

Privatization and Beyond: The JR Case

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Privatization policy in retrospect

In 1949, Japan National Railways (JNR) was reorganized as a public corporation under the supervision of the Ministry of Transportation to pursue two, quite contradictory, objectives: to achieve financial independence, and to assume the provision of a nationwide railway service as a key transport mode. Since emphasis was placed on provision of universal railway services, the government was given the authority to rigidly control JNR. From the very beginning there was an inevitable conflict between the financial control by the government and financial independence.

Road to financial collapse

Macro reasons: While JNR played a key role in providing railway services for passengers and freight, its competitiveness was gradually eroded due to rapid motorization and later development of air transport. The loss of its competitive edge against cars and airlines triggered accumulating deficits. In fact, JNR's market share declined sharply from 45% in 1965 to 23% in 1985 in terms of passenger-km. Interestingly, JNR retained solid profitability until 1963, shortly before the inauguration of its first shinkansen service between Tokyo and Osaka in 1964. It is ironic that the success of the high-speed shinkansen promoted unrealistic expectations among the public, making it unaware of the sharp decline in JNR earnings. Due to high personnel expenses coupled with excessive capital investment, JNR's losses began to inflate rapidly, amounting to ¥1 trillion in 1980. The deficits were covered by borrowing from the Ministry of Finance and others in the early stage, and later by direct subsidies. Total subsidies from the government amounted to ¥600 billion in 1985, for example.

Another macro background for privatization was the failure to introduce a consumption tax aimed at remedying the heavy dependence on income tax revenues, as well as the abnormal fiscal deficit in the latter half of the 1970s and 1980s. The government was forced to embark on fiscal reconstruction by privatizing major public enterprises including JNR.

Micro reasons: As a public corporation, JNR was neither allowed to retain the freedom of setting its own budget nor of changing its own fares. In particular, fare adjustment often became a political issue in the Diet and was sometimes delayed or cancelled "for the benefit of the public at large". The nationwide uniform fare system for universal services was also responsible for widening unequal cost burdens, since it did not reflect the cost difference by regions. Moreover, construction of deficit-ridden rural lines worsened the financial conditions of JNR. In sum, JNR suffered from a vicious cycle between red ink and government subsidy, leaving too much room for political intervention. JNR itself failed to implement effective reforms due to the antagonism between management and labour, although some unprofitable rural lines were converted to bus routes. Ironically, the major strike by JNR labour unions in December 1975 proved that JNR was no longer a major player in commuter markets and exploded the myth that "JNR is forever".

These macro and micro factors significantly diminished JNR's domain, accelerated its serious financial problems, and gradually paved the road to privatization in 1987.

Economics of privatization policy

There has been a drastic change in economic theory about public enterprises such as railways and other public utilities. The traditional rationale for government-owned railways is twofold. First,

railway activities have public-interest elements in the sense that the general public should be given universal access or availability to railways. Second, there are economies of scale in operation. When the marginal cost of providing railway services declines with the increase in scale, it is often referred to as a "natural monopoly". In theory, since natural monopolies can set prices substantially in excess of costs, the classical prescription for curbing abuse of market power is either regulation or government ownership. However, public-interest elements don't necessarily mean government ownership. In Japan, as elsewhere, private railways could provide a similar service more efficiently than national railways. Moreover, as many case studies suggest, the economies of scale are disappearing in railway operations or only exist in specific railway activities. Instead, diseconomies of scale tend to increase in state-owned railway operations.

Generally speaking, there is no strong inducement to hard work and efficient use of resources in publicly-owned railways. Possible sources of inefficiency are inadequate feedback of information, lack of incentives, contradictory objectives, pressure from interest groups and politicians. These public enterprises are inclined to emphasize quantity rather than quality in order to minimize trouble. They also tend to be bureaucratic and become less responsive to changes in markets and the needs of customers.



Series 300 Shinkansen passing Kyoto

(JR Central)

The question is how to create an incentive to minimize costs. Recent economic theory tells us that potential competition or 'contestability' plays an important role in generating competitive behaviour even if the markets are natural monopolies. The policy options suggested by the contestability theory are to privatize or/and to deregulate state-owned enterprises and provide opportunity to all possible competitors on an equal basis. In the case of JNR, privatization was chosen as the stimulus to efficiency.

Major features of JNR privatization

Geographical Breakup and Line-of-Business Distinctions

An important feature of JNR privatization policy was the breakup of JNR into six regional passenger companies (JRs) and one nationwide freight company (JR Freight). The geographical division of passenger companies was based on the regional distribution of demand in order to ensure a sound managerial base. JR East and JR West, which were established in the profitable Tokyo and Osaka metropolitan regions, respectively, amalgamated with unprofitable adjoining rural lines to balance the financial obligation among the JRs. The most profitable trunk-line shinkansen between Tokyo and Osaka was reorganized as JR Central. Three island companies (JR Hokkaido, JR Kyushu, and JR Shikoku) were set up to serve the needs of local passengers.

Establishing Incentive Subsidy Scheme

The second characteristic of the privatization policy was the establishment of the Management Stabilization Fund in order to channel lump-sum funds to the small three island JRs which are handicapped by geographical location with relatively small populations. These three JRs were expected to yield an interest of



Friendly Service at Tokyo Central (EJR/CF)

about 7%. From the viewpoint of economics, this interesting scheme is close to one of incentive regulatory mechanisms. In contrast to normal practice, it is proposed that, on the one hand, the railway company is allowed to freely choose its own price (fare) and, on the other hand, the government subsidizes the company by an amount equal to the difference between the (marginal) cost and price, which is referred to as 'consumer surplus'. It is argued that this kind of lump-sum subsidy could transform the profit-maximizing natural monopolist into a social welfare maximizer, because the subsidy could increase the railway company's profits if the monopolist could lower its price. Put another way, the rational behaviour of monopolists to maximize profits would result in maximizing total welfare meaning that there is no need to strictly supervise the behaviour of the monopolistic company.

Establishing Intermediate Institution and Public Offering of Stock and Assets

Third, since the problems of the long-term debt and redundant workers seemed impossible to solve immediately, these problems were separated by establishing an intermediate institution called the JNR Settlement Corporation. As discussed later, although the problems could not be solved completely, the establishment of intermediate institutions played an important role of arbitrating between conflicting interests and managing the process of

transfer of entitlements. Among a number of alternatives for restructuring such as concessions, franchises, lease and operation, and sale of operating rights, unlike Europe, Japan introduced mechanisms for auctioning surplus assets such as land, and public offering of stock in order to privatize JNR.

Originally, out of the total ¥37.2 trillion debt, JNR Settlement Corporation took over about 70%, which was expected to be liquidated by selling JNR-owned real estate (¥7.7 trillion) and selling stocks (¥1.2 trillion), leaving about ¥14 trillion as the taxpayers' burden. Although the three island JRs were exempted from liability, the main-island JRs had to bear the burden equally.

Privatization effects on JR performance

After the managements of the new JRs were given their freedom, financial performance improved significantly. Thanks to the favorable economic climate in the late 1980s, the performance of the JRs improved dramatically between 1987 (the year of privatization) and 1990. The annual average increase in passengers and cargo rose from 5% in 1987 to 10% in 1990. JRs have branched into new businesses that were once strictly regulated. Improved labour-management relations have also contributed to better service quality. The major effects of privatization policy on performance are discussed under the themes of labour productivity, competition, debts, fares and JR freight.

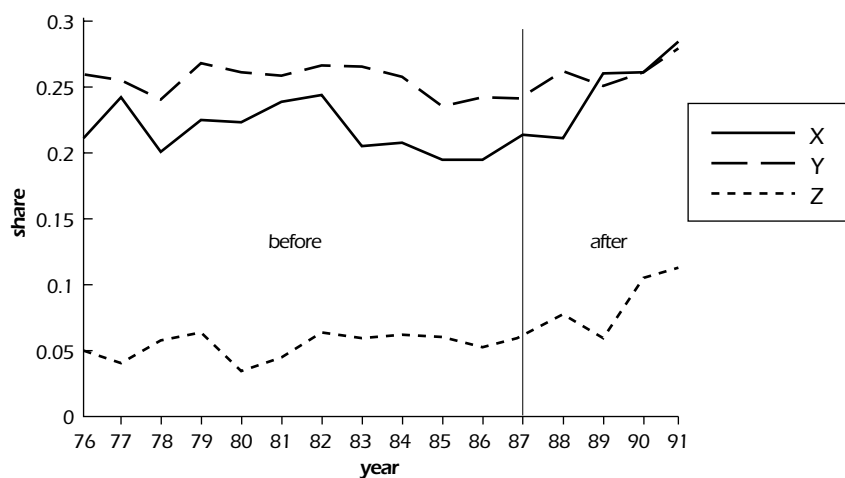
Productivity

Improved JR labour productivity: First, labour productivity in the JRs increased dramatically during and after privatization. The productivity growth rates after privatization are several times higher than those of large private railways proving that there was much room for improvement in JNR. Table 1 shows that

Table 1 Comparison of Labour Productivity Growth

period	Average annual % change of labour productivity								
	passenger-km per employee			car-km per employee			train-km per employee		
	JR	private	JR / private	JR	private	JR / private	JR	private	JR / private
before									
('80-84)	6.4%	1.4%	4.6	4.5%	1.8%	2.5	6.3%	0.3%	21.0
during									
('85-89)	16.7%	2.1%	8.0	15.5%	2.1%	7.4	18.3%	0.7%	26.1
after									
('87-91)	8.3%	2.0%	4.2	7.8%	3.1%	2.5	8.5%	1.4%	6.1

Source: F. Mizutani and K. Nakamura (1994)

Figure 1 Changes in JRs' Market Share in X, Y and Z Lines

Source: Nakamura, K. and F. Mizutani (1995)

the productivity level of the JRs is still about 20% lower than that of large private railways, which are the most efficient in the world. The lower level of the JRs reflects the structural difference between the JRs and the private railways, for example, the longer network of the JRs, the inter-city links, the shinkansen network, and employment practices. The employment structure of the JRs has become much more similar to that of private railways.

Increased station and car maintenance productivity: If the rail service activity is classified into rail operations, stations, track maintenance, car maintenance, and administration and engineering at headquarters, the labour productivity varies between them. The allocation of the JRs' employees to each section has also become similar to that of private railways. In fact, the proportion of the JRs' employees in the station section and the car maintenance section decreased even before privatization, increasing labour produc-

tivity in these sections. In contrast, labour productivity in the track maintenance section of the JRs was only about half that of large private railways, and labour productivity in the administrative and engineering sections was significantly lower. There was not much difference in productivity per operator and conductor between the JRs and large private railways.

A possible reason behind differences in labour productivity by sections between the JRs and the large private railways is that the JRs have larger networks than large private railways, requiring more administrators. Operation of the shinkansen by each JR may need more engineers. In addition, large private railways extensively contract-out maintenance activities, whereas the JRs depend on their own maintenance sections. An econometric study taking into account the differences in output level and network conditions proves that the JRs' labour productivity was still 20%-30% less than that of large private railways in 1991. The JRs must endeavor to increase labour productivity.

Competition

Fierce airline competition: Since privatization, the JRs have been introducing new high-speed shinkansen and through-train services to meet local demand. The spur for development of newer, faster trains is obviously intense competition from airlines. Since there is little difference between air fares and railway fares, the price war between Tokyo and Osaka is getting hot. JR West in particular is very keen to develop a new shinkansen with a speed of 300 kph, because it is exposed to competition from airlines. However, to take full advantage of high-speed trains, they must run on a long-distance route including the most profitable route between Tokyo and Shin-Osaka, which falls under JR Central's jurisdiction. Thanks to cooperation between the three island JRs, the piecemeal ownership of infrastructure has not proved

a barrier to competition with airlines so far. Furthermore, the strong desire for individual JRs to be listed on the stock market has added fuel to the fire of intermodal competition.

Yardstick Competition Working: The regional division of JRs has proved to be a blessing because it has enhanced yardstick competition between JRs and private railways in urban areas and also between JRs. Yardstick competition is working especially well on urban commuter lines. In the JNR era, there was no incentive to improve service quality and efficiency. However, since privatization, the JRs have clearly set the level of service by benchmarking the quality of service of the large private railways. This sort of yardstick competition can be observed particularly on the commuter lines of Tokyo, Nagoya and Osaka, where both JRs and rival private railways operate in parallel. It takes the form of increased frequency and speed, because fares are regulated and the only strategy the JRs could adopt is increased train frequency.

Figure 1 shows the changes in the JRs' market shares against those of the rival private railways on three major commuter lines (X, Y, and Z) before and after privatization. Obviously the JRs' relative market shares have increased sharply since privatization. They have become more responsive to passengers' needs and pay more attention to the quality of services on commuter lines where a strong rival is present. In fact, the JRs are in a relatively advantageous position to increase train frequency, because they inherited heavy-duty tracks and space from JNR allowing them to increase frequency easily. They are also allowed to utilize special discount fares on these urban commuter lines to set a competitive fare against rival private railways.

Yardstick competition greatly contributed to expansion of individual choice. Consequently, commuters have been enjoy-

ing upgraded service quality and improved convenience. Since these benefits have been transferred to passengers, privatization of JNR can be said to have been successful.

Debts

Postponed sale of JRs' shares: Liquidating the huge deficit is the most pressing problem. Although the three main-island JRs (JR East, JR Central, and JR West) had already met all the requirements for listing on the Tokyo Stock Exchange by April 1992, the listing was delayed until 1993. Only 62.5% of JR East shares were sold to the public in September 1993. The major reason for the postponement was the collapse of the asset-inflated (bubble) economy in the early 1990s. The stock market was deeply depressed after the collapse and the government feared that listing of JR stocks would cause further damage to the market.

In June 1994, the JNR Settlement Corpo-

ration concluded that only JR West should be listed. However, the listing was not raised again, partly because the economic prospects were poor and partly because the government gave priority to the listing and sale of Japan Tobacco Inc., another privatized public corporation. To make matters worse, the Great Hanshin Earthquake hit Kobe in early 1995, delaying JR West's listing due to damage of at least ¥160 billion. In April 1996, the government again announced a plan to list and sell the stocks of JR West. Although there are signs of recovery in the Japanese economy, it is very uncertain whether there is enough room to absorb the JR West stocks or not. It would contribute to an oversupply of shares and weaken the Japanese stock market. It may take years until the remaining 1.5 million shares of JR East, 2 million shares of JR West as well as 2.24 million shares of JR Central will all be listed on the stock markets.



Shiodome Freight Terminal awaiting Redevelopment

(JNR Settlement Corporation)

Delayed land sales: As far as land sales are concerned, the government missed the best time to sell land. Despite soaring land prices during the bubble economy from 1987 to 1988, the government feared that bidding for former JNR land might further inflate land prices. The sale was very limited and was carried out at a much slower pace than planned. JNR Settlement Corporation originally expected revenue of ¥7.7 trillion from sales of 8,810 hectares. However, due to sharply declining prices and lack of sales after the economic collapse, JNR Settlement Corporation earned only ¥403 billion in 1994 and ¥425 billion in 1995. It still has 3,510 hectares to sell. It is estimated that the ¥7.7 trillion appraised value of JR land may fall to about ¥4 trillion, far below the expected earnings. The lower land price has been affecting the repayment plan.

Increasing long-term debts: The repeated delay in the listing coupled with unsold land resulted in a record long-term debt of ¥27.6 trillion in April 1996. The debt is still increasing due to the annual interest totalling ¥1.3 trillion. About ¥20 trillion is expected to be shouldered by taxpayers. In other words, each man, woman and child in Japan will have to pay about ¥200,000.

Unfortunately, the prolonged recession after the economic collapse has adversely affected the financial performance of the JRs. Demand has not increased as expected. The three island JRs, which have depended on additional revenue from the Management Stabilization Fund, face financial difficulty due to the lower yield of the Fund caused by the low-interest-rate policy.

Fares

First fare increases in 8 years: The JRs did not increase fares for 8 consecutive years, but finally raised them in 1995. The three island JRs (JR Shikoku, JR Kyushu, and JR Hokkaido) hiked fares in the spring

of 1995 due to operating losses and finally bade farewell to the uniform fare system, meaning that the new pricing scheme takes cost variations between markets into account.

How to efficiently control fares is a central question for regulatory policy. The regulatory scheme for fares should provide both the JRs and private railways with investment incentive. It is argued that if regulated firms recognize that they can't recover costs due to price regulation after investment, the firms might hold back investment in infrastructure because it is obviously associated with heavy irrecoverable costs. To ensure that the JRs are able to make investment in infrastructure to improve the quality of service and safety, a price regulatory framework providing credible long-term investment incentives should be considered.

Recently, a price-cap scheme has been used extensively as an incentive regulation in public utilities in the USA and UK. Price-cap regulation requires that the price should increase by no more than the rate of retail price inflation minus $x\%$. Put simply, the maximum price hike should be $x\%$ in real terms. Price-cap regulation can

provide incentives for cost efficiency, because if the regulated company succeeds in reducing costs by more than $x\%$, it can pocket surplus as profit. Although price-cap regulation has been proposed for railway fares, there remain questions about whether it facilitates efficient investment, or whether there might be a problem of explicit or implicit collusion between railways.

JR Freight

Declining JR Freight demand: JR Freight has been leasing tracks owned by each passenger JR to provide railway freight services. According to a World Bank study (1994), the leasing fee for use of tracks paid by JR Freight to the JRs is less than the avoidable costs, or expenditure that would not have been made if the freight service were eliminated. In other words, the JRs have cross-subsidized JR Freight to sustain the railway freight networks.

Heightened truck competition: JR Freight faces increasing competition from trucks. Moreover, it lacks experience in dealing with end customers, suggesting a possible reorganization from the current nation-



Loading Garbage Collection Container

(JR Freight)

wide network to regional integration of service areas. This depends on whether there are economies of scale and scope in the provision of the nationwide freight services.

Overall assessment

The passenger JRs today employ about 157,000 (about two thirds of the total employment in the Japanese railway industry) with a little over 20,000 km of track. Needless to say, since the JNR Settlement Corporation still owns almost all the shares of the JRs, privatization is still unfinished. However, if JNR had not been privatized, it would have had to depend on huge government subsidies every year. When the fact that the JRs are now paying corporate taxes is considered, privatization helped lighten the government's fiscal burden from the opportunity cost viewpoint.

Japan's experience suggests that privatization is an essential policy to transcend various vested interests. It has taken many years to implement privatization in Japan, simply because the more drastic the reform, the stronger the interest groups opposing it. It was a great opportunity to convince people inside and outside JNR that the idea "The good old government will foot the bill." would eventually damage fiscal health and reduce economic liberty to a minimum.

Privatization is not a cure-all panacea. Privatization should not be a simple transfer of monopolistic power from public enterprise to private hands. In particular when monopolistic privileges are transmitted to the private sector, competition is an indispensable ingredient in controlling market power. It must be remembered that competition rather than privatization per se is the main stimulus for efficiency. Even when markets are characterized by natural monopolies, if freedom of entry and exit for potential

competitors is ensured, private monopolists are led to behave in an efficient manner. The role of government is to create competitive environments and to promote actual and potential competition both in the markets and for the markets. The government is only responsible for designing legal and regulatory frameworks to enhance competition. Although there is no perfect recipe, if privatization is correctly planned and implemented, the benefits can be considerable.

JNR privatization was a sign of changes in the post-war Japanese economic system, which has been suffering from 'institutional fatigue' for 50 years. It also signified that the Japanese economy had to tackle the task of internal reform. The future of Japan will be determined by how swiftly it moves to a regulation-free society. Although the JNR privatization policy has not been successful in all respects, the most important lesson is that privatization is essential for reclaiming the railway's inherent advantages.

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