Railway Operators in Japan 1

Railways in Japan—Public & Private Sectors

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Introduction

The railway network in Japan has been owned and operated partly by the public sector and partly by the private sector almost since the first railway line was opened in 1872. The building of many private lines during so-called 'railway manias' at the end of the 19th century and the first nationalization in 1906/7 are described in detail in *A History of Japanese Railways 1872–1999*, published by EJRCF.

On the initiative of the General Headquarters (GHQ) of the occupation forces, Japan's government railways was reorganized in 1949 as a public corporation called Japanese National Railways (JNR) that almost completely monopolized the nation's intercity rail passenger services and freight transport, until privatization and division in 1987.

The division split JNR into six independent passenger railway companies (commonly called JR Hokkaido, JR East, JR Central, JR West, JR Shikoku, and JR Kyushu) and one freight railway company (JR Freight). The passenger JRs own their own infrastructure while JR Freight carries freight on the infrastructure of the JRs. Although breakup of JNR was described as a privatization, only some shares of JR East, JR West and JR Central have been sold by the initial public offering so far with the rest being held by a government holding corporation (now a part of Japan Railway Construction Public Corporation). However, the government has announced that it intends to sell its remaining holdings in these three companies before the end of 2001.

In addition to the JRs, there are many private railway companies throughout Japan, but they generally offer only local services. Depopulation in rural areas forced many private railways to close lines serving rural areas since the 1970s to focus on very profitable operations in large cities where they could carry huge numbers of passengers. One of the most important features of railways in Japan is that private railways invariably play a large role in urban transit.

The new Ministry of Land, Infrastructure and Transport (MLIT) classifies private railways into different groups. Fifteen of the most important companies are classified as major private railways. One serves Nagoya, one serves Fukuoka, and the rest are all in Tokyo and Osaka. Some other railways operating in or near large metropolitan centres are classified as quasi-major private railways but there are no clear distinctions between these railways and major private railways. Indeed, some of the former group carry more passengers than some of the latter. But there are some differences—for example, some railways are categorized as quasi-major because they are subsidiaries of major private railways and pricing regulations are different for each category.

From the statistics viewpoint, subway and tram systems owned by municipal governments are classified as private railways and it is customary to classify Tokyo's Teito Rapid Transit Authority (TRTA) as a private railway, although it is jointly owned by the Tokyo Metropolitan Government (TMG) and the central government. The TRTA operates Tokyo's subway network, carrying 9% of all rail passengers in the nation (1998 figures), which makes it Japan's most important private railway. MLIT regulations now treat the TRTA like other Major Private Railways because there are plans to privatize it.

Japan's Rail Industry

Number of companies and track lengths

Comparison of Japan's passenger railways in 1998 with the situation in 1965 gives a good overview of the recent changes. In 1965, there were 103 passenger railway companies operating on 26,179 km of track. Just one corporation (JNR) owned 20,376 km (78%) of the total track length.

JR East's Series 209 on Keihin-tohoku Line (JR East)

The rest belonged to private railways, including a few municipal rail businesses. Major private railways in large cities held about 50% of all privately owned track while the other half was owned by small and medium-sized private railways.

By 1998, the number of passenger railway companies had increased by 43 to 146, operating on a total of 27,179 km of track. Many of the new companies were public–private railways financed partly by municipal governments to maintain passenger services on rural branch lines abandoned by JNR and the JRs. This explains why the number of passenger companies increased considerably, while total track length increased only marginally.

Of the 27,179 km of track used for passenger services in 1998, the JRs owned 20,058 km, or 74%. Consequently, the basic structure of Japan's rail industry has not changed since the JNR privatization in 1987 (although government railway policy changed greatly at the time). The only change to the industry's structure was the creation of the six JRs and JR Freight. The track length owned by major private railways in large cities has changed very little since 1965 but the track length of subways and small and medium-sized private railways has increased.

Passenger volumes

In 1965, total rail ridership in Japan was 15.8 billion journeys, 6.7 billion (43%) of which were on JNR trains. The remaining 57% was carried by private railways, broken down into 33% (5.2 billion journeys) on major private railways in large cities and 14% (2.2 billion journeys) on municipal lines, including subways and trams. Interestingly, at that time, trams carried more people than subways. The TRTA lines in Tokyo, which were financed jointly by JNR and the TMG, accounted for 4% of total rail ridership (0.7 billion journeys).

This situation had changed considerably by 1998 when total rail ridership in Japan reached 22.1 billion journeys. The JRs accounted for 40% (8.7 billion journeys), meaning that the other private railways increased their share from 57% in 1965 to 60%. Major private railways in large cities accounted for 33% (7.3 billion journeys) while municipal lines (primarily subways) accounted for 12% (2.7 billion journeys). The TRTA subway lines in Tokyo accounted for 9% (2.1 billion journeys).

In 1965, Japanese railways handled 255 billion passenger-km. JNR accounted for 68% (174 billion passenger-km) of this total. The private railways' share of 32% was much lower because their networks were (and still are) built for local, short-distance passenger traffic.

In 1998, Japanese railways handled 389 billion passenger-km with the JRs accounting for 62% (243 billion passenger-km) of the total, meaning that the other private railways increased their share from 32% in 1965 to 38%.

The average journey length is 28 km for the JRs, while it was 14 km for major private railways in large cities and 6 to 8 km for other private railways in 1998. The length of the average journey length increased from 1975 to around 1980 and then declined slightly. There are several reasons for the drop—some long-distance travellers switched from trains to expressways and aeroplanes, commuting distances stopped increasing as metropolitan growth levelled off, and then the new JRs refocused their attention on short-distance local services.

A look at all transport modes shows that railways carried 51% of traffic in 1965 but only 26% in 1998. The decline is even sharper in terms of passenger-km (67% in 1965 but only 27% in 1998). Today, the railways' share is less than half that of motor vehicles.

Railways carry 49% of all passenger traffic in Japan's three largest metropolitan areas of Tokyo, Osaka and Nagoya, meaning railways and motor vehicles carry almost the same numbers of people. However, the share of motor vehicles is increasing gradually and passed railways in 1997. Other private railways (including subways) in these three metropolitan areas carry 1.8 times more passengers than the JRs.

Each urban centre has experienced different levels of population expansion and railway development. In Tokyo, the largest metropolitan area, railways account for 54% of all travel modes, while the figure is only 22% for Nagoya, the smallest of the three areas.

In 1996, private railways in the Greater Tokyo (including Yokohama, Kawasaki and other neighbouring cities) carried 1.4 times as many passengers as JR East. In Osaka, the private railways' share was 2.7 times larger than JR West's share, and in Nagoya it was 3.9 times larger than JR Central's share. Although JR East's role in the Greater Tokyo is quite close to that of other private railways, the JRs in Osaka and Nagoya are much weaker.

These differences are due to the fact that the national rail network developed from Tokyo as the hub, so JR East's lines radiate out from Tokyo, while the lines of the other JRs just pass through Osaka, Nagoya and other cities. The JRs' networks in Osaka and Nagoya were not laid out for the specific purpose of carrying commuters. Furthermore, before WWII, the government policy prevented private railways in Tokyo from operating trains inside the Yamanote loop line owned by the government railways, explaining why private lines still do not enjoy a large share of rail passenger traffic in Greater Tokyo.

Railways outside Tokyo, Osaka and Nagoya accounted for just 7% of traffic carried by all transport modes. In 1996, the JRs had a larger share of this traffic than the other private railways.

The government's national development plan calls for the construction of subways, monorails or other track-based transit

systems in cities larger than 500,000 people. Other than the Tokyo, Osaka and Nagoya metropolitan areas, there are five Japanese cities (Sapporo, Sendai, Hiroshima, Kita Kyushu, Fukuoka) with populations of more than 1,000,000. Of these five cities, four have a subway and one has a monorail. Among cities smaller than 500,000 people, just Naha with a population of 300,000 is constructing a monorail to be finished in 2003.

However, none of these subways or monorail have come even close to attracting the originally projected ridership levels and they are all operating in the red despite the fact that the construction costs were heavily subsidized by the MLIT and municipal governments. A similar fate has met railways providing access to new towns on the edge of the larger metropolises with many either becoming bankrupt or one step away from bankruptcy in the late 1990s.

The light rail transit (LRT) and automated guideway transit (AGT) systems have attracted attention as reliable options for areas where so-called conventional rail systems would not be profitable, and Japan's first bus guide system began operations in Nagoya in March 2001.

Freight volumes

In 1965, railways accounted for 9% of all freight tonnage in Japan. By 1998, this had dropped to a mere 1%. In tonne-km terms, rail freight occupied 31% of all freight carried in 1965, but this too had fallen to just 4% by 1998. Today, freight trains haul less than 1% of the tonnage carried by trucks (less than 10%, in tonne-km terms). There are two reasons for the drop—a decline in demand for transport of bulk cargo (coals, cement, etc.), which is especially suited to rail transport, and a modal shift in transport of general commodities from rail to truck.

In 1998, rail freight in Japan totalled 22.9 billion tonne-km, 99% of which was carried by JR Freight (84% containerized, 16% bulk).

Other private railways carried just 1% of all rail freight . Most is hauled on feeder lines mainly in ports and industrial zones for JR Freight. Generally, such lines are jointly owned by JR Freight and shippers.

Profits and Losses

Railway business

In FY1998, the operating revenues of all track-based passenger transport systems in Japan totalled ¥6.35 trillion (¥100=US$0.80). Operating expenses were ¥5.38 trillion. This gives an average operating balance of 118%. The balances for the various types of railway were 122% for major railways in large cities; 120% for the JRs; 118% for TRTA; 109% for quasi-major railways in large cities; 101% for municipal railways; and 99% for small and medium-size private railways in smaller cities. The balances vary considerably by company; major railways in large cities all enjoy a surplus. However, the JRs have balances ranging from 145% to 74%, and the range is 124.5% to 59% among municipal subways in smaller cities.

All the railway companies pay interest on funds for capital investment, so none enjoy a high operating balance. The ratio for major railways in large cities is 113% (including non-rail income and expenses).

One measure of productivity is the annual running distance of rolling stock per employee. In 1965, this figure was 7300 km, increasing 4.3 times to 31,600 km in 1998. Figures for JNR in 1965 were 6400 km, increasing 5.2 times to 33,100 km for the JRs in 1998. During the same time-span, private railways (including TRTA and municipal bodies in smaller cities) increased the figure from 10,400 to 29,300 km (2.8 times).

The productivity of the JRs increased considerably and passed that of other private railways soon after JNR was restructured in 1987.

Non-railway business

Right from their initial formation, private railways in Japan have pursued both railway operations and real estate development. In many instances, profits from the sale of railway-built housing and land alongside railway lines have compensated for operating losses. But many companies can no longer pursue this option, because new urban development norms clash with the railways' side business strategies, and also because there is no more land available in metropolitan areas for large-scale housing development.

As a result, the private railways have refocused their corporate investment strategy to include development of resorts, hotels and department stores in various parts of Japan, often far from their railway lines. This concentration of capital investment in non-rail business has been so great that revenues from rail and bus operations now account for only about 20% of the total corporate revenues. However, the drop in the value of assets during the deflationary 1990s has negatively affected non-rail business, forcing radical restructuring of loss-making operations.

Unlike the private railways, the JRs have fewer non-rail business interests. For example, JR Hokkaido, JR Shikoku and JR Kyushu operate bus services that generate more than 10% of all revenue, but this is still far lower than that of other private railways. The JRs non-rail business is relatively small because JNR was prohibited by legislation from engaging in non-railway activities. Although the JRs were late entrants to non-rail business in the 1980s and 1990s, this proved a lucky advantage during the recent severe recession, which has had a bad effect on the non-railway business of private railways.

Railway Regulations

Entry to market

There has been almost no competition for government licenses to construct new railway lines in Japan since around 1950. For example, the huge cost of constructing urban subways (about ¥30 billion per km) is a substantial barrier to new entrants. Despite the high construction costs, in theory, companies should find it possible to enter the market if they can separate infrastructure costs from operation costs. Government regulations permit this option, and categorize the transport business in a way that should stimulate competition between railway operators.

The 1986 Railway Business Law was part of the government effort to restructure JNR. Under this law, each railway operator is placed into one of three categories. 1. Providing passenger and/or freight transport using own infrastructure, 2. providing passenger and/or freight transport on infrastructure of another company, and 3. building and selling infrastructure to category-1 companies, or renting infrastructure to category-2 companies. JR Freight , which was established when JNR was privatized into a number of regional carriers, is a category-2 company.

In 2000, the then Ministry of Transport announced a new policy for dividing category-3 operators into two sub-categories—companies aiming to achieve revenues exceeding costs, and those with no such profit motive. This new categorization was designed to make it easier for municipal governments to invest in railways. For the moment, nothing definite can be said about the effect of this policy—it is not easy to say that category-3 operators can be divided into commercial and non-commercial businesses. And, even if it is possible to classify them in this way, it is still not clear how such a classification would help promote investment.

Since 2000, the government has also moved decisively towards deregulation. Restrictions on market entry were loosened by changing from a licensing system to a permission system under which the government cannot reject entry applications without giving open and good reasons. This means that existing operators cannot block entry of a newcomer simply because they fear competition. Indeed, a newcomer is now able (at least in theory) to build a new station near a competitor's existing station. And in fact, adjacent stations would make it easier for passengers to change trains.

Fares

From 1949 until 1977, JNR fares were determined by the debate in the Diet and the opposition parties tended to resist government attempts to raise fares. This was one cause of JNR's deepening deficit from 1964. On the other hand, increases in private railway fares were regulated by the Minister of Transport under the principle that fares should cover all costs. In 1977, the government permitted JNR to raise fares in accordance with the same rules governing private railways, and since the 1986 Railway Business Law was passed, the same regulations have been applied to fare adjustments proposed by both the private railways and the JRs.

Major private railways in large cities (including the TRTA subways in Tokyo) use a rate-base calculation system in which capital costs are determined systematically using an asset scale for railway services. This allows railways to develop their own fund procurement strategies. On the other hand, smaller private railways use a cost-plus system in which fares are calculated to cover incurred costs (including capital costs).

One important question discussed after the JNR reforms was the choice of fare adjustment system for the JRs. Later, when JR Hokkaido, JR Shikoku and JR Kyushu raised their fares in 1996, they chose the cost-plus system but this is not to say that the question has been resolved finally.

The yardstick approach was introduced in 1997 to regulate fare increases. This approach provides for a strict cost review before fares can be raised. Thus, the old, inflexible government regulations have been replaced by regulations that place an upper limit on fares. Deregulation, including the new entry measures introduced in 2000, have given companies more freedom to determine their own fares.

In the old days, fare increases were vigorously opposed by passengers of both JNR and the private railways. This changed somewhat from the early 1980s and consumers became gradually aware of the need for private railways to manage their finances in a business like manner. This change in attitude prepared the way toward privatizing JNR.

About 60% of all rail passengers in Japan travel on commuter or student season tickets but revenues from these tickets account for just 28% of all ticket sales. Thus, 72% of passenger revenues comes from the sale of ordinary tickets bought by only 40% of passengers. This seems illogical, since most season ticket holders ride trains during the morning and evening rush hours. Peak-load pricing under which higher fares are charged during peak periods would reduce the congestion, but the current fare structure is just opposite. There is an argument that railways do not charge enough for commuter and student season tickets since season ticket holders crammed onto trains at peak times force railways to invest huge sums in order to increase capacity. Consequently, the issue of whether and how to introduce peak load pricing is important. However, there are logistic problems to solve before peak load pricing could be introduced. First, automated ticket gates would have to be able to differentiate between different times when accepting passes. Second, how should

fares be set for travelling on almost empty trains shuttling back out of town to pick up more commuters? The only step major private railways in large cities have taken in this regard has been to start selling ticket coupons that cost more when used during peak times.

The three JRs on Hokkaido, Shikoku and Kyushu raised fares in 1996, but the three JRs on the main island of Honshu have never changed their fare structures (except to include a 2% increase in the government Consumption Tax). One reason for breaking up JNR was to let each JR determine its own fare structure reflecting costs. This has not happened so in some sense one reason for establishing the JRs has not been achieved.

Before the 1987 privatization, JNR fares in Tokyo, Osaka and other large cities tended to be much higher than the fares of competing private railways and municipal subways. Since 1987, three of the six JRs have held fares stable while the competitors have raised fares several times. As a result, there is now almost no difference between short-distance fares charged by the JRs and other private railways. But the JRs' long-distance fares are still relatively more expensive than those of airlines and intercity bus companies.

JNR had more freedom to offer reduced fares than the private railways and sold huge numbers of discounted tickets. But it is questionable whether many of these discounts actually attracted sufficient demand to boost overall revenue. The JRs are well aware of this and have tended to reduce the number of discount incentives, although regulations on fare discounting have been liberalized.

Government Financial Assistance

Subways

Recently, municipal subways have become the main recipients of subsidies for urban railways. The national and municipal governments bear 70% of the total cost of facilities for subways, monorails, AGTs and guided busways. If interest on loans is taken into account, the actual subsidy rate is roughly 50%.

Most Japanese railway and bus companies operate under a self-supporting accounting system, and the 70% subsidy for subways seems unbalanced to them. Public subsidies for transport systems have concentrated too heavily on subways, leading to a shortage of funds for construction of other types of systems, such as medium-distance, high-speed lines for commuters.

Another problem is that subway subsidies were for municipal subways not designed to cross into neighbouring municipalities. This approach unintentionally encouraged construction of short subway lines. For example, separate subway systems with lines ending abruptly at the municipal or prefectural border have been constructed in different cities in the Tokyo and Osaka areas. After 1990, awareness of this negative result and the poor financial situation of railways serving suburbs forced the government to expand the scope of its subsidies to include suburban lines planned by public–private joint ventures.

Rather than basing construction subsidies on the applicant category (for example, differentiating between a private railway and a municipal subway), the subsidy rate should be based on the extent of the economic benefits offered by the project. Annual government subsidies for subways in different parts of the country amount to about ¥80 billion, which is only sufficient to dig about 3 km of tunnels. If the subsidy must be lowered, the funds should be granted to projects that, although small, will provide the maximum benefit for the money.

Keio's Series 8000 running near Minami-osawa on Sagamihara Line (Keio Teito Electric Railway)

Private railways

Although private railways occupy an extremely important position in Japan's rail market, government policies do not allow them to make profits while receiving subsidies. This makes it very difficult for the government to promote investment to increase the capacity of private rail lines.

Two of the most important measures taken to help some private railways build new infrastructure and lay more track are mentioned below:

- Fare Supplements for New Construction

In 1987, a new system was introduced whereby railways are permitted to charge a fare supplement on line sections where new construction is being undertaken to reduce congestion. The supplement can be charged up front for 10 years starting during the construction to pay for the improvements. The money is held in a special account and no corporate taxes are levied on the total amount. The first companies to apply the fare supplement system were four major private railways in large cities. Although they charged supplements, once the capacity-increasing construction projects were completed in 1997, only Keio Railway Company of the four companies refunded the supplement as planned, and that company had completed only a relatively small construction project. Although the users-pay-up-front system is quite innovative, it is hard to say whether it has been a success. At a minimum, it does show that there are ways to use fare structures in order to procure investment funds.

- Another government assistance measure involves interest-reduction subsidies for construction loans to pay part of the interest costs by Japan Railway Construction Public Corporation and the Development Bank of Japan. This subsidy has helped finance construction of lines to suburbs of metropolitan areas, and laying of more tracks in congested sections. This method involves payment of a fixed amount of interest but since interest rates are hovering at under 5% in Japan, it has lost its value in promoting construction.

JNR Privatization

Problems after JNR privatization

JNR was privatized in 1987 based on the *Opinions on JNR Restructuring* published in 1985 by the Supervisory Committee for JNR Reconstruction but the policies eventually adopted for the JRs have differed in some important ways from the original recommendations.

First, the shinkansen infrastructure and facilities were sold to some of the JR companies for a relatively high price and the profits were placed in the Railway Development Fund (see *JRTR* 11) to subsidize construction of new shinkansen lines in other parts of the country. Some new shinkansen construction projects were started and then mothballed in order to avoid placing too heavy a burden on the JRs' resources. But the projects were soon restarted against a backdrop of political interference and special-interest groups.

Second, shares in all seven new JRs have not been sold as planned. Although the JRs have been in business for 14 years, only 60% of shares in three of the companies have been offered for sale with the government holding the remainder. Although the government just recently announced its intent to sell the remaining 40% of shares in the three companies before the end of 2001, it is not known whether the shares of JR Hokkaido, JR Shikoku, JR Kyushu and JR Freight will ever be sold.

Third, the delay in selling the shares coupled with the huge drop in land prices after the bursting of the Bubble Economy have kept the old JNR debt at almost its original high level. It is still not known when, or how, the government will pay off the debt and the interest continues growing in the meantime.

Results of JNR privatization

The JNR break up and privatization occurred when the Japanese economy was booming, so overall demand for passenger travel continued to grow for a while, but the recession in the late 1990s has caused problems for the island JRs (JR Shikoku, JR Hokkaido, JR Kyushu) and JR Freight.

One positive effect was that the JRs' train schedules are now closer to the public's needs. Although it was feared that the break up would lead to fewer long-distance trains crossing from one company's region to another and poorer connections between trains from different regions, there are few indications that services have deteriorated in this way. On the contrary, the JRs now compete with each other by raising speeds, introducing new rolling stock, and holding down fares in areas where services are adjacent to another JR.

The policy of the new JRs has been to invest primarily in equipment to replace older equipment, within the range permitted by depreciation expense accounting. However, this reluctance to make new investment has led to urgent needs in some areas. Compared to JNR, the JRs invest less in new and additional track. Instead, they have invested in new rolling stock that offers higher speeds and greater ride comfort. This is especially true in areas away from large urban centres and investments by JR Hokkaido, JR Shikoku and JR Kyushu have been quite high relative to revenues.

JNR used to change its train timetables once every 2 years, but the JRs introduce new timetables about once every 6 months, responding quickly to local changes in demand.

JNR rarely considered how its bottom line could be improved by offering commuters better services, except in the Tokyo and Osaka areas. In some cities as large as 200,000 or 300,000 people, it even spaced local trains 2 or 3 hours apart during off-peak daytime hours. However, as a trial just before 1987, it increased the number of departures in Hiroshima and Nagoya, boosting ridership considerably. The successor JRs followed through with this idea by running more trains and building new stations at strategic locations in key regional cities.

JNR had an unwieldy bureaucracy, with

a number of intermediary organizations preventing easy communications between headquarters and local offices. This arrangement was rationalized in 1987, taking into account the role of each organization, and managerial resources removed from the bureaucracy during this process were redirected to sales and non-rail business.

In areas away from major cities, new business departments were established with multiple responsibility for general affairs, accounting, sales, train operations, construction and planning. Under JNR, the vertical division in the headquarters bureaucracy restricted communications between the various local offices in charge of these functions. The JR restructuring gave more power to executives, and introduced a top-down approach to the overall decision-making process (something perfectly normal for a private company). JNR middle managers had tended to monopolize information, base their decisions on this information, then obtain the consent of executives later.

Under JNR, hiring standards were different for executives and general personnel, causing a number of long-running labour disputes. Although this double standard was abolished before 1987, one issue still to be tackled is whether JR executives are being appointed fairly today.

Since the launch of the JRs, employees have been given more consideration through better training programmes, smaller workgroups, and mechanisms that encourage suggestions. But more time is needed before all company personnel have a true understanding of the business practices. For example, many ideas from small workgroups, and grass-roots suggestions still show ignorance of cost principles.

Various Aspects of JR in Rail Markets

Intercity services

The 47 prefectures of Japan are served by many local airports, and expressways with a similar total length to main-line railways extend throughout the country. Railways are only competitive with air and road traffic over distances of 100 to 600 km and this problem has changed little since before JNR's restructuring. Up to 100 km, motor vehicles enjoy the largest share of passenger traffic, while the shinkansen has the largest share for distances between 100 and 600 km. Beyond 600 km, air travel has the dominant market share. Since the three JRs on Honshu have not raised fares since 1987, we can say that their rail fares have declined when inflation is taken into account. The full deregulation of the domestic airline industry by 2000 has created fierce competition between shinkansen and planes especially in the Tokaido and San'yo shinkansen (Tokyo–Fukuoka) corridor. New airlines are entering the market with the intention of competing for passengers in this corridor, and the airlines themselves are waging price wars. The JRs plan to improve their infrastructure for intercity services to improve train speeds. But politicians who want shinkansen for their constituencies tend to intervene in the JRs' decision-making on intercity rail infrastructure. The JRs' success in intercity markets will depend on whether they can avoid political pressure and find rail attractive markets.

Commuter services

Much of the JRs' revenue comes from the Tokaido Shinkansen and from commuter lines in large urban centres, particularly Tokyo and Osaka. Although the populations of these major centres have stopped growing, commuter lines have yet to experience a decline in demand. Under government policy, commuter lines are expected to reduce their average morning rush-hour congestion rate to a maximum 180% of seating capacity, so the JRs are under pressure to invest in more capacity, especially in Greater Tokyo. The new Joban Line now under construction and running north-east from the metropolis is a joint public–private partnership with JR East as one partner.

Another east–west line through Greater Tokyo (extension of Keiyo Line) is in the planning stages and has received high priority as a future project. Plans call for the line to connect with a number of JR lines but it is still not clear whether JR East will invest in this project, or whether it will operate the service but not pay the construction costs. In any case, if this line is built it will swell JR East's coffers.

Rural services

One reason for privatizing JNR was to deal with problems with loss-making rural services. From around 1980, about 40 lines with fewer than 4000 passengers per day were transferred to new third-sector railway companies funded jointly by local governments and local businesses. Some lines were just abandoned or replaced with bus services. These strategies were continued by the new JRs, but although large subsidies were granted to third-sector companies for these rural services from the treasury, many of these companies are falling deeper into financial difficulties.

Moreover, at the privatization in 1987, it was realized that JR Hokkaido, JR Shikoku and JR Kyushu would not have the internal resources to cover losses from their many rural lines. To buffer them against poor profitability, a Management Stabilization Fund was set up with funding from the Treasury. Income from the Fund totalled ¥57.3

billion in FY1998 and ¥56.3 billion in FY1999. However, payments are disbursed in such a way that the public cannot be sure whether they are being used to maintain rural services, or they are being used to cover the cost of offering discount fares on main lines in order to compete with other intercity transport.

Freight

Although freight trains are far more competitive than trucks for distances over 1000 km, JR Freight's share of the market has still dropped to less than 1%. The opening of the Seikan Tunnel in 1988 linking Japan's two largest islands of Honshu and Hokkaido should have been a trump card for long-distance rail freight but volumes rose only a little during the several years after 1987 and then went into decline.

JR Freight is the only company in the JR Group classified as a category-2 company (running trains on infrastructure owned by other railways) and it pays minimal infrastructure fees based on the avoidable costs principle. However, the disadvantage of running freight trains on another company's tracks is that there is little leeway in train schedules to match the needs of shippers. Similarly, if JR Freight should try to develop all-night services for the entire country, its trains would pass through the Nagoya area during the rush hour. Moreover, the tiny market share precludes the chance of building dedicated freight-only lines.

Despite this gloomy scenario, the government is calling for a modal shift of freight from trucks to trains as a means to reduce levels of harmful exhaust emissions. Although this is a laudable aim, it is very doubtful that JR Freight can make the profits it needs to increase capacity and speed under the present avoidable costs system.

Conclusion

Japan's rail industry experienced a decisive change in government policy in 1987 when the JRs were established from the ashes of JNR. However, the privatization is still far from complete with many shares in the companies yet to be sold. One solution would be to permit cross holding of shares between the JRs but this might defeat the original purpose of the break up, which was to promote competition and raise efficiency.

Non-JR private railways carry the major share of all passengers in Japan's large cities and their important role is a distinctive feature of the nation's rail industry. However, all these private companies have failed in some of their non-rail businesses.

The government's subsidy system for railway construction is quite complex and wrongly favours construction of municipal subway lines in built-up areas. It should be re-targeted at building high-speed commuter lines to suburbs.

There is an urgent need to promote and coordinate various railway strategies, especially completion of the JRs privatization, privatization of the TRTA, and full deregulation of the railway industry. There is no more time to lose in restructuring Japan's railway industry further. ■

Further Reading

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