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REVIEW OF SELECTED ROAD FUNDS
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**REVIEW OF SELECTED ROAD FUNDS**

**I. JAPAN: ROAD IMPROVEMENT SPECIAL ACCOUNT**

Japan introduced a special funding system for roads in 1954. This coincided with introduction of the first 5-year road improvement program. At the end of the war, there were about 130,000 motor vehicles in Japan, but this figure jumped to one million by 1953 and it became clear that the road network – which was outdated and in poor condition – had to be improved. Among other things, these 5-year rolling programs were therefore designed to bring the Japanese road system into the 20th century and to cater for the rapid growth in motor vehicles. Since then, the 5-year road improvement programs have been renewed and implemented continuously to provide road users with better driving conditions and to provide people living in urban areas with better access to the countryside.

The new funding system for roads involved earmarking certain road-related taxes and depositing them into a special account, or road fund. The special funding system was introduced to meet the needs of the post-war road improvement program and was “based on the concept that road users who enjoy the benefits of improved roads should bear the burden for their improvement” (i.e., it was based on the user pay concept).

The road fund employs an elaborate system of earmarked national and local taxes to finance the maintenance, improvement and construction of national, prefectural (provincial) and local roads. At the national level, tax revenues earmarked for roads are divided between the various road authorities as follows:

(i) All the revenue from the gasoline tax (about $0.41 per liter) is transferred to the road improvement special account and up to a quarter of this can be donated to local governments for local road development;
(ii) Half the motor vehicle LPG tax ($0.14 per kg) is paid into the special account, while the remainder is transferred to local government as motor vehicle LPG transfer tax;
(iii) Seventy-five percent of the motor vehicle tonnage tax ($51 per half ton per year) is paid into the special account, while the remainder is transferred to local government as motor vehicle tonnage transfer tax.

At the local level, tax revenues earmarked for roads are divided between the various road authorities as follows:

(i) LPG tax is spent on roads in the Tokyo Metropolitan Area, Hokkaido, prefectures, and designated cities;
(ii) Motor vehicle tonnage tax is spent on roads in cities, towns, and villages;
(iii) Up to a quarter of the national gasoline tax is donated to local governments (about $0.10 per liter). Forty-three percent of this is spent on roads in the Tokyo Metropolitan Area, Hokkaido, prefectures, and designated cities, while the other 57 percent is spent on roads in cities, towns, and villages;
(iv) Local diesel fuel tax ($0.31 per liter) is spent on roads in the Tokyo Metropolitan Area, Hokkaido, prefectures, and designated cities; and

(iv) Thirty percent of the motor vehicle purchase tax (5 percent of purchase price for private motor vehicles) is spent on roads in the Tokyo Metropolitan Area, Hokkaido, and prefectures, while the other 70 percent spent on roads in cities, towns, and villages.

Earmarked revenues at both the national and local levels are supplemented by general tax revenues and, in the case of the national government, are also deposited into the Road Improvement Special Account to ensure comprehensive management of the funds. Revenue from user fees in 1995 was roughly $30 billion.

Funds from the Road Improvement Special Account are provided to road authorities on a cost-share basis. Central government finances half the costs of maintaining directly managed national highways. The remaining costs are financed by prefectural governments and designated large cities. Central government also finances two-thirds of the costs of improving directly managed national highways, 70 percent of the national expressway network, and half the costs of subsidized national highways, main local (prefectural) roads and main local (municipal) roads.

Road spending in Japan is based on Five Year Road Improvement Programs prepared by the Ministry of Construction (MOC). The process worked well up until the start of the Ninth Road Improvement Program. Programs were prepared, approved and corresponding tax rates were then written into a new proper tax law which ensured that the road fund generated sufficient funds to cover costs during the next five year period. However, in 1982, a concerted effort was made to abolish the road fund and replace it with allocations from the government’s consolidated budget. Although there was a roads board in place – the Japan Road Council – it had played a relatively nominal role up to that point in relation to the road fund. The role and duties of the Council are laid down in article 77 of the Road Law. The law provides for a Road Council to be established by the Ministry of Construction at the request of the Minister. Among other things, the Council is asked to, "deliberate on management of the road fund and on toll road financing and advise the Minister on changes necessary to reorient road financing."

Faced by this crisis for the road fund, the MOC asked the Road Council to conduct an inquiry and make recommendations regarding how the overall road network should be developed as the country approached the 21st century. Their report, Proposal for Road Improvement Approaching the 21st Century, not only set the future direction of the road program, but also saved the road fund and established the credibility of the Road Council. Since then, the MOC has always asked the Road Council to submit its views on long-term strategy for road improvement as part of the preparations for the Five Year Road Improvement Program.

The Council was established in 1952 and consists of a chairperson and twelve other members. The members are proposed by the Director General of Roads and are appointed by the Minister of Construction. The chairman has traditionally been the President of Japan Road Association (always a former under-secretary from the Ministry
of Construction), but is currently the former President and chairman of Nissan Corporation. Board members include representatives of the motor industry, business community, trades unions, academia and local government. Much of the substantive work of the Council is carried out by three sub-committees: one deals with road policy, one with toll roads, and the other with environmental issues. The Council has no permanent secretariat, but is serviced by staff from the Roads Bureau of MOC.

Day-to-day management of the road fund is carried out by the General Affairs Division of the Roads Bureau. They have about 12 staff who are responsible for forecasting revenues, liasing with Ministry of Finance and monitoring use of funds by the other divisions of the Roads Bureau and the prefectures. Each of these divisions (e.g., the Expressway Corporation, Highway Division, etc.) and the prefectures have two or more accountants who monitor the expenditure programs and report back to the General Affairs Division. Expenditures on roads in cities, towns and villages are monitored by the prefectures who then report back to the General Affairs Division on programs supported by the road fund.

The road fund acts like a line of credit. Once the overall spending limits have been approved by parliament, MOC can draw down the funds, regardless of the actual revenue in the road fund account at the Central Bank (i.e., the government provides working capital). Contractors are paid directly after work has been inspected by an experienced MOC engineer who has not been involved in planning or implementation of the work. Work carried out by prefectures and designated cities is also inspected by MOC engineers.

All work financed from the road fund is subjected to an audit by the Japanese Institute of Audits which is independent from the government and influential amongst the public. The audit is done on a sample basis and they target several specific works per office. The audit team visits the work office, examines control procedures and financial records, and dispatch civil engineers to inspect the selected work sites. Problems and queries are resolved with MOC and the audit report is then submitted to the Parliament.
II. TRANSFUND NEW ZEALAND

The original road fund in New Zealand was established in 1953. In 1989 the road fund was re-named the Land Transport Fund and the management of the fund was transferred to Transit New Zealand (TNZ) which had been set up in 1989. However, since the road fund was used to finance TNZ's road program, as well as those of the Regional Councils and District Councils, there was thought to be a conflict of interest. So, on 1 July 1996, the Transit New Zealand Amendment Act came into effect and created a separate road fund administration called Transfund New Zealand (Transfund). Management of the road fund was therefore separated from TNZ and placed under the jurisdiction of a separate management board. The board consists of five members: (i) two representing TNZ (either employees or members of the TNZ Authority); (ii) one representing local government; (iii) one representing road users; and (iv) one representing other aspects of the public interest. Members are appointed by the governor-general on the recommendation of the Minister, following consultations with people from the land transport industry and elsewhere. The Chairman is appointed by the governor-general from among the existing members of the board.

The revenue for the road fund comes from: (i) a fuel excise added to the price of gasoline; (ii) weight-distance charges paid by diesel vehicles; (iii) motor vehicle registration fees; (iv) interest earned on the road fund account; (v) revenues earned from sale of surplus property; and (vi) refund of GST (the NZ equivalent of VAT).

♦ The fuel excise in 1996 was set at about $0.065 per liter (the total excise tax on gasoline was $0.21 per liter) and is expected to generate about $204 million. The funds are collected by the NZ Customs who are paid about $414,000 to cover their costs (i.e., about 0.2 per cent of revenue). Evasion is negligible.

♦ Weight-distance charges are expected to generate about $293 million in 1996. The collection is managed by a unit within the Land Transport Safety Authority at a cost of about $10 million (including $5 million spent on enforcement). A number of agencies sell the weight-distance certificates, including the NZ Post (approximately 50 per cent), BP petrol stations, Vehicle Testing NZ, Vehicle Inspection NZ, NZ Automobile Ass., and AMI Insurance. There is also an arrangement whereby operators can buy licenses from their own offices by way of a remote terminal. The overall costs are about $1.00 to $2.00 per transaction. Evasion accounts for about 12 percent of revenues (9.4 percent heavy vehicles and 2.8 percent light vehicles respectively) and legal avoidance for about 7 percent of net revenues.

♦ Motor Vehicle Registration Fees are expected to generate about $104 in 1996. The collection is managed by the Land Transport Safety Authority at a cost of about $19.3 million (i.e. nearly 19 percent). Similar agencies sell the registration certificates, namely: NZ Post, Vehicle Testing NZ, Vehicle Inspection NZ, the Automobile Ass. and AMI Insurance. The extent of evasion is unknown.
Interest and sale of surplus property are minor items.

Reimbursement of GST is at a rate of 1/9 of the expenditures made out of the Land Transport Fund to compensate for payment of GST on all revenues received by the road fund.

The main objectives of the board are to “allocate resources to achieve a safe and efficient roading system”. In this connection, its key functions are to:

(i) approve and purchase a national roading program from the various road agencies, including capital projects;

(ii) approve the competitive pricing procedures applicable to the roading program;

(iii) audit the performance of TNZ and Local Authorities against their respective roading programs;

(iv) provide advice and assistance to Local Authorities in relation to the new Transfund Act.

Transfund has 35 staff, including a General Manager who is appointed by the board. The General Manager appoints all staff. They include programming and contracts staff, audit staff and other staff in seven regional offices.

Transfund manages the National Roads Fund which has been reconstituted out of the old Land Transport Fund. The key changes are the new management structure and the removal of the need for separate decisions on the funding level and the expenditure program. Government still sets the charges which determine the inflows to the road fund, but no longer determines the outflow. Once the costs of Police and the Land Transport Safety Authority have been met, the balance of the revenues are available for use by Transfund without any further controls. In other words, the charges are still being collected “as if” they were taxes, but Transfund is now wholly responsible for what happens to the resulting revenues.

The specific responsibilities of Transfund are to:

(i) prepare the Annual National Land Transport Plan;

(ii) recommend Government income and expenditure levels needed to support the Plan;

(iii) advise in general on the suitability of the Land Transport system;

(iv) fund the approved projects within the Plan;

(v) make payments to road agencies to finance the approved projects.
The National Land Transport Plan is thus the basic building block for Transfund's short and long-term activities. It is built up from bids submitted by TNZ and the Local Authorities. The bids are subject to checks on the reasonableness and appropriateness of supporting B/C calculations, before projects are ranked in order of priority. Maintenance is accorded highest priority, with other projects ranked in order until all available funds are utilized (the current cut-off B/C ratio is 4).

Maintenance requirements are based on a combination of professional judgment and the outcome of a Road Assessment Maintenance Management System (RAMM). RAMM is a computerized pavement management system that includes road inventory (road condition) and treatment selection for determining work programs based on engineering and economic criteria. Transfund requires all road agencies wishing to receive funds from the road fund to base their estimated funding requirements on RAMM. Road authority requests are vetted on an ongoing basis by Transfund staff and the Review and Audit Division carries out audits every three years to ensure that minimum maintenance standards and service levels are being maintained by each road authority.

To further refine the method of allocating maintenance funds, a project has recently been launched to determine the best way of estimating optimal maintenance funding levels for the different road authorities.

The Review and Audit Division carries out systematic reviews and appraisals of activities wholly or partly funded from the road fund. It reports through the CEO to the board and, in exceptional circumstances, may report directly to the chairman. One of the conditions for providing funds to the road authorities, is that they provide all the information and cooperation necessary to enable the division to review and audit the correct application of these funds. The aim of the audits is to ensure that the funds have been used in an efficient and effective manner. The division monitors outputs in relation to stated performance measures and tests compliance with agreed plans. The latter include TNZ's Statement of Intent, the Land Transport Programs prepared by the Local Authorities and the policies and decisions of Transfund.

The division visits the regional offices of TNZ and the Local Authorities at appropriate intervals and reviews their internal systems (including accounting and related systems) to confirm that they are being operated correctly and in conformity with the various Acts and policies of Transfund. The division carries out its role under the standards for internal auditing laid down by the NZ Institute of Internal Auditors. Technical and economic audits are made on a regular planned basis about every five years, while procedural audits are made every three years. The purpose of the procedural audits is to assess the accuracy of the financial assistance claims made by the road authorities and the extent to which the road authorities are complying with Transfund's policies with regard to the custody, recording and utilization of road fund resources.
The United States established the Highway Trust Fund in 1956 to finance the federal share of the inter-state highway network and support most other Federal-aid highway projects. Later amendments extended funding to other transport programs as follows:

- The Highway Safety Act of 1966 made funds available for state and community road safety programs.
- In 1982, the scope was widened to permit the financing of mass transit.
- In 1991 the Intermodal Surface Transportation Efficiency Act (ISTEA) confirmed the new role of the Highway Trust Fund as an "Intermodal Fund" by extending support to high speed rail lines and bike trails.

The funding system involved earmarking certain road-related taxes and depositing them into a special account. The user fees are identified as separate revenue streams and the qualifying expenditures may be limited to highway construction, maintenance and operation, or may be used for other transportation modes such as mass transit, rail, etc. (as per the above amendments). The special account was initially introduced to finance construction of the interstate highway network and was based on the user-pay concept. The concept involves two elements: first, the user pays, and second, the government credits the user fees directly to a special account to avoid confusing them with other government revenues. The user-pay concept is well established in the United States. All but six states now dedicate their user-fee revenues to special highway or transportation accounts.

The US Federal Highway Trust Fund exists only as an accounting mechanism. The taxes earmarked for the Trust Fund are deposited into the general fund of the US Treasury and a paper transfer of these taxes is made to the Trust Fund twice per month as liabilities are incurred. Earmarked tax revenues in excess of those required to meet current expenditures are invested in public debt and interest earned is credited to the Trust Fund. The Trust Fund finances the federal-aid highway program, administered by the Federal Highway Administration (FHWA). Since 1982 a portion of the Fund has also been used to finance mass transit projects administered by the Federal Transit Administration. Revenues from the highway portion of the Trust Fund are used to reimburse states for expenditures on approved projects. These include heavy maintenance (reconstruction, rehabilitation and resurfacing), road improvement, new construction, road safety programs, studies, and other highway related expenditures. The Trust Fund does not currently finance regular maintenance.

Trust Fund revenues are derived from a variety of highway user taxes, including:
(i) motor fuel taxes on gasoline, diesel, and gasohol; (ii) a graduated tax on tires weighing 40 lbs. or more; (iii) a retail tax on selected new trucks and trailers; (iv) a heavy-vehicle use tax on all trucks with a gross vehicle weight (GVW) over 55,000 lbs; and (v) interest on the Trust Fund balance. Tax rates are adjusted as part of the regular budgetary process. In 1997, the tax rates were: gasoline = 18.4 cents/gallon; diesel = 24.4 cents/gallon; with different rates for other fuels which are not widely used on the highway. Some 0.1 cents/gallon of this tax was dedicated to the Leaking Underground Storage Tank Trust Fund.
and the remainder went to the Highway Trust Fund. Of the taxes dedicated to the Highway Trust Fund, 2.85 cents/gallon is earmarked for the Mass Transit Account. Other taxes dedicated to the Highway Trust Fund include: tires = sliding incremental scale which varies from 15 cents/lb to 50 cents/lb over 90 lb; a 12 percent tax on the retail price of trucks over 33,000 lb GVW and trailers over 26,000 lb GVW; $100 plus $22 for each 1,000 lb over 55,000 lb GVW up to a flat fee of $550 for trucks over 75,000 lb GVW; and interest on the balance of the Highway Trust Fund which is currently 6 5/8 percent p.a.. In 1997 the revenues from the above tax rates for highway purposes were $18.5 billion (mainly from gasoline − less than 30 percent comes from diesel), $299.7 million from tires, $1,674.3 million from truck sales, and $761.8 million from GVW tax. After credits and refunds, and some minor transfers for non-highway uses, the net revenue for 1997 was $21.2 billion. An additional $3.8 billion (net) was paid into the Mass Transit Account.

Some vehicles, like school buses and state, local government and non-profit vehicles are exempted from paying Federal Highway motor fuel taxes. In addition, fuels used in off-highway uses are exempt from these taxes (e.g., agriculture and industry). Off-highway uses are dealt with by coloring un-taxed diesel and testing non-exempt diesel vehicles to ensure they are using regular (taxed) fuel.

The federal-aid highway program is a reimbursable program. The states are allocated a line of credit against which they can draw to meet obligations. Funds are allocated on the basis of formulas which, though not perfect, are difficult to change. The US Government Accounting Office has recently criticized the formulas, but concluded that “Because the selection of a highway apportionment formula is a judgment for the Congress, GAO is making no specific recommendations.” In other words, the allocation formulas are (at least in the US) highly political. The formulas are relatively simple and generally use variables like population, road mileage, and traffic density. For example, heavy maintenance funds are allocated according to the following formula:

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\text{(interstate lane miles/total interstate miles)} \times 0.55 + \text{(vehicle miles on interstate roads/total interstate vehicle miles)} \times 0.45
\]

This means that the average allocation per state is about 2 percent of total maintenance allocations, subject to each state receiving a minimum allocation of 0.5 percent. Allocations do not cover all costs, but generally cover 80 percent of costs or, in the case of maintenance, 90 percent of costs (i.e., funds from the Highway Trust Fund are provided on a cost-share basis). In looking at this allocation formula, the GAO suggested consideration of two alternatives:

Alternative 1 Distribution based equally on: (i) total lane miles; and (ii) total vehicle miles traveled.

Alternative 2 Distribution based equally on: (i) total lane miles; (ii) interstate vehicle miles traveled; and (iii) state population.

Payment for work financed through the Highway Trust Fund is made in the following way:

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(i) Work is done by a contractor.
(ii) Contractor is paid by the state.
(iii) Vouchers for reimbursement (usually covering several project withdrawals) are sent to FHWA for review and approval.
(iv) Claims are certified by FHWA (this is a formality and certification is automatic).
(v) Certified schedules are submitted to Treasury.
(vi) Federal share is transferred to state bank account by electronic funds transfer.

Each state participating in the scheme is required by law to have an annual audit carried out. The audits are normally carried out by outside auditors and cover financial matters and compliance and internal control procedures (i.e., it is more extensive than a purely financial audit, in that it also covers control procedures, etc.). Staff from FHWA also check these procedures on an ad hoc basis. There is no formal technical audit. Staff from FHWA used to carry out field inspections but this has ceased due to staff shortages. However, occasional field inspections are still carried out.

FHWA is also subjected to an annual audit to ensure it follows laid down procedures and can account for funds spent.

About 3,000 staff manage the federal-aid highway program. They are stationed in Washington and in each of the states.