

**XXIIIrd WORLD ROAD CONGRESS  
PARIS 2007**

**JAPAN - NATIONAL REPORT**

**STRATEGIC DIRECTION SESSION ST1**

**CHALLENGES FOR THE SUSTAINABLE  
DEVELOPMENT OF ROAD SYSTEMS**

Masafumi MORI

Road Bureau, Ministry of Land, Infrastructure and Transport, Japan  
mori-m92qb@mlit.go.jp

Satoshi ISEDA

Road Bureau, Ministry of Land, Infrastructure and Transport, Japan  
iseda-s2zd@mlit.go.jp

# JAPANESE ROAD DEVELOPMENT FINANCING AND REFORM

## ABSTRACT

Japanese road development has been supported financially by the two major funding methods after the World War II: "Earmarked" road taxation and the toll road system. Almost fifty years after the full-scale road construction had begun, Japanese road conditions, once considered very poor, have improved dramatically. Supported by this vigorous road construction, Japan has recovered from the war, experienced significant economic development.

However, under the long-lasting recession, the government and the majority parties tried to introduce private sector know-how into expressway development, the domain that had previously been regarded as public, with the principle "leaving to the private sector what it can do."

In the midst of debate on the necessity for reform, the maintenance, among other items managed under the toll road system was reduced and, in October 2005, six new companies were privatized. At the same time, a new system for highway maintenance and management established an independent administrative institution that would hold and lend expressway assets and ensure the early debt repayment.

Hereafter, the private companies should realize steady development and management of expressways by pursuing efficiency and ensuring the debt repayment within 45 years by the institution, while maintaining their independence. At the same time, the companies must build public understanding and trust by providing a variety of services such as flexible fee levels through ETC.

In addition, earmarked budget, another basis of Japanese road development, is about to be reformed. The government and the majority parties have agreed that they would discuss allocating these tax revenues from earmarked account to the general account while maintaining provisional tax rates. A concrete plan to implement this shift is currently under discussion.

As the road administration authority, we believe that earmarked funding system is based upon the beneficiary burden principle that those who benefit and bear burdens should coincide. Such a system is appropriate when considering fairness, efficiency, stability, and rationality in road development.

To promote necessary road development, it is very important to establish stable financial resources while preserving the current road stocks properly. Future funding system should be approved by public and serious consideration of public needs in road development is crucial.

## **1. FOREWORD**

Last year, 2005, was a milestone in the history of Japanese road development. The road-related public corporations that had sustained the Japanese toll road system for fifty years became privatized.

In the recession that followed the “Lost Decade” in the 1990s, budget deficit had increased and the government was attacked for leaving enormous budget deficit which would hinder economic recoveries. Especially, public works have been regarded as the major components of the deficits sometimes even wasteful use of tax revenues, due to their immense investment. Under such circumstances, with the directorship of Prime Minister Koizumi, an advocate for structural change in Japan, the privatization of government-affiliated public corporations was one of his top priorities. Based on a principle "leaving to the private sector what it can do," the government tried to introduce private sector know-how into expressway construction that had previously been regarded as public.

In particular, the toll road system has long been the subject of a national debate between supporters and opponents of necessity of national expressway network. As a result, the development expressway network was reduced and a new system for the improvement and maintenance of highways was introduced. Based on this direction, the four road-related public corporations were privatized into six new companies and an independent administrative institution that would hold and lend expressway assets and ensure the early redemption of debt was established.

In addition, earmarked funds for road improvement, another mainstay of Japanese road development, were about to be reformed under the criticism of public works. The criticism is that earmarked funds are inefficient and road network development is sufficient, so earmarked funds could be transferred to general account in order to cover the budget deficit. A concrete plan to implement this shift is currently under discussion, assumed to draw conclusion by the end of this year, while respecting road users/taxpayers' opinions.

While the Japanese road system faces this turning point, this national report explores how road development system should be through an examination of the current situation as well as the twin financial supports that have until now supported the current system of road maintenance and improvements, i.e., the systems of earmarked funds and toll roads. The authors hope that this report will be a resource for global road policy.

## **2. JAPANESE ROAD DEVELOPMENT HISTORY**

After the Meiji period, Japanese road development was delayed significantly during which time the country seemed to not experience any significant coach transportation period. Instead, the government of that time prioritized development of the railway system and harbour facilities. Systematic road developments started only when the Old Roads Act was enacted and the first road improvement plan was formulated in 1919. However, that plan hit a setback due to a reduced budget resulting from the great Kanto earthquake in 1923. Even though the second road improvement plan (a 20-year plan) was established in 1933, it did not make significant progress due to limited budget. Shortly after this, Japan entered into World War II.

Full-scale development of the Japanese road system began after World War II. The transportation infrastructure at that time was extremely poor and caused a bottleneck in

both the nation's reconstruction and economy, each of which had been devastated by the war. As reported by the 1956 Watkins mission that had come to Japan from the U.S. in order to study the expressway between Nagoya and Kobe, road conditions at that time were poor and were described as follows:

"Japanese roads are unbelievably poor. There is no other industrialized nation other than Japan that has completely neglected its road network."

In post-war Japan, the toll road system, earmarked funds and five-year road Improvement programs had both served as the financial underpinnings for road development. In 1952, the Road Law was thoroughly reviewed and the current road system that includes expressways, national highways, prefectural roads, and municipal roads were established.

At that same time, a toll road system was established through the enactment of the Law on Special Measures for Road Development and Improvement and by the creation of the Japan Highway Public Corporation. The toll road system is designed to build roads quickly, particularly expressways, by borrowing and repaying the funds within a certain time period through charging toll fare to users, even with the nation's severe financial conditions.

In the following 1953, the "Temporary Measures Act Relating to the Financial Sources of Road Improvement Costs" was introduced and gasoline tax was earmarked for road development. This enabled planned road development, along with the five-year road Improvement program that commenced the following year. That system of earmarked funds was based on the idea that the cost of road development should be borne by the drivers who use those roads. Since then, the system has expanded and been reinforced to its current size of 5.7 trillion yen, including both national and local budgets, and this system forms the basis for national land development in Japan.

As to the toll roads, the nationwide expressway system that includes 7,600km was approved with the "National Development Arterial Expressway Construction Law" in 1966 (amended to 11,520km in 1987). In 1972, the pooling system, which redeems as total road network, was incorporated into the toll road system from individual redemption system. The pooling system ensures fiscal stability and reliable redemption, in totalling up toll revenues and distributing the revenue from profitable highways among unprofitable highways as well as for use in the construction of other highways. As a result of this system, the construction of national trunk roads began to develop as a comprehensive expressway network rather than as single roads.

Fifty years after full-scale road development had begun, Japanese road conditions, once considered very poor, have improved dramatically. By 2005, Japanese roads had developed into a trunk road network consisting of 7,422 km of expressways (high-standard expressways include 9,083km), some 54,000 km of national highways and around 128,000 km of prefectural roads.

Supported by this vigorous road development, Japan has recovered from the war, experienced enormous development in its economy, and has become one of the largest global economic powers with a real GDP that reached 525 trillion yen (2000 price) in 2004. The number of automobiles in Japan also increased, from 920,000 in 1955 to 74,880,000 by 2004. Concurrently, passenger and cargo transportation volume by automobile increased from 27.5 billion passenger-km to 954.2 billion passenger-km, and from 9.5 billion ton-km to 321.8 ton-km, respectively.

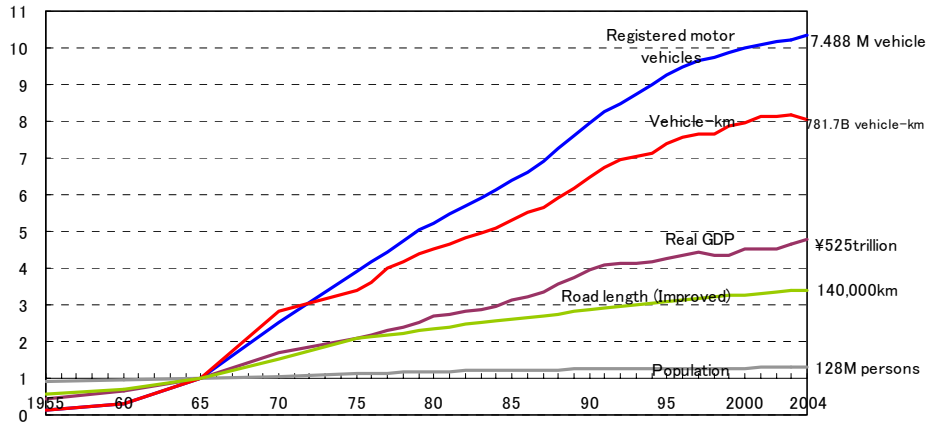


Figure 1 - Economic growth and road development

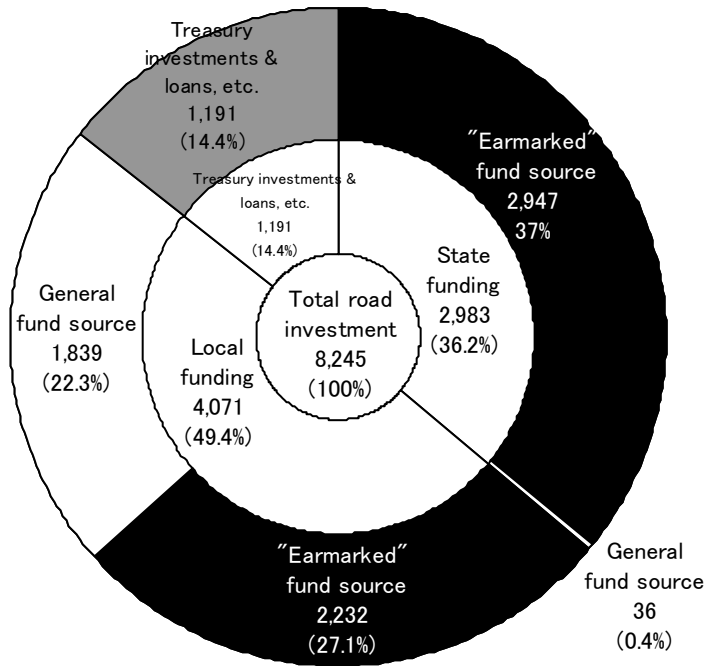
### 3. INVESTMENTS AND RESOURCES

Current road projects in Japan are categorized into three types: general road projects, toll roads, and local independent works. As a rule, general road projects are funded by the national budget (by expenditure from special accounts for road improvements) and by local budgets (by local municipality expenditure). Some portion of the general road projects is directly controlled by the central government and the remainder is managed by the local municipalities. Toll road projects are financed by mainly loans and repaid by toll revenue after completion. Subsidies are provided from national and local investments and loans. In contrast, independent projects by local municipals are solely financed by local budgets.

The following chart illustrates road investment by funding source and by project type in the 2006 initial budget. This demonstrates that among the eight trillion yen total to be invested in roads, three trillion yen is financed by national expenditure (earmarked funds), four trillion yen by local municipality expenditures (earmarked funds and general funds, each paying two trillion yen), while the remaining one trillion yen is financed through borrowing and toll revenues. Also by project type, 25% are administered by the national government, 57% by local municipalities, and 17% by highway companies and public corporations.

① by Financial Source

(Unit ¥billion)  
Composition share in ( )



② by Project type

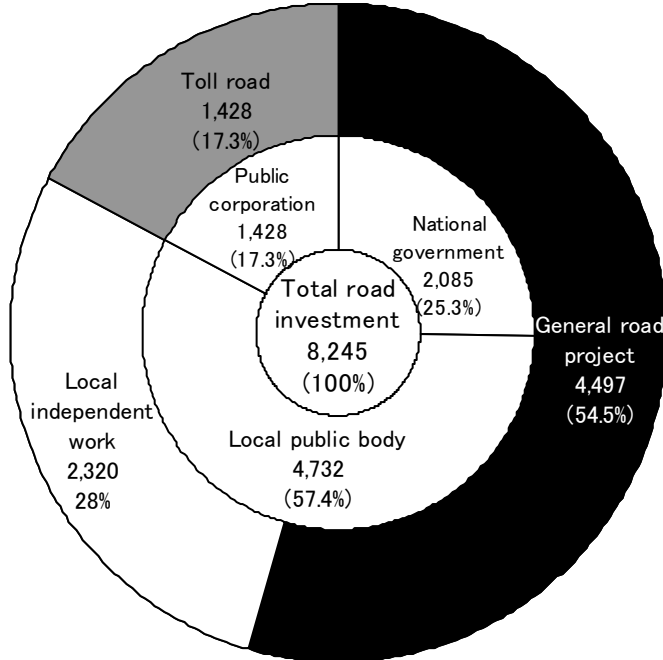


Figure 2 - Road investments by financial source and project types

## 4. DISCUSSION RECONSIDERING EARMARKED ROAD FUNDS

### 4.1. What is the system of earmarked road funds?

The system of earmarked funds for road development was initiated in 1954 when the revenue from the gasoline tax was set aside as a funding source for the implementation of the 5-year Road Improvement Program. This decision was based on the enactment of the "Temporary Measures Act Relating to the Financial Sources of Road Improvement Costs" (Today's the "Emergency Treatment Act for Road Improvement") in 1953, in order to urgently implement planned development of the poor road conditions in Japan which were lagging far behind those in other advanced nations.

National government earmarked funds for road are consisted of gasoline tax, LPG tax, and motor vehicle tonnage tax. Local earmarked funds are consisted of transfer tax collected by central government and local taxes collected by local municipalities (diesel fuel transaction tax, motor vehicle purchase tax). In 1974, Diet decided to raise the base rates of these taxes and rates have since then been gradually increased. The current provisional rate has doubled since inception of the gasoline tax and the motor vehicle tonnage tax is now 2.5 times.

However, under the financially difficult situations, in December 2005, the government and the ruling parties announced their "Basic Policy for Reviewing Earmarked Funds for Road Projects" and decided to redirect the system to the general revenue pool. However, there are strong petitions with more than 8 million signatures from car-users and automobile-related organizations.

Below, the implications of the earmarked road funds and the arguments about its incorporation into the general budget will be examined. An examination of Japan's current earmarked road funding system, one that influences the development of infrastructure, may help other countries seeking their own sustainable economic development.

**Table 1 - Earmarked road funds**

	Tax	Earmarked percentage	Tax rate	Tax income (FY2004) billion yen
National government	<b>Gasoline Tax</b> Established in 1949 Earmarked for road construction since 1954	100%	[provisional tax rate] 48.6yen /liter [basic tax rate] 24.3 yen/liter	2,836.2 (2,823.5)
	<b>Liquefied Petroleum Gas Tax</b> Established in 1966	1/2 of tax income (50% is delivered to local governments as liquefied petroleum gas tax)	[basic tax rate] 17.5 yen/kg	14 (14.2)
	<b>Motor Vehicle Tonnage Tax</b> Established in 1971	80% of the nation's share (2/3) of tax income (77.5%) (Although 2/3 of tax income is general fund source, the amount equivalent to about 80% (77.5%) is recognized as earmarked fund source based on the history of creation of the tax and use system.)	(Example: home-use passenger vehicle) [provisional tax rate] 6,300yen /0.5t year [basic tax rate] 2,500yen/0.5t year	582
	SubTotal			3,432.2 (3,424.6)
Local government	<b>Local Road Transfer Tax</b> Established in 1955	100% of Local Road Tax income (Applied with Gasoline Tax) 58/100: Prefectural and city governments, and designated city 42/100: municipalities 100% of Local Road Tax income	[provisional tax rate] 5.2yen /liter [basic tax rate] 4.4yen/liter	304.1
	<b>Liquefied Petroleum Gas Transfer Tax</b> Established in 1966	1/2of Liquefied Petroleum Gas Tax: Prefectural and city governments, and designated city	Same as Liquefied Petroleum Gas Tax	14
	<b>Motor Vehicle Tonnage Transfer Tax</b> Established in 1971	1/3 of Motor Vehicle Tonnage Tax Income: Municipalities	Same as Motor Vehicle Tonnage Tax	374.6
	<b>Light Oil Delivery Tax</b> Established in 1956	100%: Prefectural and city governments, and designated city	[provisional tax rate] 32.1yen /liter [basic tax rate] 15.0 yen/liter	1,075
	<b>Automobile Acquisition Tax</b> Established in 1968	100%, 3/10: Prefectural and city governments, and designated city	[provisional tax rate] 5% of purchase price for private motor vehicles [basic tax rate] 3% of purchase price	457.2
	SubTotal			2,224.9
	Total			5,657.1 (5,649.5)

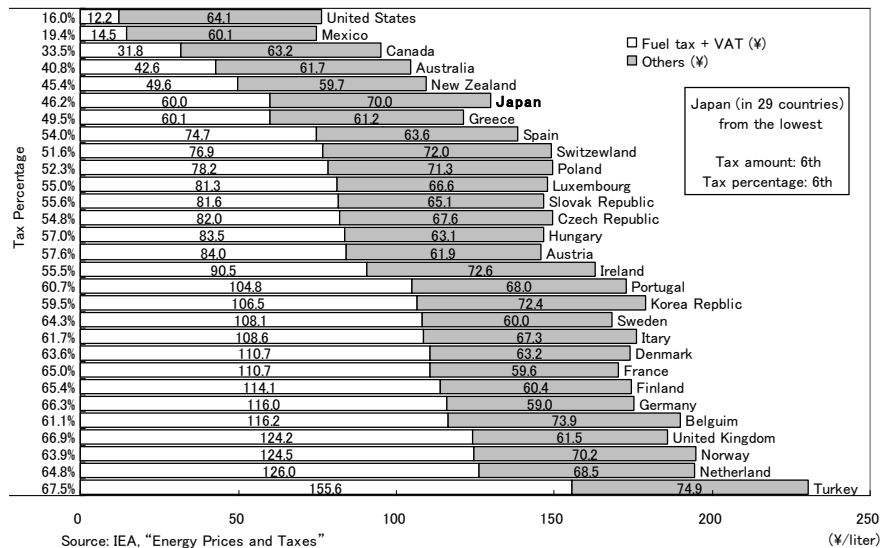


Figure 3 - Comparison of gasoline pricing and tax payments (January to March 2006)

#### 4.2. Implications of the earmarked road funds system

The implications of the earmarked road funds system will be examined herein. This current system is based upon the beneficiary burden principle that the ones who benefit and bear burdens should coincide. The scheme is that “the users of motor vehicles bear the burden of being the special funding source for road works which will be used for road improvements. Road improvements will result in the reduction of driving time and enhancement of safety, which in turn will benefit the road users”. It is generally considered that such a system is the proper way to bear the costs of road development and maintenance when concerning fairness, efficiency, stability, and rationality.

- (i) It is fair to match benefits with burdens so that the beneficiaries should bear the burdens.
- (ii) The use of roads becomes more efficient because it works as the user charge system, i.e., only those willing to pay burdens at their own costs are satisfied. The scale of tax revenues is also effective information for investment.
- (iii) It enables stable road development and maintenance because the fluctuations seen in the general funding sources, caused by the economy and other contingent factors, are relatively small.
- (iv) It is easy to get the tax payers’ support because it is a straightforward system that allocates all user payments toward road development and improvement.

#### 4.3. Points under discussion

Two points have been supported for the arguments about shift to general funding. The first is that the sufficient road network has been developed already. The second point is that the independently-managed massive funds without the finance authority are the problem. This concern includes, among others, issues of enormous funds dedicated to road development, the disturbance of earmarked funds within integrated budgetary control, and their role in causing inflexible budgets. On the other hand, there are oppositions to those opinions.

##### 1) The opinions against the sufficient road network

Many mayors in rural areas claim that the current road development and maintenance situation are still insufficient in spite of steady improvement based on the earmarked road funds system. Especially, ring roads in urban areas, necessary countermeasures against



natural disasters and environmental issues, remain incomplete and as a result have caused serious congestion on arterial roads. It is said that this congestion level on arterial roads could reduce Japanese competitiveness in the international arena.

Furthermore, there are many issues still need to be addressed, including measures against the increasing number of repairs and renewals assets, solutions for the traffic jams that amount to an annual 12 trillion yen economic loss, reduction of the traffic accidents that cause six thousand deaths and 1.1 million casualties annually, the bottlenecks in local roads, and the needed revitalization of road space including roadsides and other areas.

Based on such realities, the road administration recognizes the necessity for clearly sorting out the role of roads and appealing by necessity to the public. Consequently, in June 2006, the “Medium-range Vision for Road Development (Draft)” was released, suggesting medium-range development targets and the required amount of projects to complete to achieve the Vision.

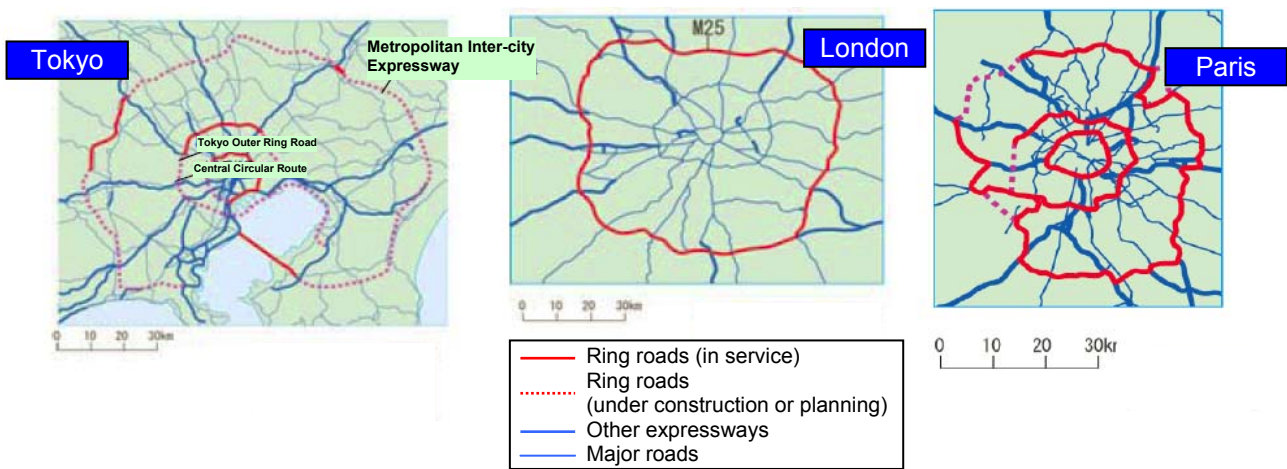


Figure 4 - Ring roads in metropolitan areas

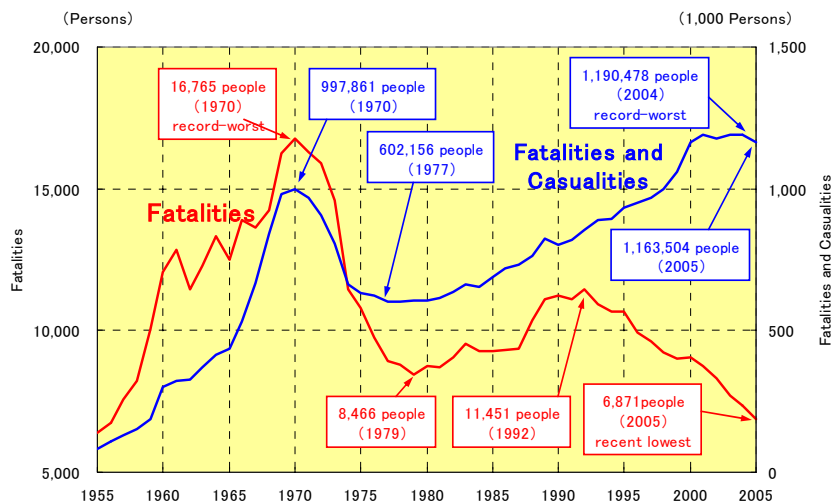


Figure 5 - Mortality trends in traffic accidents

## 2) The opinions against financial issues

Arguments of shifting to a general budget system are based on the following financial points: (i) The large earmarked funds for roads; (ii) The prevention of coordinated budget

control; and (iii) Causing an inflexible fiscal policy. Against the arguments, some experts including transportation economists etc. pointed out following problems:

(i) The size of earmarked funds for roads is large.

Whether or not the road fund is large should be determined by comparing it against the necessary amount of road development with a long term view of the national land structure. If the road fund is indeed excessively large, then a reduction of the tax rate should be considered.

(ii) The earmarked funds will disturb overall budgetary control.

The necessity for comprehensive budget control is undeniable. However, the various taxes that supply earmarked road funds are based on the principle of beneficiary payment, have functional aspect as user fees, and reflect user choices among transportation modes in the transportation market. It is more beneficial to utilize this function within the transportation market rather than it is to rely upon artificial coordination by centralizing the financial authority's budgetary power.

(iii) It would cause an inflexible financial policy

The issue of inflexible fiscal policy is not a unique problem to earmarked funds but is also a common problem with any general funds system. Therefore, the current situation would not be solved by merely adopting a general funds system. Precisely, roads are one of the most important components of national land infrastructure that maintains Japanese society and economy's sustainable development and also it is necessary to work for national land so that long term effort with stable budget is essential for developing them. Therefore, earmarked road funds are particularly indispensable system.

The argument to shift the funds from the earmarked system to the general budget is made within the context of enormous government debt and expected increasing expenditures in an aging society. However, there is no reason the burden to restore the general budget soundness should be imposed on only road users. Even if a shift to the general budget is necessary, imposing a tax on automobile users would still be inappropriate. Unlike in metropolitan areas, where forms of public transportation such as railways, subways, and buses are easily and cheaply available, in rural areas where automobiles are necessary as the only means of transportation that ensures mobility. Consequently, if automobiles were to be taxed for the general revenue, such taxation would be an unfair burden to people living in rural areas.

#### 4.4. Expansion of usage of earmarked road funds

With the arguments stated above, the road administration has implemented appropriate reforms depending on socioeconomic conditions at the time.

In recent years, particularly road administration policies need to be adjusted to new situations, such as the new demographic of aging, yet affluent and vital, society with a decreasing number of children, improvements in economic and international competitiveness along with East Asia, realization of a safe and secure society, and keep up with the global environmental issues. From such a standpoint, the use of earmarked funds has been expanded to include continuous elevated urban railways, monorails, and LRT, as well as laying power cables and others underground.

However, expanding the use of the earmarked funds is based on the idea that the use should remain in line with the original purpose for taxation. Therefore, such improvement projects should be limited to those for which tax payers give their consent.

Moreover, related to the expansion of funds usage, there is an argument that the earmarked road funds can be resourced as an environmental tax. It is not difficult to deny that road traffic is a source of greenhouse gas emissions and causes air pollution. However, it is not clear that such an environmental tax is whether the tax should achieve the reduction in emission levels as an allocation of the social cost or as revenue source of future environmental measures. The feasibility of the taxation effect is also in doubt. Therefore, although we believe that the earmarked funds can naturally be allocated to road related usage because of road traffic's causation, the issue requires further discussion as to whether an environmental tax is appropriate.

## **5. REVIEW OF THE TOLL ROAD SYSTEM**

### **5.1. What is the toll road system in Japan?**

The toll road system was first adopted on a full scale in 1952 when the former "Law Concerning Special Measures Highway Construction" was enacted. This system functioned by borrowing the necessary funds for planned construction from the special account, and then repaying the loan with toll fees levied from the users of the completed road. Toll road projects were undertaken by respective road administrators: the national government and prefectural and municipal government.

Subsequently, the Japan Highway Public Corporation was established in 1956 with the objective of achieving efficiently operation of road works and broad utilization of the surplus of private funds. The establishment of the corporation ended the previous toll roads construction system in which national government direct control over the national highway and a new construction methodology was introduced by public corporations was adopted. Then, the Metropolitan Expressway Public Corporation (1959), the Hanshin Expressway Public Corporation (1962), and the Honshu-Shikoku Bridge Authority were all established and assumed responsibility for constructing toll roads in metropolitan areas, the Kinki area, and for bridges connecting Honshu and Shikoku, respectively.

Total toll cost of construction, maintenance and maintenance an management, interest and other expenses should be recovered by the cumulative amount of toll fees collected over the collection period (redemption principle); and toll fees should be fair and valid (fairness and validity principle).

In 1972, a national pooling system was introduced into the toll road system, thereby opening the way for the nationwide development of expressways. Such a pooling system ensures both financial stability and smooth redemption, as it calculates toll revenues and the revenues from profitable expressways are allocated to routes with deficits as well as for other expressways. With this pooling system, the trunk road network has been realized. At the end of 2005, total expressway construction had reached 7,389 km.

### **5.2. Criticisms and arguments for toll road system**

As the national expressway network has developed, the construction of local expressways with low traffic volume and high construction costs has increased progressively. The

development of such new but unprofitable expressways contributed to the inevitable gradual increase of tolls in order to maintain the pooling system. However, toll road users became increasingly frustrated with the comparatively high pricing. Because of such sentiments, toll levels have not been raised since 1995. This resulted in an increase of interest-bearing debt, 28 trillion yen with the Japan Highway Public Corporation, and 40 trillion yen with all four road related public corporations. For these reasons, Japanese expressway construction via utilization of the toll road system has faced an extremely difficult situation with its goals of repaying debt, and continuing the construction of remaining sections while avoiding a price increase. Under these circumstances, various criticisms have appeared, mainly in the mass media, as follows:

- Tolls are expensive and never be liberated
- The construction of expressways serving low traffic areas is economically ineffective

**Table 2 - Toll road tariff comparisons**

		France	Germany	Italy	Japan
Toll level	Currency	€0.064/km < As of Feb. 2003 >	€0.09-0.14/km < As of Jan. 2005 >	€0.052/km < As of Jan. 2003 >	¥24.6/km + ¥150
	JP¥ equivalent	¥8.05/km	¥11.3-17.6/km	¥6.54/km	¥24.6/km + ¥150
	Compare to Japanese tolls	About 1/3	About 1/2	About 1/4	-
Remarks		Average of all corporations <sup>(Note)</sup>	Truck Toll (Total weight 12t and over)	Toll by Autostrade	Expressway tolls

Note) Tolls differ in timing, construction costs, etc.

Sources) Germany: Federal Ministry of Transport, Building, and Housing website.

Other countries: Council for Future Direction of Toll Roads, the Ministry of Land, Infrastructure, and Transport of Japan.

### 5.3. The privatization of the four road-related public corporations

Prime Minister Koizumi, who took office in April 2001, advocated a policy agenda of reviving Japan through structural changes and downsizing the government through both administrative and financial reforms. Consequently, privatization of government-affiliated agencies became the top priority. In particular, the privatization of four road-related public corporations became one of the primary policy agendas. As a result, these four public corporations were privatized as of October 1, 2005, with main objectives as follows:

- Ensuring repayment of 40 trillion-yen debt within a certain period;
- Construction of the most necessary roads within a minimum period of time and with minimum public financial burden, while respecting each company's autonomy; and
- Setting various flexible tolls and offering a variety of services through utilization of private sector know-how.

Also, the Japan Highway Public Corporation, which was responsible for the construction of expressways for all of Japan, was divided into three companies serving for the east, central, and west regions. As a result, a total of six private companies shown in the chart below were established. At this same time, the Japan Expressway Holding and Debt Repayment Agency (JEHDRA) was also created.

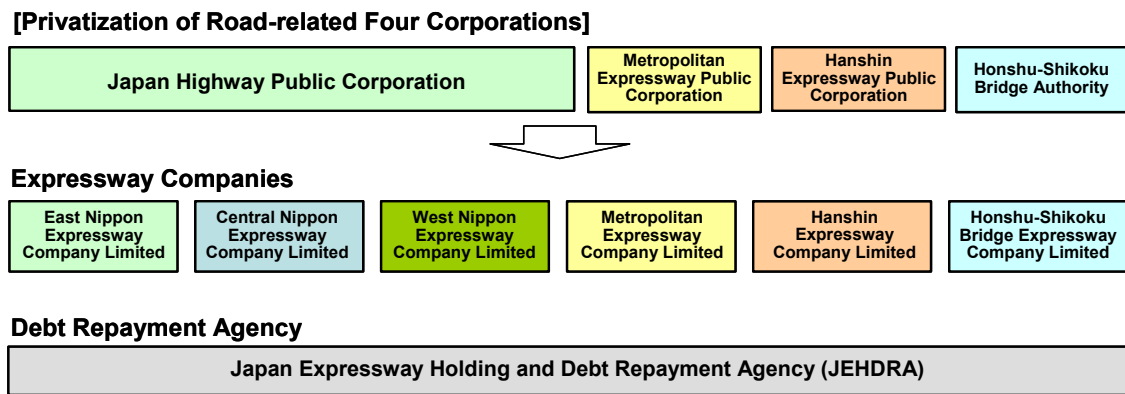


Figure 6 - Privatization outline

#### 5.4. Reviewing the toll road system adjusted to the privatization

When reviewing the toll system considering the privatization of the Japan Highway Public Corporation, which was in charge of all expressway construction in Japan, there are three focal points:

First, of 1,975 km expressways the Japan Highway Public Corporation were planning prior to the privatization in 2003, 822 km in rural areas (budgeted for ¥3trillion) will be built as new direct-control projects by the central government, not as toll road projects, and will be toll-free once open to public. With this, the expressways to be constructed by the other 3 private Corporations were cut down to 1,153 km (¥7.4trillion), but all 9,342 km previously planned expressways will be constructed.

Second, by introducing private sector management methods, cost reductions in both administration and construction will be reflected as company profits, thus ensuring debt repayment within 45 years. As far as the administration costs are concerned, by the end of 2005 these companies had achieved a 30% reduction since the privatization.

Third, by utilizing ETC (electronic toll collection), various discounts, including time and mileage discounts were introduced, thus the average toll level was dropped approximately 10%. The maximum discounts for shared-time and mileage are 50% and 14%, respectively. Because they can be combined, drivers may now feel that tolls are not too expensive.

In addition to these three points, expressway companies are now able to engage in new endeavours such as SAPA (service area and parking area) businesses and others. This enables the companies to provide drivers with more attractive SAPA and other services for comfortable expressway travel as compared with pre-privatization conditions.

All these measures are expected to further vitalize privatized companies, thereby allowing them to operate expressways focusing more on users.

## 5.5. SMART IC

In the past, construction of any interchange (IC) has involved great costs, causing Japan to use fewer ICs than other countries and thereby adding further inconvenience to expressway usage. To remedy this situation, a new system has been introduced that creates ICs with less construction and lower maintenance costs, thereby allowing only vehicles with ETC to enter and exit expressways through gates installed in service areas and parking areas. This system utilizing the innovative ITS (Intelligent Transportation Systems) technology, contributes to enhancing expressway convenience and is welcomed by the rural areas.

ITS has the strong possibility to solve the issues caused by road traffic as remarked. Therefore, we continue our effort to introduce more ITS technology such as enhanced VICS and ETC, safe driving support system called AHS (Advanced Cruise-assist Highway Systems) under the concept of "Smartway" for users' convenient and safety driving.

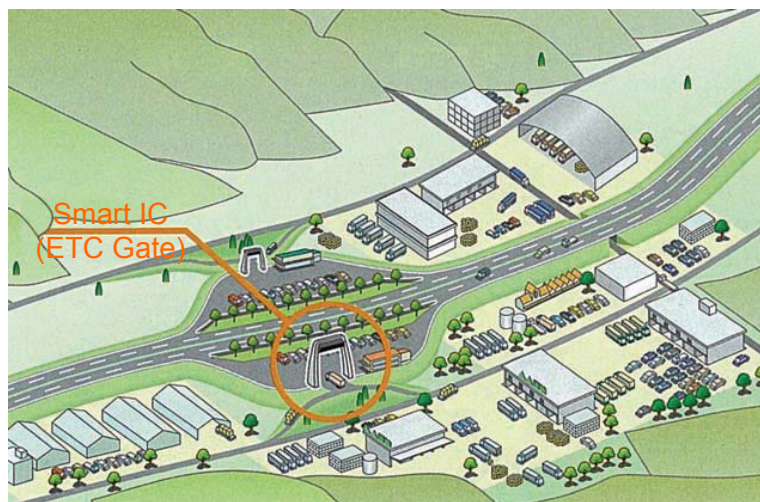


Figure 7 - SMART IC

## 6. SUMMARY

This report discussed Japan's funding system for road development. Like our history shows, for the economic growth, steady development of infrastructure especially roads that contribute to goods and people flow is essential. To achieve this, it is very important to establish stable financial resources for road development.

Various countries have developed different systems for their road development and maintenance in keeping with their own history and national system. The Japanese system uses both a toll road system and a taxation system, mostly taxing gasoline. What is a unique characteristic is the adoption of a national pooling system of tolls for the development of national expressway network in order to ensure the balanced development of national territory. This system greatly contributed to the Japanese economy's rapid growth. However, after certain road development work, users around the routes already in service object never-ending toll payment. In contrast, rural users demand urgent road developments through the pooling system, but such areas would have difficulties to earn profits and repay debt due to insufficient economic activities.

These circumstances caused nation-wide discussion about reviewing the tolling system and earmarked road funds. The road administration now is going back to the starting point

of the road development and starting to review its system with users and taxpayers perspectives under the accurately comprehending present situations and goals.

Points of argument are: how to resolve enormous debt, and whether tolling system is necessary for rural road development. Thus, reviews such as declaring the targeting year of final debt repayment, and clarifying the priorities that profitable routes will be built with toll revenues and unprofitable routes with tax revenues, have been implemented as well as adopting the efficient road management system with the privatization of corporations and active introduction of ITS (e.g. ETC).

As the new toll system has just begun, the six private companies should realize steady development and management of expressways by pursuing efficiency, ensure the debt repayment. At the same time, the corporations must build public understanding and trust through providing a variety of services such as flexible fee levels using ETC, etc.

Currently, there is a great difference between for and against of the argument on shifting earmarked fund to general fund, and the result of the argument is still not clear. It is inevitable to explain to public concrete policy which the road administration is going to conduct, and to share the importance of road development. We believe that nationwide discussions on truly necessary road development, respecting taxpayers' perspectives are absolutely fundamental before drawing conclusions.

## **REFERENCES**

Research Report on Nagoya-Kobe Highway, Watkins Mission, 1956.

Road Administration 2005, Road Administration Study Group, March 2006.

On Basic Orientation for Future Road Policy, Infrastructure Council, Road WG, June 2006.

Medium-range Vision for Road Development (Draft), Ministry of Land, Infrastructure, and Transport and the City and Regional Development Bureau, October 2006.