



Ten years after bus deregulation in Japan: An analysis of institutional changes and cost efficiency

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ABSTRACT

The local bus market in Japan was deregulated in 2002. This study examines the impact of this deregulation on the market structure and the operators' cost efficiency over the last ten years. First, we perform a qualitative before-and-after-deregulation analysis of Japan's bus market, finding that there has been little change in the structure of the Japanese bus market so far. Second, we investigate the effectiveness of the deregulation and internal organisational factors by using a dataset of publicly owned (municipal) bus companies. We estimate the total cost frontier functions in order to examine their effects, showing that it is the internal organisational factors (i.e. governance structure) that affect the operator's efficiency, not deregulation. In fact, the coefficient of subsidies to companies is positive, with statistical significance, thereby suggesting that cost efficiency decreases as the subsidy ratio increases. The coefficient of the contracting-out (MCGL) dummy also obtains statistically significant results; thus, we provide an account of how contracting out clearly improves operators' cost efficiency. The deregulation variable did not show significant results.

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1. Introduction

The bus market in Japan, both local and the intercity coach, was deregulated in 2002, following the deregulation of the chartered bus market in 1999. Now, it is time to evaluate the consequences of this deregulation in Japan, as in the United Kingdom, the bus deregulation policy was evaluated approximately ten years after its implementation in 1986 and 1987 (Mackie & Preston, 1996; Mackie, Preston, & Nash, 1995; White, 1997).

The remainder of this paper is structured in the following manner. First, we review the structure of the Japanese bus market until the 1990s as regulated by Demand-Supply Balancing. Second, we survey the debate regarding and the main features of the deregulation policy implemented in 2002. Next, we examine the consequences of the deregulation, with a focus on new entries and competition, indicating that little change has occurred in the structure of the Japanese bus market. Then, we quantitatively investigate the impacts of the deregulation programme introduced in 2002 and the internal factors in bus companies' cost efficiency through a dataset of publicly-owned bus (municipal bus) companies. Finally, we conclude our paper by evaluating the ongoing

supply system reform in the Japanese bus sector based on our qualitative and quantitative results.

2. Qualitative before–after analysis of the deregulation

2.1. The market before the deregulation

In this chapter, we present a qualitative before–after analysis of the deregulation programme. As pointed out by Mizutani and Urakami (2003), the local bus sector in Japan suffers from several problems: (1) a continuing decline in ridership, (2) operating deficits, (3) decreasing financial support from the government, (4) large cost differences between public (municipal) and private operators,¹ and (5) difficulty maintaining bus services in small communities. We review the demand and supply side of the market in order to investigate the backgrounds of these problems.

First, we examine the demand side—the patronage. Japan experienced high economic growth from the mid 1950s to the mid 1970s (when the first oil crisis began). Economic development

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¹ Public operators are those local public enterprises categorized as being sponsored through a special account set up in the local general account; therefore, they are managed by local governments (typically by a separate municipal department). We refer to these operators as 'publicly owned' or 'municipal'.

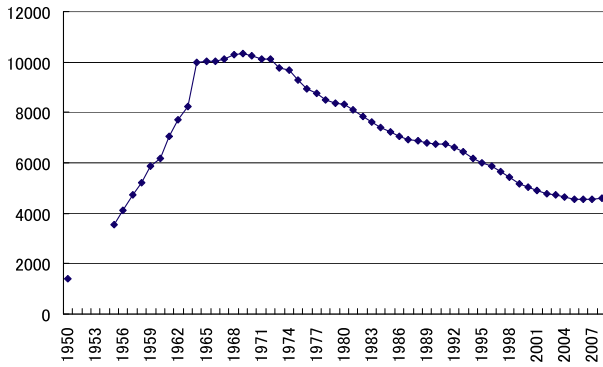


Fig. 1. Change in bus patronage in Japan (in million pax.). Source: Japan Automobile Conference (each year).

helped increase bus patronage until the late 1960s. This period can be called the ‘golden age’ of public transport. However, income growth also promoted motorisation by private cars. Since then, as indicated in Fig. 1, patronage has decreased. The decline seems to have bottomed out in 2005, but we do not know why. This may be partly because of the amendment to the Road Transport Carriers’ Act of 2006, which we will discuss later. Unfortunately, as the East Japan Great Earthquake hit the eastern part of Japan in March 2011, patronage is expected to decrease again.

Next, we review the supply side before deregulation. Fig. 2 shows the change in the number of local bus companies.² Surprisingly, this number was virtually fixed at around 360 from the late 1950s to the early 1980s. Thus, although demand fluctuated greatly (as we see in Fig. 1), few entrants appeared in the market when the demand increased, and no incumbents disappeared when the demand decreased.

After the late 1980s, the number of fixed-route bus companies surged despite the still decreasing demand because of divestitures implemented by the major incumbent bus companies (Sakai & Suzuki, 2011; Takahashi, 2006, Ch.4). Divestitures are supposed to be a means of reducing labour costs because a new wage system is usually applied to the drivers employed by the newly founded subsidiaries; this is because the incumbents and their labour unions have agreed that the smaller the company, the lower the wage to be paid to its employees.

The supply side of the bus market was regulated through Demand-Supply Balancing (DSB). This typical form of regulation for local and natural monopolies consisted of entry and price regulation. This means that operator entry required a license, and exit required permission. As the name itself indicates, the regulator believed the market would ‘fail’ without the ‘visible’ hand of the government. Under DSB regulation, local public transport operators have traditionally been required to independently balance their revenue costs. Thus, national government policy still considers public transport to be ‘self-supporting’ and running at ‘full-cost’.

However, there is an exception. Municipal bus companies cannot cover their total operating costs solely through passenger revenues, including fare compensation for the concessionary fare system. Thus, many of them have been privatised or contracted out to private

² Japanese bus companies are divided into ‘fixed-route’ and chartered. Fixed-route bus companies are allowed to provide both local and intercity coach services, and many provide both. In this paper, we refer to ‘fixed-route bus companies’, in the strict sense, as ‘local bus companies’ and focus on the local bus market. Municipal bus companies do not provide intercity services, as they concentrate on local services within their own cities.

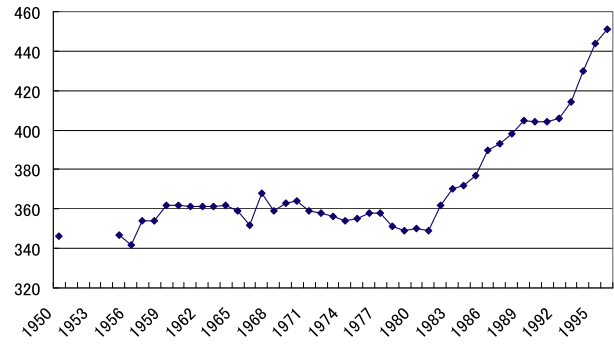


Fig. 2. Change in the number of local bus companies in Japan before deregulation. Source: Japan Automobile Conference (each year).

bus companies in recent years. Whether the deregulation programme triggered these reforms to improve their efficiency, as has been argued, is the question addressed in the following chapters.

2.2. The main features of the deregulation programme

In 1996, the government decided to implement a deregulation programme for all modes of public transport. Its centrepiece was the abolition of DSB, the mitigation of entry and exit regulation. Permission was required only for an operator to enter the market, and a submission was required to exit the market. In addition, the industry’s price regulation was changed to price-ceiling regulation (Takahashi, 2006, Ch. 5). This allows bus companies to reduce prices but prevents them from raising them above the regulated ceiling determined by the full cost.

The regulator, the Ministry of Land, Infrastructure and Transport, found it difficult to directly deregulate the local bus market and asked the Council for Transport Policy for advice on implementing the programme. The Council discussed the anticipated effects of the abolition of DSB on the local bus market.

One of the main issues discussed in the Council was cream-skimming (Council for Transport Policy, 1999; Sugiyama, 1999, pp. 58–59; Terada, 2002, pp. 213–214). In the present context, cream-skimming implies an entry limited to peak hours or profitable services. Both advantages and disadvantages are associated with cream-skimming. The advantage is that it is a kind of hit-and-run strategy in the theory of contestable markets, promoting competition and revitalising the market. The disadvantage is that the incumbent, in responding to the entrant’s cream-skimming, will give up cross-subsidising and provide unprofitable services in preparing for direct competition with the entrant.

The Council concluded that cream-skimming should be avoided because it undermines the incumbents’ profit centre that had allowed them to be self-supporting. In response to the Council’s advice, the regulator defined cream-skimming in the following manner. In order to judge whether the entrant is cream-skimming, the regulator calculates the services’ gap ratio between the peak hour and an average off-peak hour. Table 1 provides a virtual example. The incumbent and entrant are supposed to operate along

Table 1
Virtual example for judging cream-skimming.

	Number of buses operating in peak hours	Number of buses operating in every off-peak hour	Gap ratio	Judgement
Incumbent	5	2	2.5	Cream-skimming (4.0/2.5 = 160%)
Entrant	4	1	4.0	

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