The Governance Structures of Japanese Credit Associations and Their Objective Functions

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Abstract

Although Japanese credit associations are nonprofit cooperative financial institutions, they assume the same financial functions as regional banks that are stock companies and they could compete with each other in a regional market. On the other hand, the governance structures of credit associations tend to exhibit weaker discipline than those of regional banks and their performances might be better than regional banks for this reason.

In this paper, we empirically investigated whether the objective functions of credit associations are different from those of regional banks considering their different governance structures. As a result, although significant differences of profitability of these two types of institutions were not detected, it was demonstrated that credit associations can capture a greater share of deposits than regional banks and the former are more conservative in risk taking than the latter. From these, there is a possibility that Japanese credit associations have different objective functions from regional banks.

Introduction

Japanese credit associations were established for the purpose of facilitating mutual aid among members and are one of the nonprofit cooperative financial institutions. However, both credit associations and regional banks that are stock companies are classified as regional financial institutions and are required to practice region-based relationship banking by the government, and their financial functions within a region are almost the same. Thus, these two types of institutions could compete with each other in a regional market[1]. However, cooperative financial institutions, including credit associations, have received significant preferential treatments, such as government taxation benefits, which is different from regional banks.

Moreover, the governance structures of credit associations are largely different from those of private banks that are stock companies because the qualifications of their investors are restricted to regional members and voting rights at meetings, such as a general meeting of representatives, allow one vote per member regardless of the amount a member invests. It is often pointed out that the governance structures of credit associations tend to exhibit weaker discipline than those of private banks in Japan.

As we will note in section 2, Allen and Gale (2000) mentioned that while the objective of commercial banks is profit maximisation, nonprofit financial institutions, which have different, i.e. weaker governance structures, incorporate labour expenses in the ordinary profit function[2]. Granero and Reboredo (2005) applied an empirical analysis to reveal that this applies to Spanish financial institutions and that savings banks can capture a greater share of deposits and take fewer risks in their

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[1] Hesse and Čihák (2007) revealed that in systems with a high presence of cooperative banks, weak commercial banks are less stable than they would be. Okuma (2017) concluded that cooperative financial institutions were more stable than regional banks during the Global Financial Crisis in Japan.

[2] Verbrugge and Jahera (1981), Akella and Greenbaum (1988) and Purroy and Salas (2000) analysed expense preference behaviour.

portfolios[3]. When we consider both the governance structures of credit associations that tend to be weaker and the benefits they receive from the government as mentioned before, it cannot be perfectly denied that the tendency of having different objective functions than those of regional banks that are stock companies will be found in Japan as well.

Therefore, the purpose of the present paper is to demonstrate whether Japanese credit associations act to maximise the objective functions that are different from those of regional banks. Specifically, we empirically investigate the following hypotheses: (1) credit associations can obtain greater share of deposits than regional banks, (2) the former are more conservative in risk taking than the latter, and (3) the former raise higher profits than the latter.

The remainder of the paper is organised as follows. In Section 2, explain the analytical method and Section 3 describes the survey data. Section 4 discusses the empirical results and Section 5 presents a summary and conclusion.

Methodology

Granero and Reboredo (2005) empirically analysed whether the performances of savings banks and commercial banks in Spain are different based on the theoretical model of Allen and Gale (2000). We also follow this theoretical framework, which is outlined as follows.

Bank A and Bank B compete with each other in a regional market. Bank A is a commercial bank whose objective is profit maximisation and Bank B is a cooperative bank whose corporate and governance structure is assumed to yield an organisation in between a capitalist entity and a cooperative of workers. Bank A maximises the following expected profit:

$$\pi_A = p(Y_A)(Y_A D_A - R(D)D_A - wL_A), \qquad (1)$$

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[3] García-Marco and Robles-Fernández (2008) examined risk behaviour in commercial banks and savings banks in Spain.

where $p(Y_A)$ is the probability Bank A receives a return Y_A, D_A is the amount of deposit Bank A holds, D is the sum of the deposits in a regional market, i.e. $D = D_A + D_B$, $R(D)$ is the opportunity cost of funds, w is the wage and L_A is the volume of labour of Bank A.

On the other hand, Bank B maximises the following objective function that includes labour expenses into Equation (1)[4]:

$$U_B = \pi_B + \theta p(Y_B) w L_B, \tag{2}$$

where θ is the (positive) expense preference parameter.

From the first-order conditions of Equations (1) and (2), the following statements can be derived[5].

(a) Cooperative financial institutions like Bank B can receive a higher volume of deposits than commercial banks like Bank A, i.e. $D_B > D_A$ and the former are more conservative on investing risk assets than the latter, i.e. $Y_A > Y_B$.

(b) Cooperative financial institutions can obtain a higher expected payoff level, i.e. $U_B > \pi_A$.

(c) When the expense preference parameter is not too large, the expected profits of cooperative financial institutions are higher than those of commercial banks.

In the present paper, the following three equations are estimated as in Granero and Reboredo (2005) to test whether the above statements (a)–(c) are applicable to Japanese regional financial institutions:

$$Deposit_{it} = c_0 + c_1 Dummy_{it} + c_2 Asset_{it} + c_3 Profit_{it}, \tag{3}$$

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[4] Fonteyne (2007) mentioned that a cooperative bank might resemble a worker cooperative rather than a consumer cooperative.

[5] See Granero and Reboredo (2005) for details.

$$Risk_{it} = c_0 + c_1 Dummy_{it} + c_2 Asset_{it} + c_3 Profit_{it}, \qquad (4)$$

$$Profit_{it} = c_0 + c_1 Dummy_{it} + c_2 Asset_{it}. \qquad (5)$$

Subscript i refers to financial institution i, and subscript t refers to year t. *Deposit* means whether a financial institution can obtain large amounts of deposits and is calculated by dividing deposits by total assets. *Risk* is a proxy variable on the aggressiveness of the financial institution's risk taking and is reported by two measures: *Risk1* is calculated by dividing loans and bills discounted by total assets and *Risk2* is calculated by dividing stock by total assets. *Profit* is profitability as measured by Return On Assets (*ROA*) and Return On Equity (*ROE*). *ROA* is calculated by dividing current term net profit by total assets and *ROE* is calculated by dividing current term net profit by total net assets[6].

Dummy is a dummy variable that takes a value of 1 when financial institution i is a credit association and a value of 0 when it is a regional bank. *Asset* is total assets and is a proxy for financial institution size. *Asset* is converted into a natural logarithm.

If the objective functions of credit associations are different from those of regional banks and statements (a)–(c) are applied to Japan, then the coefficients of *Dummy* in Equations (3) and (5) will take positive signs and in Equation (4) it will take a negative sign.

Data

Table 1 shows the descriptive statistics of the dependent variables of estimation models from Eqs. (3)–(5), which are separated into credit associations and regional banks.

Table 1. Descriptive Statistics

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[6] Average balances are used as total assets and total net assets in the denominators.

The mean of *Deposit* of credit associations is about 4% larger than for regional banks. Credit associations can capture a greater share of deposits. Both the means of *Risk1* and *Risk2* of credit associations are about 20% for the former and about 1.15% for the latter less than those of regional banks. In both lending and stock investment, it can be said that credit associations are more conservative with respect to risk taking.

The means of *ROA* and *ROE* of credit associations are about 0.02 for the former and about 0.2 for the latter larger than those of regional banks. In both *ROA* and *ROE*, credit associations can realise higher profitability although their differences are not too large. That is, when focusing on the means, *Deposit*, *Risk*, and *Profit* all satisfy statements (a)–(c) in the former section. These will be tested by regression analyses in the next section.

The data used in the present paper are derived from Nikkei Needs. Data absent from Nikkei Needs were supplemented by the 'Analysis of Financial Statements of All Banks,' edited by the Japanese Bankers Association, and by 'Financial Statements of All Credit Associations,' edited by the Consultant of Financial Books Co., Ltd.

Estimation Results

In this section, we discuss the estimation results for Eqs. (3)–(5). The estimation results for Eqs. (3) and (4) are presented in Table 2. Standard errors are calculated as White heteroscedasticity-consistent errors.

Table 2. Estimation Results for *Deposit* and *Risk*

In the estimation results for *Deposit*, all of the coefficients of *Dummy* take significantly positive signs at the 1% level. The fact that credit associations can gather a greater share of deposits than regional banks is also found here, which is the same tendency as in the means shown in the previous section.

In addition, in the estimation results for *Risk1* and *Risk2*, the coefficients of *Dummy* take significantly negative signs at the 1% level in all cases. In both lending and stock investment, credit

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associations take fewer risks than regional banks. These are also consistent with the tendency of the means observed in the previous section[7].

Next, the estimation results for Eq. (5) are shown in Table 3. These standard errors are also White heteroscedasticity-consistent errors.

Table 3. Estimation Results for *Profit*

In the estimation results for both *ROA* and *ROE*, all of the coefficients of *Dummy* take positive signs but are insignificant. Although the tendencies that credit associations can raise a little larger profitability than regional banks were found on both the means of *ROA* and *ROE* in the previous section, significant differences are not detected here. The profit margins of interest rates have become much smaller due to the long-standing ultra-low interest rate policies taken by the Bank of Japan. Therefore, the profit rates of financial institutions have been lower as a whole and the differences of them among financial institutions have become smaller. This might be the reason for these results.

From these, although significant differences are not observed in profitability, it can be revealed that credit associations can receive deposits easier than regional banks and the former are more conservative in risk taking than the latter, which are consistent with the theoretical predictions in Section 2. Thus, there is a possibility that Japanese credit associations also have the objective functions as in Eq. (2), which are different from those of regional banks due to the special characteristics of their governance structures.

Conclusion

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[7] We used cash and due from banks (*Safe*) as the proxy on investing in risk-free assets instead of *Risk*, contrary to the variable on aggressiveness of risk taking. Consequently, the coefficients of *Safe* take significantly positive signs at the 1% level, contrary to the coefficients of *Risk*. Thus, credit associations are more conservative in risk taking.

Japanese cooperative financial institutions assume almost the same financial functions as regional banks in a region and they could compete with each other. On the other hand, the former are institutions for mutual aid among members and whose governance structures tend to exhibit weaker discipline than regional banks[8]. Thus, there is a possibility that their objective functions are different. In this paper, we select Japanese credit associations and empirically investigate whether their objective functions are different from the ordinary profit function.

Although the means of profit rates of credit associations are a little larger than those of regional banks, significant differences could not be detected by regression analysis. This might reflect that the differences of profitability among financial institutions have been small due to the ultra-low interest rate policies that have been applied in Japan for a long time.

On the other hand, it was also revealed that credit associations can capture a greater share of deposits than regional banks and the former take fewer risks than the latter. These two points are consistent with theoretical predictions in the case that we assume that credit associations and regional banks have different objective functions.

Judging from these, there is a possibility that Japanese credit associations tend to maximise the objective functions that incorporate labour expenses in the profit function as demonstrated in foreign previous studies[9]. If the governance structures of credit associations become stronger, then their objective functions will be nearing those of regional banks and the benefits that credit associations can enjoy, which were revealed in the present paper, might be weaker. It might be necessary to reconsider what the governance structures of credit associations should be like as they and regional banks could compete with each other and, unlike regional banks, they receive preferential treatments such as taxation benefits.

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[8] Laeven and Levine (2009) showed that the same regulation has different effects on bank risk taking depending on the bank's corporate governance structure.

[9] Yamori (1998) found that Japanese credit associations employing bureaucrat-managers held more employees than those that did not.

References

Akella, S. R. and S. I. Greenbaum. 1988. "Savings and Loan Ownership Structure and Expense Preference." *Journal of Banking and Finance* 12: 419‑37.

Allen, F. and D. Gale. 2000. *Comparing Financial Systems*, MIT Press.

Fonteyne, W. 2007. "Cooperative Banks in Europe Policy Issues." *IMF Working Paper*, No. WP/07/159.

García-Marco, T. and M. D. Robles-Fernández. 2008. "Risk-Taking Behaviour and Ownership in the Banking Industry: The Spanish Evidence." *Journal of Economics and Business* 60: 332–354.

Granero, L. M. and J. C. Reboredo. 2005. "Competition, Risk Taking, and Governance Structures in Retail Banking." *Applied Financial Economics Letters* 1: 37–40.

Hesse, H. and M. Čihák. 2007. "Cooperative Banks and Financial Stability." *IMF Working Paper*, No. WP/07/2.

Laeven, L. and R. Levine. 2009. "Bank Governance, Regulation and Risk Taking." *Journal of Financial Economics* 93: 259–275.

Okuma, M. 2017. "Risk-taking Behavior in Cooperative Financial Institutions and Financial Stability in Japan: Lessons from the Global Financial Crisis." [in Japanese.] *Rieti Discussion Papers* No. 17-J-064.

Purroy, P. and V. Salas. 2000. "Strategic Competition in Retail Banking under Expense Preference Behavior." *Journal of Banking and Finance* 24: 809‑824.

Verbrugge, J. A. and J. S. Jahera. 1981. "Expense-Preference Behavior in the Savings and Loan Industry." *Journal of Money, Credit, and Banking* 13: 465‑476.

Yamori, N. 1998. "Bureaucrat-Managers and Corporate Governance: Expense-Preference Behaviors in Japanese Financial Institutions." *Economics Letters* 61: 385–389.

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Regional Banks					
Deposit	840	88.343	6.211	68.835	187.691
Risk1	840	65.497	7.881	45.412	131.773
Risk2	832	1.575	1.010	0.092	7.757
ROA	840	0.211	0.192	−1.619	1.097
ROE	840	4.120	4.795	−42.752	24.276
Credit Associations					
Deposit	2,147	92.390	2.975	52.683	98.099
Risk1	2,147	45.658	9.161	6.384	72.614
Risk2	2,147	0.417	1.247	0.001	21.656
ROA	2,147	0.235	3.652	−3.829	168.811
ROE	2,147	4.342	80.193	−109.077	3703.356

Table 2. Estimation Results for Deposit and Risk

VARIABLES	(1) Deposit	(2) Deposit	(3) Risk1	(4) Risk1	(5) Risk2	(6) Risk2
Dummy	0.025***	0.025***	−0.201***	−0.201***	−0.009***	−0.009***
	(7.183)	(7.176)	(−39.920)	(−39.915)	(−11.443)	(−11.401)
Asset	−0.008***	−0.008***	−0.001	−0.001	0.001***	0.001***
	(−8.093)	(−8.099)	(−0.777)	(−0.786)	(5.437)	(5.433)
ROA	−0.000		−0.000		0.000	
	(−0.633)		(−0.459)		(0.467)	
ROE		0.000		0.000**		−0.000**
		(0.215)		(2.531)		(−2.117)
Constant	1.001***	1.001***	0.676***	0.676***	−0.004	−0.004
	(64.681)	(64.672)	(24.936)	(24.937)	(−1.146)	(−1.155)
Observations	2,987	2,987	2,987	2,987	2,979	2,979
R-squared	0.189	0.189	0.506	0.506	0.171	0.171

Robust t-statistics in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 3. Estimation Results for Profit

VARIABLES	(1) ROA	(2) ROE
Dummy	0.176	3.427
	(1.190)	(1.053)
Asset	0.078**	1.633**
	(2.186)	(2.092)
Constant	−0.924*	−19.756*
	(−1.779)	(−1.730)
Observations	2,987	2,987
R-squared	0.001	0.001

Robust t-statistics in parentheses

*** p < 0.01, ** p < 0.05, * p < 0.1

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