DIVERSIFICATION STRATEGY OF THE 'MINOR' PRIVATE RAILWAY COMPANIES IN JAPAN*

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INTRODUCTION

In Japanese urban passenger transport, privately owned and operated railway firms are common and play an important role, particularly in urbanised areas. Although it is well known that they are financially independent, it is still an open question how they can manage. The interesting issues that we should address, therefore, are: how can these private railway companies manage their business without lump-sum subsidies, and are there lessons that may be transferable to other situations.

On the previous paper (Killeen and Shoji 1997), we analysed the so-called 'major' private railway operators of which there are fifteen in Japan. The paper concludes that it is and has been the innovative use of diversification strategies that has allowed the firms in Japan to build a stable ridership necessary to not only survive but to thrive, though factors such as a favourable market conditions (densely populated cities with concentrated urban cores), the regulated fare system (full cost pricing principle).

Some researchers claim the success of the private railways in Japan to be idiosyncratic, because their traffic volumes are too high. This might be true in the case of the 'major' operators, which provide service mainly in Japan's three large metropolitan areas. However, we should point out there are many private rail firms operate successfully even in less populated areas in Japan. As majors do, their innovative use of diversification and integration strategies has helped enable to provide adequate urban transport at virtually no cost to the government.

The main purpose of this paper is to clarify the diversification strategy as utilised by these 'minor' providers of urban transport. After the introduction, we will give a brief overview of rail transport in Japan, the performance of 64 'minor' private rail companies and their diversification strategy based on the data of Fiscal Year 1995. As we did earlier studies, Rumelt's (1974) methodology for classifying strategic behaviour is adapted and utilised to analyse the 'in-house' (company-level) diversification strategy of the minors. Then, we will focus of our analysis on six firms over a period of twenty years from 1977 to 1996.

Our main finding is, although the minors which face declining ridership and increased competition from the automobile struggle for survival, the more efficient firms are able not only to survive but thrive as well. The paper concludes that the Japanese model exemplifies a scenario under which railway systems can be privately operated without subsidization.

A Brief Sketch of Rail Transport in Japan

Although, trends indicate an increase in auto use and ownership and stagnant or gradually declining rail ridership, rail transport maintains a reasonably high modal share of total trips in Japan. In 1996, on a countrywide basis, the rail modal split of motorized transport market in terms of passengers was 27%. If only the large metropolitan area considered this figure increases to 48%[1].

There are 174 rail operators providing passenger and freight services in Japan. Of which 88 pure private railway companies operate passenger rail services. 15 of these firms called as ' major' provide service mainly in Japan's three large metropolises except Nishitesu. Rest of firms are called 'minors' and of which 67 firms provide rail passenger service outside metropolitan areas. In addition 50 quasi-public firms providing passenger services and total share of these 'privates' was 10%. A break down according to ownership and type of service offered is detailed in Figure 1[2].

Figure 1: Number of rail operators in Japan by type

TYPE OF SERVICE	OWNERSHIP	NUMBER OF FIRMS
PASSENGER	PRIVATE	88
	PUBLIC	14
	QUASI-PUBLIC	50
	JR	6
FREIGHT	JR	1
	PRIVATE	15
		174

Note: 1) cable car, ropeway and non-rail operators are not included.
2) quasi-public operations (Daisan Sekuta) include monorail and Shin-Kotsu (AGT) operators
Source - Ministry of Transport. *A look at Rail Transport in figures (Suji de miru Tetsudo)*, Transport Economics Research Center, 1997

The private rail providers receive normally minimal subsidies while providing government coffers with considerable corporate tax revenues. While the 15 majors are completely self-sufficient, the firms operating smaller centres received minimal subsidies. As a basic matter of principle Japanese national government set and has set the self-sufficient principle even for the local public transportation. Although there are some on-going discussions on this point, most private operators still run on a commercial basis. Therefore, basically speaking, in Japanese public transport provision, the operators decide what level of services and how.

The Railway Enterprise Law (Tetsudo Jigyo Hou) requires potential entrants to have a railway license on each line. This licence must be approved by the Ministry. The Law, which has been in effect since 1987, classifies railway licences into the three categories and most railways have class 1 licences.

Class 1: operations that provide rail passenger and/or freight services while holding their own rail infrastructures
Class 2: operations that provide rail passenger and/or freight services using rail infrastructure owned by another organisation
Class 3: operations that built rail infrastructure for sale to a class 1 operation, or an operation

which own infrastructure and rents it to a class 2 operation.

The rail boom, which occurred in numerous industrialised countries in the 19th and/or early 20th century, was also a phenomenon in Japan. Most of the firms originated operations in the late 19th or the early 20th century and thus have long histories. However, unlike the bankruptcies that plagued rail operators in other countries, the Japanese majors are still in operation today, though it is true that several rail companies have closed unremunerative lines (in most cases, replacing them with their own bus operations) and reduced freight services in responsive to competition from automobiles. In fact, the total route kilometres of 'minor' private railways decreased from 2842km in 1965 to 2147km in 1985[3].

It is generally taken for granted that a large ridership must exist before infrastructure necessary for urban transport will even be contemplated. This is because the public sector, not the private sector funds the project and there must be a visible need before a project is even considered to be "politically viable". However, because of the Railway Nationalization Law, which was in effect in 1906, the many private firms were united into an organisation totally under government control. After that, private firms were restricted to the use of or creation of lines that basically didn't interfere with government lines and thus travelled through areas with relatively limited populations. While firms expected that rail operations could be self supporting, numerous bankruptcies and limited population bases forced firms to generate a steady ridership for rail operations. This led to the more positive utilisation of a business diversification strategy.

To be important, Japanese private railways have long been allowed to operate non-rail business as well as rail business. However, railway business and non-rail business are strictly separated by Rail Accounting Regulations (*Tetsudo Kaikei Kisoku*) that has been set and publicised by the Ministry of Transportation. A railway company is forbidden to allocate rail and no-rail cost at its own discretion, but must follow regulations that describe in detail how to allocate the costs of common facilities and administration. Therefore, an intentional cross-subsidy strategy is avoided, whereby a rail company charges low fares in the expenses of the non-rail businesses, and vice versa.

Today, the private railway firms generally divide their operations into four divisions including a rail division, a transport division, a real estate division and an "other business division". The rail division in general provides commuter services but some firms provide inter-city, resort access, airport access and freight service as well. The transport division provides such services as bus and taxi feeder links to rail lines, inter-city express bus service and tour bus operations. The real estate division mainly develops commercial and residential properties and/or leases these properties. The other business division's operations vary between each firm and include various retail ventures, restaurants and leisure facilities such as amusements parks, stadiums, and museums etc.

Not only these in-house diversification, private rail companies also diversify outside the company, and, as a whole, they form a multi-product association called "group". In many cases, the flagship company of private rail groups is still the rail. The member of the each group are bound together by cross-ownership and other financial ties, interlocking directorates, long-term business relationships, and other social and historical links, though many companies are fairly independent entities. They form an organisational network albeit with somewhat 'weak' ties between firms, and companies together straddle the entire 'food chain' to the full range of lifestyle service needs of the local people.

An Overview of Minor Private Railways

Of the 88 private railway companies in Japan, fifteen are referred to as "majors". Classification is

conducted by the Ministry of Land and Transportation and at present includes firms with revenues of over about US $700 million. Rest of the firms, in total 73, provide rail services in the less densely populated cities of Japan, These 73 such firms referred to as 'minors'.

The differences between 'minor' firms in terms of scale and type of services offered are substantial. While several of the firms have networks more extensive than some of the majors, others have limited infrastructure. The smallest is Kishu, which operates only 2.7 kilometres of track. In terms of service provided, most firms offer either commuter service, inter-city links, access to tourist areas or some combination of the three. A few of the firms, which specialise in tourist travel, halt operations for the winter. The total number of passengers carried also varies significantly. Shinkeisei, for example, transports on average over 300,000 passengers daily while Arita at the other end of the scale carries just 78. Therefore firm differences are considerable. However, all firms do have one notable similarity, they are all active diversifiers. With greater competition from automobiles when comparing majors, which situated in metropolitan areas, these firms have steadily faced declining ridership and are somewhat reliant on but small subsidies.

The subsidies directed toward majors are almost nothing, but there are subsidies available to smaller private firms, especially in the rural area. The Ministry set following schemes, though by the end of fiscal year 1997, the Ministry ceased 1).

1) subsidies to cover some part of operating deficit. The national and local governments reward the same amount respectively to cover the operating deficits.
2) subsidies to 'modernise' existing facilities. The national and local governments will cover 20% of the total cost of improvements equally. If the firms meet with special conditions, they would get a little more subsidies. For example, if the improvement is safety related the rate of subsidisation increases to one third.

Figure 2: Subsidy type and amount directed towards the smaller railways in 1995 prices

Fiscal Year	Operating loss subsidy	Firms receiving subsidy	Infrastructure modernization subsidy	Firms receiving subsidy	Oper. loss subsidy for ex JNR lines	Firms receiving subsidy	New rail infrastructure subsidy	Firms receiving subsidy	Total subsidies
1975	1,687	*19*	273	*21*	-	-	-	-	1,961
1985	370	*10*	549	*24*	15	*2*	0	*0*	918
1990	368	*10*	538	*22*	789	*25*	0	*0*	1,696
1995	204	*5*	2,248	*57*	378	*5*	187	*1*	3,017
1998	-	-	2,239	*57*	10	*1*	102	*1*	2,351

(million \ in 1995)

Note: 1) roughly speaking, US$1 = ¥120.
2) There is a subsidy system for grade crossing improvement. In 1998, total amount of this subsidy was 200 million yen and in 1980 was 593 million yen.

Source - Ministry of Transport. *A look at Rail Transport in figures (Suji de miru Tetsudo)*, Transport Economics Research Center, 1988 and 1999

In 1995, subsidies directed at smaller railway that include JNR-Reform related quasi-public firms, totalled 3,017 million Yen (about US$25 million), and this is only 1.6% of total revenue of smaller railways in Japan. To be careful the number, this includes designated subsidies for ex-JNR lines and other JNR reform related lines. In 1985, total subsidies directed at smaller railway which dose almost not includes JNR related firms was only 918 million Yen and this is only 1% of total revenue

of smaller railway. To put this figure in perspective, subsidise for British Columbia's transit system totalled US$230 million (about 27.6 billion Yen) in 1994.

While 73 firms are classified as minors, 64 were considered for the purpose of this study. This is because we exclude five firms that only have Class 3 licences, two very new firms4 and two other firms. The last two firms are Osaka-fu Toshi-Kaihatsu, which most Japanese call 'Senboku' and Kita-Osaka-Kyuko. Both company operates the lines in Osaka metropolitan area and their traffic density is well over 100,000 passenger-kilometres per day per route-kilometres. We think both companies have met somewhat different situation from other minors. Besides these two companies are quasi-private.

Figure 3 shows the number of 'minor' private rail companies classified their passenger density and profitability. As an index of profitability we adopt the ratio of the revenue from rail operation to the cost of rail operation (including depreciation). The figure also shows whether these firms make profits or loss in operational account. From the figure, we can observe that many companies, which do not have high demand, are profitable. Of the total of 64 firms, 29 firms makes profits in rail operation and 9 more firms covered their cost more than 95%. Only 12 firms of which 11 firms have traffic density are less than 2000 passenger-kilometres per route-kilometres per day dose cover less than 80%. As the firms, 34 were found to be profitable.

Figure 3: Passenger density and number of profitable firms (1995)

DENSITY	NUMBER OF COMPANIES	RAIL DIVISION PROFITABILITY				FIRMS WITH OVERALL OPERATING PROFITS	FIRMS WITH CURRENT PROFITS (after taxes)
		100% -	95 - 100%	80 - 95%	- 80%		
40,000 -	1	1	*0*	*0*	*0*	1	1
20,000 - 40,000	5	4	*1*	*0*	*0*	5	2
10,000 - 20,000	10	10	*0*	*0*	*0*	9	9
8,000 - 10.000	0	-	-	-	-	-	-
6,000 - 8,000	8	5	*0*	*3*	*0*	3	2
4,000 - 6,000	6	3	*1*	*1*	*1*	2	2
2,000 - 4000	13	5	*3*	*5*	*0*	6	4
1,000 - 2,000	15	1	*4*	*5*	*5*	6	3
0 - 1,000	6	0	*0*	*0*	*6*	2	2
TOTAL	64	29	*9*	*14*	*12*	34	25

Note: 1) density is defined as the average number of passenger-kilometers per route-kilometer per day.
2) two firms (Sanyo and Kobe Dentetsu) use 1994 data due to effects of the Great Kobe Earthquake.
3) there are seven companies that also provide rail freight services. But only three of them, their freight revenues exceeds passenger revenues; Chichibu (density was 6,300, rail profitability was 84%), Mizushima (4,300, 96%) and Sangi (3,000, 102%). Gakunan (1,400, 81%) has almost same weight of both services.

This is quite remarkable given the fact that passenger fare revenues dose not cover of its operating expenses incurred on operating, maintaining and administrating the undertaking[6] in Europe and North America. In fact the fare-box ratio dose not exceed 80% in most undertakings. Although firms which carried over 10,000 passenger-kilometres per route-kilometre per day, were almost all determined to be profitable, passenger density itself did not seem to have a crucial influence on the overall profitability. However, densities are much more important if only rail operations are under

consideration, especially if the passenger-kilometres densities were less than 2,000.

Figure 4 details the differences in the revenues accrued by each division. A total of 62% of revenues were earned on average in minors by diversified operations. While revenues earned by the real estate and other business divisions, on average, are similar, the transportation division plays a more important role for the minors. Bus service is operated in many cases in lieu of rail service. In general, this type of bus service does not function in a complimentary role but rather because the smaller densities are more conducive to being supported by bus service. Thus, in some cases, the transportation division or part of its operations might more appropriately be classified as part of the main business. However, for purposes of consistency the assumptions that rail is the main business as utilised in the study of the majors were maintained.

Figure 4: Revenue percentages of the majors and firms operating in smaller markets (1995)

FIRM	Number of Firms	Diversification index	Operating level profitability	Revenue percentages			
				Rail Division	Transportation Division	Real Estate Division	Other Business Division
MAJORS	15	42.87	115	51%	11%	21%	17%
OTHERS	64	40.46	100	38%	32%	13%	17%

Note: 1) operating level profitability is defined as operating profits divided by operating costs.
2) the numbers are simple average of each category companies

Diversification Strategy of 'Minors'

Following the earlier study, we utilised Rumelt's (1974) pioneering methodology for classifying firms based upon their diversification activities. In addition to simplifying Rumelt's eight categories into five, including firms which are fundamentally specialised (single business), firms whose diversified businesses, on the whole, are vertically integrated with main business (vertically integrated), firms which are diversified to an extent but whose operations are largely stick on main (dominant business), firms which have horizontally diversified into areas which are related in terms of the market technology to the main (related business) and firms which are widely diversified into area not exclusively related to their main business (unrelated business), it was necessary to adapt the model to make it applicable to the transport industry because Rumelt's model was created for comparing firms conducting business in the manufacturing sector[7]. Due to the complexity of businesses within the individual divisions in each firm it was necessary to determine the share of vertically integrated businesses, related businesses and unrelated businesses within each division to sufficiently quantify the specialisation ratio, related ratio and the vertical integration ratio[8]. While individual differences between firms were noticeable, averages were taken to standardise the classification technique. The Tetsudo Tokei Nenpo (Annual Report of Rail Statistics) published by the Ministry of Transportation was primarily used because it provided standardised data for all the firms in the study.

The rail division was taken as the main business (largest single business). In the transport division, obviously, bus and taxi feeder lines which link residential developments and other facilities to the rail lines can be classified as being vertically integrated businesses because of the complementary nature of their operations. However, long distance bus service and tourist buses, which have duplicate functions, are more likely to be related in nature. Some firm's have unrelated businesses in their respective transport divisions including toll roads, trucks, etc. The real estate division also has a

wide variety of businesses. Vertical businesses would include those which are built primarily to increase ridership. Utilisation of acquired "core competencies" obtained from developments located close to rail infrastructure to develop land in other markets is better classified as a related business[9]. The location of the business in question was used as a primary indication of relatedness. The other business division is made up of a variety of businesses some of which are related, some are unrelated and some are vertically integrated.

Using the adapted model the firms were classified according to strategic type for the Fiscal Year 1995. Although, on average, the diversification index which measures quantitatively the extent to which a given firm is divisified[10], was almost same level for the minors and for the majors, a large number of firms were found to be following an unrelated business strategy. More majors on the other hand tended to utilise a related business strategy. The results indicated that 8 firms were single business, 3 were vertically integrated, 6 were dominant, 6 were related and 40 were found to be classified as unrelated.

When we see the profitability of each division, we were found the low profitability of the rail division and the losses of the transportation divisions. Total profitability, which calculated by total rail division revenues of minors divided by total operating expenses, which include depreciation, of the transport division, was 102% and average profitability, which is average of 64 companies, of the rail was only 95%. Total profitability of the transport division was 94% and average profitability of transport division was only 61%. On the other hand, the real estate division made good results. Its total profitability was 131% and the average profitability was 124%.

Although drawn from only one year, the results indicate that the success of the majors has been duplicated by numerous firms operating in 'less densely populated cities. Even firms with extremely small passenger densities are able to remain profitable. Thee are three major factors possibly determining the success or failure of these firms. The first factor is whether or not firms are able to increase the demand for rail services. The attraction especially of non-pass holders is of vital importance to the strived of the firms as a majority of committing is done by automobile. Thus, privates operating in smaller markets strive to increase use by shoppers and tourists.

Another important goal is the improved efficiency of rail operations. This is carried out through the initiation of unmanned stations, Out-sourcing of rolling stock repairs as well as by the rationalizing of staff and management, In addition to the above cost cutting measures firms have also worked to improve the safety and efficiency of rail operations through increases in the frequency of service.

The third factor is the important role of diversification. Limitations on the profitability of the rail division have forced firms to look for new sources of revenue sources. The most successful firms are those which are able to increase demand for rail services or the number of non-pass holders which in large part is accomplished through the application of diversified operations.

However, there are numerous issues, which need to be considered. One of these is the high losses accrued by transportation divisions. Another major area of concern is that fares tend to be higher for the minors. In 1990, the average one-kilometre fare was 8.88 yen for the majors, while it was 20.90 for the smaller firms. Further decreasing ridership leads to the need to further increase fares, which creates a viscous cycle. Finally, many firms also suffer from high losses at the current level, which brings interest payments on debt into the picture.

Diversification Strategy of Selected Firms

The next step in the analysis was to focus on six firms over a 20-year period to get some senses at the nature of operations. The sample was chosen on the premise that passenger densities should be similar to or less than those in a 'typical city' in other countries. The six firms with their passenger densities in brackets included Sanyo (32,500), Kobe Dentesu (Shintetsu, 29,400), Nose (39,100), Hiroden (18,500)), Kotoden (6,600) and lyo Tetsu (6,200) in 1995[11].

Figure 5 provides an overview of the firms and exemplifies the varied nature of the operations in terms of scale of the rail network in addition to the high percentage of diversified operations earnings.

Figure 5: Comparison of selected local urban transit providers in Japan FY1995)

COMPANY NAME	YEAR ESTABLISHED	NETWORK SIZE (PASSENGER KM)	NUMBER OF RAIL EMPLOYEES	ANNUAL PASSENGERS x THOUSAND	AVERAGE PASSENGER-KMS PER KM PER DAY	REVENUE FROM RAIL OPERATIONS	REVENUE FROM DIVERSIFIED OPERATIONS	OPERATING LEVEL PROFITABILITY
SHINTETSU	1926	69.6	768	62,500	29,400	69%	31%	119%
SANYO	1933	70.4	1,013	79,800	32,500	71%	29%	110%
NOSE	1908	15.4	188	32,800	39,100	52%	48%	111%
HIRODEN	1942	34.9	237	65,600	18,500	28%	72%	104%
KOTODEN	1943	60.0	340	16,500	6,600	83%	17%	103%
IYO TETSU	1942	43.5	356	21,900	6,200	29%	71%	114%
AVERAGE	1932	49.0	484	49,800	22,100	55%	45%	110%

Note: 1) all companies except Nose has their predecessors. For example, Sanyo's predecessor (Hyogo Denki) established in 1906 and began rail service in 1910. Hiroden's first section opened in 1912 and by 1925 most lines began services. Kotoden started its rail operation in 1912 and most sections opened by 1927.

2) number of rail employees includes directors.

Source: Ministry of Transport, *Annual Rail Statistics (Tetsudo Tokei Nenpo)*, 1995

Figure 6: Annual ridership of selected minors in Japan (1977-1996 average)

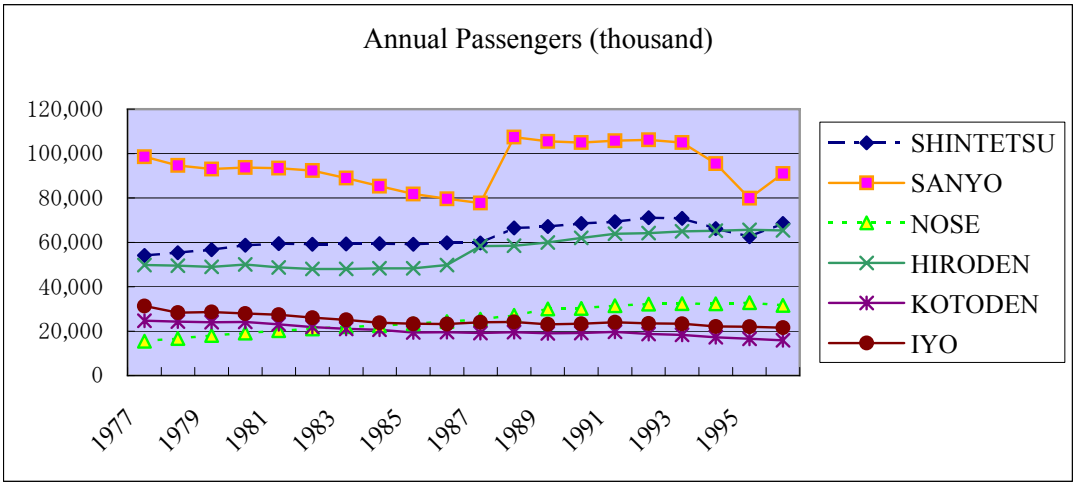


Figure 6 shows the trends of annual ridership of six companies from fiscal year 1977 to 1996. While Kotoden and lyo face decreasing ridership, which mirrors the situation in many less populated centres, Kobe, Nose and Hiroden have managed to increase ridership steadily over the course of the data set. Sanyo's ridership has experienced considerable fluctuation, though there are exogenous

factors[12] (Figure 6).

Figure 7 shows the breakdown of revenue percentages by division of each company and their diversification strategy types with diversification indexes. Shintetsu and Sanyo are in their focus on rail operations. Shintetsu earned 62% of total revenues from rail operations, on average, over the period of study and Sanyo was 75%. However, diversified operations also play an important role. Shintetsu's infrastructure is located in one of the fasting growing areas in Japan. Thus explaining the importance of the real estate division, which earned 21% of total revenues.

Like other private railways in Japan, both companies have a long history of diversification. At Sanyo the inauguration of bus service was in 1936. This was followed by tourist bus services in 1940, express service in 1990. The other types of diversified businesses have more long stories. The predecessor (Hyogo Denki) started diversified operation, such as rail patronage attraction facilities, from the beginning (1910) and proliferated, such as lights and electricity, housing developments and amusement park from 1918. In 1925, revenue percentage of rail division was 63%, while lights and electricity was 36% and real estate was 1%[13].

Nose, which is 80% owned by Hankyu (one of the ‘major’ private railways), patterns its diversification strategy after the larger firm. Nose does not operate any bus services and like Shintetsu is located in a fast growing area. Diversified operations thus focus on the development of housing properties (50% of total revenues). Nose also operates a cable car and several leisure facilities.

Hiroden earns a majority of its revenues from the transportation division (61%). This is largely due to the urban structure of Hiroshima, which is more conducive to bus operations. While the rail division is focussed on commuter services, it is unique in the success of its operation of trams. Acquisitions and mergers play a large role in Hiroden's diversification strategy. A merger in 1938 led to the inauguration of general bus service followed by the acquisition of tourist bus company in 1956. In 1960, the first retail store was opened followed by the inauguration of real estate development the following year. The transportation division was expanded with the start of express bus service in 1984 followed by limousine bus service in 1993.

Kotoden and lyo operate in similar sized and structures markets. Both operate in cities with a population of less than a half million people. While Kotoden has remained rail focussed (62%); Iyo is an extensively diversified organization. It operates heavy rail lines in addition to trams, actively develops real estate, and operates a large transportation division. In addition to numerous travel agencies, Iyo operates airfreight service and a store at Matsuyama's airport. Iyo became actively involved in diversified operations when ridership declines became persistent from 1965. However, Like Hiroden, lyo attracts a large number of non-pass holders (72% to Kotoden's 42% in 1996) partly because both mother cities have famous sightseeing spots.

The analysis determined that Shintetsu and Nose followed related type diversification strategies due to the high importance of real estate development. Sanyo and Kotoden were found to be vertically integrated due to the significant role of the transportation division. Iyo and Hiroden were classified as unrelated although a vertically integrated strategy classification is probably more appropriate for Hiroden because the main business might be bus service. Revenue percentages earned by the four respective divisions clearly represent differences between firms.

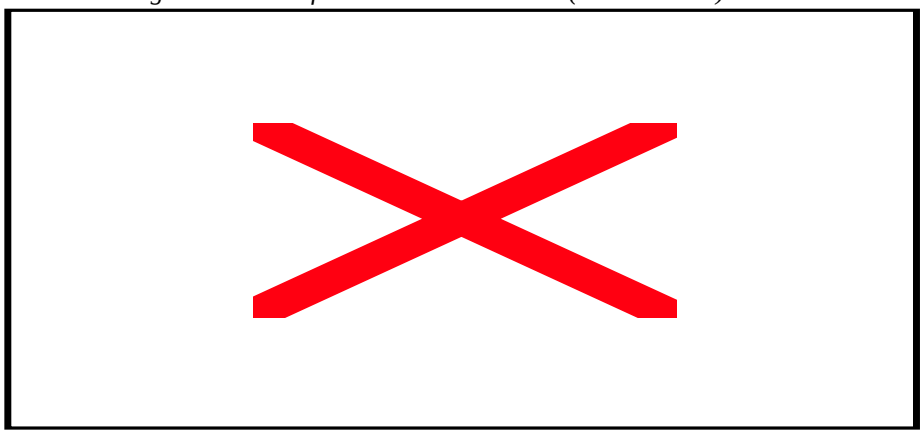
Figure 7: Breakdown of revenue percentages by division (1977-1996 average)

FIRM	Strategy	DI	Revenue percentages			
			Rail Division	Transportation Division	Real Estate Division	Other Business Division
SHINTETSU	R	35.63	62%	3%	21%	14%
SANYO	VI	24.06	75%	15%	9%	1%
NOSE	R	40.67	49%	0%	50%	1%
HIRODEN	U	51.00	24%	61%	15%	0%
KOTODEN	VI	34.70	62%	27%	0%	11%
IYO	U	57.92	27%	42%	22%	9%
AVE.		**40.66**	**50%**	**25%**	**20%**	**6%**

Note: 1) operating level profitability is defined as operating profits divided by operating costs.
2) VI = vertically integrated business, R = related business, U = unrelated business

While diversified operations increased over the course of the data period there was a recent trend towards a refocus of operations indicated by a fall in the diversification index over the past 10 years. This is consistent with the findings of the majors.

Figure 8: Diversification Index over time (1955 to 1995)



Note: diversification index values are averages of six companies for the year in question

Figure 9 shows average profitability of the selected firms at both operating and current levels of each division. While all of the six firms were profitable, here were numerous differences. The rail divisions of Iyo and Kotoden, as expected, were less profitable than their counterparts operating in more densely populated areas. In addition, much like the majors, the real estate division was responsible for a large proportion of profits while the transportation and other business divisions suffered losses or were slightly profitable. In the case of Kotoden, profits from real estate endeavours were included with other business profits influencing that figure.

At current levels, which include interest on debt payment, all firms were found to be profitable, on average, over the course of the study except for Kotoden, which broke even. The most conspicuous result is the success of Iyo, which is large part to its efficient use of diversification strategy. Kotoden, which operates in a comparable market, suffers losses in almost half of the years of the study.

Because there has been few concrete supporting schemes from local governments, which have little power to begin with, the property of the firm was usually sold to cover these losses, a procedure that cannot continue for any lengthy period of time.

Figure 9: Profitability of the local firms at both operating and current levels (1976 to 1995)

			Operating level profitability					Percentage of total profits				Current level profits		
Firm name	Strategy	DI	Overall	Rail Division	Transportation Division	Real Estate Division	Other Business Division	Rail Division	Transportation Division	Real Estate Division	Other Business Division	Gross profits (thousand yen)	Current level profits operating level revenue	Years with Current level losses
SHINTETSU	R	35.63	118	119	87	141	97	66	-3	40	-3	260,767	2%	3
SANYO	VI	24.06	112	110	107	149	74	65	9	29	-3	608,751	3%	1
NOSE	R	40.67	121	119	-	124	98	45	-	55	0	191,560	3%	1
HIRODEN	U	51.00	104	111	97	131	-	63	-54	91	-	443,815	2%	2
KOTODEN	VI	34.70	101	98	89	-	190	-225	-549	-	874	8,799	0%	9
IYO	U	57.92	109	103	95	173	111	9	-26	106	11	1,137,194	8%	0
AVE.		**40.66**	**111**	**110**	**95**	**144**	**114**	**4**	**-104**	**54**	**147**	**441,814**	**3%**	**3**
AVE. (Note 4)		41.86	113	112	97	144	95	50	-15	64	1	528,417	4%	1

Note: 1) operating level profitability is defined as operating profits divided by operating costs.

2) percentage of total profits is defined as division operating profits divided by total operating profits.

3) current level profits take into account non-operating revenues and costs (including interest on debt).

4) Kotoden's result is not included in this average.

Many studies have indicated that firms which diversify into fields relating to their main business tend to be more profitable than firms which expand into unrelated activities (Rumelt (1982), Itami (1982)). The results from this research are consistent with this, though the limited number of sample firms. This corresponds with the result obtained in the case of majors (Killeen and Shoji (1997), Shoji and Killeen (2001)), though further research will need before we discuss to the causality of this matter.

Due to decreasing ridership and the recession, the firms are coping in different ways. Shintetsu and Nose are fortunate in the sense that they are located in higher growth areas. Shintesu's present focus is on improving the speed of rail services in addition to the development of property. Hiroshima has managed to greatly increase the number of non-pass holders that accounts for almost 80% of total ridership, which is considerably greater than most firms. Sanyo, which suffered heavy damage in the Great Kobe Earthquake, has since rebuilt infrastructure and is striving to improve rail service, though Sanyo have struggled with severe competition with JR-west. Sanyo has tried to improve the efficiency of its transportation division and recent rationalisation of tourist bus operation has one such step. Iyo is constantly modernising and striving to streamline operations. One such effort was separation of taxi service in 1976. In addition, Iyo plans major urban redevelopment at its main station.

SUMMARY

Diversification strategy plays an important role for the many private firms operating in the less densely populated centres in Japan, even though these firms vary greatly in terms of scale, type of services offered and profitability. Faced with decreasing ridership, increased competition from the automobile and nominal subsidies from the governments, the minors have not only had to strive to improve the efficiency of rail operations but also search for other sources of revenues.

34 out of the 64 minors were found to be profitable at an operating level in 1995. However transportation division of many firms consistently lose money. Passenger densities did to seem to have a crucial influence on the results although less than 2000 passenger-kilometres per route-kilometre per day are all makes loss in rail operation. Firms utilising an unrelated business strategy tended to be more common, this is different from majors, which R is common.

The six firms, which were considered over a twenty-year period, exemplified the uniqueness of each firm's strategy. However, the results in terms of related-type firms tending to be more profitable, that diversification increases with time and that the rail and real estate divisions were responsible for a majority of profits were consistent with the result of the analysis of the majors.

The most significant result is that the case of the majors appears not to be idiosyncratic. While certainly not true for all the firms, a large number of private rail firms operating in small markets are able to remain profitable. Their success indicates a possibility that the Japanese example may be duplicable in other settings.

FOOTNOTES

1. In 1990, this number moved up to 28% and 51% respectively. In 1980,the modal split of rail in Japan was 35% and in metropolitan area was 53% and in 1970 the percentage were 40% and 55%.

2. Strictly speaking these minors include several private-public mixed (quasi-pubic) companies. There are several definitions of 'minors'. At the Annual Railway Statistics, the Ministry are using six categories for passenger rail operators (which excludes tram, mono-rail and Automate-Guided-Transit operators); JRs (6), majors (15), EIDAN (1), Jun-Ote (junior majors)(6), local minors (98) and municipals (12). Jun-Ote provides services in and/or edges of metropolises but not as big as majors. Three of those are quasi private that is part of shares owned by public sector but not as much as 50% in all three firms. 'Local minors' include ex-JNR '3rd Sector Railway' (quasi public, 38) but exclude Class 3 operators (6).

3. Because of the Japan National Railway Reform, it is hard to compare the statistics after this year.

4. The one started its business on March 30th 1996. Therefore it operated only two days in Fiscal Year 1995. The other one opened the line on April 1996.

5. Please refer to Killeen and Shoji (1997), Mizutani (1999) and Mizutani and Shoji (1997)

6. This definition normally excludes depreciation, interest payments and renewal provision and concession payments. However depreciation are included in Japanese cases. For the statistics of several cities, please refer to House of Commons (1983), Table III, p.xlvi, and Pucher, J. and C. Lefevre [1996], Table 2.8 and 2.9, pp.33-34.

7, Because we analysed businesses in service sector, we defined that 'vertically integrated operations' are defined as those including operations, which are located in the vicinity of rail lines and whose main function is to help increase rail ridership. Related operations for the large part capitalize on know-how and experience

acquired over the years and location is of less importance. Unrelated operations are usually located at a distance from rail infrastructure and have little link or relation with the main business.

8. The specialisation ratio (SR) is the proportion of a firm‘s revenues that can be attributed to its largest single business in a year. The related ratio (RR) is the proportion of a firm’s revenues that can be attributed to its largest group of related businesses. Businesses are considered to be related when a common skill, resource, market or purpose is applicable to each business. The vertical integration ratio (VR) is the proportion of a firm‘s revenue that arises from all by-products, intermediate products and end products of a vertically integrated sequence of processing activities.

9. Historically, residential sites were developed in the vicinity of rail not only to increase demand for rail service but also to capture externalities. However, a majority of real-estate development now takes place in areas located a considerable distance from rail. These endeavours more likely are utilizing the know-how and experience acquired from years as a developer and are more likely related type business. One of the objectives of leasing property at stations and developing real estate development near is to increase ridership and thus these types of businesses are vertical integrated in nature.

10. $DI = (1-\sqrt{(\sum P_i^2)})*100$ where P_i is the percentage of revenues attributable to a discrete business.

11. Their average passenger volume per day per route-kilometres were Sanyo (3717), Shintesu (2729), Nose (5839), Hiroden (5 149)), Kotoden (756) and lyo Dentetsu (1380).

12. From 1988 the annual passengers of Sanyo and Kobe has included the passengers carried in Kobe-Kosoku lines. This came to effect because of The Railway Enterprise Law 1987. In 1988, the passengers of Kobe-Kosoku line for Sanyo was 29 million (27% of total passengers of Sanyo) and the passengers of Kobe-Kosoku line for Shintesu was 5 million (8% of total passengers of Shintetsu). In addition, because of the Great Kobe Earthquake which struck at 5:46a.m. on January 17, 1995, Sanyo and Shintesu got severe damages. Five months later, Sanyo restored its rail operation on June 18 and Shintetsu restored on 22th.

13. Lights and electricity had been one of the major diversified businesses in many private railways in Japan. In fact there were several companies that owned by electricity companies, such as Sanyo. However, in 1942, the order of nationalisation of electricity came out. Thus, every private railway had to give up this business. This makes a reason why Hiroden, Kotoden and Iyo-tesu established almost same period.

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