Feature

Regulatory Reform and the Railway Industry

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Vertical Separation of Railway Industry in Context of Regulatory Reform

The experience of deregulation in the USA and UK suggests that deregulation represents an ongoing task, rather than a programme that can be completed rapidly. Regulations governing entry into the aviation industry, fare pricing, and other practices have been abolished, but this has created new problems, such as 'mega-carrier' semi-monopolies and longer delays at overcrowded airports. These problems, in turn, call for new regulations and monitoring to ensure that they are followed. Thus, in many cases, the workload of the regulating authorities has not actually decreased. Of course, the fact that such problems occur does not in itself mean that deregulation should be viewed negatively. Morrison and Winston (1995)[1] include these factors in their calculations, and state that if the end result is positive (i.e. brings a net surplus), deregulation can be regarded as acceptable. However, when competition is limited, companies are able to act in a monopolistic fashion, and this runs counter to anti-monopoly policies. There are growing calls for the government to regulate user fees for essential facilities at airports (facilities providing essential services, such as aircraft maintenance and landing slots at crowded terminals). The extent to which this economic approach could be applied to vertical separation in the railway industry represents an important consideration. (See also Daigo and Hori, 1996[2], and the report prepared by the Corporation for Advanced Transport and Technology, 1999[3].)

In this article, I use the term 'regulatory reform' to mean the ongoing optimization of regulations that govern economic activities. Regulatory reform is having a tremendous impact on railways in Europe, and this article will explore the implications of regulatory reform in the Japanese railway industry.

Regulatory reform is usually embraced because it will supposedly lead to the following three positive results:

- It is assumed that regulatory reform will lead to social benefits. Morrison and Winston (op. cit.) estimated in 1995 that deregulation in the USA had helped airlines increase their revenues to a total of $12.4 billion per year (1993 figures), mainly due to the fact that more travellers took advantage of lower fares.
- Regulatory reform boosts government revenue, through the sale of shares of companies created by privatization. The UK, the first nation to wholeheartedly embrace privatization, sold shares in British Airways and three other companies during 1987 and 1988, for a total gain of about £4 billion. At a time when all industrialized countries are finding it difficult to increase their funding of welfare programmes (pensions, health insurance, etc.), this revenue offers a welcome relief.
- Greater competition stimulates industry and contributes to the overall economy. New Zealand adopted a radical deregulation programme, privatizing state-run industries and promoting competition in aviation, railways, postal services, and other sectors. The result was an improvement in key economic indicators—for example, economic growth was higher, unemployment declined, and the nation's balance of payments improved.

Thus, regulatory reform is seen as providing a combination of social benefits, increased government revenue, and economic revitalization. However, we need to carefully consider the relationship between these three factors. Morrison and Winston (op. cit.) emphasize that deregulation of the domestic aviation industry is bringing concrete benefits, and that the international aviation industry therefore needs to be deregulated too. They claim deregulation of the international aviation industry will likely bring further social benefits, boost government revenue and stimulate economic revitalization, with deregulation of domestic and international routes creating a continuous cycle of improvement.

In contrast, Glaister *et al.* (1998)[4] said although deregulation might bring some social benefits, there are times when the social benefits and increased government revenues form an imperfect balance. For example, in the case of the London bus system, regulations remain in force as a way to ensure government revenues and reduce traffic congestion.

Similarly, the economic-revitalization argument cannot always be taken at face value. New Zealand may have benefited from deregulation in the medium term, but there are signs of negative effects over the long term. For example, the reforms spread into areas such as health care and education, where regulations may be needed. And there have been indications that income differentials in New Zealand have widened, and that high added-value industries have not grown as well as expected. Still, Hall (1999)[5] pointed out that deregulation brings positive results overall.

Let's examine the regulatory reform of European railways in the context of the three positive results outlined above. In Europe, the third positive result (economic revitalization) has not been achieved to a great extent. This is because railways on the continent play only a slight role in the overall transport picture, and that role lies more in carrying freight. There is a greater possibility of achieving economic revitalization by lowering fares and improving services. In freight transport, for example, only the UK and Italy have lower tonne-km rail freight than Japan; in France, the freight tonne-km is about

double that of Japan, and in Germany it is nearly triple. However, passenger shares throughout Europe are generally lower than in Japan, so regulatory reform would not bring about a high level of economic revitalization.

Deregulation of the railway sector is particularly significant when one considers social benefits and government revenues. Vertical separation is being proposed and gradually implemented in the railway industry. Vertical separation partitions railways into two sectors: 1. Infrastructure, meaning essential facilities, such as tracks, stations, signalling and communications systems, and 2. Operations, meaning all aspects of train operations. Generally, the infrastructure sector is not split up, while the operations sector is opened to competition between companies, through processes such as competitive tendering. In the European example, European Directive 91/440/EEC calls for promotion of railways through independent management of railway operations, improved financial conditions, separation of infrastructure from operations, and imposition of track usage fees. Although member nations are free to implement the provisions of the directive as they see fit, a further directive in 1995 (in effect a set of detailed regulations complementing the original directive) provides for the granting of operator licences, the apportioning of line capacity, and methods to be used when imposing track usage fees. The extent and manner of implementation of these principles vary considerably, from the UK (which has several private-sector operators), to Ireland (where no division has taken place at all).

Regulatory reform in the EU is characterized by a combination of factors, including provision of subsidies (based on unified EC standards) to ensure public service obligations, and the need to encourage a modal shift away from road to rail, in order to combat pollution, road congestion, and other problems. Government policy promotes vertical separation as a way to ensure more efficient use of facilities, and competition as a way to stimulate economic activity. Although the EU as a whole seems to have strongly embraced vertical separation, railway authorities in member countries were initially opposed in 1989 (Imashiro, 1999)[6]. Their arguments were often similar—for example, a fear that safety standards would fall.

Characteristics of Japanese Railway Industry and Impact of Competition

The experiences described above highlight the unique nature of the railway industry in Japan.

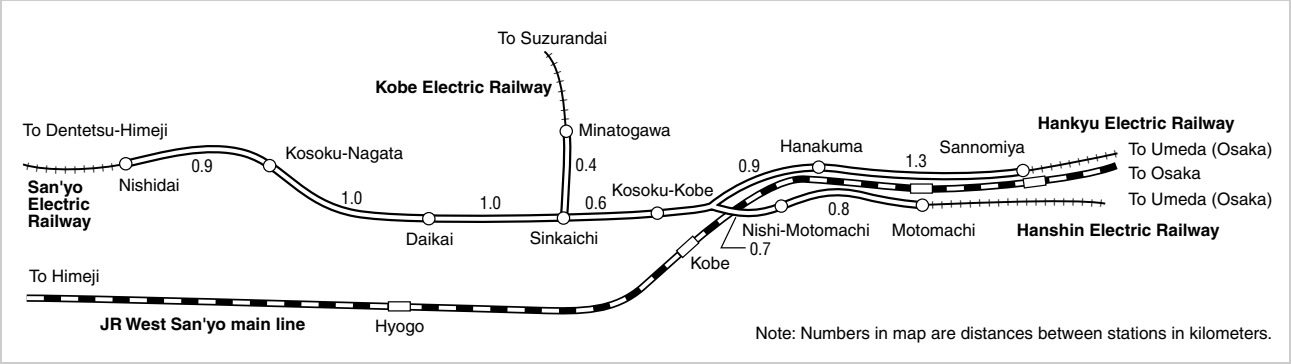
In Japan, the six JR passenger companies of the JR Group (formed after privatization of Japanese National Railways (JNR) in 1987) and many private railways are designated category-1 railway companies (providing passenger and/or freight transport using own infrastructure). Among the category-2 companies (providing passenger and/or freight transport on infrastructure of another company), the most obvious example is JR Freight. Most passenger services are provided by category-1 companies. Category-3 companies (building and selling infrastructure to category-1 companies or renting infrastructure to category-2 companies) have only a secondary presence in the industry. They are often involved in the construction of new short lines for specific purposes, such as commuting or airport access, and stretches of shinkansen lines. Such lines are generally less than 10-km long. A typical category-3 company is Kobe Kosoku Tetsudo (Kobe Rapid Transit Railway) that provides a total of 7.6 km of underground double tracks, allowing trains from four private operators to reach central Kobe (photos below and Fig. 1).

These classifications under the 1986 Railway Business Law appear to be designed to promote competition through vertical separation, as in Europe.

Umeda-bound Series 2000 EMU of Hanshin Electric Railway standing at Kobe Kosoku Station (Kobe Rapid Transit Railway)

San'yo Electric Railway's Series 5000 bound for Himeji from Hanshin's Umeda Station via Kobe Kosoku Tetsudo (Kobe Rapid Transit Railway)

Figure 1 Route and Connections of Kobe Rapid Transit Railway



(*Tetsudo Yoran 1999*—Railway Handbook 1999)

However, the reasons for the Law's enactment, and the fact that most lines are quite short, suggest otherwise. Whereas vertical separation in Europe is designed to encourage competition, in Japan it is used mainly for financial reasons. According to Fujii (1997)[7], the 'primary objective of vertical separation is to make the national and local governments shoulder the risk and the responsibility for procuring funds for infrastructure development'.

In the past, regulations governing the railway industry essentially involved various forms of licensing—issuing fare permits based on an overall cost method approach, and issuing licences to operators, as a way to control market participation. The abandonment of supply and demand adjustment regulations announced by the Ministry of Transport in December 1996 is likely to bring significant changes. In its June 1998 report, the Railway Committee of the Council for Transport Policy questions the direction being taken by deregulation, and cites the need to retain natural monopolies and protect routes that are necessary to maintain living standards. The report does not touch specifically on promotion of competition. We can say that the report's appraisal of the current situation is accurate, although there is a need for greater competition in the future. But we cannot have a precise understanding of the repercussions without considering how proposed fare increases are adjudicated under the new regime. No major changes have been seen thus far.

Significantly, while the fare permit system for private railway operators has been based (at least in form) on the average cost method approach, an incentive programme has also been applied. The incentive programme, announced in 1975, compares the business performance of different operators with respect to growth in earnings, improvements in productivity, and streamlining of operating expenses. Companies deemed to be making insufficient efforts in these areas are subject to a more stringent scrutiny when applying for fare increases (Moriya, 1996)[8].

This is not to imply that there is no competition in Japan's railway industry. Tokyo, Osaka and other large metropolitan regions represent an excellent environment for railway operations. Due to space constraints, this section focuses on the regulatory reform of railways in the Kansai district, which is about the same size as the Netherlands but has about 50% more people (626 people per km^2 versus 459). It has about 1000 fewer route-km than the Netherlands (1773 route-km versus 2795 route-km, or 2808 route-km according to *Jane's World Railways 1999–2000*). Per capita income is US$28,621, nearly 50% higher than in the Netherlands (US$19,050) and per capita motor vehicle ownership in Japan is 0.300 compared to 0.362 in the Netherlands (Mizutani, 1999)[9]. Three separate railway companies provide competing services between the major cities of Kyoto, Osaka, and Kobe, while two railways compete for passengers on the Osaka–Wakayama and Osaka–Nara routes. Many of the lines were completed before the end of the 1930s. Some routes had little competition due to an unprecedented round of corporate amalgamation in the years around WWII. However, since that time, there has generally been competition between a number of companies, even in cases such as the Hanwa Line (Osaka–Wakayama), where ownership of the line was transferred. In other words, competition among category-1 companies is flourishing in Japan.

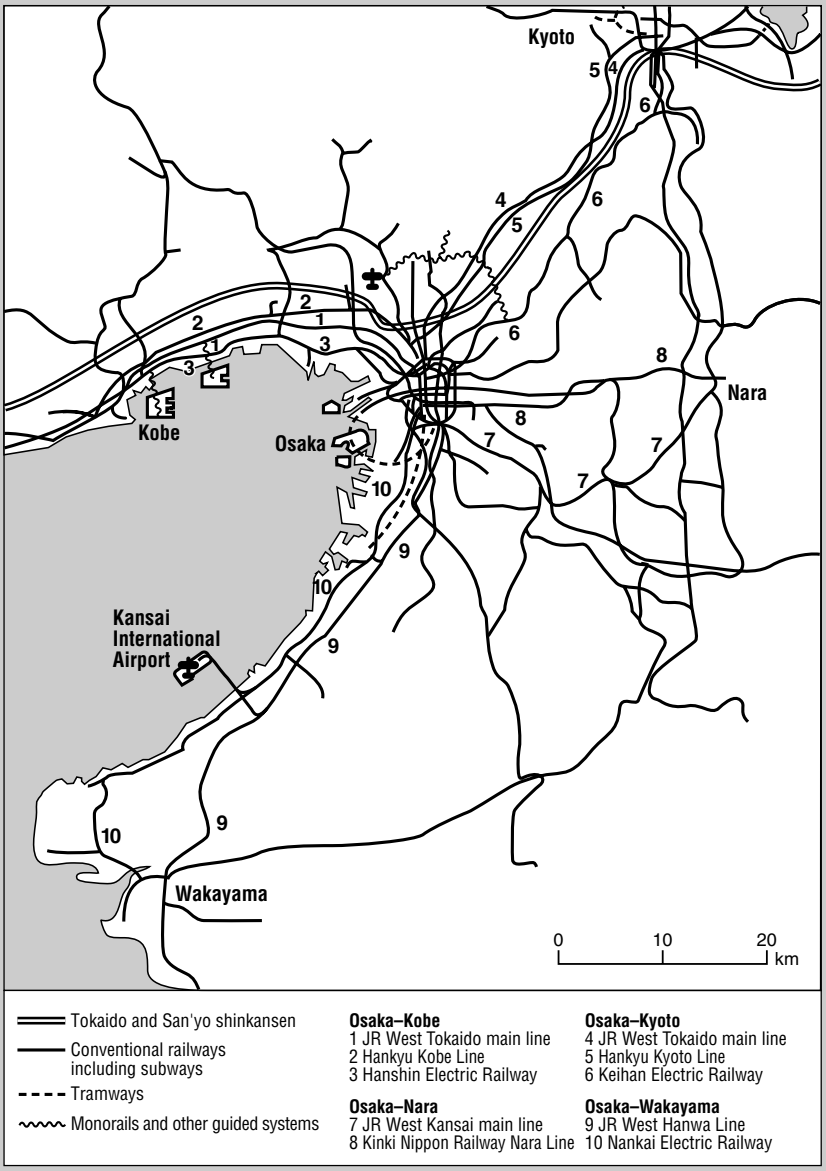
Japan's metropolitan areas are densely populated, their residents have relatively high incomes, and there is a relatively low dependence on cars. As a result, demand for rail transport ensures that several railway companies can remain profitable, even though they must compete with each

other and their lines are not long. This situation naturally reflects the fact that there have been regulations (Fujii, op. cit.) restricting the entry of new companies into the transport market. Unlike their western counterparts, private railway operators in Japanese cities have received almost no operations subsidies from the government. Instead, public financial support generally takes the form of investment assistance. The type and level of investment varies greatly, depending on the type of railways—subways and monorails (usually operated by municipal governments) receive government subsidies for infrastructure construction, while heavy and light railways receive subsidies only in limited cases. Here, 'subsidies' mean assistance from external sources only. Cross-subsidies from profitable operations provided the former JNR with an important source of investment funds. Private railway operators in large urban areas are allowed to add a small extra charge to fares that they can reserve in a long-term development fund for future infrastructure investment. Established by a special law in 1986, this fund is officially known as the Reserve for the Development of Specific Urban Railways, and could be viewed as a time-based cross-subsidy.

Since the 1960s' proliferation of private car ownership in Japan, private railway companies have found their rail operations to be increasingly less profitable. To increase profits, they have diversified into related non-rail businesses (leasing retail premises, real-estate development near stations and along lines, etc.). They have also taken steps to maintain and improve their ridership. So far, the JR Group of companies have had relatively little involvement in non-rail businesses and therefore have few other sources of income contributing to their overall revenues. This can be explained by the fact that most non-rail businesses were prohibited during the JNR days and all surplus real estate owned by JNR was transferred to the JNR Settlement Corporation at JNR privatization as part of the long-term debt settlement.

During the postwar rapid economic growth period, Japan's railway industry did not grow quite as rapidly as other industries, but the railways were still able to maintain stable profit levels. However, the falling birth rate and long recession from the mid-1990s make the future look uncertain.

Figure 2 Competing Services on Main Interurban Railway Lines in Kansai District



(Map originally drawn by E. Aoki, adapted from 1999 map on p. 221 of *A History of Japanese Railways, 1872–1999*)

(Odakyu Electric Railway)

(Tobu Railway)

Odakyu Electric Railway's quadrupled tracks at Komae Station in southwest suburb of Tokyo (top) and quadrupling work at Kita Koshigaya Station of Tobu Railway in north suburb of Tokyo (bottom). Both engineering works used the Reserve for the Development of Specific Urban Railways, special funds set aside from extra charges on passenger fares.

Government Policy Objectives and Responses to Changing Environment

Let's examine the Japanese railway industry with respect to the three positive results that are said to follow regulatory reform.

- Increased social benefits
  Vertical separation does not play an important role in increasing the social benefits of railways (Takeuchi, 2000).[10] Shinkansen lines are faced with increasing competition from airlines; urban services are offered by many competing railways in the cities, so there is already plenty of competition between modes and railway companies themselves. As described earlier (although of limited scope), programmes designed to boost the business efficiency of railways have been incorporated into Japanese regulatory systems for more than 20 years.
- Government revenues
  The Japanese government has reduced its shareholdings in the three profitable JRs from 100% at privatization to 12.5% in JR East, 39.7% in JR Central and 31.5% in JR West (*Nihon Keizai Shimbun* 25 Jan. 2000). The sale of the remaining government-held shares cannot be expected to strongly contribute to government revenues. Naturally, the government does not hold any shares in private railway companies, and vertical separation would not boost government revenues from corporate taxes.
- Economic revitalization
  In Japan, regulatory reform would play only a small role in spurring economic revitalization, partly because rail freight is only a very small part of total freight transport, and partly because vertical separation would be unlikely to result in a reduced passenger fares, for the reasons outlined above.

But a different picture emerges when looking ahead to the next 20 years. The foundation of Japanese urban passenger railways is being eroded by falling birthrates and an aging population. Furthermore, commuting may one day be a thing of the past as the IT and networking revolution changes working habits. Under the harsh scrutiny of global stock markets, private railway companies are finding capital investment more difficult and less advisable. We are gradually approaching the time when railways will require government subsidies if they are to maintain or increase their capacity.

In any case, if the wrong decisions are made about introducing subsidies (as happened with JNR), there is a real danger of railways losing passenger confidence. Furthermore, the rapid change in Japan's population structure will have a severe impact on government tax revenues, and increased individual contributions to pensions and health care will reduce the disposable income of all Japanese. Obviously, these increasingly severe financial difficulties will force the government to consider streamlining its railway subsidies.

A better approach for more effective use of government subsidies might be a system of competitive tendering for choosing railway operators based on vertical separation of infrastructure and operations. The changing economic climate might force railway policies in Japan to move closer to the European model of vertical separation. ■

Notes

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