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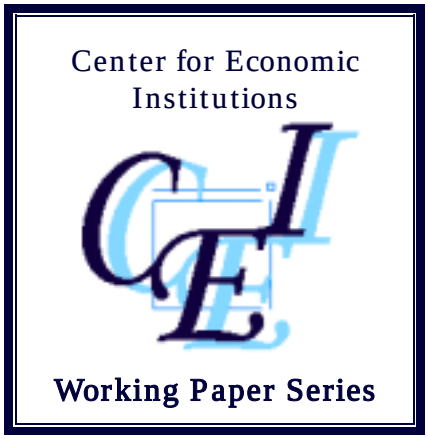

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A Note on Shareholder Oversight and the Regulatory Environment: The Japanese Banking Experience*

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Abstract

During a period where Japanese banks operated under a less restrictive regulatory environment, 1986-88, we find positive relationships between bank risk and ownership concentration. This empirical evidence reveals shareholder activism by the largest shareholders. During the periods immediately before and immediately after this particular subperiod, which are characterized by stricter regulatory environments, we do not observe evidence of shareholder activism. Taken together, these results are consistent with the argument that restrictive regulation and shareholder oversight are substitutes for one another. Time-series results and bank performance results yield consistent evidence.

Keywords: *Large shareholders; Japanese banks; bank risk; shareholder oversight*
JEL Classification: G21; G28; G32

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1. Introduction

Large shareholders are found to play an active role in the corporate governance of the firm.[1] However, it has been argued that strict regulation of the firm's operating environment substitutes for shareholder monitoring and activism [Demsetz and Lehn (1985) and Geddes (1997)]. In fact, Black (1998) contends that strict regulation represents an obstruction to potentially effective shareholder oversight. Despite these contentions, and despite the growing academic literature on corporate governance, we still know very little regarding the potential interaction between shareholder behavior and regulatory scrutiny. This paper attempts to shed some light into this issue. Specifically, we study large shareholders of Japanese banks under different regulatory regimes. Overall, we find evidence of shareholder activism when the regulatory environment provides the flexibility and incentives for shareholder oversight to take place.[2] This evidence, therefore, provides empirical support for Black's (1998) thesis that shareholder oversight and strict regulation are essentially substitutes for one another. In addition, a second contribution of our paper is that we specifically examine bank ownership structure. Very little is known regarding the governance of banks, and

[1] Demsetz (1983, 1986) argues that the existence of large shareholders leads to better monitoring of managers and that a shareholder's ability to exercise control "must be the primary explanation for ownership concentration." Shleifer and Vishney (1986, 1997) contend that large shareholders have a large enough stake to enjoy the returns to monitoring. Winton (1993) contends that, "large investors can acquire a sizable share of the firm and its risk, giving themselves more incentive to monitor."

[2] We define 'active' large shareholders in the following broad sense: owners with substantial minority stakes, such as 10 percent, which provides them the incentive to collect information and monitor management for the purposes of profit maximization (Shleifer and Vishney, 1997, pages 754-755). This definition is also consistent with Black's (1998) characterization of "institutional voice."

because many countries are currently experiencing serious banking problems, this topic merits attention.

Our study uses the Japanese bank case because its banking environment from 1983 to 1991 provides an excellent setting to examine the relationship between the regulatory environment and shareholder oversight. During this study period, the Japanese banking system experienced three distinct regulatory regimes. In 1986, Japanese bank regulators (1) lowered the bank capital adequacy ratio and (2) increased deposit insurance. These two significant changes potentially create a flexible and conducive environment for bank shareholders to exercise oversight. In 1988, however, the Bank of International Settlements (BIS) passed the Basle Accord that required a specific minimum capital ratio for all member banks. For many Japanese banks, this meant a significant increase in their capital ratios [Wagster (1996)]. As a result, this "tighter" regulatory regime may diminish the incentives for shareholders to be active.[3] The Japanese experience, therefore, offers a unique opportunity to examine the impact of regulatory scrutiny on shareholder activism.

In our study, we first argue that the brief period from 1986 to 1988 represents the only subperiod where the regulatory environment could have allowed shareholder oversight to possibly flourish. Consistent with this observation, our empirical results reveal that the magnitude of ownership concentration of the top shareholders is positively related to bank risk during this period. Demsetz and Lehn (1985) argue that large shareholders will become active monitors when there are potential gains from exerting this role. Therefore, when firms have more risk exposure, large shareholders

[3] In fact, Marsh and Paul (1997) also cite the BIS regulations as one of the causes for Japan's recent

will maintain greater concentrations of ownership due to the greater necessity, or potential, for control. However, with the introduction of the Basle Accord in 1988, it marks the end of the relaxed regulatory environment. Consequently, during this latter subperiod, we find that the positive relationship between ownership concentration and bank risk virtually disappears.

Overall, our research reveals that a strict regulatory environment reduces shareholder oversight. At the same time, we also provide the first empirical evidence regarding bank ownership structure. The rest of our paper is organized as follows. The next section discusses the Japanese bank regulatory environment. Section 3 discusses the data and empirical design. Section 4 presents the empirical results and Section 5 concludes.

2. The Japanese Regulatory Environment

From the end of the war until the deregulation process of the early 1980's, Japan's banking structure was characterized by strict regulation.[4] Later, deregulation on lending during the early 1980's allowed banks to act on their desires [Marsh and Paul (1997)]. During the mid-to-late 1980's, Japan continued to experience distinct regime shifts characterized by significant changes in the regulatory environment. We describe these changes and their potential implications on shareholder behavior in the following subsections.

2.1 Changes in 1986: Deposit Insurance and Capital Adequacy

In 1986, the Deposit Insurance Corporation (DIC) raised deposit insurance, to a

bank problems.

[4] See Kitagawa and Kurosawa (1994) for an excellent overview of the history of Japanese bank regulation.

single depositor, to 10 million yen from its original 3 million yen.[5] This 233 percent increase is higher than the increase that occurred in the United States in 1980 where it went from $40,000 to the current $100,000. This increase in deposit insurance is particularly relevant to our study because it is well known that deposit insurance provides banks with excessive risk-taking incentives.[6] As specifically stated by Wheelock and Kumbhakar (1995), "Deposit insurance subsidizes risk-taking, therefore, creating a 'moral hazard' in that banks with insured deposits will find it optimal to assume more risk than they would otherwise." Therefore, in regards to the bank stockholder and in the context of higher deposit insurance, shareholders may encourage bank management to engage in more risk taking [Crawford, Ezzell, and Miles (1995)]. At the same time, shareholders will voluntarily expend a monitoring effort because if risk pays off, they are the ones that ultimately enjoy the benefits, while losses are limited to the little equity that exists. In fact, the DIC and the taxpayers are the ones primarily exposed to the downside risk [Crawford, Ezzell, and Miles (1995)]. Consequently, these contentions suggest that some Japanese bank shareholders (those that can best respond to the costs and benefits of monitoring) will encourage more risk-taking after the 1986 increase in deposit insurance. In fact, Benston (1986) and Kane (1985) argue that the increase in deposit insurance that occurred in the U.S.

[5] With the enactment of the Deposit Insurance Law of 1971, the Japanese Deposit Insurance Corporation (DIC) was established and modeled after the U.S. Federal Deposit Insurance Corporation [Tatewaki (1991)].

[6] Noe, Rebello, and Wall (1996), Keeley (1990), Kareken and Wallace (1978), Merton (1978) and Sharpe (1978).

contributed to additional risk-taking during the 1980s.[7]

In addition to the change in deposit insurance, another major revision that occurred in 1986 focuses on the capital adequacy requirement. In 1985, the Financial System Research Council, a component of the Ministry of Finance, recommended significant revisions to the capital ratio. Traditionally, capital was viewed as security on deposits, but the Council suggested that capital should be viewed as the last reserve to prevent asset deterioration [Sasaki (1994)]. In light of this recommendation, the Ministry of Finance re-evaluated the capital adequacy requirement and made major revisions that took effect in May 1986. Originally, the capital ratio was based on a capital-to-deposit ratio and was set at 10 percent. Under the new requirement, the ratio became a capital-to-asset ratio and was set at 4 percent, but 70 percent of hidden reserves was allowed as capital [Sasaki (1994)]. Hidden reserves are unrealized capital gains on equity that Japanese banks carry at cost on their books [Wagster (1996)]. Wagster (1996) finds that in 1987, Japanese banks' capital-to-assets ratio was 12.35 percent when including hidden reserves, but only 2.11 percent without including these hidden reserves. Prior to 1986, banks were usually undercapitalized, but by allowing hidden reserves into the capital ratio, banks suddenly became overcapitalized. As a result, bank shareholders gained additional flexibility, as regulatory hurdles became easier to manage.

[7] Saunders, Strock, and Travlos (1990) empirically confirm the Benston (1986) and Kane (1985) argument by showing that banks engaged in high levels of risk-taking during the period surrounding the passage of the 1980 Depository Institutions Deregulation and Monetary Control Act (DIDMCA). One of the provisions of the Act increased deposit insurance from $40,000 to $100,000. Other evidence regarding consequences to the 1980 change in deposit insurance includes Allen and Wilhelm (1988) and Cornett and Tehranian (1989). These papers conduct event-studies and find positive returns to Federal Reserve System member banks.

Overall, the period immediately following 1986 represents a period of relative deregulation and flexibility, and, consequently, it also represents a period of optimal risk-taking and 'control potential' to those that can best respond to the benefits of monitoring. During this subperiod, therefore, we should observe an active presence by the large shareholders. Such a finding would be consistent with Black's (1998) argument that "institutional voice" can only be effective under a regulatory regime that provides appropriate flexibility and incentives for active oversight to take place. However, the 1988 Basle Accord later imposed regulations on Japanese banking that may have constrained shareholder activity. We discuss this issue in more detail in the next subsection.

2.2 The 1988 Basle Accord

The 1988 Basle Accord, enacted by the Bank for International Settlements (BIS), imposed international standards on bank capital requirements.[8] The overall goal was to reduce risk in the international banking system by regulating bank capital in all member countries, which includes the G-10 countries along with Switzerland and Luxembourg. However, as pointed out by Wagster (1996), the ulterior motive behind the Accord was to eliminate the funding-cost advantage of Japanese banks. Before the establishment of the Accord, it was well known that Japanese banks enjoyed lower capital ratios (when excluding hidden reserves) than their international counterparts. Since its establishment, however, the consequences of the Accord are still relatively unknown. In this paper, we argue that with the additional regulatory presence created by the Accord, along with the subsequent required increase in bank equity, bank stockholders will

[8] See Hall (1993), Wagster (1996), and Marsh and Paul (1997) for detailed overviews on the Basle Accord.

become less active because the Accord, by enforcing capital standards, provides subsidized monitoring. This idea is similar to a proposition put forth by Besanko and Kanatas (1996) where they argue that higher capital requirements will lead to a decrease in effort by bank managers. In addition, Demsetz and Lehn (1985) and Geddes (1997) similarly argue that outside regulation minimizes the need, and the benefits, of active monitoring by shareholders.

The Basle Accord raised the capital standard to 8 percent and it was to be met by March 1993. This was complemented with a Ministry of Finance revision to the capital ratio that was to take effect by 1991. By 1991, banks were to achieve at least a 4 percent ratio of capital-to-assets *without* including hidden capital [Kester (1991)]. In response to the increase in capital adequacy, several observations have been noted. Kester (1991) and Sasaki (1994) find that banks primarily met the new capital adequacy ratios by issuing new equity between January 1988 and June 1989. When banks are forced to increase equity, however, they may be moving away from their optimal capital structures and their ability to capture subsidies from deposit insurance may diminish. In addition, Horiuchi and Shimizu (1995) observed decreases in loans by Japanese banks that had increased their equity capital. Hall (1993) argues that Japanese banks reduced their loans to businesses during the period 1990-93 to reduce the amount of risky assets they had on their books in a way to maintain appropriate capital levels. Marsh and Paul (1997) observe a slightly different outcome. They argue that some banks responded to the higher capital requirements by increasing their risky lending to capture more retained earnings as a way to meet the capital requirements. However, they also argue that owners lost the incentive to ensure profitability under a higher

capital requirement regime. Therefore, the Marsh and Paul (1997) findings reveal a perverse result: riskier lending practices without complementary monitoring.

2.3 Hypothesis

Based on our discussion, we examine three subperiods: 1983-85, 1986-88, and 1989-91. Due to (1) the increase in deposit insurance and (2) the decrease in the capital ratio that occurred in 1986, we argue that 1986 represents the first year when the regulatory environment was flexible and conducive to bank shareholder activism. However, we also argue that the passage of the Basle Accord that occurred in 1988 marked the end of this brief era. Based on our contentions, we expect the following two results. First, we should observe a positive relationship between bank-specific risk measures and ownership concentration of the largest bank shareholders for the subperiod from 1986 to 1988. Second, with the changing regulatory environment, we expect that ownership structure and bank risk levels will respond optimally (depending on the specific subperiod transition), at the firm level, as part of a profit maximizing process. The following section discusses how we test our hypothesis.

3. Data and Empirical Design

In our study, we test for a positive relationship between bank risk and ownership concentration of the largest shareholders in a regression setting using ordinary-least-squares (OLS). We use ownership concentration as a dependent variable using three distinct measures of bank risk as explanatory variables. We also employ a control variable (firm size) that has been suggested by prior research to be potentially important in modeling ownership concentration. A discussion of our dependent and explanatory variables follows.

3.1 Dependent Variable: Ownership Concentration

Bank ownership data is collected from the Japan Company Handbooks, published by Toyo Kezai Inc., from 1983 to 1991. This source identifies the top six to top ten shareholders based on their percentage ownership. For 1991, there are 65 banks in our sample. Consistent with Demsetz and Lehn (1985) and Prowse (1992), we use the following measure of ownership concentration:

$$LTOP6 = \log[TOP6/(100-TOP6)].$$

TOP6 represents the concentration of ownership of the top six shareholders.[9] The log transformation is calculated to create an unbound dependent variable.[10]

3.2 Explanatory Variables

The financial data and stock data used in this study are retrieved from the Financial Statements Files and the Daily Returns File, respectively, of the PACAP Databases-Japan provided by the Pacific-Basin Capital Markets Research Center (PACAP) at the University of Rhode Island.[11]

To test for the relationship between bank risk and ownership concentration of the largest shareholders we employ three distinct, but most commonly cited measures of bank risk. Prior literature provides justification for each measure as an appropriate

[9] In almost 10 percent of the observations, there was a tie for fifth place. Using TOP6 completely eliminates any potential problems that ties might introduce.

[10] A second measure of ownership concentration is employed to ensure the robustness of our results. Specifically, we use the log transformation of a Herfindahl Index. We find a high correlation (0.98) between our two ownership concentration measures and as a result, all of our findings using the Herfindahl Index yield the same findings as the LTOP6 measure. Therefore, we do not report the Herfindahl results.

[11] PACAP Databases are created in cooperation with Daiwa Institute of Research and Toyo Kezai Inc.

proxy for bank risk. In addition, we also employ a control variable. A discussion of each variable is provided below.

3.2.1 Bank Specific Risk Measures

(EA). The equity to asset ratio is one of the most commonly used proxies for bank risk-taking. When equity levels are low, bank risk is high because capital represents collateral against bank liabilities and protects banks from insolvency when asset values decline.[12] Conservative owners or managers will maintain high levels of capital. Barth, Bartholomew, and Bradley (1990), Cebenoyan, Cooperman, and Register (1995), and Knopf and Teall (1996) also suggest that these capitalization ratios are a good measure of thrift risk-taking. Finally, Gibson (1995) uses the capital ratio as a proxy for bank risk-taking in his study of Japanese banks. Using annual observations, we calculate the capital ratio (EA) as the total value of book equity to the total value of book assets.[13]

(VRET). The variance of stock returns is another commonly used measure of bank risk (Demsetz and Lehn (1985), Saunders, Strock and Travlos (1990), and Prowse (1992), Houston and James (1995) among others). Demsetz and Lehn (1985) state that stock return volatility measures the instability of the firm's environment. Therefore, when return variance is high an active shareholder presence via monitoring, is required. In fact, Saunders, Strock, and Travlos (1990) state that stock return variance is the most appropriate indicator of risk for commercial banks. Similar to Houston and James

[12] See Pringle (1974), Santomero and Watson (1977), Taggart and Greenbaum (1978), Buser, Chen, and Kane (1981), Marcus (1983), and Houston and James (1995).

[13] We also used several alternative measures of the capital ratio by including various reserve accounts (see Pettway, Kaneko, and Young (1991) for a discussion on calculating these alternative ratios). However, the findings remain qualitatively the same.

(1995), we also use the variance of daily stock returns and we calculate this for each year.[14]

(WR). Finally, we also use write-off for loan losses as a measure of bank risk [Gorton and Rosen (1995)]. Most empirical studies are unable to use this latter risk measure due its unavailability [for example, see Sharpe (1992)]. When borrowers default on their bank loans, banks will write off these defaults on their balance sheets. Higher amounts of write-offs, therefore, reveal risky lending behavior. For our write-off measure (WR), we use the ratio of total write-offs to total investments, loans, and receivables.[15] The next section discusses a control variable.[16,17]

3.2.2 Control Variable

(MVE). The market value of equity represents our proxy for firm size. According to theory, larger firms will have lower ownership concentrations by TOP6 owners simply because, as succinctly stated by Prowse (1992), "the larger the firm, the greater is the cost of obtaining a given fraction of ownership." What this implies is a wealth constraint. However, Prowse (1992) argues that institutional investors are *not* wealth constrained. To verify his contention, Prowse (1992) examines a sample of firms with high

[14] We also considered various forms of firm-specific risk derived from market models, such as standard errors or betas, but including these risk measures would represent a dual test of our hypothesis and of the capital asset pricing model for banks. In addition, Saunders, Strock, and Travlos (1990) specifically state that stock return variance represents a superior risk measure to beta.

[15] We also considered other forms of this ratio. For example, we also deflated the write-offs by total loans only, but the results remained the same. We also considered using a log transformation of total write-offs instead of a ratio. The results using the log-transformed yield superior statistical significance. We do not report these results, however, because the findings are consistent with results we report.

[16] Houston and James (1995) and Knopf and Teall (1996) provide additional discussions on financial institution risk measures that are employed in our study.

[17] It has been suggested that the degree of derivative exposure would represent another excellent measure of bank risk. However, a developed derivative market does not exist in Japan. Japanese banks may invest in the U.S. derivative market, but we do not have this data.

institutional ownership and finds *no* significant relationship between firm size and ownership concentration. In our bank sample, we observe that large shareholders of banks are institutional investors. Therefore, we also predict no significant relationship between bank size and ownership concentration. Consistent with Prowse (1992), this would reveal that large shareholders are not wealth constrained.

3.3 Summary Statistics

All variables that are employed in this study are summarized in Table 1. This table also includes a 'spread' variable that measures the difference between returns (in percent) received from loans, receivables, and securities, and the interest (in percent) paid out for bank deposits (SPREAD). This variable is used as a control variable later in the paper when we look at bank profitability.

[Insert Table 1 Here]

Table 2 presents summary statistics of our variables and they are categorized by subperiods. First, we see that the top six shareholders (TOP6) hold over 18 percent of the bank and that TOP6 does not vary much across subperiods.[18] It is important to note, however, that our hypothesis does *not* necessarily imply that *aggregate* ownership concentration will change across subperiods, instead, our hypothesis predicts: (1) that we observe different cross-sectional *relationships* between ownership structure and risk for each subperiod, where we only anticipate a positive relationship between risk and ownership concentration for the middle subperiod (1986-88), and (2) that if time-series

[18] Insurance companies are the primary large shareholders of banks followed by other financial institutions (which consists of other banks and long-term credit banks), and non-financial corporations shareholders. It is important to note that despite the fact that the largest shareholders are institutions, they are still known to be active (not passive) owners [Agrawal and Mandelker (1990)]. Finally, there are no cases where an inside shareholder, or an individual, is among the top six shareholders.

changes in ownership concentration (and risk) does occur, it would only be at the firm level.

[Insert Table 2 Here]

From Table 2, the variance of daily bank stock returns (VRET) reveals that the banking environment is more risky in the later periods. In addition, consistent with the requirements of the Basle Accord, we see that total equity to total assets (EA) increases during our study period. With regard to ROE, it is well known that Japanese bank profitability began to decline toward the end of the 1980's. However, it is quite revealing that bank profits is highest during the 1986-88 period, which is the same period where we anticipate the highest level of shareholder activism. The declining spread through the years probably reflects the increasing competitive nature of Japanese banking, in light of the deregulation on lending that occurred in the early 1980's. Finally, the fact that the market value of equity declines in the third subperiod is consistent with a proposition put forth by Besanko and Kanatas (1996). They contend that the issuance of equity to satisfy higher capital standards can lead to decreases in the bank's market value of equity.

From these descriptive statistics, we identify several revealing insights that support some of our earlier contentions and are consistent with the arguments of prior literature. However, we should not draw too many conclusions based on aggregated data. To gain better insight, therefore, we turn to our regression results discussed in the next section.

4. Regression Results

In Table 3, we present our subperiod results examining the relationships between risk and ownership concentration. From these results, we see that all three bank risk variables are significant with the correct signs *only* during the sub-period from 1986 to 1988. When bank equity is low, when volatility of bank stocks is high, and when write-off for loan losses is high, ownership concentration for the top shareholders is high.[19] This empirical result supports Demsetz and Lehn's (1985) control potential hypothesis. When risk is high, there is more 'control potential' accrued to the large shareholder and as a result, the large shareholder will maintain higher ownership concentrations to facilitate monitoring.[20] In addition, the fact that these relationships are strongest for the

[19] Because we use three proxies of bank risk-taking in a regression model, multicollinearity may be problematic. However, a Variance-Inflation-Factor (VIF) test indicates that multicollinearity is *not* affecting our parameter estimate results. To confirm the VIF results, we also execute two-factor models using each risk measure and our MVE control variable. These findings remain the same as our multiple regression model so we do not report them. In addition, we also conduct our analysis using intrafirm means of all variables. However, the drastically reduced sample size and statistical power of this analysis leads to increases in significance levels of our parameter estimates. Therefore, we do not report these results. Finally, the standard errors of the regression models are corrected for heteroskedasticity, but the results remain the same regardless of this correction.

[20] An alternative interpretation of our results is that large bank shareholders are engaging in more risk-taking during periods of relaxed regulations. While this slightly alternative interpretation of our finding still reveals shareholder activism, it does raise an important issue regarding the endogeneity of our dependent variable. To examine this endogeneity issue, we execute regression analyses using our risk variables as dependent variables and ownership concentration as an explanatory variable. From this empirical examination, the same positive relationships between risk and ownership concentration emerge (these results are not reported to minimize repetition). Therefore, the direction of causality between risk and ownership appear to run in both directions. To verify this contention, we employ Granger causality tests in a manner similar to Atkins and Dyl (1997). Specifically, when modeling a posited dependent variable, we use three lags of the dependent variable and three lags of a posited explanatory variable (unrestricted model) and compare it to a model that simply uses three lags of the dependent variable (restricted model). The two models are compared using a Wald F-test to see if the unrestricted model has superior explanatory power over the restricted model. The results of these tests confirm that ownership concentration is endogenous of risk, but the tests also indicate that risk is endogenous of ownership concentration as well. Due to the potential simultaneity that exists with our variables, we execute 2-stage least squares (2-SLS) and 3-stage least squares (3-SLS) regression models to allow the explanatory variables to be determined within the system. From these analyses, we again find a positive relationship between risk and ownership concentration that runs in both directions. The recent corporate governance literature has started to address these simultaneity issues, but primarily in the context of firm performance [see Cho (1998) and Himmelberg, Hubbard, and Palia (1998)]. For the purposes of our paper, we do not go further into this empirical investigation because developing an appropriate model using risk as the

1986-88 subperiod confirms Black's (1998) argument that shareholder activism emerges when regulatory scrutiny diminishes. It is noteworthy that the adjusted R^2 is highest during this sub-period and it is only sub-period where the F-statistic is significant at the 1 percent level.[21]

[Insert Table 3 Here]

Finally, as expected, the bank size (MVE) variable is not statistically significant for any subperiod. The insignificant MVE finding is consistent with prior literature. When the largest owners are institutional shareholders, as is the case for our bank sample, we should observe no significant relationship between firm size and ownership concentration because wealth-constraint is minimal for institutional shareholders [Prowse (1992)].

Although our study focuses on the cross-sectional relationships between risk and ownership concentration, our previous discussions on the changing nature of the regulatory environment strongly suggest that shareholder oversight and/or bank risk changes, on a firm level, from one subperiod to the next. To provide some empirical evidence, we offer the following analysis. First we calculate intra-firm averages of each of our variables within each subperiod. We require complete data for the calculation of the intra-firm means. Next, we calculate changes in these variables from one subperiod

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dependent variable represents an extensive endeavor which merits its own study, and thus it is beyond the scope of our paper. Nonetheless, from these simultaneity analyses, the most important inferences that we draw are as follows: (1) our findings are robust to different models and methodological approaches and (2) our reported results are not the product of simultaneity biases.

[21] We also restricted our sample to banks that had available data for every subperiod. This restriction ensures that differences in results among the subperiods are due to regulatory changes and *not* due to the comparison of a different mix of banks. Overall, the regression results of the restricted sample are qualitatively similar to the reported results, but due to the issue of selection bias we do not report them. Nonetheless, a time-series analysis that is executed later in the paper will require complete data. This analysis will ensure further that we are contrasting subperiods for the same mix of banks.

to the next. Finally, we use the change in ownership concentration as the dependent variable and the changes in the other variables as explanatory variables in a regression model. From the first subperiod (1983-85) to the second subperiod (1986-88), we expect changes in risk to be positively associated with changes in ownership concentration. Such a finding would be consistent with our hypothesis. Table 4 presents these results.

[Insert Table 4 Here]

The first column of results from Table 4 shows the effects of changes from the first subperiod (1983-85) to the second subperiod (1986-88). From these results, we see that changes in total risk (ΔVRET) are positively related to changes in ownership concentration. The ΔVRET results is quite revealing as Saunders, Strock, and Travlos (1990) argue that stock return variance may be the most appropriate indicator of risk for commercial banks. In addition, we also see that changes in the capital ratio (ΔEA) are negatively related to changes in ownership concentration. A relaxed regulatory environment allows the variation of the degree of costs and benefits to being a large shareholder to be high. In such an environment, when control potential is high (low), ownership concentration should also be high (low). Therefore, our time-series are as expected and consistent with our earlier findings.

For the second model, that examines changes from the second subperiod (1986-88) to the third subperiod (1989-91), we see that changes in total risk is negatively related to changes in ownership concentration. This result seems to indicate that shareholders have become risk-averse and exhibit less desire to actively monitor.

Again, this result is as expected given that the stricter regulatory environment may have reduced the incentives for shareholder activism during this third subperiod.

4.1 Profitability

Thus far, our findings indicate a positive relationship between risk and ownership concentration of the largest shareholders of Japanese banks. In this subsection, we provide some results on shareholder activism by looking at bank performance (profitability). It has been suggested in the earlier banking literature that banks may not engage in profit maximization due to regulatory constraints [Williamson (1963), Edwards (1977), and Hannan and Mavinga (1980)]. This argument implies that relaxed regulations may create an environment where profit maximization can occur. According to our hypothesis, we would expect banks with active shareholders, responding to higher control potential (risk), to be the most profitable. To empirically examine the ability of large bank shareholders to improve profitability, we use LTOP6 as an explanatory variable in a regression model that uses accounting profits (ROE) as a dependent variable.[22] Winton (1993) states that monitoring and firm performance increase as shareholders commit more of their wealth to the firm.

Along, with the ownership variable (LTOP6), we control for other factors that affect bank profits. We include a 'SPREAD' variable that measures the difference between returns (in percent) received from loans, receivables, and securities, and the interest (in percent) paid out for bank deposits (SPREAD). We naturally expect this variable to have a positive relationship with bank profits. We use a one-period lag of

[22] We use accounting profits (ROE) as our measure of bank profitability rather than stock market rates of return because, as stated by Demsetz and Lehn (1985), stock market rates adjust for any divergence between management and owners, while accounting measures would reveal this divergence. Smith (1996) also makes similar claims regarding the use of accounting profits.

write-offs (LagWR) as a risk variable. It is necessary for us to lag this risk variable because current write-offs are directly written off against current accounting profits, which would yield a trivial inverse relation. We also use bank size as another control variable. We expect this variable to have a positive relationship with bank profits simply because larger banks should enjoy greater economies of scale. Yoshioka and Nakajima (1987) confirm this latter contention for the Japanese bank case. We use the market value of equity (MVE) as our bank size variable to be consistent with our previous analysis. We considered other proxies of bank size including the book value of assets and total bank loans outstanding, however, the results are qualitatively similar to the MVE results.

In Table 5, we present our subperiod results examining the relationships between profit and ownership concentration. For the subperiods prior to 1989, we see that the ownership concentration variable (LTOP6), and the size variable (MVE), is positively related to profitability.[23] The former result reveals the effect, and thus the existence, of shareholder activism. The latter result is consistent with the prior findings of Yoshioka and Nakajima (1987). For the first subperiod, 1983-85, we see that risk (LagWR) is also positively related to profits. The SPREAD variable does not become significant until the last subperiod, perhaps revealing the increasing competitive nature of Japanese banking or that there were few other comparative advantages that Japanese banks could employ in later years. Overall, while we did not expect a positive coefficient on LTOP6 during the first subperiod, the positive coefficient on LTOP6 during the second

[23] Consistent with our risk results, our profit models also undergo various robustness checks. These checks include endogeneity and simultaneity issues, the time-varying property of bank profits (the inclusions of year-dummies lead to the same results), and possible multicollinearity. All results from these additional analyses yield qualitatively the same observations as the presented results. Finally, the

subperiod, and the much lower coefficient on LTOP6 in the third subperiod, provides consistent evidence with our monitoring results reported earlier.

[Insert Table 5 Here]

5. Conclusion

We examine ownership concentration and bank risk during the period from 1983 to 1991 for a sample of Japanese commercial banks. During a specific subperiod (1986-88) where deposit insurance significantly increased and the capital ratio significantly decreased, we show a positive relation between bank risk and ownership concentration of the largest shareholders. This finding reveals shareholder activism during a subperiod where the regulatory environment was less restrictive. Time-series evidence that examines changes in our risk and ownership variables from one subperiod to the next provides consistent results. Furthermore, during this same subperiod, we also find a positive relationship between ownership concentration and bank performance (profits). These findings do not persist in the subsequent subperiod (1989-91) which is distinguished by the Basle Accord regime.

Overall, our findings indicate that bank shareholders will exert oversight, but only when the regulatory environment subsidizes risk-taking and provides flexibility to the shareholders. Therefore, our research is the first to reveal that large shareholders of banks can be potentially important for bank governance. Finally, our observation that Japanese bank shareholders have become less active in recent years is an observation that is shared by the popular press. For example, the *Economist* recently stated that

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standard errors are corrected for heteroskedasticity, but the results remain the same regardless of this correction.

Japanese bank regulators were hoping that bank shareholders would step up the pressure on banks' management.[24]

[24] *The Economist*, February 15, 1997, page 73.

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Table 1
Descriptions of All Variables Used in the Study

Ownership Measure	
LTOP6	Log transformation of TOP6/(100-TOP6), where TOP6 represents the percentage of outstanding common shares owned by the top six shareholders.
Risk Measures	
EA	Book value of total equity to book value of total assets.
VRET	Annual variance of daily bank stock returns.
WR	Ratio of write-off for loan losses to total investments, loans, and receivables.
Other Measures	
ROE	Net income to book value of equity.
MVE	Fiscal year-end market value of equity.
SPREAD	Income received (in %) from securities, loans, and receivables minus interest payments (in %) for bank deposits.

Table 2
Descriptive Statistics: By Subperiods

This table presents overall averages for the variables included in this study. The ownership data comes from Japan Company Handbooks and the financial data comes from the PACAP Databases. Descriptive statistics are provided for three subperiods: 1983-85, 1986-88, and 1989-91. TOP6 represents the percentage of outstanding common shares owned by the top six shareholders. VRET is the variance of daily stock returns, EA is the ratio of book equity to book assets, WR is the ratio of write-offs to investments, loans, and receivables. ROE is the ratio of net income to equity, SPREAD is the difference (in percent) between interest income on investments, loans, and receivables and interest expense on deposits, and MVE is the year-end market value of equity. Standard deviations are reported in parentheses.

Variables	1983-85	1986-88	1989-91
TOP6	18.849	18.500	18.066
	(4.860)	(4.365)	(3.654)
VRET[a]	1.999	4.044	4.596
	(2.532)	(3.503)	(3.156)
EA	0.030	0.031	0.036
	(0.008)	(0.007)	(0.006)
WR[a]	0.764	0.971	0.583
	(1.423)	(1.337)	(0.818)
ROE	0.080	0.084	0.058
	(0.019)	(0.019)	(0.013)
SPREAD	0.023	0.021	0.018
	(0.006)	(0.006)	(0.006)
MVE[b]	58.164	121.558	100.890
	(106.114)	(235.682)	(186.076)

[a] adjusted by 10^4
[b] in trillions of yen

Table 3
Regression Results for Ownership Concentration: By Subperiods

This table shows regression results from three subperiods: 1983-85, 1986-88, and 1989-91. Ownership concentration of the top six shareholders (LTOP6) is the dependent variable. LTOP6 is calculated as follows: log[TOP6/(100-TOP6], where TOP6 represents the percentage of total outstanding shares held by the top six shareholders. The explanatory variables are as follows: VRET is the variance of daily stock returns, EA is the ratio of book equity to book assets, and WR is the ratio of write-offs to investments, loans, and receivables. MVE is the year-end market value of equity. EA is adjusted by 10^2, VRET and WR are adjusted by 10^3, and MVE is adjusted by 10^{-14}. Heteroskedastic-consistent standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Adjusted R^2 and F-values are also reported. N denotes the number of firm-year observations.

Independent Variables	1983-85	1986-88	1989-91
Intercept	-1.219***	-1.295***	-1.324***
	(0.142)	(0.120)	(0.131)
VRET	0.075	0.157***	0.011
	(0.082)	(0.049)	(0.058)
EA	-0.098**	-0.103***	-0.063*
	(0.042)	(0.033)	(0.034)
WR	0.031	0.360**	0.139
	(0.139)	(0.144)	(0.246)
MVE	0.018	0.031	0.042
	(0.234)	(0.075)	(0.073)
Adj. R^2	0.038	0.125	0.008
F-statistic	2.413*	7.084***	1.406
N	146	172	194

Table 4
Time-Series Behavior in Ownership Concentration

This table shows regression results using ΔLTOP6 as the dependent variable and ΔVRET, ΔEA, ΔWR, and ΔMVE as explanatory variables. All variables represent changes in intra-firm averages from one subperiod to the next. The subperiods are categorized as follows: 1983-85, 1986-88, and 1989-91. LTOP6 is calculated as: log[TOP6/(100-TOP6], where TOP6 represents the percentage of total outstanding shares held by the top six shareholders. VRET is the variance of daily stock returns, EA is the ratio of book equity to book assets, and WR is the ratio of write-offs to investments, loans, and receivables. MVE is the year-end market value of equity. VRET and WR are adjusted by 10^2, and MVE is adjusted by 10^{-12}. Heteroskedastic-consistent standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Adjusted R^2 and F-values are also reported. N denotes the sample size.

Independent Variables	from 1983-85 to 1986-88	from 1986-88 to 1989-91
Intercept	0.007	-0.008
	(0.008)	(0.023)
ΔVRET	0.730**	-2.518***
	(0.297)	(0.552)
ΔEA	-5.724*	-2.653
	(3.186)	(4.038)
ΔWR	-0.222	-1.356
	(0.325)	(1.436)
ΔMVE	-0.045	-0.010
	(0.068)	(0.094)
Adj. R^2	0.217	0.179
F-statistic	4.602***	4.334***
N	53	62

Table 5
Regression Results for Profitability: By Subperiods

This table shows regression results from three subperiods: 1983-85, 1986-88, and 1989-91. The dependent variable is accounting profits (ROE), where it is calculated as net income to book equity. The explanatory variables are as follows: LTOP6 is the ownership concentration variable and calculated as log[TOP6/(100-TOP6], where TOP6 represents the percentage of total outstanding shares held by the top six shareholders. SPREAD is the difference (in percent) between interest income on investments, loans, and receivables and interest expense on deposits. Lag(WR) is the one-period lag for write-offs for loan losses (WR). MVE is the year-end market value of equity. LTOP6 and MVE are adjusted by 10^{-2} and 10^{-16}, respectively. Heteroskedastic-consistent standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 levels, respectively. Adjusted R^2 and F-values are also reported. N denotes the number of firm-year observations.

Independent Variables	1983-85	1986-88	1989-91
Intercept	0.085***	0.088***	0.049***
	(0.007)	(0.007)	(0.007)
LTOP6	0.742***	0.622**	0.367
	(0.249)	(0.257)	(0.339)
SPREAD	-0.098	-0.069	0.701***
	(0.220)	(0.248)	(0.252)
Lag(WR)	0.028***	-0.009	0.067
	(0.011)	(0.066)	(0.081)
MVE	1.265***	0.608***	0.275***
	(0.142)	(0.073)	(0.093)
Adj. R^2	0.562	0.593	0.060
F-statistic	46.604***	63.330***	4.054***
N	143	172	194