In Wignaraja et al. (2010), they found that lower RVC (than the existing rule) were favoured by firms, and (together with the introduction of self-certification in the origin application process) could possibly double AFTA usage.

As regards the different CO forms, the firms admitted that the information asked from the forms was almost the same and so filling out the forms was not difficult. In addition, with their frequent shipments, they have organized a system and already knew which forms and which particular information were needed.

Another issue is with regard to customs personnel and classification of products and/or origin. A firm related an experience when customs personnel misclassified a product. The firm had to call the attention of the customs administration, which meant some time being wasted. The Wignaraja et al. (2010) study also found one related factor that impedes firms' FTA use – the arbitrary classification of origins, which emanates from differing tariff classification among countries (caused by slow adoption of harmonized tariff classification), and therefore origin and duty determination is going to be in question.

5.3.6. Non-Tariff Barriers

The firms had International Organization for Standardization (ISO) certification requirements– ISO 9001 for quality management system of business, and TS16949 which applies to automotive. There was only one firm without ISO certification. Although its customers require it, it gets away with it since it is the only supplier in the Philippines, aside from them supplying the mother company abroad.

As for standards, the firms claimed that the customers approve the quality of their products and so in essence this is the standard they follow, and which they are able to satisfy. This indicates that there appears to be less constraint as far as customers' standards are concerned, especially for firms that manufacture for parent firms abroad, or that operate as contract suppliers. There was however one issue raised by one firm, a vehicle assembler, with regard to complying with local and international standards. For some completely knocked down (CKD) parts, this firm had to get certification for every export shipment (e.g. seatbelts), which cost 5,000 Philippine pesos (around US$115) each time. Meanwhile, imported vehicles are not subject to such standards, therefore this was seen as unfair and penalizing local assemblers.

5.3.7. Government Support

The interviews indicated that the government support and efforts were found to be lacking, as far as businesses and FTAs were concerned. Firms claimed that there was not much information dissemination when it comes to FTAs or benefits that businesses can get from using FTAs. Government agencies such the Department of Industry hold forums that tackle FTA or general trade or industry issues, but the belief was that there was not enough effort to engage the firms and all stakeholders at these gatherings. The firms appealed for the government to exert more effort to encourage exporters/businesses to use or maximize the use of FTAs so that they may know and eventually earn the benefits. One electronics firm interviewed had no working knowledge of FTAs and what potential benefits it can get. Meanwhile, one automotive firm related having encountered a forwarding company that had limited knowledge on FTA compliance and further added its observation that forwarders are not invited or are not attending forums.

For the firms to use FTAs and participate in the supply chain to their full potential, what they also asked from the government was active promotion of local companies/suppliers and support for them to develop products that are acceptable to their sector– to current and potential customers in the supply chain. The small firm interviewed related the lack of support even coming from fellow local firms, when it is in fact possible to help local suppliers develop through technical knowhow exchange, as a large automotive firm has experienced. If such arrangements can be done by more firms, then the supply network in the Philippines will improve.

On a positive note, there are some people from the government who work towards helping business in matters of investment as well as trade. The Philippines has investment promotion agencies (IPAs). Among the IPAs, the agencies that handle administration of economic zones seem to give the better services to firms. One highly regarded IPA is PEZA, which manages 64 manufacturing economic zones in the country. Firms located in PEZA zones praised the good service that they got from PEZA. Firms interviewed said that the agency responds quickly to consultations and has no bureaucratic procedures, therefore lessening logistics delays. Exportation, as well as importation, is done with relatively more ease than being located outside the PEZA zone or not having an active IPA. The experience with PEZA, however, was in

contrast with what firms experience in dealing with some customs personnel who are observed to lack good understanding and knowledge of FTAs.

The private sector in its own way makes an effort to disseminate information via industry organizations. In the Philippines, there are several industry organizations in the automotive and electronics sectors that are active in lobbying different issues, although only some are very active in terms of free trade issues and some are not. The active ones normally hold forums to tackle the latest issues among members, or in annual gatherings to discuss plans or roadmaps for the industry.

6. Conclusion

This chapter has looked at the automotive and electronics sectors, which have supply chains integrated with the rest of East Asia. Trade data and firm interviews indicate that the Philippines automotive and electronics imports/exports come from/go to East Asia – China, Japan and Korea, and Thailand, Indonesia and Malaysia in ASEAN. Outside the region, the US, Germany and Australia are also top markets for products imported and exported. Thus, insofar as FTAs are concerned, the supply chain could be facilitated as these markets are FTA partners of the Philippines.

As other studies have found – that automotive firms use FTAs more than other sectors such as electronics – the interviewed automotive firms are FTA users, while the interviewed electronics firms are all non-users. The interview results also validate the observation that the margin of preference and domestic incentives received by firms determine whether or not firms use FTAs – margin of preference is high in the automotive sector, while tariffs in electronics are already low and domestic incentive schemes are present. Lack of information and bureaucratic rent-seeking procedures are also cited. It is also observed that the electronics firms interviewed, since they are essentially sub-contractors, are highly dependent on their customers. For instance, a reason cited by two firms for the non-use of FTAs was that their customers (buyers) do not require them to submit documentation for CO.

On another note, firms that were interviewed claimed that the supply chain they belong to has been running smoothly. These firms had been importing and exporting for several years, such that their relationship with suppliers and customers was already established. Moreover, firms welcomed the fiscal and non-fiscal incentives from the government, and for users of FTA, the additional incentives they receive in the form of preferential tariffs, which make production and exchange cost-effective.

What remains to be addressed are: on FTA matters – harmonization of ROOs; and for domestic policy issues – customs procedures, logistic systems, and government support. Highly cited issues that need attention include: the bureaucratic customs procedures which still exist and trouble businesses; more organized and modernized ports to meet the logistics demands of industry; and government support for more awareness of FTAs, promotion of products; more efforts to develop capacities of firms especially in the automotive sector such that the much-needed supplies can be made available locally; and for customs personnel to be well educated on technical systems used in customs management and on matters related to FTAs.

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