

**Investment Expenditures of Local municipalities in Japan in the 2000s**

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**Abstract**

In this paper, I analyzed the investment expenditures of local municipalities in Japan in the 2000s by examining the cases of different municipalities and obtained the following results. First, merged municipalities issued Special Merger Bonds and nonmerged/depopulated municipalities issued Depopulation Bonds most. Second, in nonmerged/nondepopulated municipalities began to focus more on works funded by grants and local bonds rather than on unsubsidized works funded by Road Bonds and other types of local bonds. That is, in the past, the total value of Road Bonds was the largest of all bond totals. However, Road Bonds were replaced by School Bonds issued to supplement School Block Grants established during the decentralization reform in the 2000s. Therefore, this phenomenon is one of the outcomes of the decentralization reform. In Japan, the decentralization can increase public works for schools in cities and some select towns and villages with high financial capability indices. This could widen the gap between rich and poor municipalities. The theory of cumulative causation by Gunnar Myrdal can be attributed to this phenomenon.

**JEL:** H71, H72, H74, H75, H77

**Keywords:** Investment expenditures, Local bonds, Decentralization reform, Cumulative causation.

**Introduction**

In this paper, I analyze the investment expenditures of local municipalities in Japan in the 2000s by examining the cases of different municipalities. In Japan, the central government pushed for a municipal consolidation, the so-called Great Heisei Consolidation, from 1999 to 2006. By doing so, the central government intended to reduce grants to municipalities as part of a general push to decrease public spending. Previous studies of this period have mainly examined the resulting stimulation of investment expenditures through the Special Merger Bonds. These bonds were used to finance infrastructure projects related to the municipal consolidation.

However, since only merged municipalities could issue Special Merger Bonds, we would not be able to capture total investment expenditures of this period by focusing only on merged municipalities. In fact, more than one-third of the municipalities never merged with any other municipalities and would be excluded from the analysis.

Here, I analyze not only the cases of investment expenditures in merged municipalities but also in nonmerged municipalities as well as other government-subsidized institutions that were not

provided Special Merger Bonds. In particular, I focus on the trends in investment expenditures and local bonds issued by nonmerged municipalities, specifically the allocation of national treasury grants and School Bonds. By doing so, I aim to highlight the actual investment expenditures of local municipalities over the past two decades and use Gunnar Myrdal's cumulative causation to discuss this issue.

This paper is structured as follows: Section 2 provides institutional background on the local public finance system in Japan. Section 3 describes a previous literature. Section 4 explains the characteristics of municipalities groups. Section 5 studies local bonds issuance and cumulative causation by Gunnar Myrdal. Finally concluding remarks follow in section 6.

**Institutional Background**

This section shows some background information on the local public finance system in Japan. The revenue of local governments consists mainly of local taxes, local allocation tax (LAT) grants, national treasury grants, and local bonds.

Japanese municipalities may issue local bonds to finance the cost of the construction of public facilities. The redemption of principal and interest of many local bonds is factored into standard financial

needs (SFN) for calculating LAT grants. These grants are determined based on the local government's deficit. The grants are calculated according to this formula. :

$$\text{Standard Financial Needs} - \text{Standard Financial Revenues} = \text{Deficit in Financial Resources}$$

Now, I explain the most significant types of local bonds in this paper briefly.

From the end of the 1980s to the beginning of the 2010s, the total value of unsubsidized works by local governments exceeded that of subsidized works. Road Bonds had played the important role in this period. Figure 1 shows the overview of Road Bonds.

Road Bonds 75% (30-55% of redemption of principle and interest factored into SFN)	Other Bonds 15%	Tax.LAT 10%
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Figure 1. Overview of Road Bonds.

As I mentioned before, the central government pushed for the municipal consolidation, the so-called Great Heisei Consolidation. Merged municipalities implemented their public works by issuing Special Merger Bonds. These bonds had provided a strong incentive for the implementation of various public works to merged municipalities. They were used to finance infrastructure projects related to municipal mergers. 70% of the redemption of the principal and interest was factored into SFN for calculating LAT grants. Figure 2 shows the overview of Special Merger Bonds.

Special Merger Bonds 95% (70% of redemption of principle and interest factored into SFN)	Tax LAT 5%
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Figure 2. Overview of Special Merger Bonds.

Depopulated Area Bonds are used to fund measures for depopulated municipalities. Depopulated municipalities are defined by the Act on Special Measures for Depopulated Areas, based on the rate of depopulation and that of increase of the elderly in a community. Only depopulated municipalities can issue these bonds for the public works. Figure 3 shows the overview of Depopulated Area Bonds.

Depopulated Area Bonds 100% (70% of redemption of principle and interest factored into SFN)
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Figure 3. Overview of Depopulated Area Bonds.

School Bonds were introduced to supplement School Block Grants in the decentralization reform in the 2000s. In the decentralization reform, specific grants for improvement in public school facilities were abolished and School Block Grants were established. Before the establishment of School Block Grants for improvements in public school facilities, a fixed percentage of the investment expenditures was subsidized by the national government for each work. However, after these grants were established, it became possible to allocate grants to investment expenditures for improvement in public school facilities beyond each work. The degree of freedom of selection was improved.

The bonds were used for public school facility improvement. Two-thirds of the bond redemption money for the principal and interest is factored into SFN for calculating LAT grants. Therefore, municipalities could carry out the public works with a few tax revenues sources and LAT grants. Figure 4 shows the overview of School Bonds. Unlike Road Bonds and Special Merger Bonds, School bonds were used for subsidized works.

School Block Grants 66.7%	School Bonds 30% (2/3 of redemption of principle and interest factored into SFN)	Tax LAT 3.3 %
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Figure 4. Overview of School Bonds.

### Previous Literature

In the 1990s, some studies claimed that the Japanese central government stimulated local governments to implement investment expenditures. The principal and interest of local bonds for investment expenditures were compensated by LAT grants. This happened during the fiscal year following the redemption of the bonds. There are a number of previous works on this topic in Japan.

For example, Machida (1997) analyzed the financial aid measures for various unsubsidized works. As a result, Machida (1997) was able to clarify how these financial aid measures influenced debt service payments and the distribution of LAT grants allocation in local governments. In particular, when discussing the relationship between unsubsidized works and the financial aid allocated for such works, there was a rapid increase in the issuance of Road Bonds.

Kanazawa (2002) analyzed the formation of modern Japan's financial sector, which is characterized by a higher percentage of public works compared to the general international standard. According to Kanazawa (2002), until 1981, this system was mainly stimulated by national treasury grants. However, after 1985, the government's focus shifted to unsubsidized works aided by revenue from the issuance of local bonds as well as LAT grants to supplement the shortage of revenue from local bonds. In other words, the central government raised the appropriation percentage of bonds issued for unsubsidized works and included the principle and interest on local bonds in SFN. As a result, an increasing amount of LAT grants were utilized as government grants.

During the 2000s, merged municipalities issued a large number of local bonds and repayment expenditures were added to SFN in subsequent years, including Special Merger Bonds. As indicated in Machida (2006) and Takagi (2006), merged municipalities implemented their public works by issuing Special Merger Bonds. A strong incentive was given to merged municipalities to implement numerous public works.

### **Characteristics of Each Group's Local Bonds Issuance**

Then, including nonmerged municipalities, what changes can be observed in the investment expenditures of the 2000s in Japan? Since only merged municipalities were able to issue Special Merger Bonds, I focus on not only the cases of investment expenditures in merged municipalities but also in nonmerged municipalities in this period.

To analyze how investment expenditures were stimulated in Japan during the period from 2002 to 2009, I divide municipalities in Japan into three groups: merged municipalities, nonmerged/depopulated municipalities, and nonmerged/nondepopulated groups. As I explained before, merged municipalities and depopulated municipalities can issue special bonds, so I use "merged" and "depopulated" as criteria.

Municipalities that were merged before the end of FY 2009 are categorized as "merged," while those that were not merged are categorized as "nonmerged." Merged municipalities can issue Special Merger Bonds under special measures.

The "depopulated" group includes depopulated municipalities on which the Act on Special Measures for Depopulated Areas defines. As I mentioned earlier, depopulated municipalities can issue Depopulated Area Bonds. And all other areas are considered nondepopulated.

Municipalities of "merged municipalities group" included 316 cities and 1,757 towns and villages in FY 2002, and 425 cities and 163 towns and villages in FY 2009. Municipalities of "nonmerged/depopulated municipalities group" included 29 cities and 352 towns and villages. Furthermore, municipalities of "nonmerged/nondepopulated municipalities group" included 355 cities and 426 towns and villages.

Now, I discuss the characteristics of the local bonds issued by the three groups.

First, I examine the case of the merged municipalities group. Figure 5 depicts the changes in the total value of local bonds issued by merged municipalities. As can be seen from this figure, the total value of Road Bonds was higher than that of Special Merger Bonds until 2004. As the total sum of Special Merger Bonds continued to increase after that year, we could see municipalities abandoned the Road Bonds.

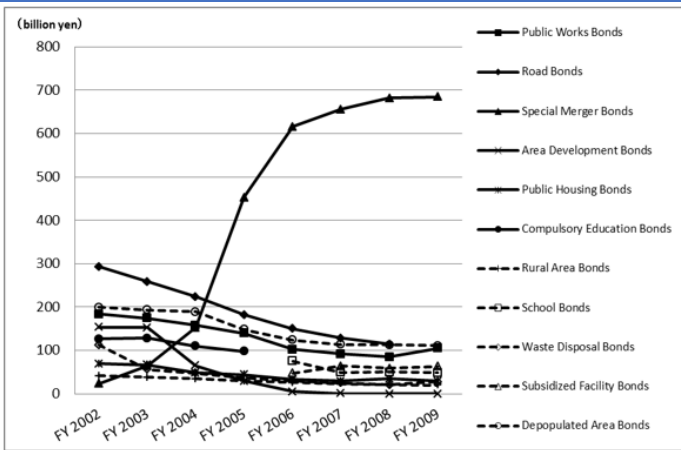


Figure 5. Changes in the total value of local bonds issued by the merged municipalities. Source: Data provided by the Ministry of Internal Affairs and Communications.

Second, as is evident from Figure 6, the total value of the Depopulated Area Bonds was the highest in the depopulated municipalities group. As I mentioned before, only depopulated municipalities can issue these bonds for public works. Due to the condition of Depopulated Area Bonds, naturally municipalities chose those and the graph shows that.

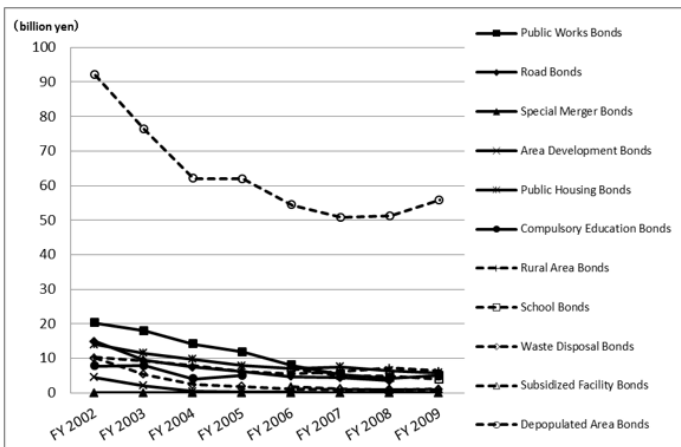


Figure 6. Changes in the total value of the local bonds issued by the non-merged/depopulated municipalities. Source: Data provided by the Ministry of Internal Affairs and Communications.

Finally, I examine the nonmerged/nondepopulated municipalities group. Figure 7 depicts the changes in the total value of local bonds issued in this group. From this figure, the following characteristics are evident: First, there has been a decrease in the total value of both Public Works Bonds and Road Bonds up to 2008. Second, the total value of School Bonds increased in 2006, and that of School Bonds was

higher than that of Public Works Bonds and Road Bonds until 2008.

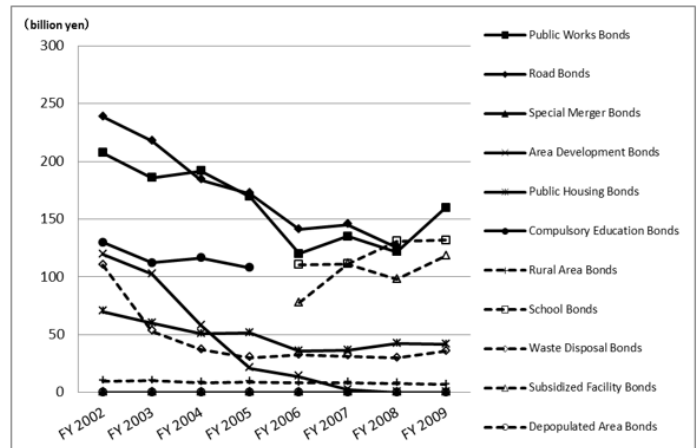


Figure 7. Changes in the total value of local bonds issued by the non-merged/non-depopulated municipalities. Source: Data provided by the Ministry of Internal Affairs and Communications.

Public Works Bonds were to finance other projects except road, for example ports or riverside. These bonds were increasing; however these were for countercyclical policy against financial crisis in 2009. So it can be said that these bonds didn't have increasing tendency. From this figure, we can see the shifting from Road Bonds to School Bonds in the nonmerged/nondepopulated municipalities group. So I present a more detailed analysis of this group.

Table 1 presents the changes in the number of municipalities among the nonmerged/nondepopulated municipalities group that did not issue School Bonds. As can be understood from this table, about 10-20% of the cities did not issue School Bonds. With regard to other towns and villages, about 60% did not issue School Bonds.

Cities

	FY 2006	FY 2007	FY 2008	FY 2009
School Bonds	26.3%	22.6%	19.8%	12.7%

Towns and villages

	FY 2006	FY 2007	FY 2008	FY 2009
School Bonds	64.2%	60.7%	59.3%	56.1%

Table 1. Changes in the number of municipalities among the non-merged/non-depopulated group that did not issue School Bonds

Source: Data provided by the Ministry of Internal Affairs and Communications.

From this table, the majority of cities issued School Bonds. In contrast, the minority of towns and villages issued these bonds. Then, what caused these differences? What were the characteristics of the municipalities that did not issue School Bonds? To consider these issues, I focus on School Bonds and examine the bond system in greater detail in order to clarify the factors that contributed to such differences.

Table 2 presents details on the issuance of School Bonds in the nonmerged/nondepopulated municipalities group according to their financial rating and split into cities versus towns and villages. As is clearly visible, many cities issued School Bonds despite their low financial capability indices; fewer towns and villages issued School Bonds than did cities, even when their financial capability indices were the same. A higher figure of financial capability index implies that the local municipality has a greater margin for revenue sources. I can therefore see that School Bonds were issued primarily by city governments as well as by some rich towns and villages.

Financial capability index	Cities		Towns and villages			
	Total (A)	Number of municipalities that did not issue School Bonds		Total (A)	Number of municipalities that did not issue School Bonds	
		(B)	(B/A,%)		(B)	(B/A,%)
Over 1.1	40	8	20.0	39	22	56.4
1.1-1.0	27	8	29.6	13	8	61.5
1.0-0.9	46	5	10.9	18	9	50.0
0.9-0.8	44	12	27.3	30	17	56.7
0.8-0.7	50	10	20.0	33	20	60.6
0.7-0.6	45	6	13.3	54	31	57.4
0.6-0.5	44	17	38.6	72	48	66.7
0.5-0.4	26	15	57.7	69	39	56.5
0.4-0.3	8	2	25.0	61	46	75.4
Less than 0.3	1	0	0.0	38	34	89.5
Special wards	23	10	43.5			
Total	354	93	26.3	427	274	64.2

Table 2. Issuance of School Bonds in non-merged/non-depopulated municipalities according to their financial rating

Source: Data provided by the Ministry of Internal Affairs and Communications

### 5. Local Bonds Issuance and Cumulative Causation

In this way, we found two research results. One is that the total value of Road Bonds decreased and that of School Bonds increased in the nonmerged/nondepopulated municipalities group. The other is that School Bonds were issued by city governments as well as by some rich towns and villages. It is possible that the theory of cumulative causation by Gunnar Myrdal can be attributed to these two results in this paper.

The reasons are as follows: First, the more the principal and interest redemption of Road Bonds increased, the more the total value of Road Bonds decreased because the financial resources allocated to the rest of bond issuances depleted. This was cumulative process in the local investment expenditures in the 2000s. Second, the cities and some select towns and villages with high financial capability indices could issue School Bonds because investment capacity of them remained. In contrast, poor towns and villages couldn't carry out the public works because of the lack of financial resources. Third, consequently the disparities between rich and poor municipalities grew. It was a kind of backwash effect.

## 6. Concluding Remarks

In this paper, I showed the analysis of investment expenditures of local municipalities in Japan in the 2000s.

The total value of Road Bonds was the largest of all bond totals in the nonmerged/nondepopulated municipalities group. However, Road Bonds were replaced by School Bonds which are issued to supplement School Block Grants. School Bonds were established during the decentralization reform in the 2000s. Therefore, this phenomenon is one of the outcomes of the decentralization reform.

In Japan, the decentralization can increase public works for schools in cities and some select towns and villages with high financial capability indices. This could widen the gap between rich and poor municipalities. The theory of cumulative causation by Gunnar Myrdal can be attributed to this phenomenon.

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