

History of Road Development, Finance and Investment in JAPAN

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Japan

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 - ① Earmarked tax revenue system
 - ② Toll road system

I introduce the thing Japan has experienced.

1. Road Infrastructure Development in JAPAN

Before the modern age (until 1868)

- Wheeled traffic failed to develop in Japan
 - surrounded by sea
 - covered by mountainous areas
 - crisscrossed by rivers



1. Road Infrastructure Development in JAPAN

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- Wheeled traffic failed to develop in Japan
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 - crisscrossed by rivers
- the main means of transport
 - • • foot,



Source: Yoshitoshi TSUKIOKA (1867) "ODAWARA", Encyclopedia of city of Odawara (<http://www.city.odawara.kanagawa.jp/encycl/>)

1. Road Infrastructure Development in JAPAN

Before the modern age (until 1868)

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Source: Hokusai KATSUSHIKA (1831) "Sunsyu-Onoshinden" (http://www.solmare.com/cbox_jp/)

1. Road Infrastructure Development in JAPAN

Before the modern age (until 1868)

- Wheeled traffic failed to develop in Japan
 - surrounded by sea
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- the main means of transport
 - · · foot, horseback, boat



Source: Hiroshige UTAGAWA (1867) "ARAI", Encyclopedia of city of Odawara (<http://www.city.odawara.kanagawa.jp/encycl/>)

The modern age

after 1868 (Meiji Restoration)

- Japan wished to catch up with the advanced nations of the West as quickly as possible.

- Priority in the development
of transport systems

↳ railroad and maritime network

⇒ Government had hardly developed
the road network

After World War II after 1945

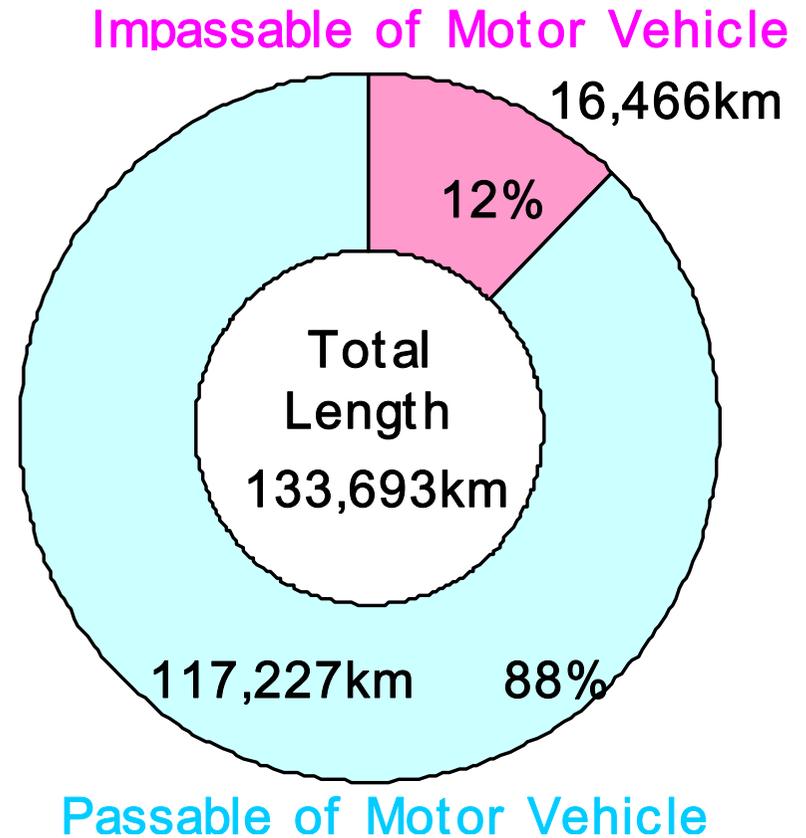
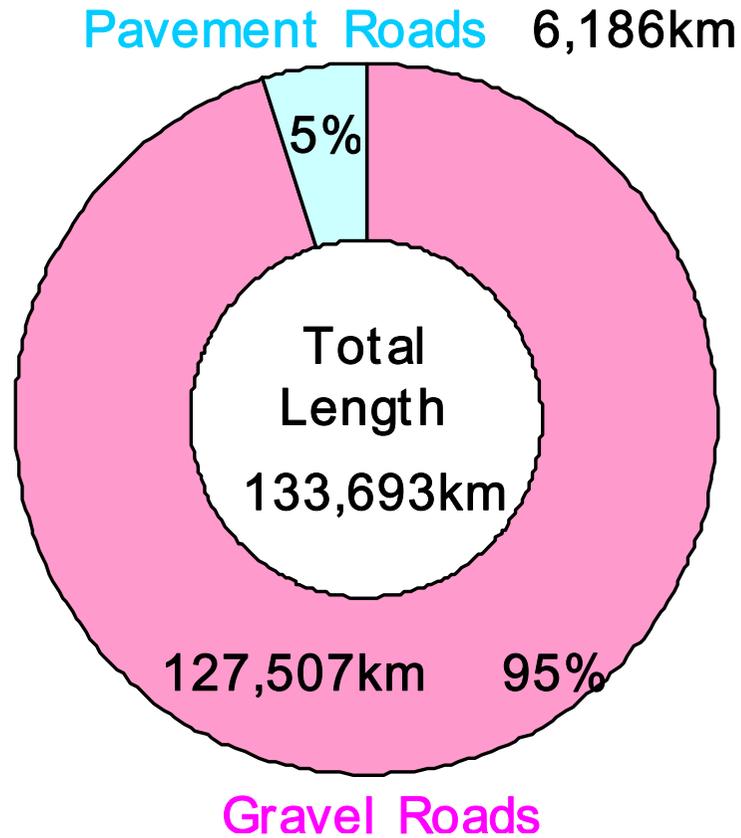
- Most infrastructure was destroyed



- Transport facilities were poor
 - bottleneck of industrialization
- • • Most roads were unpaved

After World War II

after 1945



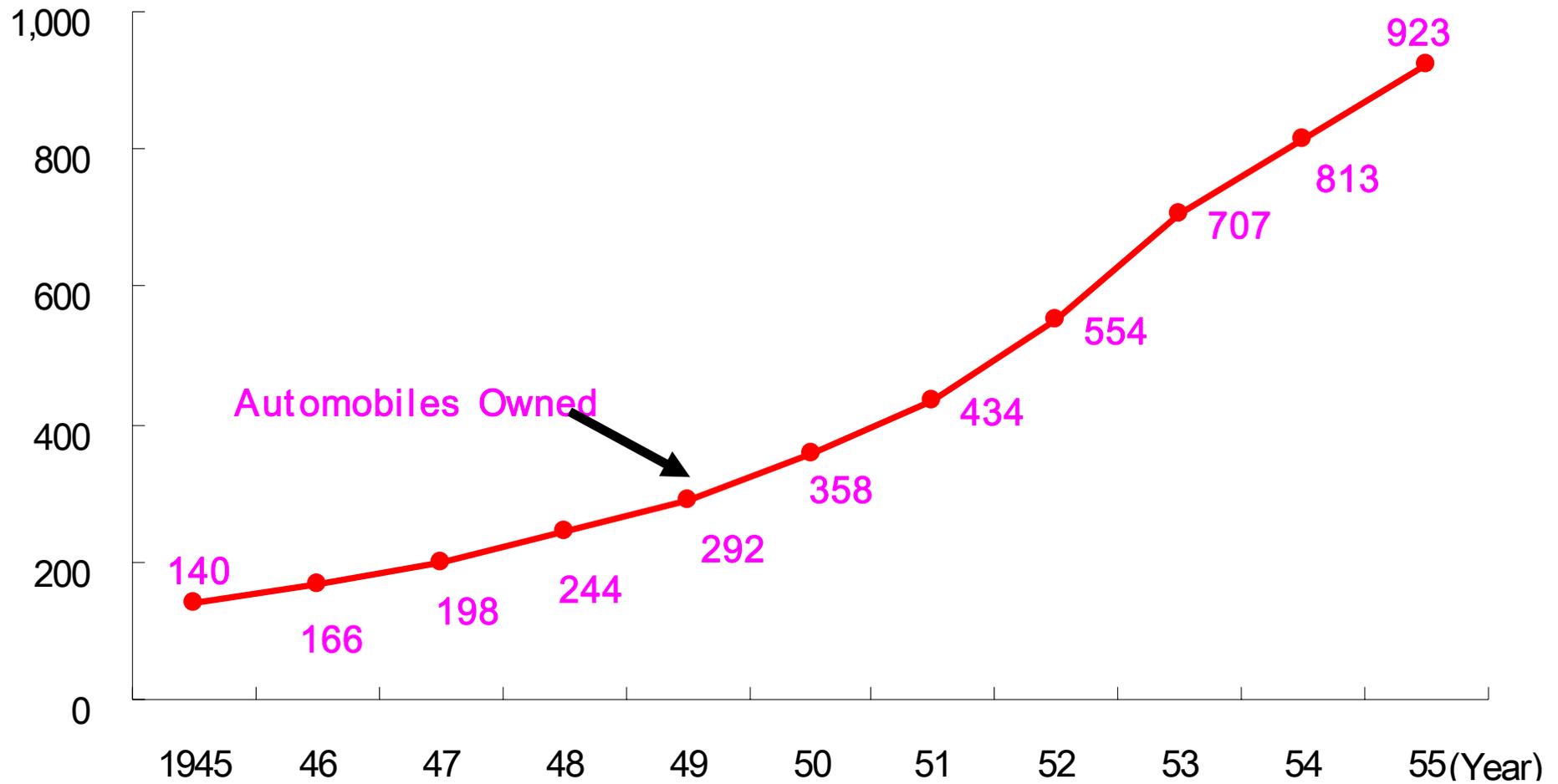
Source: Road Bureau, Construction Ministry (1952) *Road Statistics 1952*.

Road condition in 1950

After World War II after 1945

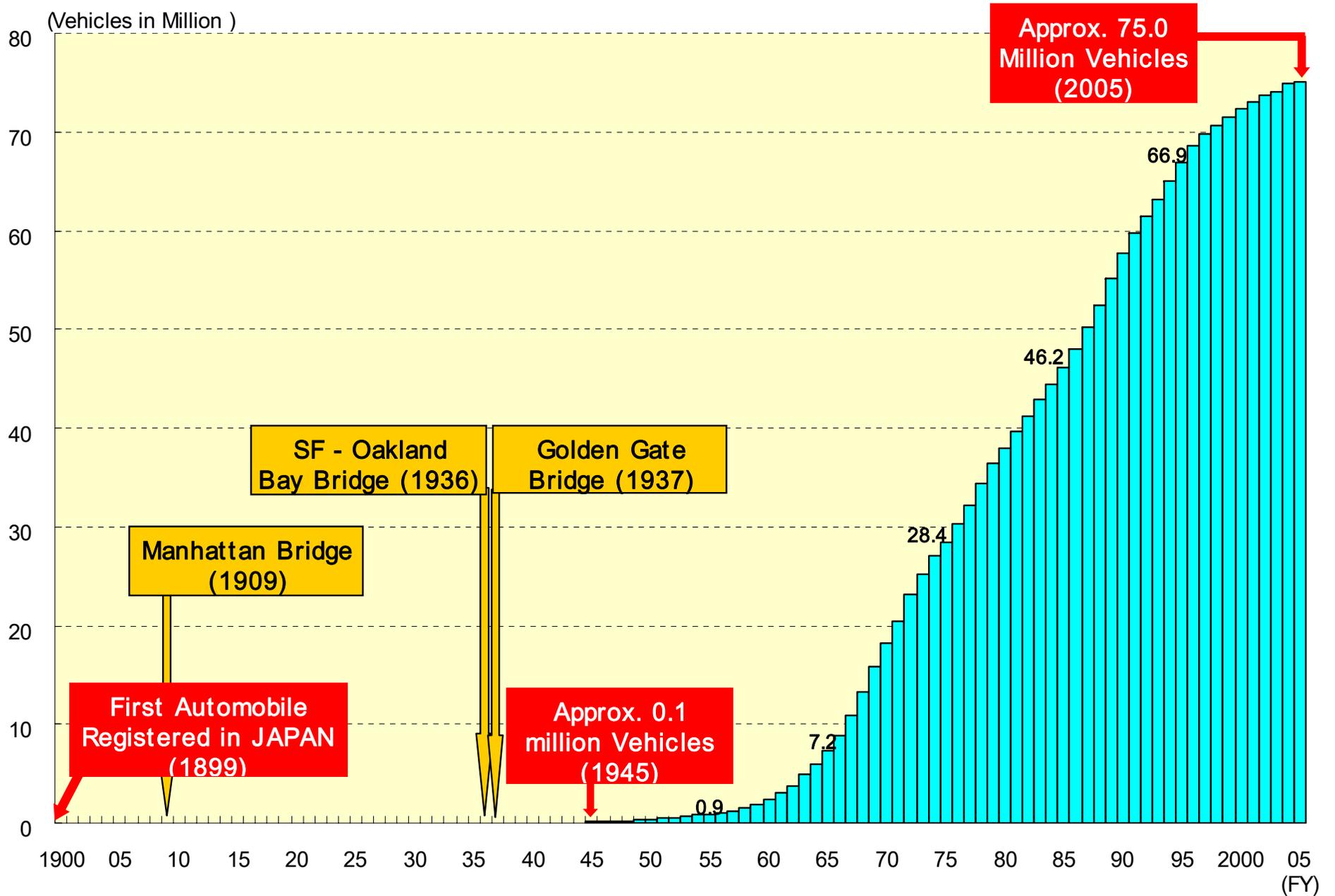
- Most infrastructure was destroyed
- Transport facilities were poor
 - bottleneck of industrialization
 - • • Most roads were unpaved
- In order to speed the recovery of the nation, full-scale road improvements were needed.

(Vehicles in Thousand)



Source: Road Bureau, Construction Ministry, *Road Statistics*.

Automobiles and Roads for postwar 10 years



Number of Automobiles Owned in Japan

***The roads of Japan are incredibly bad.
No other industrial nation has so completely
neglected its highway system.***



Source: Hagen, E. E, F. W. Herring, G. E. McLaughlin, W. Owen, H. M. Sapir, and R. J. Watkins (1956),
Report on Kobe-Nagoya Expressway Survey, Ministry of Construction.

After World War II

- Road policy of the government
 - Toll Road System (1952 ~)
 - · · supplement inadequate road investment by toll fees
 - Earmarked Tax Revenue System (1953 ~)
 - · · secure the road development budget by fuel tax

- Road policy of the government

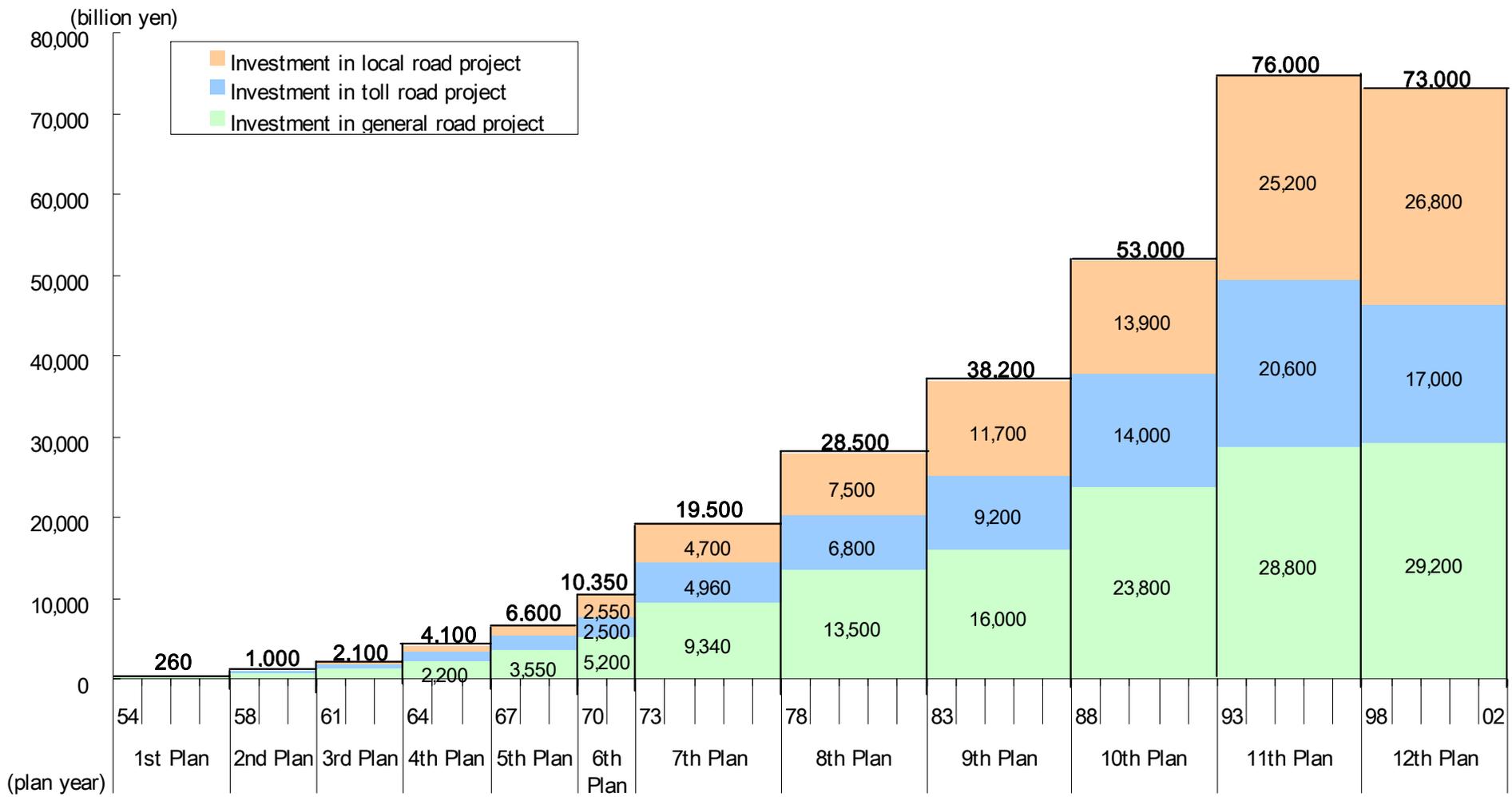
- Toll Road System (1952 ~)

- Earmarked Tax Revenue System (1953 ~)

plan with corroboration of funds

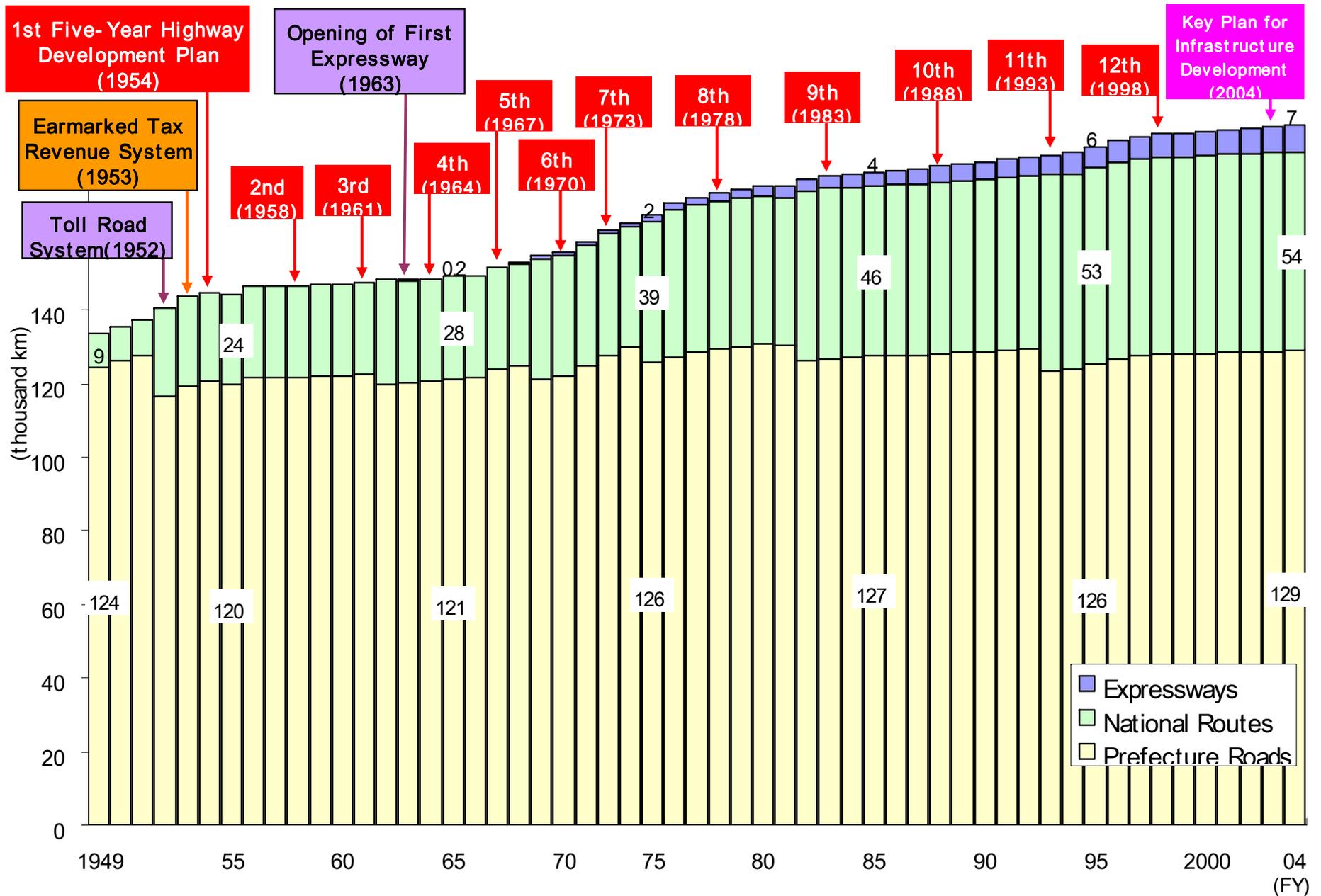
- Five-Year Highway Development Plan (1954 ~)

⇒ The road network has been developed steadily and continuously.



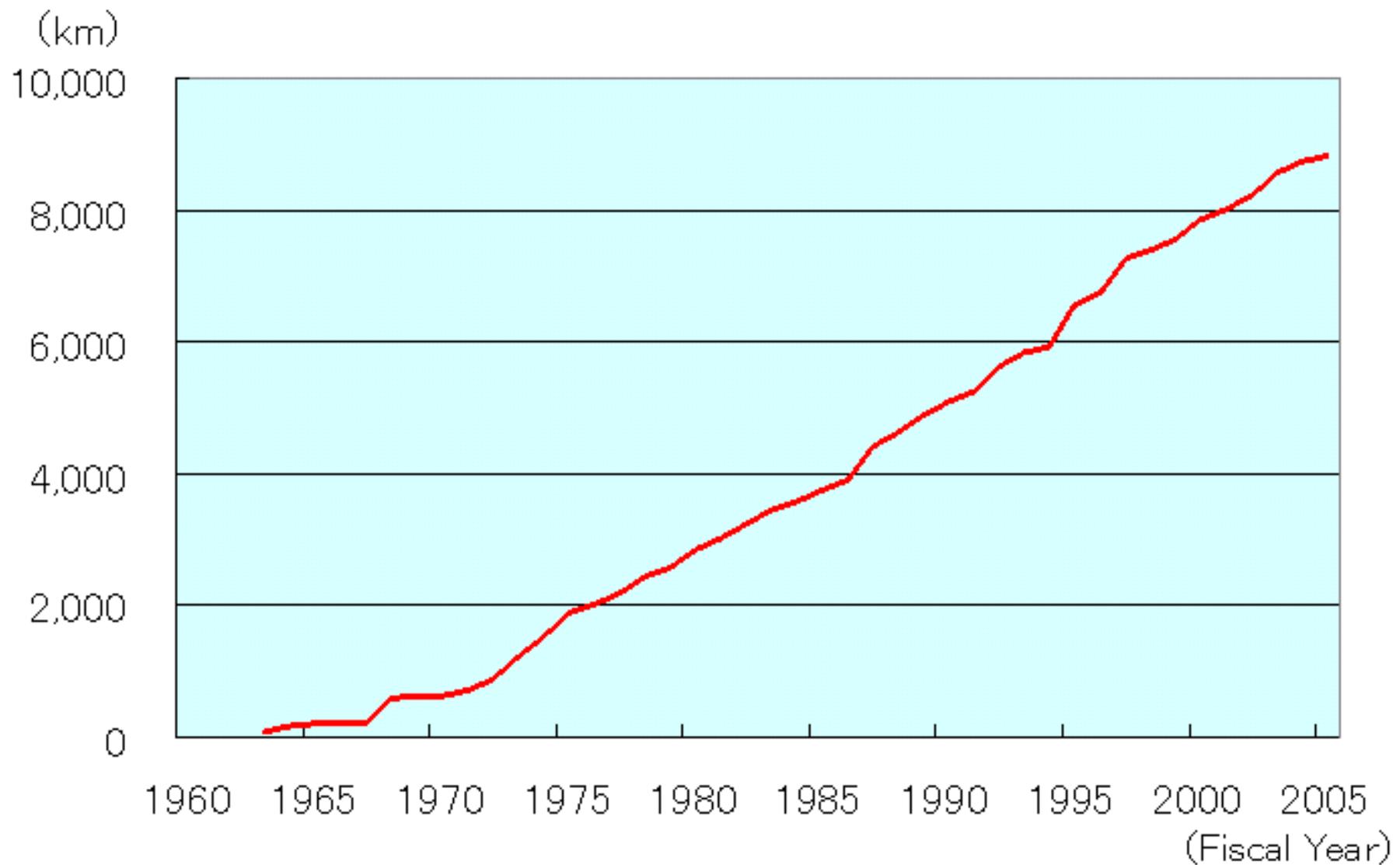
Source: Ministry of Land, Infrastructure and Transport

Five-Year Highway Development Plan



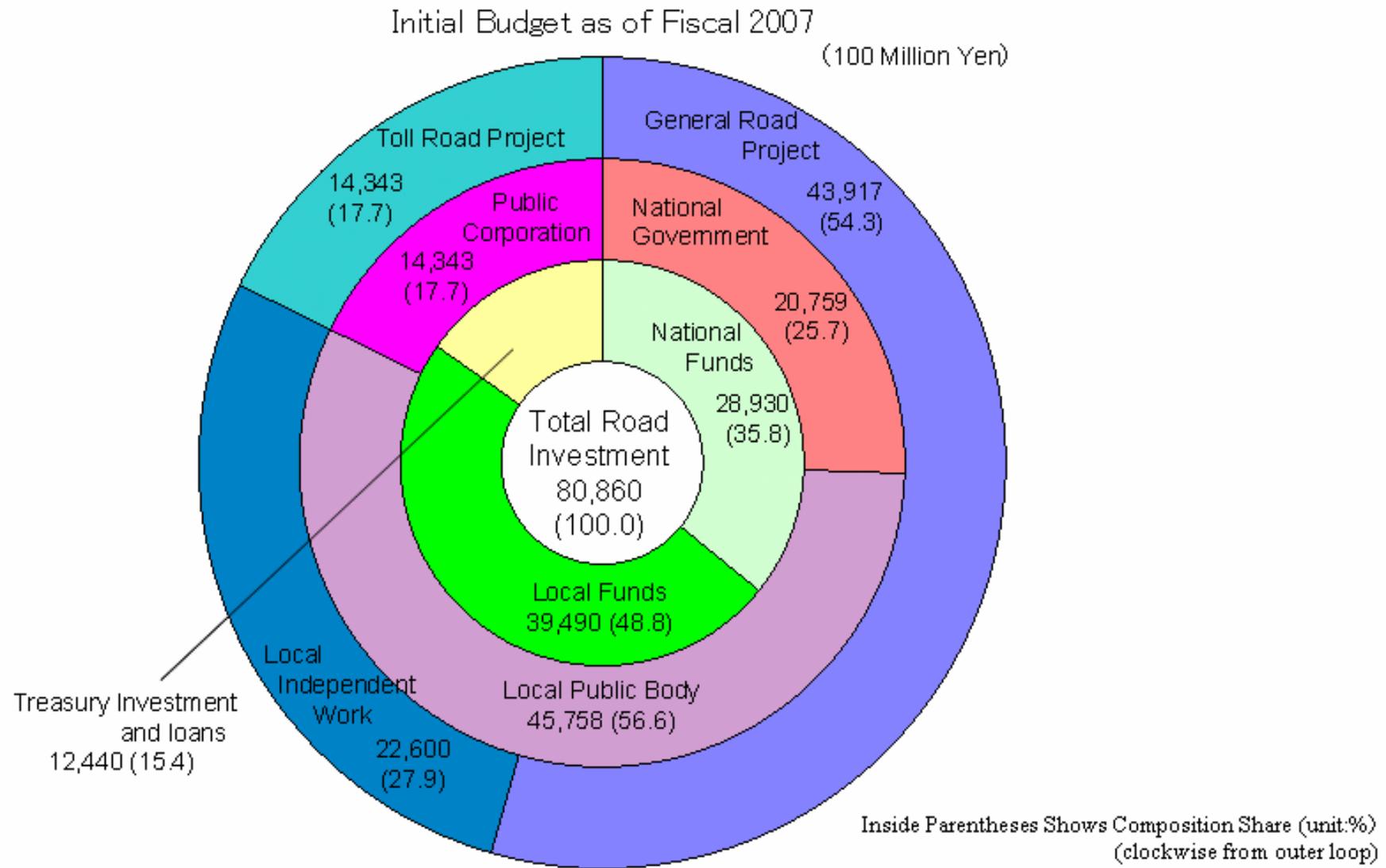
Source: Ministry of Land, Infrastructure and Transport

Change in the Length of Roads



Source: Ministry of Land, Infrastructure and Transport

Change in Length of High-Standard Highways



Source: Ministry of Land, Infrastructure and Transport

Composition of Road Investment by Project Type, Administrator, and Financial Resource

2. Road Financing System

- Development of the road network require
 - large-scale funding
 - stable funding
- This funding should respond to
not the influence of economic conditions,
road traffic demand.
- Beneficiaries from road use must bear the burden.



- ① Earmarked tax revenue system
- ② Toll road system

① *Earmarked tax revenue system* [concept]

- Owners and drivers of automobiles receive more benefit and damage roads significantly more than pedestrians.

⇒ They should pay more for the road cost.

Fairness: Users must bear the burden in accordance with the benefits.

Rationality: User's burden is totally spent on road improvements, which is acceptable to tax payers.

Stability: Free from the effect of fiscal condition, the revenues can be stabilized.

[history]

- 1953: Special laws on urgent highway development
 - Motorists were subjected to taxes
 - Government established earmarked funds for road improvement
- 1954: The gasoline tax was established as an earmarked tax
 - · · burden according to the mileage (user benefit)
- 1971: Setting of the motor vehicle tonnage tax
 - · · burden according to the tonnage (damage by user)

| Taxed Stage Vehicle Type | Purchase of Motor Vehicles | |
|---|---------------------------------------|--|
| | | |

Source: Ministry of Land, Infrastructure and Transport

Overview of Earmarked Taxes for Road Projects

| Taxed Stage Vehicle Type | Purchase of Motor Vehicles | Ownership of Motor Vehicles | |
|---|---------------------------------------|--|--|
| | | | |

Source: Ministry of Land, Infrastructure and Transport

Overview of Earmarked Taxes for Road Projects

| Taxed Stage Vehicle Type | Purchase of Motor Vehicles | Ownership of Motor Vehicles | Use of Motor Vehicles (Fuel Consumption) |
|---|-----------------------------------|------------------------------------|---|
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| Taxed Stage Vehicle Type | Purchase of Motor Vehicles | Ownership of Motor Vehicles | Use of Motor Vehicles (Fuel Consumption) |
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| | | | |

Source: Ministry of Land, Infrastructure and Transport

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Source: Ministry of Land, Infrastructure and Transport

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| | | | |

Source: Ministry of Land, Infrastructure and Transport

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| LPG Vehicles | | | 1966 ~ LPG Tax (National/ Local Revenue Source) |

Source: Ministry of Land, Infrastructure and Transport

Overview of Earmarked Taxes for Road Projects

| Taxed Stage Vehicle Type | Purchase of Motor Vehicles | Ownership of Motor Vehicles | Use of Motor Vehicles (Fuel Consumption) |
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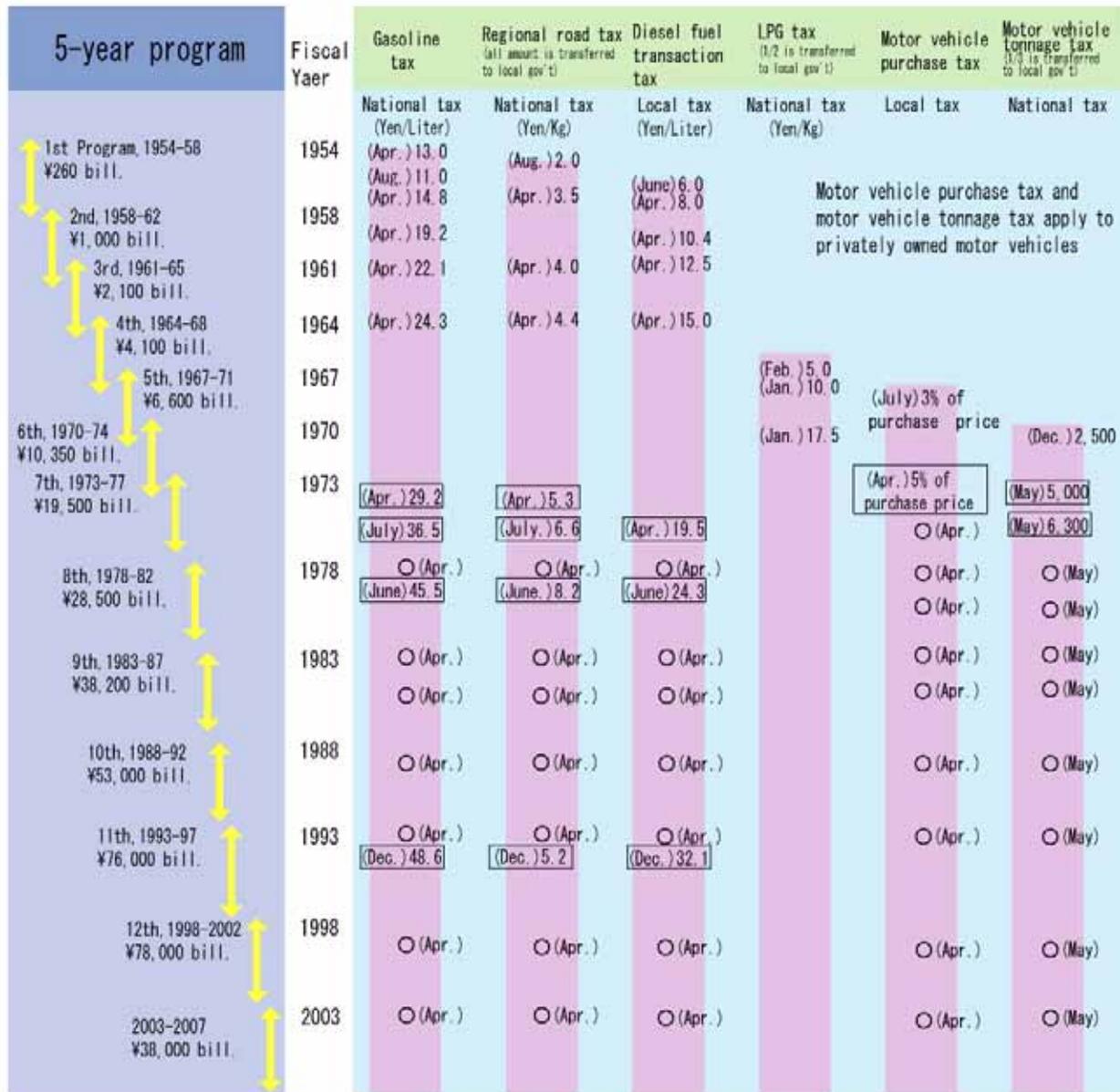
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Overview of Earmarked Taxes for Road Projects

| Taxed Stage Vehicle Type | Purchase of Motor Vehicles | Ownership of Motor Vehicles | Use of Motor Vehicles (Fuel Consumption) |
|---|---|--|---|
| Gasoline Vehicles | 1968 ~ Motor Vehicle Purchase Tax (Local Revenue Source) | 1971 ~ Motor Vehicle Tonnage Tax (National/ Local Revenue Source) | 1954 ~ Gasoline Tax (National Revenue Source) 1955 ~ Local Road Tax (Local Revenue Source) |
| Diesel Fuel Vehicles | | | 1956 ~ Diesel Fuel Transaction Tax (Local Revenue Source) |
| LPG Vehicles | | | 1966 ~ LPG Tax (National/ Local Revenue Source) |

Source: Ministry of Land, Infrastructure and Transport

Overview of Earmarked Taxes for Road Projects



Source: Ministry of Land, Infrastructure and Transport

- Note: 1) Indicates provisional tax rate stipulated by Special Taxation Measures Law or the additional clause of the Local Tax Law.
 2) Indicates the years which the provisional tax rate was extended.
 3) The rate of transfer for the motor vehicle tonnage tax is 1/4 until fiscal 2002.
 3) The figure for 2003-2007 does not include local independent works.

Trends of 5-Year Plan and Rates of Earmarked Tax

Earmarked Tax Revenue for Road Projects in Current Japan

| | Tax Items | Appropriation for Road Improvement | Tax Rate | Tax Revenues |
|-----------------|-----------------------------|---|--|---------------|
| National | Gasoline Tax | Total Amount (1/15 has been directly allocated to the special account for road improvement since 1985: however this has been expanded to 1/4 since 1988.) | Provisional tax rate: ¥48.6/liter Basic tax rate: ¥24.3/liter | 29,573 |
| | LPG Tax | 1/2 of Revenue (1/2 is transferred to the local government as motor vehicle LPG transfer tax.) | Basic tax rate: ¥17.5/kg | 143 |
| | Motor Vehicle Tonnage Tax | 77.5% of the National Share (2/3) of Revenue (2/3 of the revenue is national general revenue: however, in view of the origin and the tax, an account equivalent to 77.5% is set aside as road fund) | (example)Provisional tax rate: ¥6,300/0.5t year Basic tax rate: ¥2,500/ 0.5t year | 5,712 |
| | Subtotal | | | 35,429 |
| Local | Local Road Transfer Tax | Total Amount of Local Road Tax Revenues (Levied together with gasoline tax) 58/100: Prefectures and designated cities 42/100: Cities, towns, and villages) | Provisional tax rate: ¥5.2/liter Basic tax rate: ¥4.4/liter | 3,110 |
| | LPG Transfer Tax | 1/2 of Revenues from Motor Vehicles LPG Tax Prefectures and designated cities | Basic tax rate: ¥17.5/kg | 142 |
| | Motor Vehicle Tonnage Tax | 1/3 of Revenues from Motor Vehicle Tonnage Tax Cities, towns, and villages | Provisional tax rate: ¥6,300/0.5t year Basic tax rate: ¥2,500/ 0.5t year | 3,707 |
| | Diesel Fuel Transaction Tax | Total Amount Prefectures and designated cities | Provisional tax rate ¥32.1/liter Basic tax rate: ¥15.0/liter | 10,620 |
| | Motor Vehicle Purchase Tax | Total Amount 3/10: Prefectures and designated cities 7/10: Cities, towns, and villages | Provisional tax rate: 5% of purchase price for private motor vehicle Basic tax rate: 3% of purchase price | 4,742 |
| | Subtotal | | | 22,321 |
| Total | | | | 57,750 |

Note: 1) Tax revenue figures are based on the original budget and local public program for fiscal year 2006 (¥ 100 million).

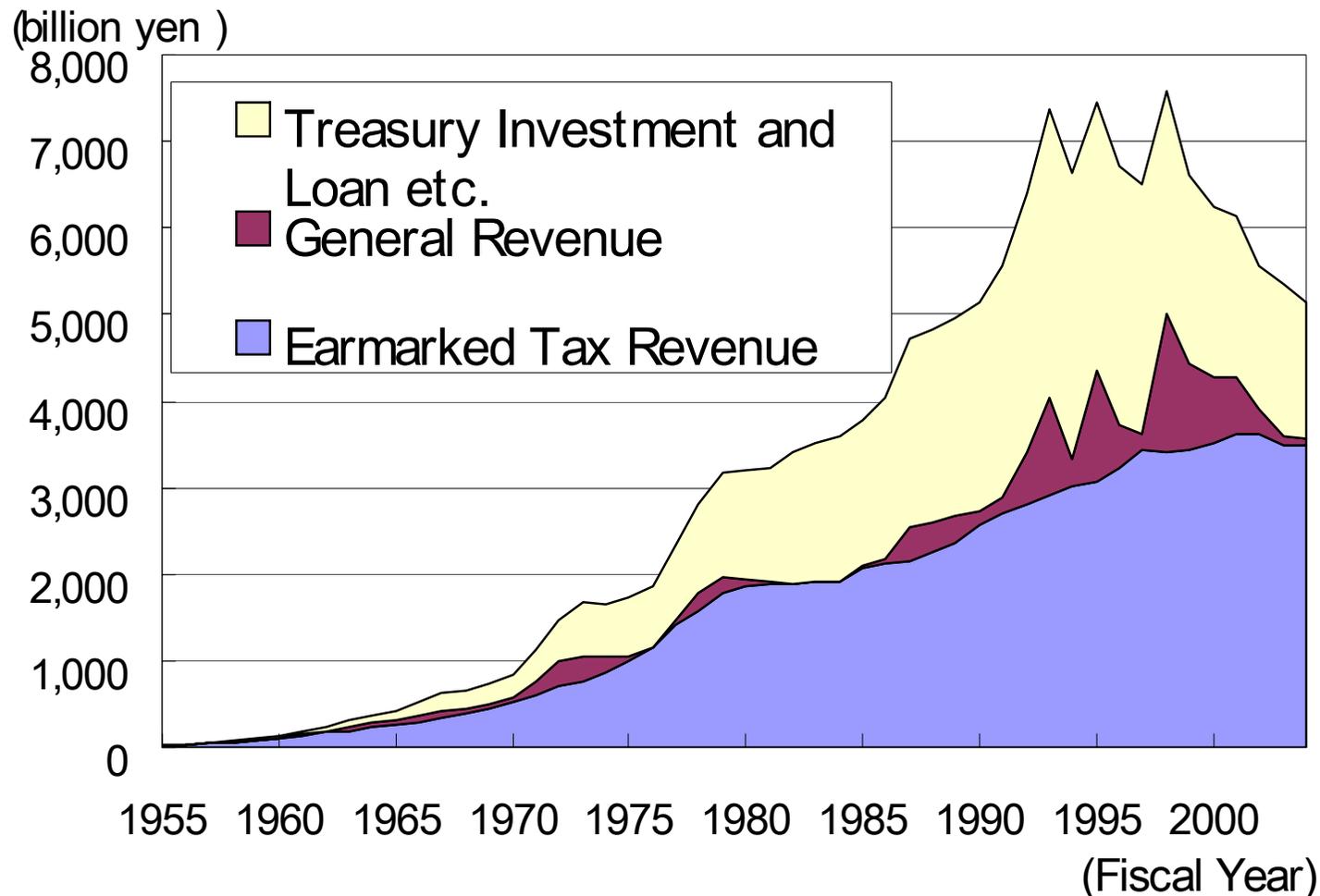
2) Revenue from motor vehicle tonnage tax corresponds to 77.5% of national revenue(2/3).

3) The tentative tax rate is applicable to the end of March 2008(or the end of April 2008 in the case of the motor vehicle tonnage tax).

2. Finance for Road Projects

(3) Transition of Road Investment and Financial

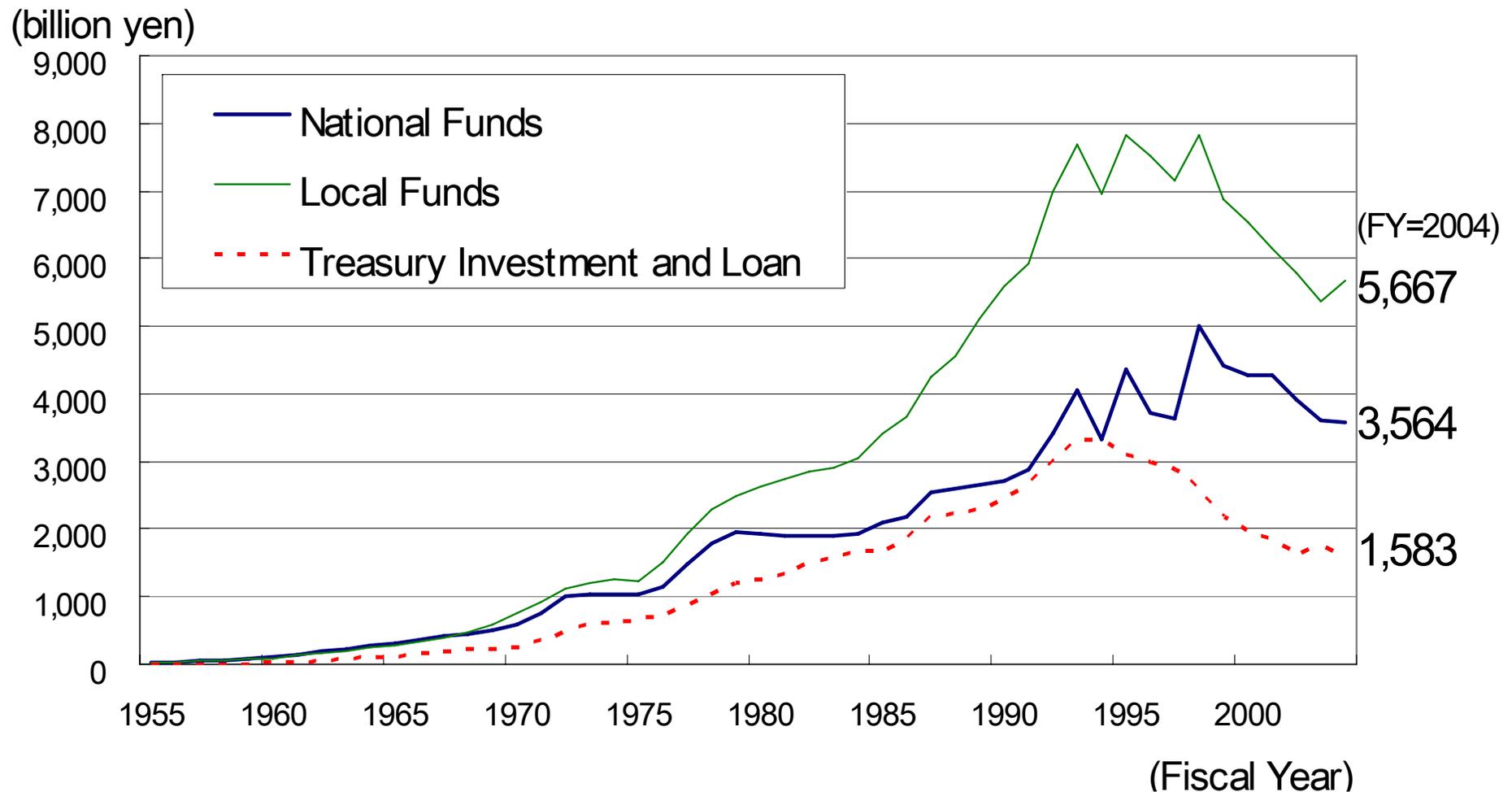
Resource Change in National Road Investment

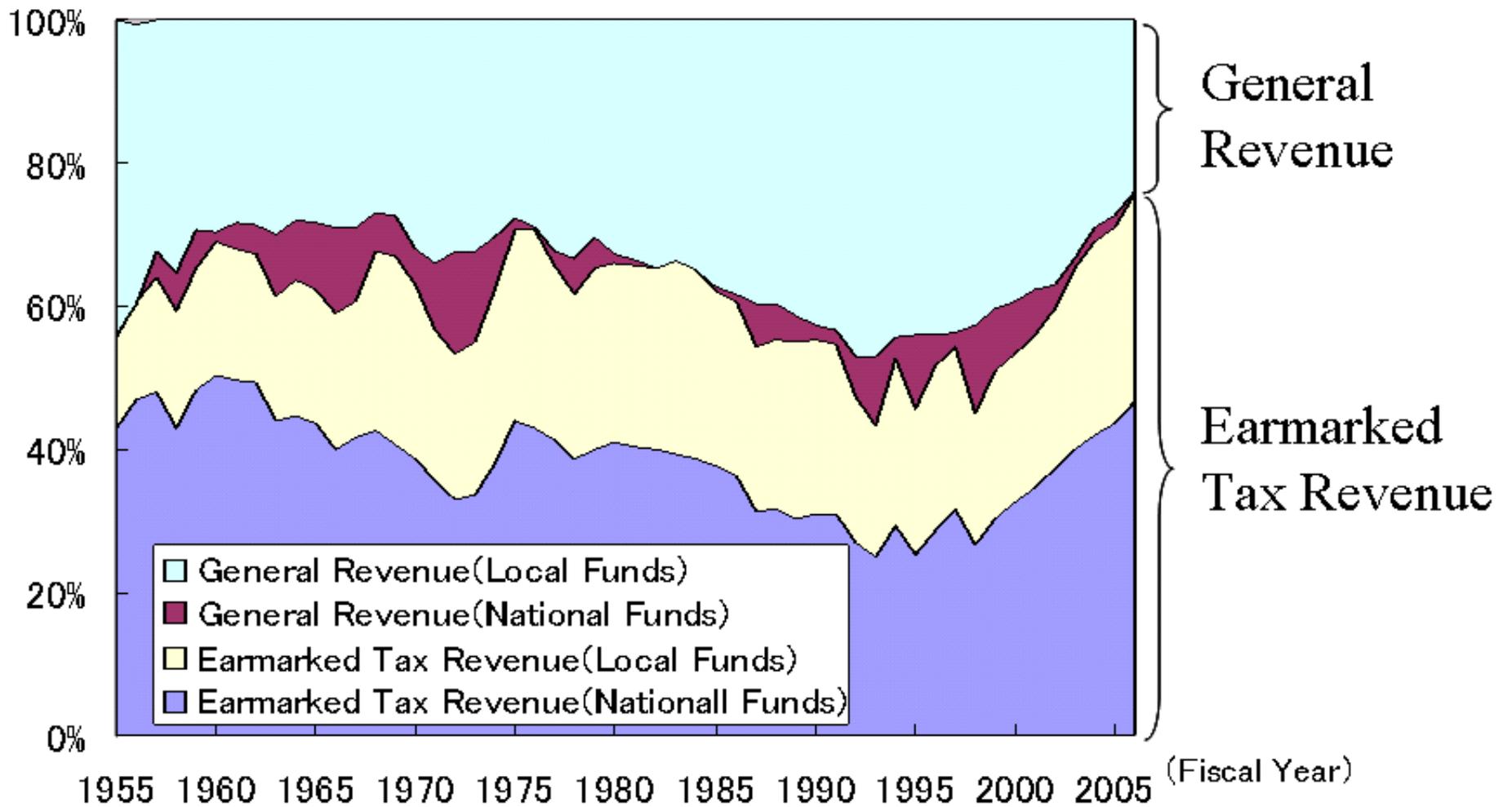


2. Finance for Road Projects

(3) Transition of Road Investment and Financial Resource

Change in Road Investment by National Funds, Local Funds, and Treasury Investment and Loans





Source: Ministry of Land, Infrastructure and Transport

Change in Share of Road Project Fund

[argument]

- the urban resident
 - Highway development has attained a certain level.
 - Investments for highway development should now be reduced.
- the Ministry of Finance
 - The earmarked funds for road projects should transfer to the general budget.



- the rural resident
 - The road network isn't developed sufficiently yet.
- car user groups
 - The beneficiary payment principle should be kept.
 - The car related tax should be returned to the road user.

[argument]

- Recommendations of transport economists
 - The earmarked funds is fair, efficient and stable.
 - A stable revenue source is required to improve
the road network.
 - The earmarked funds should not be transferred
to the general budget.
 - If road development is enough,
the earmarked tax should be abolished.

*Finally, the prime minister decided
to generalize the earmarked tax.*

2. Road Financing System

② *Toll road system* [concept]

- The road should be open to the public for free.



But, only of tax revenue was insufficient to cover the cost of the needed road development.

- The toll road system
 - · · a means of covering revenue shortages, funding maintenance costs and repaying construction loans
 - · · The system collects toll fees from users, who utilize specific roads.

[concept]

- rule of toll setting in Japan

- 1) Toll must be set to cover the entire cost by its revenue within its collection period.

- 2) Toll must be fair and valid.

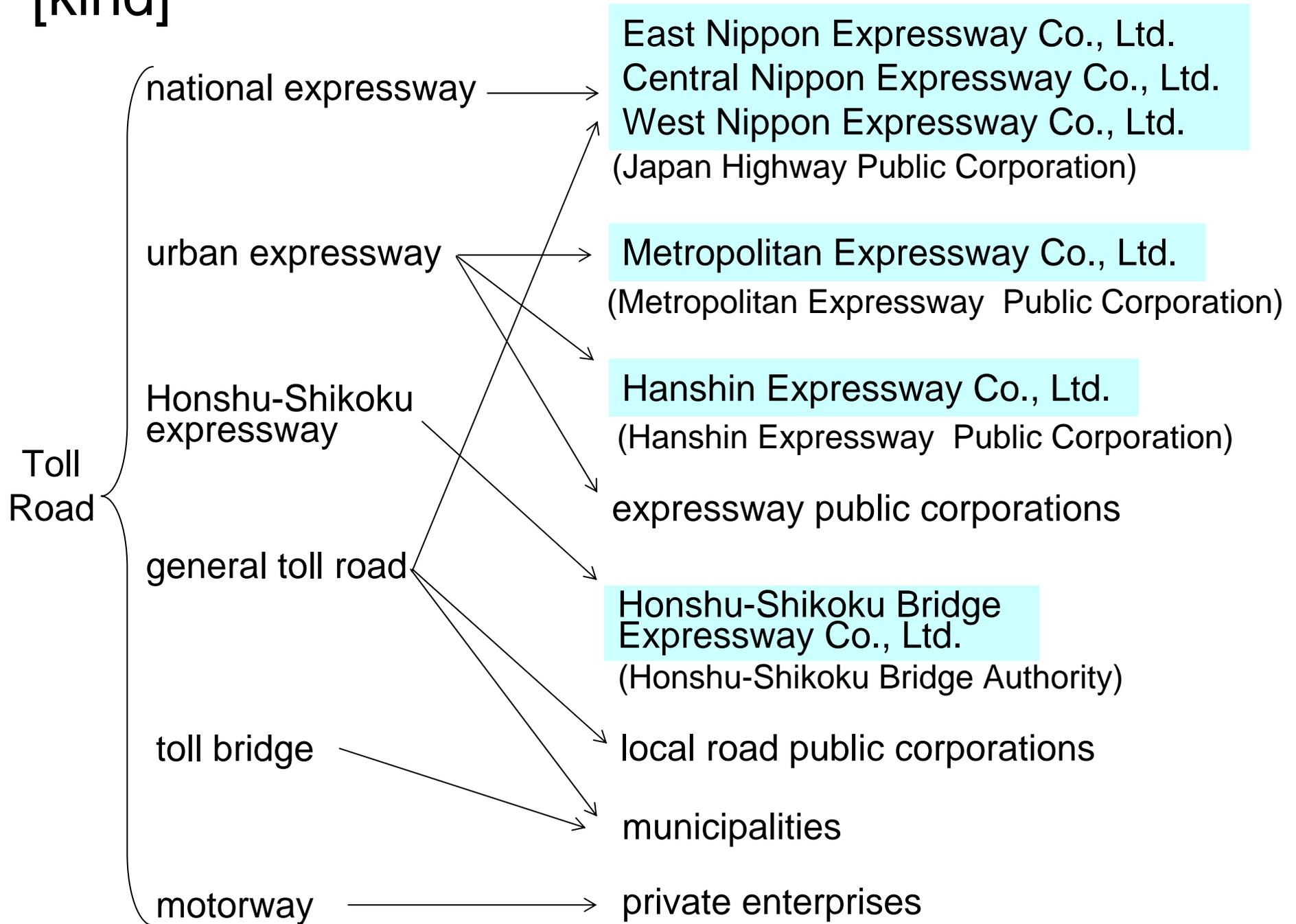
- 3) Toll should not exceed the benefit of users.

- feature of toll setting in Japan

- toll pooling system

- · · Several toll roads can be “networked” on a nationwide or regional basis to create a single project for calculating revenue and redemption of expenditures.

[kind]



[history]

- 1952(revealed in 1956):
“Law Concerning
Special Measures for Highway Construction”
 - Introduction of “loans” for compensation
for the shortage of source of revenue
 - Introduction of the “toll road system”
(Overseer: State, Local Public Bodies)

1956: Foundation of Japan Highway

Public Corporation

---- a main body of national toll road network

- 1959: Establishment of the Metropolitan Expressway

Public Corporation

- 1962: Establishment of the Hanshin Expressway

Public Corporation

- 1970: Establishment of the Honshu-Shikoku Bridge

Authority

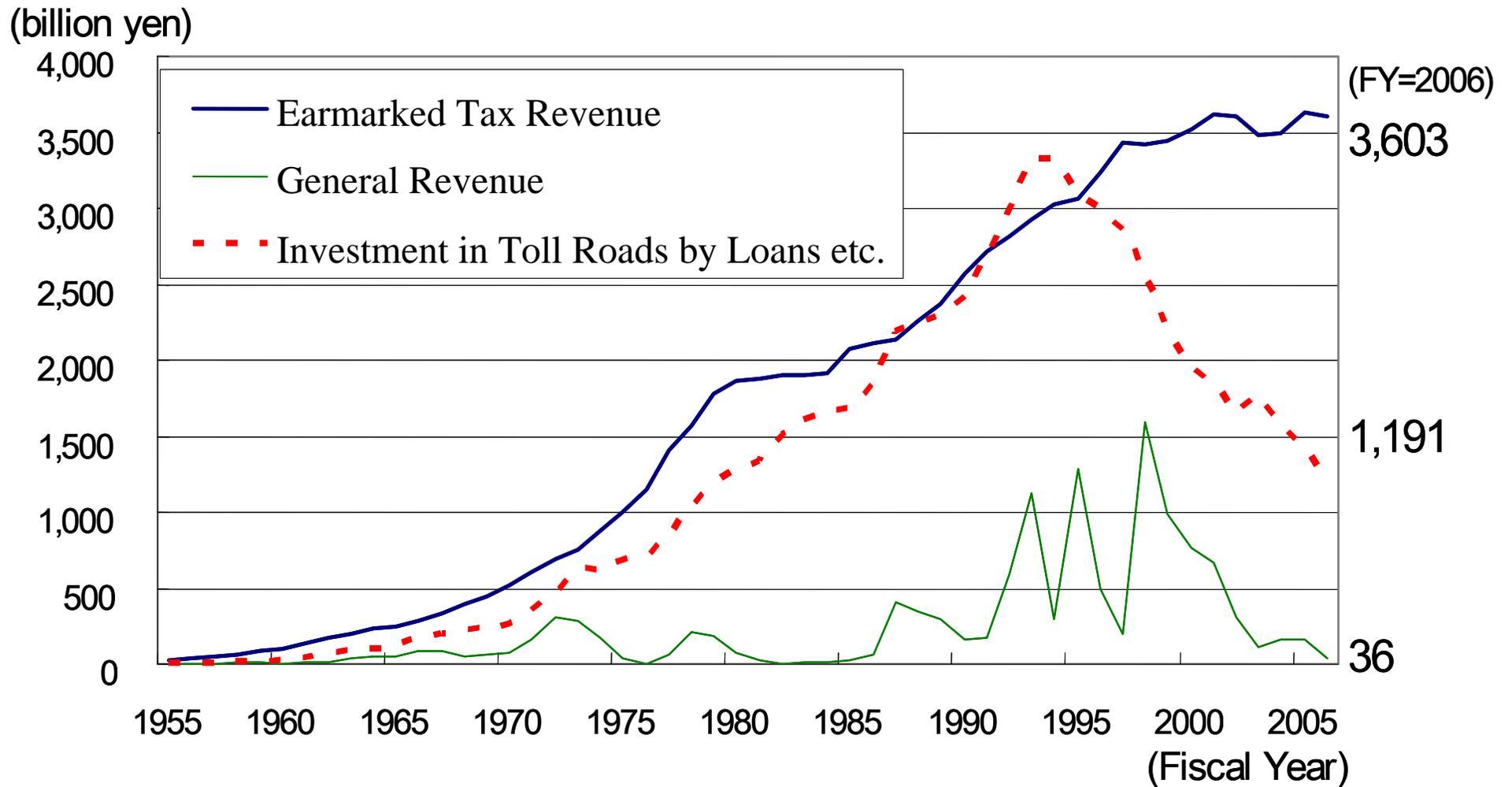
: Enactment of the Law Concerning Local Road

Public Corporation

- Permitting establishment of a local road public corporation to construct regional arterial toll road.

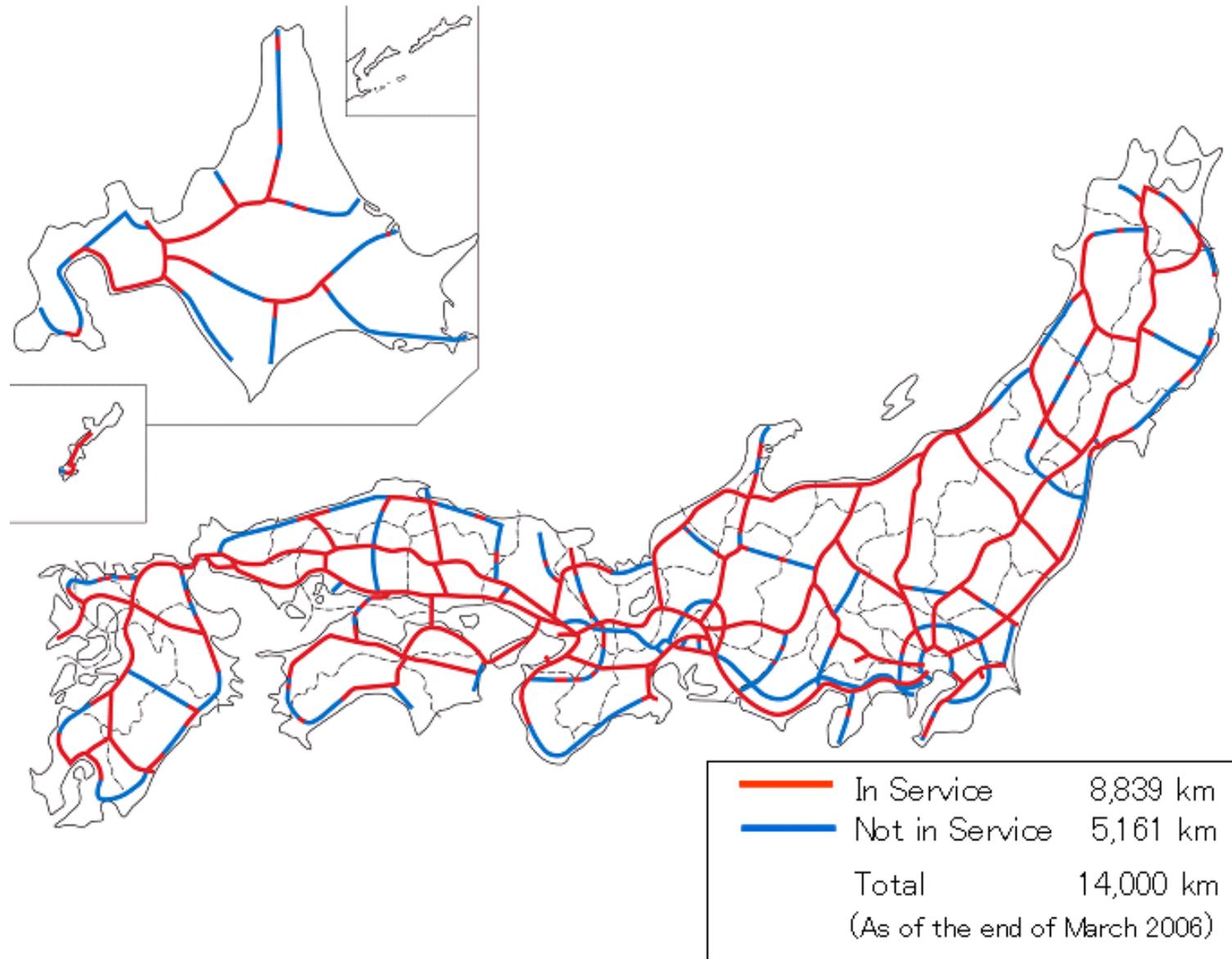
[history]

- 2000:
 - Budget for toll road works: 2,590 billion yen
 - Share for toll road works
 - · · About 35% of the total road works
 - Total national government funds for toll road works
 - · · 530 billion yen = 15% of the total national funds
- 2005:
 - Total length of toll roads: Approximately 9,500km
(Includes national expressways, urban expressways, Honshu-Shikoku expressways, general toll roads)



Source: Ministry of Land, Infrastructure and Transport

Change in Road Investment of National Government by Financial Resource

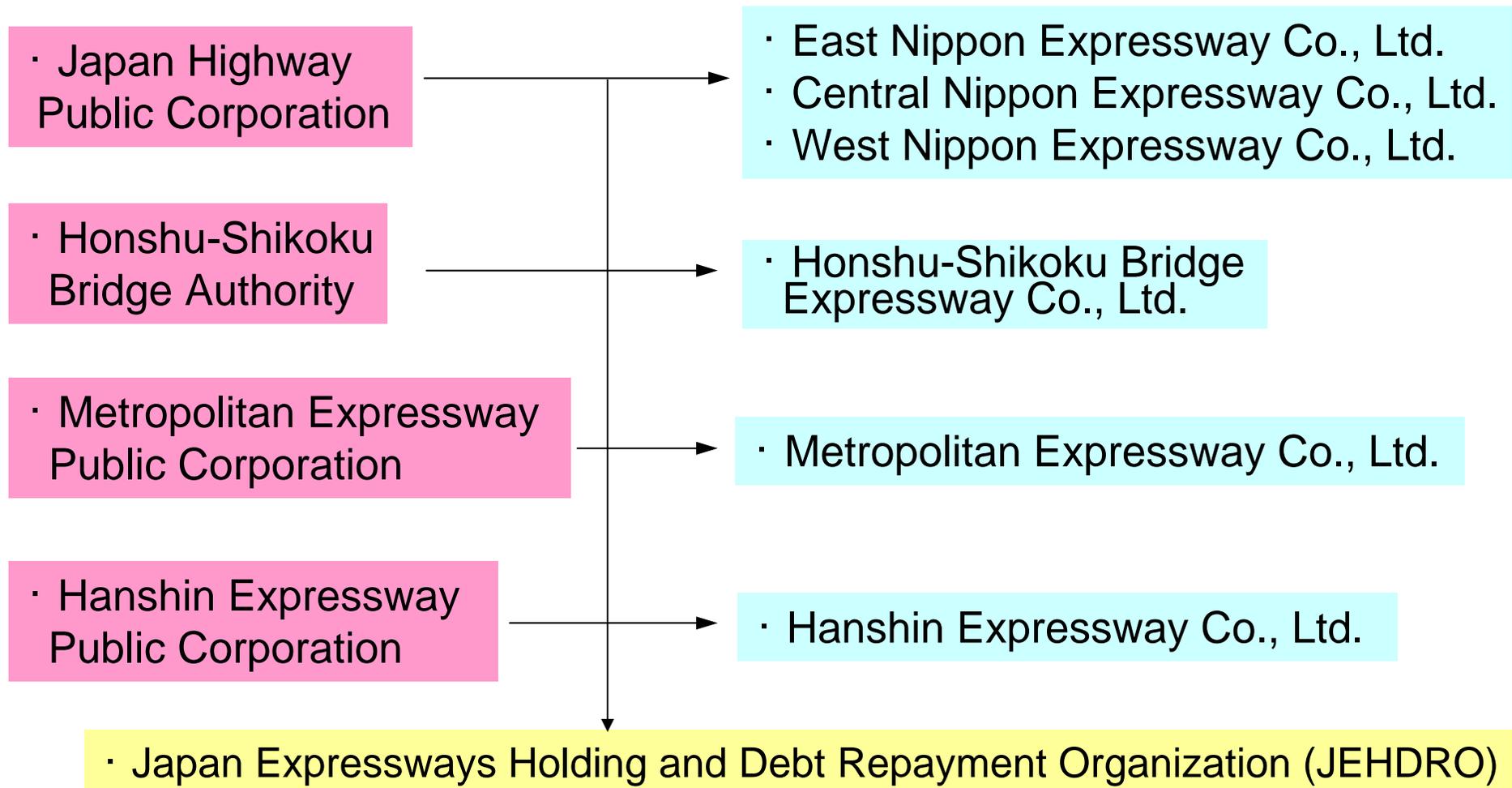


Source: Ministry of Land, Infrastructure and Transport

Current Status and Further Development of High-Standard Arterial Highways

[history]

• 2005: Privatization of Four Highway-Related Public Corporations



CONCLUSION

- The earmarked tax system

When a country expects an increase in traffic demand in the future, earmarked tax systems can be effective because tax revenues related to automobiles increase in proportion to traffic demand.

- The toll road system

It is possible to introduce toll road systems to cover the cost of development even in countries with low economic growth rates with some assistance from the government as long as traffic demand is above certain levels.



stable and adequate financial resources for road development

- The Five-Year Highway Development Plan

It is important that stable development and maintenance plans should be practiced with corroboration of above mentioned resources.

Improving road networks
based on the plan, and
securing stable, reliable and
adequate funding for road
investment are believing in
the future of the nation.

Thank you

The **END**

