

Chapter 2

Industrial Structure and Production Orientation

2-1. Current situation of production

The motorcycle industry of Vietnam was born about a decade ago and developed quickly, especially in the period 2001-2005. At first, four foreign-invested firms, VMEP, Honda, Yamaha and Suzuki, assembled motorcycles in the 1990s. Subsequently, a large number of indigenous firms entered the market to assemble motorcycles, initially with parts imported from China, but later with locally produced parts with Chinese and Vietnamese technology.

During 2001-2005, at least 67 firms existed in the motorcycle industry, which were located all over the country and collectively produced nearly 2.2 million units at the peak time. Supporting industries also began to form, which belonged to various ownership types and included suppliers of different nationalities such as Taiwan, Japan, Thailand, China and Vietnam.

Prior to 2000, total production was only hundreds of thousand units per year, which was mainly attributable to FDI assemblers and a handful of local assemblers. Motorcycle prices up to that time were relatively high, and this prompted a number of local producers to set up assembly lines to produce low-priced motorcycles of Chinese origin in 2000 and 2001. Since new comers' prices initially matched the income level of consumers, their production rose sharply to capture 87% of the market in 2001.

However, in 2003 and 2004, almost all assemblers had to reduce output due to a number of policy reasons, including the imposition of import part quotas, restriction on motorcycle registration by some localities, and stricter

regulation over production activities of assemblers. However, by 2005, these policy constraints on motorcycle assemblers had all been lifted, and production volume began to surge.

Under the price pressure from the so-called "Chinese" assemblers, FDI assemblers adjusted business strategies, reorganized production, developed new supplier systems and after-sale services, and gradually regained customer base. By 2005, their combined market share rose to 53.6%. Meanwhile, the sales of inexpensive motorcycles with Chinese origin dropped significantly.

According to Vietnam Register (Table 2-1), in 2006, only 18 assemblers which had the sales of more than 20,000 units of motorcycles per year collectively occupied the market share of 88% with four FDI firms accounting over 50%. Six of the local assemblers, whose sales exceeded 40,000 units expanded their collective sales and market share. Including two other local assemblers, which produced more than 39,000 units, the total sales of the leading 8 local assemblers is 770,000 units with the market share of 30%. The number of assemblers with sales of 20,000 to 40,000 units decreased to 6 compared to 10 in 2005. Those with sales of 10,000 to 20,000 units also fell from 14 in 2005 to 9 in 2006. The rest were the local assemblers with the sales less than 10,000 units, which operate irregularly and seasonally. 20 of them even did not have any product officially registered in 2006.

It can be said that, among totally 54 motorcycle assemblers (three of which were approved to operate since 2006), there are only 10 firms, three of which were FDI firms, i.e. Honda, Yamaha, Suzuki and VMEP, operated efficiently.

Tabs. 2-1 and 2-2, which contain similar data, are compiled from different sources and show some discrepancies between them, which are sometimes quite large. The main reason for the gap is that some motorcycles produced during the year, mainly by local assemblers, are registered by producers but are not sold within that year. Unsold vehicles are sometimes re-modeled and re-registered, which causes double counting. Another reason seems to be that, in some remote areas, unregistered motorcycles are put into use.

Tab. 2-1 Development of Motorcycle Assembly Production

	2001	2002	2003	2004	2005	2006
Newly registered motorcycles (x1,000)	2,485.6	1,818.6	1,789.6	2,138.8	2,188.4	2,553.6
Scooters	22.43	82.17	101.47	180.98	192.32	n.a.
Manual transmission	2,463.17	1,736.43	1,688.17	1,957.81	1,996.10	n.a.
Market share (percent)	100%	100%	100%	100%	100%	100%
FDI assemblers	12.94%	42.37%	47.59%	51.71%	53.55%	54.53%
Honda	6.84%	21.02%	23.68%	23.85%	28.63%	31.57%
Yamaha	0.92%	3.78%	6.77%	9.80%	11.72%	13.74%
Suzuki	1.04%	2.31%	2.88%	3.59%	3.89%	1.69%
VMEP	3.18%	13.55%	11.80%	12.02%	7.75%	5.87%
Other	0.97%	1.71%	2.47%	2.46%	1.56%	1.65%
Local assemblers	87.06%	57.63%	52.41%	48.29%	46.45%	45.47%
Over 40,000 units/year (6 firms in 2005)	8.07%	10.20%	12.59%	19.35%	22.42%	27.09%
20,000-40,000 units/year (10 firms in 2005)	40.54%	31.10%	30.64%	24.57%	13.43%	7.35%
10,000-20,000 units/year (14 firms in 2005)	21.07%	10.03%	9.16%	4.20%	8.83%	5.46%
Less than 10,000 units/year (in 2005)	17.38%	6.29%	0.03%	0.16%	1.77%	5.57%

Source: Compiled from Vietnam Register data.

As of September 2005, cumulative capital invested in the motorcycle industry was about 9,000 billion VND, of which one-third (3,200 billion VND) was by local producers. FDI firms, as a group, had a total registered capital of 394.4 million USD and at present are continuing to expand output capacities of assembly and part production.

Under strong competitive pressure, smaller FDI enterprises have re-oriented their business strategies. For example, Lifan Vietnam reduced output of completed motorcycles and shifted to engine production for the domestic market. Vina-Siam started to assemble scooters from parts which are almost all imported, and simultaneously supply a number of components such as brake, chain gear, brake cable, speedometer cable, shock absorber, etc. with reasonable quality for the domestic market. GMN was split into new GMN which handled trading and VAP which produced automobile and motorcycle components. VAP has become a Honda group

member and a part supplier of Honda Vietnam, with the latter contributing 70% of its capital.

Tab. 2-2 Market Share by Assembler

	1998	1999	2000	2001	2002	2003	2004	2005
Total sales (x1,000)	302	475	1686	1983	2058	1280	1437	1641
Share (percent)								
Honda	27.2	19.5	9.7	8.6	19.4	33.3	35.7	36.9
Honda (import)	40.0	43.6	9.7	3.3	0.0	0.0	0.0	0.0
Yamaha	0.0	2.7	1.0	1.3	2.7	7.7	13.3	13.2
Suzuki	7.2	3.6	1.0	1.4	2.2	4.0	4.9	4.1
VMEP	11.7	4.2	2.3	3.3	7.4	13.6	15.6	7.5
Scooter CBU	0.4	2.5	1.1	1.7	3.4	3.7	1.0	2.7
Local and other	13.5	23.8	75.2	80.5	65.1	37.8	29.6	35.7

Source: Compiled from Enterprise Survey Data.

As for local assemblers, which initially relied on imported parts from China, some of them invested in internal part workshops to respond to the government policy of localization. However, such investment often lacked effectiveness and balance. When the government abolished localization requirement, many of them gave up internal part production and began to use purchased parts again.

As for R&D, the four largest FDI assemblers all belong to a global group with the parent company conducting most of the key R&D activities. Assemblers in Vietnam conduct supplementary research only, such as market survey and adjustments on the group's basic models. However, it is notable that VMEP is now investing in the R&D center in Dong Nai. For FDI companies, the largest obstacle in R&D is the dearth of high skill human resources. On the other hand, R&D activities of local suppliers remain insignificant at present.

2-2. Current situation of supporting industries

The supporting industries (part suppliers) of the motorcycle industry are the largest in number and production volume among all supporting

industries in Vietnam, thanks to the rising production volume of finished motorcycles in recent years. For some Japanese assemblers with large volumes, the process of building the part procurement system is approaching the final stage.

During the period 2000-2003, partly due to the policy to encourage localization, many assemblers invested or helped to establish supporting industry activities, which contributed to the rising localization ratio. At present, almost all parts of manual transmission motorcycles, including engine parts, can be produced domestically. Apart from internal part production of assemblers, there are several hundred enterprises that produce motorcycle parts in Vietnam, although part production is often a side job or part-time activity for most of them. However, the quality and cost of such parts are not always satisfactory in comparison with imported parts. Important and difficult parts, such as engine parts and functional parts, are at present not produced completely or in reliable quality in Vietnam. Nevertheless, an increasing number of local suppliers invest in necessary equipment to improve quality, and some of them can now supply parts with international quality. These suppliers have become a part of FDI assemblers' procurement system.

For manual transmission motorcycles, the Ministry of Industry survey shows that local assemblers have achieved relatively high part localization, some of which have a localization ratio above 80% for all parts, and above 60% for engine parts. As for FDI assemblers, localization is also relatively high, ranging between 70% and 90% depending on production volume and the company's procurement strategy. For scooters, localization is still low since production volume is small at present.

By 2002, over 80 FDI part producers came to Vietnam to supply parts to Honda, VMEP, Suzuki and Yamaha with the total capital of 260 million USD. In particular, VMEP initially brought 11 suppliers to an industrial cluster in Dong Nai, and their number subsequently increased. The average quality of parts is highest among Japanese FDI and lowest among Vietnamese, with Taiwanese FDI coming in the middle. However, quality differs significantly across individual suppliers. Some Vietnamese suppliers

perform better than some Japanese FDI suppliers in terms of quality, cost and delivery (QCD).

In addition, assemblers also produce parts internally. In 2004, VMEP achieved a localization ratio of 70% for engines and exported 18,000 engines. In 2005, Honda installed an integrated engine production line on the premise. In 2006, Yamaha invested in a new factory to produce head cylinders and mission gear sets for internal use as well as for export to Japan.

Among three Japanese assemblers, the current situation and future strategy of part procurement differ significantly, depending on production size as well as the global procurement strategy of the parent company (see Appendix to Chapter 2 for collective procurement pattern of Japanese assemblers). For assemblers with large volume, the localization ratio has already reached or is about to reach 90%, which can be considered a saturation point. In globally integrated markets, procuring everything locally goes against scale economy and optimal allocation of production sites around the globe. For such assemblers, the part procurement system is nearly complete, and there is no strong need to increase localization further. However, diversifying domestic suppliers for each part to avoid the risk of relying on only one supplier, or switching to new suppliers with better QCD performance, still remains desirable for them. In contrast, assemblers with relatively small volume still look for new domestic suppliers in order to replace low-performing suppliers. For them, the part procurement system remains incomplete and there is urgent need to increase the number of domestic suppliers and the localization ratio.

Notwithstanding these differences, part procurement of Japanese assemblers shows a clear pattern. Tab. 2-3 indicates their combined procurement structure in 2007 based on part item counts (not necessarily proportional to value). For engine parts, imports from Thailand are the largest supply while the rest are supplied mainly by Taiwanese and Japanese FDI firms and in-house production. For electric parts, which are relatively difficult, Japanese FDI firms dominate. Exhaust and body parts are mainly supplied by Japanese and Taiwanese FDI firms. Vietnamese

suppliers mainly supply "other" items and some body and electric parts, which have relatively low value.

Tab. 2-3 Part Procurement Structure of Japanese Motorcycle Assemblers, March 2007

(Percent of part items)

	<i>In-house</i>	<i>Domestic purchase</i>				<i>Imports</i>						<i>Total</i>
		<i>JP</i>	<i>TW</i>	<i>VN</i>	<i>Other</i>	<i>JP</i>	<i>TH</i>	<i>INDO</i>	<i>MAL</i>	<i>TWN</i>	<i>Other</i>	
All parts	2.6	28.1	28.4	10.6	4.0	2.3	19.5	2.3	0.7	0.7	1.0	100.0
Engine	6.3	14.3	16.1	5.4	0.0	2.7	47.3	4.5	1.8	0.9	0.9	100.0
Exhaust	0.0	50.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Body	0.8	32.0	44.3	9.0	9.0	0.0	3.3	0.0	0.0	0.8	0.8	100.0
Electric	0.0	75.0	7.1	10.7	3.6	0.0	0.0	3.6	0.0	0.0	0.0	100.0
Other	0.0	15.2	24.2	36.4	0.0	12.1	6.1	3.0	0.0	0.0	3.0	100.0

Source: VDF Survey, 2007.

Note: JP: Japan, TW: Taiwan, VN: Vietnam, TH: Thailand, INDO: Indonesia, MAL: Malaysia. These percentages are based on the questionnaire on supply sources of 82 part items conducted on three Japanese motorcycle assemblers in Vietnam (see Appendix to Chapter 2). The results are combined over all assemblers. Since each part item may contain more than one individual part, and there may be more than one supplier for each part item, numbers in the table are not proportional to the number of individual parts or their value.

Since 2005, there is a sharp increase in the marketing activity and even investment in Vietnam by FDI part producers from India, Thailand, Indonesia, and Malaysia as well as from more traditional source countries such as Japan and Taiwan. They vigorously approach large motorcycle assemblers in Vietnam in order to receive orders from them. This reflects the attractiveness of Vietnam's motorcycle part market with increasingly large volume, as well as the improved capability of these foreign suppliers, many of whom already have business relations with Japanese FDI assemblers in their home countries. Japanese FDI assemblers all state clearly that QCD is the primary criteria for selecting suppliers and that they have no particular preference as to the nationality of suppliers. Under these circumstances, the remaining niche in the localization need of Japanese

FDI assemblers may be filled by new FDI part producers rather than Vietnamese part producers, since the latter do not engage in equally aggressive marketing (chapter 4).

2-4. Exports and imports

The exports and imports of motorcycles and their parts are presented in Tab. 2-4.

Tab. 2-4 Exports and Imports of Motorcycles and Parts

	2000	2001	2002	2003	2004	2005
Export value (million USD)	2.2	6.2	9.0	22.9	46.4	70.8
Share (percent)						
Complete units	12.1	1.4	3.3	1.6	0.6	0.5
CBU	0.0	0.0	53.4	66.7	57.2	47.5
Engines	0.0	0.0	0.0	1.9	10.8	24.4
Engine part set	0.0	0.0	0.0	0.0	0.9	0.0
Separated parts	87.9	98.6	43.3	29.8	30.5	27.6
Import value (million USD)	810.4	713.3	465.2	319.6	451.6	541.4
Share (percent)						
Complete units	0.1	0.3	0.3	12.8	8.8	12.0
CBU	95.5	88.2	64.2	28.0	0.0	0.2
Engines	0.0	0.1	1.6	0.7	0.5	1.1
Engine part set	0.0	4.7	2.4	3.0	2.9	0.2
Separated parts	4.5	6.8	31.6	55.5	87.9	86.5

Source: Compiled from General Customs Office data.

Exports rose dramatically, albeit from a very low base, from 2.2 million USD in 2000 to 70.8 million USD in 2005. Main export products are CKD parts, engines and loose parts. Honda is the largest exporter of motorcycles and parts in Vietnam, with the Philippines, Laos and Indonesia as main destinations. The second largest exporter following Honda is VMEP. Exports of complete units have been mainly for marketing and providing samples only, and never exceeded 1,000 units per year. Only FDI assemblers, especially VMEP, conduct such exports.

Meanwhile, Honda and VMEP are the only producers that have exported engines in recent years. Two companies with Taiwanese capital, Machino and Chunfun, also export motorcycle parts, together accounting for 13% of total export of this industry in 2005. Overall, Japanese FDI assemblers in Vietnam mainly target the domestic market and do not seem to have clear export strategy, especially beyond Southeast Asia, at this point. On the other hand, VMEP, a Taiwanese FDI assembler, has a clear strategy to build an export base in Vietnam and already exported to EU. Vietnamese assemblers are also exploring the possibility to export to such markets as Africa, Middle East and Latin America, but outcome is yet to be seen.

Imports exhibited a declining trend in the period 2000-2003, from 810 million USD to 320 million USD, as the supporting industries for motorcycle continued to develop in Vietnam. However, this trend was more than offset in the period 2004-2005, with imports rising to 541 million USD in 2005, by the increased parts import by FDI assemblers which raised production volume in response to strong domestic demand. As to the structure of imports, CKD parts fell drastically and loose parts and complete units increased. Imports of complete units are mainly scooters of average to high quality. Complete units of the value over 2,000 USD, such as SH, Dylan, @, and Vespa come mainly from EU, US and Japan, while complete units of the value less than 1,000 USD come mainly from China and Malaysia. In 2005, Vietnam imported 45,700 complete units with the total value of 65 million USD, with the average unit price of 1,424 USD. Urban demand for expensive scooters is rising rapidly.

If the motorcycle industry of Vietnam develops successfully in the future, with a sufficiently large domestic market, broad-based supporting industries, and high-quality industrial human resources, it is quite possible that Vietnam may be able to participate in the vertical or horizontal division of labor in global motorcycle production, and secure a meaningful position in the global value chain. The Vietnamese government generally and strongly encourages such development, and urges domestic motorcycle producers, FDI and local as well as assemblers and part suppliers, to seize every opportunity to increase exports with ambitious business plans.

Nevertheless, feasibility and desirability of exports constitute a crucial part of the decision making of each enterprise, and are also strongly affected by competition and market trends. At this point, it is not yet clear where Vietnam's dynamic comparative advantage lies in the motorcycle industry. Moreover, for FDI producers, the decision to export or import usually belongs to the parent company in the context of its global business strategy. For Vietnamese producers, ability to conduct effective international marketing and build an efficient global supply chain is lacking. In either case, concrete planning for export seems hardly possible at this point. For this reason, the government does not set any numerical export targets for the period up to 2010 with a view to 2020.

2-5. Business architecture

With high production technology, design initiative, and large market share, FDI assemblers are the leaders of Vietnam's motorcycle market and play an important role in its development. However, competitiveness, output trend, investment plans, and marketing orientation differ significantly according to nationality as well as each firm. Using the terminology of Prof. Takahiro Fujimoto of Tokyo University, business architecture can be classified into two main types: *integral manufacturing and modular manufacturing*⁷. Japanese manufacturers are mostly integral and Chinese manufacturers are mostly modular. This observation also applies to the motorcycle industry.

The basic feature of integral manufacturing is that products are designed and produced with parts that are unique to each model. Such parts have original design which continues to evolve and improve over time, and which cannot be used in any other model. The industrial structure of integral manufacturing consists of a system of vertically organized

⁷ Takahiro Fujimoto, *The Monozukuri Philosophy of Japan*, Nihon Keizai Shimbunsha, 2004, in Japanese; Takahiro Fujimoto and Junjiro Shintaku, eds, *Architecture-based Analysis of Chinese Manufacturing Industries*, Toyo Keizai Shimposha, 2005, in Japanese; Kenichi Ohno and Takahiro Fujimoto, eds, *Industrialization of Developing Countries: Analyses by Japanese Economists*, GRIPS, 2006, in English and Japanese, Vietnamese edition forthcoming in 2007.

producers which have close, long-term relations with each other. At the top, there is an assembler that designs products, sets standards, and provides technology and market for suppliers. Suppliers in turn produce parts which satisfy quality, cost and delivery (QCD) required by the assembler. Through this process, original technology is created and internalized. If successful, this architecture can produce high quality products and capture high-end markets. To be effective, however, integral manufacturing requires a business environment characterized by healthy and fair competition, stringent protection of intellectual property rights, and strong linkage between assemblers and suppliers based on long-term trust, reputation, and protection and active development of industrial secrets. Moreover, long-term perspective is required since it takes a long time for efforts to bear fruits.

According to the Japanese motorcycle producers in Vietnam, there are very few local suppliers at present that can participate in such a rigorous manufacturing system. For this reason, they have so far had to rely heavily on FDI part producers, especially Japanese, as well as internal part production. They have met many difficulties in trying to expand this system to include local suppliers. This problem should be solved with the help of policy measures proposed in this master plan (chapters 4 and 9).

By contrast, modular manufacturing uses parts which are common to all models and available in the market. Part purchase contracts are short-term and depends on the price and quality offered. In such a market, there is no need to organize suppliers into long-term, vertical production system. The market is characterized by free entry and excess competition, where low price is the only winning strategy. The merits of modular manufacturing are speed and flexibility, appeal to low-income consumers, and dynamic outsourcing of resources. On the other hand, its demerits are low quality, low profit and low R&D. Motorcycles produced by modular manufacturers show little difference among models, and their quality is low to average. Part suppliers are also under strong pressure to lower prices, so the quality of parts is also low and unstable. Illegal copies and other violations of the intellectual property law are rampant. Crucial technology is not created or

accumulated within producers. This is the vicious circle which Prof. Fujimoto calls "technology lock-in."

Modular manufacturing is practiced widely in China as well as in Vietnam. Since little capital or technology is required, this type of manufacturing is very popular among local producers in many developing countries. Moreover, in such countries, the business environment required for integral manufacturing, as noted above, often does not exist. The market is not fair or stable, business practice lacks trust and transparency, and policy is highly uncertain which prevents long-term investment. Under such circumstances, only modular manufacturing is possible.

In Vietnam, all Japanese motorcycle assemblers are integral manufacturers. They have built a system of suppliers that are long-term, interactive and disciplined. Their production processes are standardized and strictly supervised from raw material to part production, inventory management, quality control, delivery, and contract settlement. Meanwhile, production of Chinese and local firms is organized according to the modular model, using common, interchangeable parts to reduce the cost. Some of these firms have also built a system of suppliers, by inviting part investors from the home country as well as using some local suppliers.

For a latecomer country like Vietnam, parallel development of integral and modular manufacturers is acceptable and even inevitable. Modular manufacturing provides employment and income, and can be organized easily by local entrepreneurs without government assistance. However, because of "technology lock-in," modular manufacturing has little scope of upgrading skills and technology. Moreover, the possibility of modular motorcycle production, which heavily relies copied models, may be severely limited if standards on quality, environment and intellectual property rights are strictly enforced. Government assistance should target local firms that are learning to become integral, rather than helping all local firms across the board.

Appendix to Chapter 2

Part Procurement of Japanese Motorcycle Assemblers in Vietnam, March 2007

Section	No.	Part	In-house	Local purchase				Imports					Other	
				Ja panese	Tai wanese	VN	Other	Japan	Thai land	Indo nesia	Malay sia	Tai wan		
Engine	1	Head cylinder	o						o					o
	2	Cover cylinder head		oo	oo									
	3	Gasket		ooo										
	4	Body cylinder	oo						o	o				
	5	Crank shaft		o	oo			o	o	o				
	6	Connecting rod		ooo					o					
	7	Pin crank							ooo	o				
	8	Piston							ooo					
	9	Piston ring							ooo					
	10	Pin piston							ooo	o				
	11	Valve							ooo					
	12	Valve spring			o				oo					
	13	Rocker arm			oo			o	oo					
	14	Cam shaft assy							ooo					
	15	Guide stopper							o		oo			
	16	Cam chain							ooo					
	17	Cam chain tensioner				oo			oo					
	18	Oil pump assy			oo				oo					
	19	Joint carburetor			oo				o					
	20	Air cleaner assy			ooo				o					
	21	Carburetor							ooo					
	22	Crank case	oo	o										
	23	Cover crank case	o	oo										
	24	Mission gear set	o						oo	o		o		
	25	Kick crank assy				ooo								
	26	Starter clutch		oo				o	oo					
	27	Clutch assy		oo					oo					
	28	Shift cam assy							ooo					
	29	Fork shift			oo				oo					
	30	Shift shaft assy							ooo					
	31	Shift pedal			oo	o								
Exhaust	32	Pipe exhaust		oo	oo									
	33	Muffler assy		oo	oo									
Body	34	Frame complete	o	o		o								
	35	Stay			oo	o								
	36	Bracket			oo	o								
	37	Fender		ooo										
	38	Leg shield		ooo										
	39	Side cover		oo			o							
	40	Graphic		ooo										
41	Rear arm		oo	o										

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	42	Rear shock absorber		oo	ooo								
	43	Front fork assy		oo	oo								
	44	Fuel tank			ooo								
	45	Fuel cap			ooo								
	46	Double seat		oo	ooo								
	47	Handle seat			ooo								
	48	Rim		oo	ooo								
	49	Spoke						ooo					
	50	Nipple						ooo					
	51	Hub		oo	ooo								
	52	Tire set		oo		oo							
	53	Wheel assy		o		oo	oo						
	54	Cast wheel			o		o		oo				
Body	55	Brake		ooo									
	56	Disk plate			oo				oo			o	
	57	Sprocket		ooo		o							
	58	Drive chain			ooo								
	59	Handle complete			ooo								
	60	Cable wire		ooo	o								
	61	Rear view mirror			ooo								
	62	Head light		ooo									
	63	Tail light		ooo									
	64	Speedometer assy			oo								o
	65	Side stand			oo	o							
	66	Main stand			oo	o							
	67	Foot rest			oo	o							
	68	Brake pedal			oo	o							
Electric	69	Rotor assy		ooo									
	70	CDI unit		ooo									
	71	Stator assy		ooo									
	72	Starting motor		ooo									
	73	Ignition coil/switch		oo	o								
	74	Battery		oo		oo							
	75	Electronic wire		ooo	o	o							
	76	Switch set		oo			o			o			
Other	77	Rubber parts		oo	ooo	oo			o				
	78	Plastic parts		ooo	o	o							
	79	Bolt nut washer			ooo	oo		ooo	o				
	80	Bearing			o	oo		o		o			o
	81	Tape				oo							
	82	Tool kit				ooo							

Source: VDF survey, 2007.

Note: This table shows the part procurement situation of three Japanese motorcycle assemblers, Honda, Yamaha and Suzuki, as of March 2007 when this survey was conducted. The procurement manager of each firm was asked to fill in a questionnaire, followed by an interview by VDF staff at the factory. Each circle represents one of these companies. An assembler may outsource any part from more than one supplier, so the number of circles for each part may exceed three. An assembler may procure the same part from more than one supplier in the same nationality or source country. Part procurement information from other assemblers was unavailable.