An analysis of inter-municipal promotion competition for the hometown tax donation program

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Kazuki Iwado

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Abstract

This paper analyzes whether or not the hometown tax donation program system promotes the competitive spirit of local governments from the perspective that the potential difference in competitiveness among local governments may affect their motivation to promote the hometown tax donation program system. We hypothesized that a higher production value of primary industry products, which account for the majority of the hometown tax donation program returns, would lead to a higher public relations expenditure for the hometown tax donation program payments by local governments, and conducted a panel data analysis using data from municipalities across Japan. The results show that municipalities with larger agricultural and fishery industries tend to put more effort into public relations. In addition, the larger the population of a municipality, the more effort it tends to put into public relations. In order to encourage innovation in local governments, we should not evaluate the inherent capabilities of local governments, but rather evaluate newly created businesses in local governments. In order to this, municipalities that do not have attractive products need to think about finding new values for their own municipalities, and they should use the hometown tax donation system to create motivation for this creation. For example, the system should be designed to relax the restriction on the rate of return for newly created values rather than old attractive products. By applying this system, we can avoid the concentration of donations to the municipalities that can provide attractive products and motivate the municipalities that do not have attractive products to create new values.

1. Introduction

The hometown tax donation program was established in 2008 from the idea that "It would be good to have a system that allows people to pay taxes to their hometowns that raised them, even if it's a small amount" (The Ministry of Internal Affairs and Communication (MIC) 2007: 1) and it is a system that allows people to receive special deductions when they donate to the prefecture or municipality of their choice.

MIC advocates that one of the policy implications of the hometown tax is that "Local governments should appeal their efforts to the public to encourage people to pay the hometown tax donation program on their hometown, thereby promoting competition among local governments" (MIC 2015: Philosophy of hometown tax donation section).

However, some municipalities have many appealing materials and are competitive, while others have few appealing materials and are not competitive, so the motivation to appeal may be reduced for those municipalities that are not competitive. In addition, the hometown tax donation program is a system that allows you to receive a return gift from the municipality to which you donate when you donate. As a result, there will be a disparity between municipalities that can provide attractive return gifts and those that are unable to do so, and those that are unable to do so may lose their motivation to appeal.

In order to clarify the above questions, this paper analyzes the determinants of motivations for local governments to promote the hometown tax donation programs and makes recommendations for the effective design of future hometown tax donation program systems.

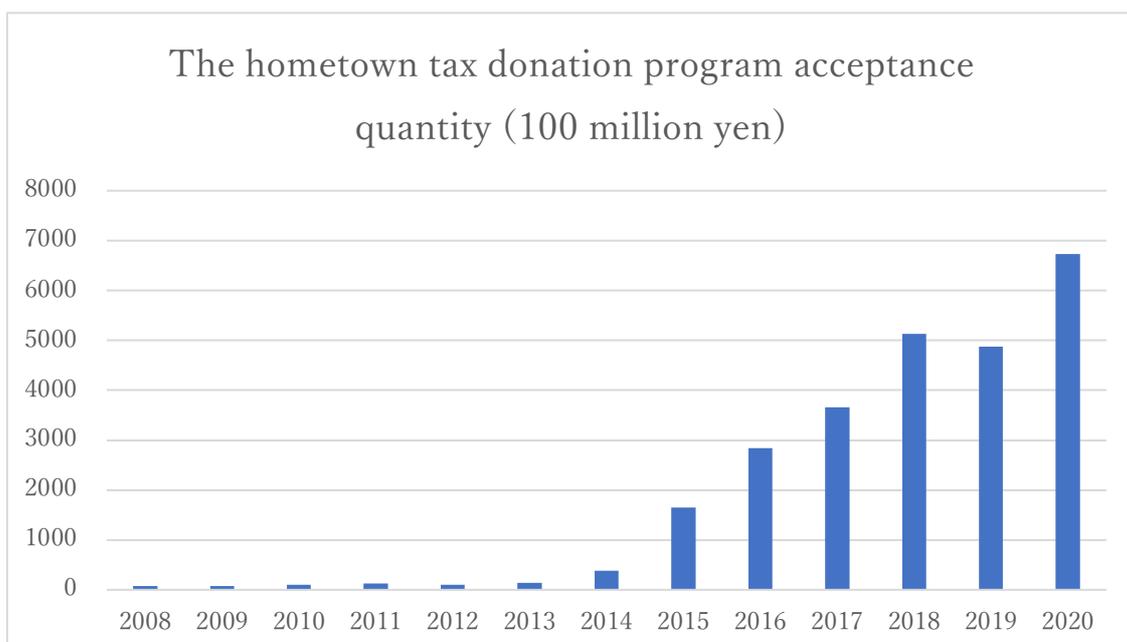## 1.1 Overview of the hometown tax donation program

According to MIC (2015) in general, when you donate to a local government, a portion of the donation amount is deducted from your income tax and inhabitant tax when you file a tax return.

On the other hand, if you donate to a municipality through the hometown tax donation program system, the full amount of the donation is deductible excluding the self-pay amount of 2,000 yen. When you donate to a municipality through the hometown tax donation program system, you can receive a return gift prepared by each municipality.

MIC (2019) amended the system to address the heated competition created by this system, in which municipalities try to attract donations with more substantial returns and the rate of return increases endlessly, limiting the rate of return to 30% and putting a stop to the heated competition.

According to the hometown tax donation status survey (MIC, 2021), hometown tax has been on the rise since it started its operation in 2008. In particular, the growth since 2014, when the hometown tax donation program has taken root among the people, has been remarkable, increasing by about 100 billion yen every year. On the other hand, due to the above-mentioned amendment of the law, the amount of donations in 2019 was negative compared to the previous year, which can be read as the heating up of the return ratio had an impact on the amount of donations.

Table1 The hometown tax donation program acceptance quantity

Sources: Colleagues Inc. (2021), MIC (2021)

According to the hometown tax donation program guide (Colleagues Inc, 2021), the most common type of return gift is seafood and marine products, and the second most common return gift is meat. When added to other primary products such as fruits and rice, about 70% of all returns are primary industry products. For this reason, the amount of money received by the hometown tax donation program system is concentrated in Hokkaido and Kagoshima, where meat and fish production are high.

1.2 The policy significance of the hometown tax donation program

On its website, MIC (2015) has identified the following three policy implications of the hometown tax donation program

First, it is a system that allows taxpayers to choose where to donate, and because they choose, it gives them an opportunity to think about how to use the money. This is a valuable opportunity to raise awareness of taxes and to see the importance of paying taxes as a personal matter.

Secondly, the system should be able to help not only the hometown where you were born, but also the region where you have been taken care of and the region you want to support in the future. This will help nurture people, protect nature, and foster the local environment.

Thirdly, local governments should appeal to the public to pay taxes on their hometowns, which will promote competition among local governments. This will lead to a rethinking of how to make the region worthy of being chosen.

The first and second are policy implications for taxpayers, and the third is policy

implications for local governments. This paper focuses on the third policy significance.

1.3 Problems of the hometown tax donation program

Various problems of the hometown tax donation program have been pointed out, including the overheated competition of return ratio that has become a problem in recent years as mentioned above.

Mizuta (2017) argues the problems with the hometown tax donation program are that (1)It violates the principle of benefit sharing and burden sharing as a desirable principle for local taxation, (2) It increases the shortage of financial resources in the special account for local allocation tax, (3) It intensifies the competition for return gifts, (4) Donations without any burden are against the principle of donation (5) Inequality between donations to local organizations and donations to other organizations

In the past, many papers on the hometown tax donation program pointed out the problems in taxation and the gap between normal donations and the hometown tax donation program, but no paper pointed out the disparity in motivation for promotion among local governments.

In section 2, we review the papers that focus on the competition of return ratio among municipalities in the same hometown tax donation program. Section 3 describes the research questions and hypotheses of this study and presents the analysis method. Section 4 presents the research results and interpretation. Section 5 discusses policy improvements based on the results. Section 6 presents a summary of this paper and future issues.

2. Literature review and significance of this paper

2.1 Literature review

In this paper, we refer to three previous studies on the design of hometown taxation systems.

First of all, we refer to papers that study whether hometown tax donation functions as a donation system.

Takahashi et al. (2018) made a quantitative comparison of the factors that cause users to donate general donations and hometown tax donation payments. They focused on trust and reciprocity as the main factors of donation. In conclusion, there is a positive correlation between reciprocity and motivation to donate to hometown tax donation, indicating that economic incentives are intervening in the donation of hometown tax donation.

Secondly, I refer to a paper that studies the function of hometown tax payments in correcting the uneven distribution of financial resources.

Tomita (2017) shows that the fiscal outflow in metropolitan areas may hinder administrative services based on the excess of hometown tax deductions in major cities and the excess of acceptance by small and medium-sized local governments.

Thirdly, I will refer to a paper that studies the competition of return ratio among municipalities, which is the subject of this paper.

Suematsu (2020) analyzed the reasons why local governments increase the rate of return. The conclusions showed that municipalities with weak financial and economic resources tend to attract donations by increasing the rate of return, that the rate of return is correlated with the availability of high-value local products, and that competition in the rate of return widens the gap between municipalities. In other words, the study showed that municipalities with weak financial strength tend to rely on the hometown tax donation system in search of new financial resources, and that municipalities with high value of returned goods tend to have an advantage in terms of the rate of return.

2.2 Significance of this paper

The above paper points out the problem of disparity among municipalities in terms of the rate of return, but the competition for the rate of return is a competition with a different vector from the original policy significance. Since competition through promotion is in line with the original policy significance, it is meaningful to identify the regional differences in promotion discussed in this paper.

3. Hypotheses and analytical methods of this study

3.1 Research question and hypotheses

The research question of this paper is "How do the characteristics of each local government affect the motivation to promote the hometown tax donation program". The hypothesis was formulated from previous studies that "The more agricultural products a municipality produces that are easy to promote through the hometown tax donation program, the more money it will invest in promotion". Municipalities that do not have attractive local products will not promote them because the promotion is not cost-effective.

3.2 Analytical method

This study analyzes the determinants of motivation for promotion by conducting a regression analysis in which the advertising cost of the hometown tax donation program is placed as the dependent variable. The explanatory variables were agricultural output and marine fishery catch, and the control variables were the amount of hometown taxes received, return rate, salary, and population. The data of the hometown tax donation program payment amount and return ratio is based on the "Current Survey on the Hometown Tax Donation Program Payment" conducted annually by MIC. Agricultural output is based on the "Statistics on Production and Agricultural Income" conducted by the Ministry of Agriculture, Forestry, and Fisheries (MAFF). Sea-level fishery catches are based on the "Sea-level Fishery Production Statistics Survey" conducted by MAFF. For the salary, we used

the "Survey of Local Public Officer Salaries" conducted by MIC. The index of local government salaries was calculated using the laspeyres formula. Population figures are from the 2015 national census.

The following is the estimated equation

$$Y_{it}=\alpha+\beta_1 Agriculture_{it}+\beta_2 Fishing_{it}+\beta_3 Furusato_{it}+\beta_4 Return_{it}+\beta_5 Salary_{it}+\beta_6 Population_{it}+\beta_7 2016Dummy +\beta_8 2017Dummy +\beta_9 2018Dummy+\varepsilon_{it}$$

A panel data analysis was conducted using data for each city and district in 2016, 2017, 2018, and 2019. At the same time, cross-sectional data analysis was conducted for each year.

In addition, the panel data analysis employs a random effect model. The reason why we used a random-effects model is that a fixed effects model cannot reveal the effects of factors that do not change with time. Since the variables in this study include data from the census conducted every five years, we used a random-effects model that can consider the effects of the census.

Table1 Variable description

Variable	Variable name	Variable description
Y_{it}	PR	Expenses related to the promotion of the hometown taxation (log)
$\beta_1 Agriculture_{it}$	Agriculture	Agricultural output (log)
$\beta_2 Fishing_{it}$	Fishing	Sea surface fishery catch (log)
$\beta_3 Hometown_{it}$	Hometown	The hometown tax donation program acceptance quantity (log)
$\beta_4 Return_{it}$	Return	Return ratio (cost of returned goods / The hometown tax donation program acceptance amount)
$\beta_5 Salary_{it}$	Salary	Salary
$\beta_6 Population_{it}$	Population	Population 2015(log)
$\beta_7 Dummy2018$	Dummy2018	Dummy variable with 2018 as 1. 0 for other years.
$\beta_8 Dummy2017$	Dummy2017	Dummy variable with 2017 as 1. 0 for other years.
$\beta_9 Dummy2016$	Dummy2016	Dummy variable with 2016 as 1. 0 for other years.

Source: Author

Table2 Descriptive statistics

Variable	Min	1st Qu.	Median	Mean	3rd Qu.	Max
PR	-9.210	-9.210	10.791	3.307	13.544	19.703
Agriculture	-9.210	4.434	5.600	5.243	6.532	9.086
Fishing	-9.210	-9.210	-9.210	-2.178	10.167	15.468
Hometown	7.601	16.311	17.748	17.606	19.011	24.630
Return	0.00	21.52	28.23	27.14	32.08	340.70
Salary	80.39	98.03	99.90	99.57	101.41	107.89
Population	2.890	9.004	10.076	10.035	11.031	15.131

Source: Author

The amount of the hometown taxes paid in the previous fiscal year was included as a control variable because municipalities that have received a large number of tax payments through the hometown tax donation program are likely to seek further increases in tax payments and increase their public relations expenditures. The return ratio is included as a control variable because the higher the return ratio, the more effort is put into public relations. The "Salary" is a variable that indicates the salary level of local government employees, and the higher the salary level, the more motivated they are to acquire new financial resources. The population was included as a variable to control for the size of each municipality. In the panel data analysis and the pooled data analysis, dummy variables with 2016, 2017, and 2018 as 1 were included in the analysis. Public relations expenditure, agricultural output, fish catch, the hometown tax payment, and population were analyzed using logarithmic transformation to facilitate interpretation because of the different units.

The correlation coefficients between the explanatory variables agricultural output, marine catch, and advertising expenditures were 0.25 and 0.15, respectively.

4. Research results and interpretation

Table3 Pool data cross section data analysis result

Variable	Pool data	2016	2017	2018	2019
Agriculture	0.420***	0.320***	0.583***	0.439***	0.352***
	(0.061)	(0.121)	(0.121)	(0.123)	(0.124)
Fishing	0.058***	0.041*	0.037	0.083***	0.071***
	(0.013)	(0.025)	(0.025)	(0.025)	(0.027)
Hometown	2.266***	2.399***	2.303***	2.276***	2.087***
	(0.075)	(0.140)	(0.150)	(0.151)	(0.161)
Return	0.036***	0.031**	0.021	0.057***	0.039
	(0.009)	(0.014)	(0.018)	(0.020)	(0.030)
Salary	-0.142***	-0.235***	-0.047	-0.217**	-0.062
	(0.045)	(0.085)	(0.088)	(0.092)	(0.100)
Population	0.464***	0.690***	0.334*	0.497***	0.346
	(0.092)	(0.180)	(0.181)	(0.186)	(0.194)
Dummy2018	3.171***				
	(0.347)				
Dummy2017	4.023***				
	(0.345)				
Dummy2016	2.660***				
	(0.339)				
Observations	6734	1682	1684	1683	1685
R-square	0.2503	0.2798	0.257	0.2499	0.1855
Adjusted R-square	0.2493	0.2772	0.2543	0.2473	0.1826

※***・**・* represent 1%, 5%, and 10% significance levels, respectively.

Source: Author

Table4 Panel data analysis result

Variable	Panel data
Agriculture	0.431***
	(0.086)
Fishing	0.066***
	(0.019)
Hometown	2.066***
	(0.090)
Return	0.038***
	(0.009)
Salary	-0.129**
	(0.062)
population	0.526***
	(0.133)
Dummy2018	3.123***
	(0.265)
Dummy2017	3.917***
	(0.272)
Dummy2016	2.502***
	(0.277)
Observations	6734
R-square	0.156
Adjusted R-square	0.154

※*** • ** • * represent 1%, 5%, and 10% significance levels, respectively.

Source: Author

The results of the panel data analysis showed that the explanatory variables, agricultural output and sea surface fishery catch, were significantly positive at the 1% significance level. A 1% increase in agricultural output resulted in a 0.431% increase in public relations expenditures, and a 1% increase in marine fishery catch resulted in a 0.066% increase in public relations expenditures. In other words, the larger the scale of the agriculture and fishery industries, the more effort the local government tends to put into public relations.

As for the control variables, the amount of hometown tax donation program donations, return ratio, and the population was each significantly positive at the 1% significance level, while the Salary was significantly negative at the 5% significance level.

1% increase in the hometown tax donation program payments results in a 2.066% increase in public relations expenditures. In other words, it was found that municipalities that are successful in the hometown tax donation program will focus on public relations in search of additional financial resources.

1% increase in the return ratio results in a 0.038% increase in public relations costs. In other words, a municipality that focuses on increasing the number of returned goods will also focus on public relations.

An increase of 1% in the Salary results in a decrease of 0.129% in public relations expenditures. In other words, the higher the wages of public officials, the less effort they tend to put into public relations.

When the population increases by 1%, public relations expenditures increase by 0.526%. In other words, the larger the size of the municipality, the more effort it tends to put into public relations. Regression analysis using the same model for the pooled and cross-sectional data showed that the positive and negative coefficients were the same as for the panel data, supporting the results of the panel data. The coefficient of determination was 0.15 for the panel data and 0.25 for the cross-sectional data.

5.Discussion

What is the best way to operate the hometown tax donation policy? In this paper, it is shown that, under the current policy, the local governments that originally produce popular products put more effort into publicity, while the local governments that do not produce such products put less effort into

publicity. The significance of the hometown tax donation policy is that local governments are required to "Rethink the nature of the region that is suitable for the people to choose as a hometown tax donation destination" (MIC 2015: Philosophy of hometown tax donation section). The current method of operation may further widen the disparity between regions, and more and more local governments may lose their motivation to review their regional ways of being. On the other hand, there are municipalities that have created new businesses with the current system. Saikai City, Nagasaki Prefecture, offers an experience to stay on an uninhabited island as a hometown tax return gift. This kind of experience-based business can be created by municipalities all over the country depending on their ideas. I believe that subsidizing the return of new businesses created through the efforts of these local governments will motivate them to think about how they should be.

6. Conclusion

According to the results of the analysis, the hypothesis of this paper, "The more agricultural products a municipality produces that are easy to promote through the hometown tax donation program, the more money it will invest in promotion" is supported. Since the scale of industry and population of each municipality is originally different, a system designed to promote competition among municipalities with different competitiveness under the same conditions, such as the hometown tax donation program, will affect the motivation of public relations of municipalities that are not competitive. The return gift system is a factor that further widens the disparity between municipalities in the competition among the hometown tax donation program. If the hometown tax donation program payment system continues under this design, competitive municipalities will gain financial resources while uncompetitive municipalities will not. As a result, industries in competitive municipalities will grow, while industries in uncompetitive municipalities will find it difficult to grow. In addition, local taxes are based on the principle of benefit sharing and burden sharing, but if financial resources are

concentrated in competitive municipalities, administrative services will be unevenly distributed among municipalities, which may lead to a policy that violates the principle. On the other hand, the hometown tax payment system has the merit of stimulating the local economy, and if the return gift system is stopped, the benefits will not be enjoyed. Therefore, it is necessary to promote competition among municipalities as much as possible without relying on their inherent capabilities. In order to do this, municipalities that do not have attractive products need to think about finding new values for their own municipalities, and they should use the hometown tax donation system to create motivation for this creation. For example, the system should be designed to relax the restriction on the rate of return for newly created values rather than old attractive products. By applying this system, we can avoid the concentration of donations to the municipalities that can provide attractive products and motivate the municipalities that do not have attractive products to create new values.

The limitation of this study is that it was not possible to incorporate into the analysis elements other than agricultural products that are included in the hometown tax donation program, such as travel, crafts, and local experience programs. There is only a limited amount of data at the municipal level, so it was not possible to conduct a study that included all the components of the hometown tax donation program. The research that is needed in the future is to analyze the cases of municipalities that have created new value through hometown donation and to analyze what factors make them different from other municipalities. By conducting this analysis, we can learn the key points in promoting innovation in municipalities.

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