

Reform of the Japanese National Railways (JNR)

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Japan implemented a ground-breaking reform in the railway sector in 1987. The railway network was split into six vertically integrated passenger companies, and it was designed so that a single nationwide freight company accesses the network by vertical separation. Seven companies have continued the railway operation in their markets since the reform, and they will mark the 30th anniversary on 1st April 2017.

1. Introduction

In April 1987, the Japanese National Railways (JNR) underwent reform. It was divided into a single freight railway and six passenger railways (JRs). This is recognized as the first case of railway reform of a nationwide state-owned railway in modern history, implemented prior to similar reforms in other countries. Mainly because of increasing transport volume, productivity, and sustainable management of the JRs, this is considered as a successful reform of a public enterprise in the country.

2. Background of the Reform

Since the establishment of the JNR as a public enterprise in 1949, it was profitable and enjoyed a dominant status in the transport sector until the 1950s. However, competition from other modes of transport became severe, and the JNR lost its competitive edge. It also shouldered the burden of construction costs of new lines. The JNR ran a deficit in 1964, and the annual deficit continued for many subsequent years. It accumulated long-term debt each year, and at the time of reform in 1987, this debt amounted to 37.1 trillion yen, which was roughly equivalent to the combined national debts of several developing countries. Besides a substantial fall in rail use caused by rapid motorisation and the development of air transport, the JNR Reconstruction Supervision Committee posited two main reasons for the JNR's failure.

First, the JNR was a public corporation which resulted in the following problems:

- a) Politicians and the government interfered in the JNR's management. For example, politicians exerted pressure to construct unprofitable new lines.
- b) The JNR's administration was not autonomous. For example, the budget, personnel, and wages were stipu-

lated by the Diet or the cabinet.

- c) The relationship between managers and the workers' unions was fraught with problems. Labour unions in the JNR were unaware of costs and demanded benefits without considering wider implications.
- d) Business scope was strictly limited. Rigid regulations prevented the JNR from expanding its business scope to non-railway activities.

Second, the JNR was a nationwide organisation, and the unified organisational structure throughout the country caused the following issues:

- a) The size of the organisation was beyond effective management control; it was difficult for managers to effectively control the monolithic organisation. Then, employees became increasingly disloyal to the JNR, and this further hindered effective management.
- b) Management was standardised. Essential issues such as fare levels, timetables and station locations were centrally planned and local conditions and requirements were not reflected in those plans.
- c) Since management of the JNR was implemented on a nationwide basis, several divisions were sustained based on irrational reliance. When the reliance had become excess, ineffective divisions could be sustained. This hindered effective management and revitalisation of railway operations.
- d) Managers and employees lacked the conscious of competition because no similar system existed in Japan. Although competition with other transport modes had become intense, the administration was not oriented to compete with them through flexible management.

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In addition to financial difficulties, the JNR also faced severe public criticism because of ineffective management. As a result, JNR reform had to be undertaken. The objective of the JNR reform was to solve the abovementioned issues. Accordingly, privatisation of the organisation was planned as a way to solve issues perceived to be attributable to its public enterprise status, and it was planned to divide the JNR into several companies to address issues attributable to the nationwide, monolithic nature of the organisation.

3. Outline of the JNR Reform Process

1) Establishment of JRs

The JNR was reformed in April 1987. Through this process, the railway network was divided according to regions, and six independent passenger companies were established. Although the Shinkansen Holding Corporation (SHC) (a government agency) owned the infrastructure of the Shinkansen lines at the time of reform, the passenger companies owned the assets of conventional lines. In 1991, the three passenger companies bought the Shinkansen lines infrastructure from the SHC. Thus, regarding the assets built during the JNR era, each passenger company subsequently owned the infrastructure of both the Shinkansen and conventional lines.

The JNR reform predicted that the railway operation of the three passenger companies on Japan's main island (Honshu) would be profitable. Thus, JR East, JR Central, JR West along with JR Freight started their management succeeding the JNR's liabilities. Then, as mentioned above, the three companies in Honshu purchased the infrastructure of the Shinkansen lines. As a result, these four companies held 14.5 trillion yen in total liabilities and have been, since then, carrying out their management repaying the allocated liabilities.

In contrast, it was predicted that the operation of the other three passenger railway companies on Japan's smaller island would become unprofitable. Thus, to incentivise management and avoid paying annual subsidies, the government allocated Management Stabilization Funds to these companies. At the time of the JNR reform, JR Hokkaido, JR Shikoku and JR Kyushu received 682.2, 208.2, 387.7 billion yen respectively.

In the freight sector, a single nationwide company (JR Freight) was established since, different from the passenger sector, the general distance travelled by freight transport is much greater and freight trains usually cross the borders which demarcate the networks of divided passenger companies. Another distinct characteristic of the JNR reform was that it was designed so that JR Freight could access the

trunk lines owned by the passenger companies. The background to this design of the railway reform was that freight rail transport had been unprofitable during the JNR's history. Although it was essential to cut excess cross-subsidies between the passenger and freight sectors and terminate irrational reliance between the two, it was also important to achieve sustainable management of JR Freight. Thus, JR Freight was released from infrastructure maintenance responsibilities for the purpose of reducing its operational costs. Also, track access charges were set at relatively low levels, namely 'avoidable costs,' aiming to shoulder only those inherent to freight rail transport.

2) Issues behind the JNR Reform

The JNR reform was one of the most serious items on the political agenda in Japan in the 1980s. To implement the reform, several issues needed to be solved. For example, by the 1990s, 83 unprofitable local lines had been separated from the JNR/JRs' network to make the management of JRs sustainable. However, the most serious issue had to do with long-term liabilities and surplus personnel.

As noted above, the JNR's long-term liabilities had accumulated to 37.1 trillion yen. To settle these liabilities, the government agency called the JNR Settlement Corporation (JNRSC) was established and succeeded 25.5 trillion yen. JNRSC made efforts to refund the succeeded liabilities by means such as selling shares of JRs and selling surplus land not required for railway operation. Despite its efforts, the JNRSC could not refund all the liabilities, and it dissolved in 1998. As a result, 13.8 trillion yen was transferred from JNR's long-term liability to a national debt.

Regarding the issue of surplus personnel, the JNR employed 277,020 workers as of April 1986. It was estimated that there would be approximately 93,000 excess personnel after the JNR reform. The government approached this issue by establishing a Surplus Personnel Reemployment Measures Headquarters and enacting a special law which requested active cooperation from various national sectors to employ them. As a result, the new railway companies reemployed 203,000 workers while the others changed jobs or retired.

4. Results of the JNR Reform

1) Management of JRs

The results of the JNR reform have been outstanding. The newly established JRs could focus their market and started to provide transport services appropriate for each region. Even in the freight sector, which had been loss-making in the JNR era, the serious downturn trend since the 1970s has been reversed and the traffic volume (tonne-km) has

become stable since the reform. As for the passenger sector, since the termination of the cross-subsidy to the freight sector, it has become possible to re-invest the profit to improve passenger services. Although the transport volume (passenger-km) decreased 6% in the decade prior to JNR reform, the trend changed significantly, increasing to 27%, in the decade after the reform. Furthermore, following the business model of other Japanese private railways, JR passenger companies also commenced affiliated business, actively utilising and developing the space in and around the stations. Nowadays, especially around large stations, it has become common for group firms of JR passenger companies to promote various kinds of affiliated businesses utilising the external economy associated with railway operations, and the revenue of these business activities has been increasing.

2) Privatisation of the 4 JRs

As for the three JR companies in Honshu, they have been in the black even they bear the cost of infrastructure and the burden of the allocated JNR liabilities. As planned, all shares of JR East, JR West, and JR Central were listed in 2002, 2004 and 2006 respectively. By contrast, JR Kyushu's railway operation segment has been making losses. However, the company increased their revenue through affiliated businesses and, as a whole, has been in the black. In October 2016, all shares of JR Kyushu were also listed, and its Management Stabilization Funds were liquidated by paying railway-related expenses such as the advance payment of lease fee for the Shinkansen infrastructure, which was constructed after the JNR reform. As shown by these cases, the JR companies improved rail services and developed affiliated businesses as well. Additionally, they have promoted their businesses based on the schemes planned in the JNR reform without receiving annual subsidies from the government.

5. Lessons and Future Challenges

1) Lessons: Post-Reform Improvement Factors

When we consider the positive performance of JRs, we can conclude that the JNR reform has been successful thus far. This success can mainly be attributed to privatisation and regional division, both of which solved the problems underlying JNR's failure, as noted above. This section discusses other essential issues which are distinct from typical EU railway systems.

First, the passenger railway company operates and manages both infrastructure and operation in Japan. Although

there are some lines where the owner of the infrastructure is different from the railway company, the railway company maintains integrated operation even on these lines. Thus, besides a few exceptional cases, we note that passenger railway operation is integrated in Japan. This has been advantageous not only for smooth railway operations but also for coordinated investment into railway systems and promoting affiliated businesses. In Japan, on-track competition has not been introduced at all and competitive bidding has been utilised only in limited cases in recent years. Instead, the JNR reform also played a role in improving yardstick competition between the railway companies. Thus, managers and employees in the Japanese railways have sufficient motivation to increase profits as an independent (private) company with three types of competition: 1) competition with other modes of transport, 2) competition between tracks (in some sections) and 3) yardstick competition.

Second, passenger through-trains are operated with a clear separation of operational responsibilities at the border station between the companies. Through-train passenger services were common among Japanese railways and were also introduced among JRs. However, different from open access in EU countries, each company takes responsibility for both train operation and infrastructure management, as noted above. In general, drivers change at the border station and drive trains on their company's track only. As this example shows, a fundamental policy in Japanese passenger railway operation is the clear separation of operational responsibilities at the border station. This has contributed to smooth, efficient and safe passenger train operation in Japan.

2) Future Challenges

The 30th anniversary of the JNR reform is on April 2017. We can say that the management of JR companies has been sustainable so far based on the original scheme planned at the time of reform. Nevertheless, when we consider the recent changes in the transport market and the changes that are likely to occur in future, there are some challenges which the railway sector in Japan has to deal with.

Despite the positive performance of rail transport in urban areas and some inter-city lines, many local lines face severe declines in passenger numbers. Since the population in Japan will decrease in the future, local lines will become more unprofitable. Certainly, division through the JNR reform eliminated excess cross-subsidies between the divided networks. But some JRs still have a large rail network. Thus, if cross-subsidization continues within the com-

pany, even the transport services on the profitable lines would lose competitiveness because of the lack of investment funds.

As for JR Hokkaido and JR Shikoku where the average passenger transport density is lower than other JRs, they still possess Management Stabilization Funds and utilise the Fund's interest to cover railway operation losses. However, because of the low-interest rates in the Japanese financial market, the Fund's interest has not accrued the amount expected at the time of the JNR reform. Thus, management has been stringent particularly in JR Hokkaido in the last few years. If it is decided to sustain the local lines with a limited number of passengers, certain measures such as vertical separation and PSO contracts should be introduced to gain financial support from the local governments.

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