

# **A Comparative Study Focusing on “Reuse” in the Development of the Used Auto Parts Business Between Japan and the United States**

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## **Summary**

In this paper, the history of the Japanese Automobile Recycling Law and the idea of “extended producer responsibility” for cars are reviewed. Then a comparison of the automotive used parts business in Japan and the United States is reviewed. Differences between Japan and the United States are found in several areas. Foreign made ultra-low-priced parts make up a certain part of the market in the United States, while they take a smaller role in the Japanese market. Although the use of recycled parts is very high in the United States, use of such parts is gradually increasing in Japan, as well. However, recycled components are a major element in rebuilt parts in the United States, while reused parts are, for the most part, merely traded in Japan.

## **Objective**

In Japan, the processing and recycling of end-of-life-vehicles (ELVs) and related parts, materials and automobile shredder residue (ASR) have changed significantly after the introduction of the Automobile Recycling Law in 2005. However, until the 1990s, most researchers studied the ELV recycling business, which seemed to play a key role in clarifying the economic structure of the automobile recycling market. Issues for ELV processing alone have been discussed by developed countries such as Japan and some EU countries because they were facing problems with discarded vehicles and the final disposal of such vehicles. As for the United States, the leading auto market in the world, there is no study on this ELV-related matter in Japan, to the best of the author’s knowledge. Furthermore, although the promotion of a “3R (Reducing, Reusing, and Recycling) Society, in Japanese, *Junkangata-Shakai*” is seen as an urgent issue in Japan, studies focusing on “reuse (reuse of products)” are scarce, compared with a variety of studies on “recycle” or “reduce”.

Therefore, this study will focus on the “reuse” of used parts in the automobile recycling business rather than “recycling” per se, and will

make a comparative study of automobile dismantlers (or recyclers), which are major players in this field in regards to Japan and the United States. In addition, an analysis on the characteristics of the ELV recycling business, which had been seen as an “informal sector” in the past, will be included in this study, as well as findings on the mechanisms of the regional and international development of this business. With this background, the agenda for future discussions on how to foster and develop the intricately connected industry will be explored.

### **Research methods, results and discussions**

In general, automobile dismantlers are divided into two groups: a used parts-oriented group, and another group depending heavily on resource collection jobs such as steel scrap production and sales. In the former group, the used auto-parts business has presented some unique challenges since the 1990s. In order to address “the difficulties of quickly providing fast-selling products,” they succeeded in forming inventory sharing networks for used auto-parts. Now there are multiple networks in Japan, and each group is making an effort to further develop such networks. For such groups, various studies are underway, led by the Japan Automotive Parts Recyclers Association (JAPRA), a nationwide organization of the recycling industry. It was my good fortune to join in the editing process of JAPRA’s 15<sup>th</sup> anniversary memorial book, in which development of the used parts industry after the 1990s were outlined. JAPRA, backed by the Ministry of International Trade and Industry, also conducted study tours to the United States in 1998 and 1999 and compiled reports. Based on these references, this study undertakes a comparative analysis of the used auto-parts business between Japan and the United States.

### **Forward**

At the end of the 20<sup>th</sup> century, the issues of how to respond to global warming and the “proper processing of waste and recycling” emerged. “The low-carbon society” is a political construct focusing on the former issue, while a “3R society” is the goal of the latter issue-oriented policy. Waste and recycling were recognized as urgent issues during late 1990s and early 2000s. On the other hand, global warming has not been an urgent issue and has remained, for some, abstract and inconclusive. But that global environmental issue was suddenly thrust into the forefront after the March 2011 Great East Japan Earthquake and Tsunami. Because of this disaster, the government reviewed its promotion of nuclear power and began to consider the development of renewable energy. This is also

thought to be the most important issue for the protection of domestic industries as well as serving as an economic stimulus amid growing concerns of the hollowing out of the domestic economy.

Since the 1990s, automotive recycling has been supervised by the Ministry of International Trade and Economy (now the Ministry of Economy, Trade and Industry). Automotive recycling, which first had been seen as a waste disposal issue, gradually became a key factor for policy making toward the “3R society.”

### **Teshima Affair and Extended Producer Responsibility**

Since the Earth Summit was held in Rio de Janeiro, Brazil, in 1992, the Japanese environmental policy has been promoted under the official government slogan of “sustainable development.” As for policy making regarding waste and recycling issues, a turning point was the Teshima Affair, which was exposed in 1990 by the Hyogo Prefectural Police. The issue of the final disposal site of waste, which was exacerbated by simultaneously spreading dioxin, has become a severe environmental problem.

Concern arising from the above-mentioned issue led to the enactment of the Law Concerning the Promotion of the Use of Recycled Resources (the former Recycling Law), led by MITI in 1990. The Ministry of Health, Labour and Welfare announced the revision of the Waste Disposal Law in 1991. Furthermore, the government introduced the Law for the Promotion of Sorted Collection and Recycling of Containers and Packaging in 1995 and the Home Appliance Recycling Law in 1998. During the law making process, extended producer responsibility (EPR) was incorporated to clarify the responsibility of waste generators. The EPR has been gradually adopted by major global companies, which also introduced corporate social responsibility (CSR) as a corporate development strategy.

### **Establishment of promotional measures toward a 3R society**

With the previously-mentioned acts, the concept of a “3R society” has spread nation wide. Japanese waste treatment policy makers have been greatly affected by measures created by EU countries, especially Germany. The Japanese concept of a 3R society was also derived from Germany’s “Gesetz uber die Vermeidung und Entsorgung von Abfallen” in 1986, and

“Kreialaufwirtschafts-und Abfallgesetz-Krw-/AbfG” in 1994. It was designed to encourage the shift of the nation’s waste management policy from disposal to recycling under sustainable economic development.

In Japan, the Law of Promotion toward Establishing 3R society was enacted in 2000. During the law making process, the Ministry of Environment (former Ministry of Health, Labour and Welfare) and the Ministry of Economy, Trade and Industry (former Ministry of International Trade and Industry) had differing opinions regarding this law. METI saw waste as a valuable resource for the society, while MOE viewed waste as a threat in terms of public health. On the other hand, the Ministry of Land, Infrastructure, Transport and Tourism (former Ministry of Construction) and the Ministry of Agriculture, Forestry and Fisheries (former Ministry of Agriculture and Forestry) enacted the Construction Recycling Law and the Food Recycling Law, respectively. At the same time, the Green Purchasing Law was also enacted.

In that period, the 3Rs (reduce, reuse and recycle) was adopted as a promotional theme for recycling campaigns.

### **Japanese Automobile Recycling Law and background: 1995 – 2005**

The Automobile Recycling Law was enacted and came into force in 2005. Its official name was the Law of End-of-Life-Vehicle Recycling. The acronym ELV was created to stand for discarded vehicles that serve as recyclable resources. The purpose of the law thus is to efficiently use and recycle ELVs. METI led the lawmaking while MLIT is not actively involved in it.

In May 1997, METI published its policy of ELV recycling under the title of “Initiatives for ELV Recycling,” amid concern over a growing number of derelict vehicles illegally left in city areas and islands since the 1990s. The policy included: 1) cutting the use of harmful substances in car making; 2) reducing the volume of shredder dust; 3) setting up appropriate root of car recycling; 4) efficient recycling by utilizing market mechanisms, and 5) clarifying role-sharing for each player.

Based on this policy, the Japanese Automobile Recycling Law was enacted and the rules of acceptance/delivery of ELVs were established. New/used car dealers, repair factories, and some dismantlers act as “receivers” of ELVs. In the electronic manifesto, which means transfer report by internet, the whole process of an ELV recycling from acceptance, dismantling to the final delivery of ASR to carmakers is monitored. This is called the “Japan model.” The Automobile Recycling Promotion Center was also created by the authorities, including METI, to manage the income

and expenditure of the recycling system. The top management position of the organization was first taken by an ex-METI official and then the center was led by academics. Currently, they are Masakatsu Hiraoka, environmental sanitary engineering, and Takashi Gunjima, environmental economist.

In this system, the “advance payment” of recycling fees was established. The owner pays the recycling fee in advance when he/she purchases a new car. The advanced payment method was proposed during disputes originating from pollution in the Teshima Affair. The reason for advanced payment was persuasive because people felt the necessity of covering the costs for the recycling of discarded vehicles across the country. The advance payment method was also designed to encourage carmakers to develop easy-to-recycle cars which help reduce the cost of recycling. As of the end of June 2012, approximately 850.6 billion yen of pre-paid recycling fees was pooled in accordance with the Japanese automobile recycling system. Most of the money is used to purchase government bonds, government-guaranteed bonds and local government bonds. The most important point of the Japanese automobile recycling system is “information management technology.” From the electronic manifesto, a total management system was established for waste and/or resources with potential monetary return. This generated a one-trillion yen fund pool.

### **Internationalization of Automobile Recycling Law: 2004 – 2008**

Around the year 2004, Toyota Motor Corporation, had grown to build a strong presence in the automotive industry. Its presence peaked in 2005 when the World Exposition was held in Aichi Prefecture. In contrast, Nissan Motor Company was suffering, and Mitsubishi Motors Corporation faced recall problems with its heavy-duty vehicles. Mitsubishi Motors Corporation then committed to improving safety measures and after sale services. Parts sales and the car repair businesses grew based on local business bases. The used car export business grew into a global powerhouse due to the impact of the Internet. Pakistani buyers and brokers became the leading group, and in 2007, they made Fushiki Port, Toyama Prefecture, an export base for Japanese used cars bound for Russia and Arab countries. But used car exports to Russia sharply declined in 2009 when the Russian authority significantly raised the import duties of such cars. In 2010, exports to that country showed a slight recovery and Fushiki Port regained the top position for used car exports to Russia.

However, in the automobile repair business, which is authorized by MLIT, the market has been shrinking. Moreover, the car repair business

has been forced to operate on a slim margin in an over-saturated market. This is due to the prolonged period for mandatory vehicle inspection which was brought about by an economic agreement between Japan and the United States in the 1990s. In the car aftermarket, various types of products ranging from genuine parts and used parts to imitation ones were traded by middle- to small-sized companies and the production, distribution, and consumption (or waste) of such parts expanded globally. Some waste, which is hard to properly recycle, began to show up in the global market. Used catalytic converters are an example and are the only recyclable product which is linked to businesses in the United States. Various precious metals, such as rhodium, palladium and platinum, are included in the used catalytic converters and the sales routes were established by the market.

Under those circumstances, Japan's environment minister, Yuriko Koike of the Koizumi administration, declared an "initiative" establishing a 3R society through the effective use of natural resources at the Group of Eight Summit in 2004. At that time, illegal disposal of electronic parts, so-called "E-waste," was a serious concern in developing countries.

The author stresses that, under the Japanese Automobile Recycling Law, the number of processes and recycling of ELVs are strictly monitored on a one-decimal-place basis. In fiscal 2009, the number of accepted ELVs increased to 3.92 million units due to the scrap-incentive program. That figure declined to 3.65 million units in fiscal 2010 and it fell further to 2.96 million units in fiscal 2011. In Japan, ELVs are expected to become scarcer amid a declining youth population and an aging society, an economic downturn, as well as a trend of young people turning away from driving.

### **Review of Japanese Automobile Recycling Law: 2009**

In the years since the 2005 introduction of the Automobile Recycling Law, the auto market conditions have dramatically changed. The first reason is a sharp growth of demand for natural resources in emerging economies, including BRICs, resulting in the international development of the recycling business for both parts and materials. The second reason is the rapid growth of carmakers in emerging economies, including China and India, as well as a reduced roll for carmakers in developed countries. It is also important to note that the Japanese carmakers approached a turning point which saw a sharp decline in terms of human and economic resources.

Because of this, "A Report on the Evaluation and Discussion of the

Automobile Recycling Law” in January 2010 was presented on the website of METI (<http://www.meti.go.jp/report/data/g100129bj.html>). In the report, four points were discussed: 1) how to clarify the difference between handling used vehicles and ELVs, 2) advanced and sustainable use of ELVs, 3) stable operation of the automobile recycling system and 4) the systems’ flexible response to changes for the mid- to long-term.

With regard to the advanced and sustainable use of ELVs, the report raised three issues: A) promotion for the use of reused parts; B) building a collection system for warning flares, tires, nickel-metal hydride batteries, and C) advancement of the automobile recycling system. Although the word “advanced or advancement” was repeatedly used in the report, it is nebulous. It is speculated that “advanced or advancement” means efforts to develop new dismantling and shredding technologies to further cut ASR as well as to further increase the material recycling rate of ELVs. The report also referred to proper management or even a reduction of harmful substances such as heavy metals, for which the EU’s ELV directives strongly suggested. In this study, “utilization of reused parts” will be discussed. In the above-mentioned METI report, the following excerpts were taken from the “sustainable use of ELVs.”

The promotion of the use of reused parts, which were taken from ELVs, is a highly effective way to control the whole volume of waste. The market of reused parts, which has been led by reused parts sales networks, accounts for 6 percent (estimated at 105.0 billion yen) of the total replacement parts market (estimated at 1.8 trillion yen) in Japan. There is room for expansion of the reused parts market. It is necessary to integrate different standards of quality among parts sales networks into a common one to create a user-friendly platform of reused parts in the market.

The use of reused parts will provide benefits by limiting CO<sub>2</sub> emissions. By showing the benefits to users, the diffusion of reused parts is expected. Coordinated efforts between companies and the government are needed to help expand the use of reused parts.

The table below summarizes the “used parts,” “recycled parts,” and “reused parts.”

### Definitions of recycled and other parts:

Name	Definitions
Recycled parts	Group name of recycled parts with a certain level of quality. It consists of reused parts and rebuilt parts
Reused parts (used parts)	Taken from ELVs for reuse. The quality is checked before shipment.
Rebuilt parts (Re-man parts)	Worn portions or damaged portions alone are replaced with new ones. The remaining portion is reused. It is tested (quality, performance) before shipment.
Dismantled parts and junk parts	Taken from ELVs and used “as is” with no quality test.

The Ministry of Economy, Trade and Industry

### Features of reused parts

Reused parts are removed from ELVs then examined and checked to meet the standards for products in terms of appearance and functionality. In other words, such parts are not necessarily taken from all ELVs which arrive in the recycler’s site.

Automotive parts, in general, have different specifications for each carmaker, vehicle type, and year of manufacture. A single part, which is taken by a recycler, does not always match with the part in demand. Therefore, recyclers began sharing parts information with other recyclers to find matched parts for their customers. Since 1985, the “recycled parts sales networks” have been moving toward group-wide marketing.

With the development of recycled parts sales networks, computer-based transactions of such parts have increased. The networks also helped recyclers to prevent opportunity losses. The Japan Automotive Parts Recyclers Association (JAPRA) was organized as a nationwide group of such networks under the umbrella of METI.

### Distribution of reused parts in the market

According to a private think tank, Yano Research Institute Ltd., the main customers of reused parts are repair factories. They take a 36.4 percent share of total sales, which is followed by recycled parts sales networks (26.4 percent) and new car dealers (12.6 percent).

In the recycled parts sales companies, the supply of reused parts accounts for roughly 40 percent of the total supply of recycled parts. Currently, they are aiming to achieve a 50 percent reused parts supply rate



by strengthening sales through the recycled parts networks as well as a lineup extension of such parts.

The use of reused parts is now expanding, due primarily to their low price. By customer group, 25 percent of car repair factories are actively using reused parts, and 18 percent of regional parts wholesalers are doing so. On the other hand, new car dealers are reluctant to use such parts because their priority is to provide users with feelings of safety.

Of course, the car repair factories acknowledge the risk of inferior quality reused parts. According to a survey of car repair factories, conducted by the major recycled parts network, NGP, 26 percent of them answered that the most important factor for handling reused parts is “safe products” and 25 percent responded “a balance between the quality and price.” Therefore, in order to expand the market, recycled parts networks attempted to provide the feeling of safety for users. At the same time, they decided to remove the image of “you get what you pay for” from reused parts and launched campaigns promoting the image of good quality reused parts.

Recycled parts networks have already set up their own quality levels for reused parts and have begun providing quality information to users, including car repair factories. Under the quality standards, the criteria and testing methods are set mostly for exterior parts (bumpers, doors, etc.), driveline parts (engines, transmissions and other driveline parts) and electric parts (starters, alternators, etc.).

### **Efforts to expand the use of reused parts**

So far, reused parts sales have been growing thanks to their most appealing point, low price. However, recently their market position has been declining as the prices of manufacturers’ “genuine parts” or “secondary brand parts” are falling. As a side note, “secondary brand parts” are produced by Japanese car makers not as best parts but as economy parts.

Under difficult business conditions, a new prospect of being “eco-friendly” appealed to reused parts users. The Green Point system was an outcome of such efforts. As part of the system, savings of CO<sub>2</sub> emissions by the use of recycled parts are converted to numerical figures and forwarded as contributing to the prevention of global warming. In June 2005, JAPRA, jointly with Waseda University Environmental Research Institute, began to develop the system. The system was already in-service as of May 2009. The calculation of Green Points is based on the life cycle

assessment (LCA). Developers measure the weight and materials of each part of the automobile and then compare the volume of CO<sub>2</sub> emissions used from the reused parts making process (taken from ELVs, washed and tested, etc.) and those generated from the new parts manufacturing process. Major recycled parts networks now use the green points to appeal to customers who want to contribute to the environment. For example, the CO<sub>2</sub> emission volume from parts delivered to a repair factory are easily shown in figures, by which the repair factory understands how they contribute to reduce CO<sub>2</sub> emissions by the use of recycled parts.

A project was conducted to study the effect of the incentive program for the use of reused parts. Under the direction of the Ministry of Environment, JAPRA, jointly with Waseda University Environmental Research Institute, BS Summit (car repair factory group), and Coop Oita (consumer group in Oita Prefecture), carried out the “project for visualizing reused parts inventory and determining the effect of the incentive program on the use of reused parts through the CO<sub>2</sub> emission reduction information platform.” Even for a short period, recycling group, car repair factories and consumers joined forces to encourage the use of reused parts by providing green points to users.

Meanwhile, a system was agreed upon in the industry toward establishing unified standards for quality and the guaranteeing of reused parts. As for the quality of reused parts, differences among parts sales networks are narrowing. As for the guarantee system, JAPRA announced the guidelines for reused parts at the end of 2010. It is expected to become an industry-wide standard because it will prevent poor quality parts from being traded in the market. Problems with poor quality used parts are still found in the market because transactions of such parts are mostly conducted through Internet auctions and routes other than established recycled parts networks. In other words, the unified standards of quality and guarantees of reused parts is one of the most urgent issues for the recycling industry. Currently, most reused parts are utilized for late-model vehicles. But the industry needs to increase the supply for older vehicles as the average service life of vehicles is likely to be extend in the future. Reused parts for older vehicles will be accelerated and set apart in a different category from new parts. There will be an opportunity for reused parts to be more widely used than before.

### **Efforts to expand the use of rebuilt parts**

Rebuilt parts are used as substitutes for reused parts. Rebuilt parts are manufactured in the following production steps: 1) disassembly of "core" parts, 2) washing, 3) inspection, 4) machining process, 5) replacement of parts, and 6) re-assembly and testing. The most important feature of rebuilt parts is that they exceed a certain level of quality. Quality has been secured based on originally accumulated know-how of production systems by each maker. That is the strength of rebuilt parts makers. But, at the same time, it is labor-intensive work because every production step is conducted manually. Rebuilt parts makers thus are going to have to use overseas factories to achieve low-cost operations. The quality of rebuilt parts also depends on the replacement rate of the parts in production. Replacement of many parts means higher quality. The cost of parts replacement is said to be around 30 percent of the unit price of rebuilt parts. Major rebuilt parts are engines, transmissions, drive shafts and other driveline parts, as well as alternators and starters. As for exterior parts, only a few makers produce rebuilt parts for bumpers and lamps.

In general, most rebuilt parts have one- to two-year guarantees which encourages repair factories and other users to lessen the risk of such parts. Recently, drive shafts have had their prices fall as rebuilt parts makers increase production. The price of drive shafts has fallen to levels almost equal to that of reused parts, resulting in a price war in the industry. As a result, repair factories which had used reused drive shafts, have turned to rebuilt parts. Demand for reused parts is being overtaken by rebuilt parts. One reason for the expansion of the rebuilt parts market is that carmaker affiliated firms, such as regional parts wholesalers and new car dealers, are likely to support rebuilt parts because they have more confidence in the safety of such parts than in reused parts. The high quality of rebuilt drive shafts is winning support from users.

Industry watchers say, in some cases, reused parts, which are only lightly repaired, are sold in the market as "rebuilt parts" because of a higher selling price than reused ones. In addition, poor-quality rebuilt parts which are made overseas and only disassembled and washed (i.e., not tested nor part-replaced) are entering the market. These moves may negatively affect the reliability of rebuilt parts.

Although there are voices calling for unified quality standards of rebuilt parts, many people say it is difficult to create such industry-wide standards

because each maker has been doing business with its own standards.

### **Impact of foreign-made ultra-low-priced replacement parts**

Due to the expanding market of Japanese carmakers and suppliers in overseas countries, there are an increasing number of imports to Japan of replacement parts, which are manufactured abroad. Such foreign-made ultra-low-priced parts are a source of strong concern among users regarding quality. For some parts, a special technique and processing are required for installment. According to a private sector think tank, it was found that 82.4 percent of parts wholesalers do not use foreign-made ultra-low-priced parts, followed by 70.3 percent of regional wholesalers and 66.2 percent of specialist repair factories. Such parts are not used by 81.8 percent of new car dealers, either. Only 8.3 percent of specialist repair factories answered that they often use such parts.

### **Comparative analysis of replacement parts sales channels between Japan and the United States**

Japanese car repair factories procure parts mostly from regional parts wholesalers (RPWs). In order to supply parts to repair factories, RPWs procure each carmaker-brand parts from carmaker affiliated parts sales firms (which are capitalized by each carmaker and dealers), but procure original maker brand parts from parts wholesalers. For repair factories, the quality of the parts is the most important factor for selection because they want to avoid claims and reports of problems from car owners after repair. Then they also consider other factors, including their profit margin, to decide which parts they will purchase. Repair factories usually have no inventory of parts, excluding consumable ones, and they send requests, via FAX, phone call, or Internet, on the vehicle to be repaired (vehicle type, year of manufacture, etc.) to regional parts wholesalers. RPWs search for the parts in their own inventory and deliver them to the customers (repair factories). If they are not found in the inventory, RPWs ask parts sales firms to procure them.

In the United States, there are various routes for parts procurement. Small-scale repair factories, which have no electronic parts catalog (EPC) system, make a phone call to a jobber (regional distributor) to get parts. Then the jobber delivers the parts to the repair factory. If the parts are not available at the jobber's site, the repair factory calls other jobbers, parts retailers, or car dealers. For carmaker-brand parts, a car technician working for the repair factory goes to car dealer to get them because jobbers usually

do not handle such parts. On the other hand, large-scale repair factories send parts orders through a computerized parts searching system, which is linked to major parts distributors.

In Japan, new car dealers use carmaker-brand parts (“genuine parts” or “secondary brand parts”) for replacement and sell them at the manufacturer’s suggested retail price (MSRP). Car repair factories choose the parts from carmaker-brand parts, original maker brand parts, reused parts, and rebuilt parts, considering quality and profit margin. In most cases, repair factories apply the MSRP to the replacement parts. On the other hand, car shops and other parts retail firms sell private label parts for popular parts as well as original maker brand parts.

However, in the United States, repair factories control the pricing of parts. Price competition does not cause a big availability gap in the same region because car owners are strongly price conscious about parts and there are numerous repair factories around.

### **Comparative analysis of rebuilt parts sales channels between Japan and the United States**

On the other hand, U.S. carmakers set up a master depot in the main factory of the maker as well as regional depots in each region through which rebuilt parts are supplied to car dealers across the country. Car dealers use many parts for repair at their service factories, while selling parts to car owners at their stores. They also wholesale parts to local repair factories. Previously, parts makers had sold their parts to repair factories mostly through warehouse distributors (WDs) and jobbers. After the 1970s, parts retail chains grew and became competitively priced in the market. To cope with this, parts wholesalers organized scheduled purchasing groups, and jobbers began to sell parts directly to car owners by upgrading stores. Through competition between retail chains and parts sales firms, distribution channels of rebuilt parts have become simpler. Some WDs began to sell parts directly, over the jobbers’ heads, to repair factories, while large-scale jobbers procure parts directly from carmakers. The U.S. sales channels of rebuilt parts has been changing indeed. The author stresses that the DIY culture, in which car users buy parts and repair their cars by themselves, has been embraced in the United States. With this background, parts retail chains with nationwide operations have grown rapidly since the 1960s. Light repair service chains, which target specific repairs, are also developing in the country. The headquarters of the chains

purchase parts directly from parts makers and supply them to franchisees.

In the United States, the market share of replacement parts, so-called “aftermarket parts,” which are different from genuine parts, is very large compared with the Japanese market. Aftermarket parts have long been produced by specialist aftermarket parts makers in the United States. Parts makers provide different choices for parts selection to meet the needs of each sales channel. In the engine and transmission category, rebuilt parts are widely used by repair factories. However, reused parts are not so often used in the U.S. industry. Vehicles on U.S. roads are used much longer compared with those in Japan therefore there are few used parts in good-condition in the U.S.

As for junk parts for export purposes, in both Japan and the United States, foreign buyers have formed a variety of sales networks. Chinese, Indian, Malaysian, and Pakistani buyers play a major role in the trade of such parts as well as used vehicles. But details on this have not been researched.

## **Conclusion**

As of 2011, some common elements have been found between Japan and the United States regarding the automotive replacement parts market, they are: 1) expanding demand for high-quality parts, 2) increasing demand for safety, 3) increasing vehicle age, 4) items of replacement parts are increasing as model changes of vehicles accelerate, and 5) the need to respond to the increasing number of next-generation cars (hybrid cars and electric vehicles).

On the other hand, differences are found in some areas. Foreign made ultra-low-priced parts are a noteworthy part of the market in the United States, while they are a smaller part in the Japanese market. Although the use of recycled parts is very high in the United States, such parts are gradually becoming popular in Japan as well. However, rebuilt parts are major elements in recycled parts in the United States, while reused parts are mostly traded in Japan. Reused parts are major items in the Japanese recycled parts market. The Japanese government’s measures are also aimed at the promotion of reused parts.

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