

Aldaba, Rafaelita M.

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## Assessing the Competitiveness of the Philippine Auto Parts Industry

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## Assessing the Competitiveness of the Philippine Auto Parts Industry

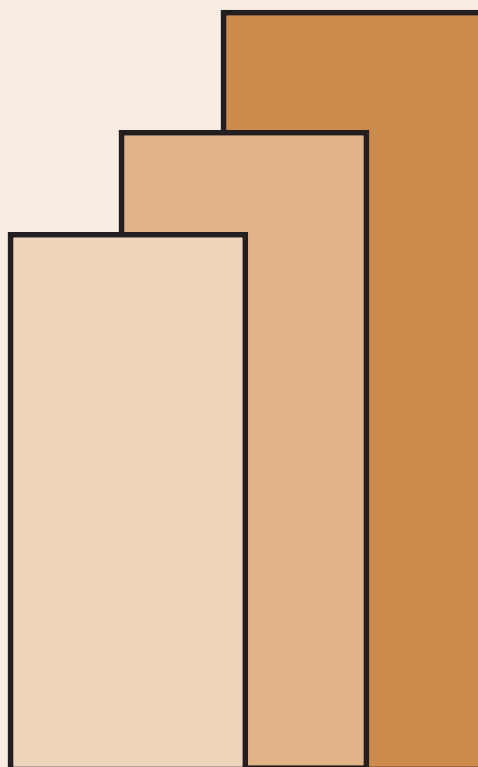
*Rafaelita M. Aldaba*

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For comments, suggestions or further inquiries please contact:

**The Research Information Staff**, Philippine Institute for Development Studies

5th Floor, NEDA sa Makati Building, 106 Amorsolo Street, Legaspi Village, Makati City, Philippines

Tel Nos: (63-2) 8942584 and 8935705; Fax No: (63-2) 8939589; E-mail: [publications@pids.gov.ph](mailto:publications@pids.gov.ph)

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### **Abstract**

The development of the Philippine automotive parts and components sector is critical to the automotive assembly industry. The availability of competitive parts and components that are locally manufactured can significantly contribute to boost the competitiveness of the assembly sector. Given the current state of small and medium manufacturers, making them internationally competitive and linking them with regional production networks are major challenges.

Less competitive firms will have to contend with reduced market shares and eventually bankruptcy. The few remaining competitive ones need to define their strategies and the market position that they want to pursue. The government has an important role to play in the firms' adjustment process. While increasing economic integration represent market opportunities; penetrating the export market is not easy and does not come automatically. As the firms search for internal ways and exert effort to improve their competitiveness, this must be complemented with active government support.

**Keywords:** automotive industry, competitiveness

# **Assessing the Competitiveness of the Philippine Auto Parts Industry**

Rafaelita M. Aldaba<sup>1</sup>

## **I. Introduction**

In its effort to develop the domestic manufacture of automotive parts and components, the Philippine government adopted local content requirements which protected the industry for almost thirty years. The government also imposed high tariffs coupled with import restrictions on the importation of motor vehicles. Over the years, however, these policies resulted in very limited localization as the automotive assemblers encountered difficulties in achieving the local content requirements set by the government.

In the face of increasing pressures to improve competitiveness brought about by globalization, reforms to liberalize and deregulate the industry were implemented. In the 1990s, the assembly sector was opened up to accommodate new players. At the same time, previous restrictions on the number of models that could be assembled were removed. The industry was also liberalized to allow the importation of all types of motor vehicles.

The main objectives of the paper are twofold: (i) to provide an overview of the major trends taking place in the Philippine automotive industry and (ii) assess the competitiveness of the auto parts and components sector with focus on selected metal parts. A survey of eleven auto parts companies from the metal parts sector was carried out to assess three crucial factors in improving firm competitiveness: cost, quality, and delivery. The survey addresses the following questions: How are these sectors facing international competition from imports in the domestic market and other countries' exports in the global market? Are they competitive enough to survive the increasing demand for low cost, high quality, and just-in-time delivery imposed by the increasingly globalizing automotive market? What are the internal and external constraints that are preventing them from achieving their full potential towards substantial improvements in their competitiveness?

The paper is outlined as follows: section two describes the major government policies affecting the growth and development of the industry. Section three presents the key characteristics of the industry as well as its structure and performance. Section four discusses the issues and problems confronting the industry. Section five focuses on the analysis of the main findings of the survey. Finally, section six summarizes the results of the analysis and discusses their implications.

## **II. Government Policies Affecting the Automotive Industry**

### **A. Local Content Program**

The Philippine automotive industry consists of two major sectors: the automotive assembly and the manufacture of parts and components. The automotive industry<sup>2</sup> consists of

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<sup>1</sup> Research Associate, Philippine Institute for Development Studies. The author is grateful for the excellent research assistance provided by Ms. Mildred Belizario of PIDS and Mr. Virgilio Abogado, Jr. She is also thankful to Mr. Angel Martinez and the members of the Motor Vehicle Parts Association of the Philippines for their cooperation in the survey-interview conducted.

<sup>2</sup> Asian Utility Vehicles (AUVs): refer to an originally Philippine-designed or similarly designed low cost light commercial vehicle with a higher local content than LCV and gross weight up to three tons.  
Light Commercial Vehicles (LCVs): refer to a vehicle other than AUV that may be classified as a light truck including pick-up, delivery van, commuter, and four-wheel drive vehicle with gross weight up to three tons.  
Trucks: refer to a medium or heavy vehicle of more than three tons gross weight and used specifically for the transport of goods and services.

passenger cars, light commercial vehicles (LCVs), Asian utility vehicles (AUVs), sports utility vehicles (SUVs), trucks, and buses. Imported cars and car parts are classified as completely-knocked-down (CKD), semi-knocked-down (SKD), and completely-built-up (CBU) vehicles. SKDs are semi-assembled cars without tires and batteries. CKDs are completely-knocked-down parts and components which include not only parts and components but also sub-assemblies and assemblies like engine, transmission, axle, chassis, and body assemblies. Automotive parts with counterpart local components of acceptable quality are deleted from the CKD pack before its importation. Locally-produced parts are incorporated as original equipment manufacturer parts (OEM) in vehicles assembled in the country.

Table 1 presents the different government policies and legislations that helped shape the Philippine automotive industry. Since 1973, the country's motor vehicle manufacturing program centered on the promotion of local content in the assembly of cars, trucks, and motorcycles. The program aimed to promote the domestic manufacture of automotive components by requiring assemblers to increase their domestic content from 10 percent in 1973 to 60 percent at the end of 1976. It also aimed to promote horizontal integration in the industry by the creation of new manufacturing activities among small and medium scale enterprises through subcontracting and transfer of technology.

Table 1A: Government Programs and Policies on the Philippine Automotive Industry

Year	Program/ Policy	Objectives
1973	<ul style="list-style-type: none"> <li>Progressive Car Manufacturing Program (PCMP)</li> <li>Progressive Truck Manufacturing Program (PTMP)</li> </ul>	<ul style="list-style-type: none"> <li>- increase local assemblers domestic content from 10 percent in 1973 to 60 percent in 1976</li> <li>- promote horizontal integration in the industry by the creation of new manufacturing activities among small and medium scale enterprises through subcontracting and transfer of technology</li> <li>- build up exports of manufactured products in a regional (ASEAN) automotive complementation program</li> </ul>
1987	<ul style="list-style-type: none"> <li>Car Development Program (CDP)</li> </ul>	<ul style="list-style-type: none"> <li>- increase local assemblers domestic content from 32.26 percent in 1988 to 40 percent in 1990</li> <li>- develop a viable automotive parts manufacturing industry</li> <li>- facilitate technology transfer and development</li> <li>- generate employment, make available reasonably priced passenger cars, and earn and save foreign exchange for the country</li> </ul>
1990	<ul style="list-style-type: none"> <li>People's Car Program (PCP)</li> </ul>	<ul style="list-style-type: none"> <li>- include the assembly of smaller cars, named as people's car, or passenger cars with gasoline engine displacement of not more than 1200 cc</li> <li>- meet the minimum local content usage from 35% in 1991 to 51% in 1993</li> </ul>
1992	<ul style="list-style-type: none"> <li>Luxury Car Program</li> </ul>	<ul style="list-style-type: none"> <li>- allow the entry of high end passenger cars defined as passenger cars with engine displacement greater than 2800 cc</li> </ul>
1994	<ul style="list-style-type: none"> <li>ASEAN Industrial Joint Venture (AIJV) Scheme</li> </ul>	<ul style="list-style-type: none"> <li>- allow the entry of new assemblers under the ASEAN Industrial Joint Venture (AIJV) Scheme</li> </ul>
1996	<ul style="list-style-type: none"> <li>Memorandum Order Number 346</li> <li>Car Development Program</li> <li>Commercial Vehicle Development Program</li> </ul>	<ul style="list-style-type: none"> <li>- open up the closed vehicle categories to new participants and removed restrictions on the number of models and variants</li> <li>- terminate the foreign exchange and local content requirements under the CDP and CVDP in the year 2000</li> </ul>

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Buses: refer to vehicles that are designed for the transport of persons.

2002	<ul style="list-style-type: none"> <li>• New Motor Vehicle Development Program (EO 156)</li> </ul>	<ul style="list-style-type: none"> <li>- ban the importation of all types of used motor vehicles and parts and components, except those that may be allowed under certain conditions</li> <li>- restructure the Most Favored Nation (MFN) tariff rates for motor vehicles and their raw materials and parts and components at such rates that will encourage the development of the Philippine motor vehicle industry.</li> <li>- restructure the current excise tax system for motor vehicles with the end view of creating a simple, fair and stable tax structure</li> <li>- continue the application of AICO scheme as maybe adopted by the Association of Southeast Asian Nations (ASEAN)</li> <li>- give incentives to assemblers and parts and components makers for the export of CBUs and parts and components</li> </ul>
2003	<ul style="list-style-type: none"> <li>• EO 262</li> <li>• EO 244</li> </ul>	<ul style="list-style-type: none"> <li>- modify the tariff rates on motor vehicle parts and components</li> <li>- provide special incentives to certain CBU exports</li> </ul>
2004	<ul style="list-style-type: none"> <li>• EO 312</li> </ul>	<ul style="list-style-type: none"> <li>- modify EO 244 to expand coverage of CBU exports and provide special incentives for the export of certain CBUs</li> </ul>

The program prohibited the importation of completely built up (CBU) vehicles and as an industry rationalization scheme, it limited the number of registered firms allowed to import completely knocked down (CKD) parts to only five assemblers, namely: Francisco/Yutivo/General Motors Philippines, Delta Motor Corporation (Toyota), Ford Philippines Incorporated, Canlubang Automotive Resources Corporation/PAMCOR (Mitsubishi), and DMG Incorporated/Nissan Motors Philippines.

The CDP covered the assembly of passenger cars with engine displacement of up to 2,800 cubic centimeters. Assemblers were allowed to import these cars in CKD condition only. The CDP also limited the number of program participants to three: PAMCOR, Nissan, and Toyota Motors. Alongside with the CDP, the Commercial Vehicle Development Program (CVDP) was formulated in 1987 to replace the Progressive Truck Manufacturing Program. The CVDP aimed to promote the local production of commercial vehicles such as Asian Utility Vehicles (AUVs), light commercial vehicles (LCVs), trucks, and replacement parts and components. Its specific objectives were the same as those of the CDP and prohibited the importation of CBU vehicles. CVDP participants were also required to comply with a minimum vehicle local content (see Table 1B) and earn 25 percent of their foreign exchange requirements through generation of export earnings.

In 1990, the CDP was amended to include the assembly of smaller cars, named as people's car program (PCP), or passenger cars with gasoline engine displacement of not more than 1200 cc. Initially, the Board of Investments (BOI) imposed a price ceiling of P175,000 on these cars. Towards the last quarter of 1990, this was raised to P220,000, it again went up to P235,400 in the first quarter of 1991, and to P300,000 during the mid-1990s. Like the main CDP participants, PCP assemblers were required to meet the minimum local content usage from 35% in 1988 to 51% in 1990. The PCP participants must also earn at least 50 percent of their foreign exchange requirements by exporting automotive and non-automotive products. They should invest at least P200 million and commit to manufacture major components. Participants were allowed to import passenger cars in SKD condition for a period of six months which could be extended for another six months. This was intended to enable the participants to sell low-priced passenger cars while their assembly facilities were being set-up.

**Table 1B: Local Content Program Requirements**

Program	Local Content Requirement						
1973 Progressive Car Manufacturing Program	Required domestic assemblers to increase domestic content from 10 percent in 1973 to 60 percent in 1976						
1987 Car Development Program (CDP)	Required CDP participants to comply with local content requirement that increased from 32.36 percent in 1988, 36.58 percent in 1989, and 40 percent in 1990						
1987 Commercial Vehicle Development Program (CDVP)	Category	1988		1989		1990	
	Category I	43.10		51.21		54.86	
	Category II	35.62		41.69		44.42	
	Category III	16.83		20.33		21.9	
	Category IV						
	6001-9000 kg	16.50		19.91		21.44	
	9001-12000 kg	17.00		20.64		22.24	
	12001-15000 kg	10.69		12.65		13.53	
	15001-18000 kg	10.87		12.87		13.77	
1990 People's Car Program (PCP)	Required PCP participants to comply with the following local content requirement: 35 percent in 1991, 40 percent in 1992, and 51 percent in 1993						
1996 Car Development Program	Year		CDP Category I			CDP Category II	
	1995		5 percent			40 percent	
	1996		6 percent			45 percent	
	1997		7.5 percent			45 percent	
	1998		7.5 percent			50 percent	
	1999		1.5 percent			50 percent	
	2000		1.5 percent			55 percent	
2002 Memo Order No. 73	CDP	CVDP					
Period	I & II	I & II	III	IV-A	IV-B	IV-C	IV-D-V
Jan. 1, 2002 - June 30, 2002	35	39.375	19.163	18.760	19.460	11.839	12.049
July 1, 2002 - Dec. 31, 2002	30	33.750	16.425	1.080	16.680	10.148	10.328
Jan. 1, 2003 - June 30, 2003	25	28.125	13.688	13.400	13.900	8.456	8.606
July 1, 2003	0	0	0	0	0	0	0

There were seven participants registered under the PCP: Italcara Pilipinas (Fiat), Honda Motors, Asian Carmakers (Daihatsu), Pilipinas Nissan, PAMCOR (Colt), Columbian Autocar (Kia), and Transfarm (Norkis Gurkel). Except for Columbian Autocars, the PCP was not a profitable undertaking for most participants, particularly for yen dependent Japanese car assemblers. Despite their unprofitability, many of the firms entered the program to get into the mainstream market where demand was less elastic. While people's car prices were subject to price ceilings, passenger cars in the main category were not. After one year of operation, PCP participants became eligible to enter the main category. Out of the seven PCP assemblers, five were able to move to the main category.

In 1992, the CDP was amended to allow the entry of high end passenger cars defined as passenger cars with engine displacement greater than 2800 cc. During this time, there was only one locally assembled model with engine displacement greater than 2000 cc. CDP participants were required to invest US\$ 8 million in the manufacture of motor vehicle parts

and components for the export and domestic markets. They were also required to generate 100 percent of their foreign exchange needs for their CKD importation. Like the PCP participants, they were allowed to import passenger cars in SKD condition for a period of six months while their CKD facilities were constructed. This could be extended for another six months. The above CDP amendment allowed the entry of Volvo International of Sweden and Daimler Benz of Germany.

In 1994, the CDP was again revised to allow the entry of new assemblers under the ASEAN Industrial Joint Venture (AIJV) Scheme. Proton of Malaysia came under this amendment through a joint venture with Autocorp Group, a Filipino firm. Proton assembles not only Proton Wira, but also European automobiles Volkswagen, Alfa Romeo, and Audi cars.

In February 1996, the signing of Memorandum Order (MO) 346 paved the way for the liberalization of the automotive industry. Prior to the issuance of MO 346, the government liberalized the importation of all types of passenger cars, commercial vehicles, and motorcycles. MO 346 removed restrictions on the number of models and variants and opened up the previously closed categories I and II to new participants, Filipino-owned and foreign-owned companies, capable of investing US\$10 million in the manufacture of motor vehicle parts and components.

The 1996 CDP redefined the following categories:

- Category I: vehicles with engine displacement of 1,200 cc or below and with a price determined by the BOI
- Category II: vehicles with engine displacement greater than 1,200 cc but below 2,190 cc
- Category III: vehicles with engine displacement of 2,190 cc or above

MO 346 prohibited new CDP participants in Categories I, II, and III intending to sell only in the domestic market from importing SKD units while their assembly facilities were under construction. Only new participants who will export at least 50 percent of their CBU car production (70 percent in the case of foreign companies) would be allowed to import SKD units to be sold locally. MO 346 also allowed the importation of brand-new CBU passenger cars. It opened the previously closed Category II to investors and introduced Category V to cover trucks with gross vehicle weight greater than 18 tons and special-purpose vehicles like fire trucks. New participants must invest US\$ 8 million in the manufacture of motor vehicle parts and components. MO 346 also liberalized the importation of brand new CBU trucks and buses, brand new CBU light commercial vehicles and Asian utility vehicles.

Note that EO 346 would have terminated the foreign exchange and local content requirements under the CDP and CVDP due to the country's commitment under the World Trade Organization (WTO) Trade-related Investment Measures (TRIMs). However, because of the 1997 economic crisis, many developing countries requested extensions to the TRIMs deadline. In the case of the Philippines, an extension of three and a half years was allowed. Memorandum Order Number 73 was issued to gradually phase out the local content and the foreign exchange requirements over a period of one-and a half years from January 1, 2002 to July 1, 2003 (see Table 1B). In July 2003, the government completely abandoned the local content program.

In December 2002, EO 156 was legislated to restructure the MVDP and provide comprehensive industrial policy and direction to the Program. In particular, EO 156 (1) prohibited the importation of all types of used motor vehicles and parts and components, inclusive of economic or freeport zones except those that may be allowed under certain



conditions; (2) it restructured the Most Favored Nation (MFN) tariff rates for motor vehicles and their raw materials and parts and components at such rates that will encourage the development of the Philippine motor vehicle industry; (3) it changed the excise tax system for motor vehicles towards a value-based tax system with the objective of creating a simple, fair and stable tax structure; (4) it continued the application of the AICO scheme adopted by the Association of Southeast Asian Nations (ASEAN) consistent with the implementation of the ASEAN Free-Trade Agreement - Common Effective Preferential Tariff (AFTA-CEP); and (5) it provided incentives to assemblers and parts and components makers for the export of CBUs and extended the ASEAN Industrial Cooperation scheme.

EO 156 defined the coverage of the MVDP to include three major classifications consisting of:

- Classification 1 covers passenger cars referring to any four-wheeled motor vehicle, which is propelled by gasoline, diesel, electricity or any other motive power and principally designed to transport persons and not primarily to transport goods.
- Classification 2 covers commercial vehicles referring to any four or more wheeled motor vehicle, which is propelled by gasoline, diesel, electricity and any other movie power and principally designed to transport persons and/or goods/cargoes, such as light commercial vehicles, buses, trucks, and special purpose vehicles (for example, ambulances, fire trucks, and the like). Light Commercial Vehicles refer to vehicles whether 4-wheeled drive or not, which may be classified under but not limited to the following: utility vehicles, sports utility vehicles, Asian utility vehicles, commuter vans, pick-ups, which are designed to carry both passengers and goods/cargoes.
- Classification 3: covers motorcycles referring to any two or three-wheeler vehicle fitted with an auxiliary motor, with or without sidecars.

Under EO 156, the assembly of motor vehicles under the MVDP is limited to completely knocked down (CKD)<sup>3</sup> condition only. Only brand-new Original Equipment Manufacturer (OEM) CKD parts and components for assembly purposes shall be allowed for importation under the Program. New participants are required to invest and/or bring in investments in the manufacture of motor vehicle parts and components for both export and domestic markets, equivalent to US\$ 10 million for passenger car assembler, or US\$8 million for commercial vehicle assembler over a period of one year. There are no limits in terms of number of models that participants may assemble/manufacture provided the same are registered with the BOI. A participant can register multi brands of motor vehicles.

MVDP participants can avail of CKD tariff rate under the CKD tariff lines determined by BOI. The BOI issues a Certificate of Authority (CA) to import to allow the participants to import CKD at CKD tariff rate. In October 2003, EO 244 was passed to provide a preferential tariff privilege package to the automotive industry covering the period from 1 January 2004 to 31 December 2008. The preferential tariff privilege on imports was granted as an export incentive to increase the industry's global competitiveness of certain CBUs.

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<sup>3</sup> CKD refers to completely knocked-down parts and components that are either locally produced or imported for assembly purposes by registered participant of the MVDP. The imported CKDs refer to sub-parts/parts and sub-assemblies/assemblies/components minus local parts and components, as determined by the Board of Investments. Sub-assemblies/assemblies/components refer to major parts and components such as engines, transmissions, axle assemblies, chassis, body assemblies and the like.

Sub-parts/parts refer to parts that are necessary for producing sub-assemblies/assemblies/components and/or other parts forming part of the CKD pack.

The granting of preferential tariff rates is contingent upon export performance on a yearly basis. An equivalent net foreign exchange earning (NFEE) will be credited to the Program participant for every unit of CBU exported according to category. The auto export program grants domestic manufacturers an export incentive in the form of tariff preference through the application of credit of \$400 for every \$5000 worth of exports phased down over the next five years (from 2005-2009). For CBU export with FOB value of less than the minimum value according to the category, no NFEE will be credited.

The program allows any auto manufacturer which exports finished vehicles from the Philippines to receive a benefit equivalent to \$400 per vehicle. This benefit is provided through a reduced tariff rate on CBU vehicles that the manufacturer imports into the Philippines. The reduced tariff rates are: MFN rates of 30 percent and 20 percent will be reduced to 10 percent and the AFTA-CEPT rate of 5 percent will be reduced to 1 percent for imports from the other ASEAN countries. This export incentive will be equivalent to \$400 per unit exported for year one to two of the program, \$300 for year three, and phased down to \$100 by year five. Currently, Ford Motor Company which exports completely built up (CBUs) from the Philippines is the only firm that has taken full advantage of the country's automotive export program.

In December 2003, another legislation, EO 262, was approved to restructure the MFN rates on assembly and parts and components manufacturing in order to encourage the development of the industry. This increased the tariff rates up to year 2005 on locally manufactured parts and components such as hoses, gaskets and o-rings, weatherstrips, carpets, springs and leaves, throttle bodies of engines, air conditioning machines, distributors, starter motors, electrical lighting and signalling equipment, electrical apparatus for switching, insulated electric conductors, revolution counters and the like, instrument panel clocks and seats. MFN tariff rates on these parts and components now range from 10 to 30%.

## B. Tariff and Non-tariff Policies

Simultaneous with the local content program which aimed to promote the motor vehicle parts and components industry, the government imposed very high tariffs combined with import restrictions to protect the local vehicle assembly industry. With the implementation of the first PCMP in the early 70s, the importation of CBU passenger cars was officially banned.

**Table 2A: Tariff Rates on the Automotive Assembly Sector: 1981-1987**

Motor Vehicle Type	1981	1982 - 1987
Public-transport type passenger motor vehicles With compression-ignition internal combustion piston engine		
• Buses	30	30
• Other	70	50
Motor cars and other motor vehicles principally designed for the transport of persons including station wagons & racing cars	70	50
Components, parts &/or accessories imported from one or more countries for assembly in any progressive motor vehicle program upon prior authorization of BOI		
• Trucks	20	20
• Passenger Cars	30	30
Trucks	30	30

Tables 3A and 3B present the tariff structure in the automotive industry for the three periods 1981-1987 and for the years from 1988 to 2004. Between 1973 to 1980, a tariff of 100

percent was levied on CBU vehicles. This was reduced to 70 percent in 1981 and further to 50 percent in 1982. This rate was maintained until 1992.

**Table 2B: Tariff Rates on the Automotive Assembly Sector: 1988-2004**

	Most favored nation (MFN) Rates								AFTA CEPT
	1988 - 1990	1993	1995	1996	1998	2000	2003	2004	2004
Vehicles for 10 or more persons									
CKD buses (6-18 tonnes)	30	10	10	3	3	3	3	3	3
Buses									
-6-18 tonnes	30	35	25	25	20	15	15	15	5
-18 tonnes	30	55	35	30	20	15	15	15	5
-other	50	65	45	30	30	20	20	20	5
Components and parts	20	10	10	3	3	3	3	1	1
Others	50	65	45	30	30	20	20	20	5
Passenger Cars	50	40	30	40	40	30	30	30	5
Components and parts	30	20	10	3	7	10	10	3	3
Dumpers for highway use with compression ignition internal combustion piston engine	30	30	20	20	3	3	3	3	0
Trucks									
-refrigerated	50	55	35	3	3	3	3	3	0
-other	30	55	35	30-40*	20-40*	20-30*	20-30*	20-30*	5
Components and parts	20	10	10	3	3	3	3	1	1

\* depending on gross vehicle weight

For motor vehicles, the MFN tariff rate went down from 50% in 1990 to 40 percent in 1993. This was further reduced to 30% in 1995 but raised back to 40% a year after until 1999. The liberalization program of the Ramos administration planned to bring down tariffs on motor vehicles to 20 percent in 2000 and to 5 percent in 2003. However, the implementation was not completed due to the decision of both the Estrada and Arroyo administrations to postpone the implementation of the uniform five percent tariff for the overall economy. Instead, tariff rates declined from 40% in 1999 to 30% in 2000 while the scheduled reduction to 5% in 2003 was moved to 2004. At present, the MFN tariff rate on motor vehicles remain unchanged at 40%. Its AFTA-CEPT rate is 5 %.

CKD packs for motor vehicles had a MFN tariff rate of 30 percent between 1981 and 1992. This declined to 20 percent in 1993 and 1994, dropped to 10 percent in 1995 and further to 3 percent during the years 1996-1997. As a result of this tariff reduction, the average tariff duties levied on local parts and components became higher than CKD imports. During this period, tariffs on locally produced parts and components ranged from 10 to 35 percent (except for carpet whose tariff rate was 50%) while CKD imports were levied a much lower tariff of only 3 percent. Domestic parts and components manufacturers complained that with this tariff structure, it would be cheaper to import parts than to procure them locally.

The sector feared that this might result in the elimination of some small and medium manufacturers.

The government responded by increasing the tariff rate on CKD packs for passenger vehicles to 7 percent in 1998 and further to 10 percent in 1999. This was scheduled to decline to 7 percent in 2000 and to 3 percent by 2003. However, the government did not reduce tariff rates on CKD packs as scheduled, but decided to maintain CKD rates at 10% till 2003. However, in 2004, the government moved to reduce CKD rates for MVDP participants from 10% to 3%.

For buses and trucks, a MFN tariff rate of 30 percent was imposed during the years 1981 to 1987. Beginning in 1988, tariff changes were introduced based on the vehicle's gross weight. Buses with gross vehicle weight (GVW) of 6 but not exceeding 18 tonnes maintained a tariff rate of 30 percent from 1988 to 1990. This declined to 20% in 1991, but went up to 35% in 1993. Between 1994 and 2000, this gradually declined from 30% to 15%. Since 2000, its tariff rate has been maintained at 15%. For buses with GVW exceeding 18 tonnes, the MFN tariff rate has been set at 20% since 2000. The AFTA-CEPT rate for buses is set at 5%.

For other motor vehicles designed for the transport of ten or more persons, the MFN tariff rate was 50 percent from 1988 to 1992. This increased to 65 percent in 1993 but declined to 55 percent in 1994, to 45 percent in 1995, and to 30 percent in 1996. This fell to 20 percent in 2000 as scheduled, however the plan to reduce the rate further to 5% in 2003 was not implemented because of the government decision to reverse its liberalization policy. The MFN tariff rate has been retained at 20% while its AFTA-CEPT rate is 5%.

For trucks with GVW exceeding 20 tonnes (except refrigerated vans), the MFN tariff rate remained at 30% between 1988 and 1992. This increased to 55 percent in 1993 but was reduced gradually from 45 percent in 1994 to 20 percent in 1999 which has been maintained till the present. The AFTA-CEPT rate for trucks is 5%.

Refrigerated vans with GVW exceeding 20 tonnes had a tariff rate of 50 percent between 1988 to 1991. This went down to 30 percent in 1992, but increased again to 55 percent in 1993. This declined to 45 percent in 1994, to 35 percent in 1995, and dropped to 3 percent in 1996 which has been unchanged till the present.

CKD packs for buses and trucks imported by MVDP participants had a tariff rate of 20 percent between 1981 to 1992. This declined to 10 percent during the years 1993 to 1994. In 1995, the tariff rate fell to 3 percent. This rate was reduced to 1% in 2004.

Table 3 presents the current tariff rates on domestically manufactured parts and components under EO 262. As earlier indicated, EO 262 which was issued on 30 December 2003, raised the MFN tariff rates for parts and components for the years 2004 and 2005 with the primary objective of encouraging the development of the country's automotive industry. The tariff increases might have also been carried out due to the need to protect the parts and components industry with the complete phase out of the local content requirement in July 2003. EO 262 requires all MVDP participants that are importing knocked-down parts and components to apply for a certificate of import authority at BOI prior to opening of letter of credit and/or ordering of items. For importation of local parts listed in Table 3, BOI will refer the application to the Motor Vehicle Parts Association of the Philippines (MVPMPA) for evaluation of QCD compliance. The MVDP participant will provide the part's detailed specification, price, and lead time needed for assembly purposes. MVPMPA is given 15 working days to complete the QCD evaluation. If no action is taken by the association during this period, the referred part will be considered not QCD compliant.

**Table 3: Structure of Tariffs on Locally Manufactured Auto Parts under EO 262**

AHTN Code	Description	MFN Rate			AFTA CEPT
		2003	2004	2005	
4009.3190	Fuel hose, heater hose, & water hose of a kind used for motor vehicles of Heading Nos. 87.02, 87.03, 87.04, & 87.11	10	10	10	5
4016.9390	Other Gaskets & o-ring, of a kind used for motor vehicles of Heading Nos. 87.02, 87.03, 87.04, & 87.11	10	10	10	5
4016.9911	Weatherstrip, of a kind used for Heading Nos. 87.02, 87.03, & 87.04	20	20	20	5
5703.1090	Of wool or fine animal hair Floormats, of a kind used for motor vehicles of Heading Nos. 87.02, 87.03, & 87.04	20	20	20	5
5703.9091 5703.9099	Of other textile materials Floormats, of a kind used for motor vehicles of Heading Nos. 87.02, 87.03, & 87.04	20	20	20	5
7320.1000 7320.1090	Leafsprings & leaves therefor Leaf springs & leaves	20	20	20	5
8409.9152	Cylinder head plug & oil filler cap, of plastics, of a kind used for motor vehicles of Heading Nos. 87.02, 87.03, 87.04, & 87.11	15	15	15	3
8415.2000	Air conditioning machines, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	30	30	30	5
8481.8099	Fuel cut valves, of a kind used for motor vehicles of Heading Nos. 87.02, 87.03, 87.04, & 87.11 Actuators (pressure reduction valves), of a kind used for motor vehicles of Heading Nos. 87.02, 87.03, 87.04, & 87.11	10	10	10	3
8511.3090	Distributors, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	3
8511.4090	Starter motors, of a kind used for motor vehicles of Heading Nos. 87.02, 87.03, 87.04, & 87.11	20	20	20	5
8511.5030	Alternators & capacitor discharge igniters, of a kind used for motor vehicles of Heading Nos. 87.02, 87.03, 87.04, & 87.11	20	20	20	5
8512.2010	Clearance/markers, license plates & interior lamps (small lamps for cars & commercial vehicles), of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	5
	Front head lamps, stop/tail light combination, rear lamps, turn signal lamps, of a kind used for motor vehicles Heading No 87.11	20	20	20	5
8512.3010	Horn assembly high, horn assembly low not exceeding 100 mm in diameter, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, 87.04, & 87.11	20	20	20	5
8536.5090	Lever combination, hazard & back-up switches, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, 87.04, & 87.11	15	15	15	3
8536.9090	Fuse tube (set) & battery clamp, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, 87.04, & 87.11	20	20	20	3
8544.3010	Wiring harness, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, 87.04, & 87.11	30	30	30	5
8544.4195	Battery cables, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, 87.04, & 87.11	20	20	20	5
8707.9021 8707.9029	Bodies for the vehicles of Heading No. 87.04	20	20	20	5

8708.2120 8708.2140 8708.2150 8708.2917	Seatbelts-3 pt. elr seatbelts, 2 pt. lap belt static, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	30	30	30	3
8708.2913 8708.2915 8708.2916 8708.2917	Trim F door rh/lh: trim R door , of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	3
	Chassis frame sub-group, chassis part, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	3
	Battery carrier/tray & bracket, rod hood support, armrest & headrest stiffener, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	3
	Asphalt sheets (sound deadener) & splash guards, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	3
	Trim assembly package, such as: fastener, mat trunk assy, top ceiling assy, trim F & R pillar rh/lh, trm ctr plr up & lower lh/rh, insulator dash up/lwr, plate scuff F rh/lh, plate assy R scuff rh/lh, trim rr w/house, rh/lh, board partition, trim trunkside rh/lh, sunvisor rh/lh, console box assy, dashboard assy, & ashtray assy, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	3
	Carpets, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	3
8708.3950 8708.3960 8708.3670	Brake drum, disc brake, brake tube, calliper & master cylinder, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	3
8708.4023 8708.4025 8708.4026 8708.4027	Transmission assy manual & transmission sub group, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	30	30	30	3
8708.7013 8708.7015 8708.7016 8708.7017	Road wheels including hub caps (alloy or steel), of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	3
8708.8030 8708.8050 8708.8060 8708.8070	Shock absorber, absorber assy shock rh/lh, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	5
8708.9130 8708.9150 8708.9160 8708.9170	Shroud assembly & drain plug, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	5
8708.9130 8708.9150 8708.9160 8708.9170	Radiator assy complete, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	30	30	30	5
8708.9213 8708.9215 8708.9216 8708.9217 8708.9293 8708.9295 8708.9296 8708.9297	Tail & center exhaust pipes, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	5
	Muffler assy, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	5
	Muffler exhaust pipes, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	5
	Exhaust system, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	5
8708.9429A 8708.9429B	Steering column assy, steering wheels & steering roll connectors, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	3

8708.9919A 8708.9919B 8708.9993	Tank fuel lower, fuel cap, filler pipe, filler hose assy, fuel tank band, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	3,5
	Fuel tank, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	30	30	30	3,5
	Brake pedal assy, clutch pedal assy, accelerator pedal sub-assy, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	3,5
	Suspension arm (front), of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	5
	Tank assy reserve, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	20	20	20	3,5
9029.2020	Combination meter, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	3
9104.0010	Clock assy, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	15	15	15	3
9401.2000	Seat assy, of a kind used for motor vehicles Heading Nos. 87.02, 87.03, & 87.04	30	30	30	5

Source: Tariff Commission (2004), The ASEAN Harmonized Tariff Nomenclature.

If the referred part is OCD compliant, the MVDP participant has the following options: (i) import the part under individual AHTN headings with applied rates under EO 262 (import authority is not required under this option); (ii) source the part from the local manufacturer; or (iii) file a request for re-assessment. If the referred part is evaluated to be not QCD compliant, the MVDP participant will be allowed to import the part under knocked down AHTN headings (see Table 2) subject to the filing of a certificate of import authority.

For replacement parts importation, if the part is QCD compliant, the applied tariff rate will be the individual AHTN headings at EO 262 rates. If the part is not QCD compliant, the applied rate will be the regular AHTN individual heading (see Table 4) subject to a certification on non-local availability<sup>4</sup>.

For non-MVDP participants, a certification of non-local availability from BOI will be required prior to importation of parts under EO 262. If evaluated to be not locally available, importation at regular AHTN rates will be applied (see Table 4). If evaluated to be locally available, importation at EO 262 rates will be applied.

Currently, there are no existing import quotas on CBU and CKD vehicles. Used cars cannot be imported, except for imports of returning residents and members of the diplomatic corps. Used trucks, buses and special-purpose vehicles are allowed but are subject to Department of Trade and Industry (DTI) - Bureau of Import Services (BIS) approval. Under the provisions of Central Bank Circular Number 1389 of 1993 (as amended) an import clearance in the form of a Certificate of Authority to Import (CAI) from the DTI-BIS is required prior to the opening of letters of credit.

The importation of the following automotive components and parts has remained regulated by the DTI-BIS requiring import clearances/permits prior to importation: dashboards, doors, fenders, ext. luggage racks, grilles, hoods, luggage compartments, running boards, plate brackets, visors, radiator cowlings, trunks/trunk lids, mudguards, floor boards, and floor mats (other than of textile material/rubber). The importation of bodies (including cabs and body shell) and chassis fitted with engines for vehicles weighing below 6 tons is not allowed (see Table 5). The importation of OEM parts intended for vehicle assembly requires prior clearance from the Board of Investments. This requires assemblers to be registered participants of the Motor Vehicle Development Program.

<sup>4</sup> This refers to parts that are not manufactured domestically in sufficient quantity, comparable quality and at reasonable prices.

**Table 4: Structure of Regular Tariffs on Automotive Components & Parts**

Auto Parts & Components	2004 MFN Rates	2004 CEPT Rates
Battery; wiring harness; seats	15	5
Tires; safety glass; glass mirrors; air conditioning units; Bumpers and parts therefore; safety seat belts; brakes	10	3;5
Assembled gear boxes; drive axles; and non-driving axles	10	3
Gaskets	7	3
Gas engines	1;3	0
Diesel engines	1;3;10	0;3
Cables	1;3;10;15	0,5
Filters; spark plugs; lighting or visual signalling equipment; unassembled sound signalling equipment	3;10	0;5
Fuses	1;5	0;5
Lamp holder plugs and sockets	0;3;5;7	0;5
Brakes, clutch and pedal	1;10	5
Fuel pumps; relays; tungsten, halogen, other filament lamps; electrical conductors, insulators; instrument cluster; shock absorbers	1;7;10	0;3;5
Unassembled gear boxes, drive axles and non-driving axles; round wheels, radiators	3	3
Contact point	0	0

Source: Tariff Commission

**Table 5: List of Auto Parts Subject to Import Regulation Under CB Circular 1389**

PSCC	Tariff Heading	Commodity Description	
784.32-09	8708.2910	Other parts and accessories, n.e.s. of bodies including cabs of the vehicles of group 781 only	
	8708.2990	Dashboards	Plate brackets
		Doors	Running boards
		Fenders	Radiator cowlings
		Floor boards	Trunk/trunk lids
		Grille	Visors
		Hood	Wings
		Luggage compartments	Mudguards
		Luggage racks (exterior)	Floor mats (other than textile material/rubber)
784.24.21-0	8707.1000	Bodies (including cabs and body shell) for motor vehicles of group 781 only (not allowed for importation)	
		Parts for the vehicles of heading No. 87.03 “Motor cars and other motor vehicles principally designed for the transport of persons (other than those of heading No. 87.02), including station wagons and racing cars” (not allowed for importation)	
784.10-09	8706.0090	Chassis fitted with engines, for the motor vehicles of group 781 only (not allowed for importation)	
Philippine Standard Commodity Code (PSCC) Group 781 covers motor car and other motor vehicles principally designed for the transport of other persons (other than public transport type vehicles) including station wagons and racing cars.			
Note: Importation of motor vehicles parts NOT for replacement purposes are not allowed.			

Source: Bangko Sentral ng Pilipinas.



### C. Taxes Imposed on the Industry

Previously, a 10 per cent value added tax was imposed on motor vehicles. In February 2006, this was increased to 12 per cent. In addition, imported and domestically assembled vehicles are subject to excise taxes. Excise taxes are internal taxes levied on the manufacture, sale or consumption of a commodity within the country. In August 2003, the base for the country's excise tax scheme was revised from engine displacement to vehicle price. Previously, excise taxes were set at 15 to 100 per cent depending on the car's engine displacement. The regulation exempted all vehicles designed for the transport of goods as well as those with seating capacity of more than nine passengers (including driver). This included Asian Utility Vehicles (AUVs), pick-ups, vans, Sport Utility Vehicles (SUVs) as well as trucks and buses.

During the late 1990s, this regulation became a much-contested issue in the industry. Large SUVs, like the Mitsubishi Pajero, which carry more than nine passengers were exempted from excise taxes while small SUVs, like the Honda CR-V, were subject to excise taxes based on their engine classification. There were also complaints against increasingly higher-priced AUVs, pick-ups, vans and trucks enjoying excise tax exemptions.

In view of these issues, the government decided to impose excise taxes on full-sized SUVs and AUVs. In February 2000, all SUVs, which are defined as 4-wheel drive vehicles regardless of seating capacity, became taxable. However, 4x2 large SUVs continued to be tax exempt. Some assemblers reacted to this new tax policy by introducing 4x2 variants of their SUVs and pick-ups in order to continue receiving the tax breaks.

In August 2000, the government announced that it would impose excise taxes on AUVs. According to the Bureau of Internal Revenue, while it upheld the exemption of vehicles based on the seating capacity rule, it did not consider rear cargo or luggage compartment that seated four or more people, as in the case of AUVs, as passenger seats. Therefore, AUVs were no longer exempted from excise taxes as they only have seven passenger seats and were, thus, covered by a 15 percent excise tax.

In August 2003, Republic Act 9224 was issued to rationalize the excise tax scheme on automobiles. The law imposed an ad valorem tax on automobiles based on the manufacturer's or importer's selling price, net of excise and value-added taxes, in accordance with the schedule described in Table 5.

**Table 5: Excise Taxes in the Automotive Industry**

Net manufacturer's price/ Importer's selling price	Rate
Up to P600 Thousand	2%
Over P600 Thousand to P1.1 Million	Phil Peso 12,000 + 20% of value in excess of P600 Thousand
Over P1.1 Million to P2.1 Million	Phil Peso 112,000 + 40% of value in excess of P1.1 Million
Over P2.1 Million	Phil Peso 512,000 + 60% of value excess of Phil Peso 2.1 Million

Buses, trucks (excluding pick- ups), cargo vans, jeeps/jeepneys/jeepney substitutes, single cab, chassis, and special-purpose vehicles are exempted from excise taxes. Automobiles used exclusively within the country's freeport zones are also exempted.

### III. Economic Structure and Performance

#### A. Motor Vehicle Assembly Sector

The Philippine automotive industry consists of 14 car assemblers with a combined annual capacity of 221,450 units and 21 commercial vehicle assemblers with a total capacity of 145,950 units. The industry is dominated by five Japanese manufacturers namely: Toyota Motor, Honda Cars, Mitsubishi Motors, Isuzu Motors, and Nissan Motors. Together, these firms have a total investment amounting to about P13.8 billion and employment of 5,228 workers. Other major motor vehicle manufacturers include Ford Motors, Columbian Autocar, and Pilipinas Hino. Total investments in the assembly sector was around P40 billion in 2002. Employment was about 15,000 workers in 2002.<sup>5</sup>

Table 6 shows that industry sales remained buoyant till 1996. On the average, sales grew by about 17.2% annually for the years 1991 to 1996. As a result, a number of firms invested in new plants to expand their operations in anticipation of a continuing domestic vehicle demand. At the same time, the purchasing power surpassed the US\$1000 GDP per capita income. The 1997 crisis, however, halted the growth of the industry. Between 1997 and 2000, the industry failed to recover as sales dropped by 19.6% annually during this period. However, some recovery is evident from 2001 to 2003 as average growth rate rose by 7.4% annually.

**Table 6: Automotive Industry Sales, 1990-2004**

Year	Passenger cars	Growth rate	% Share	Commercial vehicles	Growth Rate	% Share	Total Vehicles	Growth Rate
1990	35,193		60.8	22,672		39.2	57,865	
1991	27,798	-23.6	58.0	20,151	-11.8	42.0	47,949	-18.8
1992	35,152	23.5	58.2	25,208	22.4	41.8	60,360	23
1993	51,199	37.6	61.1	32,612	25.8	38.9	83,811	32.8
1994	58,501	13.3	56.5	44,970	32.1	43.5	103,471	21.1
1995	71,195	19.6	55.6	56,967	23.6	44.4	128,162	21.4
1996	88,977	22.3	54.9	73,118	25.0	45.1	162,095	23.5
1997	75,760	-16.1	52.5	68,675	-6.3	47.5	144,435	-11.5
1998	34,688	-78.1	43.2	45,543	-41.1	56.8	80,231	-58.8
1999	27,580	-22.9	37.1	46,834	2.8	62.9	74,414	-7.5
2000	22,000	-22.6	29.7	52,000	10.5	70.3	74,000	-0.6
2001	23,684	7.4	30.9	52,986	1.9	69.1	76,670	3.5
2002	21,728	-8.6	25.4	63,859	18.7	74.6	85,587	11
2003	24,321	11.3	26.3	68,015	6.3	73.7	92,336	7.6
2004	27,373	11.8	60.8	45,036	-41.2	39.2	72,421	-24.3

Source: CAMPI

Table 6 also shows that from 1998 to 2003, commercial vehicles dominated total vehicle sales. AUVs have provided a sound value proposition given their affordable price, sturdy built and capacity to accommodate members of large Philippine households. The share of commercial vehicles increased steadily from 39% in 1990 to almost 75% in 2002. The preference for commercial vehicles has also been due partly to the poor condition of roads in the country. Although there is an extensive road network, it has suffered from decades of underinvestment—only 60.7% of national roads were paved with concrete or asphalt in 2001, according to the Department of Public Works and Highways. Some of the most serious

<sup>5</sup> These figures were from “The Philippine Automotive Industry” provided by the Chamber of Automotive Manufacturers of the Philippines, Inc. (CAMPI).

shortcomings are now being tackled, partly through build-operate-transfer (BOT) schemes, which are expected to bring in private capital and expertise.

However, with the imposition of the new tax system in 2003, the share of commercial vehicles dropped drastically to 39% as sales fell by 24% in 2004. Nevertheless, demand for commercial vehicles is expected to recover in future years, owing to their suitability to Philippine conditions. Demand for passenger car sales will likely to be less disadvantaged in the future as sales gradually rise back towards their 1996 peak.

Table 7 indicates that total imports grew at an annual average rate of 39.5% during the period 1998-2003. Used vehicles comprised around 32% of total imports on the average. Currently, the industry is facing stiff competition from second-hand imported vehicles which are priced 30% to 50% lower than their new counterparts depending on vehicle model. As Table 7 shows, new vehicle registration increased by about 3% annually while used vehicle registration rose by 5% annually during the period 1998-2003. Domestic sales grew by only 3% during the same years while total imports grew at an annual average rate of 39.5%.

**Table 7: Official Import Data and LTO Registration Data**

Year	NSO CBU Imports			LTO New Registration			Domestic Sales
	New	Used	Total	New	Used	Total	
1998	5,531	4,480	10,011	79,764	81,034	160,798	80,231
1999	53,285	5,112	58,397	74,434	78,369	152,803	74,414
2000	21,050	46,384	67,434	83,994	88,057	172,051	74,000
2001	184,377	22,071	206,448	76,671	97,024	173,695	76,670
2002	128,328	20,967	149,295	85,594	113,327	198,921	85,587
2003	40,583	31,726	72,309	92,336	103,228	195,564	92,336
Cumulative Total	433,154	130,740	563,894	492,793	561,039	1,053,832	483,238
Average growth rate	39.9%	39.15%	39.5%	2.9%	4.8%	3.9%	2.80%

Sources: NSO Trade Data for imports of passenger cars, trucks, and buses; CAMPI for sales of passenger cars, SUVs/AUVs, trucks, and buses; and LTO for new vehicle registration data covering brand-new and used imported passenger cars, SUVs/UVs, trucks, and buses.

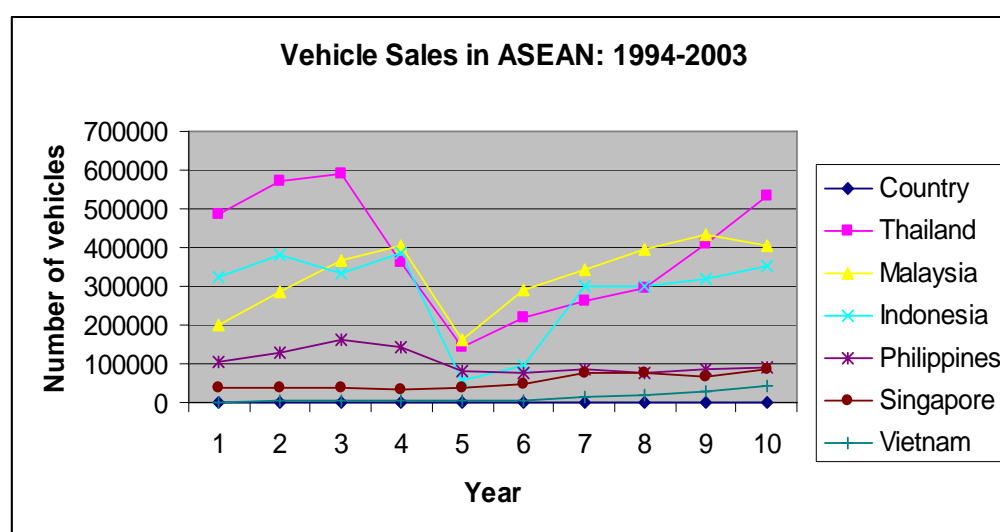
The automotive industry has been complaining about the smuggling problem taking place in the industry. Used RHD vehicles that enter through the Subic Bay Freeport and Special Economic Zone ports are not paying the correct duties and taxes, thus, they can be sold cheaply. These RHD vehicles are converted into LHD and auctioned off. Buyers are given a deed of sale and are registered by the Land Transportation Office right away. Upon registration, only the deed of sale is required unlike in the case of brand new cars which are required to submit a dealer report, which is the basis for assessing duties, excise tax, and VAT. In the case of second-hand converted vehicles, the current registration procedure does not require an invoice, hence; no duties, excise tax, and VAT are collected by the government.

Note that through EO 156 of December 2002 has banned the importation of all types of used motor vehicles and parts and components, it could not be enforced because of a temporary restraining order issued by the Olongapo City Regional Trial Court (RTC) on March 3, 2003, and a subsequent order from the same Court enforcing the injunction on August 19, 2003. On October 27, 2002, the Court of Appeals issued a resolution preventing the Olongapo RTC from issuing another injunction against the implementation of EO 156. In February 2005, the Court of Appeals upheld the decision of the Olongapo RTC and ruled that EO 156 was unconstitutional and illegal.

**Table 8: Vehicle Sales in ASEAN: 1994-2003**

Country	1994	1995	1996	1997	1998
Thailand	485678	571580	589126	363156	144065
Malaysia	200435	285792	364788	404837	163851
Indonesia	321760	378704	332035	386691	58303
Philippines	103471	128162	162087	144435	80231
Singapore	38993	38609	36915	34812	37493
Vietnam	1428	2519	5539	5941	5928
Total	1151765	1405366	1490490	1339872	489871
Country	1999	2000	2001	2002	2003
Thailand	218330	262189	297052	409242	533176
Malaysia	288432	343173	396381	434954	405010
Indonesia	93814	300964	299560	317788	354629
Philippines	74414	83949	76670	85587	92336
Singapore	48975	76121	74277	65612	86212
Vietnam	6964	13957	19557	26873	42557
Total	730929	1080353	1163497	1340056	1513920

Source: Automotive Manufacturers Association, Governmental Organizations as cited in Analysis of the Automotive Industry in Japan and Asia, Asian Automotive Business Review, Vol 15 No. 4, October 2004.



The country's motor vehicle exports are negligible, although some increases in passenger car exports are evident in 2002 and 2003, rising significantly from 2,895 units to 12,147 units. Mostly, the passenger car exports comprised of new cars with spark ignition combustion engine exceeding 1500 cc not 3000 cc to Thailand and Indonesia. These are mainly Ford's exports under the ASEAN Industrial Cooperation Scheme. Isuzu also exported about 90 CBUs between 2000 to 2003 to South America and Honduras and CKD vehicles to Vietnam.

Table 8 and Figure 1 present vehicle sales in the Philippines vis-à-vis its ASEAN neighbors. It is evident from the data that in terms of sales, the country has lagged behind Malaysia, Indonesia, and Thailand. Currently, except for the Philippines, the ASEAN automotive industry has recovered from the 1997 Asian financial crisis. In the Philippines, the industry is faced with reduced domestic demand and excess capacity.

## **B. Auto Parts and Components Sector**

The parts and components segment of the automotive industry is composed of 256 companies<sup>6</sup> producing different parts and components made of metals, plastic, rubber and composite materials for both the OEM and replacement markets. Of the 256 automotive parts manufacturers, 124 are considered first-tier manufacturers who are directly supplying the needs of domestic automotive assemblers. The remaining 132 are mostly small and medium enterprises (SMEs). They are sub-contractors serving as second- and third tiers who are supplying the needs of the first-tier manufacturers<sup>7</sup>. These are 100 percent Filipino owned companies while the rest have multinational affiliations. Out of the 256 auto parts makers in the country, 103 are members of the Motor Vehicle Parts Manufacturers of the Philippines (MVPMAP). Non-MVPMAP members are mostly suppliers from Japan that were brought in by assemblers. These parts makers are under the umbrella of the car manufacturers and form part of their vertically integrated operations.<sup>8</sup>

The bulk of the industry is composed of small firms with capitalization ranging from P0.5 to P5 million. Most of these firms operate as mom and pop style suppliers with varying capabilities and some real quality problems. These firms failed to develop as they have insufficient capital and technology that are necessary to improve their products. The large firms with capitalization of more than P100 million account for only about 7 percent of the industry. They comprise the major players of the industry and are the same companies manufacturing parts for OEM car assemblers and engaged in exporting activities.

The major players in the automotive components manufacturing sector are Yazaki-Torres Manufacturing Corp. (wiring harness), United Technologies Automotive Phils. (wiring harness), Temic Automotive (Phil.) 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). Table 9 presents a list of automotive parts and components manufacturers with proven track record in both OEM and replacement markets. These companies are manufacturers of wiring harness; transmission; alloy wheels; radiator, leaf spring, and stamp parts; tires; and auto rubber parts. Large auto parts companies have also employed quality supportive processes and systems: 41 companies have ISO 9002 certification, 13 with ISO 14001, and 24 with QS 9000 certification.

The Philippine components sector consists of the following sectors: metalworking -- 47 percent, rubber -- 15 percent, plastics, seats and trims -- 18 percent, chemical -- 7 percent, and allied -- 13 percent.<sup>9</sup> The metal sector is composed of large parts manufacturers and vehicle assemblers like Mitsubishi (Asian Transmission Corp), Toyota (Toyota Auto Parts), and Honda (Honda Parts Manufacturing) whose main products consist of engine and transmission assemblies. These large companies exist along with relatively small parts companies that manufacture mainly small-type bracket and clips and metal-based components like clutch pedals and battery trays. The metal sector also includes firms that manufacture stamped parts, aluminum wheels, mufflers and exhaust pipes, radiators, leafspring, and steering wheels and columns among others.

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<sup>6</sup> Motor Vehicle Parts Manufacturers of the Philippines (MVPMAP)

<sup>7</sup> A. Tenorio and L. Lugo (August 1, 2002), "Automotive Parts Making: A Dying Industry", Business World.

<sup>8</sup> Romeo Villadolid of MVPMAP in an interview by T.R. Salazar, "Filipino skills prove parts are worth the sum of the car", Philippine Daily Inquirer, 15 December 2004.

<sup>9</sup> RP Automotive Parts Industry Roadmap: Enhancing Supplier Base for Exports (March, 2004), Power Point presentation.

**Table 8: Auto Parts Companies that supply OEM and replacement markets**

Product	Firm	Quality Accreditation	Major Clients
Wiring harness	Yazaki Torres Manufacturing Inc.	QS9000, ISO 14001, ISO 9001, Ford Q1	Ford, Jaguar, Toyota, Mitsubishi, Mazda, Honda, Isuzu, Nissan, Universal Motors Corp.
	International Wiring Systems Corp. (Phils)	ISO 9002, QS 9000, ISO 14000	Sumitomo Wiring Systems (Japan, USA, Australia)
	Pilipinas Kyohritsu, Inc.	ISO 9002, QS 9000	Nissan Motor (Japan, Phils), Nissan Diesel, Universal Motors Corp
Transmission	Asian Transmission Corporation	ISO 14000	MMC (Japan, Thailand, Phils), Proton Malaysia
	Honda Parts Manufacturing Corp.	ISO 9000	Honda (Japan, Indonesia, India, Thailand, UK, USA, Pakistan)
	Toyota Auto Parts	ISO 14000	Toyota (Thailand, Indonesia, Malaysia, Taiwan, Japan, South Africa)
	Isuzu Auto Parts Manufacturing Corp.	ISO 9001	Isuzu (Thailand)
Alloy Wheels	Philippine Aluminum Wheels, Inc.	QS 9000, ISO 9001	Mitsubishi, Nissan, Toyota, Universal Motors Corp., Ford, Isuzu, GM, Hino
	Enkei Phils. Inc.	QS 9000	Honda, Toyota, Enkei Asia Pacific, Mitsubishi, Isuzu, Ford, Nissan
	Kosei Inc. (Asia Pacific)	QS 9000	Toyota, Honda, Mitsubishi, Japan, Isuzu, Nissan, Ford
Radiator, leaf spring, stamp parts	Roberts Automotive & Industrial Parts Manufacturing Corp.	ISO 9002	Mitsubishi, Honda, Hino, Columbian, Universal Motors
Tires	Goodyear Phils., Inc	QS 9000, ISO 14001	Honda, Toyota, Mitsubishi, Isuzu, Nissan, Ford, Universal Motors, Hino, Columbian
Auto rubber parts	Ohtsuka Poly-Tech Phils., Inc	ISO 9002	Toyota, JIDECO, Honda, Lamcor

Source: "RP Automotive Parts Industry Roadmap: Enhancing Supplier Base for Exports", (March, 2004), Power Point presentation.

The rubber sector is made up of firms that manufacture tires and other rubber parts such as rubber hoses for radiators, heaters, and air conditioners, weather strips, glass runs, side moldings and other molded rubber products like pedal pads, steering gear, tube/boot, plugs, bumper bounds, and oil seals. The plastics sector consists of firms producing small plastic injected parts and fiber-reinforced plastic components that cater mainly to the replacement market. The electrical sector is composed of large companies manufacturing wiring harnesses which have state of the art technology and skilled workers. Other products manufactured by firms in the sector include horns, lamps and relays, small motors and alternators, and semi-conductor controls for anti-brake systems, car stereos, and car speakers.

Currently, the parts and components sector manufactures about 330 parts including the following:

- Suspension: tires, steel rims, aluminum wheels, leaf and coil springs
- Electrical system: wiring harnesses, batteries, lamps, relays
- Pressed components: mufflers, radiators, seat frames, seat adjusters, oil and air filters, pedals
- Mechanical parts: transmission

- Cast and forged components: gear blanks, brake disks, brake drums
- Rubber and plastic components: fan belts, rubber hoses, small plastic parts
- Interior: carpets, seats

By the end of 1999, total investments in the parts and components industry amounted to about P27 billion. In 2001, total investments increased to P28 billion. Total employment was 45,000 workers, although this declined to 33,000 workers in 2002.

Total exports increased by 15 percent in 2002 and by 13 percent in 2003 (see Table 9). These were valued at around US\$1.3 billion in 2002 and around US\$1.5 billion in 2003. The bulk of total exports was accounted for by wiring harnesses which is a labor-intensive component. In the past three years, however, the share of electrical wiring harnesses continuously declined from 41 percent in 2001 to 39 percent in 2002 and to 33 percent in 2003. The share of other parts and accessories, not elsewhere specified, increased from 21 percent in 2001 to 29 percent in 2002 and to 35 percent in 2003. The share of brakes and servo brakes exports fell from 19 percent in 2001 to 13 percent in 2003. Note that major components exports like transmissions and ABS controls are manufactured by Japanese vehicle assembly firms under the ASEAN AICO scheme. OEM export sales are difficult to achieve unless there is a close tie-up with multinational corporations. The industry's other major exports are steel belted auto tires with an almost constant share of 2.4 percent between 2001 and 2003.

**Table 9: Auto Parts and Components Exports (In FOB US\$)**

PSCC	COMMODITY DESCRIPTION	2003	2002	2001
6214109	OTH TUBES, PIPES & HOSES, OF UNHARDENED VULCANIZED RUBBER, W/O FITTINGS	243,051	356,426	-
6214209	OTH TUBES, PIPES & HOSES, OF UNHARDENED VULCANIZED RUBBER, REINFORCED OR W/ METAL	151,987	227,568	884,548
6214509	OTH TUBES, PIPES & HOSES, OF UNHARDENED VULCANIZED RUBBER, W/ FITTINGS	781,534	1,298,635	984,869
6251001	STEEL BELTED AUTOMOBILE TIRES, PNEUMATIC, OF ALL SIZES, NEW	36,887,948	28,342,492	27,423,957
6251009	OTH TIRES, PNEUMATIC, NEW, USE ON MOTOR CARS (INCLUDING STATION WAGON & RACING CARS)	364,439	431,601	2,527,832
6252001	STEEL BELTED TIRES, PNEUMATIC, NEW, OF A KIND USED ON BUSES [AND] OR LORRIES (INCLUDING TRUCKS)	123,641	232,384	423,873
6252009	OTHER TIRES, PNEUMATIC, NEW, OF A KIND USED ON BUSES [AND] OR LORRIES (INCLUDING TRUCKS)	210,793	-	102,908
6638201	BRAKE LININGS & PADS	589,662	425,500	435,785
6647102	TOUGHENED (TEMPERED) SAFETY GLASS, OTH THN SUB-ITEM 6647101	-	78,749	18,148
6647201	LAMINATED SAFETY GLASS, FOR VEHICLES, AIRCRAFT, SPACECRAFT/VESSELS	31,066	-	72,879
6647202	LAMINATED SAFETY GLASS, OTH THN SUB-ITEM 6647201		202,642	-
7138101	SPARK-IGNITION RECIPROCATING/ROTARY INTERNAL COMBUSTION PISTONS, 1100 CC (25 HP)	16,989	23,125	-
7138109	OTH SPARK-IGNITION RECIPROCATING/ROTARY INTERNAL COMBUSTION PISTON ENGINES, NES	288,010	125,218	460,600
7138201	COMPRESSION-IGNITION INTERNAL COMBUSTION PISTON ENGINES, NES, NOT EXCLUDING 1100CC 25HP	172,872	-	-
7138209	OTH COMPRESSION-IGNITION (DIESEL/SEMI-DIESEL) INTERNAL COMBUSTION ENGINES, NES	7,955	-	-
7139109	OTH PARTS OF GASOLINE & KEROSENE ENGINES FOR AUTOMOBILES	-	-	48,767
7139119	OTH PARTS, NES, OF GASOLINE & KEROSENE ENGINES	383	-	-
7139201	CYLINDER LINER/SLEEVE & VALVE OF DIESEL & SEMI-DIESEL ENGINES FOR AUTOMOBILES	2,886	-	-
7139209	OTH PARTS OF DIESEL & SEMI-DIESEL ENGINES FOR AUTOMOBILES	12,174	-	-
7139211	CYLINDER LINER/SLEEVE & VALVE OF DIESEL & SEMI-DIESEL ENGINES FOR TRUCK, BUSES, ETC	-	-	361

7139212	OTH CYLINDER LINERS/SLEEVES & VALVES, OF DIESEL & SEMI-DIESEL ENGINES	-	-	18,831
7139219	OTH PARTS, NES, OF DIESEL & SEMI-DIESEL ENGINES	741,207	-	916,016
7436300	OIL/PETROL-FILTERS FOR INTERNAL COMBUSTION ENGINES	134,807	146,065	187,424
7436400	INTAKE AIR FILTERS FOR INTERNAL COMBUSTION ENGINES	5,938,343	3,735,572	2,474,940
7481001	CAM SHAFTS AND CRANK SHAFTS FOR INTERNAL COMBUSTION PISTON ENGINES	994,423	554,418	416,005
7481002	TRANSMISSION SHAFTS (INCLUDING CAM SHAFTS& CRANK SHAFTS OTHER THAN FOR INTERNAL COMBUSTION ENGINES)	295,689	37,355	17,545
7482201	BEARING HOUSINGS, NOT INCORPORATING BALL OR ROLLER BEARINGS	193,047	156,871	419,504
7484002	GEARS, N.E.S., AND GEARING (INCLUDING FRICTION GEARS) OTHER THAN TOOTHED WHEELS, CHAIN SPROCKETS & OT	417,442	9,324	1,012,508
7484004	GEAR BOXES AND OTHER SPEED CHANGERS, INCLUDING TORQUE CONVERTERS	3,416,002	7,222,609	6,966,046
7485001	FLYWHEELS	146,163	105,995	
7486002	SHAFT COUPLINGS(UNIVERSAL JOINTS)	396,842	697,795	851,217
7489000	PARTS, NES, FOR ARTICLES OF GROUP 748	5,108,519	2,941,275	4,040,866
7731301	ELECTRICAL WIRING HARNESS FOR MOTOR VEHICLES	507,254,846	519,724,363	482,462,599
7783402	SIDE LAMPS, TAIL LAMPS, PARKING LAMPS AND LICENSE PLATE LAMPS OF A KIND USED FOR MOTOR VEHICLES, U	46,674	186,643	38,647
7783404	HORNS AND SIRENS AND OTHER ELECTRICAL SOUND SIGNALLING APPLIANCES OF A KIND USED FOR MOTOR VEHICLES,	62,400	129,632	190,715
7783405	WINDSCREEN WIPERS	116,946	38,276	203,450
7783409	OTHER ELECTRICAL LIGHTING AND VISUAL SIGNALLING EQUIPMENT, FOR CYCLES OR MOTOR VEHICLES, UNASSEMBLED	-	1,000,168	622,866
7783419	OTHER ELECTRICAL LIGHTING AND VISUAL SIGNALLING EQUIPMENT, FOR CYCLES OR MOTOR VEHICLES	723,341	22,892	12,087
7842100	BODIES(INCLDG CABS), FOR MOTOR VEHICLES OF GROUP 781	-	-	32,695
7783500	PARTS OF EQUIPMENT OF ITEM 77834	463,213	128,905	4,950
7841009	OTH CHASSIS FITTED W/ ENGINES FOR MOTOR VEHICLES OF GROUPS 722,781,782 & 783	62,800	30,000	-
7842100	BODIES(INCLDG CABS), FOR MOTOR VEHICLES OF GROUP 781	-	9,985	-
7842500	BODIES(INCLDG CABS); FOR MOTOR VEHICLES OF GROUPS 722, 782,& 783	35,211	-	-
7843102	BUMPERS & PARTS THEREOF OF THE MOTOR VEHICLES OF GROUPS 722,781,782 & 783, OF OTHER MATERIALS	4,029,941	725,621	580,427
7843209	OTHER PARTS AND ACCESSORIES, N.E.S., OF BODIES (INCLUDING CABS) OF THE MOTOR VEHICLES OF GROUPS 722,	68,387	79,155	-
7843301	BRAKES & SERVO-BRAKES & PARTS OF MOTOR VEHICLES OF GROUPS 722,781,782 & 783	202,696,559	182,399,123	220,920,862
7843302	MOUNTED BRAKE LININGS OF MOTOR VEHICLES OF GROUPS 722,781, 782 & 783	15,147	110,977	422,143
7843401	GEAR-BOXES OF THE MOTOR VEHICLES OF GROUPS 722, 781, 782 AND 783, UNASSEMBLED	101,750	2,736,282	14,463,551
7843409	OTHER GEAR-BOXES OF THE MOTOR VEHICLES OF GROUPS 722, 781, 782 AND 783	-	124,271,751	90,805,325
7843509	OTHER DRIVE-AXLES W/ DIFFERENTIAL, WHETHER OR NOT PROVIDED W/ OTHER TRANSMISSION COMPONENTS, OF THE	138,109,334	14,764	51,117
7843901	SUSPENSION SHOCK ABSORBERS	8,429	87,683	150,467
7843903	RADIATORS	1,102,107	2,016,927	4,053,511
7843904	SILENCERS & EXHAUST PIPES	2,564,313	1,963,938	941,150



7843907	STEERING WHEELS	229,319	285,214	-
7843913	WHEEL CENTER DISCS; CENTER CAPS WHETHER OR NOT INCORPORATING LOGOS	224	3,772	-
7843914	ROAD WHEELS AND PARTS AND ACCESSORIES THEREOF OTHER THAN WHEEL CENTER DISCS AND CENTER CAPS	17,729,427	22,012,817	20,382,059
7843915	BRAKES & CLUTCH PEDALS; CHASSIS FOR AUVS; FUEL TANKS [; ARM RESTS; SUN VISORS; BATTERY TRAY/HOLDERS]	10,358,755	18,587,205	11,461,878
7843916	UNASSEMBLED FUEL TANKS	-	7,036	-
7843919	OTH PARTS & ACCESSORIES, NES, OF MOTOR VEHICLES OF GROUPS 722, 781, 782 & 783	533,080,730	385,185,241	240,545,580
7853509	OTHER PARTS (NOT INCLUDING RUBBER TIRES, ENGINES, ELECTRIC PARTS, COMPLETELY KNOCKED-DOWN PARTS, AND	38,107,994	29,951,087	26,714,105
8211200	SEATS USED FOR MOTOR VEHICLES	166,442	255,500	1,126,029
8743501	PRESSURE GAUGES FOR MOTOR VEHICLES	1,417,685	2,259,752	727,591
8743901	PARTS OF LEVEL GAUGES AND PRESSURE GAUGES FOR MOTOR VEHICLES	7,453	125,676	39,614
	Total Exports	1,516,227,301	1,341,702,004	1,167,244,307

Source: National Statistics Office, Foreign Trade Statistics

Table 10 presents the industry's imports from 2001 to 2003. Auto parts and components imports increased by 15 percent in 2002 and by 11 percent in 2003. These were valued at US\$ 757 million in 2001, US\$ 891 million in 2002, and US\$ 1 billion in 2003. The bulk of the industry's imports consisted of components, parts and/or accessories and other parts and accessories which together accounted for 59.4 percent of the total in 2001. In 2002, this went up to around 64 percent and to 66 percent in 2003.

**Table 10: Auto Parts and Components Imports (in US\$)**

PSCC	commodity description	2003	2002	2001
6214209	OTH TUBES,PIPES & HOSES, OF UNHARDENED VULCANIZE RUBBER,REINFORCED OR W/ METAL	631,681	657,634	706,588
6251001	STEEL BELTED AUTOMOBILE TIRES, PNEUMATIC, OF ALL SIZES, NEW	6,312,098	4,837,639	1,918,932
6251009	OTH TIRES, PNEUMATIC, NEW, USE ON MOTOR CARS(INCLDG STATION WAGON&RACING CARS)	15,204,779	14,693,557	11,682,345
6252001	STEEL BELTED TIRES,PNEUMATIC,NEW,OF A KIND USED ON BUSES[&]OR LORRIES(INCLUDING TRUCKS)	13,670,537	15,514,154	11,471,897
6252009	OTHER TIRES,PNEUMATIC,NEW,OF A KIND USED ON BUSES [AND] OR LORRIES (INCLUDING TRUCKS)	26,159,989	27,529,050	26,771,224
6255101	TRACTOR TIRES, PNEUMATIC, NEW, HAVING A "HERRING-BONE" OR SIMILAR TREAD	15,705	22,347	49,412
6255109	OTHER PNEUMATIC TIRES, NEW, HAVING "HERRING-BONE" OR SIMILAR TREAD, N.E.S.	92,302	490,054	2,549,528
6255901	TRACTOR TIRES, PNEUMATIC, NEW, HAVING TREADS OTH THN HERRING-BONE/SIMLR TREAD	301,667	93,643	54,705
6255902	OFF-THE-ROAD TIRES OF 300 K & ABOVE, PNEUMATIC, NEW, NES	759,864	850,498	2,117,314
6255903	TIRES, PNEUMATIC, FOR AGRI'L,CONST&IND EQUIPMENT, NES	3,612,430	4,091,975	4,013,405
6255909	OTH PNEUMATIC TIRES, NEW, NES	1,188,838	1,624,615	2,067,946
6259101	AUTOMOBILE TUBES, NEW	741,977	1,609,235	1,512,495
6259102	AUTOMOBILE TUBES, USED	3,201	4,634	92,119
6259103	TRUCK TUBES, NEW	1,737,942	2,148,014	3,163,232
6638201	BRAKE LININGS & PADS	204,464	649,995	438,029
6647101	TOUGHENED(TEMPERED) SAFETY GLASS, FOR VEHICLES,AIRCRAFT,SPACECRAFT/VESSELS	1,787,992	751,727	935,027
6647102	TOUGHENED(TEMPERED)SAFETY GLASS,OTH THN SUB-ITEM 6647101	698,936	720,738	1,302,611
6647201	LAMINATED SAFETY GLASS, FOR VEHICLES, AIRCRAFT,	539,993	325,548	502,161

	SPACECRAFT/VESSELS			
6647202	LAMINATED SAFETY GLASS, OTH THN SUB- ITEM 6647201	222,941	388,286	418,088
6648100	REAR-VIEW MIRRORS FOR VEHICLES	440,090	448,743	594,384
6991102	LOCKS FOR MOTOR VEHICLES, OF BASE METAL	182,219	205,853	238,393
6994101	LEAF SPRINGS & LEAVES, OF IRON/STEEL	588,086	483,438	988,829
7132206	COMPLETELY KNOCKED-DOWN ENGINES OF A CYLINDER CAPACITY EXCEEDING 1,000 CC	31,779,905	37,824,786	38,429,840
7132209	OTHER RECIPROCATING PISTON ENGINES OF A CYLINDER CAPACITY EXCEEDING 1,000 CC, FOR PROPELLING VEHICLE	5,502,110	6,879,721	7,111,139
7132305	COMPLETELY KNOCKED-DOWN (CKD) COMPRESSION-IGNITION (DIESEL OR SEMI-DIESEL ENGINES) ENGINES	15,497,534	18,180,419	17,198,374
7138101	SPARK-IGNITN RECIPROCTG/ROTARY INTERNAL COMBUSTN PISTON NES,1100 CC (25 HP)	13,480,436	7,311,773	6,761,740
7138109	OTH SPARK-IGNITION RECIPROCATING/ROTARY INTERNAL COMBUSTION PISTON ENGINES, NES	1,738	42,950	17,678
7138201	COMPRESSION-IGNITION INTERNAL COMBUSTN PISTON ENGINES,NES,NOT EXCDG 1100CC 25HP	8,598,291	10,252,678	8,571,544
7138209	OTH COMPRESN-INGITN(DIESEL/SEMI-DIESEL) INTERNAL COMBUSTN ENGINES, NES	946,077	680,267	2,727,349
7139109	OTH PARTS OF GASOLINE & KEROSENE ENGINES FOR AUTOMOBILES	1,356,366	3,006,620	2,509,927
7139111	CYLINDER LINERS/SLEEVES&VALVES,OF GASOLINE&KEROSENE ENGINES FOR TRUCK,BUS,ETC	17,320	11,164	171,576
7139112	OTH CYLINDER LINERS/SLEEVES & VALVES, OF GASOLINE & KEROSENE ENGINES	8,836	23,918	23,147
7139119	OTH PARTS, NES, OF GASOLINE & KEROSENE ENGINES	2,005,628	3,196,185	2,693,084
7139201	CYLINDER LINER/SLEEVE&VALVE OF DIESEL/& SEMI-DIESEL ENGINES FOR AUTOMOBILES	13,768	4,502	132,671
7139209	OTH PARTS OF DIESEL & SEMI-DIESEL ENGINES FOR AUTOMOBILES	427,453	902,515	2,145,487
7139211	CYLINDER LINER/SLEEVE&VALVE OF DIESEL & SEMI-DIESEL ENGINES FOR TRUCK,BUSES,ETC	3,316	18,817	17,649
7139212	OTH CYLINDER LINERS/SLEEVES & VALVES, OF DIESEL & SEMI-DIESEL ENGINES	271,968	111,796	50,904
7139219	OTH PARTS, NES, OF DIESEL & SEMI-DIESEL ENGINES	32,570,462	28,595,290	21,775,424
7165104	ELECT GENERTG SET SPARK-IGNITN INTERNAL COMBUSTN PISTON ENGINE	1,062,725	687,407	578,397
7415503	AIR CONDITIONING MACHINES, FOR MOTOR VEHICLES, INCORPORATING A REFRIGERATING UNIT, EXCLUDING THOSE O	1,136,555	1,167,386	1,723,641
7415505	AIR CONDITIONING MACHINES OF A KIND USED FOR PERSONS, IN MOTOR VEHICLES	929,886	426,796	745,300
7417401	CONDENSERS FOR AIR-CONDITIONING MACHINES FOR MOTOR VEHICLES	1,777,754	1,439,728	1,580,256
7422000	FUEL, LUBRICATING/COOLING MEDIUM PUMPS FOR INTERNAL COMBUSTION PISTON ENGINES	744,218	970,152	957,853
7431901	AIR COMPRESSORS FOR MOTOR VEHICLES	5,326,592	409,681	724,594
7436300	OIL/PETROL-FILTERS FOR INTERNAL COMBUSTION ENGINES	3,102,160	3,010,249	2,465,967
7436400	INTAKE AIR FILTERS FOR INTERNAL COMBUSTION ENGINES	1,272,896	1,259,978	1,083,160
7481001	CAM SHAFTS AND CRANK SHAFTS FOR INTERNAL COMBUSTION PISTON ENGINES	1,436,083	1,543,634	3,307,468
7481002	TRANSMISSION SHAFTS (INCLUDING CAM SHAFTS& CRANK SHAFTS OTHER THAN FOR INTERNAL COMBUSTION ENGINES)	652,560	1,301,587	1,884,792
7482100	BEARING HOUSINGS, INCORPORATING BALL/ ROLLER BEARINGS	2,102,123	2,739,499	1,949,413
7482201	BEARING HOUSINGS, NOT INCORPORATING BALL OR ROLLER BEARINGS	802,454	1,338,597	1,242,808
7484002	GEARS, N.E.S., AND GEARING (INCLUDING FRICTION GEARS) OTHER THAN TOOTHED WHEELS, CHAIN SPROCKETS &OT	6,701,920	4,687,090	3,780,638
7484004	GEAR BOXES AND OTHER SPEED CHANGERS, INCLUDING TORQUE CONVERTERS	7,229,088	2,716,735	3,287,527
7485001	FLYWHEELS	50,338	45,039	25,896

7486002	SHAFT COUPLINGS(UNIVERSAL JOINTS)	944,437	1,330,264	1,123,765
7731301	ELECTRICAL WIRING HARNESS FOR MOTOR VEHICLES SIDE LAMPS, TAIL LAMPS, PARKING LAMPS AND LICENSE PLATE LAMPS OF A KIND USED FOR MOTOR	9,755,484	10,693,374	7,764,450
7783402	VEHICLES, U INTERIOR LIGHTING LAMPS OF A KIND USED FOR	2,835,210	670,407	597,591
7783403	MOTOR VEHICLES, UNASSEMBLED HORNS AND SIRENS AND OTHER ELECTRICAL SOUND SIGNALLING APPLIANCES OF A KIND USED FOR MOTOR	77,244	31,798	37,704
7783404	VEHICLES,	536,428	249,109	307,435
7783405	WINDSCREEN WIPERS OTHER ELECTRICAL LIGHTING AND VISUAL SIGNALLING EQUIPMENT, FOR CYCLES OR MOTOR VEHICLES,	113,406	107,840	430,422
7783409	UNASSEMBLED SIDE LAMPS, TAIL LAMPS, PARKING LAMPS AND LICENSE PLATE LAMPS OF AKIND USED FOR MOTOR	490,254	379,263	191,976
7783411	VEHICLES, ASSE INTERIOR LIGHTING LAMPS OF A KIND USED FOR	690,148	1,438,960	1,242,581
7783412	MOTOR VEHICLES, ASSEMBLED HORNS AND SIRENS AND OTHER ELECTRICAL SOUND SIGNALLING APPLIANCES OF A KIND USED FOR MOTOR	129,704	255,303	76,149
7783413	VEHICLES, OTHER ELECTRICAL LIGHTING AND VISUAL SIGNALLING EQUIPMENT, FOR CYCLES OR MOTOR VEHICLES	456,815	233,026	371,089
7783419		911,074	1,156,405	619,559
7788104	ELECTRO-MAGNETIC COUPLINGS, CLUTCHES & BRAKES COMPONENTS, PARTS &/OR ACCESSORIES IMPORTED FROM ONE OR MORE COUNTRIES FOR ASSEMBLY OF	198,718	542,768	131,292
7812071	[PASSENGER CA COMPONENTS, PARTS &/OR ACCESSORIES IMPORTED FROM 1 OR MORE COUNTRIES FOR ASSEMBLY OF	85,692,825	96,341,976	79,478,256
7831903	MOTOR VEHICLES CHASIS FITTED W/ ENGINES, FOR MOTOR VEHCLS OF SUB-ITEM,782.19-03&04,7831103	261,902,031	244,692,202	187,060,535
7841001	OTH CHASSIS FITTED W/ ENGINES FOR MOTOR VEHICLES OF GROUPS 722,781,782 & 783	2,925,927	3,033,823	2,360,737
7841009	BODIES(INCLDG CABS), FOR MOTOR VEHICLES OF GROUP 781	4,087,845	3,374,330	4,055,794
7842100	BODIES(INCLDG CABS); FOR MOTOR VEHICLES OF GROUPS 722, 782,& 783	77,334	239,388	171,857
7842500	BUMPERS & PARTSS THEREOF OF THE MOTOR VEHICLES OF GROUPS 722,781,782 & 783, OF MOLDED PLASTICS	6,732,639	6,201,796	5,921,057
7843101	BUMPERS & PARTS THEREOF OF THE MOTOR VEHICLES OF GROUPS 722,781,782 & 783, OF OTHER MATERIALS SAFETY SEAT BELTS OF MOTOR VEHICLES OF GROUPS 722, 781, 782 & 783	1,396,048	991,920	480,836
7843102		1,275,923	967,554	1,414,315
7843201	COMPONENTS AND PARTS OFDOOR TRIM ASSEMBLY	1,859,429	2,455,690	973,033
7843202	ARM RESTS; SUN VISORS; BATTERY/TRAY HOLDERS OTHER PARTS AND ACCESSORIES, N.E.S., OF BODIES (INCLUDING CABS) OF THE MOTOR VEHICLES OF GROUPS 722,	645,539	549,726	724,939
7843203	BRAKES & SERVO-BRAKES & PARTS OF MOTOR VEHICLES OF GROUPS 722,781,782 & 783	4,635	288,874	85,855
7843209	MOUNTED BRAKE LININGS OF MOTOR VEHICLES OF GROUPS 722,781, 782 & 783	9,243,713	7,076,236	5,816,466
7843301	GEAR-BOXES OF THE MOTOR VEHICLES OF GROUPS 722, 781, 782 AND 783, UNASSEMBLED	4,466,416	4,957,502	6,273,225
7843302	OTHER GEAR-BOXES OF THE MOTOR VEHICLES OF GROUPS 722, 781, 782 AND 783	362,696	132,859	636,956
7843401	DRIVE-AXLES W/ DIFFERENTIAL, WHETHER OR NOT PROVIDED W/ OTHER TRANSMISSION COMPONENTS, OF THE MOTOR	25,196,922	32,189,940	30,205,282
7843409	OTHER DRIVE-AXLES W/ DIFFERENTIAL, WHETHER OR NOT PROVIDED W/ OTHER TRANSMISSION COMPONENTS, OF THE	20,098,621	7,303,323	7,876,082
7843501	NON-DRIVING AXLES OF THE MOTOR VEHICLES OF GROUPS 722, 781, 782 AND 783, UNASSEMBLED	208,237	27,045	169,043
7843509	OTHER NON-DRIVING AXLES OF THE MOTOR VEHICLES OF GROUPS 722, 781, 782 AND 783	8,482,168	5,316,067	5,346,054
7843601	SUSPENSION SHOCK ABSORBERS	5,781	19,891	721,984
7843609		206,967	1,033,196	1,021,328
7843901		1,230,968	1,739,791	2,023,406

7843902	COMPONENTS & PARTS OF SUSPENSION SHOCK ABSORBERS	366,265	217,302	207,583
7843903	RADIATORS	1,841,889	1,021,528	1,380,419
7843904	SILENCERS & EXHAUST PIPES	320,737	499,514	609,755
7843905	CLUTCHES OTH THN SUB-ITEM 7486001	577,993	601,904	1,218,006
7843906	COMPONENTS & PARTS OF CLUTCHES	542,157	579,824	1,182,721
7843907	STEERING WHEELS	1,935,548	642,138	358,637
7843908	STEERING COLUMNS AND STEERING BOXES	942,561	296,473	344,324
7843911	PROPELLER SHAFTS	314,728	299,855	215,499
7843912	COMPONENTS & PARTS OF PROPELLER SHAFTS	4,317	18,602	16,725
7843913	WHEEL CENTER DISCS; CENTER CAPS WHETHER OR NOT INCORPORATING LOGOS	485,179	379,800	356,887
7843914	ROAD WHEELS AND PARTS AND ACCESSORIES THEREOF OTHER THAN WHEEL CENTER DISCS AND CENTER CAPS	2,731,960	2,320,433	2,503,801
7843915	BRAKES & CLUTCH PEDALS; CHASSIS FOR AUVS; FUEL TANKS [; ARM RESTS; SUN VISORS; BATTERY TRAY/HOLDERS]	484,815	468,633	246,837
7843916	UNASSEMBLED FUEL TANKS	191,657	120,309	94,505
7843917	PARTS AND COMPONENTS OF RADIATORS	61,618	160,028	80,495
7843919	OTH PARTS & ACCESSORIES, NES, OF MOTOR VEHICLES OF GROUPS 722, 781, 782 & 783	315,638,653	228,878,150	183,448,397
	Total	1,001,587,954	891,454,475	757,239,551

Source: National Statistics Office, Foreign Trade Statistics

#### IV. Major Issues and Problems in the Industry

After almost three decades of import substitution which was centered on local content policy, a large part of the industry still remains underdeveloped. At best, the local content program of the government only had a limited impact on the growth and development of the industry. The domestic content of automotive products has been relatively low and this has remained unchanged despite the government's local content program. The MVPMAP revealed that the local automotive sector has barely 10 to 15 percent locally produced parts and local automobile assemblers must rely on imports for the other 85 percent.<sup>10</sup>

There are a number of reasons for the failure of the local content program<sup>11</sup>. First was the reluctance of multinational companies to outsource components manufacturing to local Filipino firms. These technologies were a product of long years of experience and entailed substantial R&D costs. Moreover, the production of some of these main components have been treated as trade secrets of the foreign assembler, because they were considered the primary source of their competitive advantage (e.g. gear boxes and engine designs). Thus, the assemblers chose to produce them initially in house and, later on, by majority-owned subsidiaries (such as Toyota Autoparts Philippines, Honda Engine Manufacturing Philippines, Honda Parts Manufacturing Corporation, and Isuzu Autoparts Manufacturing Corporation) or by their first-tier suppliers, often though not always a part of the tightly-knit *keiretsu*. This, in turn, reduced the need to transfer technology to local Filipino firms.

Another was the lack of domestic firms that could meet the standards of the contractor-assembler in the short term. Local supplier firms, particularly during the initial stages of the program, were almost absent and those that existed could not meet the cost-quality-delivery (CQD) requirements of the Japanese assemblers. Finally, the adoption of inconsistent policies in the industry fragmented an already narrow market for cars. In the

<sup>10</sup> Based on an interview with Romeo Villadolid, secretary-general of MVPMAP by Arnold Tenorio and L. Lugo (July 31, 2002), "Auto parts industry: stymied by imports", Business World.

<sup>11</sup> Dr. Gwendolyn Tecson, University of the Philippines School of Economics.

absence of policies to keep the number of car assemblers to the required minimum, both assembly and parts manufacturing failed in achieving scale economies.

Currently, the industry is characterized by a dichotomy, there exist a few firms (mostly foreign-affiliated ones) that have access to the best industry practices and state of the art equipment and technology. At the same time, there is a large number of parts manufacturers consisting mostly of small and medium enterprises that have low technology levels, and are faced with lack of capital, low productivity, and lack of worker skills.

Most firms in the industry consider the country's skilled labor force as the major source of their strength. They also believe that the industry is competitive in terms of quality and delivery against their ASEAN counterparts but not in terms of price primarily because of the absence of the required volume to achieve an efficient scale. At present, most firms are operating at an average rate of 60% of their total capacity. Their weaknesses revolve around the unavailability of raw materials in the local market, labor strikes and radical unions, high cost of electricity, weak domestic demand due to the failure of the economy to recover from the 1997 financial crisis, and the increasing presence of second-hand imported CBUs as well as smuggled and counterfeit auto parts and components.

With the unavailability and inferior quality of raw materials in the Philippines, the domestic content of automotive products has been relatively low. The high percentage of raw materials that must to be imported leads to a significant increase in production cost which has been exacerbated by the continuous depreciation of the peso. Hardly hit are those firms that do not earn foreign exchange and those that focus solely on the domestic market for their sales.

Labor strikes and the high degree of radicalism in the labor sector have imposed high costs on the industry. These have led to very costly delays as affected firms must readily import the materials that cannot be delivered by the striking company, otherwise the whole production assembly line is stalled. One assembler spent between P50-80 million as a result of a one-week strike staged by workers in its affiliated parts manufacturing company. Another labor-related weakness is the relatively high cost of labor in the country vis-à-vis our Asian neighbors. The minimum wage rate in the Philippines is around US\$5, in Vietnam: US\$0.91, Beijing: US\$0.31-1.28, Jakarta: US\$1.52, and Thailand: US\$3.27-4.13. Moreover, the country's labor policy requiring firms to hire its workers as regulars after a period of six months is also hurting the industry. The industry argues that in other ASEAN countries, firms are allowed to hire contractual workers up to two to three years. Given the wide fluctuations in the industry, this policy has added up to their costs. Since they are unable to regularize their workers, they have to hire and train new workers each time demand peaks up.

The industry also points out infrastructure problems in the country particularly the high cost of power and distribution. These contribute to the high production costs in the industry which is already saddled by a weak supply base and a small domestic market that is allegedly being eroded by the influx of smuggled vehicles.

At present, the short term problem of the industry is how to survive in the face of weak domestic demand and the presence of used imported vehicles. In the medium to long-term, the industry faces the problem of how to survive the international competition that is expected to grow intensely in the near future. While the other ASEAN countries have already been able to recover from the 1997 Asian crisis, the Philippines is yet to regain its pre-crisis sales level. The industry complained that it is hurting from the "unfair competition" from cheap second-hand used CBUs which are priced 30-50% lower depending on brands and models. Industry sources reported that because of second-hand imports, they are losing sales of about 20,000 vehicles annually.

## **V. Survey Results**

A survey of eleven companies in the metal sector was conducted to assess their cost, quality, and delivery; the three most crucial factors in improving firm competitiveness. The survey addresses the following questions:

- Are they competitive enough to survive the increasing demand for low cost, high quality, and just-in-time delivery imposed by the increasingly globalizing automotive market?
- How are these sectors facing international competition from imports in the domestic market and other countries' exports in the global market?
- What are the internal and external constraints that are preventing them from achieving their full potential towards substantial improvements in their competitiveness?

The metal group is the largest sector in the auto parts manufacturing industry with close to fifty percent of the parts manufacturers belonging to this sector. Most of the major auto parts manufacturers are in this group along with the companies that produce proprietary parts for OEM assemblers. The metal group is further subdivided into three major sub-sectors consisting of (i) metal parts, (ii) metal-electrical systems and products, and (iii) metal works and services. The metal parts sub-sector includes products such as stamped metal parts, shock absorbers, exhaust mufflers, aluminium wheels, pedal and suspension parts, fuel cut valves, fuel pumps, car seat adjusters, intake manifold, alternators, starters, die-cast and aluminium parts, brake drums and discs, brackets, seat frames, automatic brake system, clutch pedal, gear sleeve, universal joint, radiator, leafspring, brake pipes and fuel lines, and seat assembly. These are manufactured by companies like Albert Metalcraft, Autobus Industries, Carparts Manufacturing, Enkei Philippines, CGS Metalcraft, F-Tech, HKT, Imasen, Karlast, Keihin, Kohei, Laguna Autoparts, Laguna Metts, Metals Engineering, PAC, HKR, Roberts, Rich Metal, Valerie, Sanoh Fulton, Visteon, and Yutaka. The sub-sector also includes major components like engine and transmission assemblies which are solely manufactured by subsidiaries of assemblers such as the Asian Transmission Corporation (Mitsubishi Motors), Honda Parts and Toyota Auto Parts.

The metal electrical systems and products cover wiring harnesses, electrical components, relay boxes, lamps, switches, battery cables, and ignition cord sets. Auto parts makers under this sub-sector include GWS, IWS, PKI, Tokai Rika, Hella, and Yazaki Torres. The last sub-sector, metal works and services, includes jig fabrication, forging, cutting, heat treatment, steel fabrication, precision tooling, quality machining, CNC machining, metal casting, and metal finishing. Companies like Aichi, Ebecor, Regal Metalcraft, and Torres Technology belong to this sub-sector.

### **A. Profile of Surveyed Companies**

Table 11 presents the profile of the eleven companies that were surveyed for the study. Most of these companies have been around from the mid seventies to the eighties. Their capitalization ranges from P1 million to P 245 million with most of the companies falling within the range between P5 million and P40 million. The company with the highest capitalization is 100% Japanese owned and is manufacturing tool and die. The next is a Filipino-owned company with a capitalization of P 96 million. It manufactures brake discs and brake drums and it also has its own foundry.

The sample firms are dominated by companies that are 100% Filipino-owned. Most of them are engaged in the manufacture of stamped parts and carry out processes such as

stamping, welding, and machining. In most of these companies, die-making is also done in-house because when the industry started, there were no reliable die makers in the country, hence, they had to do the simple dies on their own. Tool and die manufacturing is a very expensive venture. Aside from the necessary capital equipment, this activity requires high precision, hence the need for highly skilled and highly trained workers.

**Table 11: Profile of the Surveyed Companies**

Firm name	Paid up Capital (in million pesos)	Date of Establishment	Total Sales (in million pesos)	Major Shareholders	Major Processes	Major Products
A	30	1993	96	100% Filipino	stamping, welding, machining	stamped body parts
B	96	1974	38.4	100% Filipino	machining	brake discs & drums
C	4.65	1990	21	100% Japanese	welding, machining, heat surface treatment	car carrier parts
D	10	1986	45	100% Filipino	stamping, welding, machining, assembly, heat surface treatment, casting	stamped motorcycle parts
E	5	1975	54.4	100% Filipino	stamping, welding, machining, heat surface treatment	stamped body parts, fuel tank assembly
F	245	1996	101 to 210	100% Japanese	die making	tool & die
G		1964	50	100% Filipino	stamping, welding, machining	auto seat frames, auto & motorcycle parts
H	40	1975	200	90% German	plastic injection	auto lighting & horns
I	1	1971	100	100% Filipino	stamping, welding, machining, assembly	muffler, exhaust system, bracket, stamped parts
J	20	1987	1	100% Filipino	stamping, welding, machining, assembly	metal stamped parts
K	5	1990	32	100% Filipino	stamping, welding, machining, assembly, heat surface treatment	auto stamped parts

The three foreign-owned companies included in the survey manufacture tool and die (Japanese), car carrier parts (Japanese), and automotive lamps and horns (German with technology agreements with Japanese firms).

## B. Quality, Cost, Delivery, and Technology Indicators

Table 12 presents the productivity and quality indicators for the surveyed firms. Value added and labor productivity are used as indicators of firm level productivity. Value added is total sales less material cost while labor productivity is the ratio of value added to total direct production workers. The highest sales were registered by the two foreign-owned subsidiaries, Firm H with total sales to the automotive sector of P200 million and Firm F with total automotive sales ranging from P101 million to P210 million. Filipino owned companies, Firms I and A followed with sales amounting to P100 million and P96 million, respectively. Except for Firm J, which accounted for the lowest sales of P1 million, the rest of the surveyed firms had total sales between P20 million and P55 million.

**Table 12: Productivity and Quality Measures**

Firm code name	Total sales	Number of direct workers	Productivity Measures		Quality Measures	
			Value added	Labor Productivity	Process Defect Ratio	Quality System
Firm A	P96M	39	P28,876.8 M	P740,430	0.23%	ISO 9000
Firm B	P38.4M	43	P21.7536 M	P505,897.7	8%	None
Firm C	P21 M	20	P12.52125 M	P626,062.5	Not monitored (very minimal)	None
Firm D	P45 M	50	P22.5 M	P450,000	Not monitored	None
Firm E	P 54.4 M	68	P19.2576 M	P283,200	0.8%	ISO 14000
Firm F	P101M to P210M	68	P50.5 to P105 M	P742,647.1 to P1,544,118	0.02%	ISO 9000
Firm G	P50M	90	P19.825M	P220,278	2%	ISO 9000; ISO 14000 (in process)
Firm H	P200M	48	P 83M	P1,729,167	18PPM	ISO 9000; ISO 14000 (in process)
Firm I	P100M	110	P36.25M	P329,545	2%	ISO 9000; TS 16949
Firm J	P1M	20	P400,000	P20,000	1%	ISO 14000 (by April 2006)
Firm K	P32M	39	P12.96M	P332,307.7	0.10%	ISO 9000; ISO 14000 (in process)

In terms of value added, Firms H and F had the highest with the former registering between P51 million and P105 million, while the latter had P83 million. These were followed by Firm I with P36.25 million and Firm A with P28.9 million. Except for Firm J, the remaining firms had value added that ranged from P12 million to P23 million. In terms of labor productivity, Firms F and J registered the highest, as expected, ranging from P743,000/worker to P1.73 million per worker. In the case of the Filipino-owned companies,



Firm A had higher labor productivity of P740,000 per worker than Firm I's P330,000 per worker. Other companies such as Firms C (P626,000 per worker), B (P506,000 per worker), D (P450,000 per worker), and K (P332,000 per worker) had higher labor productivity than Firm I.

In both Firms H and F, workers are trained to do various tasks. Firm H applies "one-piece flow" set up wherein each worker has one work table where he performs all activities from assembly, finishing, and packing. The workers also perform quality control tasks. In Firm F, workers are multi-skilled and can easily perform the required tasks from one section to another (from cutting, machining, grinding, and assembly).

The quality measures used are process defect ratio in final checking before repair and quality systems like TS 16949, QS 9000, ISO 9000, ISO 14000, and ISO 18000 that are employed by the companies. In terms of process defect ratio, Firm H had the lowest followed by Firm F. Both implement in-process inspection. Filipino owned companies such as Firm K had 0.1%, Firm A had 0.23%, while Firm E had 0.8%. Firms I, G, and J had between 1 to 2% while Firm B had the highest at 8%.

Most of the surveyed firms have ISO 9000 and/or are in the process of obtaining ISO 14000 certification. Firms B, C, and D do not have any ISO certification. Among the surveyed firms, Firm I is the only one with TS 16949. Note that Firm I exports almost 90% of its production to the US. It will also be exporting its product to Mexico and other parts of South America. Locally, its major market consists of Toyota Motors, Isuzu, Nissan, Kawasaki and Honda Motorcycle.

Table 13 presents another set of important competitiveness indicators consisting of cost, delivery, and engineering capacity. Among the surveyed companies, Firm C had the lowest percentage of material cost to total production cost of about 48%. Firm C sources its major raw materials locally. However, in terms of the share of labor cost to total production cost, Firm C had the highest ratio of about 21%. Except for Firms I and F, with labor cost ratios of 15% and 16%, respectively; the rest of the firms had labor ratios ranging from 9.5% to 13%.

In-process inventory days refer to the average number of days from production order release to the delivery of finished goods to the storage and include actual time for processing. Firms D and G had, on the average, spend 7 days. Firm A takes 15 days while Firms C and F need 20-21 days. Firms B, E, I, and J need 30 days, Firm K requires 45 days and Firm H, 60 days. In terms of the average inventory days for customers or the number of days the company keeps the inventory of finished goods for customers range from 7 to 15 days for most of the surveyed firms. Firm J maintains the inventory from 45 to 90 days. Firms C and F do not keep the finished goods inventory on behalf of customers.

Most of the firms have 2 to 5 engineers assigned to implement the company's quality control and quality assurance system. They are also responsible for product design and development. These functions are merged into one department. Except for three companies, the surveyed firms do not engage in research and development activities. For the foreign-owned subsidiaries, their mother companies are the ones responsible for this task. For most of the Filipino-owned companies, the products that they make are all based on the specifications provided by their customers. Their customers normally give them samples to copy from and for some firms, drawings are provided from which to base their product designs. Firm I spends the most for its R&D, around 3% of its sales. The firm is concentrating its R&D efforts in improving its tool and die capability. Six of the surveyed companies use advanced engineering and testing facilities such as 3D CAD, CAM, CAE, and CAT. Five companies (B, C, E, J, and K) do not have these facilities.

Firms A, C, and F are currently operating at almost full capacity (see Table 14). Firm E operates at 80% capacity while Firms I and H are operating at 60% and 70%, respectively. In four of the surveyed firms, a lot of excess capacity exists. Firm K is operating at 50%; Firms B, D, and J are operating between 16% and 30%. Table 14 also presents a listing of the surveyed firms' machinery and equipment. Mostly, the firms have press machines, lathe machines, and welding machines. Firms I, J, F, and B have CNC machines. Except for Firm D which has a robot for welding, none of the surveyed firms have robot utilization.

**Table 13: Cost, Delivery, and Engineering Capacity Measures**

Firm	Cost		Delivery		Engineering		
	Material Cost as % of Production Costs	Labor Cost as % of Production Costs	In-process inventory days (average)	inventory days for customers (average)	Number of Engineers	R&D spending	Engineering & testing facilities
Firm A	76%	9.5%	15 days	15 days	3	0.5% of sales	AD CAM
Firm B	51%	13%	30 days	15 days	3	2% of sales	None
Firm C	47.5%	20.6%	20 days	0	0	0	None
Firm D	58.8%		7 days	3 days	0	0	3D CAD, CAM, CAE, CAT
Firm E	76%	9%	30 days	15 days	3	Negligible	None
Firm F	54%	16%	21 days	0	0	0	3D CAD, AD CAM
Firm G	71%	12%	7 days	1 day	4	Negligible	3D CAD, CAM
Firm H	65%	10%	60 days	7 days	0	0	3D CAD, CAM, CAE
Firm I	75%	15%	30 days	7-15 days	5	3% of sales	3D CAD, CAM, CAE
Firm J	71%	12%	30 days	45-90 days	2	0	None
Firm K	70%	10%	45 days	30 days	2	Negligible	None

In general, most of the surveyed firms' factories have clean facilities. Firms F and H have the cleanest and most orderly facilities. Safety measures are implemented in the surveyed firms' factories and standard worksheets are found in every place. Firms F and H, Japanese and German subsidiaries, respectively, have the most outstanding facilities among all the surveyed companies. Their plants have high ceilings and are well-lighted and well-ventilated. The workflow from one process to another is also very systematic. Firm H seems to be more compact than Firm F, which is very spacious.

The cleanliness and orderliness of the facilities of Filipino owned firms A and E are also commendable. Since Firm E is operating way below capacity, its unutilized equipment are neatly covered with white plastic sheets.

**Table 14: Production Utilization and Machinery and Equipment**

Firm	Present Capacity Utilization Rate	Machineries & Equipment
Firm A	98%	hydraulic press machines, pneumatic press machines, mechanical press machines, spot welding machines, mig welding machines, lathe machines, pipe bending machines and shearing machines
Firm B	16%	moulding machines, CNC machine, air compressor, lathe machine, drill press/multi drill machine, various grinder, milling machine balancing machine, spectrometer and hardness tester
Firm C	100%	press machines, shearing machines, band saw machines, milling machines, lathe machines, bench drill, mig welding machines and forklift
Firm D	25-30%	press machines, spot welding machines and seam welding machines
Firm E	80%	hydraulic press machines, pneumatic press machines, mechanical press machines, spot welding machines, seam welding machines
Firm F	100%	OKR machine, surface grinding machine, cylindrical grinder, wire cutting machine, electronic discharge machine, press machine, moulding machine, CNC machine, coordinate measuring machine and cutting machine
Firm G	27%	Magnetic power press machines, CNC pipe bending/cutting machines pneumatic press machines, shearing machines, lathe machines, spot & mig welding machines
Firm H	60%	injection moulding machines, metallizing machine, ultrasonic welding machine, paint booth, generators and oven
Firm I	70%	stamping machines, welding machines, CNC/wire cutting machine, special machines for muffler
Firm J	30%	power press machines, hydraulic press, pneumatic press, drill press, lathe machines, turret machine, welding machine
Firm K	50%	power press machines, milling machines, lathe machines, drill machines, grinding machines and welding machines

Compared with Firms A and E, Firm D's factory is smaller and needs more lighting. Firm G's factory is also smaller relative to Firms A and E, and a re-configuration of its processes would be helpful in smoothing out the workflow from one section to the other.

Firm B has a huge plant and a foundry shop, but they are severely underutilized (see Box 1). Firm C's factory is also large; its facilities appear to be generally acceptable.

Firm I looks congested, its cleanliness and orderliness are generally acceptable, although there are sections that needs to be improved. Firm I also needs to re-arrange the processes for easier workflow. Some heavy tools were found lying around which might cause accidents in the factory.

Relative to the rest of the firms included in the survey, Firm J's factory is the smallest. Two of its presses are installed on the ground under a tree without any covering or protection. The machine shop has a galvanized iron roof, there are no walls and the floor is not cemented. Considering that this firm has been around since 1987, it has not made much investment to upgrade its facilities. In the interview, the manager revealed that the company used to earn 70% margin in the late eighties.

### **Box 1: Where have all my customers gone?**

Firm B manufactured brake discs for Mitsubishi (or Pamcor) in 1975 and beginning in 1990, it also supplied Toyota and in 1991, Honda also became its customer. As the supplier of the top automotive firms in the country, the early nineties were the busiest and the most profitable years for the company. At any given time, the representatives of the three major assemblers came all together in its factory to check on their orders. To keep up with demand, the company acquired additional CNC machines and automatic second-hand equipment. The company has its own foundry shop, the only one in the Philippines that is accredited by Japan.

After 1996, however, things started to change. Isuzu would have been its customer, but because of a labor strike in Carparts, Isuzu became anxious and pulled out from its initial deal with the Company. In 1997, Toyota left and soon after, it also lost Honda. The company would have also been one of the suppliers of Mitsubishi for the regional car that the latter planned to assemble in the Philippines. However, the agreement did not push through due to Mitsubishi's decision to postpone its plan of making Manila its export platform.

With the substantial cutback in demand that the industry faces, the company has downsized its labor force. Prices of its raw materials have kept on increasing. Scrap iron prices increased from P4.50 in the 1990s has gone up to P14 in the recent years. Their power cost has also increased substantially. However, the company has been having difficulties passing these increases to its customers. Toyota wanted a 20% reduction in its price, which the company could not meet given the volume they are currently producing. The company has also explored possibilities of entering the export market, but has not been successful so far. It has joined trade fairs abroad and was able to get inquiries from some companies, but has not closed any deals yet. France wanted 1.5 million pieces annually but was asking a 15% reduction in its price. Japan, on the other hand, wanted the company to fulfill major requirements to enable it to penetrate the world market. To satisfy their potential customers, the most crucial need is the upgrading of their existing equipment. In particular, their grinding operations and finishing process are not acceptable to Honda. To modernize their finishing process would require an additional P12 million in new investment.

To reduce their costs, they are currently outsourcing their machining process. The company has also started shifting to other industries such as the manufacture of charcoal stoves and sewing machines. Their workload nowadays pales very much in comparison with the early nineties. Toyota, whose affiliate company in Thailand owns a foundry, wants the company to do only the finishing of its brake discs which it imports from Thailand. Asian Transmission, sister company of Mitsubishi, has also asked it to do the finishing of its bearing retainers.

### **C. Adjustment Measures to Cope with Increasing Competition and Weak Domestic Demand**

The increasing competition from imports and the lack of demand have led to an industry shakeout with some firms consolidating their operations while others are closing down. The surveyed firms are adjusting in different ways. Most of those that are able to survive and compete are those that have accepted the reality that they cannot rely solely on the domestic market. These firms have shifted their focus towards the international market and have made serious efforts in finding the right product mix and improving their internal competitiveness by focusing on their quality, cost, and delivery. These enabled them to position themselves in the market and face competition from imports and other domestic manufacturers.

### **Box 2 : Testing the International Market Experiences of Firm I**

Firm I manufactures mufflers, exhaust system, and small metal parts like brackets, with 70% of its production geared towards the export market. Ten years ago, the company started to join trade fairs organized by the Department of Trade and Industry's CITEM. As early as 1993, the company already wanted to stop its production for the domestic automotive industry because of the lack of profitability. This began to change, however, when they started their export operations. Currently their major market is the US, where the company exports shock absorber parts. In the domestic market, its major customers are Toyota, Isuzu, Nissan, Honda Motorcycle, and Kawasaki.

In 2005, the sales of the company amounted to around P100 million. The company, which was established in 1971, has a paid-up capital of P1 million. It has a total of 110 production workers in its stamping, welding, machining, and assembly operations working on an 8-hour 6 days a week shift. The company is presently operating at 70% capacity utilization rate.

The company noted that there has been no substantial increase yet in terms of its total productivity and sees the need to upgrade their equipment. The company's ISO 9000 certification has just expired and they are about to get their ISO 14000 and TS 16949. The company dreams of becoming a world class manufacturer of auto parts and components in the future. Its R&D target is to start product redesign and enhance product reengineering. The company spends about 3% of total sales for R&D. It has a product development department which employs 5 staff members. At present, their R&D activities cover product development from prototype, product reengineering, moulds and die designing and evaluation and testing. In terms of the company's engineering testing capability; 3D CAD, CAM and CAE are utilized.

The defect rates set by major customers are 100PPM for Toyota and 0.5PPM for export. There has been no major rejection in their domestic market. For their exports, the company offers a 1% annual rebate to customers to cover rejects.

The president of the company revealed that their breakthrough in the international market can be attributed to a combination of a lot of factors. The most important elements are good marketing; sufficient plant production capacity, and equipment and technology that are up to international standards. Their company has a marketing arm based in the United States. This year, they will open a market in Mexico and other parts of South America. The main problem of the Company right now is how to raise the necessary capital needed for its market expansion abroad.

If the company wishes to develop new products with more complexity and value added, it needs to further enhance its competitiveness by continuously improving its research and development efforts along with its technological capacity and design capability. In the very short-term, it needs to put more emphasis on quality and productivity improvement measures. The main sections of the factory are too crowded and a re-configuration of various activities and re-grouping of product lines will certainly help in increasing efficiency. There may also be a need to trim down its workforce, redefine workers responsibilities and eliminate redundant jobs. It is also important to invest in trainings that will develop and improve workers' skills particularly in handling multiple tasks. Lastly, the company must also upgrade its existing equipment. Recently, it acquired a computerized die-making equipment as it plans to focus on product design.

Filipino exporters like Firm I decided to leave the domestic market after it was convinced that the domestic automotive industry was no longer profitable. Instead, it concentrated its efforts towards producing quality products for export abroad. Currently Firm

I exports 70% of its production. The firm notes that its success in penetrating the export market was due to a combination of factors: good marketing arm, capacity to manufacture good quality products at low cost and delivered on time, acquisition of modern machinery and equipment, and application of proper technology. Firm I has invested in computerized die making facilities and is currently concentrating on product design (see Box 2).

Firm A, which has also experienced manufacturing for the export market, acknowledges that it is a very profitable venture. But since it is having difficulties finding markets abroad, the firm still remains domestic-oriented.

The rest of the surveyed firms have remained domestic-oriented (B, E, G, J, and K) and are producing mainly for the OEMs. Most of them are manufacturing proprietary parts which they cannot sell directly to other customers or in the replacement market. The firms know that to penetrate the export market, they need to innovate and develop their own products.

Firm C, a Japanese subsidiary, exports all its products to its parent company. The firm knows that its parent company can transfer its Philippine plant to other countries any time, hence they consciously focus on improving their efficiency. The other foreign-owned firms, F and H, were set up in the country initially to target the domestic automotive industry. But given the limited domestic market, the firms made the decision to shift to other industries. In the case of Firm F, which has modern facilities to manufacture tool and die, it decided to shift to the manufacture of ATM and computer components and parts which allowed the company to sustain its profitable operations. Currently, their sales to the automotive industry range only from 5% to 10% of total sales.

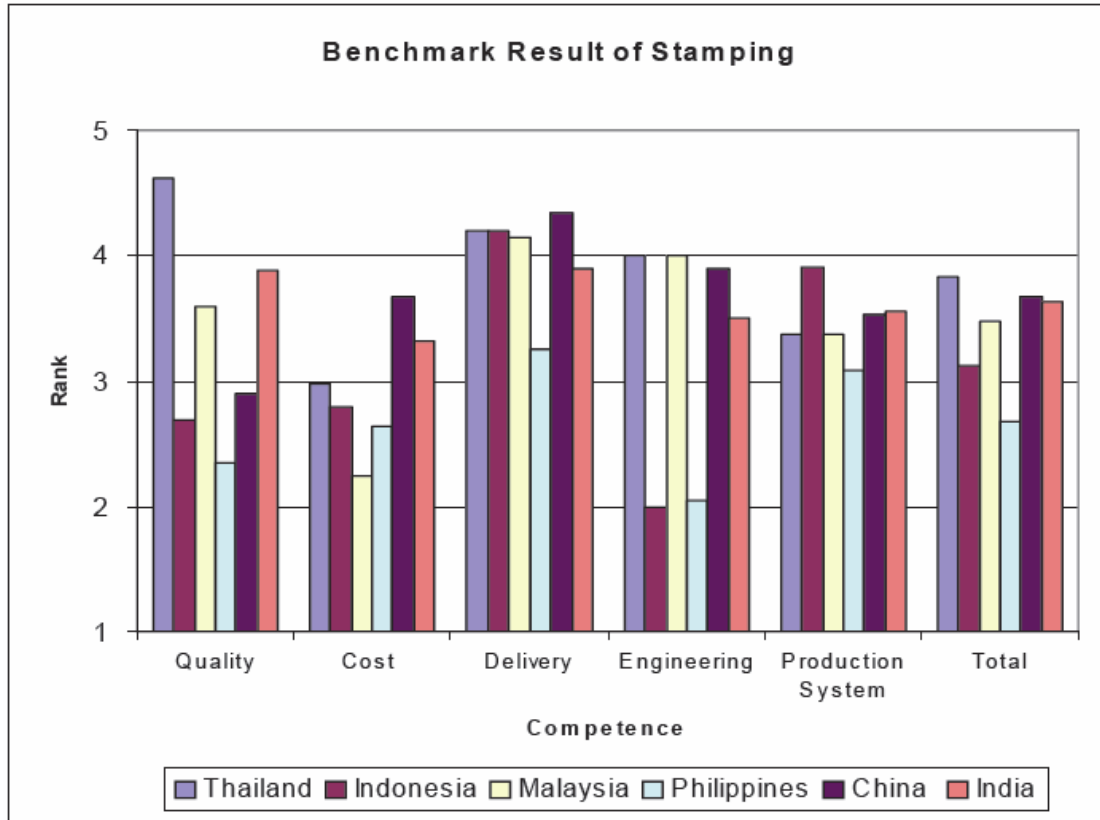
Meanwhile, Firm H has shifted its focus on the motorcycle industry and the replacement market after realizing that it could not rely solely on the domestic automotive industry. Its present sales to the automotive industry only accounts for roughly 9% of the total company sales. Their sales in the replacement market are more profitable. According to the firm, their sales to OEMs only allow them to break even. Similar quality products imported from Thailand, China, and India are available, but their customers continue to buy from them. The firm believes that since the automotive industry is dominated by Japanese companies, one needs to be affiliated with them in order to become their steady partners/suppliers. In Firm H's case, it has three existing technology agreements with Japanese companies.

#### **D. Comparison of Philippine Performance with Other Asian Countries**

The same survey covering the following parts were conducted by JETRO in Thailand, Indonesia, India, Malaysia, and China: tail lamps, stamping body parts, die casting, brake parts, and machining parts. Based on the survey, the countries were ranked in terms of their competencies in quality, cost, delivery, engineering, and production system. Appendix 1 contains a description of the criteria used to obtain the rankings of the countries. Figure 2 shows the overall results for stamping, Thailand leads in the stamping sector due to its high performance in terms of quality. Thailand is followed by China and India. China and India are ahead of the countries in terms of cost competitiveness. China has the lowest cost of raw materials. The Philippines is at the bottom of the list lagging behind other countries in terms of quality, delivery, engineering, and production system.

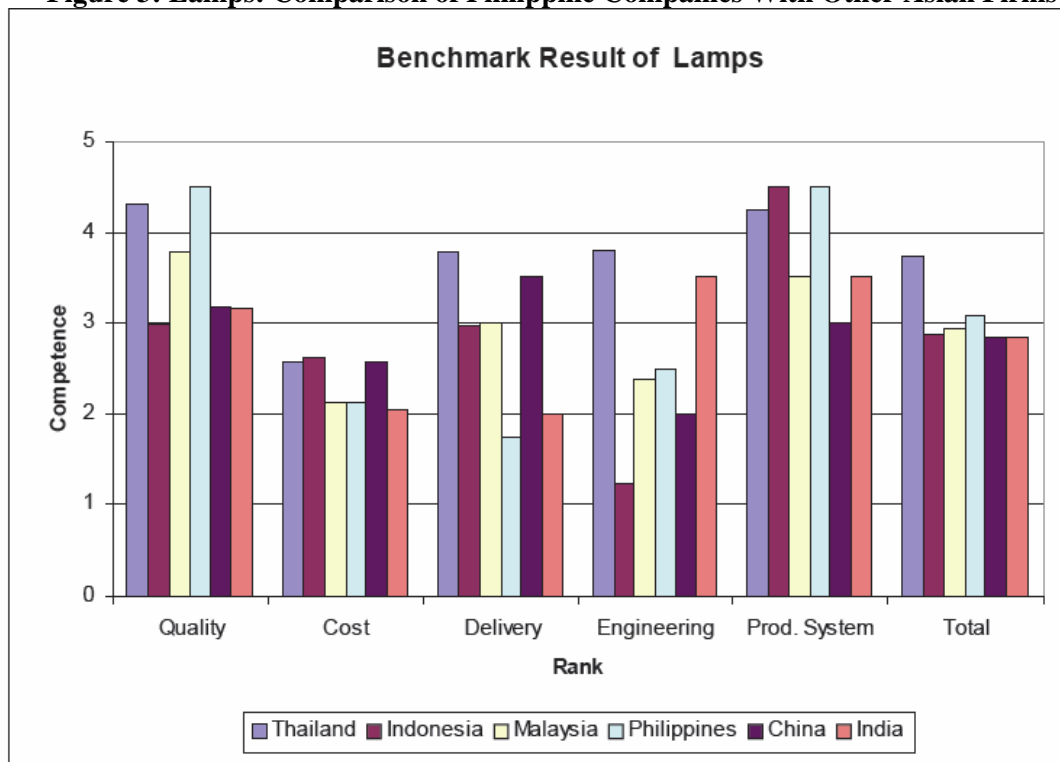
Figure 3 presents the overall results for lamps. Again Thailand is ahead of the countries followed by the Philippines which leads in terms of quality and production system. Although, the Philippines lags in terms of cost and delivery.

**Figure 2: Stamping: Comparison of Philippine Companies With Other Asian Firms**



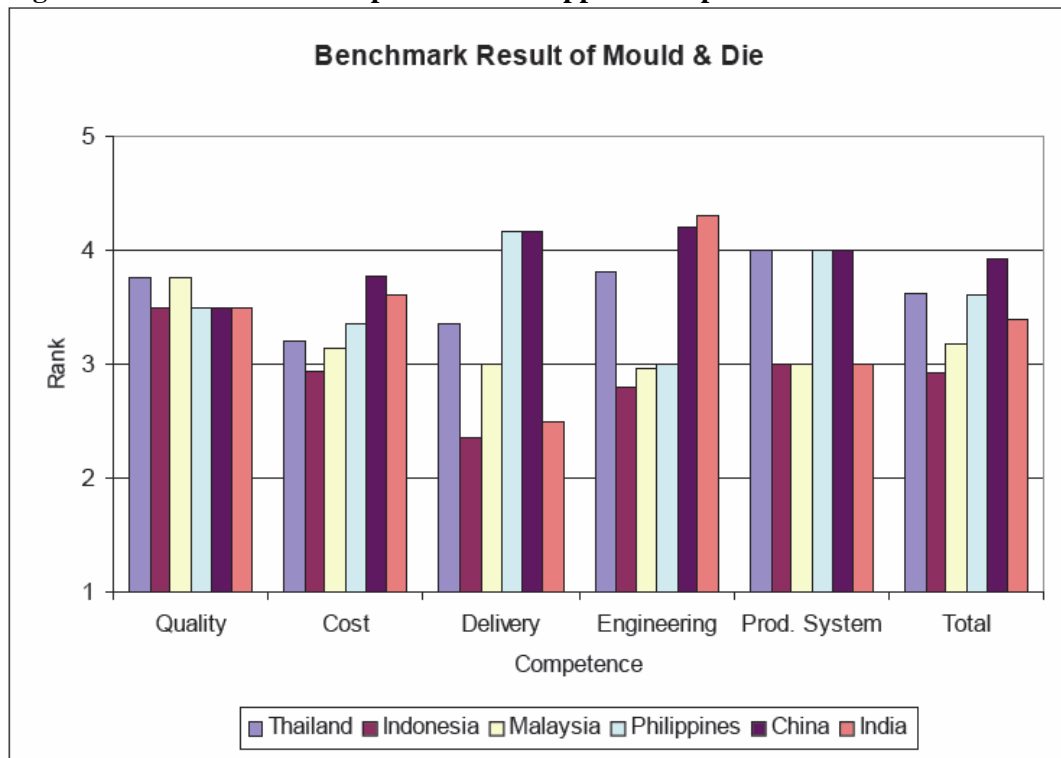
Source: Yamamoto [2006], "Benchmark Survey Project Competitiveness of ASEAN vs. China vs. India on Auto Parts Industry", Powerpoint Presentation.

**Figure 3: Lamps: Comparison of Philippine Companies With Other Asian Firms**



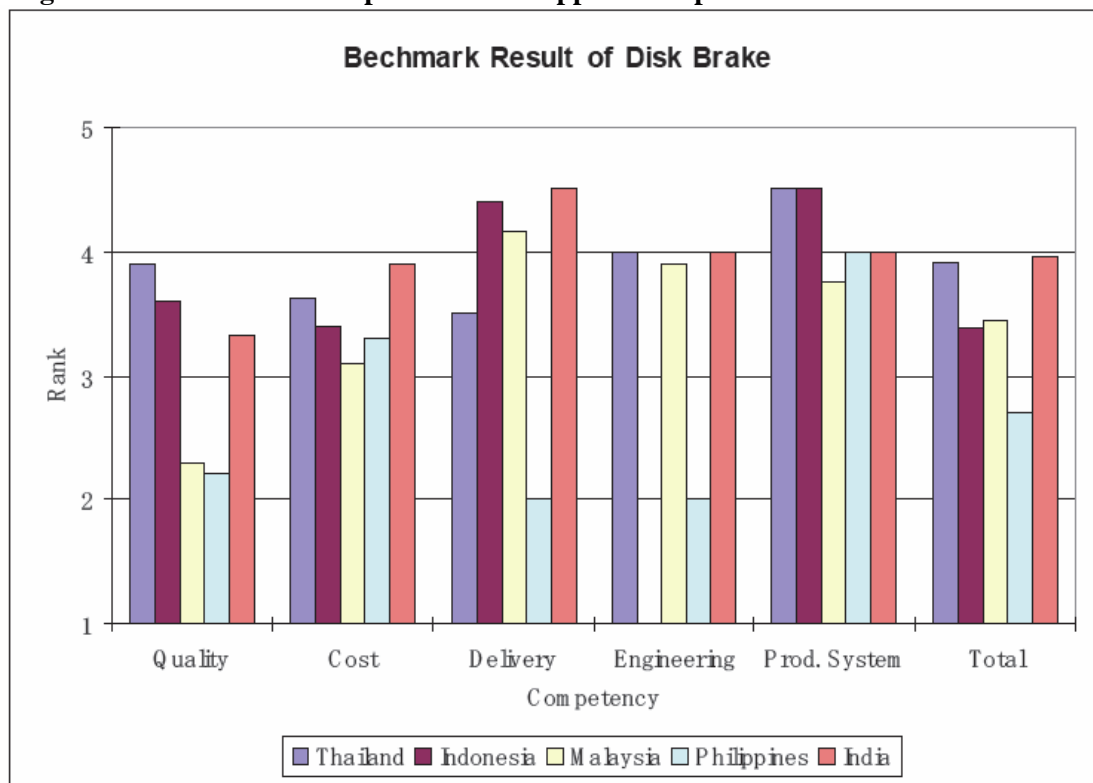
Source: Yamamoto [2006], "Benchmark Survey Project Competitiveness of ASEAN vs. China vs. India on Auto Parts Industry", Powerpoint Presentation.

**Figure 4: Mould & Die: Comparison of Philippine Companies With Other Asian Firms**



Source: Yamamoto [2006], "Benchmark Survey Project Competitiveness of ASEAN vs. China vs. India on Auto Parts Industry", Powerpoint Presentation.

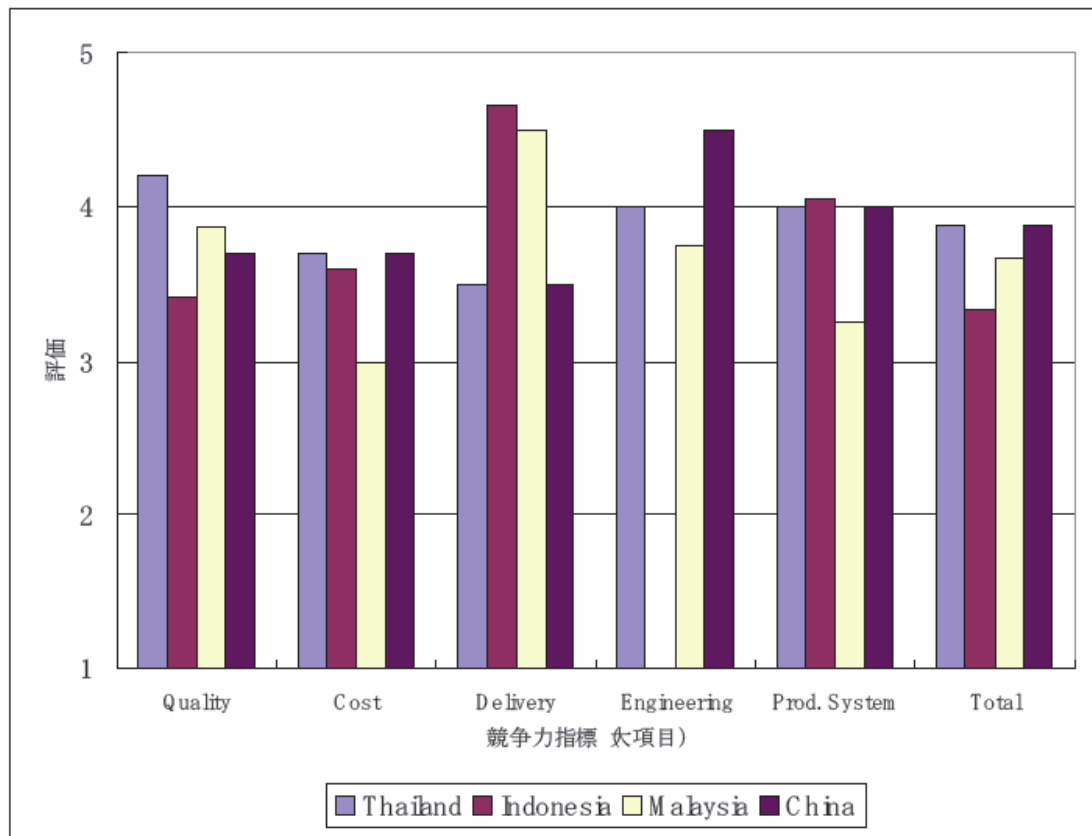
**Figure 4: Brake Parts: Comparison of Philippine Companies With Other Asian Firms**



Source: Yamamoto [2006], "Benchmark Survey Project Competitiveness of ASEAN vs. China vs. India on Auto Parts Industry", Powerpoint Presentation.



**Figure 5: Machining Flywheel: Comparison Asian Firms**



Source: Yamamoto [2006], “Benchmark Survey Project Competitiveness of ASEAN vs.China vs. India on Auto Parts Industry”, Powerpoint Presentation.

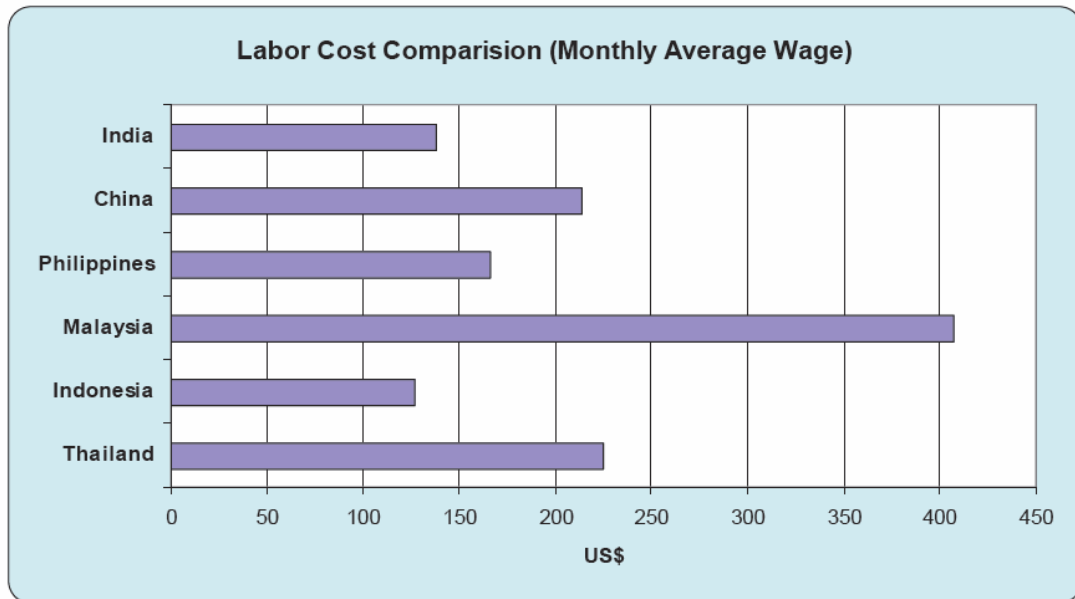
Figure 4 shows that in the mould and die sector, the Philippines together with Thailand follows China which is at the top of the list. In terms of production system, the Philippines is at par with China and Thailand. Although in terms of cost, China is ahead followed by India and in terms of engineering the Philippines is behind China, India, and Thailand.

Figure 5 shows the overall results for machining-brake parts. In this sector, the Philippines is at the bottom of the list. India leads followed by Thailand due to their excellent performance in terms cost, delivery, and quality.

Figure 6 presents the results for flywheel, on the overall, the leaders are China and Thailand due to their cost competitiveness. There is no flywheel manufacturer in the Philippines.

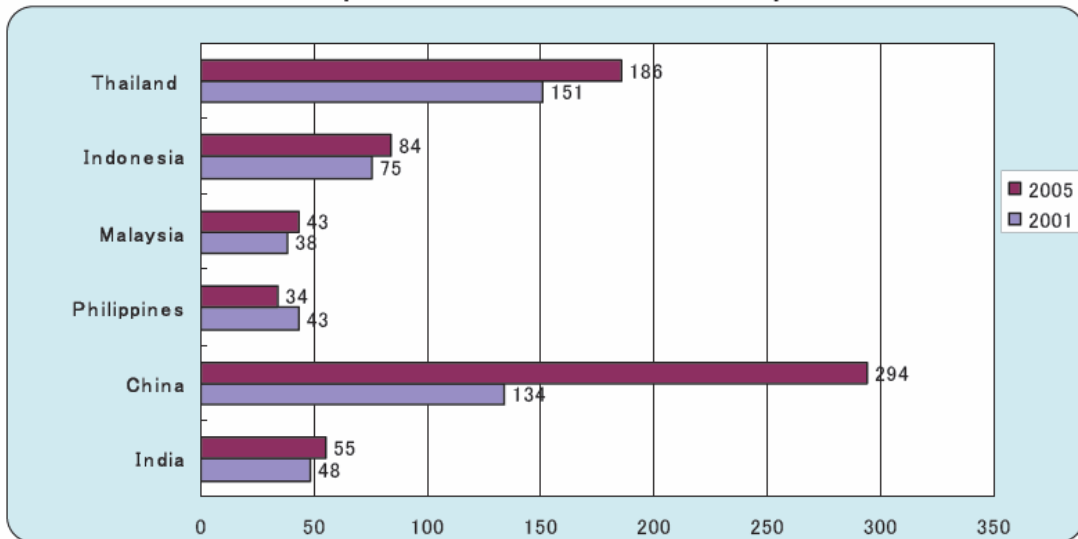
Figure 7 shows a comparison of average monthly wages in the different Asian countries. As the Figure indicates, the Philippines still has an advantage in terms of wages relative to China, Malaysia, and Thailand. Figure 7 compares the number of Japanese auto parts firms in Asia. It is evident that in 2001, Thailand was the preferred supply based of Japanese companies, although this has changed in 2005, with the supply base shifting to China. In the case of the Philippines, the number of Japanese auto parts companies declined from 43 in 2001 to only 34 in 2005.

**Figure 6: Labor Cost Comparison in Asia**



Source: Yamamoto [2006], "Benchmark Survey Project Competitiveness of ASEAN vs.China vs. India on Auto Parts Industry", Powerpoint Presentation.

**Figure 7: Number of Japanese Auto Parts Companies Located in Asia**



Source: Yamamoto [2006], "Benchmark Survey Project Competitiveness of ASEAN vs.China vs. India on Auto Parts Industry", Powerpoint Presentation.

Compared with the other countries in Asia, the cost competitiveness of Philippine auto parts companies is weak due to the industry's heavy reliance on imported raw materials and low productivity due to small scale of production and low utilization rate. Yamamoto [2006] noted that except for mould and die, the country ranks lower in most of the products studied. The country may take advantage of its relatively cheap and highly skilled work force in developing the mold and die sector.

## E. Constraints to Improving Firm Competitiveness

Table 15 presents a summary of the internal and external constraints that the firms perceive in improving their competitiveness. Volume, particularly the current weak domestic demand, has remained a major internal problem in reducing their costs and improving their competitiveness. Another crucial element is the non-availability of the necessary raw materials domestically and the high dependence of the industry on imported raw materials which continue to add up to their rising costs of production. Although there are some domestic producers of certain raw materials, these remain unacceptable to their clients due to quality problems.

**Table 15: Constraints to improving firm competitiveness**

Firm	Internal	External
Firm A	Increase in production volume Automation of production process Penetration export market	Government assistance in accessing markets abroad Labor policies add up to high cost of production
Firm B	Increase in production volume Investment in state of the art technology Produce few high volume products	Reduction of power rates Smelting plant to produce necessary raw materials in the Philippines
Firm C	Absence of volume Increase in labor productivity	Improvement in investment climate in the country
Firm D	Efficiency in production process Reduction of overhead & operating costs Increase in demand	Availability of raw materials Reduction of power and distribution costs Improvement of infrastructures Improvement in business climate
Firm E	Increase in demand R&D to develop own product State of the art machinery & equipment	Availability of raw materials Government must control importation of second hand cars Improvement in business environment
Firm F	Quality improvement Human resource development	Technology improvement – responsibility of our mother company
Firm G	Own product development Improvement of mould & die Increase in demand	Availability of raw materials
Firm H	New technology & modern equipment	Better government, the company has survived despite government Tedious Customs clearance Harassment from Internal Revenue
Firm I	High price of raw materials Quality improvement Focus on tool & die improvement	Labor policy of government Radical unionism
Firm J	Reduction of overhead expenses Quality improvement	Availability of raw materials locally Government support in accessing markets abroad and finding foreign partners
Firm K	High cost of imported raw materials Improvement in production process	Availability of raw materials locally Political stability

The firms are aware that they need to invest in state of the art equipment and engage in innovation and product development, but unless there is an increase in production volume, they find it hard to justify the expenses involved in carrying out these activities. Other constraints cited were the country's labor policy that requires employers to hire contractual workers as regular employees after a period of six months. Given the cyclical nature of the business, firms are finding it difficult to comply with this requirement. What they do is to lay-off contractual workers after six months and hire and train a new batch of workers which makes investment in the country an expensive venture. Another labor-related constraint is the presence of radical labor unions in the country.

## **VI. Conclusions and Policy Implications**

Currently, the Philippine domestic market is very limited and with the previous investments made in the industry, there exists tremendous amount of excess capacity. Very little raw materials are locally sourced and auto parts manufacturers have to import at greater costs. All these have resulted in high manufacturing costs and low profitability for domestic manufacturers, which are mostly small and medium enterprises. At the same time, these small and medium domestic firms suffer from other problems such as low productivity and limited R&D (there is actually no research, only relevant product development levels) and technological capabilities. Their equipment and technology are also not up to international standards. Engineering capabilities are also limited since most firms manufacture their products based on samples rather than on engineering drawings.

While Filipino workers are regarded as highly skilled, this is not sufficient to make us internationally competitive. One firm narrated in the survey that it brought some of its workers to Japan to compete against robots in a welding process. The Japanese were very impressed with the Filipinos because of the high precision of their manual work and their ability to produce the same amount of output after 30 minutes. The only downside was while the robots can continuously sustain their work; the workers get tired and had to stop.

The automotive industry is a highly global industry; it is technology driven; competition is intense and only the best survive (those that can offer the lowest cost, highest quality and most innovative products). As the surveyed firms have shown, penetrating the export market is not easy and does not come automatically. Given the current state of small and medium manufacturers, making them internationally competitive is a major challenge. Facing international competition will be difficult as domestic firms can no longer rely on protective government policies. Less competitive firms will have to contend with reduced market shares and eventually bankruptcy. The few remaining competitive ones need to define their strategies and the market position that they want to pursue. If they want to focus on lower value products, they must continue to improve their manufacturing efficiency with small facilities, lean business structure, and limited engineering. If they want to go into more high value added products, they must enhance their engineering capabilities such as design, test, validation, and prototyping. Investments on product development and increase in size will also be crucial. Given the firms' limited technology and R&D capability, finding technologically fit foreign partners will also be important.

As the firms search for ways and exert effort to improve their competitiveness, this has to be supplemented with government support. The responses in Table 15 are instructive in designing government policy measures to support the industry's transition from a highly protected market towards a more open and competitive one. The government can help companies by pursuing, together with the assembly industry, market expansion policies in order to stimulate demand for domestically assembled vehicles. The government can also assist parts and components firms, especially those with growth potentials like Firm A, by providing support in finding markets abroad as well as in linking them with multinational

companies. Government action is also necessary in addressing human resource development and labor policy issues that increase firms' costs, thus making us uncompetitive internationally. With respect to the high cost of raw materials used by the industry, immediate tariff reduction must be provided to address distortions in those sectors where the tariffs on their major raw materials are greater than tariffs on their finished goods. Lastly, it is also important for the government to improve infrastructure provision in the country particularly utilities like power and ports operation to help firms bring down their operating/overhead costs.

## APPENDIX 1: Criteria for Evaluating Competitiveness

### Quality and Cost

Quality		
Rank	Criteria	Major Points
5	Very High	Quality level comparable to global 1st Tier suppliers with very well managed QA system, acquire key QS, ISOs
4	High	Quality level among highest in the region with well managed QA system, acquired ISO 14000, and others
3	Medium	Average Quality level in the region, with acceptable QA system. acquired at least 1 QS or ISO
2	Low	Average Quality level in the region, acquired more than two acquired at least 1 QS or ISO
1	Very Low	Very low quality level, with no ISO or QS
Cost		
Rank	Criteria	Major Points
5	Very High	Very competitive against Japan (less than 60 if Japan price=100) with high local content, low material cost ratio, or very low labor cost
4	High	Competitive against Japan (between 60 to 79, if Japan price=100) with high local content, low material cost, or very low labor cost
3	Medium	Marginally competitive against Japan (between 80 to 100, if Japan price=100) with high local content, low material cost, or very low labor cost
2	Low	Less Competitive than Japan (between 100 and 110, if Japan price=100) with low productivity & low local content, or higher material cost
1	Very Low	Not competitive against Japan (above 110, if Japan price=100) with low productivity & low local content, or higher material cost

### Delivery, Engineering, and Production System

Delivery		
Rank	Criteria	Major Points
5	Very High	Virtually with no inventory, and shorter lead time comparable to global 1st Tier suppliers
4	High	Low inventory level among the region with short lead time
3	Medium	Average delivery level among the region
2	Low	Lower delivery level in the region
1	Very Low	Very low delivery level compared to the region
Engineering		
Rank	Criteria	Major Points
5	Very High	Has product development capability comparable to global 1st tier supplier with strong spending on R&D and a large number of R&D staffs
4	High	Has High engineering capability (at least has 3 of 4 capability; CAD, CAM, CAE, CATs), with independent R&D department with more than 5 staffs
3	Medium	Has Some R&D functions with engineering capability (at least has 1 of 4 capabilities; CAD, CAM, CAE, CATs)
2	Low	No R&D functions but has some minimum engineering capability (eg. die maintenance etc)
1	Very Low	No R&D functions and no engineering capability
Production System		
Rank	Criteria	Major Points
5	Very High	Comparable to global 1st tier supplier in 5S and flow of process
4	High	Among the highest in the region in 5S and flow of process
3	Medium	Some problems in 5S and flow of process, but overall in acceptable level
2	Low	Many problems in 5S and flow of process
1	Very Low	Most of the points of 5S and flow of process are unacceptable

Source: Yamamoto [2006], "Benchmark Survey Project Competitiveness of ASEAN vs. China vs. India on Auto Parts Industry", Powerpoint Presentation.

## APPENDIX 2: Sample Questionnaire

### Questionnaire for Die Maker/Die Casting Parts

PROFILE OF THE COMPANY	
Name of the Company _____	Location _____
Date of Establishment _____	
Paid up Capital _____	Major Share holders _____
Characteristic of the company ( JV or Local Company, Public, Private or State Owned Company )	
Total No. of Employees _____ Persons	
Major Customers _____	
Major Products _____	
Total Sales _____ Average Sales growth in 2 years _____ %	
Current Technology Licensee (if any) _____	

INTERVIEWEE \_\_\_\_\_ POSITION \_\_\_\_\_

DATE OF INTERVIEW \_\_\_\_\_ TARGET PRODUCT \_\_\_\_\_

1. PRODUCTION

- a. TOTAL PRODUCTION CAPACITY \_\_\_\_\_ PCS./( YEAR or Month for 2005)
- b. TOTAL ACTUAL PRODUCTION VOLUME \_\_\_\_\_ Tons or Pieces /YEAR or 2005
- c. PRODUCTION UTILIZATION RATIO; \_\_\_% (a / b)
- d. Major PRODUCTION ITEMS ; Largest volume \_\_\_\_\_ Highest Value \_\_\_\_\_
- e. No. of staffs \_\_\_\_\_ persons × \_\_\_\_\_ Working hours (daily) × \_\_\_\_\_ working days(YEAR or MONTH).  
(TOTAL NUMBER OF LABOR \_\_\_\_\_ HOURS/(YEAR or MONTH). This includes staffs in design and testing, etc.)
- f. FACILITY (PLEASE GET THE MACHINERY LIST, IF POSSIBLE)
- 1) 3D-CAD/CAM Machines : ----- Units
- 2) CAE Machines : ----- Units
- 3) CAT Machines : ----- Units
- 5) Other : ----- Units
- g. Average Die Life (High Pressure )
- ☐ Less than or equal to 10,000 ☐ More than 10,000 to 30,000
- ☐ More than 30,000 to 50,000 ☐ More than 50,000 to 100,000 ☐ More than 100,000 (Specify\_\_\_\_)
- h. TO WHOM DO YOU SUPPLY DIES
- ☐ Own Company ☐ Group Company ☐ Non-Group Company

## 2. PRODUCTION COST

- a. TOTAL SALES OF THE PRODUCT: \_\_\_\_\_ Baht/ Rupia/Ringgit/Peso/RMB/Rupee
- b. PRODUCTION COST STRUCTURE :

	COST PER UNIT	RATIO
1. MATERIAL COST (Do not include Mold & Die Cost)		%
2. DIRECT LABOR COST		%
3. DEPRECIATION		%
4. Other Direct Fixed Cost (Tooling, Mould & Dies, etc)		%
5. OVERHEAD COST (include Electricity, gas & Freight costs)		%
6. TOTAL PRODUCTION COST (exclude SGA Cost)		100 %

If difficult to get price itself; Please Provide the following information

- 1) AVERAGE LABOR WAGES (OPERATOR LEVEL) : \_\_\_\_\_ (Per month) Average changes of wages in the past 2 years \_\_\_\_%
- 2) MAJOR MATERIAL ( NAME \_\_\_\_\_ ) : \_\_\_\_\_
- c. PRODUCTIVITY IMPROVEMENT MEASURES;
- 1) ANY SUBSTANTIAL INCREASE IN PRODUCTIVITY IN THE PAST FEW YEARS
- ☐ Yes (Please Specify; Increased \_\_\_\_\_% in \_\_\_\_\_ years, in the area of \_\_\_\_\_ ) ☐ No
- 2) IF YES, PLEASE STATE THREE MEASURES YOU APPLIED FOR INCREASING PRODUCTIVITY
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
- d. OWN EVALUATION OF COST COMPETITIVENESS;
- HOW YOU GRADE YOUR COST COMPETITIVENESS AGAINST JAPAN (eg; below 70% of Japan's cost, etc)
- ☐ Very Competitive (below 60%) ☐ Competitive (60-79%) ☐ Moderately Competitive (80-94%)
- ☐ About the Same (95-100%) ☐ Not Competitive (Above 100%) ☐ Others( \_\_\_\_\_ )

## 3. MATERIAL

- a. MATERIAL & PARTS PURCHASED IMPORTED (Die)



☐Material (SKD., etc) ☐Major Die Parts ☐Cutting Tools ☐Others( )

b. MAJOR PROBLEMS IN SOURCING MATERIAL & PARTS , IF ANY

( )

4. TECHNOLOGY AND R&D (include Engineering)

a. MAJOR R&D POLICY & TARGET

( )

b. R&D EXPENSE AS % OF OVERALL SALES \_\_\_\_\_

c. NUMBER OF DIE DESIGN / TESTING STAFFS \_\_\_\_\_ STAFFS.

d. DEPARTMENTS CONCERNING DIE DESIGN / TESTING \_\_\_\_\_

( eg. Product Development Department)

e. IN-HOUSE OR OUTSOURCE

1) CAD/CAM DESIGN

☐ALL INHOUSE ☐PARTLY OUTSOURCE ☐MOSTLY OUTSOURCE

☐SUPPLIED BY CUSOMTER

2) CAE (Simulation)

☐ALL INHOUSE ☐PARTLY OUTSOURCE ☐MOSTLY OUTSOURCE

☐SUPPLIED BY CUSOMTER

f. EXTENT OF MAJOR R&D ACTIVITIES IN YOUR COMPANY (You may answer more than one answer )

☐ Advanced Technology Research ☐ Product Development from Prototype ☐ Product Reengineering

☐ Production Technology Development ☐Production Process Design

☐ Evaluation & Testing ☐ Others ( please specify which )

5. QUALITY SYSTEM

a. MAJOR QUALITY TARGET;SPECIFY QUALITY ASSURANCE POLICY & QUALITY TARGET

(eg. ACHIEVE---- % DEFECT BY YEAR ----, if no target, please state so )

( )

b. QUALITY IMPROVEMENT MEASURES;

1) ANY SUBSTANTIAL QUALITY IMPROVEMENT IN THE PAST FEW YEARS

☐ Yes (Please Specify; improved \_\_\_\_\_% in \_\_\_\_\_ years, in the area of \_\_\_\_\_ ) ☐No

2) IF YES, PLEASE STATE THREE MEASURES YOU APPLIED FOR IIMPROVING QUALITY

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

c. QUALITY SYSTEM (You may answer more than one response.)

☐ TS 16949 ☐ QS 9000 ☐ ISO 9000 ☐ ISO 14000

☐ ISO18000 ☐ Others. ( Please Specify )

d. TYPE OF EQUIPMENT USED FOR ACCURACY MEASUREMENT; \_\_\_\_\_

e. QUALITY GUARANTEE AFTER QUENCHING;

☐ Yes ( specify ; \_\_\_\_\_ ) ☐No

f. QUALITY CONTROL & ASSURANCE SYSTEM

1) DO YOU HAVE QUALITY CONTROL DEPARTMENT?

☐ Yes ☐No ☐ Part of Other Department ( Please Specify )

2) DO YOU HAVE QUALITY ASSURANCE DEPARTMENT?

☐ Yes ☐No ☐ Part of Other Department ( Please Specify )

3) No. of QC & QA Engineers: QC \_\_\_\_\_persons, QA \_\_\_\_\_persons

4) MAJOR QUALITY INSPECTION MEASURES (In-process inspection, Sampling, etc.)

- ( )
- 5) MAJOR PREVENTIVE MEASURES AGAINST RECURRENCE OF QUALITY PROBLEMS
- ( )
- g. OWN EVALUATION OF QUALITY LEVEL; HOW YOU GRADE YOUR QUALITY LEVEL AGAINST JAPAN
- ( )
6. DELIVERY (LEAD TIME; PLEASE ANSWER FOR YOUR MAJOR CUSTOMERS)
- a. MAJOR DELIVERY & CUSTOMER RELATION POLICY & TARGET
- ( )
- b. AVERAGE IN PROCESS INVENTORY DAYS (INCLUDING ACTUAL TIME FOR PROCESSING)
- \_\_\_\_\_ Hour(s) or DAYS (From production order release to delivering finished goods to the storage).
- c. AVERAGE INVENTORY DAYS FOR CUSTOMERS; \_\_\_\_\_ DAYS (how long do you keep inventory of the finished product on behalf of customers).
- d. LEADTIME IMPROVEMENT MEASURES;
- 1) ANY SUBSTANTIAL LEADTIME IMPROVEMENT IN THE PAST FEW YEARS
- ☐ Yes (Please Specify; improved \_\_\_\_\_% in \_\_\_\_\_ years, in the area of \_\_\_\_\_ ) ☐ No
- 2) IF YES, PLEASE STATE THREE MEASURES YOU APPLIED FOR IMPROVING LEADTIME
1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
- e. OWN EVALUATION OF DELIVERY LEVEL; HOW YOU GRADE YOUR QUALITY LEVEL AGAINST JAPAN
- ( )
7. KEY CAPABILITIES TO IMPROVE COMPETITIVENESS
- a. WHAT ARE THE BASIC ISSUES FROM THE VIEW POINT OF MANAGEMENT IN YOUR COMPANY IN THE FACE OF INCREASED COMPETITION IN THE INDUSTRY
- ( )
- b. CRUCIAL FACTORS TO FURTHER ENHANCE COMPETITIVENESS OF YOUR COMPANY
- Internal Factor - ( )
- External Factor - ( )

#### FACTORY VISIT EVALUATION

(Filled by Interviewer)

Topics	Evaluation
Cleanness	1. Very Clean 2. Acceptable 3. Not Clean
Safety	1. Safety Measures Implemented 2. Few Safety Measures
Standard Work Sheet	1. In Every place 2. Not Every place 3. Not much practiced
Speed of work	1. Work at a high speed and with efficiency 2. Slow pace of working
Labor	1. Tight Labor Force 2. Excess of workers

Inventory	1. Very few in-process inventory 2. Many in-process inventory
Equipment	1. Almost Fully utilized 2. Some equipment underutilized
General Comments about the factory	