DOES THE AGENCY PROBLEM EXIST IN KOREAN BANKING INDUSTRY?

Seok Weon Lee*

Abstract

In this paper, we empirically examine whether the agency problem exists in Korean banking industry. Banking industry may be a very special type of industry where government regulations are prevailing and market discipline may function less effectively than in other industries. Investors and even bankers themselves may believe that regulators will not let them fail because it can cause much bigger damage to the economy especially when banking regulations are very loose. Therefore investors would not have great incentives to monitor the behavior of banks, and bank managers could pursue riskier strategies than the firms in other industries do without worrying about the possible loss of their jobs due to the bad performance and reputation of their management. But when regulations are very tight bank managers would realize that closing down and bankruptcy of the bank is not hard to occur, and therefore, they would act in a more conservative and risk aversive manner, which is the case where the agency problem arises.

From the analysis of the panel data, we find consistent evidences that the agency problem does not appear to exist in Korean banking industry before 1998 period, when regulations are very loose, which is consistent with our presumption. We find positive associations between the level of outside share ownership and risk-taking for the period of pre-1998. But this association becomes weaker for the post-regulation period 1998-2005. As the regulations become tighter, agency problem becomes bigger which will be the loss, anyway, of firm's cash flow, while the regulations may have some effectiveness in bringing more safety of the industry. Thus, regulators and the firms in financial industry need to develop better systems to minimize the costs associated with agency problem when making regulatory reforms.

Keywords: Ownership structure, Agency problem, Insider ownership, Banking industry

*Associate Professor, Division of International Studies, Ewha Womans University, 11-1 Daehyun-dong, Seodaemun-gu, Seoul, Korea, 120-750
Email: seoklee@ewha.ac.kr. Tel: 82-2-3277-4456, Fax: 82-2-365-0943

I. Introduction

The corporation is viewed as a set of complicated contracting relationships among individuals. One of the most important contract claims is a residual claim or equity on the firm's earnings and cash flows. This equity contract is referred to as a principal-agent relationship. The members of the management team control the firm, but they are the agents, and the shareholders are the principals or owners, but they generally do not control the firm. Therefore, in finance, it is believed that the managers and shareholders will attempt to act in their own self-interest. In terms of risk-taking manner, they would have different attitudes and preferences. Managers would act in a risk-averting manner unlike a risk-pursuing manner of shareholders to maximize the firm value, because in many cases their compensation packages are predetermined rather than being exactly proportional to the firm's cash flows. On the other hand, shareholders, especially outside shareholders who do not participate in management of the firm at all, would have strong incentives to pursue risky strategies to maximize their claims on the resi-dual equity, and consequently the stock price in capital market, after all the other types of stakeholders on the firm are paid.

The shareholders, however, can discourage the managers from diverging from the shareholders' interests, or can provide the managers with the incentives to align their interests to those of the shareholders. One of the most widely known methods to solve the agency problem, in addition to the technical strengthening of the monitoring system for the managers' behavior, is through insider ownership by giving stock or stock options to the managers. It could be expected that the managers after acquiring ownership and becoming what's called insiders would have very similar interests and goals to those of outside shareholders. Theoretically, insiders will compare the possible benefits and costs associated with pursuing riskier strategies to maximize their own utility and make optimal decisions. Many researchers already examine the effectiveness of the insider ownership.

This paper continues the above line of research. Rather than, however, examining the effectiveness of the insider ownership, this paper empirically focuses

on whether the agency problem itself exists in a specific type of industry. We employ the data on Korean banking industry. Banking industry may be a very special type of industry where government regulations are prevailing and market discipline may function less effectively than in other industries. Investors and even bankers themselves may believe that regulators will not let them fail because it can cause much bigger damage to the economy especially when banking regulations are very loose. Therefore investors would not have great incentives to monitor the behavior of banks, and bank managers could pursue riskier strategies than the firms in other industries do without worrying about the possible loss of their jobs due to the bad performance and reputation of their management. But when regulations are very tight bank managers would realize that closing down and bankruptcy of the bank is not hard to occur, and therefore, they would act in a more conservative and risk aversive manner, which is the case where the agency problem arises. Methodologically it might be impossible to find whether agency problem exists. Instead, we take an indirect approach to examine this empirical issue as follows. If we accept the general belief in finance literature that pure outside shareholders would have very aggressive and more value-maximizing utility function compared to the managers and insiders (manager-owner), the negative (positive) association between the level of outside share ownership and risk-taking would be a good evidence for the existence (nonexistence) of the agency problem; Other things being equal, despite a greater proportion of the outside shareholders, that the firm does not increase risk would imply that the group of management acts too conservatively causing the agency problem.

We examine the Korean banking industry over the period 1994-2005. We presume that this is a very good sample to examine the above-mentioned issue. In Korean banking industry, the period 1994-1997 is acknowledged to have been a period of banking deregulation in terms of interest rates, various types of bank activity such as the reorganization of financial industries including banking sector. As is very widely acknowledged, the post 1998 is the period of much more tightened and stricter banking regulation for most of the Asian countries including Korea. From the analysis of the panel data, we find consistent evidences that the agency problem does not appear to exist in Korean banking industry before 1998 period, when regulations are very loose, which is consistent with our presumption. We find positive associations between the level of outside share ownership and risk-taking for the period of pre-1998. But this association becomes weaker for the post-regulation period 1998-2005. As the regulations become tighter, agency problem becomes bigger which will be the loss, anyway, of firm's cash flow, while the regulations may have some effectiveness in bringing more safety of the industry. Thus, regulators and the firms in financial industry need to develop better systems to minimize the costs associated with agency problem when making regulatory reforms.

II. Sample and Data

We use the ratio of outside shareholdings to the total equity capital as the measurement of outsiders' ownership. Also, we use the variables such as dividend payout ratio, total asset size, capital-to-asset ratio, fixed asset-to-asset ratio, the ratio of government bond-to-investment securities, and the ratio of stock-to-investment securities for each bank. These data are obtained form the Statistics of Bank Management for each year, from 1994 to 2005, published by the Korean Financial Supervisory Service. The summary statistics of all the variables used in our analysis are presented in table 1.

Insert Table 1 approximately here

III. Testable Hypotheses and Testing Models

To examine whether the agency problem exists in Korean banking industry under the two different regulatory regimes, and how it changes, we estimate the following pooled time-series/cross-sectional regression equation (1) over the period 1994-2005. In the equation, the dummy variable D takes the value of 0 during the period of loose regulation (1994-1997) and the value of 1 during the period of tightened regulation (1998-2005).

$$(\text{Risk})_{i,t} = \beta_0 + \beta_1(\text{Outside ownership})_{i,t} + \beta_2 D \times (\text{Outside ownership})_{i,t} + \beta_3 (\text{Asset})_{i,t} + \beta_4 (\text{Capital-to-asset})_{i,t} + \beta_5 (\text{Fixed asset-to-asset})_{i,t} + \varepsilon_{i,t} \text{ ---------(1)}$$

Therefore, in the equation (1), the coefficient β_1 indicates whether the agency problem exists during the period of loose regulation (1994-1997). As described in the previous section of this paper, we hypothesize that if the agency problem existed in the Korean banking industry during this period, it would be significantly negative. The coefficient on the dummy interaction variable β_2 represents how this relationship changes with the strengthening of the regulation.

Risk for each individual bank, as the dependent variable in equation (1), is proxied by the proportion of the bank's investment securities invested in the risk-free government bond and risky common stock. Of course, the lower the ratio of the government bond-to-total investment securities and the higher the ratio of the stock-to- total investment securities, the riskier the bank will be. Therefore, in equation (1), the null hypothesis of nonexistence of agency problem during the period of loose regulation will be rejected with respect to the ratio of the government bond-to-total investment securities if β_1 is significantly positive, and with respect to the ratio of the stock-to-total investment securities if β_1 is significantly negative. As the control variables for the bank's risk-taking, we employ the bank's asset size, financial leverage (capital-to-asset ratio), and the operational leverage (fixed asset-to-asset

ratio). We use the two leverage variables as the proxies for the bank's risk taking as well. It is very well known in finance that the higher the financial or operational leverage, and therefore, the lower the capital-to-asset or the higher the fixed asset-to-asset, the greater risk-taking incentive the bank would have. In this case, we exclude these variables from the independent variables.

In addition to the above two very clear risk proxies, finally, we employ the dividend payout ratio to examine the hypothesis, as a robustness test. If the agency problem prevails, the group of management would be very reluctant to pay dividends to outside shareholders. Instead, they would have great incentives to retain the cash flows to make more future growth and sales or to capture larger market shares to have better reputations and preserve their jobs. Following this belief, we would find a negative association between outside ownership and dividend payout ratio if agency problem prevails.

IV. Results for Empirical Analysis

Table 2 and 3 present the results of the regression analysis for the cases where the ratio of the government bond-to-investment securities and the ratio of the stock-to-investment securities are used as the proxy for the bank's risk-taking. Table 2 represents a significantly negative coefficient on outside ownership, β_1, indicating that the banks with higher outside ownership invest less in lower-risk securities. This suggests that the agency problem does not exist in the first period. However, the coefficient on D×(Outside ownership), β_2, is significantly positive, indicating that this tendency becomes weaker with the strengthening of regulations. We find similar results with respect to the dependent variable, the ratio of risky stock-to-investment securities, in table 3. β_1 is positive, even though its p-value is slightly higher than 10%, indicating that the banks with higher outside ownership seem to invest more in riskier securities. We obtain a negative β_2 as we expected, however, it is not significant at less than 10% p-value.

Insert Table 2 and 3 approximately here

Table 4 shows the results for the case where the dividend payout ratio is used as the dependent variable. It represents a significantly positive coefficient between outside ownership and dividend payout ratio, indicating that the banks do not act in the interest of managers, and therefore, the agency problem does not exist. However, this tendency seems to become weaker as indicated by the negative β_2 (significant at 14% p-value).

-Insert Table 4 approximately here-

Overall, the above results suggest that the agency problem does not appear to exist in Korean banking industry before 1998 period, when regulations are very loose. When regulations are loose, bank managers

don't need to worry about the possibility of failure because banking industry would be backed up by the government and deposit insurance system, and therefore, they would not have many things to lose from risk-taking. If they are lucky, they will benefit a lot, and this will incline them to more easily align their interests with those of outside stockholders. But when regulations are very tight bank managers would realize higher possibility of failure, and therefore, they would act more conservatively, diverging more from the interests of outside stockholders.

As for the control variables, table 3 shows a significantly positive coefficient on asset size and capital ratio with respect to the ratio of stock-to-investment securities, respectively. Thus, the banks with larger asset size and higher capital ratio have greater risk-taking incentives than smaller banks. That capital ratio is one of the main target variables in bank supervision and surveillance since the late 1980s following the BIS capital standards may be the reason for the banks with lower capital ratio to discourage from taking high risk. Table 4 represents the banks with larger asset size and higher capital ratio pay more dividends.

V. Concluding Comments

In this paper, we empirically examine whether the agency problem exists in Korean banking industry. Banking industry may be a very special type of industry where government regulations are prevailing and market discipline may function less effectively than in other industries. Investors and even bankers themselves may believe that regulators will not let them fail because it can cause much bigger damage to the economy especially when banking regulations are very loose. Therefore investors would not have great incentives to monitor the behavior of banks, and bank managers could pursue riskier strategies than the firms in other industries do without worrying about the possible loss of their jobs due to the bad performance and reputation of their management. But when regulations are very tight bank managers would realize that closing down and bankruptcy of the bank is not hard to occur, and therefore, they would act in a more conservative and risk aversive manner, which is the case where the agency problem arises.

From the analysis of the panel data, we find consistent evidences that the agency problem does not appear to exist in Korean banking industry before 1998 period, when regulations are very loose, which is consistent with our presumption. We find positive associations between the level of outside share ownership and risk-taking for the period of pre-1998. But this association becomes weaker for the post-regulation period 1998-2005. As the regulations become tighter, agency problem becomes bigger which will be the loss, anyway, of firm's cash flow, while the regulations may have some effectiveness in bringing more safety of the industry. Thus, regulators and the firms in financial industry need to develop better systems to minimize

the costs associated with agency problem when making regulatory reforms.

References

1. Cebenoyan, A.S., Cooperman, E.S., and Register, C. A., "Ownership structure, charter value, and risk-taking behavior for thrifts," *Financial Management* 28 (43-60), 1999
2. Crutchley, H. and R, Hansen, "A Test of the Agency Theory of Managerial Ownership, Corporate Leverage and Corporate Dividend," *Financial Management*: 36-46, 1989
3. Demsetz, R.S., M.R. Saidenberg, and P.E. Strahan, "Agency problems and risk taking at banks," *Federal Reserve Bank of New York Economic Review*, 1997
4. Esty, B.C., "Organizational from and risk-taking in the savings and loan industry," *Journal of Financial Economics* 44 (25-56), 1997
5. Galloway, T.M., W.B. Lee, and D.M. Roden, "Banks' changing incentives and opportunities for risk taking," *Journal of Banking and Finance* 21 (509-527), 1997
6. Jensen, M. C., Solverg, D. P. and T. S. Zorn, "Simultaneous Determination of Insider Ownership, Debt and Dividend Policies," *Journal of Financial and Quantitative Analysis*: 517-529, 1992
7. Rozeff, M., "Growth, Beta and Agency Cost as Determinants of Dividend Payout Ratios," *Working Paper Series No. 80-11*, University of Iowa, 1981
8. Saunders A., E. Strock and N.G. Travlos., "Ownership Structure, Deregulation, and Bank Risk Taking.," *Journal of Finance* 2 (643-654), 1990

Appendices

Table 1. Sample descriptive statistics

	Mean	Median	Standard deviation	Min	Max
Asset	325,735	174,205	380,175	9,803	2,148,219
Capital	13,847	5,745	18,741	-1,905	123,736
Stock	7,769	2,772	10,650	13	70,483
Government bond	21,262	8,150	27,500	396	136,741
Fixed asset	50.76	31.2	172.58	147.6	2442.9
Outside ownership	525	190	898	0	4,409
Payout ratio	2.4617	0.1525	3.8347	0	20

Table 2. Regression results

$$(\text{Government bond-to-Investment securities})_{i,t} = \beta_0 + \beta_1(\text{Outside ownership})_{i,t} + \beta_2 D \times (\text{Outside ownership})_{i,t} + \beta_3(\text{Asset})_{i,t} + \beta_4(\text{Capital-to-asset})_{i,t} + \beta_5(\text{Fixed asset-to-asset})_{i,t} + \varepsilon_{i,t}$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D=1 if the sample period belongs to 1998-2005, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	0.2450***	9.76	6.44×10^{-19}
Outside ownership	-0.7758***	-5.92	1.17×10^{-8}
D × Outside ownership	0.5977***	3.60	0.0004
Asset	1.62×10^{-8}	0.64	0.5207
Capital-to-asset	-0.0761	-0.17	0.8611
Fixed asset-to-asset	0.0002	1.39	0.1646
Adjusted R^2	0.13		
Number of observations	225		
Standard error of regression	0.1399		
F-statistic	7.7893***		

Table 3. Regression results

$$\text{(Stock-to-Investment securities)}_{i,t} = \beta_0 + \beta_1 \text{(Outside ownership)}_{i,t} + \beta_2 D \times \text{(Outside ownership)}_{i,t}$$
$$+ \beta_3 \text{(Asset)}_{i,t} + \beta_4 \text{(Capital-to-asset)}_{i,t} + \beta_5 \text{(Fixed asset-to-asset)}_{i,t} + \varepsilon_{i,t}$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D=1 if the sample period belongs to 1998-2005, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	0.0319**	2.42	0.01615
Outside ownership	0.1084	1.58	0.1164
D × Outside ownership	-0.0932	-1.06	0.2865
Asset	2.96×10^{-8}**	2.24	0.0260
Capital-to-asset	0.7694***	3.36	0.0009
Fixed asset-to-asset	1.48×10^{-5}	0.25	0.8016
Adjusted R^2	0.05		
Number of observations	225		
Standard error of regression	0.0735		
F-statistic	3.3459***		

Table 4. Regression results

$$\text{(Payout ratio)}_{i,t} = \beta_0 + \beta_1 \text{(Outside ownership)}_{i,t} + \beta_2 D \times \text{(Outside ownership)}_{i,t}$$
$$+ \beta_3 \text{(Asset)}_{i,t} + \beta_4 \text{(Capital-to-asset)}_{i,t} + \beta_5 \text{(Fixed asset-to-asset)}_{i,t} + \varepsilon_{i,t}$$

This table shows the panel regression results. One, two, or three asterisks indicate statistical significance at the 10, 5, or 1% significance level, respectively. D=1 if the sample period belongs to 1998-2005, and 0 otherwise.

	Coefficient	t-value	p-value
Constant	-0.1254	-0.1898	0.8495
Outside ownership	8.3193**	2.41	0.0165
D × Outside ownership	-6.5251	-1.49	0.1365
Asset	1.15×10^{-6}*	1.74	0.0831
Capital-to-asset	44.1332***	3.85	0.0001
Fixed asset-to-asset	-0.0023	-0.80	0.4222
Adjusted R^2	0.08		
Number of observations	225		
Standard error of regression	3.6834		
F-statistic	4.7567***		