

**A SIMULTANEOUS APPROACH TO ANALYZING THE RELATION
BETWEEN BOARD STRUCTURE, CORPORATE GOVERNANCE
MECHANISMS AND PERFORMANCE OF JAPANESE FIRMS (1989-2001)**

A Thesis Submitted to the College of Graduate Studies and Research
in Partial Fulfillment of the Requirements for the Masters of Science
in the College of Commerce
University of Saskatchewan
Saskatoon

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ABSTRACT

This study examines the significance of corporate governance mechanisms during the corporate governance reform using a sample of 117 non-financial Japanese firms listed on the Tokyo Stock Exchange over the period 1989 to 2001. Japan's prolonged recession brought about numerous reforms in post-bubble Japan. Although it is plausible to infer that the corporate governance system in Japan may have been a factor that led to the sustained recession in Japan, it is vague as to how deep and thorough the changes to Japanese corporate governance have been. The inference is that adverse impact of corporate governance may have been one of the factors that led to the sustained recession in Japan. Numerous proposals have been offered and some implemented in an attempt to fix problems exposed during the recession period in the 1990s. Remedies include instituting reforms to corporate governance by establishing new standards, punishing malpractice, and changing corporate board structures. Many Japanese firms look abroad for alternate governance mechanisms to integrate into their own system of control. As such, most reforms propose changes, for the most part, reflecting the American-style of corporate governance: alignment in incentives between top management and shareholders, board size reductions, and greater board independence to promote better monitoring and firmer discipline.

The significance of proposed changes to traditional Japanese corporate governance is examined in this study. Using a different econometric approach from that of previous studies, the relationship between board composition and firm performance is examined with a simultaneous framework of equations. The purpose of this empirical framework is to tackle potential endogeneity problems between board composition, governance and performance variables. Results show that: (1) there exists a significantly negative relationship between turnover of members of the board of directors and firm performance; (2) board size reduction is significant, but there is no evidence of consistent relationship between outside directorship and firm performance. (3) While keiretsu membership is generally relevant in linking board turnover and performance in Japan, board turnover is sensitive to performance in firms where ownership is concentrated than where ownership is dispersed. (4) President turnover, whether routine or non-routine, is unrelated to performance. Overall, results support that the entire board assumes responsibility for the firm's performance and the 2SLS model is an effective estimator for estimating the relationship between board composition and firm performance.

ACKNOWLEDGEMENTS

I would like to give my greatest appreciation to my thesis supervisors Dr. Prem Mathew and Dr. Semih Yildirim for giving me an opportunity to write my thesis under their direction. Their sound advice and careful guidance were invaluable from the formative stages of this thesis to the final draft.

I am indebted to my many professors who have taught me finance and economics and inspired me to pursue my Master's degree in Finance: my undergraduate professors at the University of Alberta (especially Dr. Randall Morck) and at Hokkaido University (especially Dr. Takao Sasaki), and my graduate professors at the University of Saskatchewan (especially Dr. Prem Mathew and Dr. William Bishopp). I would also like to thank the rest of the academic and support staff of the Department of Finance and Management at the University of Saskatchewan.

I also thank the Association of International Education, Japan (AIEJ) for awarding me the Monbukagakusho scholarship for research at Otaru University of Commerce, Japan. Without the scholarship, I would not have been able to collect all the data for this study. I would like to acknowledge the help of Dr. Kaoru Endo with the empirical tests and for his helpful comments on Japanese corporate governance and econometrics. For their efforts and assistance, special thanks as well to those who helped me with the data collection and in Japan that I regard as so important.

I would like to express my sincere appreciation to my friends. You make my life what it is- an enjoyable journey.

I owe my warmest thanks to my parents, my brother Raymond, my sisters Mei Mei and Anna who offered me unconditional love and continuous support throughout the course of this thesis. Finally, my heartfelt gratitude is due to my loving husband Lambert, for continuous encouragement and support, our daughter Sophie, for her cheerful spirit, and our little son Nicholas, for being such a good boy.

To each of you above, I extend my greatest appreciation. Without you, this thesis would not have been possible.

DEDICATION

To my children, Sophie and Nicholas

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Japanese corporate governance, the system by which corporations are directed and controlled, has been a frequently encountered research topic for economists, policy makers and academics in the last decade. Since the collapse of asset prices in Japan in the early 1990s, the prolonged recession and the floundering banking sector, the assessment of the Japanese corporate governance system has been critically reexamined. Subsequent to the bursting of Japan's stock and property market bubbles in 1991, Japan suffered through a lost decade - three recessions and depressed real GDP growth of roughly 1.2 percent. Unemployment rose to its highest rate since World War II and consumer confidence collapsed. Compounding the problem was a deeply troubled banking sector, with Japanese banks suffering from billions of dollars in bad loans (¥60trillion). The Japanese banks shouldered loans that businesses are unable to repay, mainly from the financial bubble during the 1980s, despite the probability that they would never be repaid. Consequently, Japan now has the largest gross public debt to GDP ratio of any country in the Organization for Economic Co-operation and Development (OECD), reaching approximately 130 percent and is rapidly rising. An explanation often suggested for this situation is the existence of a sub-optimal system of corporate governance.

Morck and Nakamura (1999) argue that Japan's economic problems are a result of more than faulty macro-economic policies and weaknesses in the Japanese system of corporate governance made the country more vulnerable to such difficulties. During the entire recession period, Japan's corporate governance system has been unable to prevent a litany of corporate scandals involving incidents from the destruction of capital to bribery to investor fraud. Deep cross-shareholding relationships, absence of transparency and full financial disclosure, lack of independent directors and a heavy reliance on bank lending highlight maladies in the Japanese corporate system. Consequently, firms in Japan allocated capital according to established relationships rather than in pursuit of the highest return to shareholders. For years, banks led corporate governance in Japan, providing a system of controls based on personnel and shareholding ties with companies that were once regarded as a foundation of stable management. But this pillar of corporate governance in Japan has collapsed with the burst of the bubble economy in the early 1990s.

Throughout the 1990s, corporate governance was much debated in Japan because of the failure of its control system during the stock market meltdown. Corporate governance reform attracted attention as one of the keys to revitalize Japanese firms. A number of reforms were introduced to achieve a more effective governance system for Japanese firms. Predominantly, the policies aim for changes to corporate boards. Most reforms propose changes for the most part reflecting the American-style of corporate governance: alignment in incentives between top management and shareholders, board size reductions, and greater board independence to promote better monitoring and firmer discipline. Further, amendments to the

Commercial Code allow large companies to opt for the American-style of corporate governance. Nevertheless, there have been efforts to re-establish effective corporate governance in Japan as a result and firms began to reduce the size of their boards of directors and announce appointments of independent directors.

1.2 MOTIVATION

Once the envy of many other economies in the world, the high economic growth period in Japan has stalled and lagged behind other leading industrial countries ever since the burst of the twin economic bubbles in the early 1990s. Why has recovery taken so long? The Japanese bank-centered system of corporate control, which worked well in the post-war catching up era, has been criticized as a weak system of corporate control. In his survey of financial deregulations in Japan, Michael Gibson (1999) argues that the low return on wealth reflects characteristics of the Japanese corporate governance system and that financial reforms should focus on measures to improve corporate governance.

In the 1980s, the US economy was stagnant, while the Japanese economy was booming. Therefore, researchers and policy makers tried to take policies from the Japanese style of corporate governance in order to achieve strong economic growth. However, things changed over the next two decades. Japanese firms are now looking abroad to adopt practices from the US system because the US was growing faster than any other matured economy. This study is largely motivated by these changes in the Japanese corporate control systems. Is there a stable form of corporate control for Japanese firms? Researchers and policy makers are constantly attempting to address

this issue.

In response to criticisms, a remarkable amount of corporate governance reforms have been proposed as a key to revive troubled firms in Japan. Corporate board reforms have been the capstone in corporate governance discussions and the Corporate Governance forum of Japan (CGFJ) is just one example. CGFJ, a private sector organization consisting of representatives from Japanese corporations, institutional investors and academia, set forth important corporate control guidelines and continue to define and promote best practice corporate governance principles. Of the CGFJ's proposals, CalPERS¹ identifies three principles that are most significant and they focus on board governance. First, corporate boards should include directors who are truly independent from the corporation and its affiliates. Second, the size of Japanese corporate boards should be reduced to allow for effective and efficient decision-making related to executive performance and the firm's strategic plan. The third principle suggests that Japanese corporations should appoint auditors who are truly independent from the corporation and its affiliates. Do the proposed changes to Japanese corporate boards necessarily facilitate superior performance? This issue is the highlight of the study.

This study provides an extension of prior research by Kaplan (1994), Kang and Shivdasani (1995), and Miwa and Ramseyer (2000) and is largely motivated by the results of these papers. Similar to related studies, this research centers on a phenomenon in corporate finance that is very extensive and complex, i.e. Japanese

¹ The California Public Employees' Retirement System (CalPERS) has long been a leader in the corporate governance movement. As the largest public retirement system in the U.S., CalPERS' Board of Administration has concluded that "good" corporate governance leads to improved long-term performance.

corporate governance. However, the interest to study this major phenomenon from a narrow perspective, that is, focusing on the significance of board member changes and its relevance to firm performance, sets this study apart from related studies. Previous studies examine the effect of presidential turnover on firm performance only. Additionally, unlike in previous studies where a binary model is used to examine these issues, a simultaneous framework of equations is used in this study. The benefits of this framework are outlined in a later chapter. As it is well documented, sound governance is critical for firms to perform well and ensure effective performance by corporate boards. Therefore, resolving issues prevalent in board governance should help ensure that firms' objectives are met, funds are well managed, and the interests of shareholders are reflected in strategic decisions. In particular, turnover of board directors are examined since it marks a major event in a firm's operation.

Japan represents a unique setting to study issues of board governance because it confronts five corporate governance challenges. First, the predominant form of business organization is the keiretsu - a group of companies linked by cross-shareholdings, business contracts, mutual co-operation and often sharing a common name. Second, compared to U.S. governance practices, there appears to be inefficiencies in the function of corporate boards in Japan. The size of boards is large and outside directorship on corporate boards is rare. Third, ownership is highly concentrated in Japan. The main bank normally holds the largest block of the firm's equity and there is a high degree of separation of ownership and control. Fourth, firms rely heavily on external finance, and that is provided mainly through bank loans, in which the banks are not only major lenders, but also large shareholders of most

Japanese firms. And last, Japanese leaders and bureaucrats, as stakeholders of the firm, can exert strong influence on managerial behavior. Morck and Nakamura (2003) suggest that keiretsu groups were enthusiastic political rent-seekers, raising the possibility that large corporate groups are better at influencing government than freestanding firms. Thus, rent-seeking might have impeded financial development and created the enduring economic problems in Japan.

Furthermore, Japan is graying faster than any other industrialized country. Its working age population is set to sink continuously over the next three decades. Consequently, decreases in long-term productivity and increases in health care costs and pension will certainly create a burden for the economy. Therefore, it is important to improve corporate governance practices in Japan, which is suspected to be a remedy to Japan's recession and will strengthen its economy, as the country must deal with these issues in the near future.

1.3 SUMMARY OF FINDINGS

Findings in this study add to empirical literature on corporate boards in several ways. This study provides strong empirical evidence consistent with the hypothesis that smaller boards are associated with higher firm value and regression test results show that poor performance initiates board turnover, while outside directors have minimal impact on Japanese corporations at the height of reforms in the 1990s.

The first set of results shows a negative relation between firm performance and turnover of board members. This is an indication that there exists a mechanism in Japanese corporate control that allows for the rotation of board members when firm performance worsens.

The second set of results presents evidence on the effect of firm performance and firm attributes on board composition. It is generally accepted that outside directors play a monitoring role over the inside directors. That is to say, when a firm underperforms, the proportion of outside directors serving on corporate boards should increase. Previous studies by Weisbach (1988), Kaplan (1994), and Kaplan and Minton (1994) found evidence of this. While board size reduction is significant, there is no evidence of a relationship between an increase in outside directorship and firm performance in this study.

Thirdly, the last set of results show that keiretsu membership is generally relevant in linking board turnover and firm performance in Japan. However, ownership concentration and the nature of the largest shareholders show the contrary, showing no effects on the appointment of board directors. This implies that concentrated ownership can impede the disciplinary role of the shareholders when the firm is performing poorly.

The study contributes to the empirical literature examining the relation between board composition, corporate governance feature and corporate performance in Japan during the decade-long economic slowdown and severe banking crisis. Thusly, corporate law reform of corporate boards and its relation to firm performance is the main focus. Unlike Kang and Shivdasani (1995) and Kaplan (2003), who only consider presidency turnovers, the effects of dismissals of a board member, regardless of his position on the board, are also considered in this study. A second important difference between the study and that of related studies² is that a simultaneous framework of equations is used in the analysis, while previous studies commonly use the OLS model. Turnover of board members should lead to improved performance during height of

² See Li (1998) for example.

reforms. Clearly, analyses show that considering turnover of presidents alone is not sufficient in explaining firm performance, so turnover of other members should also be considered. In addition, the two-stage least squares specification provides a fine model to control for endogeneity between variables. Cross-sectional OLS regressions of firm performance and variables entailing board characteristics governance may yield misleading and inconsistent results due to the potential simultaneity of variables. Therefore, these are two significant contributions to literature concerning Japanese corporate governance.

This study is organized as follows. The following chapter reviews the related literature. Chapter 3 presents the hypotheses to be tested. In Chapter 4, data sources are explained, as well as the econometric models used in estimations. The results are discussed in Chapter 5. Chapter 6 concludes.

CHAPTER 2

BACKGROUND ON THE JAPANESE CORPORATE GOVERNANCE

2.1 JAPANESE CORPORATE GOVERNANCE

In its broadest sense, corporate governance encompasses the framework of rules, processes, and relationships by which a firm's management is monitored by solving conflicts of interests among stakeholders or controlled to improve management performance. The governance system can be external or internal. In countries such as the United States and Great Britain control is external; whereby, markets exert influence mechanisms such as hostile takeovers. The firm's board of directors, on the other hand, exerts internal control, and the supervisory role is given to large shareholders. In countries such as Germany and Japan, inside mechanisms dominate. Correspondingly, this study explores the effectiveness of internal corporate control mechanisms among Japanese firms.

The Japanese style of corporate governance system is recognized as a relationship-based system. There is less emphasis on shareholders and more focus on relationships with employees and consumers. Because banks hold large ownership shares of corporate equity in Japanese firms, they play an important corporate control role. There has been an active debate in the literature as to whether the strong role of banks, in firms that they lend to, is good or bad. The close and stable relationship

between the firm and the main bank is largely a result of the heavy reliance on debt financing, rather than equity financing. Nonetheless, equity financing also has its unique feature. New shares are often allocated to financial institutions or non-financial firms, or they are mutually held in the form of cross shareholdings, rather than being sold to individual investors. The keiretsu is another distinct feature of the Japanese corporate control system. It is a complex form of groups, consisting of a number of affiliated companies with cross-shareholdings, directorships and intra-group financing, which usually revolves around a lead bank. All these features have made Japanese corporate governance unique when compared with the American style of governance. Although hostile takeovers are generally assumed to be the ultimate weapon to discipline managers, they are rare in Japan when compared with countries such as the United States. This is due to the fact that there is the substitution mechanism in Japan - an extensive cross holding of equity among members of keiretsu firms. The cross shareholding feature makes it exceedingly difficult for an external buyer to purchase a large portion of shares in a company.

Morck and Nakamura (1999) argue that Japan's main bank and financial keiretsu systems left corporate governance largely in the hands of creditors rather than shareholders, suggesting Japanese governance practices did not assign effective control rights to residual claimants. They further infer that effective external governance predicts changes in ownership concentration and shifts in corporate ownership and control. La Porta et al. (1999) emphasize the importance of law and legal enforcement on the governance of firms, development of markets and economic growth. They argue that the protection of minority shareholders may also be an important function of the

corporate legal system. Prior to the 1990s, it was rare for shareholders to execute their rights in court due to high legal costs. Fortunately, under revisions of the commercial law in 1993, the fee to plead was reduced significantly enough for individuals to execute that right. Another constraint that La Porta et al. (1999) identified in the Japanese system is that the general shareholder meetings are concentrated in a few days so it is inconvenient for shareholders to participate. The identification of these challenges by minority shareholders allowed for a review of Japan's commercial code.

The following subsections of this chapter discuss the main features of Japanese corporate governance in detail.

2.2 KEIRETSU

Keiretsu and main banks are considered to have important roles in Japanese corporate control and governance (Prowse, 1992; Aoki et al., 1994). The keiretsu are big conglomerates linked by widespread cross-shareholdings among member firms. Prior to World War II, Japan was dominated by successful family controlled-business groups, known as the zaibatsu. The firm owners, typically founders or their family successors, controlled the company. Most of the zaibatsu developed after the Meiji restoration in 1868, when the new Japanese government granted them subsidies and a favorable tax policy. Banks did not play a significant monitoring role since most of the capital was raised internally or through issuance of new shares.

By the early 1930s, the four dominating zaibatsu (namely, Mitsubishi, Mitsui, Sumitomo and Yasuda) had become a major feature of the Japanese economy. Zaibatsu used a hierarchical form of governance to monitor and manage its industrial companies and the groupings involved the use of a holding company and cadres of

professional managers to monitor the function of the firms. These advantages, as well as close relationships with major political parties, placed these business groups in a privileged position in the economic development of Japan. However, zaibatsu were dissolved after Japan's surrender to the U.S. in World War II (1945). The dissolution of the monopolistic organizations was announced as a major aim of the postwar Allied Occupation reforms to create a competitive environment. Based on economic considerations, the Japanese government relaxed its policies in 1952, while maintaining its stance on monopolistic power. And in the 1950s and 1960s, the zaibatsu reformed into enterprise groups, which is now known, as the keiretsu.

The most remarkable feature of the keiretsu is the reciprocal ownership of equity among member firms. These trading firms are usually from a variety of industrial, resource and service sectors. Although each member firm typically holds only a small percentage of shares of another member firm, the aggregate share of all members is normally large enough for the group to gain significant control over each member firm. These groupings are integrated both vertically (connecting a manufacturer and its suppliers, distributors, and retailers) and horizontally (businesses extend into diverse fields) so that they are capable of controlling nearly every step in the economic chain.

Therefore, this system of reciprocal ownership safeguards members of the keiretsu from hostile takeovers.

Empirical results from previous studies have shown that keiretsu have lower average profitability than non-keiretsu firms and that there are differences in the governance structure between keiretsu and non-keiretsu firms. In Japan, the majority of

large firms belong to keiretsu, which together make up a large proportion of the Japanese economy. These groups of businesses have a close relationship with a main bank, which is often also a member of the keiretsu itself. Among them, the largest and best-known keiretsu is the Big Six keiretsu (namely, the Mitsui, Mitsubishi, Sumimoto, Fuyo, Sanwa, and Daiichi Kangyo group).

Berglof and Perotti (1994) closely examine the governance structure of the Japanese financial keiretsu. In the study, a refined model of the keiretsu is created based on the nexus between the main bank system, cross equity holdings, and the weak managerial market to highlight the effectiveness of this system. They show that this system of corporate groupings can theoretically prevent managers from shirking. In addition, the controlling mechanism rests in the group's ability to monitor and remove incumbent managers. Berglof and Perotti (1994) provide an example of internal control in force within the keiretsu by discussing how keiretsu bailout financially distressed firms. The main bank is normally passive against their creditors, but when the firm faces financial difficulties, the bank intervenes and assumes control. Notably, they identify the transfer of investment funds and the heavy use of trade credit among member firms as a feature of the industrial groups. Empirical evidence shows that group financing patterns reflect the important features common to most keiretsu, characterized by dominance of main bank lending, extensive inter-locking of debt and equity, high level of leverage, and the intricate network of financial and trading relationships that links banks, member firms (e.g. manufacturers, suppliers, wholesalers and retailers), and government.

2.3 THE MAIN BANK

In Japan, a bank having a strong and long-term relationship with its client firm is known as a main bank. The main bank normally holds large shares in the firm and provides financial support over the long term; therefore, it plays an extremely influential role in corporate governance. It is often cited that they have been a major influence in the economic success of the Japanese economy since World War II.

The main bank performs three essential functions. First, it is an efficient provider of readily committed finance to develop long-term investment projects. In Japan, firms rely heavily on funds provided by banks due to close ties. A survey conducted for 110,000 firms in 1992 shows 90% of Japanese firms have a relationship with a main bank (Dixon 1999). The main bank creates loans and is usually its major creditor.

Second, the main bank provides a type of contingent governance. It monitors managerial performance and plays a disciplinary role in the corporate governance of its client firms when necessary. As an agent for investors, the main bank examines the viability of investment projects of its client firms. Day to day corporate affairs are normally left to the incumbent management when the firm is financially sound, but control turns over to the main bank when firm performance worsens. When the main bank takes control, it intervenes in the management of companies to undertake necessary restructuring. And a common practice of such intervention is the appointment of bank directors to the board of the company. This implies very close ties between the bank and its client firm; therefore, the bank has the incentive to monitor the firm very closely. The influence of bank-appointed directors on the corporate boards

reflects the important role of the main bank. Moreover, studies have shown that the probability that a bank will send additional directors to a board is directly related to poor performance.³ Although other large shareholders, business partners, such as suppliers and clients, also monitor the performance of companies, their influence is subsidiary. An important weakness in the main bank system is that firms face limited pressure from shareholders and other investors. This is largely due to the fact that the main bank can acquire full authority for monitoring and collecting information relating to the firms' investment decisions. As a result, shareholders and investors may become discouraged to commit time and resources in gathering difficult to obtain information. These weaknesses created an opportunity for exploitation. Bribed banks and regulatory officials often overlooked the troubles of the firms, by concealing negative information, to avoid depressing the value of their own equity holdings. Both Kaplan and Minton (1994) and Morck and Nakamura (1993) present evidence that appointment of bank directors increase with poor stock performance. Further, Kaplan and Minton (1994) examine post-appointment financial performance for up to five years following the appointment of a bank director. They predict that appointments ought to reverse, or at least stop, the deterioration in poor firm performance. Results suggest that bank directors are appointed to firms that are in financial distress, and after the appointment of a bank director, performance does not deteriorate. Therefore, banker appointments in Japan are disciplinary.

Third, the main bank has a provision of insurance against a client firm when it performs poorly. The main bank of a firm often rescues the client firm facing financial distress by extending emergency loans. This has been a common practice because of

³ See Kaplan and Minton (1994)

the long-term mutual commitments that exist between banks and client firms. And because ownership is concentrated, the main bank has the power to decide efficiently whether to bail out or liquidate its client firm when the firm is in financial distress.

Previous works support the existence of main banks in the Japanese corporate governance system. Kang and Shivdasani (1997) and Kaplan (1994) document the important role of main banks in the success of Japanese firms. In addition, Hoshi et al. (1991) find that the levels of investment and sales decrease less for firms with strong ties with its main bank. This finding confirms the main bank's role as an efficient provider of investment funds to client firms by mitigating under-investment problems. Kaplan and Minton (1994) show bank relationships by identifying appointments of directors from main banks. They document that appointments of bank directors increase significantly when performance deteriorates. This is because the main banks assist firms when faced with financial troubles and can mitigate investment inefficiencies.

Kang and Shivdasani (1995) extend and support the work of Kaplan and Minton (1994). They find evidence that nonroutine turnover of poor performance managers improves firm performance for Japanese firms. Further, they find that firms with ties to a main bank are more likely to remove top executives for poor earnings performance than firms without ties to a main bank. They identify the previous experience for 14 of the 18 cases of outside appointments and find that banks play an important role in outside succession by appointing one of their own executives as president.

While the main bank system has its strengths in Japanese corporate governance, it does not exist without its weaknesses. The costs of main bank affiliation have been a

focus of recent studies, especially after the economic downturn in the 1990s. Much of this research emphasizes the economic costs of a close banking relationship between the main bank and the firms to which they have provided both equity and debt capital. Deregulation during the 1980s allowed firms to seek alternative sources of finance for the first time in post-war era. As a result of the expanded non-bank financing options, there was an increased diversity in the capital structure of the Japanese firm. And by comparing alternative financing options, researchers are able to identify the negative effects of main banks on Japanese corporate governance. For example, Weinstein and Yafeh (1998) find a weak association between firms with a main bank and profitability and growth and the cost of capital for a firm involving a main bank is higher than that of a comparable firm without a main bank. They explain that bank pressure induce artificially high loan flows as well as inefficient investment strategies. Consequently, client firms can end up using more than the profit-maximizing level of capital.

Morck and Nakamura (1999) also identify weaknesses in the main bank system. Their results show that main bank oversight is less effective than shareholder oversight in firms in Japan, which implies a need for an alternate corporate control mechanism. Banks have not closely monitored the client firms and become active only when they experience financial difficulties. Further, they point out that Japanese banks act primarily in the short-term interests of creditors when dealing with firms outside bank groups.

Hiraki et al. (2003) critically assess the significance of the role of the main bank. They report that main bank borrowing is negatively associated with firm value and that holdup costs are significant for bank affiliated firms in Japan. In this context, the

prevailing holdup problem is described by the situation where the monitoring bank, using its monopoly power in information, extracts rents from its client firms, which in turn leads them to distorted (commonly over-investment) decisions. In order to generate interest income, the bank urges firms to take on more investments and in some cases, negative NPV projects. In light of the mixed evidence on the importance and nature of main banks in Japan, their findings are worth revisiting.

2.4 THE JAPANESE CORPORATE BOARD

Since the 1990s, Japanese corporations have strived to gain efficient internal management control and the corporate board has been the main focus of corporate governance debate since it links managers and investors. Theoretically, the main function of the board is to help solve the agency problems prevalent in managing an organization. By performing its control role, the board is expected to align the interests of board directors as well as senior executives' with those of the shareholders to minimize agency cost and protect shareholders' long-term interests. The corporate board, with its mix of expertise, independence and legal power, is potentially a powerful governance mechanism. However, despite the boards' top position in firms, in practice, it has been criticized that many boards are in fact not very effective.

Boards of directors are generally made up of a mixture of insiders and outsiders, but there is still uncertainty as to how this mixture is determined to achieve optimal board composition. In the case of Japan, it is argued that the number of outside directors serving on a corporate board is simply too small.

The relation between board composition and firm performance has been a focus of corporate governance research. In particular, appointments of new outside directors

to corporate boards appear to matter. A common approach to address this issue is to study stock price reactions to announcements of a change in board composition. Rosenstein and Wyatt (1990) find that stock prices increase by about 0.2 percent, on average, when companies appoint additional outside directors. This increase is statistically significant, but economically small, and could reflect signaling effects, rather than an actual correlation between board composition and firm performance.

In Japan, boards of directors are large compared to those in the U.S.⁴ Japanese boards generally consist of 20 to 35 members, who are typically insiders. While formally elected at the shareholders' meeting, the members are in effect, appointed by the CEO, who is the President of the board. Outside directors are rare in Japan (Kaplan 1994) and they may not be truly independent. They can be from other companies in the group or infrequently from the bank. The corporate board consists of directors at different levels, beginning with the Chairman, the President, Senior Managing Directors, Managing Directors and the Directors. Not every position is necessarily found in every firm. Representative Directors are selected from the top-level directors and they have special rights to represent the company.

In the Japanese corporate governance system, boards of directors show to have an internal monitoring role. They are responsible for monitoring the company president, as in the U.S., as well as managing the company and supervising management. For example, the acquisition or sale of substantial asset, large borrowings and dismissal of managers are not carried forth without the board's approval. This dual nature of their role is set by corporate laws in Japan (mainly codified in the Commercial Code), which stipulates that the board of directors shall determine the administration of

⁴ The number of board directors serving on corporate boards averages 11 in U.S. (2003).

company affairs and supervise the execution of the directors' duties. Also, different from the system in U.S., where the outside directors fulfill the task of governing, insiders play a dominant role on the board.

There is an equivalent of a second tier in the board structure called the President's Council, which is made up of financial intermediaries and inter-corporate owners. Shareholders exert influence on the board by interacting with managers of the firm in the monthly President's Council meeting. Although no votes are taken at the meeting, the president is swayed by consensus opinions of the council.

In Japan, the entire board assumes responsibility for firm performance. This is contrary to the usual practice in the U.S., where the CEO exercises extensive authority and is responsible for the performance of the firm. In which case, it follows that the corporate governance mechanism is probably most appropriately analyzed by studying the turnover of CEOs. However, in the Japanese context, analysis overlooking the role of board members other than the president may miss some important features of disciplinary mechanisms. As such, both board and presidency turnover are analyzed in this study. Further, changes in board composition and the significance of outside directors are examined in this study because outside directors presumably play a larger role in monitoring management than inside directors.

2.5 PRESIDENT TURNOVER AND PERFORMANCE

Over the past two decades empirical researchers have produced a large body of evidence on the relationship between top executives turnover and firm performance in the U.S. These studies, for the most part, are based on agency theory of the firm where

managers are agents acting in the best interest of shareholders to maximize firm value. Among numerous findings, the one most relevant for this study is evidence that suggests an increased likelihood of CEO turnover following poor performance.⁵ This relationship is significantly stronger when outside directors dominate the board or in firms with a block shareholder because lack of board independent leadership in firms makes it difficult to remove poorly performing managers.

In a more recent study, Brickley (2003) summarizes a set of conclusions which emerge from the existing literature. He finds that CEO turnover is inversely related to both stock performance and accounting-based firm performance measures. Further, CEOs are more likely to separate from the firm when stock price and accounting performance deteriorates. Most researchers study this association for publicly traded firms, yet similar relations have been found within nonprofit hospitals and at the divisional level of the firm.

Consistent with economic intuition, boards dominated by outside directors are more likely to dismiss a CEO for poor performance and are more likely to replace a poorly performing CEO with an outside candidate (Hermalin and Weisbach, 1988). However, the sensitivity of turnover to firm performance decreases with management stock holdings and when the manager is a member of the founding family of the company. Hermalin and Weisbach (1988) provide evidence that boards with significant managerial ownership are more likely to act in the interest of the shareholders. On the other hand, executive ownership may lead to managerial entrenchment in which it becomes difficult to remove an under-performing manager. Rosenstein and Wyatt

⁵ For example, Kang and Shivdasani (1995), Warner et al. (1988), Weisbach (1988) and Parrino (1997).

(1990) find that the probability of top management turnover is inversely related to their equity ownership when poor firm performance is controlled for.

In larger firms, lower-level managers from within the same firm usually replace CEOs. However, outside replacements have become more common in recent years. For example, 8.3 percent of the new CEOs hired by S&P 500 firms during the 1970s were from outside the firm. From 1990 through 1997, the percentage was 18.9 (Murphy 1999). Results differ when the nature of top executive departures is used. The probability of an outside replacement of a CEO is negatively related to prior firm performance, especially when the departure of the previous CEO was forced. Covered in a *Forbes* survey, between 1969 and 1989, 49.6 percent of the 127 forced CEO departures in large firms were followed by outside replacements, compared to only 9.9 percent for voluntary departures (Parrino 1997).

Turnover of top executives in Japanese firms has been an increasingly researched subject. It has been observed that a similar negative relationship between top executive turnover and firm performance, both stock performance and accounting performance measures, is evident in countries with different corporate governance mechanisms. The evidence suggests that internal corporate control mechanisms do serve to discipline incompetent managers. The sensitivity of executive turnover to the different measures of firm performance is not very different from the one found for the U.S. In a very influential paper, Kaplan (1994) investigates the turnover of top executives in Japanese companies and finds a negative relation between turnover and performance. Later studies such as Kang and Shivdasani (1997) confirm this result.

Subsequently, the contributions of these two papers will be discussed in the context of Japanese board governance.

2.6 THE ROLE OF SHARE OWNERSHIP

In Berle and Means' classic study, *The Modern Corporation and Private Property* (1932), they discuss the phenomenon of the domination of large public corporations by professional managers as the separation of ownership and control. From their perspective, shareholders lost complete control of the management of the corporation. Managers not only overlooked the management of the company, but they were also in control of the company. Berle and Means (1932) identify that a consequence of the phenomenon was the domination of board directors who were appointed because of some prior relationship with management. As a result, boards comprised either of managers themselves or the managers' associates (i.e. inside directors) rather than non-affiliated directors (i.e. outside directors).

Ownership structure is closely related to different types of corporate control. Because there is a tradeoff between the motive for owners to monitor management and dispersion of firm ownership, differences in corporate ownership structures predict variation in systems of corporate control. Claessens and Fan (2002) review literature on corporate governance issues in Asia. Generally, the typical Asian corporation is dominated by one or several members of a family who tightly hold shares of a corporation. Different from other Asian firms, the dominant ultimate owners of Japanese firms are characterized by cross holdings of shares by industrial and financial groups. They document that high ownership concentration of Asian corporations

increases the risk of expropriation of minority rights, which is reflected in firm valuations. Further, such agency problems are exacerbated by low corporate transparency associated with rent-seeking and extensive group structures.

It is well known that concentration of ownership is still one of the remarkable characteristics of the Japanese corporate system as it presents the most extreme case of separation of ownership and control of listed companies in the world (Patrick 2004). Control is generally in the hands of management and shareholding is dispersed.

The shareholders of Japanese firms can be categorized into four main groups. The first group is the set of financial institutions consisting of the main bank, other core banks, life and casualty insurance companies, and securities companies. Together they hold up to 20 to 30 percent of the shares and play a significant, although decreasing, role as monitors for corporate governance purposes. The second group includes other industrial companies, each of which holds only a small percentage; together, amounts to another 20 to 30 percent. The third group holds no more than 25 percent of a company's shareholding. It consists of individual and outside institutional investors. The last group is the foreign institutional shareholders. The ownership of outstanding shares of Japanese firms held by this group has risen sharply to about 20 percent in recent years.

Conceptually, concentrated ownership may improve performance by imposing a higher degree of managerial monitoring, which alleviates problems resulting from conflict of interests between shareholders and managers. Nonetheless, frequently debated is the possibility that large shareholders exercise their control rights to expropriate smaller investors.

There has been considerable research on the relation between ownership structure and firm performance. Morck et al. (1988) estimate a piece-wise linear regression between the level of management ownership and Tobin's Q using data for U.S. firms and observable a non-linear correlation⁶. Likewise, McConnell and Servaes (1990), also using US data, regress Tobin's Q on both the percentage of shares held by corporate insiders (i.e. officers and directors), its square and other financial characteristics and find similar results to those of Morck et al. (1988). They observe that the level of managerial ownership is positively associated with firm performance at low management ownership levels (range of 0% to 40-50%), although negatively related at high ownership levels. Such studies argue that alignment and entrenchment effects influence the relation between ownership levels and firm performance yielding a non-linear relationship. This is an implication that the benefits of large shareholders reach its peak, beyond which costs of concentrated ownership will outweigh the benefits. Comparably, the role of share ownership is also studied for Japanese firms. Lichtenberg and Pushner (1994) find a positive significant relationship between levels of ownership and profitability. Morck et al. (2000) observe that the level of director ownership is positively related to Tobin's Q in Japan. They provide an important interpretation of this result that a negative relation at high ownership levels is not observed in Japan due to the rarity of hostile takeovers. In which case, superior shareholder monitoring of management are observed in firms with high levels of ownership and an entrenchment effect not ought to be observed in Japan. La Porta et al. (1999) examine the distinctly different governance regimes found around the world.

⁶ They report a significant positive relationship between the fraction of shares owned by corporate management and Tobin's Q in the 0 % to 5% ownership range and beyond the 25% ownership level. A negative relation is observed in the 5% to 25% range.

They find that concentration of ownership is highly related to the framework to protect corporate shareholders.

Reform of capital markets, in collaboration with reorganization of financial institutions and financial deregulation since the 1980s brought about slow but steady changes in corporate ownership in Japan. One such change to Japan's shareholder structure is the unwinding of cross shareholdings and it is still true that corporate ownership is highly concentrated on banks. Kuroki (2001) reports that the proportion of cross shareholding decreased gradually in the 1990s, from approximately 17 percent at the end of 1990 to approximately 10 percent by the end of 2000. It has been observed that the proportion of shares held by financial institutions has declined, while the proportion of foreign shareholders has grown. There is also an obvious trend towards indirect ownership by the personal sector through institutional investors, although it is not yet as high as it was during the bubble economy.

2.7 RELATED STUDIES

Kaplan (1994) studies management turnover in Japanese firms. He examines whether top management turnover and compensation changes are related to firm performance for 119 Japanese firms in the Fortune International 500 from 1980 to 1988. The study provides a comparative study of executive turnover to firm performance at U.S. and Japanese firms. He finds a significant negative relationship between non-standard top executive turnover likelihood and stock price performance for Japanese firms. His results also show that the coefficients of stock returns are significantly different between U.S. and Japanese firms. Kaplan (1994) also reports that CEO turnover in U.S. firms is more sensitive to firm performance than presidential turnover

in Japanese firms because there is an alternative corporate governance mechanism (for example, main banks) in Japan. Further, his results do not show a significant relationship between firm performance and routine turnover. He argues that this finding suggests it is standard for Japanese presidents to resign their presidencies at regular intervals, regardless of firm performance. And this is consistent with the fact that the president often becomes chairman after resignation. Kaplan (1994) also documents a positive relationship between changes in director compensation and firm performance. While U.S. managers receive more compensation than their Japanese counterparts, he observes that the relation between turnover and performance and between compensation and performance does not differ much from those in large U.S. firms. Much of the article is devoted to the differences. He finds that Japanese boards tend to weigh poor performance more heavily in both the compensation and turnover arenas. Viewed together, this, and lower executive ownership imply that the role of bank monitoring is more important in Japan than in the U.S.

Kang and Shivdasani (1995) also study management turnover for Japanese firms. Using data on 270 Japanese firms in Moody's International Reports from 1985 to 1990, Kang and Shivdasani (1995) examine the effect of main banks, block holders, keiretsu groups, and outside directors on the relation between top executive turnover and firm performance. Their analyses focus on non-routine turnover and outside succession since they are likely to constitute disciplinary events. Consistent with evidence provided by Kaplan (1994), Kang and Shivdasani (1995) find a negative relation between non-routine top executive turnover likelihood and firm performance for Japanese firms. Also, it is observed that the effect of firm performance on standard

presidential turnover is small. Main banks and large shareholders also play an important role in the likelihood that a new top executive will be appointed from outside the firm. They find some evidence of a marginally stronger relation between stock-price performance and non-routine turnover for firms with high levels of block ownership. Conditional on turnover, they find that a successor is more likely to be appointed from outside the firm when ownership by the top ten shareholders is high or there exists a main bank relation. Taken together, their results suggest that mechanisms such as the main bank system and concentrated equity ownership perform an important governance role in Japan. In contrast to evidence from Kaplan's (1994) study, the presence of outside directors on the board has no effect on turnover likelihood. Kang and Shivdasani (1995) suggest two possibilities for this result. First, it is possible that the outside directors are not able to remove poorly performing presidents since they never constitute a majority of the board in their sample. Alternatively, they are unable to distinguish between directors who may have close business or family ties to management and those who are truly independent. Finally, they find that new outside directors perform a more important governance role than existing outside directors during the process of top executive turnover.

Miwa and Ramseyer (2002) assemble board composition and financial data on the 1,000 largest Japanese firms listed on the Tokyo Stock Exchange from 1986 to 1994 to study which firms tend to appoint outside directors to their boards. Reformists persistently argue that Japanese firms maintain inefficiently few directors resulting in sub-optimal board structures. However, Miwa and Ramseyer (2002) argue that, by standard economic theory, market competition should drive firms toward their firm-

specific optimal board composition. And that optimum need not involve many outsiders since outsider trade expertise for their independence.

Three main hypotheses are tested to explore the determinants and effect of outside director appointments. First, they postulate that if the reformist intellectuals are right, then Japanese boards do matter, but most are structured inefficiently. They made the point that given that at least some substantial minority has a meaningful number of outside directors, the firms with more outsiders should evidently outperform those with fewer. They find that Japanese companies with more outside directors simply do not observably show superior performance than those with fewer. Instead, as the logic of market competition predicts, board composition seems endogenous.

Second, the firms for which board composition matters will have boards approaching their firm-specific optimum, driven by market constraints. Board structure should bear no observable relation to firm performance. Rather, firm characteristics should determine board structure. They control for such effects by including industry dummy variables for affiliation in various industries. Results show that board composition is in fact endogenous. Given that the composition does not change from the go-go 1980s to the depressed 1990s, optimal board structure seems unrelated to macroeconomic environment.

And last, if board composition just does not matter, then firm performance will show no relation to board structure. Thereby outside directors will be randomly distributed across firms. Regression results confirm that outsider appointments are decidedly non-random in Japanese firms, suggesting that board composition is relevant. They observe that firms appoint directors from the banking industry when they borrow

heavily, when the firm has fewer mortgageable assets, or when the firm itself is in the services and finance industry. Firms appoint retired governance officials when they are in construction and sell a large fraction of their output to government agencies. Also, firms appoint retired business executives when they have a dominant parent corporation or when they are in the construction industry selling heavily to the private sector.

CHAPTER 3

TESTABLE HYPOTHESES

With respect to previous research, the following hypotheses will be tested to gain insight into the effects of board composition and corporate governance features on firm performance in Japanese corporations.

3.1 HYPOTHESIS ONE

Board turnover is considered since it marks a significant event in a corporation's operations. The governance structures of corporations can be understood as a body of institutional agreements concerned with ways of aligning interests of investors and managers and ensuring that firms are run for the benefit of investors. In theory, the board of directors serves as a vitally important safeguard for shareholder interests in public companies through its monitoring and control activities (Fama and Jensen, 1983). The board has legal authority to ratify and monitor managerial initiation, and evaluate and reward, or penalize the performance of top managers. While one of the principal responsibilities of the board of directors is to monitor the company's performance, poor firm performance would indicate that the directors' jobs are not performed to their highest capability; thereby, that should initiate changes in board membership (Kaplan, 1994 and Kang and Shivdasani, 1995). And since poor performance signals a change in management, positive performance with a new board structure should eventually follow.

HYPOTHESIS 1: Negative performance leads to a change in board members; subsequently, a positive effect on stock return performance should be observed.

3.2 HYPOTHESIS TWO

The second research question attempts to determine whether or not reforms are driving changes in Japanese corporate governance by promoting supermajority independent boards. The majority of the existing studies classify the members of the board into two broad groups: insiders and outsiders. Insiders refer to directors who form part of the firm's management team and, thus, work full-time in the firm. This group also includes firm employees, retired employees, and even family members of the firm employees. The remaining directors are outsiders, whose members frequently work in other firms with other responsibilities. While the inside directors provide valuable information about the firm's activities, the outside directors may contribute both expertise and objectivity in evaluating managers' decisions. The general view of outside directors is that they are not aligned with management; rather, they will act independently from management in order to fulfill their fiduciary duties to maintain their reputation as insightful executives and effective monitors. Their only tie to the firm is their directorship. External directors are expected to be the best delegates of the shareholders and they should act as professional referees who resolve potential conflicts of interest among senior directors (Fama 1980). Therefore, it is expected that the presence of outside directors on a corporate board is an assurance that the board will effectively exercise a high degree of monitoring.

In fact, empirical studies have substantiated the monitoring role played by outside directors and there has been a global trend towards the increased representation

of outsiders on corporate boards. For example, Weisbach (1988) finds that the higher the proportion of outsiders on a board, the more likely it is that the board will replace the firm's CEO following a period of poor performance. Similarly, Hermalin and Weisbach (1988) proclaim that the likelihood of insiders leaving a board and outside directors will join is higher when the firm performs poorly or leaves an industry. This finding infers that there is a need for additional outside guidance when a shift in strategy is required. Furthermore, Rosenstein and Wyatt (1990) document that the appointment of outside directors leads to significant, positive, share price reactions. Viewed together, these results confirm that outside directors effectively carry out their function in aligning themselves on the side of the shareholders.⁷

While there is extensive evidence on the crucial role of outside directors, why do boards numerically dominated by inside directors, as in the case of Japan, still exist? Are reforms guiding Japanese corporations in the right direction by encouraging supermajority independent boards? Based on the assumption that the presence of outside directors on corporate boards is an influential governance mechanism in protecting shareholders from expropriation, the second hypothesis predicts a positive association between outside directors on the board and firm performance. By this, the aim is to determine whether or not corporate governance reforms should persistently encourage appointments of outside directors to corporate boards in Japan. While Miwa and Ramseyer (2002) use the total number of outsiders on a board, this study examines the influence of a positive change in outside directors.

HYPOTHESIS 2: Firm performance should improve subsequent to a positive change in the number of outside director on the board.

⁷ See also Byrd and Hickman (1992) and Kini, Kracaw and Mian (1995).

3.3 HYPOTHESIS THREE

Ownership structure, keiretsu, the main bank and board structure are unique aspects of Japanese businesses which affect corporate behavior. While these features were vital to success in post-war catch up period in Japan, it is uncertain whether they were crucial for recovery during the implementation of economic and financial reforms in the 1990s. The third hypothesis encompasses the effects of these attributes on turnover of board members. The nature of president turnovers and the role of bank and corporate directors are also examined.

In support of the view that keiretsu groups, main banks, large shareholders and outside directors play an important role in the Japanese corporate control system, the third hypothesis predicts these governance forces to influence board turnover in the event of poor firm performance. To test for these corporate governance effects, variables representing keiretsu, main bank, ownership (BLOCK 2, BLOCK 3 and BLOCK 4), and outside director are also included in the 2SLS model.

HYPOTHESIS 3: Corporate governance forces, including keiretsu groups, main banks, ownership concentration, and outside directorship affect turnover of board members and firm performance.

CHAPTER 4

DATA AND EMPIRICAL FRAMEWORK

4.1 DATA

Data used for the empirical tests are mainly hand collected from several different sources. The sample of Japanese companies used in this study is directly taken from the list of publicly traded Japanese companies on the Tokyo Stock Exchange Price Index (TOPIX) 150 Index. The analyses in this study are limited to the 117 firms for which complete data is available. Firms that are not listed are excluded because there are substantial difficulties obtaining data on unlisted Japanese firms. Due to data availability, the sample period for analyses is restricted from 1989 to 2001. However, while the sample period is restricted to 2001, it is relatively longer than that of related studies.

The following definitions of the different variables used in this study are consistent with those of Kang and Shivdasani (1995). Data on board directors is collected from *Toyo Keizai's Yakuin Shikiho*,⁸ which surveys board composition by mailing questionnaires to all firms listed on the Tokyo Stock Exchange (TSE). Data for all accounting variables are extracted from Thomson Financial Datastream.

Firm performance is measured using market adjusted stock returns based on the TOPIX 150 Index. Stock return (R) is calculated using the following formula:

$$R_t = (P_t - P_{t-1}) / P_{t-1} \quad (1)$$

⁸ *Toyo Keizai* is a Japanese financial information company similar to Value-Line.

The market-adjusted return is defined as stock's annual return less the return on the TOPIX150 Index. Turnover rate is measured as the number of dismissals of board members during a calendar year divided by the number of board members in the previous year.

Following Kaplan and Minton (1994), those few directors with previous experience at another firm are referred to as outsiders. The outside director variable is measured using a dummy variable that equals one when there is a positive change in the number of outsiders on the board, and zero otherwise. Appointments of outsiders are important because corporate reforms, such as the Corporate Governance Forum of Japan (CGFJ), place emphasis on the role of the outside director. In Japanese firms, outsiders are rare and their appointments are generally considered an indication that the main bank or outside corporation is paying particular attention to the governance of the appointing firm. Therefore, it is expected that a positive reaction to stock returns will be observed following an increase in the number of outside director on board.

Board size is the total number of directors on the board. Like Morck and Nakamura (1999), statutory auditors are not considered a director in the analyses; therefore, they are not included when determining board size. The auditors can attend, but cannot vote at, board meetings so they have less of an influential role on the boards. Morck and Nakamura (1999) also estimate the determinants of bank appointments and include statutory auditor appointments as director appointments. They note, however, that they obtain similar results even when the auditors are excluded. Following Kaplan and Minton (1994), board appointments of government officials and non-Japanese directors are excluded. Retired government officials occasionally obtain board

positions in firms they previously regulated in Japan, which is a common practice known as a ‘descent from heaven’. Since such appointments are generally considered rewards, they are not regarded as outside appointments. Further, board appointments of non-Japanese directors are also excluded because they are unlikely to be part of the Japanese corporate governance system (Kaplan and Minton, 1994). Yermack (1996) find a negative relationship between board size and firm valuation. Similarly, it is expected that such inverse relation should be observed.

Keiretsu is also a dummy variable indicating industrial grouping membership, which equals one if a firm belongs to a keiretsu and zero otherwise. Firms have keiretsu membership if they belong to the Big Six keiretsu. Kang and Shivdasani (1995) experiment with alternative definitions of keiretsu membership in addition to the Big Six definition, such as the eight bank-centered groups (namely, Mitsubishi, Mitsui, Sumitomo, Fuyo, DKB, Sanwa, Tokai, IBJ) and all seventeen industrial groups. Nonetheless, they obtain qualitatively identical results. Data on keiretsu membership is collected from Toyo Keizai’s Kigyo Keiretsu Soran. Therefore, if keiretsu is critical in the success of Japanese firms, keiretsu should be positively related to performance.

Kang and Shivdasani (1995) adopt their classification of routine and non-routine turnover to be consistent with a previous study by Warner, Watts, and Wruck (1988). Likewise, the same classification is used in this study, so forced departures should increase when firm performance deteriorates, while routine turnover occurs is not expected to affect performance. Non-routine turnover refers to turnover events where the president does not remain on the board of directors, while routine turnover refers to turnovers where the president remains on the board. Kang and Shivdasani (1995)

comment that as with all such classifications, the distinction between routine and non-routine turnover is probably imperfect. For instance, some incidents of non-routine turnover events could be planned retirements and is unrelated to performance. Kang and Shivdasani (1995) obtain similar results when an alternative classification method is employed. That is, defining a non-routine turnover to include all cases where the president does not become chairman of the board. However, they comment that coefficients are not estimated as precisely using the latter definition.

The bank relation variable is also a dummy variable that equals one if a firm has ties to a main bank, zero otherwise. A firm is considered to have ties with a main bank if the firm's largest lender is also the firm's largest shareholder. Data on lendings and equity ownership are obtained from annual issues of Kigyo Keiretsu Soran. If main banks are significantly less influential on corporate matters, a connection between bank ties and firm performance will not be observed.

The ownership variable depicts the percentage of shares owned by the top ten shareholders. This variable is further defined using four dummy variables that relate to the percentage of equity held by the firm's top ten shareholders: BLOCK 1 equals one if the top ten shareholders own less than 31%; BLOCK 2 equals one if ownership by the ten largest shareholders is between 31% and 35%; BLOCK 3 equals one if ownership is between 35% and 41%; and BLOCK 4 equals one if ownership is greater than 41%. The choice of 31%, 35% and 41% reflects the fact that these are the 25th, 50th, and 75th percentiles of the distribution of block ownership. Data on ownership structure is obtained from Kigyo Keiretsu Soran. Since ownership is highly concentrated in Japan and there is an absence of managerial entrenchment, it is

suspected that higher concentration levels are associated with better performance as theory predicts (Morck et al, 2003).

Prior to Japan's economic turndown, close bank-firm ties fuelled remarkable growth of the Japanese firms by ensuring a stable supply of credit to troubled companies. However, effects of this close relationship turned to a liability during Japan's domestic banking crisis. Thus, leverage is also a measure of the strength of the bank-firm relationship in Japan and is the average debt ratio calculated as long-term debt over assets. Similar to the main bank variable, leverage should be negatively related to performance. Firm size is also considered in the analyses and is measured as natural logarithm of average annual sales. Since executives at larger firms are able to find alternative employment opportunities more easily than their counterparts at small firms, turnover should increase with firm size.

Director appointments are further defined based on previous employment experiences and are measured using dummy variables. Directors with bank experience are classified as bank directors, and those with corporate experience are defined as corporate directors. If the two types of directors serve different purposes, a distinct pattern in relation to performance ought to be detected in the analysis.

Problems of joint endogeneity are prevalent in empirical studies on board directors and corporate governance. Almost all of the variables of interest are endogenous. For example, changes in board structure affect firm performance and corporate governance attributes, in turn, may influence shifts in board members. Thus, it is uncertain whether a firm's performance is affected by board changes or by governance features such as the presence of an outside director.

Hermalin and Weisbach (2001) observe that firm performance is affected by actions of previous board directors and, itself, is a factor that can exert influence in the appointment of subsequent directors. McConnell (2003) also provides an example of this problem. He suggests that it is unclear whether an action taken by the board occurs because the board is dominated by outside directors, or whether market forces dictate board composition, recognizing that a particular action will be appropriate at some time in the future. Kaplan and Minton (1994) and Morck and Nakamura (1999) detect an increased likelihood of outside director appointments to the board when firms under perform. If both top executive turnover and outside director appointments follow poor performance, failing to account for this endogeneity problem can result in a spurious relation between top executive turnover and the presence of outside directors on the board. An approach used to mitigate this endogeneity problem is to use lagged variables (Hermalin and Weisbach, 2001). For example, the outside director is lagged by two years for analysis in this study. Firm performance is considered in this relationship as it is expected to affect both variables simultaneously. Without a lagged variable, it is uncertain whether there is a relationship between outside directors and president turnover, or if it is poor firm performance that leads to this spurious relationship. Therefore, using lagged outside director values should yield more reliable results since the value of outside directors is already determined.

4.2 EMPIRICAL FRAMEWORK

Hermalin and Weisbach (2001) survey the empirical literature on corporate boards and find that this strand of research can be classified as estimating one or more of the following equations in the system:

$$a_{t+s} = \phi c_t + \varepsilon_t \quad (2)$$

$$p_{t+s} = \beta a_t + \eta_t \quad (3)$$

$$c_{t+s} = \mu p_t + \xi_t \quad (4)$$

where a denotes an action, board turnover for example, c denotes characteristics, such as composition or size of the board, p denotes firm performance, t indexes time ($s \geq 0$), ϕ , β , and μ are parameters to be estimated, and ε , η , and ξ denote the rest of the specification plus errors. In cases where the entire system is not estimated simultaneously, the joint endogeneity problem is tackled using lags (i.e., $s > 0$). Hermalin and Weisbach (2001) further suggest that it is possible to directly study the relationship between board characteristics and firm performance by combining the first two equations, which forms:

$$p_{t+s} = \beta(\phi c_t + \varepsilon_t) + \eta_t \quad (5)$$

where P_t is the price of the shares in t . This study uses the approach as defined in equation four to correct for endogeneity problems amongst variables. Figure 1 presents a graphic illustration of these four equations.

The models proposed to test the first hypothesis have the following forms:

$$\text{Turnover} = \beta_0 + \beta_1 \text{Performance}_{t-i} + \varepsilon \quad (6)$$

$$\text{Performance} = \beta_0 + \beta_1 \text{Turnover}_{t-i} + \varepsilon \quad (7)$$

The second hypothesis predicts a relationship between the presence of outside directors on corporate boards and firm performance, which is characterized by the following equation:

$$\text{Performance} = \beta_0 + \beta_1 \text{Change in Outside Directors}_{t-2} + \varepsilon \quad (8)$$

Board size is also regressed on performance using the pooled OLS model:

$$\text{Performance} = \beta_0 + \beta_1 \text{Number of Directors}_{t-2} + \varepsilon \quad (9)$$

The model proposed to test the third hypothesis is estimated using the two stage least squares method in equation 4 (Hermalin and Weisbach, 2001). This estimator accounts for the effects of key governance variables in Japanese firms, including keiretsu membership, outside directorship, main bank relations, firm size and ownership.

As discussed, it is expected that board turnover affects performance and corporate governance attributes, in turn, initiates board rotation. However, governance mechanisms also affect the performance of firms, so the 2SLS method should be applied to these relationships.

As depicted by equation 1, the following model is estimated:

$$\begin{aligned} \text{Board Turnover} = & \beta_0 + \beta_1 \text{Outside director}_{t-2} + \beta_2 \text{Directors}_{t-2} + \beta_3 \\ & \text{Leverage}_{t-2} + \beta_4 \text{Firm Size} + \beta_5 \text{Keiretsu} + \beta_6 \text{Block2}_{t-2} + \beta_7 \text{Block3}_{t-2} + \\ & \beta_8 \text{Block4}_{t-2} + \beta_9 \text{Ownership}_{t-2} + \varepsilon \end{aligned} \quad (10)$$

Using the simultaneous equations approach suggested by Hermalin and Weisbach (2001), the two-stage least square (2SLS) method is applied to study the effects of board turnover and Japanese governance characteristics on performance⁹:

$$\begin{aligned} \text{Performance} = & f(\text{board turnover (outside director}_{t-2}, \text{board size}_{t-2}, \text{firm} \\ & \text{size}_{t-2}, \text{keiretsu}_{t-2}, \text{block 2}_{t-2}, \text{block 3}_{t-2}, \text{block 4}_{t-2}, \text{leverage}_{t-2}, \\ & \text{ownership by 10 largest shareholders}_{t-2})) \end{aligned} \quad (11)$$

The nature of president turnover is also examined by classifying the dismissal of presidents as routine or non-routine. Because the dependent variables include only

⁹ performance=f (board actions(board composition)) , board action=f (board composition),
performance =(board actions)

binary data, the logit model is best suited as an estimator. Replacements of board directors are also further defined to identify the background of the director. Those with banking experience are bank directors while others without such experience are classified as corporate directors. The following equations depict these models:

$$\text{Probability (routine turnover)} = f(\text{firm performance}_{t-2}) \quad (12)$$

$$\text{Probability (nonroutine turnover)} = f(\text{firm performance}_{t-2}) \quad (13)$$

The models involving the background of the director are depicted as follows:

$$\begin{aligned} \text{Probability (appointment of corporate director)} = & f(\text{performance}_{t-2}, \\ & \text{leverage}_{t-2}, \text{ownership}_{t-2}, \text{keiretsu}_{t-2}) \end{aligned} \quad (14)$$

$$\begin{aligned} \text{Probability (appointment of bank director)} = & f(\text{performance}_{t-2}, \text{leverage}_{t-2}, \\ & \text{ownership}_{t-2}, \text{keiretsu}_{t-2}) \end{aligned} \quad (15)$$

4.3 DESCRIPTIVE STATISTICS

Table 1 presents descriptive statistics on ownership and board composition variables for the 117 firms as of the beginning of the sample period. In the sample, 43.6 percent of the firms belong to a keiretsu. This figure is roughly 5 percent lower than the percentage reported by Kang and Shivdasani (1995) for the fiscal year-end 1984. Equivalent to the statistic reported in the previous study, 18 percent of the firms have ties to a main bank according to the definition in which the dummy variable equals one if the firm's largest lender is also the firm's largest shareholder and 71 percent if the alternate definition is used¹⁰. Equity ownership by the top ten shareholders remains about the same, averaging 37.9 percent. Surprisingly, the number of directors serving on the boards averages 27, which is 2 greater than previously reported. Boards have an

¹⁰ Dummy variable equals one if the firm's largest lender is also a blockholder.

average of 2 outside directors and the maximum number of outside directors in the sample is 13. There appears to be a drastic increase in the fraction of firms with an outside director. 71 percent of the sample firms have an outside director on the board while this statistic was reported to be 38 percent for 1984. Mean turnover rate is 0.18 for this sample and the standard deviation is small, 0.121, for this statistic. This suggests that there may not be much variation in board turnover.

Table 2 documents the extent of president turnover in the sample of Japanese firms. There are a total of 150 turnover events in 936 firm-years. Turnover appears to be evenly concentrated throughout the sample period. By examining the president's subsequent employment with the company, it is possible to gain insight into the nature of turnover. 105 presidents, representing 70 percent of the turnover events, remain in the corporation as the chairman of the board. In 24 instances, the former president remains on the board in a capacity other than the chairman, often as either a vice-chairman of the board or in an advisory position. In the remaining 21 instances, the president is no longer on the board of directors. Therefore, 86% of president turnover is routine, while 14% is non-routine.

The correlation matrix in Table 3 describes pair-wise correlations among key variables in the dataset. To avoid a multicollinearity problem, a conservative approach is used to examine whether or not the variables are highly correlated.¹¹ Observing no pairs of variables with correlation coefficients values greater than the criterion, results in this study should not be obscured by the problem of multicollinearity.

¹¹ A variable with a correlation coefficient greater than $R=0.9$ is removed from the equation.

CHAPTER 5

EMPIRICAL RESULTS

5.1 BOARD TURNOVER AND PERFORMANCE

The roles of board of directors in the Japanese system of corporate governance are studied. Tables 4 and 5 present the results for hypothesis 1, which establishes a negative relationship between board turnover and performance two years prior to turnover. This suggests that poor performance triggers turnover of board members in the sample period. Results here are similar to findings of Warner et al. (1988), who find a significant relationship between a company's performance and the probability of management turnover for a sample of U.S. companies. This is an indication that corporate board turnover is a determinant of this aspect of corporate governance.

Surprisingly, the expected positive relationship between board rotation and performance does not occur, neither one nor two years, subsequent to board turnover. A possible explanation is that under traditional Japanese governance practices, promotions are based on seniority, so the new directors may not necessarily demonstrate superior performance than the dismissed. Also, the model could not capture dismissals due to retirements which could also affect results. Another possible interpretation is that since the variance for turnover rate is extremely small, impact on performance is also minimal therefore minimal.

To capture the effects of market-wide shocks on performance, the pooled OLS models were also estimated including year dummies. However, including year

dummies to the model did not significantly change regression results in the analyses so the latter results are not reported.

5.2 OUTSIDE DIRECTORS AND PERFORMANCE

Table 6 present the results for the second hypothesis proposed. Here, the significance of a positive change in outside directors serving on corporate boards is tested. Is there really value in appointing an outside director to the board in Japan? Like models from hypothesis one, the model in which firm performance is lagged two periods exhibits stronger overall effects on the presence of outside directors than the model using firm performance lagged by one period.

Reformists persistently encourage adding outside directors to boards to mirror US governance practices. Prior studies have provided evidence that adding an outsider to a board produces significant positive stock price reaction (Rosenstein and Wyatt, 1990). However, results here show the contrary. A positive change in outside directors does not necessarily yield positive stock price reactions. The finding here is consistent with that of Miwa and Ramseyer (2000) who argue that outsiders are not significant. Outside directors are generally thought to bring benefits to the firm, but they do come at cost. While they are independent from everyone else in the firm, outside directors generally know little about the firm's dynamics. Thus, outside directors trade independence for expertise and are much less influential in Japanese firms.

5.3 BOARD SIZE AND PERFORMANCE

Lack of independence and unwieldy size of Japanese boards have been a particular focus for researchers of Japanese corporate governance. Reducing the size of

Japanese corporate boards is also an objective of governance reforms in Japan.¹² Regression results on Table 7 support the traditional view that smaller board companies tend to outperform firms with larger boards. For example, Yermack (1996) provide evidence that smaller boards have a higher Tobin's Q. The intuition is that the ability of the board to control management declines since problems of co-ordination and communication increase with larger boards; therefore, the board becomes less efficient. Further, agency problems, such as director free-riding, increase when boards become too big. In which case, the boards become more symbolic and neglect its monitoring and control duties.

5.4 KEY GOVERNANCE FEATURES AND PERFORMANCE

Table 8 presents results for the initial stage of the two-stage least squares model estimating the relation between key governance characteristics on board turnover and performance. Specifically, the first stage of this model examines whether governance characteristics drive corporate board turnover. Board size, leverage, and ownership initiate changes in board members. It is evident that turnover of corporate board members increase with smaller boards. This is consistent with the traditional view that smaller boards are more efficient.

Leverage is also negatively related. Recall that leverage is a measure of firm-bank relationship. Therefore, dismissals are less likely for firms with closer connections with main banks. This could be an indication that the governance power of the main bank serves to protect dismissals of under-performing directors. Hiraki et al. (2003) report negative significance between bank borrowing and firm value. This is due to several limitations of this main bank system. Cost of capital for bank firms is

¹² Sony, for example, reduced its board size from 38 to 10 in 1997.

higher than non-bank firms and there is a weak association between profitability and growth with main bank firms. Thus, the negative relation reflects on the notion that alternative measures, other than bank oversight, are necessary. While main banks were critical in the success of Japanese firms in the post-war era, it appears that they are becoming less influential during the height of reforms in the 1990s.

The block ownership variables, which displayed minimal significance in the late 1980s (Kang and Shivdasani, 1995), appear insignificant throughout the 1990s. Variables representing quartiles of block ownerships display no significance, while turnover is more likely when ownership by the top ten shareholders is high.

Finding significance in the ownership variable suggests the existence of some managerial entrenchment in Japan. For example, Claessens and Fan (2002) report that high ownership concentration is associated with higher risk of expropriation. Significance of the ownership variable is consistent with the conventional view that concentrated ownership improves performance by imposing a higher degree of monitoring and alleviating problems arising from conflict of interests between shareholders and managers. Morck et al. (2003) find that the level of director ownership is positively associated with Tobin Q.

Table 9 presents results for the second stage of the 2SLS estimation, which is used as an estimator for analyzing the significance of and board turnover on performance in the presence of corporate governance variables. As expected, results show a significant inverse relation between board turnover and past performance. Therefore, in the presence of governance variables, poor performance triggers turnover of board members. Viewed together, the two-stage least squares model shows to be an

effective estimator in identifying key governance determinants of the board turnover-performance relationship¹³.

5.5 NATURE OF TURNOVER

To gain insight into the nature of turnovers on corporate boards, departures of presidents are examined to determine whether the departure was forced or voluntary. Moreover, the role of bank versus corporate directors is also examined in the remaining tests.

5.5.1 Presidency Turnover

Table 10 presents results for the two types of president turnovers. Contrary to expectations and earlier literature, such as that presented by Kang and Shivdasani (1995), non-routine turnover of presidents is not associated with performance. A possible explanation for this finding is that the board of directors still serves at the discretion of the president. Under the traditional Japanese corporate governance model, the president, who is usually the retired president or retired executive of a parent company, still selects the president's successor and promotions are based on seniority. As such, the appointed president is unlikely to be a better representative of the shareholders, and may not play much of a monitoring role in disciplining and monitoring senior management.

Kang and Shivdasani (1995) document the annual likelihood of non-routine president turnover is 3.1 percent. Other papers estimate it at less than 5 percent so it seems hard to argue such an infrequent event alone to be the main corporate governance

¹³ The significance of the 2SLS regression is evaluated using the F-statistic, which is 12.23 for which the p-value is 0.0005.

mechanism in Japan. As hypothesized, other key attributes of Japanese corporate governance should also be accounted for when analyzing the firms' financial standings.

Routine turnover also show no significance in this specification. As expected, it is the usual standard for Japanese presidents to resign their presidencies at regular intervals without regard to performance¹⁴. Therefore, standard presidential turnover may not be disciplinary in any real sense.

5.5.2 Bank and Corporate Directors

Since the roles of banks are changing, it is of particular interest to determine whether appointed directors are affiliated with banks. Table 11 shows results for the regressions estimating the relationship between appointments of bank and corporate directors and firm performance and key corporate governance variables measuring the intensity of the relationships governing Japanese firms¹⁵. Regardless of the background of the appointed director, they are both unrelated to stock return and ownership variables.

Both types of director appointments relate to leverage. Since leverage is a relationship measure of the firm-bank relation, the negative association with bank director appointments indicates that appointments of bank directors are less likely for firms with closer bank ties. This suggests that the role of banks and bank directors are changing and becoming less influential. On the other hand, higher leverage increases likelihood of a corporate director. This observation is unexpected because under traditional Japanese corporate governance, main banks normally send their

¹⁴ It is also common that the president usually becomes the chairman or retains his representative rights after resigning presidency in Japanese firms.

¹⁵ Kaplan and Minton (1994) find that appointments of both types of directors increase significantly with poor stock performance.

representatives to their client firms. However, it is now evident that corporate directors are appointments are more likely when firms have closer relations to the bank.

Keiretsu almost always involve bank leadership and this relation is evident here as firms belonging in a keiretsu increase the likelihood of bank director appointments.

Kaplan and Minton (1994) document contrasting results for Japanese firms during the 1980s. Their results show that firm performance affect the likelihood of bank and corporate director appointments and find a distinct pattern in governance variables between the two types of director appointments. The differences in relationship measures suggest that the two types of appointments serve different purposes and protect different interests. They reason that corporate appointments are meant to protect or support the main shareholders and, unlike bank appointments, are not intended to protect the main bank nor inter-corporate shareholdings.

Viewed together, these results suggest that the role of banks has changed since the booming 80s as a distinct pattern in governance variables affecting the probabilities of each type of director appointment is not observed. Therefore, these findings are not consistent with the notion that different types of appointments serve different purposes.

CHAPTER 6

CONCLUSION

Japan has confronted problems of economic and political transformation throughout the 1990s, which have raised deep concerns regarding Japanese corporate governance. The extent to which Japanese policy makers should adopt US governance practices has been sharply contested. In this study, the key proposed changes to corporate boards are analyzed to determine their significance in relation to stock returns. Primarily, downsizing corporate boards and increasing board independence. In addition, governance characteristics including board size, ownership, firm size, main bank and keiretsu relations are considered key determinants of the board turnover-performance relationship.

6.1 CONTRIBUTIONS OF THE STUDY

While related studies have focused on appointments of CEOs, existing literature is short on analysis of the effects of changes of the entire board in relation to governance attributes and firm performance, especially outside US. This study is unique in that it explores the factors driving board rotation and firm performance and how important the key governance features have been over the past decade, with the remarkable amount of corporate law reform and the increasing pace of corporate governance reform in Japan. Recent US corporate scandals have produced a different perspective on the extent to which Japanese corporations should transform corporate governance practices and has raised uncertainties in this regard. Firms in Japan now

have the option to maintain the traditional Japanese board or to adopt the US type of board.

Analyzing the relationship between board turnover and corporate governance mechanism on firm performance reveals both positive and negative effects of convergence to the US style of corporate governance. For instance, while some proposals (such as downsizing boards) are effective, some may even be counter-effective. For example, there is still uncertainty as to whether a supermajority independent board will necessarily improve overall performance. This raises concerns regarding regulatory reforms which promote outsider dominated boards. The presence of even just one truly independent director on the board means that the president would have to explain all matters.

While close bank ties fuelled impressive growth of the Japanese economy by ensuring a stable supply of credit after World War II, it turned into a liability during the domestic banking crisis. Results in this study suggest that the roles of the main bank and directors are changing and becoming less influential than before.

Related studies estimate president turnover, corporate governance mechanisms and performance using OLS or binary models; however, a similar relation is estimated using the two-stage least squares model to correct for endogeneity problems in this study. Also, the majority of the related studies are on US firms, while this study focuses on Japanese firms governed by a unique system of control. The 2SLS model shows to be an effective tool in estimating the relation between turnover and performance in the presence of corporate governance variables. It can be deduced from results of this model that smaller boards are indeed more efficient than larger boards.

As well, firms with less connection with banks outperform those with higher reliance on leverage. Finally, a significant relation is observed between ownership level of Japanese firms and board turnover.

Test on the nature of turnover yield interesting results. Contrary to expectations, results show no connection between presidency turnover (routine or non-routine) and firm performance. This is an implication that the president does not solely assume responsibility for the firm's performance. Finally, appointments of bank and corporate directors are both significantly unrelated to firm performance. As it is suspected that the role of the bank and corporate director differs, this no longer is the case. The two types of appointments appear to serve the same purpose and the role of the bank director has become comparably less influential since the 1980s.

Finally, while there is a strong association between poor performance and turnover of board members, such relationship is not observed for president turnovers. An important implication of this finding is that the entire board, rather than the president alone, assumes responsibility for performance in Japanese corporations.

Weak relationships in this study could be an indication that Japanese firms do not necessarily have to converge to the US style of corporate control in order to achieve superior performances. Instead, firms should establish a system of management, which adequately respects the signals arising from shareholders and adjust with the changing features of the system and improve firm performance to a greater extent.

6.2 LIMITATIONS OF THE STUDY

The present study is only a preliminary step in investigating board rotation and governance attributes based on reform recommendations. Japan's corporate control

system is indeed extensive and complex. This represents a challenging task for research. There are several limitations that should be acknowledged in this study. First of all, the analyses cannot go beyond 2001 due to data availability. Due to data limitations, director age and retirements were not controlled for in the analyses. Further, weak results in this study also depict that the notion of directors as monitors is too simplistic. Issues dealing with inner workings of the board, such as the board-CEO relationship, complicate the modeling problem. Moreover, group decision-making and the behavior of small groups of individuals could also alter the model as the individuals appear to be governed by issues of emotions, fairness and norm adherent.

However, while these are shortcomings in this study, they can be seen as fruitful avenues for future research under the same theme.

6.3 FUTURE RESEARCH

Even though it is evident that some of the corporate governance reforms are effective during the 1990s, analysis stretching beyond the end of the sample period in this study will inevitably provide a much deeper perspective of the evolving corporate system in Japan. For example, it could be possible to determine how much of the economic crisis is firm-specific, and how much is due to overall economic problems by analyzing these effects under different economic conditions. While evidence supports the notion that smaller boards are more effective, how small should corporate boards be? What is the optimal board structure? The extent to which the boards will change remains an open question, as new standards of corporate governance are yet to take shape.

Overall, in examining the relationship between governance attributes, board

composition and firm performance using a system of equations, and finding a significant relationship between turnover of the entire board and firm performance, this study makes two significant contributions to Japanese corporate governance literature.

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APPENDIX A: CORPORATE GOVERNANCE FORUM OF JAPAN

In November 1994, The Corporate Governance Forum of Japan was formally inaugurated. The committee for the Settlement of Corporate governance principles comprises of seventeen participants drawn from members representing corporate executives, institutional investors, law and economics academics, the mass media and lawyers. The forum decided to draw up and propose its Corporate Governance Principles for Japan with the belief that these Principles would be a formula for realizing effective corporate governance. The Japanese Corporate Governance Committee revised the Principles in May 26, 1998 and after 31 meetings, they were revised once again in October 26, 2001. The Committee revised the first version of the Principles by integrating these discussions, including the appointment of outside directors who are professors at national universities and certain revisions to the Commercial Code¹⁶.

The document offers sixteen ideas for modernizing the governance of Japanese corporations so that they become more competitive in the global market. These principles focus on the rights of shareholders, disclosure and transparency, and the responsibilities of the board of directors. A primary principle is to rejuvenate the board of director structure within the Japanese corporation and firmly establish it as the guardian of corporate governance in Japan. More specifically, they attempt to establish an independent system of outside directors in Japan, and by establishing a market for independent directors to promote the transferability of corporate executives between companies.

¹⁶ See Hashimoto (2002) for the list of commercial code revisions.

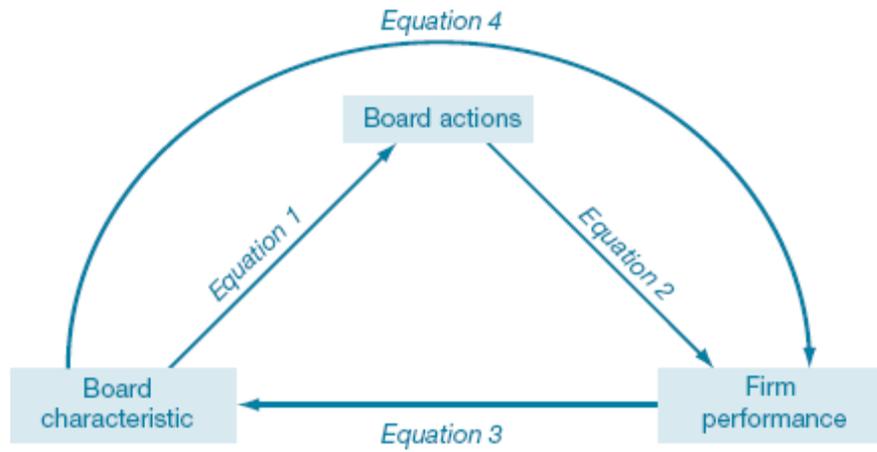
The principles are designed as a two-step formula (Step A and Step B) for realizing effective corporate governance. “Step A Principles” are those that should be adopted as soon as possible, except parts of principles that are along with legal reforms. “Step B Principles” are those, which should be aimed for in the 21st century, and are necessary with amendments to promote market globalization, or which require legal reforms on a grand scale.

Of the sixteen principles, the Governance Structure principles are most closely related to the issues discussed in this study. Governance structure principles state that the board of directors should include independent, non-executive directors who have no direct interests in the company. In addition, the number of directors should be appropriate to guarantee effective discussion at board-level, and enhance articulate and timely corporate decision-making. Principle 8A states that the board of directors should consist of both executive directors and independent, non-executive directors. Independent, non-executive directors should comprise a majority on the board. A question raised here is, whether or not this majority is optimal for corporate boards in Japan. Principles regulating accountability and disclosure, corporate auditors and the board of corporate auditors, as well as shareholders’ meetings were also included in the forum’s proposal¹⁷.

Important longer-term reforms proposed by the Corporate Governance Forum of Japan include a majority of independent, non-executive directors on corporate boards and the implementation of special board committees including nominating and remuneration committees comprised of a majority of independent directors.

¹⁷ See “Corporate Governance Principles (Final Report)” for detailed descriptions of each Principle.

Figure 1: An illustration of the joint endogeneity problem influencing empirical work on boards of directors.



Source: Hermalin, B., and Weisbach, M., 2001: *Boards of Directors as an Endogenously Determined Institution: A Survey of the Economic Literature*.

Table 1
Descriptive statistics on financial and governance characteristics

The sample consists of 117 nonfinancial Japanese firms listed on TOPIX 150.
Descriptive Statistics presented is as of fiscal year-end 1991.

Characteristic	Mean	Standard Deviation	First Quartile	Median	Third Quartile
Book value of assets (¥ million)	1,679,002,126	1,435,270,009	337,699,488	856,751,616	1,859,391,696
Sales (¥ million)	2,152,440,640	4,216,633,728	348,329,344	809,184,768	1,789,602,304
Market Value of Equity (¥ million)	1,025,062	854,458	371,000	744,972	1,194,493
Fraction of firms belonging to a keiretsu	0.436				
Fraction of firms with a main bank relation	0.18*/.71**				
Equity ownership by top ten shareholders	0.379	9.831	0.32	0.361	0.42
Number of directors	26.87	10.161	20	26	32
Number of outside directors	2	2.378	0	1	3
Maximum number of outside directors	13				
Fraction of firms with an outside director	0.71				
Turnover Rate	0.136	0.097			

*Applying the definition in which the dummy variable =1 if firm's largest lender is also the firm's largest shareholder, 0 otherwise.

** Applying the definition in which the dummy variable =1 if biggest lender is also a blockholder, 0 otherwise.

Table 2

Frequency of president turnover, classified by year and type of turnover

The sample consists of 117 nonfinancial Japanese firms listed on TOPIX 150. Data presented is as of fiscal year 1991. Turnover occurs between 1991 and 1999. Turnover frequencies are determined from Yakuin Shikiho (Seasonal Corporate News).

Type of Turnover	1991	1992	1993	1994	1995	1996	1997	1998	1999	Total
President loses position but stays on board as chairman	13	12	11	8	12	15	8	10	16	105
President loses position but stays on the board in capacity other than chairman	0	4	4	1	4	2	2	3	4	24
President loses position and does not remain on the board	1	2	7	0	0	2	1	4	4	21
All turnover events	14	18	22	9	16	19	11	17	24	150

Table 3 Correlation Matrix: pair-wise correlations among variables in the dataset

The sample consists of 117 nonfinancial Japanese firms obtained from the Tokyo Stock Exchange Price Index (TOPIX) 150 Index over the period 1991 to 2001. Performance is measured using market adjusted stock returns based on the TOPIX 150 Index. Board turnover is measured as the dismissals of board members during a calendar year divided by the total number board members in the previous year. Keiretsu is a binary variable that equals one if the firm belongs to a keiretsu. Leverage is long-term debt ratio to total assets. Outside director dummy equals one if there is a positive change in the number of outside directors, zero otherwise. Board size is the total number of directors, excluding auditors, on a board. Firm size is the natural logarithm of average annual sales. BLOCK2 equals one if ownership by the firm's ten largest shareholders exceeds 32% but less than 36%. BLOCK3 equals one if ownership by the firm's ten largest shareholders exceeds 36% but less than 42%. BLOCK4 equals one if ownership by the firm's ten largest shareholders exceeds 42%. Directors previously employed by a nonfinancial corporation are classified as corporate directors and those with banking experience are bank directors. Turnover is termed non-routine if the president does not remain on the board of directors. Turnover is termed routine if the president remains on the board of directors. Ownership is the percentage of shares owned by the ten largest shareholders. A variable with a correlation coefficient greater than 0.9, is removed from the equation

	Performance	Turnover	Keiretsu	Leverage	Outside Director	Board Size	Block2
Performance	1.0000	-0.0151	-0.1070	-0.1409	-0.0037	-0.1256	-0.0321
Turnover		1.0000	0.0923	0.1382	-0.0018	-0.1094	0.0014
Keiretsu			1.0000	0.1116	0.0055	0.3011	0.0237
Leverage				1.0000	0.2178	0.2619	-0.0108
Outside Director					1.0000	0.0036	-0.0615
Board Size						1.0000	0.1103
Block2							1.0000

Table 3 Correlation Matrix: pair-wise correlations among variables in the dataset

	Block3	Block4	Bank Director	Corporate Director	Non- routine Turnover	Routine Turnover	Ownership
Performance	0.0626	0.0773	0.0251	-0.0077	0.0001	-0.0364	0.1461
Turnover	-0.0164	-0.0990	0.0161	0.0202	-0.0114	-0.0851	-0.0953
Keiretsu	-0.0009	-0.0645	0.0339	0.0082	-0.0182	0.0622	-0.1235
Leverage	-0.0898	-0.2293	-0.0611	0.0327	0.0603	0.0871	-0.3368
Outside Director	0.0217	0.0031	0.1534	0.2516	0.0136	0.0112	-0.0416
Board Size	-0.1101	-0.2630	0.0710	0.1340	-0.0284	0.0860	-0.3035
Block2	-0.3613	-0.2826	0.0100	-0.0288	-0.0023	0.0026	-0.2052
Block3	1.0000	-0.3146	-0.0118	0.0379	-0.0154	-0.0384	0.1051
Block4		1.0000	0.0274	0.0083	-0.0196	-0.0253	0.7812
Bank Director			1.0000	0.4540	0.0007	0.0504	0.0102
Corporate Director				1.0000	-0.0004	0.0342	0.0397
Non-routine Turnover					1.0000	-0.0566	-0.0227
Routine Turnover						1.0000	-0.0564
Ownership							1.0000

Table 4

Pooled least squares regression estimates of performance on board turnover

The sample consists of 117 nonfinancial Japanese firms obtained from the Tokyo Stock Exchange Price Index (TOPIX) 150 Index over the period 1991 to 1999. Firm performance is measured using market-adjusted stock returns based on the TOPIX 150 Index. Performance is computed over one and two fiscal years prior to board turnover. Board turnover is measured as the dismissals of board members during a calendar year divided by the number of board members in the previous year. Sample sizes vary due to missing data. P-values for the two-tailed tests are in parenthesis.

Estimated Model:	Board Turnover = $\beta_0 + \beta_1 \text{Performance}_{t-1} + \varepsilon$	Board Turnover = $\beta_0 + \beta_1 \text{Performance}_{t-2} + \varepsilon$
Intercept	0.0150*** (<0.0001)	0.162*** (<0.0001)
Performance	0.0176 (0.4331)	-0.099*** (0.0002)
No. of Observations	935	818
Adjusted R ²	-0.0004	0.0161

* p < 0.10

** p < 0.05

*** p < 0.01

Table 5

Pooled least squares regression estimates of board turnover on performance

The sample consists of 117 nonfinancial Japanese firms obtained from the Tokyo Stock Exchange Price Index (TOPIX) 150 Index over the period 1991 to 1999. Performance is measured using market-adjusted stock returns based on the TOPIX 150 Index. Board turnover is computed over one and two fiscal years prior to firm performance. Board turnover is measured as the dismissals of board members during a calendar year divided by the number of board members in the previous year. Sample sizes vary due to missing data. P-values for the two-tailed tests are in parenthesis.

Estimated Model:	Performance = $\beta_0 + \beta_1$ Board Turnover _{t-1} + ε	Performance = $\beta_0 + \beta_1$ Board Turnover _{t-2} + ε
Intercept	0.022 (0.308)	0.006 (0.798)
Board Turnover	-0.063 (0.606)	0.045 (0.755)
No. of Observations	936	819
Adjusted R ²	-0.0008	-0.001

* p < 0.10

** p < 0.05

*** p < 0.01

Table 6

Pooled least squares regression estimates of a positive change in the number of outside director on performance

The sample consists of 117 nonfinancial Japanese firms obtained from the Tokyo Stock Exchange Price Index (TOPIX) 150 Index as of August 1, 2002. Performance is measured using market-adjusted stock returns based on the TOPIX 150 Index. Outside director dummy equals 1 if there is a positive change in the number of outside directors, zero otherwise. Outside director variable computed over one and two fiscal years prior to performance. Sample sizes vary due to missing data. P-values for the two-tailed tests are in parenthesis.

Estimated Model:	Performance = $\beta_0 + \beta_1$ Outside Director _{t-1} + ε	Performance = $\beta_0 + \beta_1$ Outside Director _{t-2} + ε
Intercept	0.017 (0.4965)	0.019 (0.517)
Outside Director	-0.005 (0.860)	-0.009 (0.788)
No. of Observations	936	819
Adjusted R ²	-0.001	-0.0011

* p < 0.10

** p < 0.05

*** p < 0.01

Table 7

Pooled least squares regression estimates of board size on performance

The sample consists of 117 nonfinancial Japanese firms obtained from the Tokyo Stock Exchange Price Index (TOPIX) 150 Index over the period 1989 to 2001. Performance is measured using market-adjusted stock returns based on the TOPIX 150 Index. Board size variable is computed over one and two fiscal years prior to Performance. Board size is the total number of directors, excluding auditors, on a board. Sample sizes vary due to missing data. P-values for the two-tailed tests are in parenthesis.

Estimated Model:	Performance = $\beta_0 + \beta_1$ Board Size _{t-1} + ε	Performance = $\beta_0 + \beta_1$ Board Size _{t-2} + ε
Intercept	0.183*** (<0.0001)	0.207*** (<0.0001)
Director	-0.006*** (<0.0001)	-0.007*** (<0.0001)
No. of Observations	936	819
Adjusted R ²	0.021	0.025

* p < 0.10
 ** p < 0.05
 *** p < 0.01

Table 8

First-stage regression results of the two-stage least squares estimates of board turnover and corporate governance attributes on performance

The sample consists of 117 nonfinancial Japanese firms obtained from the Tokyo Stock Exchange Price Index (TOPIX) 150 Index over the period 1991 to 2001. Performance is measured using market adjusted stock returns based on the TOPIX 150 Index. Board turnover is measured as the dismissals of board members during a calendar year divided by the number of board members in the previous year. Outside director dummy equals one if there is a positive change in the number of outside directors, zero otherwise. Board size is the total number of directors, excluding auditors, on a board. Firm size is the natural logarithm of average annual sales. Keiretsu is a binary variable that equals one if the firm belongs to a keiretsu. BLOCK2 equals one if ownership by the firm's ten largest shareholders exceeds 32% but less than 36%. BLOCK3 equals one if ownership by the firm's ten largest shareholders exceeds 36% but less than 42%. BLOCK4 equals one if ownership by the firm's ten largest shareholders exceeds 42%. Leverage is long-term debt ratio to total assets. Ownership is the percentage of shares owned by the ten largest shareholders. Explanatory variables are lagged by 2 years. P-values for the two-tailed tests are in parenthesis.

Estimated Model: Performance = f (board turnover (outside director $t-2$, board size $t-2$, firm size $t-2$, keiretsu $t-2$, block 2 $t-2$, block 3 $t-2$, block 4 $t-2$, leverage $t-2$, ownership -2))

First Stage Regression Statistics

Intercept	-0.235 (0.507)
Outside Director	0.021 (0.557)
Board Size	-0.005** (0.026)
Firm Size	0.009 (0.644)
Keiretsu	-0.044 (0.201)
Leverage	-0.261** (0.021)
Block 2	-0.028 (0.584)
Block 3	-0.032 (0.601)

Table 8

First-stage regression results of the two-stage least squares estimates of board turnover and corporate governance attributes on performance

Estimated Model: Performance = f (board turnover (outside director $t-2$, board size $t-2$, firm size $t-2$, keiretsu $t-2$, block 2 $t-2$, block 3 $t-2$, block 4 $t-2$, leverage $t-2$, ownership $t-2$))

First Stage Regression Statistics

Block 4	-0.131 (0.208)
Ownership	0.009*** (0.028)
No. of Observations	804
Adjusted R ²	0.038

* p < 0.10
 ** p < 0.05
 *** p < 0.01

Table 9

Second-stage regression results of the two-stage least squares estimates of board turnover and corporate governance attributes on performance

The sample consists of 117 nonfinancial Japanese firms obtained from the Tokyo Stock Exchange Price Index (TOPIX) 150 Index over the period 1991 to 2001. Performance is measured using market adjusted stock returns based on the TOPIX 150 Index. Board turnover is measured as the dismissals of board members during a calendar year divided by the number of board members in the previous year.

Two-Stage Least Squares Estimation	
Dependent Variable: Performance _{t-2}	
Intercept	0.356*** (0.0004)
Turnover	-2.532*** (0.0005)
No. of Observations	804
Adjusted R ²	0.0138

* p < 0.10
 ** p < 0.05
 *** p < 0.01

Table 10

Logit regression estimates of the likelihood of appointments of routine and non-routine president turnover versus performance

The sample consists of 117 nonfinancial Japanese firms obtained from the Tokyo Stock Exchange Price Index (TOPIX) 150 Index over the period 1991 to 2001. Performance is measured using market-adjusted stock returns based on the TOPIX 150 Index and is computed over two fiscal years prior to turnover. Turnover is termed routine if the president remains on the board of directors. Turnover is termed non-routine if the president does not remain on the board of directors. Performance is measured using market adjusted stock returns based on the TOPIX 150 Index. P-values for the two-tailed tests are in parenthesis.

Estimated Model:	Probability (routine turnover) = f (performance _{t-2})	Probability (non-routine turnover) = f (performance _{t-2})
Intercept	-1.935*** (0.0001)	-3.826*** (0.0010)
Performance	-0.484 (0.153)	0.421 (0.281)
No. of Observations	1283	1283
Adjusted R ²	0.004	0.003

* p < 0.10
 ** p < 0.05
 *** p < 0.01

Table 11

Regression estimates of the likelihood of appointments of bank and corporate directors versus performance and corporate governance attributes

The sample consists of 117 nonfinancial Japanese firms obtained from the Tokyo Stock Exchange Price Index (TOPIX) 150 Index over the period 1991 to 2001. Performance is measured using market-adjusted stock returns based on the TOPIX 150 Index. Directors previously employed by a nonfinancial corporation are classified as corporate directors and those with banking experience are bank directors. Relationship measures are leverage, calculated as long-term debt over total assets, the percentage of shares owned by the ten largest shareholders, and a dummy variable equal to one if the firm is a member of a keiretsu, zero otherwise. Sample sizes vary due to missing data. All explanatory variables are computed over two years prior to firm performance. P-values for the two-tailed tests are in parenthesis.

Estimated Model:	Probability (appointment of corporate director) = $f(\text{performance, leverage, ownership, keiretsu})$	Probability (appointment of bank director) = $f(\text{performance, leverage, ownership, keiretsu})$
Intercept	-0.391 (0.247)	0.570 (0.138)
Performance	0.213 (0.189)	0.584 (0.1125)
Leverage	1.110*** (0.009)	-0.8334* (0.086)
Keiretsu	0.005 (0.968)	0.322** (0.033)
Ownership	0.012 (0.119)	-0.003 (0.712)
No. of Observations	1039	1038
Adjusted R ²	0.006	0.008

* p < 0.10

** p < 0.05

*** p < 0.01