

Large shareholder monitoring and regulation: The Japanese banking experience

Kenneth A. Kim^{a,*}, Sang-Hyop Lee^b, S. Ghon Rhee^c

^a School of Management, State University of New York at Buffalo, Buffalo, NY 14260, United States

^b Department of Economics, University of Hawaii, Honolulu, HI 96822, United States

^c Shidler College of Business, University of Hawaii, Honolulu, HI 96822, United States

Abstract

During a period where Japanese banks operated under a less restrictive regulatory environment, 1986–1988, we find positive relations between bank risks and ownership concentration. This empirical evidence suggests that shareholder monitoring is present when the potential return to monitoring is high (the “shareholder monitoring hypothesis”). During the periods before and after this particular period, we do not observe evidence of shareholder oversight. These results are consistent with the argument that regulation (an external governance mechanism) and shareholder monitoring (an internal governance mechanism) are substitutes for one another (the “substitution hypothesis”) because the pre- and post-periods are characterized by stricter regulatory environments. Finally, tests on bank performance lend supporting evidence to both hypotheses.

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1. Introduction

Researchers contend that regulation and shareholder monitoring are substitute governance mechanisms. For example, Demsetz and Lehn (1985) suggest that “systematic regulation restricts options available to owners” and “regulation also provides some subsidized monitoring and disciplining of the management of regulated firms”. Therefore, for example, financial firms and utility firms probably do not have active shareholders. Black (1998) also argues that regulation obstructs the potential for effective shareholder oversight. When a firm operates in a regulated industry

* Corresponding author. Tel.: +1 716 645 3293; fax: +1 716 645 3283.

E-mail address: kk52@buffalo.edu (K.A. Kim).

or environment, the gains to shareholder monitoring may be limited. The implication of these contentions is that an internal governance mechanism (e.g., shareholder monitoring) can be a substitute for an external governance mechanism (i.e., regulation).

Concentrated ownership is often used to identify shareholder monitoring (e.g., Demsetz & Lehn, 1985; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998; Shleifer & Vishny, 1986). When a public firm's ownership is concentrated into the hands of a few large shareholders, then these large shareholders should have both the desire and the power to monitor the firm's operations and management. For example, according to Shleifer and Vishny (1997, 1986), large shareholders have the incentive to collect information and monitor management for the purposes of profit maximization. If large shareholders are inactive, then there is an obvious cost as their inactivity (or shirking) is significantly borne to large shareholders (Demsetz & Lehn, 1985). As such, Demsetz (1983, 1986) argues that a shareholder's ability to exercise oversight and control "must be the primary explanation for ownership concentration". In a similar vein, Grossman and Hart (1986) contend that observed ownership concentration is, in effect, the same as observing the extent to which large shareholders have control. However, the benefits to control are unlikely to be equal across firms. Demsetz and Lehn (1985) contend that large shareholders will be present in risky firms, as the payoff potential to active monitoring of risky firms is high. The mere presence of large owners in risky firms strongly suggests they are monitoring, as the downside potential of not monitoring is also especially high in risky firms.

In empirical tests, Demsetz and Lehn (1985) find that firms in regulated industries have lower ownership concentrations. For unregulated firms, they find the relation between ownership concentration and firm risks to be positive. Their finding that ownership concentration and regulation are negatively related supports the "substitution hypothesis". Their finding that ownership concentration and firm risks are positively related supports the "shareholder monitoring hypothesis". Holderness, Kroszner, and Sheehan (1999), and Himmelberg, Hubbard, and Palia (1998) also find a positive relation between ownership concentration and firm risk. They too suggest that this evidence is indicative of monitoring by large shareholders.

Other researchers find support for the substitution hypothesis. Krole and Lehn (1999) find that controlling shareholders in the US airlines industry instituted numerous governance mechanisms after the industry was deregulated. Anderson and Fraser (2000) study US banks during more regulated and less regulated periods and find managerial shareholdings and risk-taking are positively related only during the less regulated period. Konishi and Yasuda (2004) study risk-taking by Japanese banks after its capital adequacy requirement was increased. They find that risk-taking by the banks' stable shareholders declined after the capital adequacy requirement was increased. All of these papers' findings can be viewed as being consistent with the substitution hypothesis. Owners are more active when there is less regulation. Booth, Cornett, and Tehranian (2002) find that two internal governance mechanisms, board quality (proxied by the fraction of independent directors) and officer/director stock ownership, are substitutes for each other. However, for regulated industries (banks and utilities), they find that independent boards and officer/director stock ownership are not substitute governance mechanisms. Therefore, they also contend that an external governance mechanism (i.e., regulation) serves as a substitute for internal governance mechanisms (i.e., independent directors and stock ownership).

La Porta et al. (1998) conduct a cross-country test of the substitution hypothesis. They find that firms in countries with relatively weak shareholder protection laws have relatively high ownership concentrations, which support the substitution hypothesis—shareholders look out for their own interests when laws do not. Caprio et al. (2003) also conduct a cross-country test while specifically focusing on the relation between bank governance and bank value. They find that

banks in countries with strong legal environments are often widely held, which is consistent with La Porta et al. (1998) and the substitution hypothesis.¹

In general, the literature has tested the substitution hypothesis in one of three ways. Papers have either (1) contrasted periods before and/or after a change in the regulatory environment (e.g., Anderson & Fraser, 2000; Kole & Lehn, 1999; Konishi & Yasuda, 2004), (2) contrasted firms from regulated industries to firms from nonregulated industries (e.g., Booth et al., 2002; Demsetz & Lehn, 1985), or (3) contrasted the internal governance of firms from countries with different regulatory environments (e.g., La Porta et al., 1998; Caprio et al., 2003). We offer additional evidence on the substitution hypothesis taking the first approach mentioned above. However, in our paper, we study an industry that experiences a significant deregulation, and then experiences a significant increase in regulation (we will discuss other aspects of our study that differentiates our study from others, shortly). Therefore, we will be able to test the substitution hypothesis surrounding two shifts (in opposing directions) in the regulatory environment, within the same industry. Specifically, we study large shareholders of Japanese banks under three different regulatory regime periods. According to the substitution hypothesis, when deregulation occurs we should observe oversight by large shareholders, which, in turn, implies a positive relation between bank risk and ownership concentration during the deregulated period. When an increase in regulation subsequently occurs, then the positive relation between risk and ownership concentration is expected to disappear.²

The Japanese bank environment during the mid-to-late 1980s provides an excellent setting to examine the relation between regulation and shareholder oversight. In 1986, Japanese bank regulators lowered the bank capital adequacy ratio requirement and increased deposit insurance. These two significant changes potentially create a flexible and conducive environment for bank shareholders to exercise oversight. A lower capital ratio requirement and higher deposit insurance give banks more freedom and ability to engage in value maximizing activities. In 1988, however, the Bank for International Settlements (BIS) passed the Basle Accord that required a specific minimum capital ratio for all member banks. For almost all Japanese banks, this meant a significant increase in their capital ratios (Wagster, 1996). As a result, this “tighter” regulatory regime after 1988 may have diminished the incentives for bank shareholders to be active. The Japanese experience before, during, and after 1986–1988, therefore, offers a unique opportunity to examine the impact of regulation on shareholder oversight.

We form three periods to conduct our hypothesis tests. Specifically, we examine periods from 1983 to 1985, from 1986 to 1988, and from 1989 to 1996. The first and last periods represent

¹ González (2005) studies bank risk-taking in 36 countries and argue that the relation between bank risk-taking and bank regulation is conditioned on the bank's charter value. To test his hypothesis, he uses a market-to-book ratio of total assets as a proxy for the bank's charter value and interacts it with a high regulation dummy when explaining bank risk-taking. He finds risk-taking is higher when regulatory restrictions are higher, but primarily when charter values are low. Barth et al. (2004) study bank regulations from more than 60 countries and find that banks in less regulated countries have a higher probability of suffering a major banking crisis. They also study bank ownership, but their focus is on state-ownership, which they find is harmful to the financial system.

² There are at least three dimensions to private (i.e., internal) monitoring: (i) ownership structure, (ii) boards of directors, and (iii) executive compensation contracts. Prowse (1992) finds that large owners of nonfinancial Japanese firms are active monitors of firm-specific risk, while Kang and Shivdasani (1999) find that board composition of nonfinancial Japanese firms is not related to firm-specific risk. Due to these prior findings for nonfinancial Japanese firms, we only focus on ownership concentration as a potential internal monitoring mechanism for Japanese banks. An effective incentive-inducing compensation contract is another viable mechanism used to motivate managers to monitor risk and to engage in profit-maximization. However, under the Japanese Commercial Code, executive stock options only became available in the mid-1990s.

periods before and after the less restrictive regulatory “event period”, 1986–1988. According to the substitution hypothesis, the period 1986–1988 represents the only period where the less restrictive regulatory environment could have allowed shareholder oversight to matter in an economically meaningful sense, and thus for shareholder monitoring to take place. To test this hypothesis, we empirically identify the relation (using regression analyses) between ownership concentration and bank-specific risk during the 1986–1988 period. A positive relation would reveal monitoring by large shareholders. Consistent with the monitoring hypothesis, we find a positive relation between ownership and risk during the 1986–1988 period.³ This positive relation does not exist in the prior period, 1983–1985. With the introduction of the Basle Accord in 1988, however, it marks the beginning of a stricter regulatory environment. Consequently, during this latter period, from 1989 to 1996, we find that the positive relation between ownership concentration and bank risk virtually disappears.⁴ Additional sensitivity analysis suggests that the relation between ownership and risk is weak during 1988–1990, but that the relation disappears after 1990. These sensitivity results are, we believe, a reflection of the gradual adoption of the Basel Accord that took place in Japan; a partial implementation of the Accord took place in 1991 and a full implementation took place in 1993.⁵

We also examine the relation between shareholder concentration and bank performance. Economic incentives are an important driving force behind shareholder oversight.⁶ For banks in particular, Barth, Caprio, and Levine (2004) suggest that strict banking regulations may limit bank agents from exerting corporate control that would promote bank profitability. We expect that Japanese bank shareholders that become active when the regulatory environment becomes less restrictive will be the most profitable. Consistent with our expectation, our empirical results reveal a stronger positive relation between ownership concentration and bank performance (accounting profits) during the less restrictive regulatory environment (1986–1988) when compared to other periods.

Overall, the observed relations between bank risk and ownership concentration and between ownership concentration and bank performance, during the less restrictive regulated period and more regulated periods, lend support for the substitution hypothesis and the shareholder monitoring hypothesis. That is, regulation and shareholder monitoring appear to be substitute governance mechanisms. During a less restrictive regulatory period where the capital ratio requirement was decreased and deposit insurance was increased, shareholder monitoring was present in banks with greater risk, and those shareholder-monitored banks captured more profits than other banks. Because we focus on a single industry that experiences a significant decrease in regulation and then a significant increase in regulation, our findings provide important additional empirical support for the thesis that shareholder oversight and regulation substitute for one another.

³ There is an issue as to which, ownership or risk, should be the dependent variable. Because our focus is on monitoring, we treat ownership structure as the dependent variable, consistent with the monitoring literature (e.g., Demsetz & Lehn, 1985; Grossman & Hart, 1986; La Porta et al., 1998).

⁴ It is important to note that the substitution hypothesis does not necessarily imply that ownership structure will change from one period to the next. Instead, the hypothesis implies that the relation between ownership concentration and bank risk will change.

⁵ We are grateful to the referee for suggesting this investigation.

⁶ There are many papers that claim that “good” governance can lead to higher valuations and/or profitability. For example, Black, Jang, and Kim (2006) is a good recent paper and Morck et al. (1988) is a classic paper that make this claim. However, there are some papers that contend there is no relation between governance and firm value (e.g., Demsetz & Lehn, 1985; Demsetz & Villalonga, 2001 are representative of a good recent paper and a classic paper, respectively).

Our paper is most similar to Anderson and Fraser (2000) and Konishi and Yasuda (2004). The first paper examines the relation between managerial shareholdings and risk-taking during more and less regulated periods for the US banking industry. The second paper studies stable shareholders and risk-taking after a higher capital adequacy ratio was imposed in Japan. Though their papers and our paper study bank risk and bank ownership, theirs focus on risk-taking, while ours focuses on monitoring. Their papers rely on capital market measures of risk (i.e., the variance of stock market rates of returns). In our study, in addition to stock return variance, we introduce additional risk measures specific to the banking industry such as write-offs for loans losses, a data item that is typically difficult to obtain. In addition, we also study the relation between ownership and profitability. Finally, while our paper studies Japanese banks, as Konishi and Yasuda (2004) do, we conduct cross-sectional tests during different periods, with some emphasis on the deregulated period, while they conduct a time-series test focusing more on the regulated period. Overall, we believe we are offering important additional empirical evidence on the substitution hypothesis.

The rest of our paper is organized as follows. The next section describes the regulatory environment for Japanese banks. Section 3 discusses our data and empirical design. Section 4 presents the empirical results and Section 5 concludes.

2. The Japanese regulatory environment

Throughout the 1960s and 1970s, Japan's banking structure was characterized by strict regulation.⁷ During the early 1980s, however, Japan underwent significant financial markets deregulation, which included the relaxation of bank lending practices (Marsh & Paul, 1997). Throughout the rest of the 1980s, the Japanese banking environment continued to experience distinct regime shifts characterized by significant changes in its regulatory environment. We describe the most salient changes that occurred during this time period, and their potential implications on shareholder behavior, in the following subsections.

2.1. Changes in 1986: capital adequacy and deposit insurance

In 1985, the Financial System Research Council, under 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%. Under the new requirement, the ratio became a capital-to-asset ratio and was set at 4%. During this time period, deposits represented over 80% of total assets on average. Therefore, going from a 10% capital-to-deposit ratio to a 4% capital-to-assets ratio represented a significant relaxation in the capital ratio requirement. In addition, under this new capital ratio requirement, 70% 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) finds that in 1987, Japanese banks' capital-to-assets ratio was 12.35% when including hidden reserves, but only 2.11% 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. Therefore, in effect, 1986

⁷ See Kitagawa and Kurosawa (1994) for an excellent overview of the history of Japanese bank regulation.

represents a year in which significant deregulation took place in the Japanese banking industry. As a result, bank shareholders gained additional flexibility, as the regulatory capital adequacy ratio requirement became easier to manage.

In addition to the relaxing of the capital ratio requirement, another major event that took place in 1986 was the raising of the Japanese banks' deposit insurance. The Deposit Insurance Corporation raised deposit insurance, to a single depositor, to 10 million yen from its original 3 million yen.⁸ This 233% 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. An increase in deposit insurance is a particularly relevant event for our study because it is well known that deposit insurance provides banks with risk-taking incentives.⁹ 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 the context of higher deposit insurance, shareholders may encourage bank management to engage in more risk-taking ([Crawford, Ezzell, & Miles, 1995](#)). At the same time, shareholders will voluntarily expend a monitoring effort because if the risk pays off, then they are the ones that ultimately enjoy the benefits, while losses are limited to the little equity that exists. Consequently, these contentions suggest that some Japanese bank shareholders (those that can best respond to the costs and benefits of monitoring) will engage in 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 US contributed to additional risk-taking during the 1980s.¹⁰

Overall, the period immediately following 1986 represents a less restrictive regulatory period and, consequently, it also represents a period of optimal risk-taking and "control potential" (or payoff potential) to those that can provide internal monitoring. Therefore, according to the substitution hypothesis, it is during this period where we should observe shareholder oversight. However, the 1988 Basle Accord later imposed regulations on Japanese banking that may have constrained and limited the returns to shareholder oversight. We discuss this issue in more detail in the next subsection.

2.2. The 1988 Basle Accord

The 1988 Basle Accord imposed international standards on bank capital requirements.¹¹ The overall goal was to reduce risk in the international banking system by regulating bank capital for all member countries, which included 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

⁸ With the enactment of the Deposit Insurance Law of 1971, the Japanese Deposit Insurance Corporation was established and modeled after the US Federal Deposit Insurance Corporation ([Tatewaki, 1991](#)).

⁹ Refer to [Demirgüç-Kunt and Kane \(2002\)](#), [Noe, Rebello, and Wall \(1996\)](#), [Keeley \(1990\)](#), [Kareken and Wallace \(1978\)](#), [Merton \(1978\)](#), and [Sharpe \(1978\)](#).

¹⁰ [Saunders et al. \(1990\)](#) 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.

¹¹ See [Montgomery \(2005\)](#), [Hall \(1993\)](#), [Wagster \(1996\)](#), and [Marsh and Paul \(1997\)](#) for detailed overviews on the Basle Accord.

known that Japanese banks enjoyed lower capital ratios (when excluding hidden reserves) than their international counterparts. In this paper, we argue that the additional regulatory presence created by the Accord and required increase in bank equity led bank stockholders to become less active—i.e., 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. Recently, [Konishi and Yasuda \(2004\)](#) provide some empirical support for this contention. They find decreases in Japanese bank risk-taking following the Accord.

The Basle Accord raised the capital standard to 8% 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% ratio of capital-to-assets without including hidden capital ([Kester, 1991](#)). In response to the increase in the capital adequacy requirement, several observations have been noted. [Kester \(1991\)](#) and [Sasaki \(1994\)](#) find that banks primarily met the new capital ratio requirement 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. [Horiuchi and Shimizu \(1998\)](#) observe decreases in loans made by Japanese banks which led to increases in the capital ratio. [Hall \(1993\)](#) argues that Japanese banks reduced their loans to businesses during the period 1990–1993 to reduce the amount of risky assets they had on their books in order to maintain appropriate capital levels. [Montgomery \(2005\)](#) makes a similar observation. She finds that banks shifted away from loans and corporate bonds in their portfolios and shifted toward government bonds. [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. *The shareholder monitoring hypothesis and the substitution hypothesis*

Based on our discussion, we examine three periods: the 1983–1985 period, the 1986–1988 period, and the 1989–1996 period. In view of two major regulatory changes, the decrease in the capital adequacy requirement and the increase in deposit insurance that occurred in 1986, we argue that 1986 represents the first year when the regulatory environment was flexible and conducive for bank shareholder oversight to take place. However, we also argue that the passage of the Basle Accord that occurred in 1988 marks the end of this brief era. Based on our contentions, we expect the following results. First, we should observe a significant positive relation between bank-specific risk measures and ownership concentration (i.e., the shareholder monitoring hypothesis) for the period from 1986 to 1988. That is, when the regulatory environment is less restrictive, then shareholders become more active (i.e., the substitution hypothesis).

Second, we should also observe a significant positive relation between bank profitability and ownership concentration for the same period from 1986 to 1988. When the nature of the regulatory environment shifts, we expect owners and their risk-taking to respond optimally (depending on the specific period transition) at the firm level in response to the profit opportunities that exists.

Finally, for the periods before and after the 1986–1988 period, which are periods characterized by stricter regulation, we do not expect to see positive relations between ownership concentration and bank risk, and between ownership concentration and profitability, as regulation provides sub-

sidized monitoring and restricts banks' activities and flexibilities. Because the Basel Accord was adopted in a phased-in manner, with a partial implementation in 1991 and a full implementation in 1993, the last period extends from 1989 to 1996 to assess the impact of this gradual adoption. The following section discusses how we conduct our empirical tests.

3. Data and empirical design

In our study, we test the relation between bank risk and ownership concentration by using ordinary-least-squares (OLS) regressions. We use ownership concentration as a dependent variable using three distinct measures of bank risk as explanatory variables. At this point, we should mention that some papers use bank risk as a dependent variable and ownership structure as an explanatory variable. However, because our hypothesis is based on the relation, not necessarily the directional causation, between risk and ownership, and, perhaps more importantly, because our paper's focus is on "monitoring", we treat ownership concentration as a dependent variable and various measures of risks as explanatory variables, which is consistent with the monitoring literature (we will discuss this issue again shortly).

The relation between ownership concentration and risk can be confounded by the bank's charter value. Therefore, we include a proxy for charter value in the regression model as an important control variable. We also employ firm size as another control variable, as it has been suggested by prior research as being directly related to ownership concentration. In subsequent tests of the structural change between periods, we pool our data and include period dummies. Finally, in tests on bank profitability, we include a keiretsu dummy variable. Keiretsu banks are able to capture "rents" from their client firms, and as such they should be more profitable than other banks. A more detailed discussion of our dependent and explanatory variables follows.

3.1. Dependent variables: ownership concentration and profitability

Bank ownership data is collected from the *Japan Company Handbooks*, published by Toyo Keizai Inc., from 1983 to 1996. This source identifies the top 6 to top 10 shareholders based on their percentage ownership. For 1991, there are 65 banks in our sample.¹² Consistent with Demsetz and Lehn (1985) and Prowse (1992), we use the following measure of ownership concentration:

$$\text{LTOP6} = \log \left[\frac{\text{TOP6}}{100 - \text{TOP6}} \right]$$

TOP6 represents the concentration of ownership of the top six largest shareholders.¹³ The log transformation is calculated to create an unbound dependent variable.

To ensure the robustness of the LTOP6 results, we also employ the following alternative ownership concentration measure:

$$\text{LHERF} = \log \left[\frac{\text{HINDEX}}{1 - \text{HINDEX}} \right]$$

¹² Our sample includes all commercial banks that include both city banks and regional banks. The distinction between the two types of banks is based solely on the location of their headquarters. In our study, when we distinguish between these two bank types, we find that it does not affect our findings.

¹³ In almost 10% of the observations, there was a tie for fifth place. Using TOP6 completely eliminates any potential problems that ties might introduce.

HINDEX is the Herfindahl index, which is calculated in the following manner: the percent ownership stakes of each of the top six largest shareholders are individually squared and then summed. LHERF is used in regressions where ownership concentration is a dependent variable. Demsetz and Lehn (1985) also employ a Herfindahl index to ensure the robustness of their ownership concentration results. The benefit of using the Herfindahl index is that it gives more weight to larger ownership stakes.

We are well aware that some papers that examine the relation between risk and ownership concentration treat risk as the dependent variable (recent papers that do this include Anderson & Fraser, 2000; González, 2005; Konishi & Yasuda, 2004). However, how one thinks of the relation between bank risk and ownership concentration depends on one's viewpoint (see Saunders, Strock, & Travlos, 1990, p. 645). Demsetz and Lehn (1985) and Grossman and Hart (1986) point out that ownership concentration is endogenous to firm-specific factors. That is, some firms, such as riskier firms, need monitoring owners. Therefore, empirical papers that study ownership monitoring have treated ownership structure as a dependent variable (e.g., Demsetz & Lehn, 1985; Holderness et al., 1999; La Porta et al., 1998). Because our paper treats owners as monitors of risk rather than as risk-takers, we allow ownership to be the dependent variable. Note also that our paper is more focused on the relation between risk and ownership concentration rather than on the direction of causality.¹⁴

In subsequent analyses, bank profitability is a dependent variable. Shleifer and Vishny (1986, 1997) contend that large shareholders monitor management for the purposes of profit maximization. Morck, Shleifer, and Vishny (1988) and McConnell and Servaes (1990) argue that large owners, by virtue of their oversight and activism, enhance firm value. For these reasons, the prior theoretical literature (e.g. Huddart, 1993) and the prior empirical literature (e.g., McConnell & Servaes, 1990; Morck et al., 1988), often consider firm performance as being endogenous to ownership. Of course, it is entirely possible for owners to simply desire more shares in firms they believe will have higher returns. This possibility raises a question of causality. To control for this possibility, we regress profitability on lagged ownership variables. This way, we are examining the effect of ownership on subsequent profitability, and not the other way around.

Bank profit is calculated as net income to book equity (ROE). We use accounting profits as our measure of bank profitability rather than stock market rates of return because, as stated by Demsetz and Lehn (1985), stock market returns adjust for any divergences between the interests of management and owners, while accounting measures do not. Smith (1996) and Weisbach (1988) also make similar claims in stating a preference for using accounting profit to identify the effects of active governance. Stock market valuations reflect the market's present valuation of long-run returns, while accounting returns reflect the immediate effect of shareholder oversight.

3.2. Explanatory variables

The financial statements data and stock returns data used in this study are retrieved from the PACAP Database-Japan.¹⁵ To test for the relation between bank risk and ownership concentration we employ three distinct, but most commonly cited measures of bank risk. Prior literature provides justification for each measure as an appropriate proxy for bank risk. A discussion of each bank risk variable, and a discussion of our control variables, is provided below.

¹⁴ Incidentally, the results remain qualitatively the same when risk is the dependent variable.

¹⁵ PACAP Database-Japan is created in cooperation with Daiwa Institute of Research and Toyo Keizai.

3.2.1. Bank specific risk measures

The variance of stock returns (VRET) is a commonly used measure of bank risk (e.g., Demsetz & Lehn, 1985; Houston & James, 1995; Saunders et al., 1990, among others). Demsetz and Lehn (1985) state that stock return volatility measures the instability of the firm's environment. In fact, Saunders et al. (1990) state that stock return variance is the most appropriate indicator of risk for commercial banks. Similar to Houston and James (1995) and Anderson and Fraser (2000), we also use the variance of daily stock returns (VRET) and we calculate this for each year.¹⁶ We expect a positive relation between stock return volatility and ownership concentration. If stock return variance is high, then shareholder monitoring should be present.

The equity to asset ratio (EA) is also 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.¹⁷ 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) suggest that these capitalization ratios are also a good measure of thrift risk-taking. Gibson (1995) also 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.¹⁸ Because a low capital ratio reflects high bank risk, we expect a negative relation between the capital ratio variable and the ownership concentration variable.

Finally, we also use write-off for loan losses (WR) as a measure of bank risk (Gorton & Rosen, 1995). Most empirical studies are unable to use this risk measure due its unavailability (Sharpe, 1994 makes a similar contention). When borrowers default on their bank loans, banks will write off these defaults on their balance sheets. For our write-off measure (WR), we use the ratio of total write-offs to total investments, loans, and receivables.¹⁹ Because a higher amount of write-offs reveals risky lending behavior, we expect a positive relation between the write-off variable and the ownership concentration variable. The next subsection discusses control variables.^{20,21}

3.2.2. Control variables

If the bank's charter value is high, then bank shareholders may own more of the bank's stocks. Therefore, a bank's charter value may represent an important explanatory variable for ownership concentration. In addition, because banks with high charter values have low risk, as risk-taking might jeopardize high charter values (Anderson & Fraser, 2000; Konishi & Yasuda, 2004), it

¹⁶ We have 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 et al. (1990) specifically state that stock return variance represents a superior risk measure to beta.

¹⁷ See Pringle (1974), Santomero and Watson (1977), Taggart and Greenbaum (1978), Buser, Chen, and Kane (1981), Marcus (1983), and Houston and James (1995).

¹⁸ We discuss results using variants of our capital ratio measure later in the paper.

¹⁹ We discuss results using variants of our write-off ratio measure later in the paper.

²⁰ Houston and James (1995) and Knopf and Teall (1996) provide additional discussions on financial institution risk measures that are employed in our study.

²¹ 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 US derivative market, but we do not have this data.

implies that some large shareholders may be present in banks with low risk. That is, a bank's charter value could confound the hypothesized positive relation between risk and ownership concentration. To control for these possibilities, we include a dummy variable equal to one if the bank has a “high” charter value (i.e., above the median charter value) in the ownership concentration regression. Our measure of charter value follows Keeley's (1990) adaptation of Tobin's Q , which is calculated as the sum of the market value of equity plus the book value of liabilities divided by the book value of assets. This measure of charter value (KEELEYSQ) is also used in Anderson and Fraser (2000) and Konishi and Yasuda (2004).

The natural log of the market value of equity represents our proxy for firm size (LMVE). Larger firms will have lower ownership concentrations 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 institutional ownership and finds no significant relation 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 relation between bank size and ownership concentration. Consistent with Prowse (1992), this would reveal that large shareholders are not wealth constrained.

In our profitability tests, where ROE is a dependent variable, we also include a keiretsu dummy variable (KEIRETSU) equal to one if the bank is one of the keiretsu main banks. Keiretsu banks are known to extract rents from their client firms (Weinstein & Yafeh, 1998). In exchange for maintaining close relationships with client firms, keiretsu banks “pressure” client firms to maintain high levels of bank debt at high interest rates (Weinstein & Yafeh, 1998). Therefore, keiretsu banks are likely to be more profitable than other banks.

All variables that are employed in this study are described in Table 1. Summary statistics are also reported by different periods. First, we observe that the top six shareholders (TOP6) hold over 18% of the bank, on average, and that TOP6 does not vary much across different periods.²² On the other hand, we see that our risk measures fluctuate substantially over time but they do not show any consistent pattern across different periods. It is important to note, however, that our hypothesis does not necessarily imply that aggregate ownership concentration will change across different periods, instead, our hypothesis predicts that we observe different cross-sectional relations between ownership structure and risk for each period, where we only anticipate a positive relationship between risk and ownership concentration for the middle period (1986–1988).

The mean of ROE shows that Japanese banks were profitable during the 1980s, but it is quite revealing that bank profits were highest during the 1986–1988 period and they began to decline toward the end of the 1980s. Approximately 10% of our bank-year observations are keiretsu banks.

²² The banks' ownership “composition” is quite homogenous. Insurance companies are invariably the primary large shareholders of banks followed by other financial institutions (which consists of other banks and long-term credit banks), and nonfinancial corporations. There are no cases where an inside shareholder, or any individual, is among the top six shareholders. Due to the observed homogeneity with regard to the banks' ownership composition, we do not report separate results by owner-type. Prowse (1992) finds that when Japanese financial institutions (including insurance companies) are large shareholders then they are active monitors. Kim and Nofsinger (2005, p. 220) find that Japanese institutional owners (in particular, financial institutions such as insurance companies and nonfinancial corporations) are equally active in their investing behavior.

Table 1
Descriptions of variables used in the study

Variables		1983–85	1986–88	1989–91	1992–96
Ownership measure					
TOP6	The percentage of outstanding common shares owned by the top six shareholders. LTOP6 represents log transformation of TOP6/(100 – TOP6)	18.849 (4.860)	18.500 (4.365)	18.094 (3.666)	18.456 (3.437)
Profit measure					
ROE	Net income to book value of equity	0.079 (0.019)	0.084 (0.019)	0.058 (0.014)	0.037 (0.018)
Risk measures					
VRET	Annual variance of daily bank stock returns	0.166 (0.229)	0.300 (0.697)	0.275 (0.199)	0.203 (0.139)
EA	Book value of total equity to book value of total assets	0.030 (0.008)	0.031 (0.007)	0.036 (0.006)	0.039 (0.007)
WR	Ratio of write-off for loan losses to total investments, loans, and receivables	0.076 (0.142)	0.097 (0.134)	0.058 (0.082)	0.051 (0.107)
Control measures					
KEELEYSQ	The sum of market value of equity plus book value of debt divided by the book value of assets	1.035 (0.028)	1.078 (0.039)	1.054 (0.029)	1.028 (0.023)
LMVE	Log transformation of fiscal year-end market value of equity	32.824 (1.422)	33.518 (1.420)	33.553 (1.257)	33.262 (1.290)
KEIRETSU	Dummy variable equal to one if the bank is a keiretsu main bank, zero otherwise	0.123 (0.330)	0.105 (0.307)	0.092 (0.290)	0.091 (0.289)

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. VRET and WR are adjusted by 10^3 . Standard deviations are reported in parentheses.

4. Regression results

4.1. Ownership concentration

In Table 2, we present OLS regression results examining the relation between risk and ownership concentration before, during, and after the 1986–1988 period. LTOP6 and LHERF are the dependent variables, and our three risk measures are the key explanatory variables. In estimating the regression models, we relax the assumption of independence and homoscedasticity under OLS. Thus, the estimated standard errors are robust to any potential bias from inter-dependence and heteroscedasticity across observations.

From Table 2, for models where LTOP6 is the dependent variable, we see that all three bank-risk variables are statistically significant with the correct signs only during the middle period from 1986 to 1988. Models using LHERF as the dependent variable yield qualitatively similar findings, i.e., risk variables are only statistically significant with correct signs during the middle period. When volatility of bank stocks is high, when bank equity is low, and when write-off for loan losses is high, the relation between bank risk measures and ownership concentration is strong.²³ During the middle period, the three risk measures are not only significant, but they also have larger parameter coefficients (for the most part) as compared to the other periods, suggesting that the relation between ownership concentration and risk is most sensitive during the middle period. To ensure the robustness of these results, we also conduct several specification checks, including the consideration of several alternative measures of EA,²⁴ and by deflating write-offs (WR) by total loans only. However, regardless of how we measure risks, the findings remain qualitatively the same.²⁵

Thus far, our empirical results support the shareholder monitoring hypothesis. When risk is high, there will be more control potential and higher payoff potential accrued, and, as a result, shareholders will maintain a significant ownership presence to facilitate oversight and to enjoy the potential payoff from their risk-taking. In addition, the fact that the relation between ownership and risk is strongest for the 1986–1988 period lends support to the substitution hypothesis that shareholder oversight emerges when regulatory scrutiny diminishes. An additional noteworthy observation: while it may not be surprising that the market-based measure reacted as it did, given our hypotheses, it is somewhat impressive that the accounting based measures also show up as significant given the short 1986–1988 period. Therefore, we view our evidence supporting the substitution and monitoring hypotheses as being quite strong. Finally, it is also noteworthy that the R^2 and F -statistics are highest during this middle period and that the risk variables are jointly significant only during the middle period (the F -statistics for the risk measures are statistically significant at the 1% level).²⁶

²³ Even though three proxies of bank risk-taking are introduced in a regression model, we confirm that multicollinearity is not affecting our parameter estimate results on the basis of a variance-inflation-factor (VIF) test. We also execute a two-factor model using each risk measure and our LMVE control variable. The results are qualitatively the same as those of our multiple regression model. In addition, we also conduct our analysis using intra-firm 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.

²⁴ See Pettway, Kaneko, and Young (1991) for a discussion on calculating these alternative ratios.

²⁵ We initially include year dummies in each regression model, but these dummies are statistically insignificant and they had no material affect on the other results. Therefore, we do not report results that include year dummies.

²⁶ We also restricted our sample to banks that had available data for every period. This restriction ensures that differences in results among the periods 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. However, due to the issue of selectivity bias of using survived firms, we do not report them.

Table 2
Regression results for ownership concentration

	Dependent variable = LTOP6			Dependent variable = LHERF		
	1983–1985	1986–1988	1989–1991	1983–1985	1986–1988	1989–1991
VRET	0.012 (0.087)	0.132*** (0.047)	−0.019 (0.088)	0.048 (0.151)	0.218*** (0.055)	−0.045 (0.157)
EA	−0.095 (0.078)	−0.099* (0.059)	−0.066 (0.057)	−0.163 (0.133)	−0.142 (0.101)	−0.080 (0.101)
WR	0.041 (0.160)	0.406** (0.192)	0.124 (0.294)	0.092 (0.278)	0.706** (0.340)	0.226 (0.510)
KEELEYSQ	0.051 (0.081)	0.042 (0.072)	0.038 (0.038)	0.075 (0.143)	0.070 (0.126)	0.041 (0.064)
LMVE	−0.001 (0.050)	0.010 (0.034)	0.000 (0.026)	0.009 (0.084)	0.034 (0.058)	0.020 (0.045)
Intercept	−1.210 (1.849)	−1.637 (1.271)	−1.306 (1.008)	−4.967 (3.094)	−6.013*** (2.152)	−5.559*** (1.728)
R^2	0.067	0.143	0.032	0.076	0.138	0.029
F -statistic for model	1.85*	5.80***	0.98	1.90	5.09***	0.82
F -statistic for risk measures	0.75	9.14***	0.53	0.79	6.41***	0.31
N	146	172	195	146	172	195

This table shows regression results from three periods: 1983–1985, 1986–1988, and 1989–1991. Ownership concentration of the top six shareholders (LTOP6 and LHERF) is the dependent variable. LTOP6 is the log of $[\text{TOP6}/(100 - \text{TOP6})]$, where TOP6 represents the percentage of total outstanding shares held by the top six shareholders. LHERF is the log of $[\text{HINDEX}/(1 - \text{HINDEX})]$, where HINDEX is the Herfindahl index. The explanatory variables are as follows: 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, LMVE is the log of year-end market value of equity, and KEELEYSQ is an indicator of Keeley's Q . EA is adjusted by 10^2 , VRET, and WR are adjusted by 10^3 . Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. R^2 and F -values are also reported. N denotes the number of firm-year observations.

Charter value (KEELEYSQ) is not significantly related to ownership concentration for any period. Just as important, whether or not we include charter value in the regression model does not affect the reported empirical relation between ownership concentration and risk. Therefore, while charter value and risk may be negatively related to each other, their potential relation does not seem to confound the relation between ownership and risk. In additional tests where charter value and risk are used as interaction variables, the results again do not qualitatively differ from what is reported.

The bank size variable (LMVE) is not statistically significant for any period. The insignificant LMVE finding is consistent with prior literature. When the largest owners are institutional shareholders, as is the case for our bank sample, then we should observe no significant relation between firm size and ownership concentration because institutional shareholders are usually not wealth-constrained (Prowse, 1992).²⁷

Although the passage of the Basle Accord was announced in 1988, it was adopted in Japan in phases. Its full implementation had to wait until 1993. To assess the consequences of this gradual implementation on the shareholder monitoring hypothesis, we extend the study period to 1996 and form the following three 3-year nonoverlapping periods: 1988–1990, 1991–1993, and 1994–1996. These periods should capture the immediate announcement effect, the transition effect, and the full effect of the Basle Accord, respectively. Regression results are presented in Table 3.

Quite interestingly, the parameter coefficient for EA is statistically significant and large in terms of magnitude during the 1988–1990 period. None of the risk measures, however, are statistically significant after 1990, suggesting that the relation between risk and ownership concentration disappears even before the Basle Accord is fully implemented.

Overall, based on the strong pattern of correct signs and the statistical significance of our risk measures during 1986–1988, and based on the immediate weakening of such patterns and significance in subsequent periods, we conclude that the ownership-risk relation is strongest under the less restrictive regulatory environment from 1986 to 1988. Some weak relation between ownership and risk remains until 1990, but that the relation disappears thereafter.

4.2. Profitability

In this section, we provide some additional results on shareholder oversight by looking at bank performance (profitability). According to our hypothesis, we would expect banks with active shareholders to be the most profitable under the less restrictive regulatory environment from 1986 to 1988. Shleifer and Vishny (1986, 1997) and others have contended that large shareholders monitor management for the purposes of profit maximization.

In empirical tests, we regress accounting profits (ROE) on ownership concentration to identify their relation. We mentioned earlier in the paper that it is entirely possible that owners simply

²⁷ We should also mention that Prowse (1992) shows that keiretsu nonfinancial firms and independent nonfinancial firms have different governance structures. However, we are not sure if his findings imply that keiretsu banks and nonkeiretsu banks will have different ownership concentrations, as banks are often the primary monitors of both keiretsu and independent nonfinancial firms in Japan. In an unreported table, we included a keiretsu dummy into the regression models and we find that the dummy is not statistically significant. Because keiretsu banks and nonkeiretsu banks appear to have similar ownership concentrations, and because we also find that the keiretsu dummy variable is highly correlated with the bank size variable (the correlation coefficient is over 0.7), we choose not to report the keiretsu dummy result.

Table 3

Regression results for ownership concentration during the phase-in period of the Basle Accord

	1988–1990	1991–1993	1994–1996
VRET	0.035 (0.905)	−0.080 (0.098)	0.159 (0.139)
EA	−0.093* (0.054)	−0.031 (0.057)	−0.008 (0.041)
WR	0.133 (0.243)	0.100 (0.326)	0.205 (0.125)
KEELEYSQ	−0.012 (0.050)	0.015 (0.044)	0.010 (0.056)
LMVE	0.016 (0.027)	0.003 (0.022)	−0.024 (0.024)
Intercept	−1.737 (1.013)	−1.508 (0.870)	−0.789 (0.877)
R^2	0.069	0.012	0.033
F -statistic for model	1.55	0.29	1.12
F -statistic for risk measures	1.31	0.37	1.68
N	191	197	196

This table shows regression results from three periods: 1988–1990, 1991–1993, and 1994–1996. LTOP6 is the dependent variable. LTOP6 is the log of $[\text{TOP6}/(100 - \text{TOP6})]$, where TOP6 represents the percentage of total outstanding shares held by the top six shareholders. Explanatory variables are as follows: 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, LMVE is the log of year-end market value of equity, and KEELEYSQ is an indicator of Keeley's Q . EA is adjusted by 10^2 , VRET, and WR are adjusted by 10^3 . Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. R^2 and F -values are also reported. N denotes the number of firm-year observations.

hold more shares in firms that are expected to have high returns. To avoid this potential reverse causality, we lag the LTOP6 variable and use this $t - 1$ variable as an explanatory variable in our regression models that use subsequent accounting profits (ROE) at time t as the dependent variable.²⁸ If shareholders engage in profit maximizing behaviors during 1986–1988, then the relation between lagged LTOP6 and subsequent ROE should be most sensitive during this middle period as compared to other periods.

Along with the ownership variable (LTOP6), we control for other factors that are related to bank profits. Specifically, we use write-offs (WR) as a risk variable.²⁹ We also include the bank's charter value (KEELEYSQ) as an important control variable. Banks with higher charter values are likely to have higher accounting profits, and this might be especially true during more heavily regulated periods where banks have less freedom to engage in a range of their own activities leaving factors such as charter value as potentially having greater explanatory power on performance than otherwise. Because keiretsu banks can capture rents from their client firms (see our discussion in Section 3.2.2), we also include a keiretsu dummy variable (KEIRETSU). We also consider including LMVE as a control variable, in order to capture any economies of scale effects, however, as mentioned earlier (in footnote 25) the correlation between the keiretsu dummy variable and the LMVE variable is very high (over 0.7). In determining which of these two variables to use, we decided to go with the KEIRETSU dummy variable as the keiretsu banks' ability to capture rents is well established in the academic literature (e.g., Weinstein & Yafeh, 1998).

In Table 4, we present regression results on the relation between accounting profit and ownership concentration. In addition to the 1983–1985, 1986–1988, and 1989–1991 periods, we also

²⁸ See Section 3.1 for a discussion on using accounting profits (ROE) as our measure of bank profitability as opposed to market measures such as stock returns.

²⁹ The write-off amount is not directly related to reported profits, as write-offs only reduce the allowance for loan losses. Large write-offs do often lead to an increase in the provision for loan losses, which does lower reported profits, but that happens with a lag. We thank Don Fraser for pointing this out to us.

Table 4
Regression results for profitability

	1983–1985	1986–1988	1989–1991	1990–1992	1991–1993
LTOP6 ($t - 1$)	0.066* (0.039)	0.072* (0.037)	0.023 (0.038)	0.010 (0.052)	−0.012 (0.070)
WR	0.036 (0.057)	−0.046 (0.112)	0.220 (0.113)	0.086 (0.175)	−0.287 (0.222)
KEELEY SQ	0.364* (0.110)	0.148*** (0.056)	0.223*** (0.050)	0.174*** (0.057)	0.005 (0.086)
KEIRETSU	0.020* (0.008)	0.032***	0.000 (0.003)	−0.014*** (0.004)	−0.015*** (0.005)
Intercept	0.293* (0.114)	(0.006) −0.068 (0.059)	−0.174*** (0.052)	−0.128** (0.060)	0.038 (0.092)
R^2	0.654	0.616	0.239	0.082	0.094
F -statistic	100.71***	40.38***	9.22***	3.51**	5.71***
N	110	164	191	195	198

This table shows OLS regression results from five periods. The dependent variable is accounting profits (ROE), where it is calculated as net income to book equity. LTOP6 is the ownership concentration variable and calculated as $\log[\text{TOP6}/(100 - \text{TOP6})]$ of previous year, where TOP6 represents the percentage of total outstanding shares held by the top six shareholders. The index ($t - 1$) on the LTOP6 variable indicates that the variable is lagged by 1 year. WR is the ratio of write-offs to investments, loans, and receivables, KEELEYSQ is an indicator of banks with high Keeley's Q , and KEIRETSU is an indicator variable equal to one if it is a keiretsu main bank. LTOP6 is adjusted by 10^{-1} and WR is adjusted by 10^{-2} . Standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. R^2 and F -values are also reported. N denotes the number of firm-year observations.

consider 1990–1992 and 1991–1993 periods. These last two periods represent different ways of denoting the period following the passage of the Basle Accord. From this table, we see that the lagged ownership concentration variable (LTOP6) is positively related to subsequent profitability in both the 1983–1985 and 1986–1988 periods. However, the estimated coefficient is larger in the latter period, suggesting that ROE responds to LTOP6 most sensitively under a less restrictive regulatory environment.³⁰ The estimated coefficient becomes smaller and also loses its statistical significance after 1989. This finding again lends support to the substitution hypothesis. When the regulatory environment is less restrictive, shareholders will exert more active oversight as the potential gains to control and oversight are larger.

Somewhat surprisingly, the risk variable (WR) is not significant in all periods. As expected, charter value (KEELEYSQ) is positively related to accounting profits in most periods. The estimated coefficient of the KEIRETSU dummy variable is positive and significant during the 1983–1988 period. However, quite surprisingly, keiretsu banks are less profitable during 1990–1993 when many Japanese banks began to experience financial difficulties. We do not pursue why this is the case, but it appears that factors other than risk-taking and charter value (such as concentrated ownership) are also contributing to accounting profits differently through time.

We conduct various robustness checks including fixed-effects (FE) regression results. The FE method addresses the endogeneity problem of the independent variables, especially with regard to the potential correlation between LTOP6 and the banks' unobserved heterogeneity which may affect the bank performance measure.³¹ The results from this additional analysis yield qualitatively similar findings as the OLS results and we do not report the results here.

5. Conclusion

We examine ownership concentration and bank risk during the period from 1983 to 1996 for a sample of Japanese commercial banks. During the event period of 1986–1988 when the capital ratio requirement significantly decreased and deposit insurance significantly increased, a positive relation is exhibited between three measures of bank risks and ownership concentration. This finding reveals shareholder oversight during a period where the regulatory environment was less restrictive. We also find a stronger relation between ownership concentration and bank performance (accounting profits) under the less restrictive regulatory environment. Both these risk and profit findings do not persist in subsequent periods, which are distinguished by the Basle Accord regime.

Overall, our research reveals that large shareholders of banks can potentially be important for bank governance (shareholder monitoring hypothesis). Perhaps most importantly, our findings indicate that bank shareholders will exert oversight when the regulatory environment provides more flexibility and more freedom to shareholders. As such, our findings lend support to the substitution hypothesis that regulatory oversight (an external governance mechanism) and shareholder oversight (an internal governance mechanism) substitute for one another. While our paper does not attempt to argue that one governance mechanism is better than another, our results do echo the sentiments of Chami et al. (2005), who stress that the balance between bank regulations

³⁰ We recognize that the denominator in the ROE measure will be affected by regulation. In fact, we observe that the mean ROE is lowest in the third period, as one might expect given the regulatory increase in the capital ratio. However, because our ROE regression analysis is cross-sectional and not a time-series, our analysis does not suffer significantly from this measurement bias, at least not in an unambiguous way.

³¹ The keiretsu dummy variable is left out of the FE regression because it does not vary over periods.

and shareholder oversight (i.e., market discipline) is a delicate and complicated issue, and thus likely to be a difficult one to address in the on-going deliberations on the future of bank regulation.

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