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<b>ARTICLE INFO</b>	Nobuyoshi Yamori, Kozo Harimaya and Kei Tomimura (2011). Roles of outside directors in cooperative financial institutions: the case of Japan. <i>Banks and Bank Systems</i> , 6(4)
<b>RELEASED ON</b>	Wednesday, 08 February 2012
<b>JOURNAL</b>	"Banks and Bank Systems"
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

0



NUMBER OF FIGURES

0



NUMBER OF TABLES

0

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## The roles of outside directors in cooperative financial institutions: the case of Japan

### Abstract

As the governance of financial institutions is becoming an important issue, there are many papers empirically investigating the governance issues of banks, which are stock companies. However, cooperative structured financial institutions (co-ops or Shinkin bank), which have a unique governance structure different from stock companies, play a substantial role in the Japanese banking markets. For example, cooperative banks hold as much as a 25% share of household deposits. Therefore, it is worth examining whether some governance schemes developed for stock companies are effective at cooperative financial institutions. Concretely, the authors investigate the role of outside directors. In many countries, listed companies including banks are required to appoint some outside directors, while Japanese banks are not required but only encouraged to do so.

In this paper, the authors first estimated the technical efficiency of Japanese mutual banks by using the stochastic frontier analysis. Then, based on the efficiency scores, the authors have found that the presence of outside directors significantly contributes to an improvement in efficiency at cooperative banks. This result supports that some of governance schemes developed for stock companies are effective at cooperative financial institutions as well. Additionally, this result implies that mandatory appointment of outside directors at cooperative banks recently considered by the government advisory committee is desirable.

**Keywords:** corporate governance, outside directors, cooperative, Shinkin.

**JEL Classification:** G21, G29.

### Introduction

In many countries around the world, stock companies are not the only institutions that constitute an important part of the financial system. For example, in countries such as Germany, France, and the Netherlands, cooperative structured financial institutions (co-ops) carry significant weight. In Japan, co-ops also hold as much as a 25% share of household deposits. On the other hand, over 150 co-ops in Japan went bankrupt during the financial system crisis period from 1990 to 2000. According to a research by the Deposit Insurance Corporation of Japan (DIC, 2006) that investigated the cause of these bankruptcies, there were problems in the management in 63% of co-ops that went bankrupt.

In contrast to stock companies in which one large shareholder can control the management of the company, co-op owners have one vote per person and do not engage in takeover bids. As a result, there are few checks on management in co-ops. There is a possibility that the large number of co-ops bankruptcy may be linked to these types of problems in governance structure. Of course, there have been similar problems in the governance structure of corporate banks as well, but there has been much advancement in recent years with regard to strengthening the governance of corporations. Conversely, such advancements have not been made with regard to co-ops.

A working group of the Finance Council established by the Financial Services Agency published a report

in June 2009 on the status of co-ops (FSA, 2009). This report recommended appointing outside directors at board as a mean for strengthening governance.

One of the roles of outside directors is to monitor management and thereby increase the efficiency. Although it is the duty of all directors to monitor management, outside directors are by definition people outside of the company in question, and are well suited for monitoring because they have another primary job and are highly independent from the CEO (e.g., Fama and Jensen, 1983). According to previous studies analyzing the function of outside directors in stock companies, many evaluated the role of outside directors positively given a certain set of circumstances (Weisbach, 1988; Daily and Dalton, 1992; Byrd and Hickman, 1992; Shivdasani, 1993; Barnhart and Rosenstein, 1994; Brickley et al., 1994; Kiel and Nicholson, 2003). However, there has been very little research on outside directors of co-ops, in spite that it is unclear whether the arguments made for stock companies can simply be applied to co-ops, which have a unique governance structure<sup>1</sup>.

As such, this paper uses stochastic frontier analysis to verify whether the existence of outside directors in credit associations (“Shinkin banks”) – a kind of co-ops that carry substantial weight in the Japanese financial market – have an impact on management performance. Our results showed that the presence of outside directors contributes to an improvement in efficiency.

## 1. Shinkin banks and non-executive directors

Financial institutions in Japan can be divided into banks, which have a stock-based capital structure, and co-ops including “Shinkin banks”, which have mutual capital structure<sup>1</sup>. Co-ops do not have outside directors because of the nature of the legal system. However, many co-ops appoint local business owners, lawyers, accountants, and politicians as part-time directors, and previous studies has indicated that part-time directors may fulfill a role of outside directors (in corporations), and can be expected to act as a management monitor.

Because they have a wealth of experience, connections, and insight, part-time directors are in a good position to determine whether the management of the Shinkin bank is headed in the right direction. Another fact that makes them advantageous as monitors is that they have a separate main source of income, and thus do not have to worry about losing their position as a part-time director if they disagree with the chairman of the board.

For the Shinkin banks, the average number of part-time directors for the period spanning FY 1999 to FY 2006 fell by 0.73, from 3.69 to 2.96 members.

$$\ln C = \alpha_0 + \sum_i \alpha_i \ln Y_i + \sum_j \beta_j \ln p_j + \frac{1}{2} \sum_i \sum_k \alpha_{ik} \ln Y_i \ln Y_k + \frac{1}{2} \sum_j \sum_l \beta_{jl} \ln p_j \ln p_l + \sum_i \sum_j \delta_{ij} \ln Y_i \ln p_j + u + v. \quad (1)$$

Here,  $C$ ,  $Y$ , and  $p$  are variables for total cost, outputs, and input prices, respectively.  $\alpha$ ,  $\beta$  and  $\delta$  are estimation parameters.  $V$  is a standard statistical error term with  $N(0, \sigma_v^2)$ . In addition,  $u$  ( $u > 0$ ) is an indicator that shows inefficiency for each Shinkin bank and is assumed to be uncorrelated to any of the independent variables and  $v$ . In accordance with much of the previous research, we assume a half-normal distribution for the inefficiency indicator  $u$ . Moreover, we adopt the indicators proposed by Battese and Coelli (1988) in individual technical efficiency, which is calculated using the estimated values for the parameters.

The following three outputs are considered: interest on loans and discounts ( $Y_1$ ), other interest income ( $Y_2$ ), and commissions and fees ( $Y_3$ ). Input prices are as follows: the labor price ( $p_1$ ; personnel expense/number of full-time employees and directors), the price of fund ( $p_2$ ; interest expenses on deposits/total amount of deposits), and the price of capital ( $p_3$ ; non-personnel expense/value of movable and immovable capital). Total cost ( $C$ ) is the sum of these

As a result, the share of part-time directors among total directors dropped from 0.34 to 0.29<sup>2</sup>. This trend stands in contrast to the environment surrounding (listed) stock companies, which have been proactively pushing for the appointment of outside directors because of the possibility of additional legal and listing standard requirements.

## 2. Hypotheses, data and analysis method

Following previous studies that investigate the roles of outside directors at stock corporations, our main hypothesis is whether the presence of part-time directors improves bank management efficiency. Also, we test whether other governance features, such as board sizes, affect bank efficiency.

First, we have to define bank efficiency. This study employs stochastic frontier analysis to obtain technical efficiency as an indicator of Shinkin banks' management performance. To observe the differences around the time of the change in the management environment in recent years, we calculate individual technical efficiency by using cross sectional data for FY 1999 and FY 2006. More specifically, for estimated functional form, the following standard translog cost function is applied.

three input expenses. Basic statistics of these variables are presented in Table 1.

A regression analysis on the efficiency indicators measured in this way was performed to test whether the variable for governance had a statistically significant impact. In other words, the recent changes in governance structure of Shinkin banks are examined by comparing the results for FY 1999 and FY 2006. That is, if the existence of outside directors has been reflected in Shinkin bank performance improvement, the estimates of such a governance factor have larger impact on efficiency indicators in the recent results. For the governance variables that are likely to have an impact on Shinkin bank efficiency, we used number of directors (NS), the ratio of outside directors to all directors (ODR), and the size of representative council members (RCM). RCM is the number of members who comprise the representative council, and are elected from among the members of the Shinkin bank<sup>3</sup>. If large number of mem-

<sup>2</sup> Average number of directors per Shinkin bank (total of full-time and part-time directors) was 10.77 in FY 1999 and 10.05 in FY 2006.

<sup>3</sup> Representative council is the highest decision making body for co-ops. Unlike general shareholders' meetings for stock companies, the members of representative council are in effect selected by the management and individual members of representative council have only one vote.

<sup>1</sup> In addition to the Shinkin banks, there are also credit unions and agricultural cooperatives.

bers in managerial or decision-making institutions relates to lower efficiency, we can expect that the estimates for NS and RCM will have a statistically significant negative value. In addition, we incorporated control variables for the capital asset ratio (CAR), bad loan ratio (BLR), loan to deposit ratio (LDR), and log of total assets (LAS). Furthermore, in accordance with previous studies that reports a drop in efficiency directly following a merger, a dummy variable for Shinkin banks that experienced a merger for each fiscal year (MGDM) is included.

Financial statements for Shinkin banks were obtained through “National Shinkin Bank Financial Statements”, published by Kinyu Tosho Consultant Sha, and governance variables were obtained from the “Japan Finance Directory” published by The Japan Financial News Co., Ltd. Governance variables could not be obtained for a few Shinkin banks, and as such, there is a small discrepancy in sample numbers.

Table 2. Descriptive statistics on efficiency scores

1999				2006			
Mean	Std. dev.	Minimum	Maximum	Mean	Std. dev.	Minimum	Maximum
0.9099	0.0454	0.5293	0.9756	0.9164	0.0386	0.6809	0.9764

Table 3 displays the results of the regression analysis. In addition to the analysis that uses the measured efficiency indicators (efficiency level), we also performed the analysis that substituted these for ranking data within each FY sample (efficiency rank).

First, the results for FY 1999 showed that among the variables for governance, only the estimation value for NS was insignificant. Since ODR has a significant positive estimation value, we can see that the existence of outside directors contributes positively to improvements in Shinkin bank efficiency. Moreover, RCM has a significant negative estimation value, indicating that a streamlined decision-making body leads to improvements in Shinkin bank efficiency. We conduct a likelihood ratio test to confirm

Table 1. Descriptive statistics for estimation variables

Variables	1999		2006	
	Mean	Std. dev.	Mean	Std. dev.
TC	5,131	6,342	5,490	6,573
Y <sub>1</sub>	5,161	6,617	5,301	6,709
Y <sub>2</sub>	1,691	2,175	1,933	2,308
Y <sub>3</sub>	478	598	736	950
p <sub>l</sub>	6.7781	0.7881	7.0191	0.8700
p <sub>u</sub>	0.2947	0.0738	0.1237	0.0417
p <sub>k</sub>	0.3932	0.1710	0.3793	0.1581
Observations	378		287	

Note: All financial data are measured in millions of yen (except p<sub>u</sub> p<sub>k</sub>).

### 3. Analysis results

Based on the stochastic frontier analysis, Table 2 gives the efficiency indicators for FY 1999 and FY 2006. Since the average efficiency for FY 2006 is greater than that for FY 1999 and the standard deviation is smaller, we can see that there is an overall trend for improvement in Shinkin bank efficiency.

appropriateness for including the governance variables in the estimation formula, and we find that the null hypothesis that the estimates for all governance variables are 0 can be rejected at the 1% significance level.

Next, the results for FY 2006 showed that the estimates for all governance variables were significant. Unlike FY 1999, NS had a significant negative coefficient, indicating the possibility that smaller boards of directors could lead to improvements in efficiency. Results for ODR and NS for FY 2006 were consistent with those for FY 1999. It was confirmed that the null hypothesis that the estimates for all governance variables are 0 can be rejected at the 1% significance level for FY 2006 as well.

Table 3. Determinants of Shinkin bank efficiency

Variable	1999				2006			
	Efficiency level		Efficiency rank		Efficiency level		Efficiency rank	
	Coefficient	Std. dev.	Coefficient	Std. dev.	Coefficient	Std. dev.	Coefficient	Std. dev.
Constant	0.7072**	0.0466	-322.4830**	124.7430	0.7025**	0.0548	-162.4700	118.0290
NS	-0.0001	0.0011	-1.1878	2.0878	-0.0035**	0.0013	-5.4133**	2.3840
ODR	0.0005**	0.0001	1.4292**	0.3619	0.0004**	0.0002	0.7188*	0.3967
RCM	-0.0002**	0.0001	-0.4973**	0.1971	-0.0002**	0.0001	-0.2785*	0.1620
CAR	0.0012	0.0011	2.6307	2.6526	0.0016**	0.0005	3.6308**	1.0546
BLR	-0.0010*	0.0006	-2.6628**	1.2261	-0.0011*	0.0006	-2.9415**	1.3960
LDR	0.0019**	0.0003	4.6781**	0.6303	0.0012**	0.0003	2.6917**	0.6074
LAS	0.0076**	0.0034	18.6699**	9.3972	0.0156**	0.0045	17.4182*	9.3292
MGDM	-0.1409**	0.0659	-88.1985	60.8045	-0.0763*	0.0391	-67.7249	50.0032

Table 3 (cont.). Determinants of Shinkin bank efficiency

Variable	1999		2006	
	Efficiency level	Efficiency rank	Efficiency level	Efficiency rank
Adj-R <sup>2</sup>	0.3417	0.2030	0.2443	0.1471
Observations	376		288	

Note: White heteroskedasticity adjusted standard error. \*\*\* and \*\* stand for significance at the 1% and 5% levels.

## Conclusion

This study examines whether the existence of outside directors in Shinkin bank co-ops, which carry substantial weight in the Japanese financial market, have an impact on management performance.

Results in this paper confirmed that differences in the governance structure between Shinkin banks have a significant effect on management performance. In particular, our result shows that the existence of outside directors contributes to improvement in efficiency and is an interesting outcome that dovetails with the government's guidelines for improving governance at Shinkin banks.

In stock companies, pressure exerted by large shareholders may also encourage appointment of outside directors, but in co-ops where each owner has only one vote, this type of pressure is absent. The government advisory committee released a

report in June 2009 (FSA, 2009). In this report, the committee strongly recommended but not legally required that each Shinkin bank employ some part-time directors as quasi-outside directors. In spite of the report's recommendation, many Shinkin are reluctant to employ more part-time directors. We have to recognize that the Law regulating Shikin bank provides that part-time directors and full-time directors take equal responsibility for Shikin management, and the law does not allow part-time directors to avoid some legal obligation unlike outside directors in stock corporations. Therefore, many Shinkin banks complain that it is very hard to find appropriate persons who are willing to serve as part-time directors.

Thus, to ingrain an outside director system, pressure from regulatory authorities such as the Financial Services Agency is needed, but also the legal reform is also desired.

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