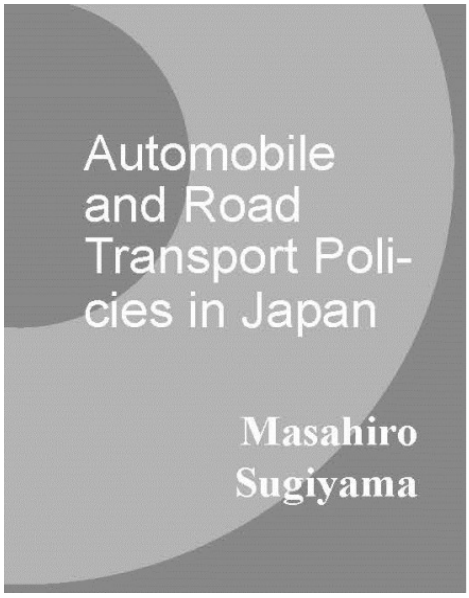


Japanese Transport Trends for Past

			2012	2013	2014
Transport volume[1]	Passengers (×100 million passenger-kilometers)	Total	13356	14000	14285
		Motor vehicles for private use	7924	8389	8522
		Motor vehicles for commercial use	739	757	746
		Railways	3951	4044	4144
		Maritime	30	31	33
		Aviation	712	779	841
	Freight (×100 million ton-kilometers)	Total	4286	4109	4229
		Motor vehicles	2327	2117	2159
		Railways	200	205	211
		Coastal shipping	1749	1778	1849
		Aviation	10	10	10
Number of motor vehicles owned* (×1000)[1]		Total	75596	79625	80273
		Trucks	15009	14852	14749
		Buses	226	226	227
		Passenger cars	58729	59357	60051
		Special vehicles	1645	1655	1670
		Two-wheeled vehicles	3502	3536	3576
		Light motor vehicles	30253	30253	31074
Driving license holders** (×1000)[2]		Total	81488	81860	82076
		Male	45437	45464	45430
		Female	36051	36396	36646
Traffic accidents[3]		Number of accidents (×1000)	692	665	629
		Fatalities within 30 days	4411	4373	4113

* Figures as of the end of March (registered vehicles + light motor vehicles)
** Figures as of the end of December
References for data:
1) Transport volumes: Annual Statistical Report on Motor Vehicle Transport, and Transport-related Statics Data Collection Annual Statistical Report on Air Transport, Annual Statistical Report on Railway Transport, and Annual Statistical Report on Coastwise Vessel Transport, and Transport-related Statistic Data Collection.
2) Motor vehicle ownership: Automobile Inspection & Registration Inspection Association
3) License holders and accidents: Traffic Statistics

1. Domestic modal share of transport and automobile transport statistics in Japan

Japan consists of four main islands (Honshu, Hokkaido, Shikoku, and Kyushu), all surrounded by the sea. The geographical feature of Japan is that it has no international land borders. The area of the country is approximately 380,000 square kilometers, where more than 127 million people live. Japan's population, like in some other developed countries, is projected to decrease in the future; according to an estimate, it will have fallen to 44.7 million by 2100 — about one third of the current population. Japan's mountainous geography limits the habitable area. The population tends to be concentrated in city areas, where traffic congestion countermeasures are needed. By contrast, in rural areas, many towns are facing depopulation and ensuring transport services (due to the withdrawal of conventional public transport, etc.) in depopulated rural areas is becoming an urgent problem to be solved. Besides the four main islands, there are over 68,000 islands within Japan, of which over 400 are inhabited. For those inhabited islands, the current issue is how to continue providing transport services by sea and/or air over the routes that are not likely to be profitable.

A highly mobile society inevitably depends on transport services provided by motor vehicles, railways, ships, and aircraft. In terms of the share of domestic transport by transport mode, motor vehicles took high percentages for both passenger and freight transport. Passenger transport excluding the transport of motor vehicles for private use for the fiscal year 2012 assigned the biggest share (78.9% of passengers, and 72.5% of passenger-kilometers) to railways. motor vehicles came in the second with figures of 20.8% and 13.6%, respectively. For maritime transport, the figures were unavailable and for aviation, 0.3% and 14.0 % respectively.

For freight transport in the same year, 91.4% of the tonnage and 51.3% of ton-kilometers were completed by motor vehicles. Those figures are 0.9% and 5.0% for railways, 7.7% and 43.4% for coastal shipping, and 0.0% and 0.2% for aviation; so the percentage of motor vehicles share was the highest. With alteration of the method of investigation and aggregation in the fiscal year 2010, the share of motor vehicles passenger transport decreased drastically from the shares of 65.5% and 57.2% respectively in the fiscal year 2009. The shares of railways in the same year were 34.3% and 35.7%.

Historically, the ship and railway have been major modes in the first stage of modern transport in Japan. It was after World War II that motor vehicles and aircraft came into popular use. In the fiscal year 1960 (more than half century ago), for passenger transport, the percentage of railway share was 60.6% for the number of passengers and 75.8% in passenger-kilometers — considerably higher than the percentage of motor vehicles share (38.9% for the number of passengers and 22.8% in passenger-kilometers). But in freight transport, the share in tonnage was 75.4% even in the fiscal year 1960. However, in ton-kilometers for the same year, it was only 14.9%; not until about 20 years later did it exceed 50%. We can identify a significant development in freight transport by pointing to the major role that coastal shipping used to play. In ton-kilometers, the percentage of coastal shipping share was close to 50% until it yielded first place to motor vehicles in the fiscal year 1985. In Japan's case, coastal shipping would be able to play a fallback role in case of a "modal shift" from motor vehicle trunk line transport services to rail or marine transport.

In motor vehicle transport statistics, there are passenger vehicles roughly divided into buses, passenger cars, and trucks for private use, with the biggest share going to passenger cars. Passenger cars are further divided into commercial use and private use vehicles; those for private use have the highest share. Those for commercial use are required by the Road Transport Law to obtain a license (or, as is mostly the case in recent years, a permit) to transport passengers (or freight) on request. Private use vehicles are defined as passenger vehicles other than those used for commercial use. A

Arterial road network of Tokyo region with peculiar category in the Japanese system is that of "light motor vehicles," reserved for vehicles whose total engine displacement is less than 660 cc. Statistics for private-use passenger cars and trucks are therefore derived from the combined lists of "motor vehicles registered" and "light motor vehicles."

In freight transport statistics, motor vehicles are divided into those for commercial use and those for private use. Recently, both in terms of tonnage and in terms of ton-kilometers, there has been an upward trend in commercial use percentages. This is because commercial transport, which has a higher load factor, is now offering customized services that make it competitive with private transport.

2. Transition of Japan's transport policies

One of the biggest changes in policies regarding roads, which are playing an important role for the motor vehicles transport services, was the privatization of the four road-related public corporations that had been building and managing toll roads. Another was the transfer of the special funding source system for road works, under which earmarked taxes (e.g., gasoline tax) had been used for road improvement, to the general revenue fund (more about those in Chapter 4). Here, let us look at the main changes in each mode of transport.

Railway services were at first under the direct control of the government. The Japanese National Railways (JNR), which became a public corporation after World War II in 1949, exercised uniform management at nationwide. Due to the inefficiency of the nationwide organization and the mismanagement of the public corporation, an enormous deficit had accumulated. The major reform that was finally brought about was the regional division and privatization of Japanese National Railways in April 1987. Honshu was divided into three areas (East, Central, and West Japan) served by three railway companies; one company was allotted to each island of Hokkaido, Shikoku, and Kyushu. The management form of the companies was decided upon as joint stock.

Traditionally, private railway companies, mainly in metropolitan areas, played a greater role in Japan compared to other countries. Now, for more than half a century, there has been a history of cooperation between different railway companies in managing direct transport services over their own routes. The six established railway companies for passenger transport service from JNR, in their form of management, are now no longer different from the already existing private railway companies; it is possible for them, for example, to be involved in new businesses. In railway stations in recent years, various commercial facilities have been set up and people can buy commercial goods through multi-purpose magnetic tickets (SUICA, etc.) in those facilities. That separation system was also implemented for the super express railway train, Shinkansen when the Japanese National Railways was reformed.

Hokuriku Shinkansen

Source: Institute of Transportation

The freight railway company was created as a single company for the whole country. It didn't own railroad tracks, or the separation system of operation and infrastructure was adopted.

The reform of Japanese National Railways, by the way, gave considerable impetus to the reform of railways in the developed countries in Europe.

As for ocean shipping, the Japanese merchant marine fleet, which had been dealt a crushing blow in World War II, was reorganized into a grouping of ocean shipping companies in 1964 with preferential financing from the government. This was done in order for the fleet to play a role in the transport sector to help to sustain Japan's high economic growth. Ninety-five companies (which included most of the ocean shipping companies of those days) were organized into eighty-eight companies in six groups.

This grouping of ocean shipping companies is considered to be the most significant event in Japan's maritime industry since World War II. After further mergers of the core companies among those six groups, there are now three major companies — Nippon Yusen Kaisha, MO Lines, and Kawasaki Lines. These three major companies account for about 70% of the total income in ocean shipping.

In 2013, the Japanese merchant marine fleet transported 10.3% of the world's cargo by volume. However, when it comes to the nationality of a ship, the number of foreign chartered ships (e.g., flag-of-convenience ships) is overwhelming. Increasing the number of Japanese ships and getting them registered is an ongoing policy problem that needs to be solved. Also, the international ranking of ports in Japan is getting lower and lower. In terms of the volume of containers handled, the Port of Tokyo dropped to the world's 28th in 2014. The Japanese government is attempting to get out of this situation by pushing for the improvement of the ports in the Tokyo-Yokohama and the Osaka-Kobe areas, utilizing their favorable situation (i.e., with big cities as their hinterlands) to develop them as ports for container cargo.

After World War II, all Japanese commercial aviation was prohibited by GHQ (General Headquarters). It was reopened in 1951, and international flights started in 1954. The government policies of 1970 and 1972 had regulated the airline business with a view to promote coexistence and shared prosperity among airline companies. In 1985, however, following the trend toward the deregulation policy (started in the U.S.A.), those regulations were rescinded, which made it possible for new airline companies to enter into the market. Thanks to those policy changes, Skymark Airlines (bankrupted in 2015), Air DO, and others have already started up businesses.

When commercial aviation went back into operation, the initial plan was to form two domestic airline companies. In reality then-existing companies were the three major companies — Japan Airlines, All Nippon Airways, and Toa Domestic Airlines (later changed to Japan Air System). Later, Japan Airlines (handling mainly international flights) and Japan Air System (mainly domestic flights) merged as Japan Airlines, so that Japanese airline system consisted of the two major companies. Finally, Japan Airlines, which had been suffering from deficit after the merge, fell into bankruptcy in January 2010; it is now reorganized and re-listed on Tokyo Stock Exchange.

As of April 2014, there are 82 airports that conform to the Airport Law. The three airports that are used for international air transport —Narita, Shin-Kansai, and Chubu — are structured as joint stock companies. Tokyo (Haneda) international airport is operated under government management. Narita, which is located in the metropolitan area of highest demand, is purposed mainly for international transport with two runways (4000 and 2500 meters), and yearly slot number 220,000. Tokyo (Haneda), which has been used for domestic transport, has four runways (3000, 3000, 2500, and 3120 meters) and total slot 350,000 per year. From October 2010, an international flight service was also reopened. Ultimately, the total yearly number of slots at Narita and Haneda airports together is projected to be 747,000 plus max. 79,000.

3. The automobile industry and automobile transport policies in Japan

The automobile industry is the key industry of Japan. Currently, the number of people who work in motor vehicle-related businesses is 8.7% of the total work force. Income from shipment of its products is 17.8% of the total income from all shipments. The automobile industry shares less than 30% of all capital investment, and its share in the research and development is 21.4%; it is indeed the driving force of Japan's economy. Led by Toyota, Nissan, and Honda, there are 14 motor vehicle manufacturers.

Until 2008 more than 10 million four-wheels vehicles had been produced per year, but

in 2009 the number of the vehicles produced fell to 7.9 million, then after recovered to 9.8 million in 2014. Since 2005, the number of motor vehicles owned has been over 75million. Though its recent trend is downward, still the number of passenger cars is increasing slightly; as of December 2012, it was 58 million. In 2009, the number of people who had a driver's license was 82 million that signified Japan entered an era in which everybody drives.

Though Japan's automobile industry are now facing the severe situation, still there have been steady improvements in environmental measures, both "hard" and "soft." The amount of carbon dioxide emitted during the manufacturing process has been consistently reduced. Legal performance standards of new vehicles on fuel efficiency and emission gases have been successful in reducing greenhouse gas emission and regional air pollution. By 2013, the average mileage of a gasoline-powered motor vehicle had been improved to 21.3 kilometers per liter; the reduced amount of emissions conforms to the world's strictest regulatory standard. Japanese FCV MIRAI was set to be sale in December 2014. In addition, steps have been taken to spread and promote ecological-driving (also energy-saving driving), to improve preventive equipment for safety to avoid accidents, and to develop and promote automatic safety equipment; those efforts have contributed to a reduction in the number of traffic accident fatalities. Though motor vehicle improvements cannot by themselves reduce the number of traffic accidents, still the annual number of fatalities (4113 persons in 2014) has decreased for 14 years running.

MIRAI

Source : TOYOTA

On the negative side, the automobile industry and users of motor vehicles are forced to bear an excessive tax burden. There are nine different taxes related to motor vehicles. In the initial national budget for 2015, the mot 8.7% (8.3 billion yen) of the total revenue from taxes. The purchaser's initial tax burden is heavy as per international standards (motor vehicle tax, motor vehicle tonnage tax, and motor vehicle purchase tax).

Motor vehicle transport policies are trending toward deregulation. Private motor vehicles are by far the biggest number of motor vehicles owned (in 2012 percentage breakdown of motor vehicles in private use: passenger cars: 99.7% of ordinary cars, 99.2% of small cars; buses: only 20.6% of ordinary buses, but 80.0% of small buses; trucks: 63.3% of ordinary trucks, 98.0% of small trucks). Although business activities are not permitted to use private motor vehicles, such illicit activities still exist. The reality is, however, that given the overwhelming numbers of private vehicles, it is hard to take effective countermeasures. This is a problem in other countries as well.

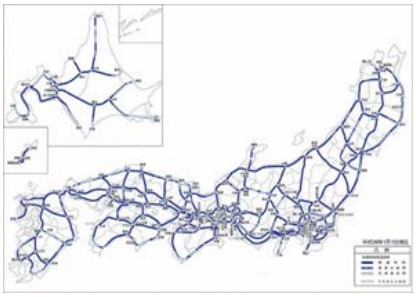
As for commercial motor vehicles that provide transport services, in 1998, the Ministry of Transport (reorganized as the present Ministry of Land, Infrastructure, Transport and Tourism) announced its intentions to basically abolish the regulations and entrust market mechanism in supply-demand adjustment. Pursuant to that policy, access to the business shifted from a licensing system to a permit system. As far as fare regulations were concerned, but bus business is only required to provide advance notification of fare changes.

With the taxi business, the authorization system remains, but the criteria for authorization are now limited to the upper and lower limit of the fare. As for trucking businesses and freight forwarding business, both of which had already been deregulated in 1990, fares can be freely determined. Basically, the expectation for the business is self-regulation through competition in the market

4. Japan's road policies

Because Japan really had no era of coach transport and there was an abrupt shift from transport on foot to motor vehicles, there were insufficient road capital stocks to accommodate automobile transport. The situation of those days is characterized in the

Expressway network



Source: Ministry of Land, Infrastructure, Transport and Tourism. Tohoku Regional Development Bureau

Arterial road network of Tokyo region with 9 radial and 3 ring roads

Source: Ministry of Land, Infrastructure, Transport and Tourism. Kanto Regional Development Bureau

report of the Watkins Commission (1956), which made a feasibility study for the (requested by the Japanese government, which was inquiring the expressway plan). In expressway between Nagoya and Kobe the beginning of the report it was stated that "The roads of Japan are incredibly bad. No other industrial nation has so completely neglected its highway system."

After World War II, the toll road system and the special (earmarked) funding source system for road works were introduced as the two main road policies. For the former, with the Law Concerning Special Measures for Highways (1952) as a basis, the building and management were conducted by public corporations. For the latter, in accordance with the Emergency Measure Law for Road Improvement (1953), a system was established in which road users paid for their road usage, creating a source of revenue to be used only for road improvement. Those systems enabled the Five-year Road Improvement Program that was started in 1954 to be carried forward. The Five-year Road Improvement Program was combined with other transport infrastructure programs to become the Priority Plan for Social Infrastructure Improvement. Those two systems played a significant role in accumulating Japan's road capital stock.

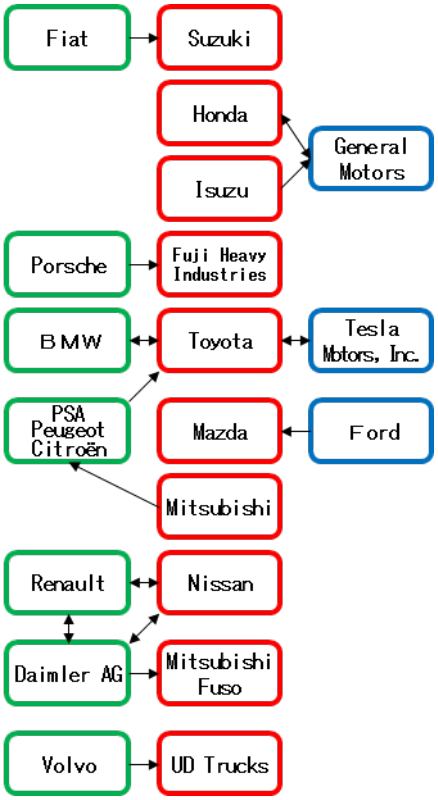
Toll roads were built and managed by four public corporations that included the Japan Highway Public Corporation (founded in 1956). As part of new initiative program, started in 2002, for streamlining special public corporations, privatization of these corporations was considered. In 2005, the four road-related public corporations (the Japan Highway Public Corporation, Metropolitan Expressway Public Corporation, Hanshin Expressway Public Corporation, and Honshu-Shikoku Bridge Authority) became joint stock companies. At that time, the separation system of infrastructure was adopted. That is: Japan Expressway Holding and Debt Repayment Agency (JEHDRA) would hold expressways and repay the debt, and six expressway companies (the Japan Highway Public Corporation alone was divided among three regions) would build, manage, and collect tolls. Unlike the privatization of railways, it typifies a separation system of infrastructure provision from its operation.

While many countries with advanced road systems are opting for road pricing, the Democratic Party of Japan, when it came into power, announced its new policy on toll-free expressways. In June 2010, social experiments started in which the toll was eliminated in limited areas. That toll-free policy goes against the redemption principle, which was the rationale for setting the toll. The new policy means that the burden will now shift from the user to the taxpayer. It will distort the competitive abilities of transport modes that are competing with the expressway service; there are many problems to be reconsidered. Now those experiments come to end.

As of May 2015, the total length of Japan's expressways is 8,190 kilometers. The final goal is to construct 14,000 kilometers, which is based on the following criterion: wherever you live in Japan, it will take you no more than an hour to access to the nearest interchange. The special (earmarked) funding source system for road works was based on the principle that those who are benefited are to pay; the system was excellent in its rationality (paying for the benefit you received from the service), fairness (avoiding free-riders), and stability (insuring a necessary source of revenue by usage).

Nevertheless, in the face of those advantages, the financial authorities acted to propose, beginning around 1980, the transfer of the road improvement system to the general revenue fund, on the pretext that the total amount of tax paid was too great, or, that road improvement, in their opinion, had already reached a level of sufficiency. It was after the turn of the 21st century that policies to transfer road improvement to the general revenue fund discussed concretely. In the beginning of 2005, government policies on reviewing the special (earmarked) funding sources for road works were announced; the decisions were made at the Cabinet level. In the end, by revising the Emergency Measure Law for Road Improvement and its successors, the system was

Partnership between Japanese, U.S. and European Automakers



Source: Editing based on JAMA information

transferred to the general revenue fund for the fiscal year 2009. The political process of extremely complicated; there is much that is not easy to understand.

The logic of the transfer to the general revenue fund contains not a small number of contradictions. A typical example is how the provisional tax rate was treated. On the assumption that the fund for road improvement would be insufficient, the provisional tax rate for many of the taxes had been set to be approximately double the tax rate in the main rules. However, even after the transfer to the general revenue fund, the policy to keep the provisional tax rate has been adopted. This obviously contradicts the argument that road improvement had reached a level of sufficiency. It is nothing but an excessive burden on road users. That is the first of many points regarding logical consistency in discussing the transfer to the general revenue fund. In 2006, members of the Japan Research Center for Transport Policy made the urgent suggestion that the logical inconsistency be corrected.

Future road improvement in Japan is to be carried forward under general revenue funding; this will require an objective and precise understanding of the road stocks so as to fulfill the needs of the actual users.