
Expressway in Japan -Toll Road System and Status-

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- 2. Toll Road System (in the past)*
- 3. Privatization of Expressway Companies and Current Toll Road system*
- 4. Efforts as a Private Toll Road Operator*

I. History of the Road Development in Japan

History of its Development: Just 50 years experience

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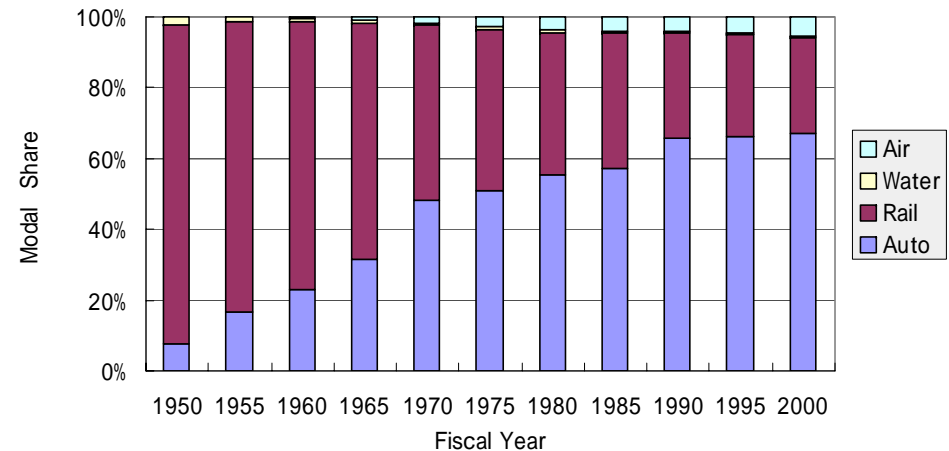


Shiojiri Pass, National Highway Route 20 (1956)



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

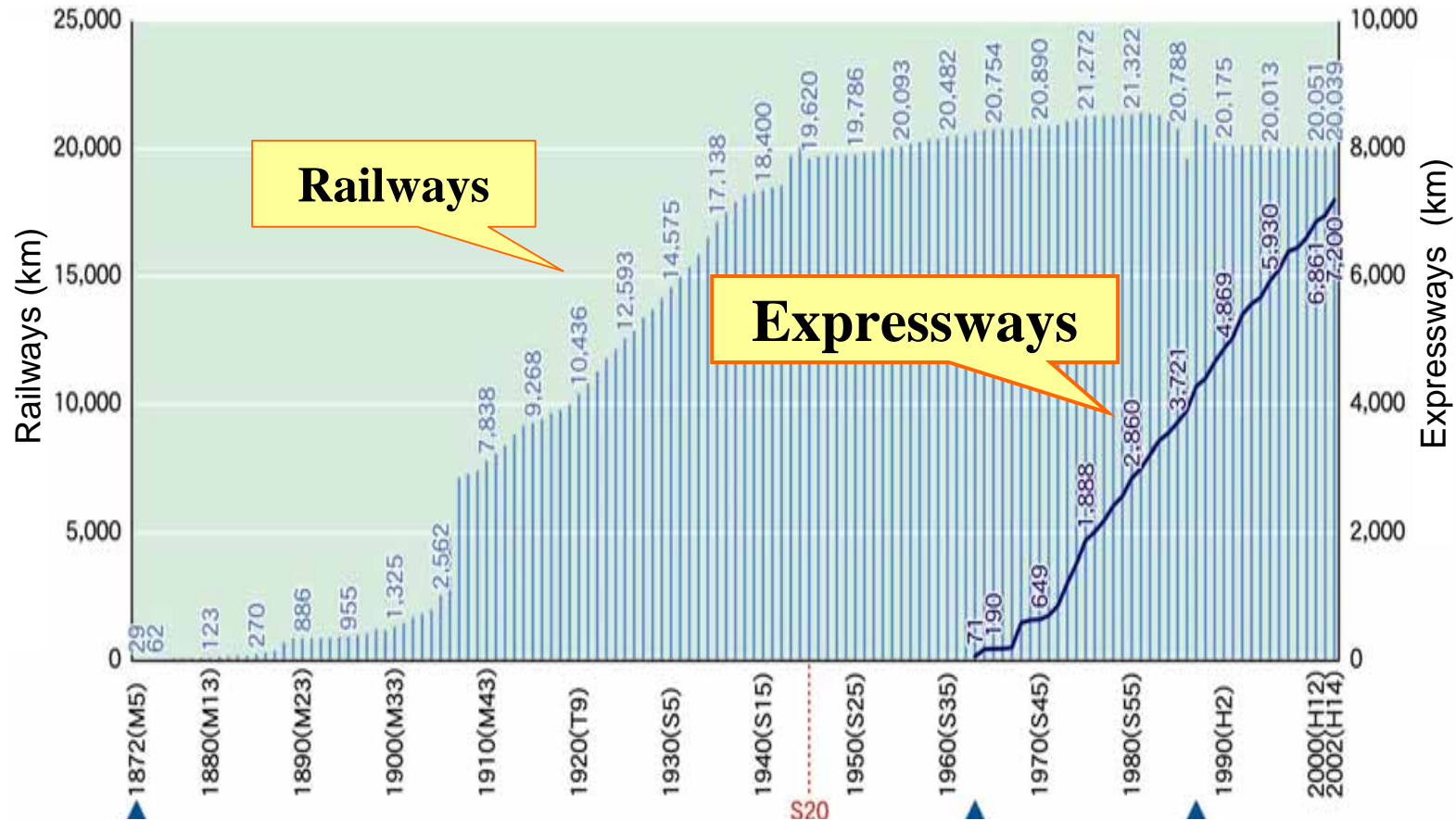
Watkins Report, World Bank (Aug. 8, 1956)



**Trend of The Modal Share of Passenger Transport
(passenger-km base)**

History of its Development: Just 50 years experience

Change in the length of Railways and Expressways



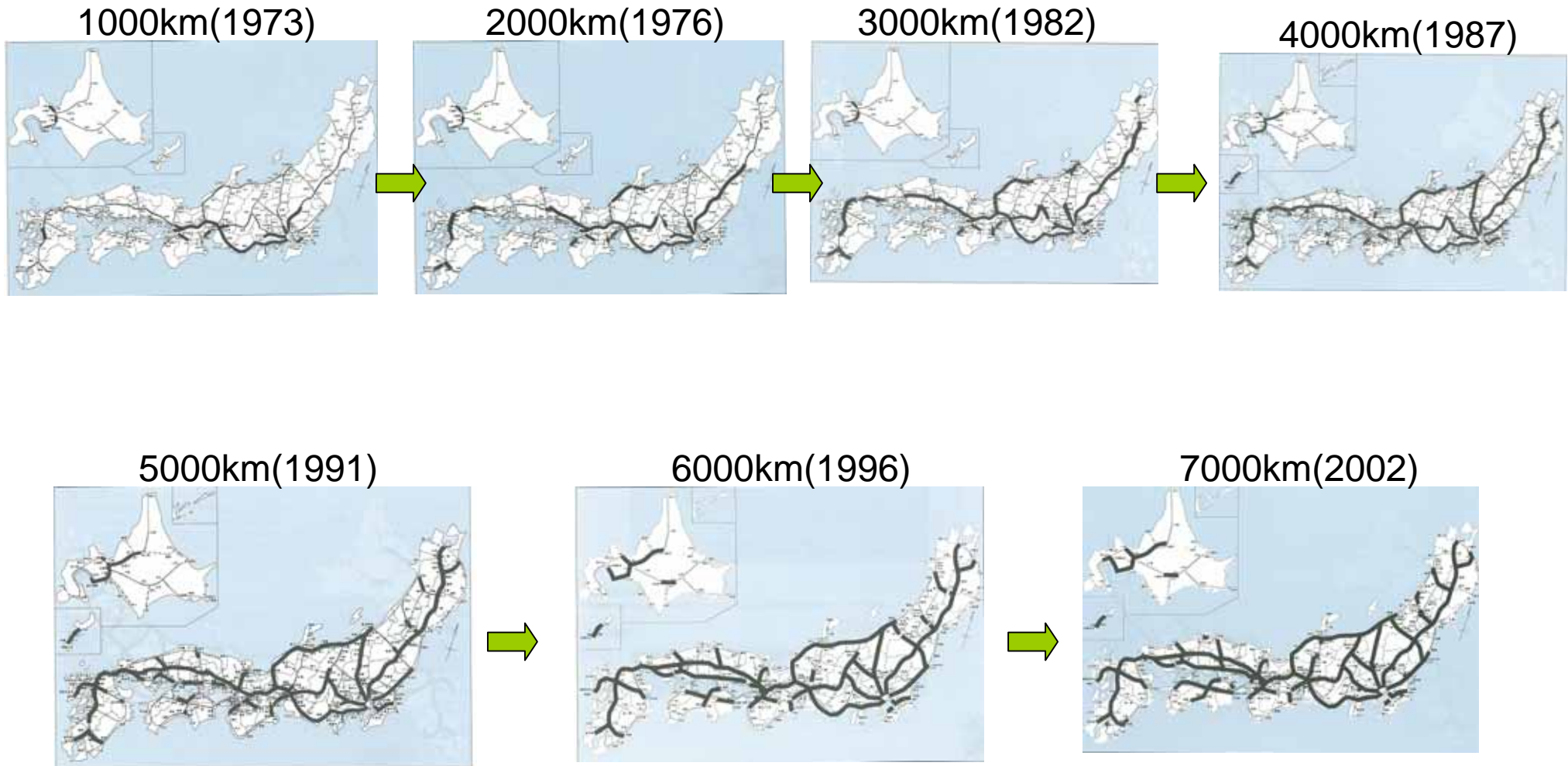
The first railway opened in 1872

The first expressway opened in 1963

Privatization of National Rail into JR in 1987

History of its Development: Just 50 years experience

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II. Toll Road System (in the past)

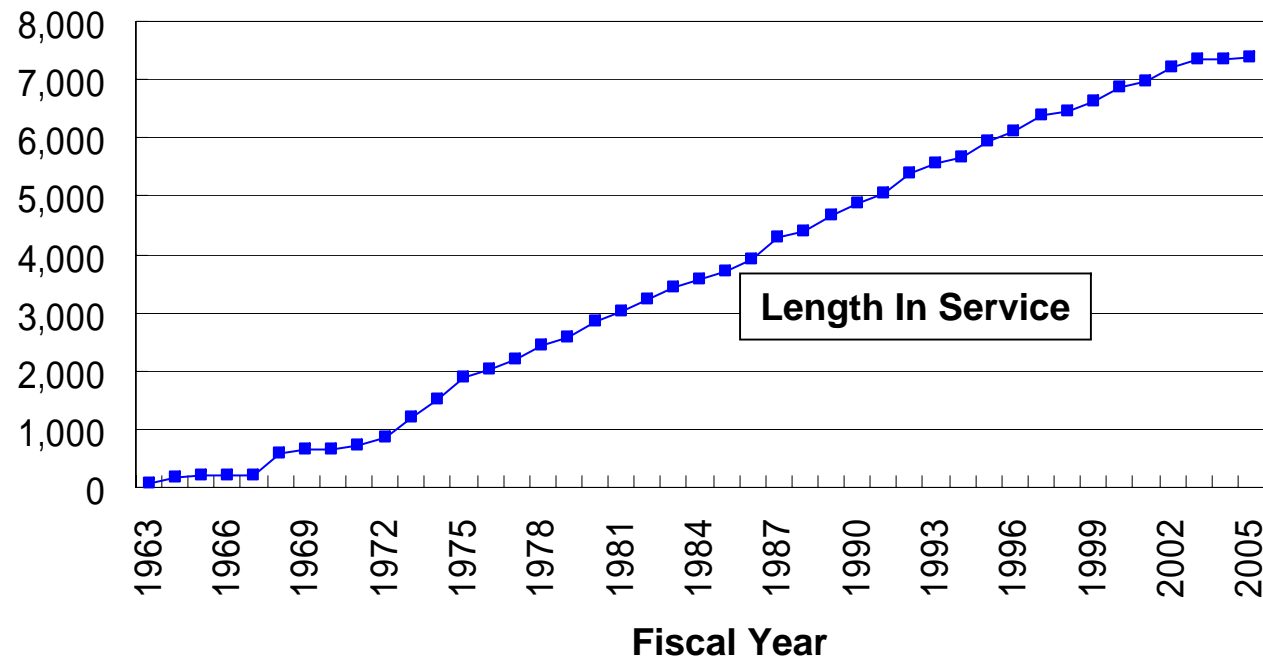
Toll Road System: General Policy

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Toll Road System

- Low-Interest Fund from the Treasury Investments and Loans (resources from the deposit of Japan Post)
- Construction and Management by four Expressway Public Corporations

Total Expressway Length (km)



Revenues and Expenditures of the Expressway Business

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Steady generation of funds for loan repayment

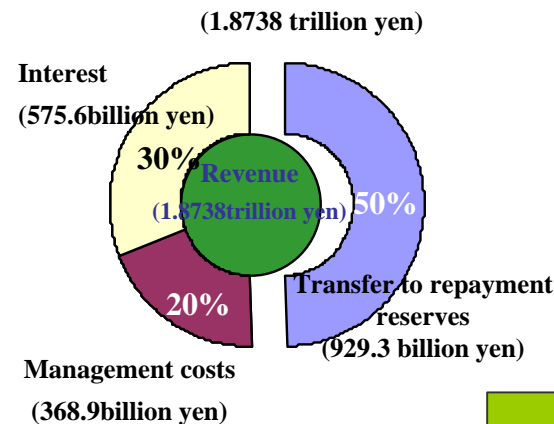
- In view of the nature of the business, the accumulation of recoupment reserves is used as the basis for preparation of the balance sheet and profit & loss statement, so that the situation of the repayment of loans, etc. can be seen at a glance.
 - ✓ The purpose of the business is not making a profit, so all revenues in excess of expenditures are applied to loan repayment, loan repayment. The repayment reserves represent the cumulative total of these amounts.
- In fiscal 2000, revenues in excess of expenditures were approximately 929.3 billion yen.
 - ✓ Over time, the borrowed funds are being steadily repaid each year.
- In fiscal 2000, the ratio of expenditures to revenues was 50, and the recoupment ratio was 33.
 - ✓ The ratio of expenditures to revenues is obtained by dividing expenses (management costs plus interest) by revenues.

$$\text{Expenditure-revenues ratio} = \frac{\text{Management costs} + \text{interest}}{\text{Revenues}} \times 100$$

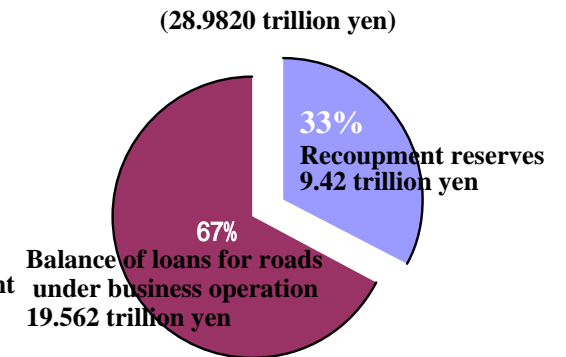
✓ The recoupment ratio is obtained by dividing the recoupment reserves by the total amount subject to repayment.

$$\text{Recoupment ratio} = \frac{\text{Recoupment reserves as of the end of each fiscal year}}{\text{Road assets as of the end of fiscal year}} \times 100$$

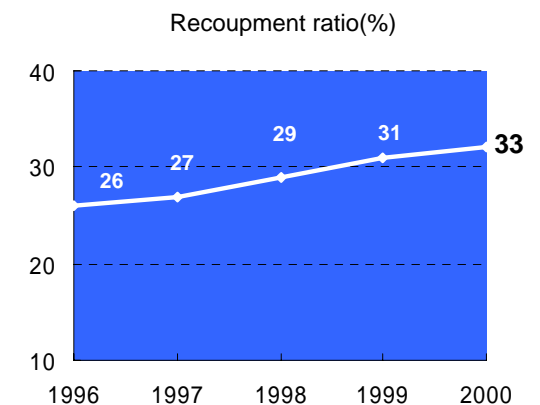
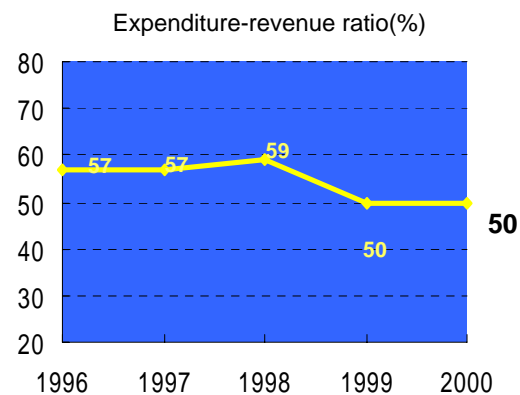
Breakdown of revenue and expenditures



Asset situation for roads in operation



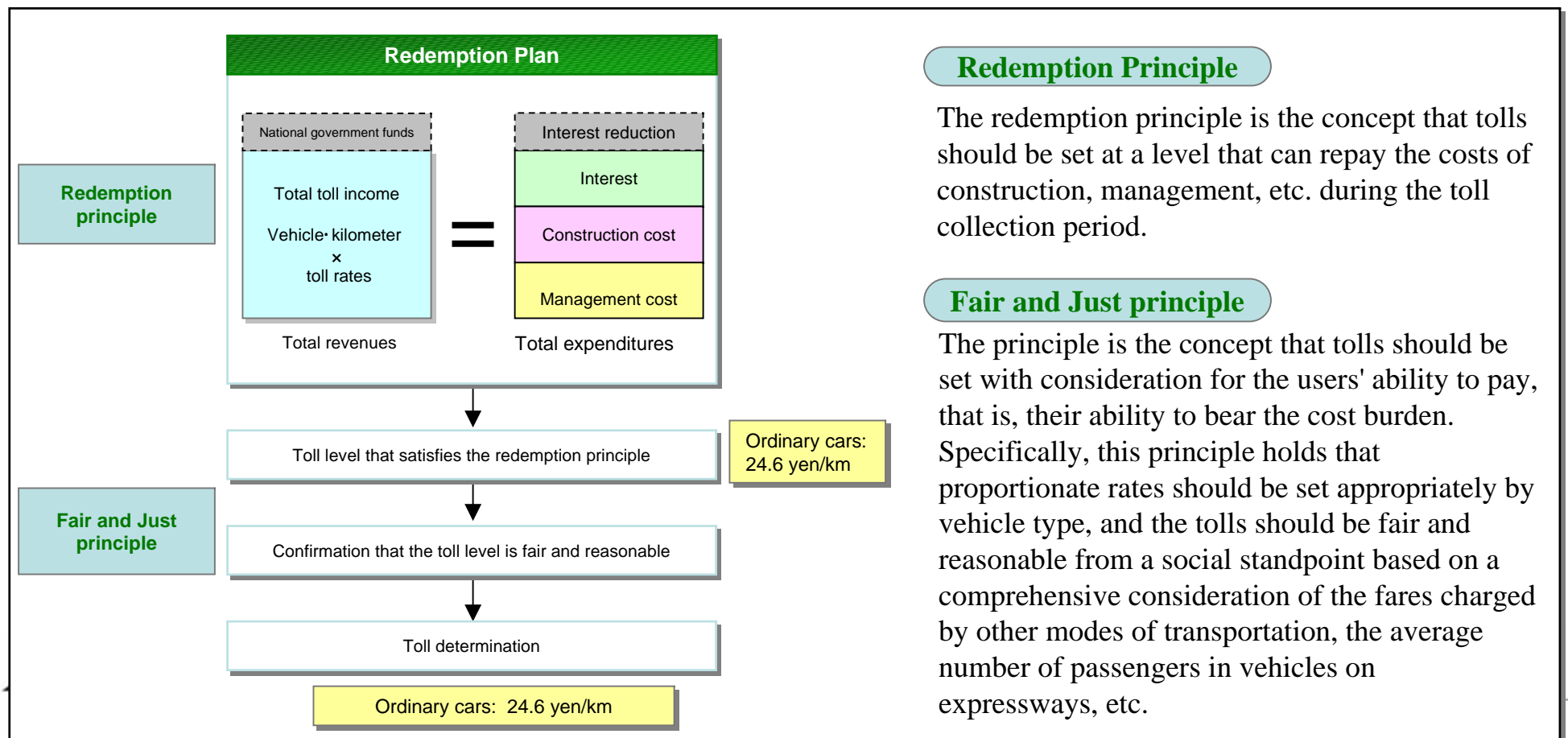
Repayment of the borrowed funds is progressing steadily.



Toll Determination Procedures

Expressway tolls are determined according to the redemption principle and the justice and validity principle.

- The current toll level is set and collected from users in order to repay the expenses needed for construction and management until repayment of the routes subject to Construction Orders of the 9,342 km under the current construction plan.
 - ✓ The current toll (24.6 yen/km) has been in effect since April 1995 (total length subject to Construction Orders: 9,064 km).



Redemption Principle

The redemption principle is the concept that tolls should be set at a level that can repay the costs of construction, management, etc. during the toll collection period.

Fair and Just principle

The principle is the concept that tolls should be set with consideration for the users' ability to pay, that is, their ability to bear the cost burden. Specifically, this principle holds that proportionate rates should be set appropriately by vehicle type, and the tolls should be fair and reasonable from a social standpoint based on a comprehensive consideration of the fares charged by other modes of transportation, the average number of passengers in vehicles on expressways, etc.

Toll Pooling

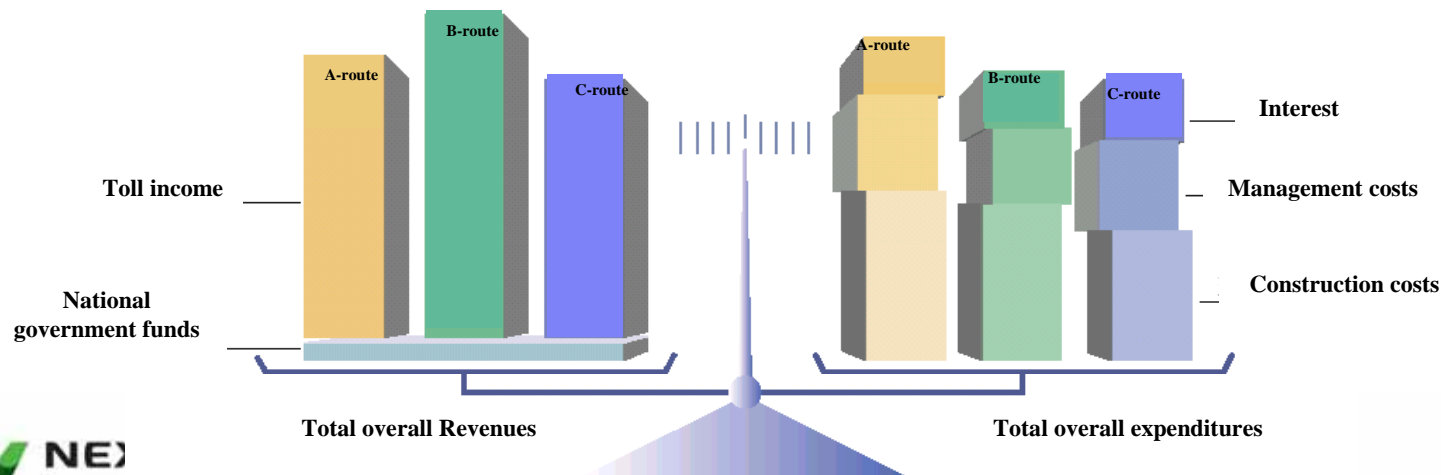
In the determination of expressway tolls, toll pooling system is used, considering the nationwide expressway network as a single unit.

- Initially, tolls were determined individually for each expressway route. However, toll pooling was proposed at the Road Council in March 1972, when the expressways were beginning to form a network, and toll pooling was begun in October 1972.
- Reasons for adoption of the toll pooling system:

The expressways form a nationwide network and provide an equivalent service of high speed transportation to the users of each route.

Since each route was built at a different time, the land acquisition costs and construction costs differ according to the time when the route was built. If tolls were determined separately based on the profitability of each route, then tolls would be higher for the routes which were built later on (recently built routes) than the routes which were built earlier at a lower cost (earlier built), in addition to the delay in construction. This would cause inequality between these two extremes.

The toll pooling approach, in which the revenues and expenditures of a group of routes are combined together, is an effective way to prevent a lack of fairness in the cost burden on users by making the toll levels and collection periods uniform and consistent, while ensuring smooth repayment of loans.

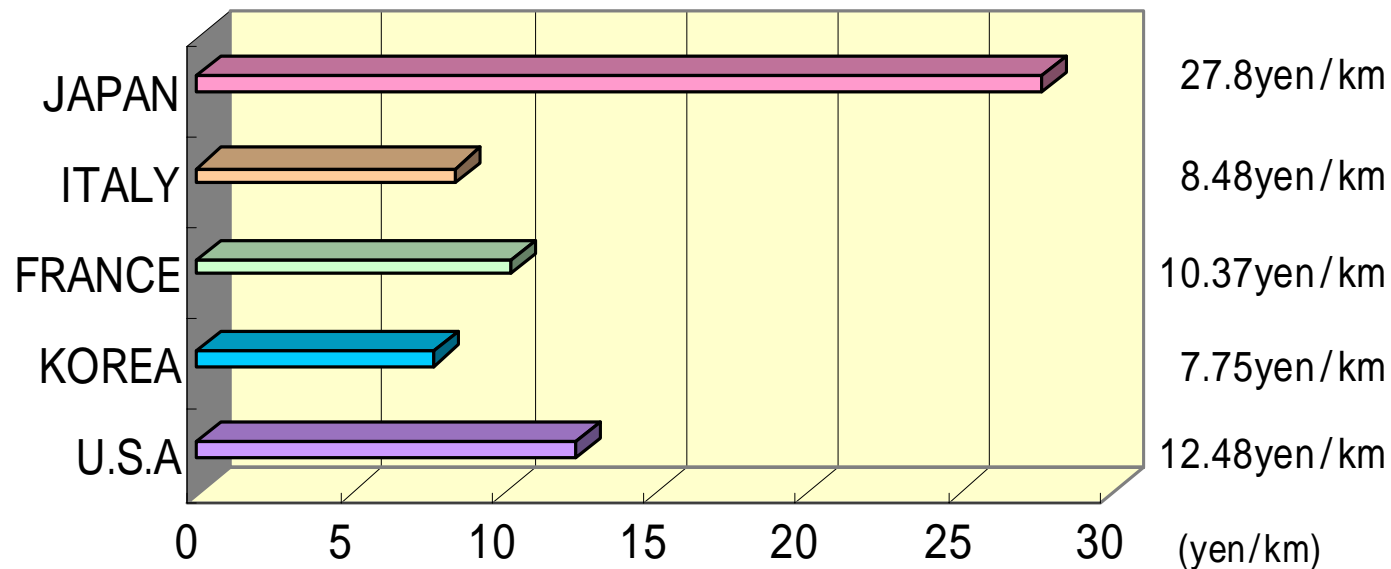


Comparison with Expressway Tolls in Other Countries

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Expressway tolls in Japan are about two to three times as high as those in other countries (converted in terms of purchasing power parity).

Toll rate comparison with other Countries (for ordinary vehicles)



Notes:

1. Tolls in Japan are calculated according to an average traveling distance of 46.4 km (1998) per vehicle.
2. Tolls in other countries are calculated according to GDP-based purchasing power parity (1999).

Comparison with Expressway Tolls in Other Countries



- **Cost factors**

- ✓ **Influencing factor 1: Expressways in other countries were constructed longer ago, when construction costs were lower.**

In Japan, only 57% of the total length of expressways currently in use were opened by 1985. In Italy, for example, this figure is 90%.

- ✓ **Influencing factor 2: Japan's rugged topography and high land prices are a factor pushing up construction costs.**

- 1) Because of the rugged topography, there is a high proportion of tunnels, bridges, and other structures.
 - 2) Land prices are high, about five times the U.S. level.
 - 3) Japan is one of the most prone to earthquakes of all the countries in the world, so thorough earthquake safety measures are needed.
- For example, construction costs in Japan are about double the U.S. level. However, if the proportion of structures (tunnels, bridges, etc.) and land prices were set at the same level, construction costs would be roughly equivalent, at 2.33 billion yen/km in Japan and 1.91 billion yen/km in the U.S.

- ✓ **Influencing factor 3: The difference in management costs is not large, when cost factors related to personnel are excluded.**

- Average wages in the construction industry in Japan are about double the level in other countries.

Comparison with Expressway Tolls in Other Countries

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- Public support

- ✓ **Influencing factor 4: Differences in public support**

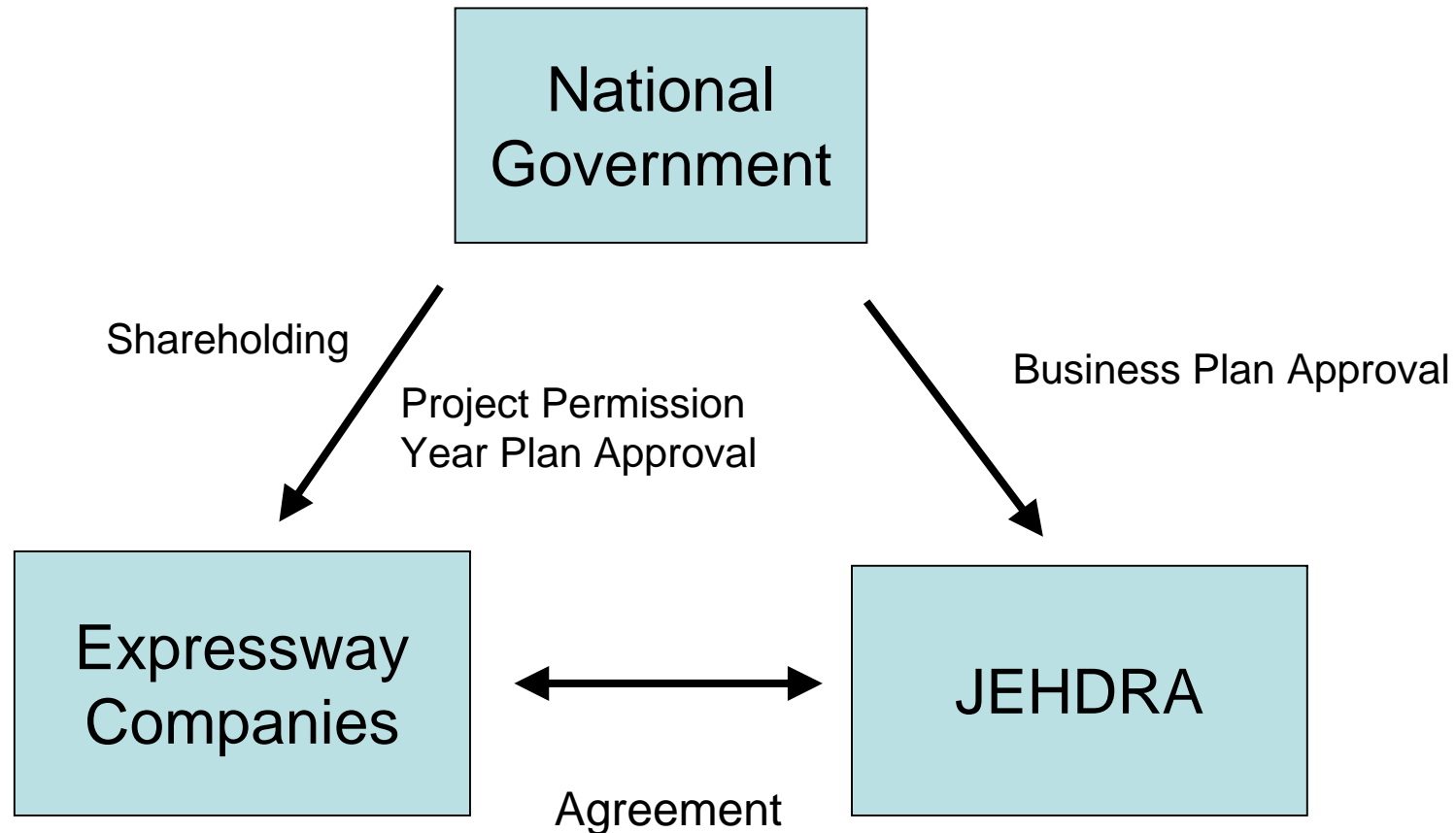
In other countries, a great deal of public support has been provided for capital investment in the form of subsidies and so on from the beginning, and this has reduced the toll burden on users.

- **Italy:** Subsidies were 20-30% in the initial construction period, and in recent years, subsidies for new road construction are about 30%.
 - **France:** Interest-free loans from the government covered 10-60% of construction costs in the initial construction period, accounting for about 37% of cumulative road investment.
 - **South Korea:** 100% of constructions costs were borne by the government in the initial construction period. Currently, government investment is about 50%.
 - **Japan:** Together, government financing and government subsidies accounted for about 12% of cumulative construction costs as of the end of 2000.

(Note: For Italy, the figures are for Autostrade and its subsidiaries. For France, the figures are for SEM.)

III. Privatization of Expressway Companies and Current Toll Road System

Basic Frame of Privatization



(Established Based on the Special Law)

(Established Based on the Special Law)

Establishment of JEHDRA

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Japan Expressway Holding and Deb Repayment Agency (JEHDRA):

Was established as an independent administrative agency

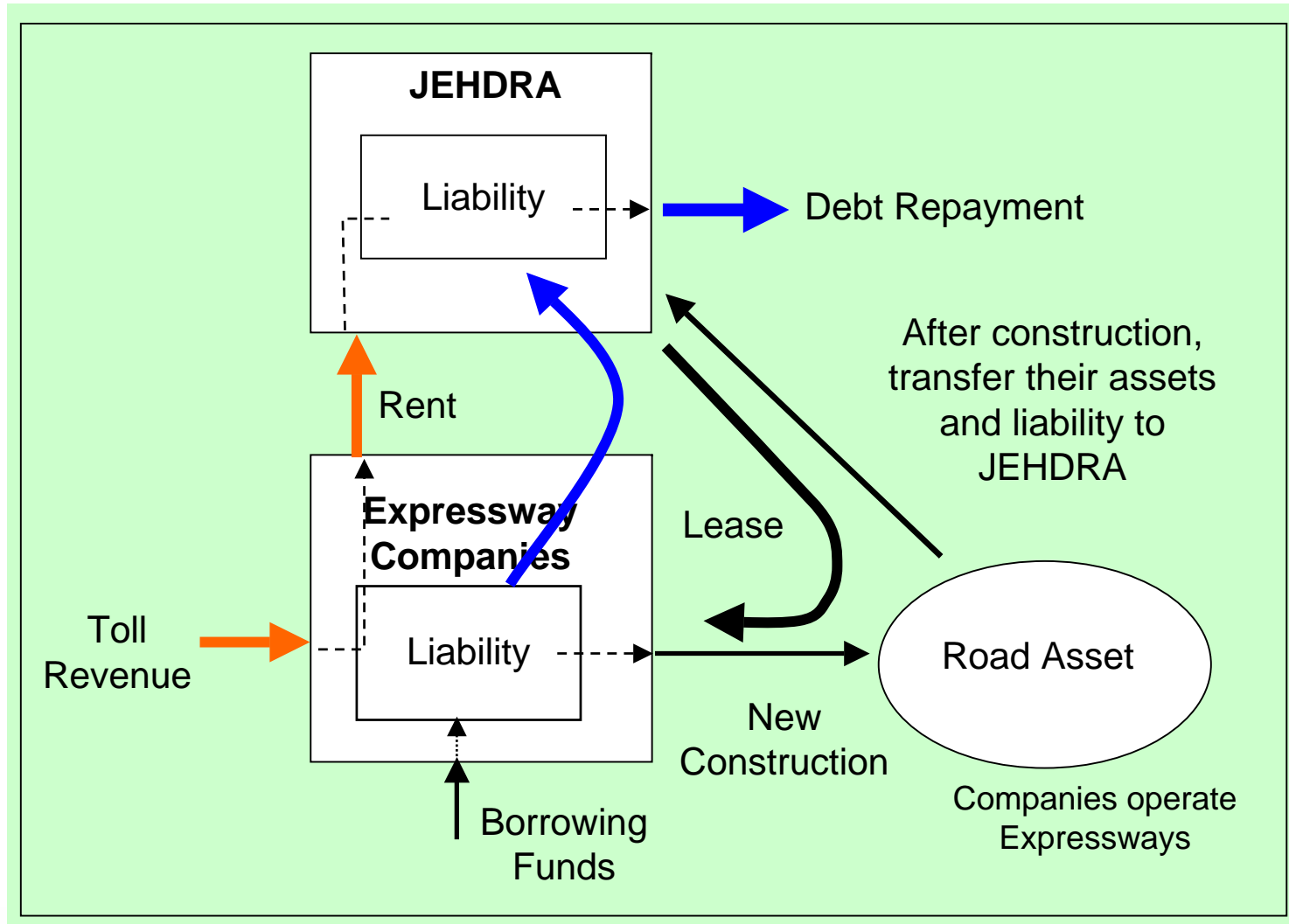
Holds Expressway assets and liabilities

Repays the debts by the rent by the companies

Holds authorities for administrative actions

Is to be dissolved after 45 years from the privatization

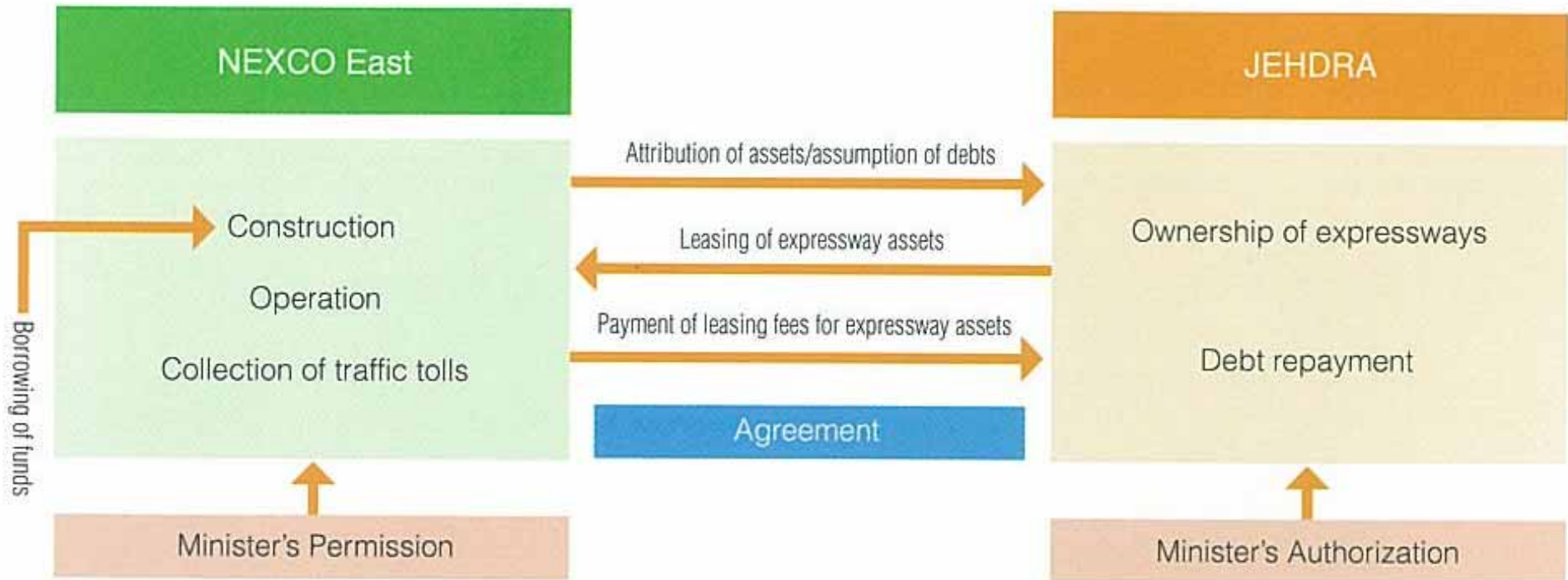
Toll Expressway Business System Architecture



Implementation Scheme of Expressway Business

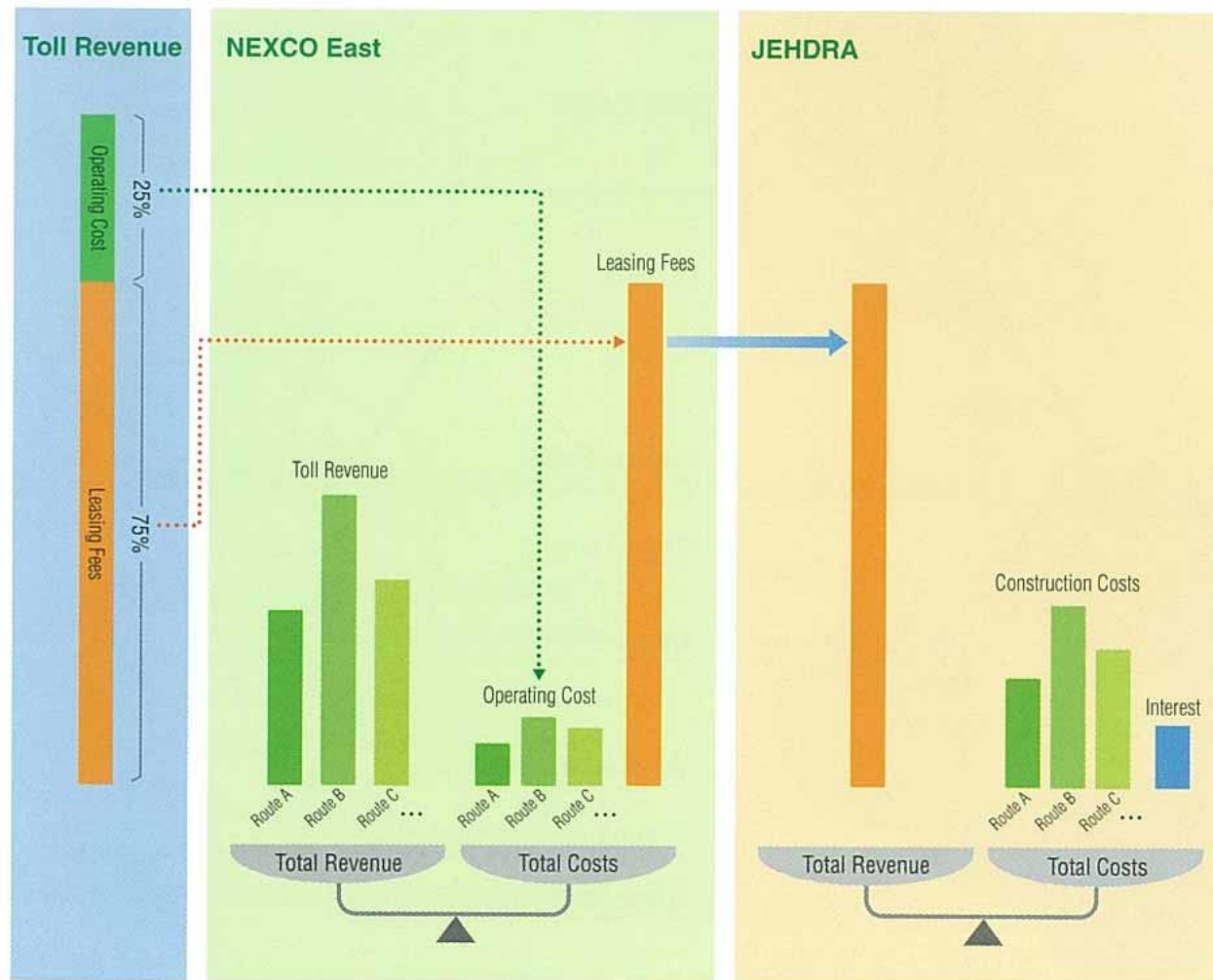
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Framework of Privatization



Implementation Scheme of Expressway Business

Relationship among toll revenue, leasing fees, construction costs, and operating costs



Basic Principle of Expressway Business



Completing repayment of debts within 45 years after the privatization

- The repayment term, less than 45 years, is statutory
- Reducing efforts of new construction and management expenses by the expressways companies

Steady Expansion of Expressway Network

- Constructed by the privatized companies using toll revenues: 1,153km (Total 8,520km including completed expressways)
- Constructed by the government using the national and local tax revenues: 822km

Toll Discount

- Discount for ETC users

Grant of incentives for the expressway companies

- Subsidies for cost reduction in construction and maintenance to the expressway companies

Expressway related business

- New Businesses in SA and/or PA

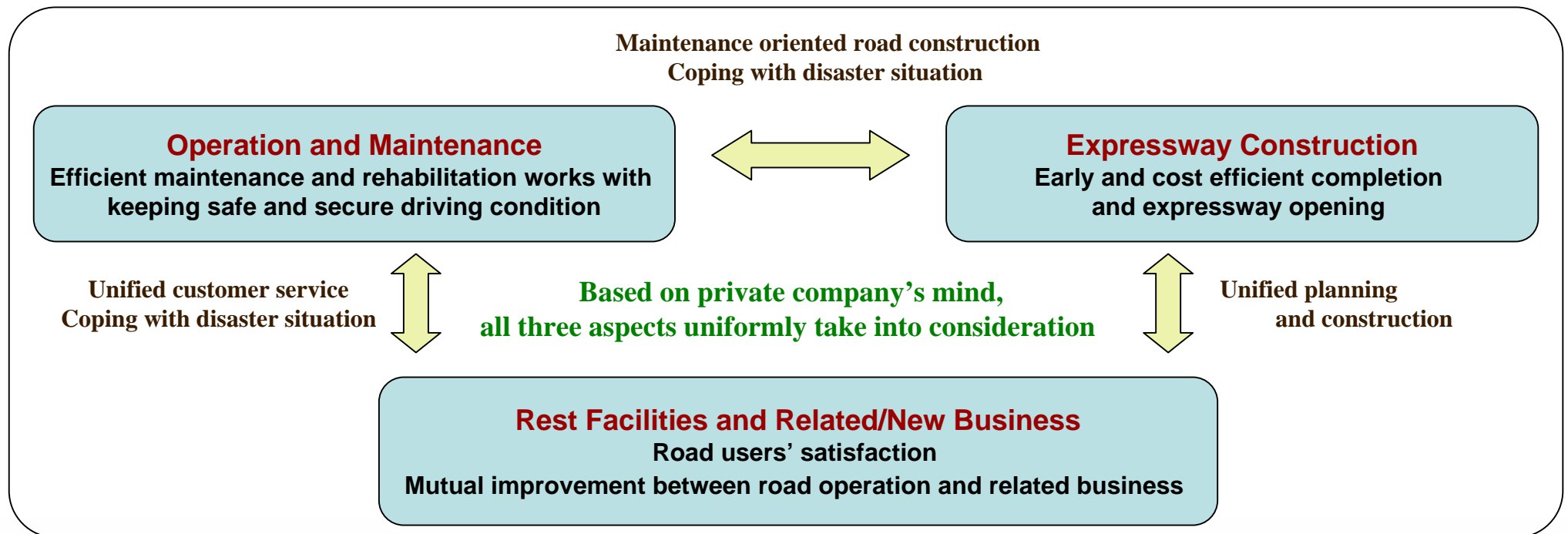


IV. Efforts as a Privatized Toll Road Operator

Privatized Expressway Company: its efficiency



- **3 Phases/aspects are effectively conducted under unified mutual operations**
 - Construction
 - Operation and Maintenance
 - Expressway related business
- **Social requirement of a privatized company: efficient and transparent business procedure**



Safe Reliable and Comfortable Expressway

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- As a toll road operator, Safe Reliable and Comfortable expressway is E-Nexco's policy.
 - Customer first
 - 24 hours a day, 365 days a year

<Maintenance/Rehabilitation>



Winter maintenance
Snow removal



Disaster management
Demolished road by an earthquake

<Inspection>



Daily/Periodical/Emergency inspection
Bridge, Tunnel, Slope etc.

Safe, Reliable and
Comfortable
Expressway

<Traffic Operation/Management>



Daily management
At traffic control center



Patrol and site operation

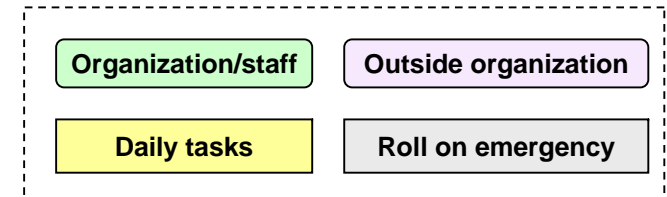
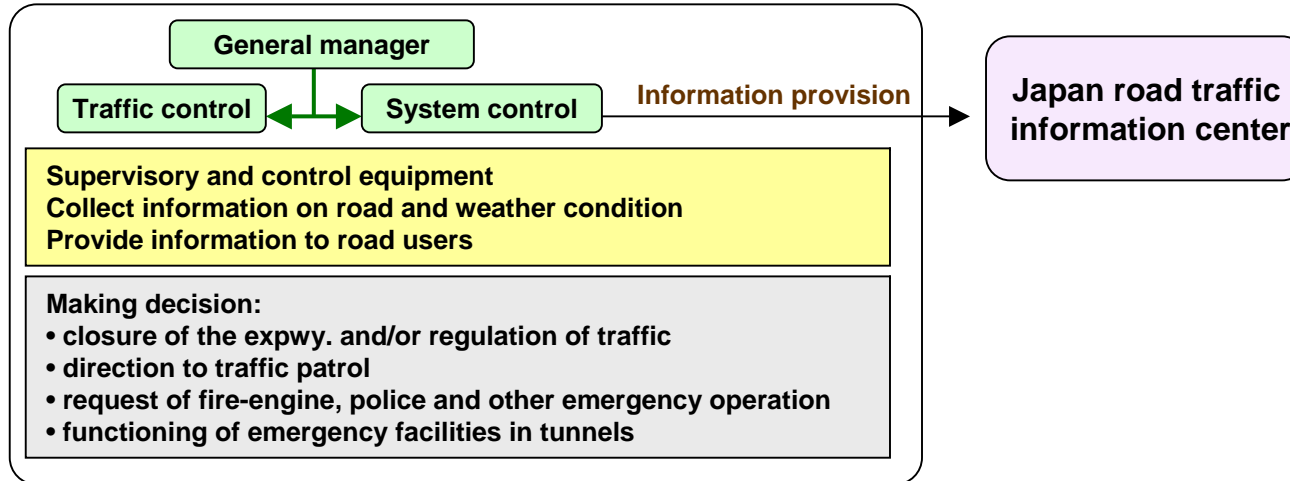
<Toll Collection>



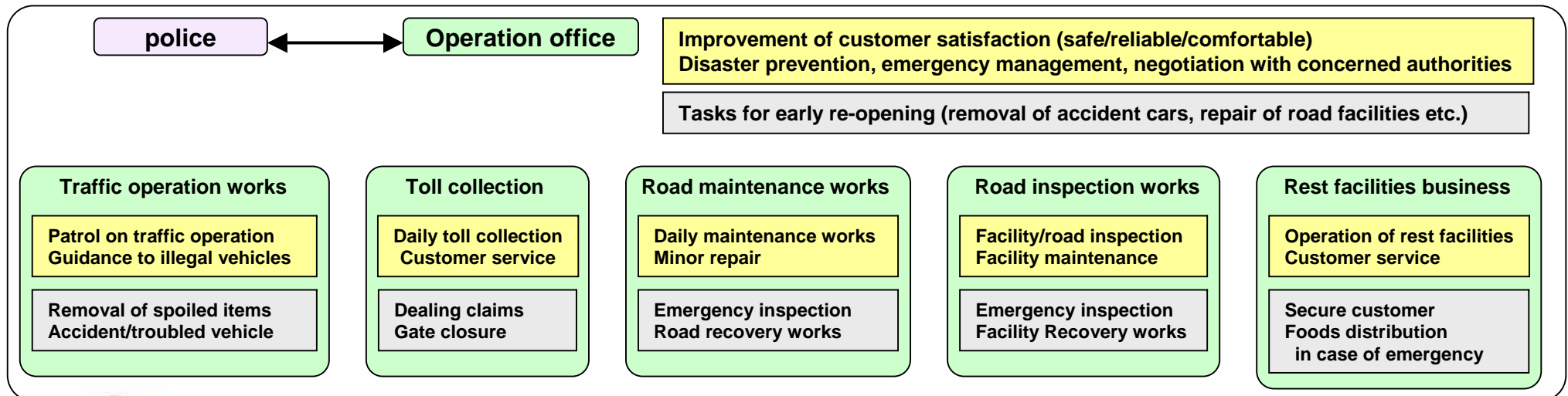
Manual and Electric Toll Collection
User friendly service: "customer first policy"

Traffic Operation Mechanism

<Traffic control center>



<at Site>



Thank you for your kind attention.

“the Best-way for your country”

To seek the best choice & practice on development of Highway is our main concern.

E-Nexco shall closely and continuously cooperate with Tajikistan authorities, if required, for “the Best-way.”