

Chapter 9

Manufacturing of Car in the Philippines

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9.1. Firm Background

This manufacturing company that produces cars in the Philippines is a large multinational producer. The company operates manufacturing operations in over 25 economies. In 2014, the company sold over 10 million vehicles in some 170 economies. The company's Head Office is in Japan, and the regional office for the ASEAN economies is located in Thailand. The case study firm has a vehicle line-up of 18 models in the Philippines and a sales distribution and service network composed of 44 outlets across the economy as of end 2014.

The Philippine automotive industry, of which is the case study company is part, comprise two sectors: assembly operations and manufacture of parts.² Imported cars are classified based on their level of completion: completely knocked down (CKD), referring to imported parts such as engines or transmission, which are combined with locally-produced parts to be assembled in the economy by different automotive firms; semi-knocked down (SKD), which are semi-assembled vehicles without tires or batteries; and completely built-up vehicles (CBU), which are completely assembled cars.

The firm's activities in the Philippines has been of considerable economic importance over the period 1988 to 2012, and can be summarized in the following figures taken from the company's website:

- Investments in the Philippines totaled Php \$ 35.5 billion (1988-2012).
- Procurement purchases from local suppliers totaled Php \$ 95 billion (1989-2012).
- Vehicle production in the Philippines came to over 500,000 units (1989-2012), of which CKD were two-thirds, or 67%.
- Total vehicle sales in the Philippines came to 750,000 units (1989-2012).
- Government revenues generated by the firm in the Philippines amounted to Php \$ 136 billion (1988–2012).
- The firm's total value chain employment in the Philippines was over 40,000 employees as of end 2012.

The firm is located in a Special Economic Zone south of Metro Manila, where it is permitted to undertake automobile assembly and production. The firm does not export vehicles and thus does not enjoy tax and duty-free benefits from the Phil. Economic Zone Authority (PEZA) as these are only accorded to exporting manufacturers located there. However, there are logistical advantages to being located in the zone close to other suppliers and the main plant. Additionally, the firm enjoys the advantage of being able to receive incentives from the Government in the form of duty-free importation of parts and income tax holiday for four to six years, depending on the specific guidelines of the particular incentive granted by government.

The plant's capacity is supposed to be 35,800 units per year. However, in 2014 the plant produced 41,000 units in response to increased demand, using adjusted production with two overtime shifts. The manufacturing assembly plant employed 1,600 regular employees as of December 2014.

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² Aldaba, Rafaela. 2007. "Assessing the Competitiveness of the Philippine Auto Parts Industry" Philippine Institute for Development Studies, Discussion Paper Series No. 14
www.eaber.org/sites/default/files/documents/PIDS_Aldaba_2007.pdf

The firm's manufacturing operation is supported by group company suppliers, many of whom are located within the Special Economic Zone and provide manufacturing inputs. These group suppliers may also export their intermediate inputs to other company locations overseas, or sell to other automobile manufacturers in the economy. The firm has an after-sales services office located in Santa Rosa. The vehicle sales and customs relations departments are located in Makati City. Several of the group suppliers export parts to other economies in the Asia Pacific region, especially Thailand, Viet Nam and Indonesia.

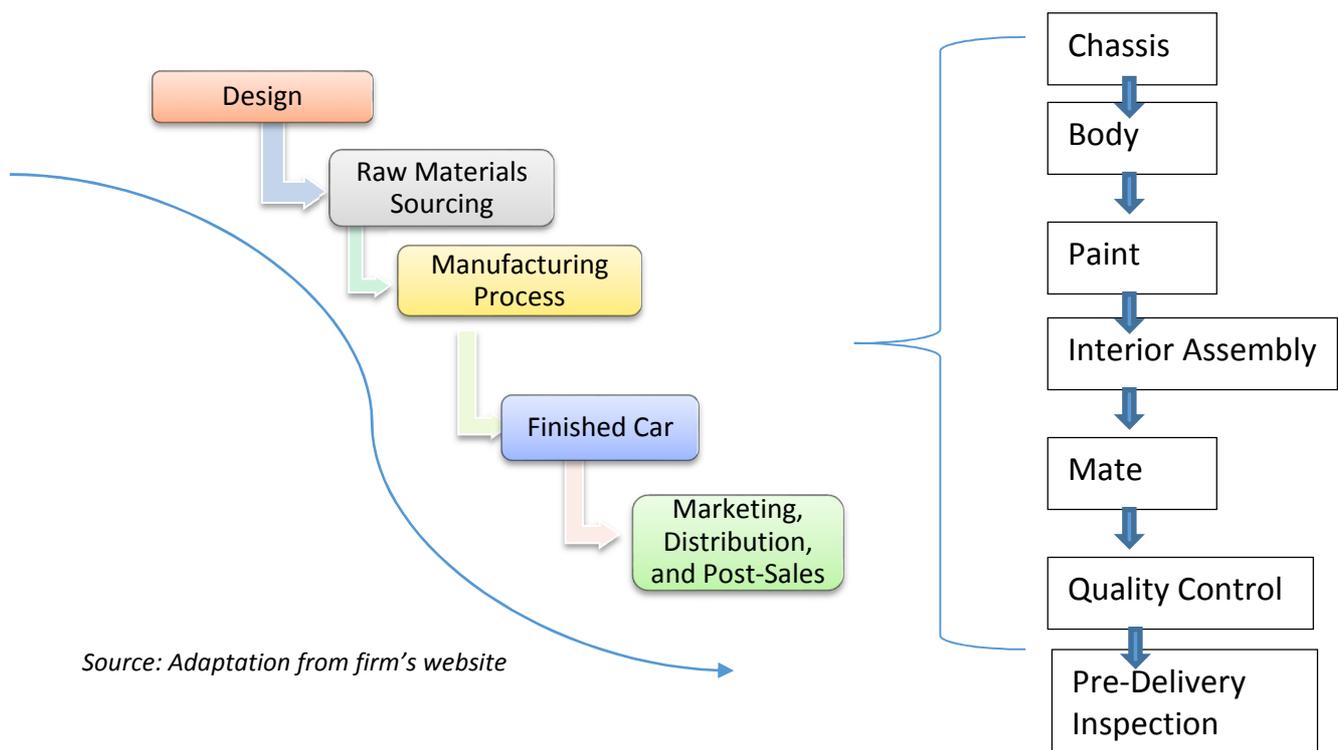
The firm produces two models in the Philippines. Both cars are produced for domestic sales only; at this point the Philippines does not export any fully finished automobiles, only parts. The firm's goal is to surpass production of 100,000 models per year in order to be able to export cars.

According to a research group in the Philippines, the firm had 39.4% of the market share for sales in the economy at end 2014, with over 106,000 unit sales.³ One of the firm's models was the best-selling vehicle in the economy and the market leader for the twelfth year in a row, representing nearly 10% of the domestic car market.

9.2. The Vehicle Value Chain

The value chain under study here is depicted in a simple, stylized form in Figure 9.1 below.

Figure 9.1. Value Chain for Car Production



Source: Adaptation from firm's website

³ <http://focus2move.com>

The value chain for the car is fairly complex, involving many stages and many suppliers into the final assembly.

- The design and manufacturing blueprint for the car are provided by the firm's Head Office in Japan.
- The procurement of some of the raw materials required in the production process (steel, aluminum, rubber and many others) is sourced from various locations in the world. Sixty percent (60%) of the raw materials used in the assembly manufacture process are imported.
- Many of the manufactured inputs into the car production assembly are supplied by several companies that are not affiliated with the cases study firm but located within the Special Economic Zone (SEZ), labeled as "locators" because they, as first-tier suppliers, followed the case study firm (lead firm) in locating to the Philippines. There are 44 local suppliers of parts and 9 indirect suppliers for paints, chemicals and steel sheet that are locators in the SEZ. Their sales to the case study firm are considered domestic sales. Examples of these first tier supplies include:
 - manual transmission
 - switches
 - machines parts
 - transmissions and engine gears
- Inspection and quality control are carried out at different stages of the manufacturing process and at the end for each finished automobile according to the strict specifications provided by the Head Office.
- The final stage of the value chain for the production of the car is the post-production phase of marketing and distribution.

The activities in the production or manufacturing phase of the value chain shown in Figure 9.1 carried out in the firm's assembly plant include the following:

- pressing & stamping (shaping metal);
- welding;
- painting;
- assembly;
- mate;⁴
- inspection & testing for quality control

Once the car is assembled and passes quality control, the unit is retained in the Special Economic Zone until it is distributed to the franchise outlet or dealership in various parts of the Philippines. As of the first quarter of 2015, there are 46 exclusive dealers in all of the Philippines for the car. The value chain studies ends with sales at one of the retail outlets and post-sales servicing.

⁴ The chassis assembly conveyor and the body shell conveyor meet at this stage of production.

9.3. Services along the Value Chain

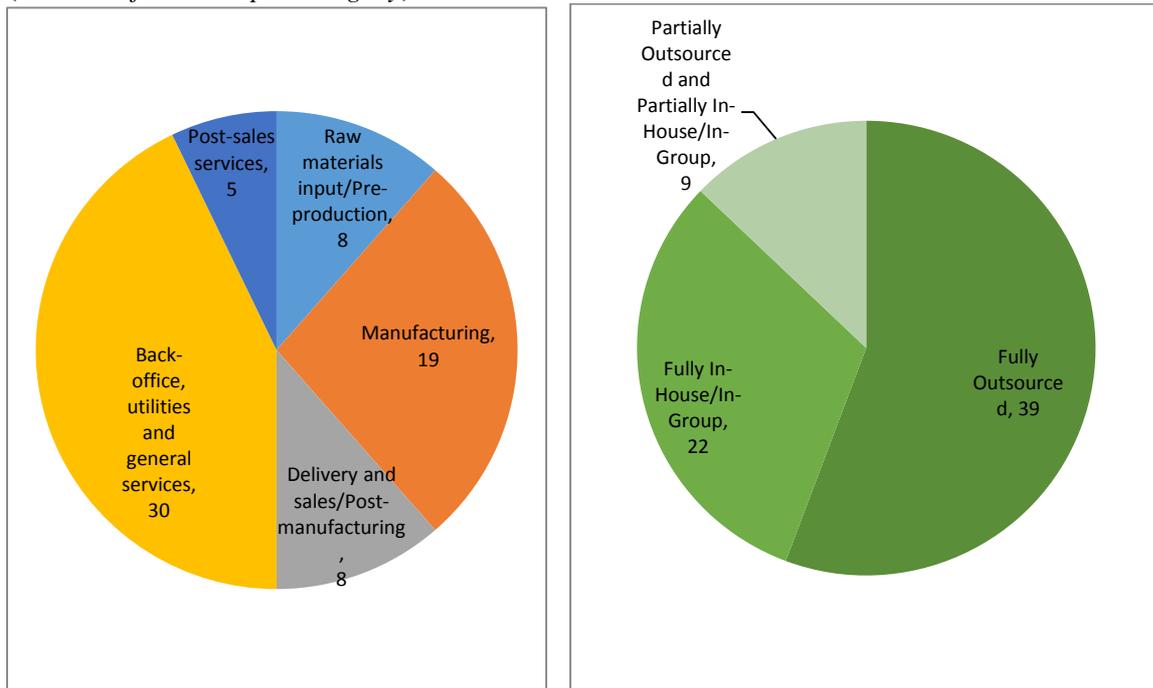
As has been emphasized in other mapping studies, services fulfill a range of functions along value chains. A classification of these is set out in Table 9.1 below. This clearly shows that for manufactured products such as an automobile, services enter the value chain at all stages, including the pre-production stage. They also accompany the final product in the post-manufacturing stage. This multi-functional role of services is the reason that their overall contribution to economic output is so large.

Table 9.1. Multiple Functions of Services in the Manufacturing Value Chain

Functions of Services	Illustrative List of Services by Function
Government regulatory services	<ul style="list-style-type: none"> • Licensing and certification • Customs administration • Product safety standards • Environmental quality
Pre-manufacturing services	<ul style="list-style-type: none"> • Design • Prototyping • Intellectual property management
Manufacturing support and coordination services	<ul style="list-style-type: none"> • Management and administration • Personnel and human resources • Insurance • Financial services • Accounting • Legal services • Repairs and maintenance • Cleaning • Facilities services (water, electricity, gas, sewage) • Security services • Packaging and labeling
Linking services in value chains	<ul style="list-style-type: none"> • Transport • Communications
Post-manufacturing services	<ul style="list-style-type: none"> • Marketing • Advertising • Distribution • Retail • After-sales services

The number of services used in the assembly value chain for the car as identified in this study was 70 in total (see Appendix A). This number includes services used in the pre-manufacturing, manufacturing and post-manufacturing phases of the value chain. The identified services have been broken down in Figure 9.2 as between pre-production stage, manufacturing stage, delivery and sales/post-manufacturing stage, back-office services and post-sales services, with the largest number of services listed as back-office support. As in the other case studies, the analysis treats both government and private services as additive sources of value.

Figure 9.2. Services Used in the Car Value Chain by Function and Source
(Number of services per category)



Source: Service classifications based on own understanding by author

A full listing of the services identified as sources of value along the chain is provided in Appendix A, together with an indication of whether these services are sourced in-house or through first-tier suppliers (from group companies or otherwise), and the reasons for the choice of sourcing. This is also discussed in the section below.

Outsourced Services

Thirty-nine services are fully outsourced and 9 are partially outsourced by the firm for its car production are listed below (Table 9.2), divided between the categories shown in the pie chart in Figure 9.2. The reasons given for the outsourcing of services by the firm revolve around specialized skills, efficiency considerations, network economies, cost considerations and government regulatory requirements (such as the legal requirement to contract out the auditing services and the customs brokerage services at the port). While nearly all of the outsourced services are contracted to arm's length third parties within the Philippines, several outsourced services are obtained from the Head Office in Japan or other affiliated subsidiaries in Asia and therefore within the firm's own corporate structure. This includes design services and technical assistance services for various aspects of the production process when required. The reasons given for within-company outsourcing of certain services center on the protection of proprietary information, as well as the maintenance of the corporation's worldwide product standards.

Many of the third parties to whom the various services tasks are outsourced within the Philippines are small and medium-sized firms (SMEs). This is the case for car carrier services, transport services for employees, hauling and disposal of scrap materials, security services, cleaning services and installation services for accessory parts, among several others. In addition, certain form of research and development, for example, testing if the addition of coconut oil in gasoline used in cars in the Philippines would have adverse effect on the car machines, is likewise outsourced to third parties. This demand thus generates additional employment and value-added in the economy. The firm specifically states that part of the reason for this outsourcing is to integrate into the domestic economy and build

networks of domestic capability, especially among SMEs.⁵

Table 9.2. List of services used in car manufacturing

Raw materials, input/pre-production	Manufacturing services	Delivery and sales/Post-manufacturing services	Back-office services	After-sales services
1) Procurement agent for raw material sourcing	7) Cleaning services of factory (SMEs)	19) Land transport of vehicles to dealers	27) Auditing services	45) Customer services-mystery shoppers
2) Customs-related services for raw materials imported	8) Gardening services for factory lawn	20) Retail Trade services – by store	28) Insurance services for machinery and inventory ⁶	46) Customer satisfaction surveys
3) Quality assurance services (of raw materials)	9) Security guards for factory and warehouses (SMEs)	21) Retail trade services - By other non-store retail trade service	29) Insurance for staff ⁷	
4) Freight transportation services (of raw materials) by road, rail, sea or air	10) Sewage water treatment services (Partly outsourced)	22) Retail services on a fee or contract bases	30) Courier, postal and local delivery services	
5) Storage of raw materials – general storage (SMEs)	11) Waste collection – General (SMEs)	23) Retail Administration - Operation management	31) I.T. and information system management, consulting and support, with webpage development	
6) Patent filing and acquisition (Partially government services)	12) Waste collection – scrap metal disposal (SMEs)	24) Retail administration - Site development for new shops	32) Safety and security services (SMEs)	
	13) Waste collection - Sludge hauling services (SMEs)	25) Storage and warehousing services for vehicles at retail outlets	33) Telecommunication services	
	14) Government inspections on fire prevention, health hazards, environmental protection and other aspects (Partly in-house and partly government services)	26) Installation services for car accessories	34) Uniform –Design and alternation	
	15) Catering services for workers (SMEs)		35) Uniform – Laundry	
	16) Transportation services for employees (SMEs)		36) Legal services	
	17) Moving cars from assembly		37) Retail Administration-Advertising	
			38) Advertisement – advertisement agencies services	
			39) Advertisement – designers’ services	
			40) Advertisement – direct marketing and mail-in advertisement	
			41) Advertisement – cameramen, directors, photographers and models	
			42) Electricity supply	

⁵ Around 40% of parts and components used by the firm in the value chain are sourced locally, while 60% are imported. The company did not have a similar figure for the services that it uses in its output.

⁶ The firm has different insurance policies for the plants and for the vehicles produced and for the vehicles driven

⁷ Group life insurance, health insurance and hospitalization insurance apply to workers. The latter two are not offered to workers after their retirement.

	line to storage parking yard (SMEs)		43) Gas supply 44) Water supply	
	18) Repair and maintenance services for car carriers and busses (SMEs)			

Source: Author's own understanding of car value chain

In-house Services

Twenty-two in-house services are provided entirely by the firm or by in-group suppliers for the identified value chain. A listing of the in-house/in-group services is provided below. It is of note that the firm has chosen to supply itself those services that are the closest to the identity of the company (design, engineering) or to the reputation and safety of the product (quality assurance control services and repair and maintenance services), or those that involve sensitive financial information. Quality controls are carried out by the firm but are dictated to the company by the Head Office in Japan through its established system of quality controls. For the Philippines, oversight of these controls is supported by the regional office in Thailand. Compliance with government standards and policies are dealt with by concerned business units. This major responsibility of compliance is done in-house.

Table 9.3. In-house services

Raw materials, input/pre-production	Manufacturing services	Delivery and sales/Post-manufacturing services	Back-office services	After-sales services
1) Conception and design of product	3) Production Administration-Production management	None	10) Financial services ⁸	20) Customer services-complains and compliments handling
2) Industrial design	4) Production Administration-Quality assurance and compliance with ISO		11) Internal auditing (including audits of financial accounts and corporate governance)	21) Customer services-technical supports
	5) Engineering Services (Technical assistance service for special skills is provided to group companies)		12) Business and management consultancy services	22) Customer services-warranty and repair services
	6) Repair and maintenance services of machines and equipment		13) Company secretary services	
	7) Personnel search and referral services -		14) Corporate communications, marketing and public relationship	
			15) Estate management	
			16) Human resources management	
			17) Human resources management -	

⁸ Financial accounting is done in-house and all loans are obtained in-house, within the company group. The Asian crisis of 1997 was the last time that the firm took out a loan.

	Recruitment of factory workers		Personnel search and referral services for back-office staff	
	8) Accommodations for dealers		18) Training of staff	
	9) Prototype testing services		19) Product development/ R&D	

Bundling

The researcher found only one case of services that were bundled when being contracted by the firm in its assembly production. These are IT/computer offerings. A single IT vendor can provide both software development and interface services for other systems within the company. It can provide a package of services including website design and maintenance, software development and computer programming and computer repair services.

9.4. Policies Affecting Services in the Value Chain

Several government policies and regulatory requirements in the Philippines affect the production of the supply chain - prior, during and after - its assembly. The firm indicated during the interview that no fewer than ten different government departments were involved in various aspects of vehicle assembly and subsequent sale in terms of granting incentives, giving permits of various types, implementing environmental and technical standards, and determining and enforcing fuel standards, labor laws and vehicle registration, among others. Table 9.4 lists these agencies, together with their area of competence.

Table 9.4. Government agencies in the Philippines involved in policy interface with the production of a car

Government Department	Area of Regulatory Responsibility
Philippine Economic Zone Authority	Grants incentives in the Special Economic Zone
Department of Trade and Industry and Dept. of Finance	Gives approval for these incentives including tax and duty rates that must then be passed by Congress into law
Dept. of Finance: Bureau of Internal Revenue and Bureau of Customs	Determines and collects tax remissions and taxes and duties
Dept. of Transportation and Communication and Land Transport Office	Responsible for registration of vehicles
Dept. of Land Franchising Registry Board	Approves applications for franchising & operation of public utility vehicles
Dept. of Energy	Establishes requirement for fuels to contain a certain percentage of coconut oil, affecting the standards for the engines
Dept. of Environment and Natural Resources	<ul style="list-style-type: none"> i) Establishes and implements emission standards ii) Grants certification for each model of automobile so that it can be put on the market for sale iii) Grants permits for construction and disposal of waste

	iv) Carries out annual inspections for painting and waste water treatment
National Biofuels Board (under Dept. of Energy)	Reviews and enforces fuel standards for automobiles
Metro Manila Development Authority	Responsible for all roads and traffic management
Dept. of Labor and Employment	Administers and enforces all labour laws

Source: Information obtained from interview

In terms of the government policies that are the most imposing on the firm's costs and efficiency, the firm pointed to labor policies, taxation rates, and inefficiencies in logistics (including infrastructure and customs procedures), each of which is discussed in turn. These policies impact heavily on the current cost structure of production for the car, which is 10 per cent higher in the Philippines than it is in Thailand. The cost of production of another model produced by the firm is 18 per cent higher in the Philippines than it currently is in Indonesia.

Labor policies

Labor laws in the Philippines are stringent and offer several layers of legal protection to workers. Current labor law strictly prohibits labor-only contracting and there is a pending bill in Congress that states that only a maximum of 20 per cent of labor in a firm can be contractual; all others must be full-time employees.⁹ Firms are not allowed to lower salaries or dispense with any type of benefits, unless it is possible to convince the labor unions to accept these changes. To date, there are no specific guidelines for part-time workers, which reduces the flexibility of the labor market and the firm's ability to deal with fluctuations in demand and the production cycle. Worker lay-offs can only be made through a notification to the Department of Labor 30 days in advance, and after having presented the plan to the labor union. Strikes are allowed anywhere in the economy except within the Special Economic Zone. Labor costs were indicated as one of the factors inhibiting expansion of motor vehicle production.

Taxation/ Subsidy policies

The firm indicated that tax rates in the Philippines are high, with a corporate tax rate 30 per cent, even for SMEs. Employee allowances are also taxed (the increment). Currently the cost of production of the case study car is not directly linked to its sales price, which is determined by competition in the domestic market but subject to final approval by the regional office. There is a roadmap pending in Government offices to provide a \$1,000 incentive per qualified automobile unit to help fill in the \$2,000 gap in the cost of domestic production; however, this roadmap has not been approved and acted upon in two years. The car manufacturing industry has been requesting a more stable automobile policy framework from the Government that would allow the company to be more competitive, and to be able to increase its domestic production base and capacity in order to be able to exports cars.

Logistics policies

Many aspects of logistics also impact on the production of the car, adding significantly to cost and time delays.¹⁰ There is a widely recognized, urgent need to upgrade port and road infrastructure so that port

⁹The firm stated that in Thailand, one of the major automobile manufacturers in ASEAN, the labor laws are very different, and over 50 per cent of the labor force can be short-term.

¹⁰ The Philippines ranked number 68 in the Logistics Performance Index of 2014, produced by The World Bank. This index is a weighted average of six key dimensions involved in logistical competitiveness, namely: customs (speed, simplicity and predictability of border formalities); infrastructure (quality of ports, roads, railroads, etc.);

services and transport services can be more efficient in coping with current and future needs. Delays in receiving imported raw materials, parts and components through customs procedures and out of the port in Manila were cited by the firm as a major reason for cost increases, given the congestion of the port, deteriorated infrastructure and slow processing times.

A mandatory inspection must be carried out for all imported parts and components of the car by Customs/Bureau of Finance and Internal Revenue before they are unloaded, but due to the port congestion, this requirement cannot be adequately implemented. Previously, this inspection was done by a pre-shipment inspection company.

In addition to port congestion, there was a local government ban on trucks in Manila where the port is located since February 2014, leading to a backlog of goods needing to be transported out of Customs. Due to these restrictions, truckers often double their charges and work overtime in order to deliver. The trucking ban has significantly added to production costs for the firm and its suppliers.¹¹ Also, because of the congestion and delays, the firm cannot carry out just-in-time delivery. The retail price is standardized by the local firm for uniform application and compliance of the dealers. Any higher logistical costs must be absorbed by local firm, putting it at a competitive disadvantage.

Overall, in terms of the government–firm policy interface, there appears to be much potential productivity growth that could be reaped through an improvement in various key policy areas, particularly logistics.

Additional policy considerations

As reported in the most recent WTO Trade Policy Review of the Philippines of 2005, MFN tariffs on imported passenger cars, trucks and motorcycles range between 20 per cent and 30 per cent. The Government assists assembly of automobiles in the economy by allowing for participants in its Motor Vehicle Development Plan to import completely-knocked-down (CKD) kits at preferential tariff rates of 1 per cent to 3 per cent. The Philippines has a zero duty policy on the import of capital equipment and spare parts by automotive manufacturers. The Philippine Motor Vehicle Development Program (MVDP) is designed to foster local assembly through low tariffs on components.¹²

These policies have resulted in a very high rate of effective protection for the motor vehicle sector, estimated by the WTO to be around 76 per cent (2004).¹³ Presently, imported cars before tariffs are cheaper than domestic cars in the Philippines.¹⁴ In addition, the economy applies non-trade barriers to many automotive inputs, usually in the form of non-automatic import licensing.

The ASEAN Free Trade Agreement (AFTA) for the automotive sector has been implemented since 2000. It has put significant competitive pressure on automobile assembly manufacturers in the Philippines over the past decade, as it substantially reduced the effective rate of protection in this sector, requiring adjustment to a new competitive environment. The realization of the ASEAN Economic Community by end 2015, according to government plans, may also bring additional competitive pressures, particularly in the services area, affecting the services that are embedded in the production

ease of shipment; ease of tracking and tracing consignments; domestic logistics costs (transport operators, customs brokers); and timeliness. The Philippines ranked below both Thailand (34) and Indonesia (46), its main competitors within ASEAN, and was also ranked lower than Viet Nam.

<http://lpi.worldbank.org/international/global/2014>

¹¹ It is estimated that the trucking ban has cost the firm around 92 million pesos, and has cost its suppliers around half of this amount (45 million additional pesos) since February 2014. After several months and worsening congestion at the port area, the ban from the local government was rescinded.

¹² USTR. “The Philippines” <https://ustr.gov/sites/default/files/2013%20NTE%20Philippines%20Final.pdf>

¹³ Trade Policy Review of the Philippines, Report by the WTO Secretariat, WT/TPR/S/149, June 2005, page 89.

¹⁴ “Japan urges Philippines to make strong auto industry policy soonest” Manila Bulletin. June 16, 2014. <http://www.mb.com.ph/japan-urges-philippines-to-make-strong-auto-industry-policy-soonest/>

of the local car. According to *The Economist*, the ASEAN Economic Community signifies the arrival of a more level playing field, less protectionism and greater competition.¹⁵

Possibly in recognition of this potential future development, the Philippine Government announced its intention in March 2015 to support the automotive industry in order for the economy to become a regional automotive production center.¹⁶ For this objective, it declared that it would be offering tax breaks to up to three automakers. The *Manila Bulletin* reported that the government has considered an annual production of 40,000 vehicles per model as a qualification for the incentive. The incentive is part of a new program entitled the “Comprehensive Automotive Resurgence Strategy” (CARS) that has been announced for implementation during 2015. The Government has stated that expanding the automobile supply chain would feed into other industries as well, providing a boost to manufacturing beyond the car industry. The extent of investment and growth in the automobile industry in the Philippines will be in large part a function of foreign direct investment, where currently the Philippines lags behind Thailand and Indonesia.¹⁷

The services and investment policies in the economy seem to be supportive of an expanded automobile manufacturing objective on the part of the Philippines Government, to the degree that there are no restrictions on foreign direct investment in this sector. Additionally, as reported by the WTO Trade Policy Review latest report on the Philippines, competition in the financial sector seems to be healthy, with no evidence of monopoly or collusive behavior, and quite a few foreign banks or subsidiaries in the economy.¹⁸ The telecommunications sector is also cited in the WTO Report as showing relatively unfettered market entry and exit, and healthy competition.¹⁹ Market access has been liberalized in nearly all telecom services, including local, domestic long-distance, international, mobile, data, telex, leased line, paging, cable television, and satellite. However, the WTO report cites evidence of restricted competition in the transport sector, and particularly between private and public ports, as well as among cargo handling operators. The need for infrastructure improvement and greater efficiency and openness in the transport sector (maritime, ports, domestic shipping) is underlined.

Despite the supportive environment in key services and investment in finance and telecommunications, for the future, the Philippines will need to differentiate its automobile products from its successful exporting neighbors in ASEAN by developing niche markets as well as by lowering its internal production costs in order to maintain and expand competitiveness. To achieve this, it will need to address the sources of higher costs for its automobile manufacturers identified in this study, and to improve its logistics policies.

¹⁵ “The automotive sector after the AEC” *The Economist*. July 30, 2014.

<http://country.eiu.com/article.aspx?articleid=722103856&Country=Malaysia&topic=Economy>

¹⁶ In 2015, the Philippines is projected to produce 90,000 light automotive vehicles, compared to 1.3 million in Indonesia and 2.14 million in Thailand, according to projections by IHS Automotive in Bangkok.

¹⁷ President Benigno Aquino has made investing in infrastructure a priority during his term, which comes to an end in June 2016, in part to boost growth and also attract foreign direct investment. In 2014, the Philippines attracted \$6.2 billion in FDI, compared to \$12.6 billion in Thailand and \$8.9 billion in Viet Nam. Medium-size manufacturing, including automobiles, is at a relative deficit compared to other production areas in which the Philippines is a bigger player on the global market, for example medical devices, aircraft parts, and platforms for oil and gas.

¹⁸ Trade Policy Review of the Philippines, Report by the WTO Secretariat, WT/TPR/S/149, June 2005, page 93.

¹⁹ *Ibid.*, page 103.

Appendix A

Services Used in the Pre-Production/Production/Post-Production/Sales and Post-Sales Stages of the Value Chain

Table A.1. Raw-materials, input/pre-production stage

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
1. Procurement of raw materials	1) Procurement agent for raw material sourcing	85999 - Other support services n.e.c.			Yes, outsourced to qualified brokers for authorized that can access the port	Legal obligations to outsource by Philippine law
	2) Customs-related services for raw materials imported	85999 - Other support services n.e.c.			Yes, outsourced to qualified brokers for imports. Several brokers are involved	Legal obligations to outsource by Philippine law
	3) Quality assurance services (of raw materials)	83441 - Composition and purity testing and analysis services	Yes. In-house inspection for raw materials and parts		Yes. Philippines government requires pre-shipment inspection and quality and quantity	
2. Logistics	4) Freight transportation services (of raw materials) by road, rail, sea or air	Division: 65 - Freight transport services			Yes. Parts are imported from plants in other parts of the Asia.	
3. Storage	5) Storage of raw materials – general storage	67290 - Other storage and warehousing services			Yes, outsourced to SMEs.	Efficiency
4. Product Design	6) Conception and design of product	83920 Design originals		Yes. Royalty paid for design in other companies in Group for design.		

<i>Stage/ Category</i>	<i>Service</i>	<i>Central Product Classification (CPC) Ver.2 Code</i>	<i>Supplied in-house</i>	<i>Supplied by another company in the group</i>	<i>Outsourced to third-parties</i>	<i>Reasons of outsourcing</i>
	7) Industrial design	83912 Industrial design services		Yes. Royalty paid for design in other companies in the Group for design.		
	8) Patent filing and acquisition	83960 Trademarks and franchises n/a		Yes. In-group patent filing department.	Yes. Government services	Handling of patent filing is a government services.

Table A.2. Manufacturing stage

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
1. Production administration	9) Production Administration - Production management	83115 - Operations management consulting services	Yes. In-house management team decide production schedule	Yes. Group in Japan decides on car models for production		
	10) Production Administration - Quality assurance and compliance with ISO	83441 - Composition and purity testing and analysis services	Yes. In-house team is responsible for quality assurance.			
2. Services supporting factory daily operations	11) Cleaning services of factory	85330 - General cleaning services			Yes. Outsourced to local firms.	
	12) Engineering Services	83310 - Engineering advisory services Class: 8332 - Engineering services for specific projects	Yes. In-house engineers.	Yes. Technical assistance service for special skills is outsourced to the Group		
	13) Gardening services for factory lawn	85970 - Landscape care and maintenance services			Yes. Outsourced to local firm.	
	14) Security guards for factory and warehouses	85250 - Guard services			Yes. Outsourced to local SMEs.	

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
	15) Sewage water treatment services	94110 - Sewerage and sewage treatment services	Yes. In-house management of outsourced team		Yes. A team of 4 handles sewage water treatment	Efficiency, cost
	16) Repair and maintenance services of machines and equipment	87156 - Maintenance and repair services of commercial and industrial machinery	Yes. In-house-team provide everyday maintenance of machines	Yes. Support will be provided by the Group in Japan when necessary.	No.	Risk aversion
	17) Waste collection - General	94239 - General waste collection services, other			Yes. To local SMEs.	Local employment
	18) Waste collection – scrap metal disposal	94229 - Collection services of non-hazardous recyclable materials, other			Yes. To a local firm for scrap metal disposals and recycling	
	19) Waste collection - Sludge hauling services	Class: 9421 - Collection services of hazardous waste			Yes. To local SMEs	Local employment

Services in Global Value Chains: Manufacturing-Related Services

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
3. Services from government regulation requirements	20) Government inspections on fire prevention, health hazards, environmental protection and other aspects.	91133 - Public administrative services related to mining and mineral resources, manufacturing and construction 91290 - Public administrative services related to other public order and safety affairs	Yes. The firm has to prepare for inspection		Yes. Government services.	Government services.
4. Worker- related services	21) Catering services for workers	63393 - Other contract food services			Yes. Outsourced to local SMEs	
	22) Personnel search and referral services - Recruitment of factory workers	85112 - Permanent placement services, other than executive search services	Yes. In-house human resources department hires workers			
	23) Transportation services for employees	64114 - Local special-purpose scheduled road transport services of passengers			Yes. Outsourced to local SMEs.	
5. Others:	24) Accommodations for dealers	63111 - Room or unit accommodation services for visitors, with daily housekeeping services	Yes. Firm manages on-site accommodation for visiting dealers.			
	25) Moving cars from assembly line to storage parking yard	67290 - Other storage and warehousing services			Yes. Outsourced to a large company.	

<i>Stage/ Category</i>	<i>Service</i>	<i>Central Product Classification (CPC) Ver.2 Code</i>	<i>Supplied in-house</i>	<i>Supplied by another company in the group</i>	<i>Outsourced to third-parties</i>	<i>Reasons of outsourcing</i>
	26) Repair and maintenance services for car carriers and busses	87141 - Maintenance and repair services of motor vehicles			Yes. Outsourced to SMEs	Local employment
	27) Prototype testing services	83443 - Testing and analysis services of integrated mechanical and electrical systems	In-house			

Table A.3. Delivery and sales/post-manufacturing stage

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
1. Delivery to wholesaler/retailer	28) Land transport of vehicles to dealers	65112 - Road transport services of freight by tank trucks or semi-trailers			Yes. Outsourced to a large company	
2. Sales services	29) Retail trade services - By store	Group of 621 - Non-specialized store retail trade services Group of 622 - Specialized store retail trade services			Outsourced to authorized dealers	
	30) Retail trade services - By other non-store retail trade services	Group of 624 - Other non-store retail trade services			Outsourced to authorized dealers	
	31) Retail services on a fee or contract bases	Group: of 625 - Retail trade services on a fee or contract basis			Outsourced to authorized dealers	
	32) Retail Administration - Operation management	83115 - Operations management consulting services 83116 - Supply chain and other management consulting services	In-house management for dealers – appointment, evaluations and supports		Outsourced to authorized dealers for daily operations	
	33) Retail administration	83911 - Interior design services			Outsourced to authorized dealers	

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
	- Site development for new shops	Group of 546 - Installation services Group of 547 - Building completion and finishing services				
	34) Storage and warehousing services for vehicles at retail outlets	67290 - Other storage and warehousing services			Outsourced to authorized dealers	
	35) Installation services for car accessories	87390 - Installation services of other goods n.e.c.			Outsourced to SMEs	Specialized. SMEs can also install in accordance to specific requirements of customers.

Table A.4. Back-office, utilities and general services

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
1. Finance	36) Auditing on financial accounts	Group of 822 - Accounting, auditing and bookkeeping services			Outsourced.	Legal requirement
	37) Financial services	71121 - Deposit services to corporate and institutional depositors 71313 - Group pension services 71701 - Services of holding equity of subsidiary companies		Yes. a major shareholder of the firm provides financial services.		
	38) Internal auditing (including audits of financial accounts and corporate governance)	Group of 822 - Accounting, auditing and bookkeeping services 83118 - Head office services	Yes.			
	39) Insurance services for machinery and inventory	71332 - Marine, aviation, and other transport insurance services			Outsourced. Insurance for inventory	
	40) Insurance for staff	71321 - Accidental death and dismemberment insurance services 71322 - Health insurance services			Outsourced.	

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
2. General Management	41) Business and management consultancy services	Class of 8311 - Management consulting and management services	Yes			
	42) Company secretary services	83990 - All other professional, technical and business services, n.e.c.	Yes.			
	43) Corporate communications, marketing and public relationship	83114 - Marketing management consulting services 83121 - Public relations services	Yes.			
	44) Courier, postal and local delivery services	Group of 681 - Postal and courier services			Yes.	Efficiency and cost
	45) Estate management	72112 - Rental or leasing services involving own or leased non-residential property	Yes			
	46) Human resources management	83113 - Human resources management consulting services	Yes			
	47) Human resources management – - Personnel search and referral services for back-office staff	Class of 8511 - Personnel search and referral services	Yes			

Services in Global Value Chains: Manufacturing-Related Services

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
	48) Training of staff	92919 - Other education and training services, n.e.c.	Yes (to maintain personnel and quality standards)			
	49) I.T. and information system management, consulting and support, with webpage development	Class of 8313 - Information technology (IT) consulting and support services Class of 8314 - Information technology (IT) design and development services Class of 8316 - IT infrastructure and network management services			Yes. IT agency has full-time staff on-site to offer help.	Specialized, efficiency, cost
	50) Safety and security services	85230 - Security systems services 85250 - Guard services			Yes. Outsourced to local SMEs.	
	51) Telecommunication services	Group: 841 - Telephony and other telecommunications services 84210 - Internet backbone services 84221 - Narrowband Internet access services 84222 - Broadband Internet access services			Yes. To telecommunication companies	

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
	52) Uniform - Design and alternation	83919 - Other specialty design services			Possibly outsourced	Specialized
	53) Uniform - Laundry	97130 - Other textile cleaning services			Possibly outsourced	Specialized
3. Legal	54) Legal services	82120 - Legal advisory and representation services concerning other fields of law 82130 - Legal documentation and certification services			Yes.	Specialized
4. Research and Development	55) Product development/ R&D	81129 - Research and experimental development services in other engineering and technology 81400 - Research and development originals	Yes. In-house team advise on local specialty on design.	Yes, outsourced to Group and other plants in Japan and Thailand		
5. Advertisement	56) Retail Administration-Advertising	83611 - Full service advertising	Yes. In-house team to manage outsourced agencies. Also distributes advertisement materials to dealers.		Yes. Professional advertisement agency contracted for marketing events for media.	Specialized
	57) Advertisement – advertisement agencies services	83611 - Full service advertising 83620 - Purchase or sale of advertising space or time, on commission				
	58) Advertisement – designers’ services	83611 - Full service advertising				

Services in Global Value Chains: Manufacturing-Related Services

Stage/ Category	Service	Central Product Classification (CPC) Ver.2 Code	Supplied in-house	Supplied by another company in the group	Outsourced to third-parties	Reasons of outsourcing
	59) Advertisement – direct marketing and mail-in advertisements	83612 - Direct marketing and direct mail services				
	60) Advertisement – cameramen, directors, photographers and models.	83611 - Full service advertising				
6. Utilities	61) Electricity supply	Class of 8631 - Support services to electricity transmission and distribution			Yes. Outsourced to national network.	Efficiency
	62) Gas supply	86320 - Gas distribution services through mains (on a fee or contract basis)			Yes. Outsourced.	
	63) Water supply	86330 - Water distribution services through mains (on a fee or contract basis)			Yes. Outsourced.	
7. Other related services	64) Support for labor relocation	91138 - Public administrative services related to general economic, commercial and labour affairs			Yes.	Government services.
	65) Government Relations/Labor Relations	83121 Public relations services			Yes. firm contracts one agency to deal with all Philippine gov't departments	Specialized, requires local knowledge and interface connections

Table A.5. Post-sales services

<i>Stage/ Category</i>	<i>Service</i>	<i>Central Product Classification (CPC) Ver.2 Code</i>	<i>Supplied in-house</i>	<i>Supplied by another company in the group</i>	<i>Outsourced to third-parties</i>	<i>Reasons of outsourcing</i>
1. Sales/After-sales Customer services	66) Customer services – complains and compliments handling	85931 - Telephone call centre services	In-house			
	67) Customer services – Technical support	85931 - Telephone call centre services	In-house			
	68) Customer service – warranty and repair services	87141 - Maintenance and repair services of motor vehicles	In-house			
	69) Sales administration - secret customers	83700 - Market research and public opinion polling services			Outsourced to market research firms	
	70) Customer satisfaction surveys	83700 - Market research and public opinion polling services			Outsourced to market research firms	

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