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Statistics on Japanese Automotive Trade

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1. Introduction

In value terms, exports of the Japanese automotive sector constitute nearly 20% of all Japanese goods exports, and are therefore still an import part of Japan's manufacturing trade. In quantity terms, around 4 to 6 million cars are exported annually from Japan to the rest of the world. In this research memorandum, I list and introduce the basic data sources of trade statistics of the Japanese automotive industry for those interested in studying international trade of the Japanese automotive sector.

The data sources presented are the following three: Ministry of Finance (MOF), Japan Automobile Importers Association (JAIA), and Japan Automobile Manufacturers Association (JAMA). All three sources provide data both in Japanese and English. I recommend taking a look at the data that these organizations offer.

2. Trade Statistics of Japan, Ministry of Finance (MOF)

About the data source

Basic government statistics on Japanese international trade is collected by the Customs Office and published by MOF. By accessing one of their websites (www.customs.go.jp), one can obtain electronic data of Japan's exports and imports from 1988. Trade data are published based on the Harmonized System (HS) codes. The HS code corresponding to the auto industry is HS 87, and passenger cars are categorized in HS 87.03. (See Table 1.) Other types of vehicles including commercial vehicles are in categories HS 87.04, HS 87.05, and HS 87.06. Trade statistics are released monthly, and annual

data are included in the December issue.

Available data

Export and import data are available on a monthly basis for the cars categorized in Table 1 (passenger cars). Both quantity and value of the cars in each category are available. The value of exports is the free-on-board (FOB) price and that of imports is the customs, insurance, and freight (CIF) price. Export data are further disaggregated into “knock-down (KD)”, “used”, and “others” at the 9-digit level of HS codes. Therefore, data of unfinished or disassembled exported cars to be assembled at the destination are found in the “knock-down” category, and new car exports are categorized in “others”. It is also important from a trade policy perspective to note that no tariffs are levied on car imports to Japan today.

Examples/findings

The main figures for the Japanese passenger car trade in 2014 are shown in Table 2. Total passenger car exports were more than 9 trillion yen (4.8 million cars) while import was around 1 trillion yen (336 thousand cars). The major export destinations include the United States and European countries. Main import sources are Germany and other European countries. The reason why Japan does not trade finished cars as much with the rest of Asia is partly because Japanese car manufacturers now produce and sell in the local markets of China and Southeast Asia.

There are a number of characteristics of the Japanese automotive trade worth pointing out. First, main exports are gasoline engine cars with 1.5 to 3 liter engines. Roughly half of passenger car exports are included in this category. Therefore, it can be said that Japan today exports mainly mid-sized cars. Second, comparing exports and imports, exports still far outweigh imports in terms of both value and quantity. During the 1980s Japan experienced trade frictions with the United States and Europe concerning its drastic increase in exports, which led to adopting policies such as voluntary export restraints. The trade issue at the time also led Japanese car manufacturers’ to increase overseas production. The imbalance between exports and imports, however, is still apparent.

One advantage of the MOF trade data is that unit prices can be obtained by dividing the total value by the quantity, i.e., the number of cars. Inspecting the unit values, it is found that the unit prices for all categories are higher for imported cars. (The comparison is made between exported new cars and imported cars. Exports of KD and used cars are excluded from the calculation.) Further, as shown in Figure 1, a U-shaped relation exists between import/export unit cost differentials and engine size.

The unit price difference can be at least partly explained by the fact that export values are FOB prices and import values are CIF prices; that is, values of imports include transportation and in-

surance costs. Given that main sources of Japanese car imports are European countries, it is likely that these logistics costs are high. However, if the observed price differentials are larger than these logistics costs, then other factors such as quality differences and difference in consumers' brand valuation may also explain the difference.

Table 1: Categorization of cars in trade statistics (HS 87.03; passenger cars)

87.03	Motor cars and other motor vehicles principally designed for the transport of persons (other than those of heading 87.02), including station wagons and racing cars
8703.10 000	Vehicles specially designed for travelling on snow; golf cars and similar vehicles
	Other vehicles, with spark-ignition internal combustion reciprocating piston engine
8703.21 000	Of a cylinder capacity not exceeding 1,000 cc
8703.22 000	Of a cylinder capacity exceeding 1,000 cc but not exceeding 1,500 cc
8703.23 000	Of a cylinder capacity exceeding 1,500 cc but not exceeding 3,000 cc
8703.24 000	Of a cylinder capacity exceeding 3,000 cc
	Other vehicles, with compression-ignition internal combustion piston engine (diesel or semi-diesel)
8703.31 000	Of a cylinder capacity not exceeding 1,500 cc
8703.32 000	Of a cylinder capacity exceeding 1,500 cc but not exceeding 2,500 cc
8703.33 000	Of a cylinder capacity exceeding 2,500 cc
8703.90 000	Other

Source: MOF trade statistics

Table 2: Basic automotive trade figures for 2014, passenger cars

		export units	value (1,000Yen)	import units	value (1,000Yen)
gasoline engine					
8703.21	<=1 liter	89,306	34,965,055	24,135	27,795,846
8703.22	1 to 1.5 liter	704,884	524,125,151	115,506	213,079,059
8703.23	1.5 to 3 liter	2,913,242	5,145,508,658	141,956	500,338,326
8703.24	>3 liter	749,468	2,644,555,333	30,773	241,915,812
diesel engine					
8703.31	<=1.5 liter	1,101	1,692,108	311	722,909
8703.32	1.5 to 2.5 liter	254,607	548,345,958	16,777	74,011,689
8703.33	>2.5 liter	150,679	456,586,004	4,780	31,298,794
8703.90	Other	4,467	11,385,169	2,526	9,590,013
total		4,867,754	9,367,163,436	336,764	1,098,752,448

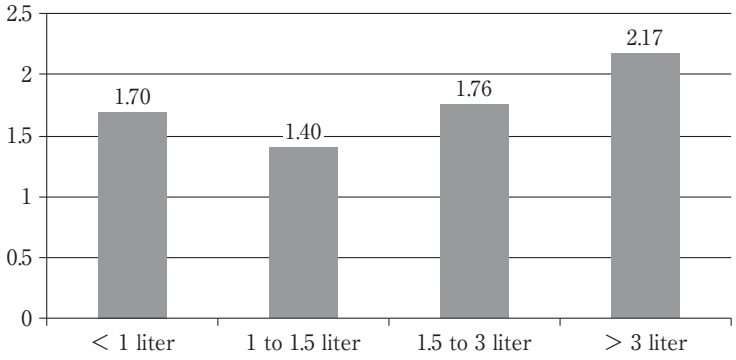
Note: includes new, used and KD
Source: MOF trade statistics

3. JAIA, Japan Automobile Importers Association

About the data source

While the MOF data are quite detailed, with quantity and value presented for different sizes of cars, they lack brand/model information on the cars. Such information can be important for mar-

Figure 1: Import-export unit price differentials, 2014 (import/export)



Note: export unit prices are those of new car exports
Source: calculated by author using MOF trade data

keting research purposes and firm-level analyses of international trade. The data issued by the Japan Automobile Importers Association (JAIA) fills this gap.

JAIA publishes new registration data of imported vehicles in Japan on a monthly basis. Based on their monthly figures, JAIA also publishes a number of historical data sets, shown in Table 3. Note that the JAIA data do not exactly match the MOF trade data since the former are based on registration; that is, they are recorded when imported cars are sold and registered for the buyers.

Available data

Data available from JAIA is listed in Table 3. All data are downloadable in both PDF and EXCEL formats from the JAIA website (www.jaia.or.jp). JAIA's general analysis of the imported car market of Japan is released annually as the document titled "Imported Car Market of Japan". It is also available from their website in PDF format starting with the 2001 report. This document is an annual summary of the overall situation of the Japanese imported car market. It also contains information on the system and procedures of car imports in Japan.

Neither the MOF nor the JAIA data include stock data, that is, data of cars in operation. Those in need of stock data of imported cars should contact the Automobile Inspection & Registration Information Association (AIRIA), which is the government body in charge of motor vehicle registration in Japan (www.airia.or.jp). Stock data can be purchased from AIRIA.

Examples/findings

According to the historical data set of JAIA, only 15 thousand cars were imported to Japan in 1967 and this amount reached a peak in 1996 when 393 thousand cars were imported. The latest figure is 319 thousand for 2014. The volume of car imports fluctuates in response to the overall situation or the fundamentals of the Japanese economy, but their market share is somewhat stable: im-

ported cars have occupied roughly 10% of the new car market since 1998. In terms of prices, price range data from 2003 indicate that the largest volume imported are the cars in the 2 to 3 million yen price range.

Taking advantage of the brand/model information of the JAIA data, it can be seen that the top 20 imported models are mostly German brands. Specifically, the Volkswagen Golf has been the number one imported model since at least 2003. (See Table 4 for the 2014 results.) The share of the German brands over time is shown in Figure 3. This share has been between 30% and 80% for several decades. In recent years the German brands seem to have gained popularity in Japan, but the highest share to date was recorded in the mid-1980s, when it reached around 80%. The drop in the

Table 3: Imported car data available from JAIA

By Calendar Year (CL) (Passenger Car/Total) since 1966	CY (Jan-Dec)
By Price Range (Non-Japanese Brand Passenger Car Only) since 2003	CY (Jan-Dec)
By Vehicle Type (Passenger Car/Truck/Bus & non-Japanese/Japanese Brand) since Jan 1988	Month, CY (Jan-Dec)
By Brand since Jan 1988 for monthly data and since 1966 for CY data	Month, CY (Jan-Dec)
By Prefecture since Jan 1988	Month, CY (Jan-Dec)
By Non-Japanese/Japanese Brand since Jan 1998	Month
By Non-Japanese Brands	Quarterly
Change in 20 Top-selling Models : Calendar Year	Half-year
By Quarter, Half Year and CY	CY (Jan-Dec)
By Non-Japanese Brands	Half-year
Change in 20 Top-selling Models : Fiscal Year	FY (Apr-Mar), half year

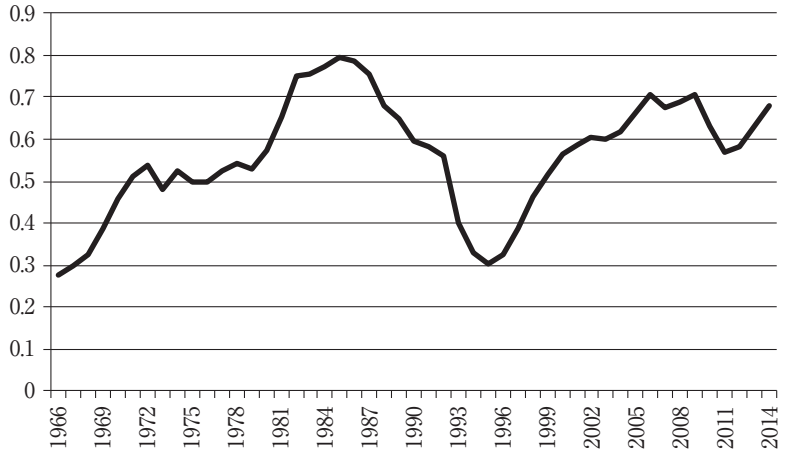
Source: JAIA

Table 4: Top 20 imported cars in Japan, 2014

	Brand	Model
1st	Volkswagen	Golf
2nd	BMW MINI	MINI
3rd	Mercedes-Benz	C-Class
4th	BMW	3 Series
5th	Volkswagen	Polo
6th	Audi	A3 Series
7th	Mercedes-Benz	A-Class
8th	Mercedes-Benz	E-Class
9th	Volkswagen	up!
10th	BMW	1 Series
11th	Volvo	40 Series
12th	Volkswagen	The Beetle
13th	Mercedes-Benz	S-Class
14th	Audi	A4 Series
15th	Volvo	60 Series
16th	Fiat	500/500C
17th	BMW	5 Series
18th	Mercedes-Benz	B-Class
19th	Mercedes-Benz	CLA-Class
20th	Mercedes-Benz	GLA-Class

Source: JAIA

Figure 2: Share of German brands in the Japanese imported car market



Source: calculated by author using JAIA data.

mid- 1990 s was due to increases by American brands, but the data show that the momentum of American brands did not last.

4. JAMA, Japan Automobile Manufacturers Association

About the data source

All Japanese car manufacturers are members of JAMA. Data from the car manufacturers are collected and published by JAMA, the main data being those of production and exports. On their website (www.jama.or.jp), an on-demand type database called the “Active Matrix Database System” is open to the public. JAMA also runs a unique library specializing in books and various historical documents on the automotive industry.

Available data

The JAMA database allows us to extract data following the format indicated in Table 5. Users choose the types of data (production, exports, or new registrations), vehicle (passenger car, truck, or bus), and manufacturer. The system will then instantly create the table as requested. Most electronic data are available from 1993.

Examples/findings

Figure 3 is created using basic data from the JAMA database. Apart from the steep “cliff” in 2009 reflecting the worldwide demand fall following the Lehman shock, Japanese car manufacturers have managed to maintain domestic production of around 10 million cars per year. Annual exports

Table 5: Format of data available from JAMA

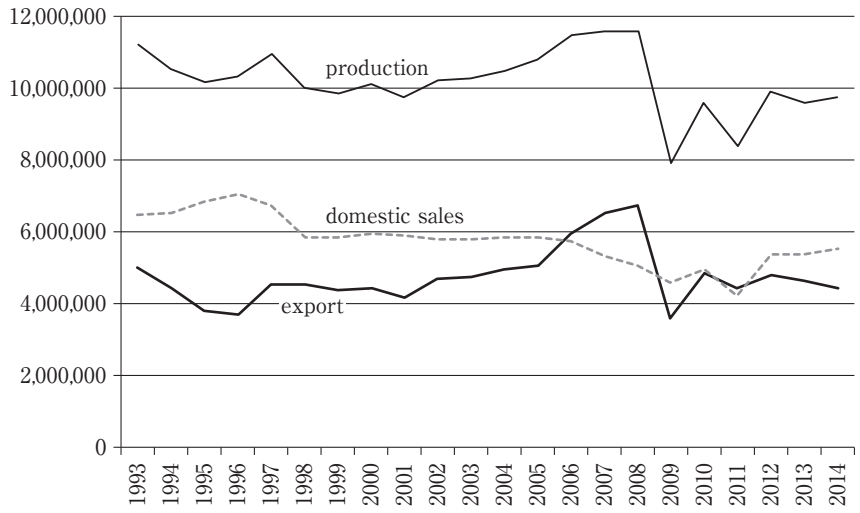
Data	Vehicle	Manufacturer
production	passenger cars	TOYOTA
exports	standard	NISSAN
new registrations (sales)	small	MAZDA
	mini	MITSUBISHI
	trucks	ISUZU
	standard	DAIHATSU
	small	HONDA
	mini	SUBARU
	buses	UD TRUCKS
	large	HINO
	small	SUZUKI
		GM JAPAN
		MITSUBISHI FUSO

Note: standard, small, and mini is the Japanese classification of passenger cars based on body/engine size
Source: JAMA

since the 1990s have been around 4 to 6 million cars, and a similar volume of cars is sold domestically.

The database also enables us to obtain firm-level export data such as in Table 6, which reveals a stark contrast between the two leading global firms, Toyota and Honda: Toyota exported nearly 1.6 million passenger cars in 2014, which far exceeds exports of other Japanese manufacturers. Its share

Figure 3: Volumes of production, exports, and sales of the Japanese auto industry



Source: JAMA database

of Japanese passenger car exports was 41%. Honda, on the other hand, exported only 31 thousand cars in 2014, which is less than 1% of the total. It probably reflects the difference in their global production strategies.

Table 6: Japanese (new) passenger car exports by manufacturer, 2014

	Passenger cars				
	Standard	Small	Mini	Total	Share
TOYOTA	1,491,514	90,143	—	1,581,657	41.2%
MAZDA	708,183	53,002	—	761,185	19.8%
SUBARU	541,385	201	—	541,586	14.1%
NISSAN	412,892	11,970	—	424,862	11.1%
MITSUBISHI	365,978	887	2,257	369,122	9.6%
SUZUKI	55,923	61,955	199	118,077	3.1%
HONDA	18,066	13,185	—	31,251	0.8%
DAIHATSU	—	7,855	—	7,855	0.2%
Total	3,593,941	239,198	2,456	3,835,595	100.0%

Source: JAMA database