
THE PHILIPPINES

IN THE AUTOMOTIVE
GLOBAL VALUE CHAIN

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The Philippines in the Automotive Global Value Chain

Executive Summary

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Executive Summary

This report uses the Duke CGGC Global Value Chain (GVC) framework to examine the role of the Philippines in the global automotive industry and identify opportunities for upgrading. The country's strength in the sector is in electrical and electronic automotive components, with approximately two-thirds of its US\$3.98 billion exports in 2014 falling in one of these categories. The Philippines has a particularly strong foothold in wire harnesses, exports of which increased by 129% from 2007 to 2014 to allow it to become the world's fourth largest global exporter. The prominence of the cluster affords the country a number of upgrading opportunities moving forward. Otherwise, the relatively small size of the domestic market has constrained the development of the industry, with local companies unable to generate the economies of scale necessary to compete in an increasingly consolidated global environment.

The Automotive Global Value Chain

The global automotive industry is one of the world's largest manufacturing sectors, and worldwide trade of final products and components accounted for roughly US\$1.4 trillion in exports in 2014. Its organization is complex and in the midst of a profound transition. Since the 1990s, it has been shifting from a series of fairly discrete national industries, connected to the outside world mainly through exports and the local assembly operations of multinational firms, to a more integrated global industry in which value is added in multiple countries before finished vehicles are sold, and locations are more likely to specialize in specific sets of activities.

- **Motor vehicles tend to be designed, engineered, and tested in the industry's traditional design clusters in developed countries such as Detroit, Stuttgart, and Tokyo.** The largest automakers have concentrated vehicle development in a few centers to distribute the high cost of vehicle design and engineering across products sold in multiple end markets.
- **Production tends to be organized regionally or nationally in large countries, with bulky and model-specific parts-production concentrated close to final assembly plants.** Because many automotive parts tend to be heavy and efforts to reduce inventory have driven firms to employ just-in-time delivery to reduce costs, there are limits on how far apart parts production and final assembly can be. As a result, regional parts production tends to feed final assembly plants, which concentrate on national or regional markets. Because of deep investments in capital equipment and skills, local automotive clusters tend to be very long-lived once established.
- **Lighter, more generic parts are produced at a distance to take advantage of scale economies and low labor costs.** When product variety is high, parts for complex sub-assemblies are shipped from distant low-cost production locations to sub-assembly facilities adjacent to final assembly plants, where they can be tailored to the exact requirements of vehicles under assembly.
- **The automotive industry is in the midst of a profound transition from a technological point of view.** The relationship between global automakers and technology companies is improving, and with the increasing amount of electronics components in

motor vehicles, deeper partnerships can be expected in the future. Moreover, the spread of electric vehicles could offer a wealth of new opportunities. Roughly 665,000 e-vehicles are already in use around the world, and millions more are expected to be purchased in the years ahead in emerging markets such as India and China.

The Philippines in the Automotive GVC

The Philippines automotive manufacturing capabilities are mostly oriented towards the domestic market rather than regional or global chains. The lead firms active in the Philippines—Toyota, Mitsubishi, Mazda, Nissan, and Isuzu—are Japanese automakers that generate vehicles for the domestic market. Most have had a presence in the country for decade, although there has been frequent turbulence, with the 2012 closing of the Ford assembly plant in Laguna being the most recent example. The shuttering of the Ford site continued the trend of decreasing assembly of Complete Knock Down (CKD) units in the country—sales of CKD kits fell to 67,742 in 2011 from an 1996 apex of 137,365.

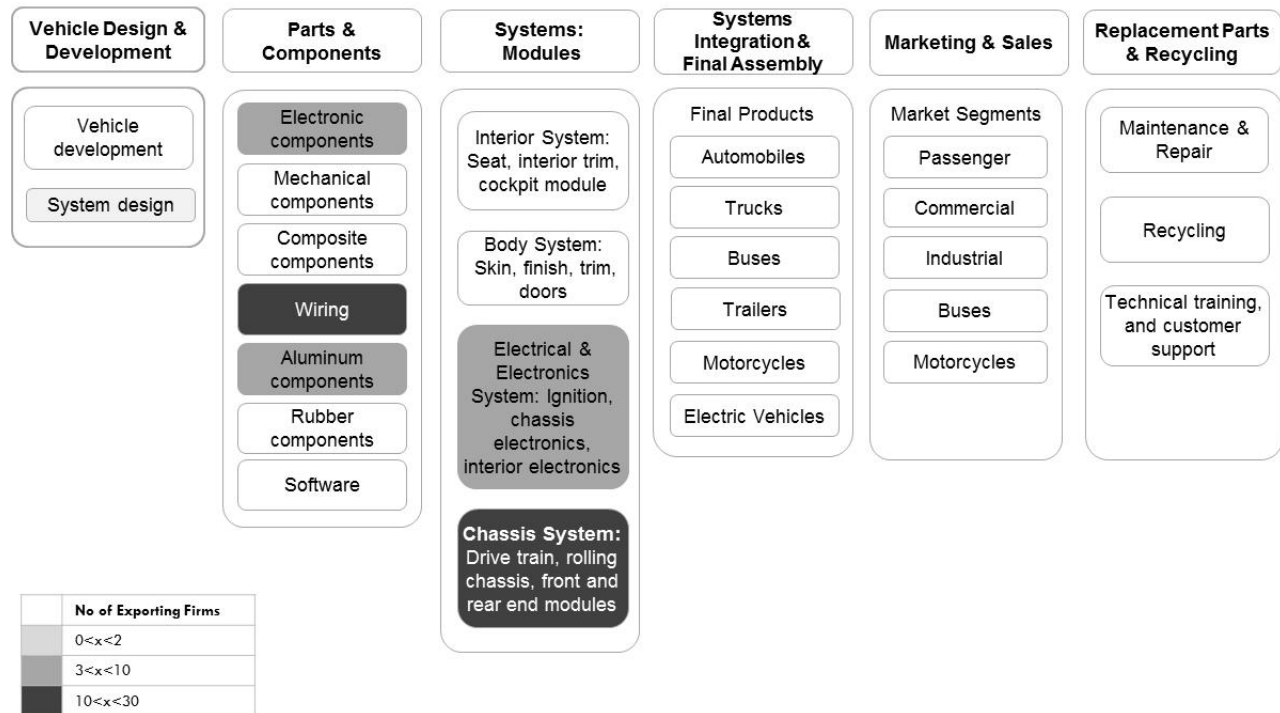
The erosion of the CKD base has, in turn, impaired the development of domestic suppliers; without requisite demand, lead firms have difficulty finding suppliers that have the ability to produce parts in sufficient volume. This has led to an overall stagnation that can be detected by analyzing the total number of domestic parts producers. In 1996, there were 240 companies manufacturing car parts and components, both producers of “Original Equipment” parts (OE) and producers of replacement parts; in 2014, that number was 256.

While there are at least 123 companies situated in the export processing zones, only a small handful of these firms export goods in high volume, with the 15 largest accounting for 80% of total revenue. Together, these companies helped the Philippines’ increase its automotive exports by roughly 33% from 2007 to 2014 to nearly US\$4 billion. Although that figure is only a small fraction of global automotive exports, it represented 6.4% of the Philippines’ total goods exports in 2014.

Six of the largest 10 exporters are wire harness companies. Wire harnesses direct the flow of current and electronic signals throughout the vehicle. The sub-system is of growing importance as the electronics content of vehicles increases—global exports increased by 53% from 2007 to 2014. Because assembly is labor intensive, it is a promising niche for developing countries, which can use their cost advantages to attract foreign investment. The Philippines has exploited its competitively priced labor to increase its market share in the industry; its share of worldwide exports increased from 4.2% in 2007 to 6.3% in 2014.

Beyond wire harnesses, the second largest export category is a broad one that captures wheel and tire assemblies, drive trains, and vibration controls. However, growth in this segment has been stagnant in recent years—there were 44 different companies that exported US\$862 million in 2007 but only 30 firms with exports of US\$674 million in 2014. The third largest export category—gear boxes or transmissions—has been demonstrating more consistent growth, although there are only four companies active. Figure E-1 summarizes with an illustration of the Philippines’ participation in the automotive GVC. Grey shading indicates the degree of Philippines participation in this segment.

Figure I. Philippine Participation in the Automotive GVC



Source: Duke CGGC.

These and other features translate to a number of advantages for the government as it attempts to facilitate upgrading in its automotive sector. These include:

- Well-established global footprint in wire harnesses.** There are at least 15 wire harness firms active in the country, and two of the industry’s leaders—Yazaki and Sumitomo—have long-standing investments, with major suppliers such as Lear and Furukawa also expanding to the Philippines in more recent years. All four companies have undergone a range of upgrades, cumulatively expanding or implementing new projects 25 times.
- Commitment of leading industry stakeholders.** The lead firms active in the Philippines have displayed a strong commitment to the local market, giving vitality to a number of industry associations. Together, these organizations have collaborated on efforts such as formulating the industry road map while also playing important roles in shaping policy initiatives such as the Comprehensive Automotive Resurgence Strategy (CARS), which provides a regulatory framework that attempts to encourage the development of the domestic supply base. The strong commitment of industry stakeholders is mirrored by a supportive and collaborative environment for industry policy development in manufacturing sectors, which has been assisted through programs put in place by the Department of Trade and Industry and the Board of Investments.

- **Competitive labor environment.** The country's human capital advantages include relatively low wage rates, a deep pool of engineers, widespread English skills, and low attrition rates.
- **Effective Export Processing Zone (EPZ) regime.** There are large concentrations of firms in the EPZs in the Laguna and Cavite regions. The EPZ regime provides a range of specific benefits, including tax incentives, assistance with visas, and streamlined import and export procedures.
- **CARS provision of incentives to lead firms.** The CARS program is an innovative attempt to generate economies of scale in the domestic market by offering US\$600 million in incentives to a limited number of lead firms. By restricting the program output-based assistance to a maximum of three models, it hopes that local parts makers will be able to generate economies of scale from only having to produce components for a small number of products.

In order to capitalize on these strengths, there are constraints that can be addressed to facilitate industry upgrading. These challenges include:

- **Gaps in supply chain.** Only 330 of the 20,000-30,000 total vehicle parts are produced in the Philippines (DTI, 2014). The gaps span all levels of the supply chain—lead firms listed body shells and stamping plants, engines, air conditioning units and suspension systems, wire harness manufacturers import electrical switches, terminals, and specialized parts from both the region and Europe and North America, and transmission producers rely on India for polished metal and China for forged parts.
- **Comparatively small market for new motor vehicles.** While annual motor vehicle sales in the Philippines have been on a strong upward trajectory, the country still ranks well below regional peers such as Indonesia, Malaysia, and Thailand. Even if the market meets the projections of 500,000 annual sales of motor vehicles by 2020, demand will still likely be lower than Indonesia, Malaysia, and Thailand, making the country an unlikely candidate for investments by global lead firms. Without further expansion in assembly capabilities, there is risk there will not be sufficient demand for suppliers to increase their capacity.
- **Low to moderate support for R&D activities.** Automotive companies such as Furukawa, Denso, and F-Tech R&D have made recent investments in EPZs for knowledge-intensive business functions. However, government support for R&D activities trails regional peers such as Malaysia and Thailand.

Both the strengths and the weaknesses shape the upgrading trajectories that are available for the Philippines. Generally speaking, the Philippines has opportunities with smaller, lighter products that do not incur excessive transport costs but that nonetheless require technical knowledge and cost-competitive labor to assemble. The country’s demonstrated strength in the wire harnesses and electrical wiring could serve as a springboard for higher-value activities.

Table I. Possible Upgrading Trajectories in Automotive GVC

Time Frame	Potential Upgrading Trajectory	Key Benefits	Capacities Required of Individual Firms	Philippines Challenges
Short-Medium Term	Product & Process Upgrading to Increase Wire Harness Exports	<ul style="list-style-type: none"> • Position the Philippines as the global automotive E&E hub • Leverages capabilities in the sector and economies of scale • Labor-intensive employment generator for semi-skilled workers 	<ul style="list-style-type: none"> • Human capital • Access to inputs • R&D capabilities to adapt to increasing complexity 	<ul style="list-style-type: none"> • Underdeveloped backward linkages for some inputs • Logistics & transportation infrastructure • Temporary decline in labor availability due to changes in education system
Medium Term	Functional Upgrading into R&D for Wire Harnesses	<ul style="list-style-type: none"> • Position the Philippines as the global automotive E&E hub • Potential to generate higher unit value products • Higher skilled employment 	<ul style="list-style-type: none"> • Human capital • Technology • Access to customers 	<ul style="list-style-type: none"> • R&D still being done in traditional manufacturing bases • Little clustering of automotive lead firms outside wire harnesses
Medium Term	Chain Upgrading into Aerospace Wire Harnesses (Electrical Wiring Interconnection Systems)	<ul style="list-style-type: none"> • Position the Philippines as the global producer of aerospace electrical systems • Leverage expertise for higher value products • Employment generation for semi-skilled and skilled workers 	<ul style="list-style-type: none"> • Certifications • Technical knowledge • Access to customers 	<ul style="list-style-type: none"> • No established reputation in the aerospace industry • No experience in regulated aerospace wire harness manufacturing
Medium Term	Product & Functional Upgrading into Automotive Electronics	<ul style="list-style-type: none"> • Leverages country’s capabilities in electronics • Higher unit value exports • Continuation of success in segment where Philippines is competitive 	<ul style="list-style-type: none"> • Human capital • Technical knowledge • Access to finance • Access to customers 	<ul style="list-style-type: none"> • No established reputation in the automotive industry • Logistics • Lack of specialized human capital • Limited R&D commercialization experience
Medium-Long Term	Chain entry into batteries for e-Vehicles	<ul style="list-style-type: none"> • Position the Philippines to earn foothold in nascent industry • Potential spillovers of technology and skills into wire harness and electronics segments • Possible for both semi-skilled and high-skilled employment 	<ul style="list-style-type: none"> • Human capital • Access to technology • Access to inputs • Access to customers 	<ul style="list-style-type: none"> • Lack of specialized human capital • No major foreign investments in technology • Possible underdeveloped backward linkages

Source: Duke CGGC.