WORKING PAPER

Maintaining Local Transport Services in Japan

Fumitoshi MIZUTANI & Shinichi SAITO

CIRIEC N° 2011/01

**CIRIEC activities, publications and researches are realised
with the support of the Belgian Federal Government - Scientific Policy
and with the support of the Belgian French Speaking Community - Scientific Research.**

**Les activités, publications et recherches du CIRIEC sont réalisées
avec le soutien du Gouvernement fédéral belge - Politique scientifique
et avec celui de la Communauté française de Belgique - Recherche scientifique.**

ISSN 2070-8289

Maintaining Local Transport Services in Japan

Fumitoshi MIZUTANI[*] & Shinichi SAITO[**]

Working paper CIRIEC N° 2011/01

[*] Professor of Graduate School of Business Administration, Kobe University, 2-1 Rokkodai, Nada-ku, Kobe 657-8501 Japan (e-mail: toshi@kobe-u.ac.jp).

[**] Lecturer of Faculty of Policy Studies, The University of Shimane, 2433-2 Nohara-cho, Hamada, Shimane 697-0016 Japan (e-mail: shi-saito@u-shimane.ac.jp).

Abstract

For many years, bus and railway companies in regional areas in Japan have been struggling to stop decreases in passenger numbers. Although motorization and the construction of road networks have caused declining ridership in public transportation, deregulation in the transportation industry has also played a part in this phenomenon. The main purpose of this paper is to overview the current situation and to discuss issues related to regional transportation in Japan. We evaluate regulation and public transportation policy by focusing on railway and bus services in regional areas.

[Key Words]: Deregulation of transport, Rural transportation, Vertical separation
[JEL Classification]: H54, R48, R51

1. Introduction

In Japan the population is decreasing because of the declining birthrate, while the proportion of elderly people is increasing. It is thought that these factors will influence regional transport systems. While megacities grow, smaller cities face a decrease in population. In fact, Japan's population as a whole began to decrease in 2005, when the number of municipal districts, towns, and villages with decreasing populations was 1,642 (69.4% of all), and the number of municipal districts, towns, and villages with population increases numbered only 723 (30.5%). Experts agree that these trends will continue into the future.

Furthermore, the number of those who use the bus and railway systems is decreasing because of motorization and the construction of a road infrastructure network. The accumulation of urban functions and population densities in central areas has been decreasing in suburban cities. The sprawl phenomenon of urban areas has accelerated with the development of large-scale commercial facilities in suburban areas of the city.

With decreasing usage, public transport is considered to be losing its advantage to the private car. If demand declines, operators respond by reducing service level or increasing fare, which results in the further deterioration of demand, putting management in an even more difficult situation than before. Consequently, policy makers are struggling with the important issue of how to maintain transport service in rural communities in Japan.

From an institutional perspective, the purpose of deregulation in the transport industry has been to alleviate consumer surplus by improving the efficiency of service provision. However, profitability can hardly be expected. Moreover, the cost structure is stifling, as many operators have already grappled with cost reduction, and it is thought that a further rationalization of cost cannot be expected. Consequently, the supply side can no longer properly adjust costs to correspond with decreases in demand, creating a situation in which users' needs are no longer satisfied.

If service cannot be provided through the market, public assistance is approved. But of course, it is necessary at the time of approval to rationalize supply costs as much as possible. In recent years, a number of municipalities have reviewed local transport services and instituted the provision of new services, for example by combining ordinary local bus service with school bus service or special transport. Many such services are created in response to the current state of traffic demand.

However, the following questions are always an issue of discussion: whether it is necessary to maintain the service; at what level it should be maintained; and what kind of services should be provided. Unified central control over regional transport policy by the Ministry would not be possible because issues related to transport vary according to region, and actual traffic flow does not coincide with administrative boundaries. A new consensus-building organization is therefore necessary to adjust interests when a certain policy is executed.

Even if decentralized decision-making is preferable, there are many cases in which it is necessary to seek financial resources from the municipality. On that point, the Local Transport Plan in the United Kingdom, which is obliged to abide by the Law on Transport, has an advantage because it decides on a certain outcome.

The main purpose of this paper is to overview the current situation of local transportation in Japan, especially focusing on railway and bus services, which are still vital transportation modes in rural areas, and to evaluate regulatory and policy issues for local transportation services. In this evaluation, we pay special attention to the consensus-building process in the local community. This paper is organized as follows. After the introduction, in section 2, we explain the legal framework, responsibility and organization of the public transport industry in Japan, summarizing major regulations and regulatory bodies. In section 3, we explain more specific regulations and in the following section explain the provision process. We describe the regulation structure in the transportation industry, regulatory reforms, planning, and the provision of LPT services. In this case, we focus on local bus service and describe decision-making systems related to LPT services. There follows an explanation of the effects of deregulation, and an explanation of railway restructuring. In section 4, we describe the main financing system in both the local bus and railway industries in Japan. In section 5, we present statistical data for several items, to serve as monitoring of LPT services. If quantitative data are not available, we describe the situation as well as we can under the circumstances. In our concluding remarks, we summarize important points regarding LPT in Japan.

2. Legal Framework, Responsibility and Organization

2.1 Major Regulation

The main law applicable to local bus services is the Road Transport Law (Doro Unso Ho). The railway industry is regulated by the Railway Business Law (Tetsudo Jigyoho), to which all rail companies have been subject since April 1, 1987, when the privatization of Japan National Railway (JNR) was enacted. Although progress has been made toward deregulation, it is a fact that both the local bus industry and the rail industry are still regulated. Details of regulation and deregulation in these industries are explained in the next section.

2.2 Regulatory body

The Ministry of Land, Infrastructure and Transportation is responsible for regulations and policy-making in both the local bus and the railway industries. This regulator must approve the ceiling price for local bus service. Because yardstick regulation is applied to the local bus and rail service industries, several measures for evaluating operators' performance are collected in order for the regulator to set standard costs for each operator. Also, for the many private local bus operators creating deficits, the government provides assistance in the form of subsidies, in a scheme administrated by the Ministry of Land, Infrastructure and Transportation.

In addition to the Ministry of Land, Infrastructure and Transportation, the Ministry of Internal Affairs and Communications plays a role in the regulation of publicly owned local bus operators and publicly owned subway systems. For example, the Local Public Corporation Law (Chiho Koei Kigyo Ho) identifies this ministry as holding certain responsibilities related to the administration of public corporations and their corporate bonds.

3. Provision and Regulation of Local Public Transport Sector's Services

3.1 Regulation and Recent Regulatory Reforms in Local Transport

Table 1 shows the major regulations of the local bus industry and the railway industry. As this table shows, in general a permission system is used for entrance, a pre-notification system for exit, and for fare revision, a pre-notification system as long as the revision does not exceed maximum fare.

Table 1: Deregulation in the Passenger Transport Sector
(Part 1)

Mode	Passenger rail	Route Bus	Chartered Bus
Law	Railway Business Law	Road Transport Law	Road Transport Law
Market entrance	License system applied to every route →Permission system applied to every route	License system applied to every route →Permission system by operators	License system depending on the operational area →Permission system by operators
Market Exit	Permission system →Pre-notification to the Ministry (1 year before)	Permission system →Pre-notification to the Ministry (6 months before)	Permission system →Ex-post notification system
Fare and charge	Approval system →Pre-notification system under approval of maximum fare.	Approval system →Pre-notification system under approval of maximum fare.	Approval system →Pre-notification system
Schedule	Promulgation: 21 May 1999 The date the law takes effect: 1 Mar. 2000	Promulgation: 26 May 2000 The date the law takes effect 1 Feb. 2002	Promulgation: 21 May 1999 The date the law takes effect: 1 Feb. 2000

(Part 2)

Mode	Taxi	Passenger Boat	Domestic Air
Law	Road Transport Law	Marine Transport Law	Civil Aeronautics Law
Market entrance	License system depending on the operational area →Permission system by operators	License system applied to every route →Permission system by route	License system applied to every route →Permission system by operator
Market Exit	Permission system →Ex post notification system	Permission system →Pre-notification to the Ministry (30 days before)	Permission system →Pre-notification to the Ministry (6 months before)
Fare and charges	Approval system →Approval system (Maximum fare)	Approval system →Pre-notification system	Approval system →Pre-notification system
Schedule	Promulgation: 26 May 2000 The date the law takes effect: 1 Feb. 2002	Promulgation: 11 Jun. 1999 The date the law takes effect: 1 Oct. 2000	Promulgation: 11 Jun. 19999 The date the law takes effect 1 Feb. 2000

Source: Ministry of Land, Infrastructure and Transport (2002).

The most recent deregulation in the transport sector took place in December 1996, at which time the Ministry of Transport (currently reorganized as the Ministry of Land, Infrastructure and Transport: MLIT) rescinded regulations controlling supply and demand. The purpose of this deregulation was to revitalize the transport sector by introducing competition. Before deregulation, regulations for controlling supply and demand had allowed transport operators to function as regional monopolies in exchange for the government's control over entry or exit from the market through the granting of licenses, which prohibited operators from changing their routes. Transport operators were forced to maintain all routes by using cross-subsidies from profitable routes. Furthermore, the transport fare of these routes was determined by a rate-of-return regulation, which stipulated that monopoly firms be required to charge the price that would prevail in a competitive market, equal to the efficient costs of production plus a market-determined rate of return on capital. This regulation had created a vicious cycle of rising fares as a reflection of decreasing revenues, which decreased the number of passengers. Under these conditions, municipal governments had no choice but to subsidize losses.

To ameliorate these problems, the Railway Business Law and the Road Transport Law were revised. The revision aimed to revitalize local transport by removing the Transport Ministry's control over those industries. In turn, service was expected to reflect the status of needs in the area. But it should be noted that even if this policy was capable of making profitable areas more efficient, unprofitable routes were still in danger of being abolished.

In the bus sector, regulations for controlling supply and demand were abolished in 2002 following the deregulation of chartered bus services in 2000, as Table 1 shows. Before deregulation, a license was necessary to enter the market or to set routes. However, these rules were simplified, and a permission system was introduced for market entry as well as an approval system for route setting. The government's approval was necessary to set a certain fare, but the rule was simplified to allow bus operators to set their own fares as long as the fares were lower than the approved maximum fare.

In the railway sector, the fare-setting rule was reformed in 1997. Under this rule, operators could set their own fare after pre-notifying the Ministry, as long as their planned fare was lower than the maximum fare allowed. The fare-setting rule differed from the price cap regulation, however, in that the maximum fare was calculated based on the rate-of-return. In March 2000, the regulation for controlling supply and demand was abolished by the revised Railway Business Law. The rule for entrance into the market, which at first required operators to obtain a license, was rescinded, and the rule regarding exiting the market was changed from getting permission to pre-notifying the Ministry.

3.2 Planning and Provision of LPT Services

In general, responsibility for planning the local public transport sector's bus services falls upon the regional council, the regional public transport council, and the council constituted by the Act. On the other hand, individual local bus operators are responsible for the provision of the local public transport sector's services. Table 2 shows the decision-making system for local bus services.

As for local public transportation provided by the railway industry, the council constituted by the Act is responsible for planning, while individual rail operators are responsible for provision of services.

In this section, we explain the decision-making system and its transition by focusing on local bus services.

Table 2: Decision-Making System for Local Bus Services and Its Transition

Name	Regional Council	Regional Public Transport Council	The Council Constituted by the Act
Law	Road Transport Law revised in Feb 2002.	Road Transport Law revised in Oct. 2006	Law on Revitalization and Rehabilitation of Local Public Transportation Systems in Oct 2007.
Purpose	Securing regional transport services after deregulation	Setting rules for services which use privately owned cars and receive some user fees	i) Encouragement for integrated decision making in the region. ii) Integration of transport policy which had been executed independently by transport mode.
Organizer	Prefectural government	Municipalities of cities, towns and villages	Municipalities of cities, towns and villages

Participants	District bureau of MLIT, Municipalities of cities, towns and villages, Bus operators	District bureaus of MLIT, prefectural governments, administrators of roads, Police, bus operators, representatives of residents and users, scholars, etc.	Public transport operators, administrators of roads, representatives of users, residents, companies, schools or hospitals in the region, scholars.
Contents	Discussion about maintaining routes which cross prefecture boundaries.	i) Integrate bus services which use hired coaches and charge fare for normal public buses ii) Deregulation of fare setting rule from approval to notification if routes concerned are to be maintained	i) Setting conference based on the Act ➢ Independently act in the local community ii) Setting action plan in close cooperation. ➢ Set basic plan, area of service coverage, identify the project, target, and project schedule
Issues	i) Routes which do not cross boundaries are not discussed or supported It is difficult to maintain bus routes because most routes inside municipalities were not considered.	(i)Financial backing was not secured. ii) In some cases, the decision of the conference differed from that of assembly after discussion of budget adjustment. iii) Other transport modes were not discussed. The purpose of the conference was limited to discussing how to maintain bus routes.	The purpose and the subject of discussion in conference should be re-appraised if the function and role would increase. Some concerns such as increasing office work would remain.

Decision-Making Systems in Local Bus Services

The economic benefits of local transport services for the region or users are seen as the external benefit of the services, which means that it is reasonable for users and residents alike to cover a portion of the cost, in accordance with the "beneficiary pays" principle. To request residents and users to take on a financial burden, public involvement is necessary. A possible scheme would be

town meetings composed not only of operators and the municipal government but also of representatives of residents or users. It is essential that local transport services not be controlled by the central government. Formulating a policy that leads to the highest efficiency is necessary.

When regulatory reforms for bus operations took place in 2002, some areas feared that transport services would be withdrawn. Out of 246 operators, 184 face deficits, and operators in other local areas face serious situations (150 out of 171 operators, or 87%, face deficits). The setting of a "Regional Council (*Chiiki Kyogikai*)" by the prefectural government as a safety net was the first movement in decentralization. That institution made it possible to discuss ways to maintain bus services, of which routes cover several municipalities of cities, towns, and villages, and is subsidized by the Ministry of Land, Infrastructure and Transport. Also, it was shown that every municipality would be responsible for bus services within its own municipal boundaries.

The formation of these regional councils anticipated the independence of local transport services by decentralizing responsibility and decision-making to the regional level. Similar entities have been set up by several revised acts: the "Regional Council" mentioned above, set up by the Revised Road Transport Law in 2002; (2) the "Regional Transport Council," set up by official notice of the Ministry of Land, Infrastructure and Transport in March 2003; and (3) the "Regional Public Transport Council," set up by the further revised Road Transport Law in October 2006. These systems have similar purposes, and each can be seen as an outcome of the revision of the former system. These transitions imply that results are heavily dependent on the following three components: skilled policy-makers who are responsible for city planning; public involvement; and financial support conducive to decentralized planning.

The importance of skilled policy-makers

An institutional system to engage the public has been set up but was not successfully introduced. There was some confusion among several city, town, and village municipalities. The revised Road Transport Law in 2002 prescribes setting up a "Regional Council," but only after operators have submitted service withdrawal notices to the Ministry of Land, Infrastructure and Transport. In addition, discussion in the council was to take place only when the route concerned covered several municipalities and was eligible for a subsidy from the prefecture. In other words, councils could not be set up for routes inside municipalities, so that municipalities had to make policy by themselves, but with little know-how, their efforts did not prove to be successful.

It was inevitable that municipalities with no experience in transport planning would be unsuccessful because of the difficult regulations of the Ministry of Land, Infrastructure and Transport. Confronted with the withdrawal of services, the only solution was to charter coaches and operate them with fare as an exception to the Road Transport Law.

Involvement of residents and users

Discussion and decision-making systems have been established since deregulation in 2002. "The Regional Council" prescribed in 2002 was to discuss and to make a decision concerning bus routes that straddled the boundaries of prefectural municipalities. However, no scheme was prescribed in the law of 2002 for responding to the withdrawal of bus services that do not straddle prefecture boundaries. Therefore, because they had little knowledge or skill in managing or planning transport services, municipalities of cities, towns, and villages inside the prefecture had no choice but to subsidize bus operators intending to withdraw services that did not straddle boundaries.

In the reform of the Road Transport Law in 2006, a "Regional Public Transport Council" took the place of the former "Regional Council." The "Regional Public Transport Council" has been set up in the city, town, and village municipalities that consider it necessary. The members comprise municipalities, operators, and representatives of residents and users. This made it possible to consult with the public comprehensively to investigate local needs and adjustments of route, timetable, and fares, which had been the responsibility of the operators.

This measure created a new demand-responsive transit service (DRT or dial a ride), which differs from the ordinal services' fixed timetables and routes. Furthermore, the streamlining of the fare-setting procedure caused a decrease in the operators' burden, which means that the maximum fare had to be approved by the Ministry of Land, Infrastructure and Transport, but it was still permissible to announce a change in fare after a "Regional Public Transport Council" was held. These measures spurred many municipalities to operate so-called "community buses," their original bus services, which reflect the needs of local communities.

Budgeting in corroboration with the execution of policy

The "Regional Public Transport Council" settled by the amendment of the Road Transport Law in 2006 was created to establish transport systems which

most reflects local needs. With this amendment, public involvement was realized institutionally.

However, even though a decision-making system was formulated, it did not secure a reliable execution of the policy because the scheme did not secure the municipalities' financial support. In some cases, a policy decided in a Council was rejected after budget adjustments during the assembly. This shows the importance of creating a decision-making system with a sound financial background. The Law on Revitalization and Rehabilitation of Local Public Transportation Systems in October 2007 ruled that the conference for the region be named "Council Constituted by Law." Depending on the provisions, the council should decide on a policy and secure local transport services by drawing up a budget of its own. And municipalities would support policies financially.

In particular, the law does not limit the application for bus service, but can limit railway or sea transit services between islands. This made it possible to constitute an integrated regional transport plan, which would be the most ideal option for the region. During the Council, members are requested to discuss the following five matters: (1) basic and conductive planning; (2) defining the area that the plan covers; (3) setting a target and choosing realistic projects; (4) making timetables; and (5) defining responsibilities for each participant in the council. As such, the "Council Constituted by Law" can discuss provisions for regional transport services comprehensively and realistically.

3.3 Effects of deregulation

Local Bus Services

Deregulation in rail and bus services was expected to cause revitalization by the introduction of a market mechanism leading to increased productivity and improvement in service. However, service in rural areas appeared to suffer. In fact, about 70% of local bus operators have operational deficits, as Table 3 shows. Likewise, about 80% of local railway operators have operational deficits. These statistics show that it has become quite problematic to maintain local routes for people who live in rural areas.

Table 3: Situation of Local Bus Operators in 2008

Areas	Finances			Percentage of Current Balance (%)	Number of Operators		
	Revenue	Expense	Profits		Profits	Deficits	Total
Urban Areas	448	467	-9.7	95.8	41	34	75
Other Areas	298	339	-40.7	88	21	150	171
Total	746	806	-60.4	92.5	62	184	246

Note:
(1) "Urban areas" include the following prefectures and areas: Chiba prefecture, Buso area (Tama area in Tokyo, and Saitama and Kanagawa prefectures), Keihin area (Tokyo special administrative district [central Tokyo], Mitaka, Musashino, Chofu, and Komae cities in Tokyo, Yokohama and Kawasaki cities in Kanagawa prefecture), the Tokai area (Aichi, Mie, and Gifu prefectures), and Keihanshin area (Osaka, Kyoto, and Hyogo prefectures).
(2) Unit item for finance: billion yen.

Source: Ministry of Land, Infrastructure and Transport (2010b).

Railways

Many railway routes have been discontinued since the Railway Business Law was rescinded in 2000. In fact, as Table 4 shows, the length of discontinued railway lines has reached 634 km since 2000. Likewise, many bus routes have been scrapped since the Road Transport Law was rescinded. The dismantling of these routes and lines indicates that the profitability of transport service is too low to justify maintaining them, as many operators yield to the difficulty or impossibility of financing deficit-making services without public support.

Table 4: Discontinued Rail Routes in Recent Years

Fiscal Year	Line	Company	Section	Route-km	Date of Withdrawal
2000	Kitakyushu Line	Nishi-Nippon Railroad Co., Ltd	Kurosaki Station — Orio	5.0	26 Nov. 2000
2001	Nanao Line	Noto Tetsudou Corporation	Anamizu — Wazima	20.4	1 Apr. 2001
	Ohata Line	Shimokita Kotsu Corporation	Shimokita — Ohata	18.0	1 Apr. 2001
	Ibi Line	Nagoya Railroad Co., Ltd	Kurono — Hon-Ibi	5.6	1 Oct. 2001
	Tanigumi Line	Nagoya Railroad Co., Ltd	Kurono — Tanigumi	11.2	1 Oct. 2001

	Yaotsu Line	Nagoya Railroad Co., Ltd	Akechi —Yaotsu	7.3	1 Oct. 2001
	Takehana Line	Nagoya Railroad Co., Ltd	Egira — Ohsu	6.7	1 Oct. 2001
2002	Kato Line	Nagano Electric Railway Co., ltd.	Shinshu-Nakano — Kijima	12.9	1 Apr. 2002
	Wakayamako Line	Nankai Electric Railway Co., Ltd.	Wakayamako — Suiken	2.6	26 May. 2002
	Eiheiji Line	Keifuku Electric Railroad Co., Ltd.	Higashi Furuichi — Eiheiji	6.2	21 Oct. 2002
	Nambu Jukan Railroad Line	Nambu Jukan Railroad Line	Noheji — Shichinohe	20.9	1 Aug. 2002
	Arida Tetsudo Line	Arida Tetsudo Co., Ltd	Fujinami — Kanayaguchi	5.6	1 Jan. 2003
2003	Kabe Line	West Japan Railway Company (JR West)	Kabe — Sandankyo	46.2	1 Dec. 2003
2004	Mikawa Line	Nagoya Railroad Co., Ltd	Hekinan — Kira-Yoshida	16.4	1 Apr. 2004
	Mikawa Line	Nagoya Railroad Co., Ltd	Sanage — Nishi-Nakaganei	8.6	1 Apr. 2004
2005	Ibi Line	Nagoya Railroad Co., Ltd	Chusetsu — Kurono	12.7	1 Apr. 2005
	Gifu City Line	Nagoya Railroad Co., Ltd	Gifu Station — Chusetsu	3.7	1 Apr. 2005
	Minomachi Line	Nagoya Railroad Co., Ltd	Tetsumeicho — Seki	18.8	1 Apr. 2005
	Tagami Line	Nagoya Railroad Co., Ltd	Tagami —Keirin-jo-mae	1.4	1 Apr. 2005
	Hitachi Dentetsu Line	Hitachi Dentetsu Co., Ltd.	Jo-hoku Ota — Ayukawa	18.1	1 Apr. 2005
	Noto Line	Noto Tetsudou Corporation	Anamizu — Takojima	61.0	1 Apr. 2005
2006	Furusato Ginga Line	Hokkaido Chihoku Kogen Railway Company	Ikeda — Kitami	140.0	21 Apr. 2006

	Tokadai Line	Tokadai New Transit Co., Ltd.	Komaki — Tokadai-Higashi	7.4	1 Oct.2006
	Kamioka Line	Kamioka Railway Company	Inotani — Okuhida Onenguchi	19.9	21 Apr. 2006
2007	Kurihara Den-en Tetsudo Line	Kurihara Den-en Tetsudo Railway Company	Ishikoshi — Hosokura Mine Park	25.7	1 Apr. 2007
	Kashima Tetsudo Line	Kashima railway Company	Ishioka — Hokota	27.2	1 Apr. 2007
	Miyajidake Line	Nishi-Nippon Railroad Co., Ltd	Nishitetsu Shingu — Tsuyasaki	9.9	1 Apr. 2007
	Takachiho Line	Takachiho Railway Co., Ltd.	Nobeoka — Makimine	29.1	6 Sep. 2007
2008	Shimabara Tetsudo Line	Shimabara Railroad Co., Ltd.	Shimabara Gaiko — Kazusa	35.3	1 Apr. 2008
	Miki Line	Miki Railway Company	Miki — Yakujin	6.6	1 Apr. 2008
	Monkey Park Monorail Line	Nagoya Railroad Co., Ltd	Inuyama Yuen — Dobutsuen (Zoo)	1.2	27 Dec. 2008
	Takachiho Line	Takachiho Railway Co., Ltd.	Makimine — Takachiho	20.9	28 Dec. 2008
2009	Ishikawa Line	Hokuriku Railway. Co. ltd	Tsurugi — Kaga Ichinomiya	2.1	1 Nov. 2009

Source: Ministry of Land, Infrastructure and Transport (2010c).

There are important points to be considered besides profitability. First, many people, such as the elderly, whose numbers are increasing, have no choice but to rely on public transport, and for this reason the government must make every effort to maintain public transport.

But it is also in a government's best interest to maintain public transport because some transport services might have an externality effect that contributes to the regional economy, in which case it would be reasonable to consider not only operational revenue but "social benefit," which includes the proceeds from daily operations and the value of convenience as a whole. The Ichibata Electric Railway argued its case for revitalization by using the idea of the externality effect and was awarded a subsidy by the municipal government of Shimane Prefecture. Table 5 shows some examples of calculated values based on the idea of the externality effect.

Table 5: Some Examples of Calculated Social Value

Line		Bessho Line of Ueda Kotsu Railway	Akita Nairiku Jukan Tetsudo Railway	Ichibata Electric Railway	Toyama-ko Line of JR West	Kishikawa Line of Nankai Electric Railway
Indicators of Social Benefit	Increased time of travel and fare if rail service was transferred to bus service	44.3	36.8	46	99	74
	Increased traffic volume of cars on the road and the lowered velocity when service was abolished	38.5	3.8	44	201	59
	Increased CO2 emissions	7	-	0.4	2	0.05
	The region's pride in the existence of its railway	4.9	2.2	-	-	-
	Virtually raised funds for reconstruction of railway	-	-	-	-	-

Note:
(1) Unit: 100 million yen.
(2) Because the estimations were carried out separately, some information is not available.
Source: Japan Railway Construction, Transport and Technology Agency (2006).

Third, in order to manage administrative costs in the future, it would be advisable to engage in city planning that values public transport systems and recognizes their central role. Traditional planning has not adequately taken public transport into consideration, and has even detracted from its functions. Because of near-sighted planning, people are now more likely to use their own private vehicles, and facilities like shopping malls are more likely to be located

in suburban areas instead of in the central city. In other words, cities have sprawled in all directions, and municipalities are likely to be required to bear more administrative costs as the population ages and public transportation becomes less available.

3.4 Railway Re-Restructuring and Public Support

Obviously, it is illogical to say that a subsidy is necessary because services are operating with deficits. However, when considering the declining population and the aging society of the future, we have to create a local transport system that would be sustainable by streamlining costs or reforming existing institutions. Many transport operators have coped with budget cuts by reducing labor costs, but there is little room for more streamlining. On the other hand, regular renewal of coaches and infrastructure maintenance are necessary. These requirements are far from trivial, especially in the railway business.

The Ministry of Land, Infrastructure and Transport reported that of the 90 rail operators in local areas, with the exception of the three largest metropolitan areas in Japan, about 70% are in deficit. The Ministry noted that if not for the money spent on infrastructure maintenance, 90% of those deficit-producing operators would be able to achieve financial balance. This fact implies that if the transport's benefit to the region could outweigh the cost, it would be reasonable to ask the public sector for support to aid in the cost of infrastructure maintenance. Moreover, operations could remain in the hands of the existing private operators. Private operators' efficiency incentives would not be lost because the cost burden would remain with the public sector.

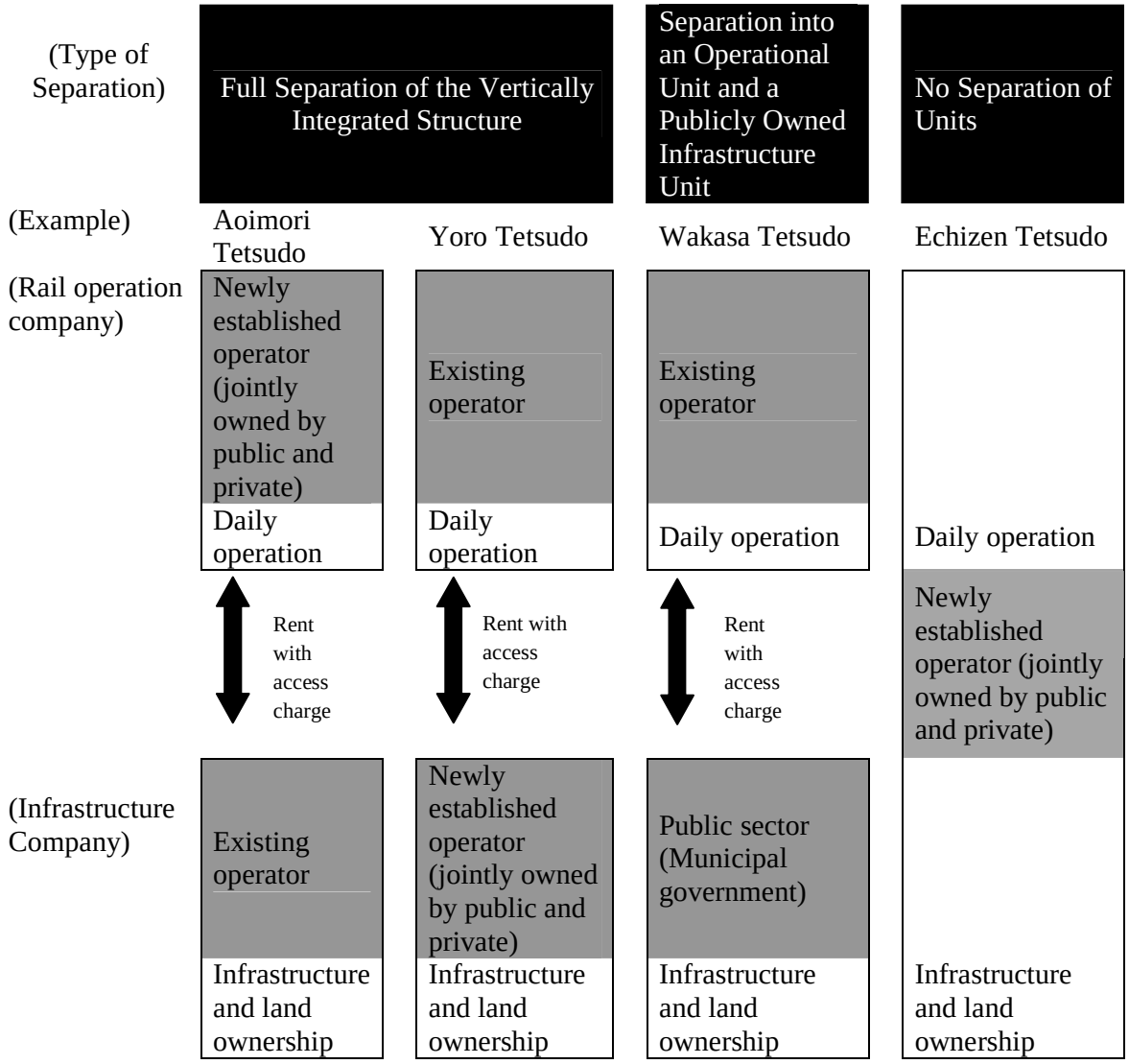
Unbundling, or the vertical (operation and infrastructure) separation of a vertically integrated structure, has been considered as a way for the public sector to support infrastructure. In many cases, operational units are left to the existing operators, and maintenance and ownership of the infrastructure are in the hands of public sector. The patterns of unbundling introduced in Japan can be classified roughly into three types. Figure 1 shows the conceptual image of vertical separation.

The first type is full separation of the vertically integrated structure in which there is an infrastructure owner and a railway operator who is responsible for the daily operation of trains. We can further classify into 2, but the method is the same. The Aoimori Tetsudo Railway and the Yoro Tetsudo Railway have adopted this option. In this case, the railway operator pays an access fee to the infrastructure owner with support from the public sector.

The second type is separation into an operational unit and a publicly owned infrastructure unit. This option was adopted by the Wakasa Tetsudo Railway. It is possible with this kind of separation to decrease railway operators' burden because the cost for infrastructure maintenance and access charges no longer exist.

Finally, the third type involves no separation of units. For this type, the municipal government would bear the cost of infrastructure maintenance. This type of unbundling would be referred to as a separation of cost burdens.

Figure 1 Types of Vertical Separation



Note: In the case of the no-separation type, the newly established rail company is providing both rail operation and infrastructure management. The rail operation was conveyed by the old existing operator. This type might be a converted form of ownership structure.

However, the second type of unbundling was prohibited by the former Railway Business Law. The Ministry of Land, Infrastructure and Transport has had to scrutinize operators from a profitability-based point of view when they first enter the market. This means the Law assumed that the operation should be profitable, so no operators could lease the infrastructure without being charged. The rule was partly revised by the Law on Revitalization and Rehabilitation of Local Public Transportation Systems and the second type of unbundling has again been admitted as an exception to the Railway Business Law.

These types of unbundling anticipate the revitalization of the local railways by decreasing the cost burden for private rail operators. However, there are still some operators facing serious deficits, such as the Jomo Electric Railway, which followed the third type of unbundling.

These unbundling options are similar to subsidies for the installation of new vehicles for bus operators, or subsidies for deficits. But the railway subsidies have a different purpose. The former subsidies to bus operators were meant to cover deficits resulting from regulation, which leads to inflexible route or fare setting. However, as in the railway sector, some policies more conducive to social welfare have been introduced in many cities, such as what is known as a "community bus" in Japan. Many municipal governments entrust private operators, non-profitable organizations (NPOs), or local community organizations with municipal subsidies to run their organizations, but in some cases, NPOs or community organizations operate their own bus services without the help of the government.

Even private operators are in deficit and many cities face a critical period of service withdrawal in the commercial market. Some schemes that support maintaining local transport systems without hurting operators' incentives have been introduced. However, a mechanism is needed which would allow residents or users to participate in decision-making about whether the service should be maintained or whether public support is reasonable. In the next section, we survey the transformation of decision-making systems over time.

4. Financing

4.1 Local Bus

In general, it is the policy in Japan that the total costs of public utility industries, including the transport sector, be covered by user fees. However, as mentioned above, it is very difficult for local bus operators to be financially independent in the absence of earmarked taxes, local environmental charges, or

private finance initiatives. The main financial sources in addition to fare revenues are subsidies from both national and local governments.

The national government has set up certain subsidy programs, the most important of which provide support for essential service routes. This support program consists of two kinds of subsidies: operating subsidies to help with operation costs and capital subsidies for purchasing new buses.

According to the Ministry of Land, Infrastructure and Transport (2009), this subsidy program is provided to local bus operators with the following conditions: (i) The bus route is approved by the regional council as worthy of being maintained and is deemed an essential service route by the governor of the prefecture; (ii) The bus route covers multiple municipalities; (iii) The bus route is longer than 10km; (iv) The total passengers per day of the bus route are 15 to 150 persons; (v) There are more than three buses operated daily; (vi) The bus route accesses the central city of the region; (vii) The current revenue and expenditure ratio of the bus route is more than 11/20. If the bus route satisfies these conditions, then it can be subsidized.

Subsidies are given to bus operators to cover the current revenue and expenditure difference of essential bus service routes. These subsidies are borne equally by the national and the prefectural governments, with an upper limit of 9/20 of the current expenses of the essential bus service route.

Second, there are subsidies given to bus operators to support the purchase of new vehicles for essential bus service routes. These subsidies are also borne equally by the national and the prefectural governments, with an upper limit of 15 million yen for a bus equipped to accommodate handicapped passengers.

In 2007, the total amount of subsidies for essential service routes was 6,576 million yen, and that for the purchase of new vehicles was 1,096 million yen. Of the 1,185 bus operators in 2007, about 18% received subsidies for essential service routes, and 7% received subsidies for purchasing new vehicles. Although bus operators in rural areas have been facing financial difficulties, the national government has been unable to increase the amount of subsidies because of its own financial constraints.

Local governments, especially municipal governments, also provide subsidy programs, of which there are many types, the most common being operating subsidies for the purpose of maintaining local bus services for the transportation poor such as students and the elderly.

4.2 Railway

As in other public utilities, total costs of local services in railway are also expected to be covered by rail fares. However, railway services in local areas have been financially facing difficulties so that the national government provides both operation and capital subsidies. There are five kinds of subsidy schemes, as follows:

(i) Transportation facility subsidies: This scheme is to provide capital subsidies to rail organizations in order to improve the safety level of rail facilities. The national government provides 1/3 of capital costs, with local governments bearing an additional 1/3.

(ii) Subsidies for the modernization of facilities: Although similar to the transportation facility subsidy, this scheme is mainly to support smaller rail organizations with very old infrastructure such as tunnels and bridges. The national government provides 1/3 of capital costs, with local governments bearing an additional 1/3.

(iii) LRT system subsidies: This scheme provides capital subsidies to rail organizations to facilitate the introduction of LRT systems with city development. A portion of the costs, such as for LRT rolling stock, stations for LRT, substations, and tram depots, are subsidized, with the national government providing 1/4 of capital costs and local governments an additional 1/4.

(iv) Subsidies for revitalizing regional public transportation: This scheme provides subsidies to a legally mandated council consisting of municipalities, transport providers and managers of roads, in order to revitalize regional public transportation. This scheme is not limited to railways but is a general package system for various transportation modes. The national government provides 1/2 of development costs.

(v) Community rail subsidies: This scheme provides capital subsidies by the legally mandated council or the third sector (i.e. jointly established by private and public sector) to railways in order to improve rail users' convenience. A portion of capital costs such as for route rearrangements, improvement of station facilities and development of pass-by track facilities, are subsidized, with the national government providing 1/3 of capital costs and local governments bearing an additional 1/3.

5. Monitoring of Services

In this section, we will give an overview of the local transportation situation. It is worth noting that the statistics listed here focus mainly on local bus services. Although rail services do exist in local areas, statistics from the railway industry mainly reflect conditions in large metropolitan areas like Tokyo

and Osaka, and intercity services such as the Shinkansen networks. Because nation-wide data on railways does not give a clear picture of local areas, we do not include all railway industry data here.

5.1 Organization Form

In the local bus industry, different operational forms have appeared, such as tendering or concessions to private companies. However, typical operational forms are either municipal transport bureau operators or private bus operators running bus services directly. Unfortunately, there is no available data on the percentage of supply forms.

As for the rail industry, most systems are vertically integrated. However, in smaller metropolitan areas, the number of vertically separated systems has been increasing. Within the vertically separated system, there are some forms mentioned in section 3.4.

5.2 Supply and Demand

Deregulation in the transport sector has been carried out as part of administrative reform, mainly after the 1980s. The most notable reform was the privatization of three public corporations: the Nippon Telegraph and Telephone Public Corporation in 1985, the Japan Tobacco and Salt Public Corporation in 1985, and the Japan National Railways in 1987, all realized under Prime Minister Nakasone's administration.

The privatization of the Japan National Railway (hereafter JNR) was an especially remarkable reform. Although the details of the privatization were described in, for example, Mizutani and Nakamura (1997, 2004), the essence of the privatization was to give operators an incentive to operate efficiently and to resolve the financial problems of the organization. The JNR was expected to be independent financially but had not drawn a profit since 1964, when it first faced an operational deficit. It recorded trillion-yen deficits after 1980, and huge subsidies, such as a massive 600 billion yen subsidy in 1985, were granted to JNR by the national government.

Table 6 and Table 7 show trends in passenger share among transportation modes. As these tables show, railways began to lose dominance in the mid-1960s, clearly because the railway sector could not adjust to motorization.

Table 6: Share of Passenger Transport Modes

Fiscal Year	Number of Passengers				Passenger-km			
	Auto	Rail	Ship	Air	Auto	Rail	Ship	Air
1955	30.2	69.3	0.5	0.0	16.6	82.1	1.2	0.1
1960	38.9	60.6	0.5	0.0	22.8	75.8	1.1	0.3
1965	48.3	51.3	0.4	0.0	31.6	66.8	0.9	0.8
1970	59.2	40.3	0.4	0.0	48.4	49.2	0.8	1.6
1975	61.5	38.1	0.4	0.1	50.8	45.6	1.0	2.7
1980	64.8	34.8	0.3	0.1	55.2	40.2	0.8	3.8
1985	64.3	35.4	0.3	0.1	57.0	38.5	0.7	3.9
1990	71.6	28.1	0.2	0.1	65.7	29.8	0.5	4.0
1995	72.8	26.9	0.2	0.1	66.1	28.8	0.4	4.7
2000	74.2	25.6	0.1	0.1	67.0	27.1	0.3	5.6
2005	74.9	24.9	0.1	0.1	66.1	27.7	0.3	5.9
2006	74.6	25.2	0.1	0.1	65.4	28.2	0.3	6.1
2007	74.4	25.4	0.1	0.1	65.0	28.7	0.3	6.0
2008	74.2	25.5	0.1	0.1	64.9	29.0	0.3	5.8

Notes:
(1) The item “Auto” includes private cars, buses, and taxis. However, due to a change in statistical treatment, the category of “Auto” before 1986 did not include light automobiles and wagons for private goods.
(2) Unit: %.

Source: Ministry of Land, Infrastructure and Transport (2010a).

Table 7: Share of Passenger by Automobile Type

Fiscal Year	Private Auto	Bus	Taxi
1945	4.5	85.3	3.5
1950	6.2	68.0	9.0
1955	11.5	57.0	9.3
1960	24.4	44.3	9.3
1965	57.0	18.5	6.8
1970	65.2	13.2	4.3
1975	70.7	9.6	3.8
1980	75.3	6.9	3.2
1985	76.5	6.6	3.1
1990	65.6	4.0	1.8
1995	70.9	3.3	1.5
2000	76.6	2.8	1.3
2005	77.8	3.0	1.2
2006	77.6	3.1	1.2
2007	76.2	3.1	1.2
2008	77.6	3.3	1.3

Notes:
(1) The item “Auto” includes private cars, buses, and taxis. However, due to a change in statistical treatment, the category of “Auto” before 1986 did not include light automobiles and wagons for private goods.
(2) Unit: %.

Source: Ministry of Land, Infrastructure and Transport (2010a).

The statistics above include all kinds of services such as intercity transport services. When limited to local bus services, the figures might become clear. Total length of public transport buses was 396,955 km in FY2008. Bus companies totaled 1,185 operators, consisting of 1,147 private operators and 38 public operators in FY2007. Total vehicle-km run by these operators was 3,033 million in FY2007. The number of passengers transported in FY2007 totaled 4,267 million (2,673 million in 3 large metropolises and 1,594 million in other areas). This means that on average people used buses at least 33.6 times per year. Again, we cannot distinguish local services from intercity services in the rail industry. These numbers do not apply to the rail sector.

5.3 Efficiency and Financial Coverage

In general, private bus operators are more efficient than their public coumterparts. Operating costs per vehicle-km in FY2007 were 316.3 yen for private bus operators and 642.2 yen for public. If we control other conditions, the cost difference becomes smaller. According to econometric studies such as Mizutani and Urakami (2003), total costs of public bus operators are about 20% higher than those of private bus operators.

Local bus services have been facing financial difficulties. As mentioned above, many bus operators create deficits. However, the main revenue sources among bus services are fare revenues, which totaled 980,863 million yen in FY2007. The percentage of costs covered by fares, which include capital costs, is 95.0% for private and 87.1% for public bus operators. Although we are unable to obtain data on subsidies from local governments, subsidies from the national government totaled about 7,682 million yen in FY2007.

5.4 Affordability and Social Accessibility

Single and monthly fare level is not available but in Table 8, we show the average bus fare level reported by the government. As the table shows, bus fare level has not increased yearly. This tendency is probably extends to the local rail service, although no concrete data set is available. Because the role of local public transportation services has been usurped by private autos, operators cannot increase fare level due to the fear of losing customers.

Table 8 Fare Level of Bus Services

Year	Average bus fare (yen per km)	CPI (2005=100.0)	Monthly wage (thousand yen)
1998	39.23	103.8	299.1
1999	39.29	103.0	300.6
2000	39.29	102.2	302.2
2001	39.29	101.5	305.8
2002	39.29	100.6	302.6
2003	39.29	100.3	302.1
2004	39.29	100.3	301.6
2005	39.29	100.0	302.0
2006	39.07	100.3	301.8
2007	39.13	100.6	301.1

Note:
(1) Average bus fare is obtained from the Ministry of Land, Infrastructure and Transport (2009, p. 37).
(2) Monthly wage is based on *Basic Survey on Wage Structure (Chingin Kouzou Kihontokei Chosa)* by the Ministry of Health, Labor and Walfare.

There are special fares which take into account transport disadvantages. In general, these special discounted fares are for students, the elderly, and handicapped people. The level of discount differs according to the operators, with many public operators allowing the elderly and the handicapped to ride free, until recently, when financial difficulties forced operators to charge a discounted fare. In Kobe, for example, the fare for the elderly is 50% of the regular fare.

Safety in local public transportation is high. In FY2007, for example, the number of serious accidents among local bus services was 2,373. As vehicle-km of local bus is 3,033 million, the accident rate is 0.73 per million vehicle-km. The safety level is even higher among rail operators.

5.5 Territorial Accessibility

Total length in local bus networks was 396,955 km in FY2008.

Second, while information on the percentage of consumers with no access or easy access to LPT is unavailable among national statistics, some cities have information on this item. For example, in Utsunomiya city, which has about 51.2 thousand inhabitants, the percentage covered by bus service was 98% in the central business district, 19% in the suburbs, and 61% on average in 2007.

Third, tariff integration in Japan is not up to date, with most individual operator having different individual fare systems. There has been little progress with tariff integration so far.

Fourth, park and ride spaces in the large city are fairly common and well designed, in contrast to the situation in rural areas.

5.6 Quality

The Japanese government does not systematically collect service quality data. Therefore, we use to describe the quality of local transport service based on the available information.

First, the average commercial speed of bus service varies according to city. Large metropolitan areas such as Tokyo and Osaka have lower speeds. In general, the average commercial speed of bus is between 13 and 20 km/h.

Second, the percentage of reserved lanes is not large. According to the Ministry of Land, Infrastructure and Transport (2009), the total length of priority and reserved lanes in FY2008 were 1,160km and 1,259 km. As total bus route length was 396,955 km, the percentage of reserved lanes is about 0.6%.

Third, while there is no information on the percentage of junctions giving priority to LPT, there is information on granting priority to buses at intersections, a system called PTPS (Public Transportation Priority System). In FY2008, PTPS was installed at 2,188 intersections.

Fourth, consumer satisfaction or dissatisfaction is highly dependent on the conditions of public transportation services. While there is no systematic data on this item, surveys have been conducted, showing, for example, that in 2009 in Satte, a city with about 54 thousand inhabitants in northern Saitama prefecture and has about 54 thousand inhabitants, about 18.8% of people were satisfied with the PTS but 54.1% were dissatisfied. As another example, in Miyawaka, a city with a population of about 31 thousand, located between Fukuoka and Kita-Kyushu, 14.6% of those surveyed in 2007 were satisfied with the PTS while 44.5% were not.

Last, as for the quality of bus fleets, there is no national data available on this item. In general, the average age of a bus fleet would be around 8 to 10 years, with large cities likely having shorter bus fleet life spans than in rural

areas. Presumably, the renewal age of bus fleet would be between 12 and 20 years.

6. Concluding Remarks

Japan's infrastructure was built with the aim of achieving "equal development among the regions." Following this policy, standardized transport services had been offered under the regulation of the government. But deregulation in transport made services difficult to maintain with traditional cross-subsidies. From a social point of view, population in smaller communities has decreased and city functions have been diffused, with motorization thought to be the cause of this diffusion. The revitalization and rehabilitation of public transport are critical issues for rural regions.

In this paper, we summarized the current situation of LPT services in Japan and regulation and regulatory reforms. We also evaluated the institutional transitions taking place in policy and decision-making systems. In the railway sector, the unbundling of infrastructure and operations has contributed to decreasing burdens on operators. The revitalization of transport sectors should also be appraised during city planning because the public is accountable for supporting infrastructure. Public support is reasonable if the benefit of maintaining the region's transport exceeds the total cost. Furthermore, in decision-making, public involvement has been introduced to reflect citizens' needs, with municipalities bearing some of the costs.

Even though the idea of public involvement has been introduced, it is financial support that is crucial. Although many monitoring results in the LPT services in Japan are not bad compared with those of other countries, as section 5 shows, the time has come to renew the sustainability of the LPT. This presents a dilemma because it has become very difficult for LPT organizations to maintain independence. In other words, local transport in Japan cannot expect profitability, making financial support necessary for the maintenance of transport in the community. At the same time, municipalities will continue to face serious budgetary difficulties in the future because of the decreasing number of young people. Whatever decision the community makes, some provisions must be worked out for a financial support system.

References

Hayakawa, S. (2007), "Current Trends in Regional Public Transport in Under-populated Areas", *Transportation and Economy (Unyu-to-Keizai)*, Vol.67 No.11, pp.48-56 (in Japanese).

Japan Railway Construction, Transport and Technology Agency (2006), *Toward Revitalizing the Local Railway (Chiho Tetsudo no Kasseika ni Mukete)*, Japan Railway Construction, Transport and Technology Agency, the Website: (http://www.jrtt.go.jp/business/train_support/data/1.pdf) (in Japanese).

Kato, H. and M. Fukumoto (2006), "The Direction of Local Government Policies Regarding Bus System and the Roles of 'Local Public Transport Council'", Paper Presented at the conference of Committee of Infrastructure Planning and Management (in Japanese).

Kato, H. and M. Fukumoto (2008), "A Discussion with the Ways for Making and Executing Local Public Transport Plan: How should 'the Act on Activation and Reformation of Local Public Transport' be applied?", Paper Presented at the conference of Committee of Infrastructure Planning and Management (in Japanese).

Matsuzawa, T (2007), "Regional and Urban Policy Issues: Focus on Local Cities", *Transportation and Economy (Unyu-to-Keizai)*, Vol.67 No.11, pp.4-15 (in Japanese).

Ministry of Land, Infrastructure and Transport (2002), *White paper on Land, Infrastructure and Transport (Kokudo Kotsu Hakusyo)*, Gyosei, Tokyo (in Japanese).

Ministry of Land Infrastructure and Transport (2009), *Automobile Statistics 2009 (Suji de Miru Jidosha 2009)*, Nihon Jidosha Kaigisho, Tokyo, Japan (in Japanese).

Ministry of Land, Infrastructure and Transport (2010), *Statistical Bulletin for Transport (Kotsu Kanren Tokei Shiryo-syu)*, Ministry of Land, Infrastructure and Transport, the Website: (http://www.mlit.go.jp/k-toukei/search/excelhtml/23/23000000x00000.html) (in Japanese).

Ministry of Land, Infrastructure and Transport (2010b), *Current Financial Situations of Bus Operators in 2008 (Heisei 20 Nendo no Ippan Noriai Basu Jigyo no Syushi Jokyo ni Tsuite)*, Ministry of Land, Infrastructure and Transport, the Website: (http://www.mlit.go.jp/common/000049726.pdf) (in Japanese).

Ministry of Land, Infrastructure and Transport (2010c), *Recently Abolished Railway Lines (Kinnen Haishi Sareta Tetsukido Rosen)*, Ministry of Land, Infrastructure and Transport, the Website: (http://www.mlit.go.jp/common/000056284.pdf) (in Japanese).

Mizutani, F. and K. Nakamura (1997), "Privatization of the Japan National Railway: Overview of Performance Change," *International Journal of Transport Economics*, Vol.24, No.1, pp.75-99.

Mizutani, F. and T. Urakami (2003), "A Private-Public Comparison of Bus Service Operators," *International Journal of Transport Economics*, Vol.30, No.2, pp.167-185.

Mizutani, F. and K. Nakamura (2004), "The Japanese Experience with Railway Restructuring," in T. Ito and A. O. Krueger (eds.), *Governance, Regulation and Privatization*, The University of Chicago Press, Chicago, pp.305-336.

Saito, T. (2007), "Regional Hub City Railway Policy Issues", *Transportation and Economy (Unyu-to-Keizai)*, Vol.67 No.11, pp.16-22 (in Japanese).

This yearly series of working papers (WP) aims to publish essentially works in English or in French resulting from the scientific network of CIRIEC and more specifically its working groups. The WP are submitted to a review process and are published under the responsibility of the President of the International Scientific Council, the president of the scientific Commissions or the working groups coordinators and of the editor of the CIRIEC international scientific journal, the *Annals of Public and Cooperative Economics*.

These contributions may be published afterwards in a scientific journal or book.
The contents of the working papers do not involve CIRIEC's responsibility but solely the author(s') one.

The submissions are to be sent to CIRIEC, Université de Liège au Sart Tilman, Bât B33 (bte 6), BE-4000 Liège, Belgique.

Cette collection annuelle de Working Papers (WP) est destinée à accueillir essentiellement des travaux en français ou en anglais issus du réseau scientifique du CIRIEC et en particulier de ses groupes de travail. Les WP font l'objet d'une procédure d'évaluation et sont publiés sous la responsabilité du président du Conseil scientifique international, des présidents des Commissions scientifiques ou des coordinateurs des groupes de travail et de la rédactrice de la revue scientifique internationale du CIRIEC, les *Annales de l'économie publique, sociale et coopérative*.

Ces contributions peuvent faire l'objet d'une publication scientifique ultérieure.
Le contenu des WP n'engage en rien la responsabilité du CIRIEC mais uniquement celle du ou des auteurs.

Les soumissions sont à envoyer à l'adresse du CIRIEC, Université de Liège au Sart Tilman, Bât B33 (bte 6), BE-4000 Liège, Belgique.

Publications

2011/01 Maintaining Local Transport Services in Japan
Fumitoshi MIZUTANI & Shinichi SAITO

2011/02 Water Supply Utility Businesses in Japan
Shoji KUSUDA

2011/03 Municipal Solid Waste Management in Japan - Present Situation and Characteristics
Naohisa WADA

2011/04 La gestion intégrée des déchets solides en Algérie. Contraintes et limites de sa mise en oeuvre
Brahim DJEMACI & Malika AHMED ZAÏD-CHERTOUK

2011/05 Local public services: Facts, experiences and prospects
Water services: what are the main challenges? *Synthesis report*
Pierre BAUBY

2011/06 Local public services: Facts, experiences and prospects
New organizational models in European Local Public Transport: from Myth to Reality. *Synthesis report*
Andrea ZATTI

2011/07 Local public services: Facts, experiences and prospects
The municipal waste management sector in Europe: shifting boundaries between public service and the market. *Synthesis report*
Barbara ANTONIOLI & Antonio MASSARUTTO

CIRIEC (International Centre of Research and Information on the Public, Social and Cooperative Economy) is a non governmental international scientific organization.

Its **objectives** are to undertake and promote the collection of information, scientific research, and the publication of works on economic sectors and activities oriented towards the service of the general and collective interest: action by the State and the local and regional public authorities in economic fields (economic policy, regulation); public utilities; public and mixed enterprises at the national, regional and municipal levels; the so-called "social economy" (not-for-profit economy, cooperatives, mutuals, and non-profit organizations); etc.

In these fields CIRIEC seeks to offer information and opportunities for mutual enrichment to practitioners and academics and for promoting international action. It develops activities of interest for both managers and researchers.

Le CIRIEC (Centre International de Recherches et d'Information sur l'Economie Publique, Sociale et Coopérative) est une organisation scientifique internationale non gouvernementale.

Ses **objectifs** sont d'assurer et de promouvoir la collecte d'informations, la recherche scientifique et la publication de travaux concernant les secteurs économiques et les activités orientés vers le service de l'intérêt général et collectif : l'action de l'Etat et des pouvoirs publics régionaux et locaux dans les domaines économiques (politique économique, régulation) ; les services publics ; les entreprises publiques et mixtes aux niveaux national, régional et local ; l'économie sociale : coopératives, mutuelles et associations sans but lucratif ; etc.

Le CIRIEC a pour but de mettre à la disposition des praticiens et des scientifiques des informations concernant ces différents domaines, de leur fournir des occasions d'enrichissement mutuel et de promouvoir une action et une réflexion internationales. Il développe des activités qui intéressent tant les gestionnaires que les chercheurs scientifiques.

International Centre of Research and Information on the Public, Social and Cooperative Economy - aisbl
Centre international de Recherches et d'Information sur l'Economie Publique, Sociale et Coopérative - aisbl

Université de Liège au Sart-Tilman
Bât. B33 - bte 6
BE-4000 Liège (Belgium)

Tel. : +32 (0)4 366 27 46
Fax : +32 (0)4 366 29 58
E-mail : ciriec@ulg.ac.be
http://www.ciriec.ulg.ac.be