Accepted Manuscript

Highlights

- We examine top executive turnover in Japanese firms throughout the period 1990–2013.

- Performance indicator that turnover is sensitive to has shifted from ROA to ROE.

- Foreign institutional shareholders have increased turnover sensitivity to ROE.

- Strong ties with main banks still affect the turnover-performance sensitivity.

- Outside directors do not have any significant effect of enhancing sensitivity.

Changes in Corporate Governance and Top Executive Turnover:

The Evidence from Japan[☆]

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December, 2017

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Abstract

We examine the turnover of top executive in Japanese firms throughout the period 1990–2013. During this time, the presence of a main bank has been weakened, the ownership of institutional investors has rapidly increased, and independent outside directors have been introduced in many firms. We find that top executive turnover sensitivity to corporate performance has not changed despite skepticism on corporate governance of Japanese firms. On the other hand, there is a shift from return on assets (ROA) to return on equity (ROE) and stock returns as performance indicators that turnover is most sensitive to. We also examine possible sources of this change. We find that foreign institutional investors strengthen the turnover sensitivity to ROE after banking crisis when their shareholding has dramatically increased. This result allows us to interpret that they began to play a disciplinary role. In contrast, we do not find that independent outside directors have any significant effect of enhancing turnover sensitivity to ROE, unless a firm appointed independent outside directors more than three. While the scope of the main bank's authority has substantially contracted, strong ties with main banks increase turnover sensitivity in the more recent period, indicating that main banks continue to perform a certain role in disciplining management.

1. Introduction

Recently, substantial changes in corporate governance arrangement have been seen across countries. Corporate governance reforms have been enacted in most of developed and emerging countries (Kim and Lu, 2013). Institutional investors have become major players not just in the U.S.; their role is rapidly growing in all developed and emerging market countries (Khorana et al., 2005). Japan is one of the countries that experienced the most drastic changes in corporate governance.

It has long been argued that corporate governance practices commonly found in Japan differ markedly from those in the U.S. In the U.S., in the arena of corporate control, institutional investors and independent boards of directors are arguably important governance mechanisms. In contrast, corporate governance arrangement in Japan is conventionally considered as bank centered (Aoki and Patrick, 1994). However, following the process of financial deregulation and the collapse of the Japanese bubble economy in the early 1990s, the bank-centered corporate governance system has been gradually transformed into the market-oriented system as commonly found in the US (Hoshi and Kashyap, 2001; Aoki et al., 2007).

Figure 1 shows the changes in the ownership structure of Japanese firms. Panel 1 shows the 25, 50 (median), and 75 percentile values for main bank ownership during the period from 1990 to 2013. Main bank ownership is used as a proxy for the strength of a firm's ties with its main bank in previous papers (for example, Gibson, 1995; Hori et al., 2006). Before the late 1990s, the extent of main bank ownership in Japan was high just below regulatory ceiling and stable.[1] However, after the late 1990s, main bank

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[1] The Japanese Anti-Monopoly Law prohibited banks from owning over 5% of a firm's outstanding equity.

1

ownership began to decline dramatically, with the mean (median) bank ownership decreasing from 4.0% (4.6%) in 1998 to 2.4% (2.5%) in 2005. In addition, the spread between the 75 and 25 percentile values increased from 1.6% in 1998 to 4.3% in 2005, implying that bank-firm relationship was diversified. In contrast to declines in main bank ownership, foreign institutional ownership began to increase sharply during the same period, from a mean (median) of 5.8% (3.2%) in 1998 to 14.0% (11.0%) in 2005. Similar to main bank ownership, the spread between the 75 and 25 percentile values increased from 7.7% in 1998 to 16.5% in 2005 as is shown in Panel 2. Firms with large market capitalization, high liquidity and well familiarity through oversee business are preferred by foreign investors, while firms with modest market capitalization and low liquidity are remaining low foreign institutional ownership (Miyajima and Kuroki, 2007; Miyajima and Ogawa, 2016).

== Figure 1 about here ==

In addition, many Japanese firms have reformed the board of directors in 2000s. Traditionally, the majority of Japanese public corporations did not have outside directors on their boards. However, following the revised Commercial Code of 2003 and increasing presence of institutional investors, many Japanese firms, for the first time, appointed outside directors to their previously insider boards. As a result, the ratio of the firms with at least one outside independent director increased from 30.5% in 2006 to 56.6% in 2013.

In this paper, we examine the impact of these changes on a primary outcome of corporate governance, the ability to identify and replace poorly performing top executives. Many previous researches show that replacing poorly performing top managers is a necessary condition for good corporate governance and the sensitivity of

2

top manager turnover to performance as a measure of the quality of corporate governance (for example, Kaplan, 1994; Murphy, 1999; Dahya et al., 2002; Volpin, 2002; Gibson, 2003).

Our study examines top executive turnover during the period 1990 to 2013 for a sample of Japanese firms listed on the First Section of the Tokyo Stock Exchange. We divide our 24-year sample periods into three eight-year sub-periods: 1990 to 1997, 1998 to 2005, and 2006 to 2013. Dividing our sample into these three sub-periods enables us to examine long-term trends in top executive turnover, and how these decisions change with a weaker main bank presence, an increase in institutional investors, and the appointment of independent outside directors.

A comparison of the evidence for the three sub-periods reveals that although the frequency of "normal" turnover, in which departing top executives become the company chairperson or advisory director, is almost constant, that of disciplinary "forced" top executive turnover increases significantly throughout the sample period. In fact, we find that forced turnovers represent 18.6% of all turnovers in the first sub-period from 1990 to 1997; 28.9% in the second sub-period from 1998 to 2005; and, 34.1% in the third sub-period from 2006 to 2013.

In addition, we examine the sensitivity of turnover to three firm performance indicators: ROA, ROE, and stock returns. Consistent with previous studies on top executive turnover in Japan, the probability of forced turnover significantly increases as ROA deteriorates, and the sensitivity is almost constant during all sample periods. When industry-adjusted ROA declines by one standard deviation, the probability of forced turnover equally increases by about 2 percent among three periods. In contrast, the relation between the likelihood of forced turnover and ROE is significantly stronger in

the most recent period. The probability of forced turnover increases by 0.73 percent when industry-adjusted ROE declines by one standard deviation in the first sub-period from 1990 to 1997. The corresponding values are 1.48 percent and 1.95 percent for the sub-periods from 1998 to 2005 and from 2006 to 2013, respectively. A similar trend is evident when stock returns serve as the performance measure. The probability of forced turnover increases by 0.71 percent when industry-adjusted stock returns decline by one standard deviation in the first sub-period. The corresponding value is 1.32 percent in the third period.

The changes in frequency of top executive turnover and its sensitivity to performance could parallel the recent trends in corporate governance in Japan, since ROE and stock return represent the interests of shareholders. Then, we examine whether the weakened presence of a main bank, increase in institutional investors, and appearance of independent outside directors actually drive the changes in top executive turnover.

Institutional investors, foreign institutional investors in particular, who have increased rapidly since the end of the 1990s, affect the performance sensitivity of forced turnover, and their influence is stronger in the most recent period. The sensitivity of forced turnover to ROE is not significantly higher for firms with high foreign institutional ownership in the first sub-period, but it is significantly higher in the second and last sub-periods. In addition, we find that foreign institutional investors influence top executive turnover decisions through blockholding. The sensitivity of forced turnover to firm performance is significantly higher for firms with blockholding by foreign institutional investors. A similar tendency does not appear for blockholding by domestic institutional investors.

On the other hand, the effect of independent outside directors on turnover-performance sensitivity is so far limited, even though they have gradually appeared on the boards of Japanese firms recently. We find that the sensitivity of forced turnover to ROA is significantly higher only if firms had three or more independent outside directors. Meanwhile, firms that had one or two independent directors did not show any significant expected effect on executive turnover. Rather, they show the reverse effect of mitigating the ROA sensitivity on top executive turnover.

In terms of the main banks, the range of their influence has narrowed recently. In our sample, the number of firms that are highly dependent on bank loans and appoint directors from a main bank has decreased by half during the period 1990 to 2013. For capturing the reduction in the range of main bank activity, we examine whether strong ties with a main bank still affect the turnover-performance sensitivity. We find that the sensitivity of forced turnover to ROA is significantly higher for firms with strong ties to a main bank than for firms without such ties in the most recent sub-period examined, 2006 to 2013.

Overall, further examination shows that the increase in top executive turnover sensitivity to ROE could be partly attributed to the increases in foreign institutional ownership, and strong ties with main banks still increase turnover sensitivity in more recent period. These results are consistent to the understanding that corporate governance arrangement among Japanese firms diversified. For firms with large market capitalization, high liquidity, and high overseas sales, foreign institutional investors have begun to play a governance role instead of main bank. However, for firms with relatively small market capitalization, low liquidity and high leverage, main banks continue to perform a certain role in disciplining management. In other words, while the

5

scope of the main bank's authority may have substantially contracted, it does not quit playing a governance role.

Our results advance the literature in two ways. First, we provide an outcome of the evolution of Japanese corporate governance in recent years. While there are numerous studies of corporate governance in Japan before banking crisis, we are not aware of any that consider the recent evolution of the corporate governance arrangement in Japan and its outcome, especially on top executive turnover.

Second, little is known about recent long-term trends in top management turnover in the era of financial globalization. The exception is Huson et al. (2001) and Kaplan and Minton (2012). They examine whether the CEO turnover sensitivity to firm performance has increased in relation to the evolution of the U.S. governance system. One advantage of the chosen Japanese setting is that the Japanese corporate governance system has recently transformed from a traditional bank-centered governance system into a more market-based system like that found in the U.S. In this setting, we find the change in performance indicators that turnover is most sensitive to.

This study is organized as follows. Section 2 provides an overview of previous research on top executive turnover, corporate performance, and governance systems. Section 3 presents stylized facts on the salient features of executive turnover. Section 4 summarizes the results of the relationship between turnover and performance. Sections 5 to 7 present analyses of the influence on top executive turnover of institutional investors, independent outside directors, and the main bank system. The final section presents our conclusions and discusses the implications of our analytical results.

2. Previous Research on Top Executive Turnover

Because poorly performing managers who resist being replaced are the costliest manifestation of the agency problem (Jensen and Ruback, 1983), the association between top executive turnover and performance is one of the most important indicators for determining whether or not corporate governance is functioning effectively. Since the mid-1980s research in the U.S. has made further advances on this issue. Pioneering studies in this research area include Coughlan and Schmidt (1985) and Warner et al. (1988) who show that management turnover is sensitive to performance. Subsequent research has aimed to shed light on the mechanism that conveys the degree of sensitivity of top executive turnover to performance. Weisbach (1988) shows that independent boards are an important mechanism for CEO turnover. He analyzes the relationship between board composition and CEO turnover, and finds that outside-dominated boards are more sensitive to poor performance in replacing their CEO than boards with predominately inside directors.

Other studies show that institutional ownership is an important mechanism for CEO turnover. Denis et al. (1997) analyze ownership structure and executive turnover, showing that the probability of top executive turnover is negatively related to the ownership stake of officers and directors and positively related to the presence of an institutional blockholder. Aggarwal et al. (2011), in examining the influence of change in ownership structure on executive turnover in 23 countries, find that the increase in institutional investors increased the degree of executive turnover sensitivity to corporate performance. Parrino et al. (2003) find that the change in institutional ownership holdings is negatively related to the likelihood of CEO turnover, showing that aside from the market for hostile takeovers and direct involvement by blockholders, the threat of exit (sale of their investment in the firm) by institutional investors affects the CEO

7

replacement decision.

Huson et al. (2001) and Kaplan and Minton (2012) examine how the relationship between CEO turnover and firm performance has changed in relation to the evolution of the U.S. governance system. Huson et al. (2001) analyzed CEO turnover from 1971 to 1994. According to their research, while internal governance improved in the U.S. during this period through, for example, an increase in the number of outside directors and a strengthening in their role, there were also advances in external governance, such as the development of a more active market of corporate control. The authors reported that although there was an increase in the frequency of forced CEO turnover, and the recruitment of CEOs from outside of the firms, the degree of sensitivity to performance did not change. Following on Huson et al. (2001), Kaplan and Minton (2012) analyzed CEO turnover for a later period: 1992 to 2007. Since governance had been strengthened through the Sarbanes-Oxley legislation by this time, their attention turned to the question of whether changes in the corporate governance system influenced the probability of CEO turnover. According to their analysis, there was an increase in the frequency of CEO turnover and a higher sensitivity to performance. Kaplan and Minton (2012) pointed to the increase in blockholders and the increasing independence of directors as factors contributing to these changes.

Research related to Japan has traditionally focused on the role of main banks in executive turnover. Kaplan (1994) was the first to shed light on this role. His study analyzed the relationship between executive turnover and performance in Japan and in the U.S. in the 1980s, and pointed out that the Japanese main bank system served the same function as the market for corporate control in the U.S. Subsequent studies examined the relationship between executive turnover and performance, with Kang and

Shivdasani (1995) analyzing the period 1985 to 1990, and Abe (1997) analyzing the period 1974 to 1990. Moreover, Miyajima (1998) analyzed executive turnover during five major recessionary periods between the 1950s and the 1990s. All of these studies noted that as in the U.S., when performance deteriorates in Japan, the probability of executive turnover increases, and the stronger the ties to the main bank, the higher the degree of turnover sensitivity to performance.

However, the corporate governance environment for Japanese firms has changed dramatically since the end of the 1990s. The financial deregulations since the early 1980s allowed firms to issue corporate bonds at market, and thereby lessen traditional ties with their main banks. The financial difficulties caused by the nonperforming loan problem reduced the ability of banks to monitor and extend loans to borrowers, and forced them to dissolve cross-shareholding (*Mochiai*) as is documented by Miyajima and Kuroki (2007). Parallel with financial globalization, foreign institutional investors have increased their equity holdings rapidly in Japan since the end of the 1990s. Miyajima and Ogawa (2016) show that firms with higher foreign institutional ownership is likely to be larger market capitalization, higher liquidity and higher overseas sales. In terms of board structure, the majority of Japanese public corporations did not have outside directors on their boards. In other words, boards were entirely composed of inside directors. However, after the weak economic climate of the 1990s, corporate board reform emerged as a serious issue in Japan. The amended Commercial Code enacted in 2003, reduced the personal liability of outside directors and allowed the adoption of a U.S.-style "committee system" to encourage the participation of outside directors. Increasing institutional investors preferred to firms with independent outsider directors in their investment and encouraged its introduction through the exercise of

their voting rights. In response to these developments, many Japanese firms, for the first time, appointed outside directors to their previously insider boards.[2] In this paper, we examine how these changes in the corporate governance arrangements have influenced top executive turnover at Japanese firms.

3. Top Executive Turnover: Stylized Facts

3.1. Sample

We randomly selected 500 firms from the First Section of the Tokyo Stock Exchange to compile two samples. Sample 1 consists of 400 firms chosen from 1,070 non-financial corporations listed as of 1990. Of these, 277 were still in existence in 2013. The attrition can be attributed to business failure, dissolution, acquisitions and mergers, and transformation into wholly owned subsidiaries. Sample 2 consists of 100 firms randomly selected from the 393 non-financial corporations that were either newly listed or had migrated their listing status on the First Section of the Tokyo Stock Exchange from 1991 to 2006. This selection procedure allowed us to compile two samples that largely reflect the distribution of firms listed on the First Section of the Tokyo Stock Exchange from 1990 to 2013. Our financial variables were basically compiled with information from consolidated balance sheets. Table 1 shows the time-series distribution of Sample 1 and Sample 2 and characteristics of corporate governance.

== Table 1 about here ==

We divided the period from 1990 to 2013 of our study into three eight-year

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[2] Japan's Corporate Governance Code formulated by the Tokyo Stock Exchange in 2015 requires to have more than two independent directors based on the "comply or explain rule". After that, the appointments of independent outside directors dramatically increased. However, this paper did not address to examine this impact.

sub-periods. First period is from 1990 to 1997 (hereafter Period I). This period began with the collapse of stock price bubble and ended at the banking crisis. During this period, many firms kept ties with their main banks. Foreign institutional ownership was still low. Table 1 shows that mean main bank ownership in 1996 is almost similar with that in 1990. The ratio of firms with foreign institutional ownership 20% or more is only 4.4% in 1996. Second period (Period II) is from 1998 to 2005. In this period, following banking crisis, corporate governance of Japanese firms was transformed substantially. Mean main bank ownership has decreased from 4.0% in 1998 to 2.4% in 2005. On the contrary, mean foreign institutional ownership has increased from 5.8% in 1998 to 14.0% in 2005. Third period (Period III) is from 2006 to 2013. In this period, stock ownership structure relatively stabilized and independent outside directors were gradually appointed. Mean main bank ownership and foreign institutional ownership in 2006 are almost similar with those in 2013. However, the ratio of firms with independent outside directors has increased rapidly from 30.5% in 2006 to 56.6% in 2013.

In examining the above three sub-periods, the aim of this study is to shed light on whether the frequency of top executive turnover and its sensitivity to performance changed; and what kind of relationship exists between such change and the evolution in the corporate governance arrangements in Japan.

3.2. Types of Top Executive Turnover

In this study, we consider the representative of corporation on financial report as the top executive. Most of firms assign the president (*shacho*) to the representative. But a few firms (for example Canon Inc. or SUZUKI MOTOR CORPORATION) assign the

11

chairman (*kaicho*) to the representative. We define top executive turnover as the situation where in a given year the top executive is replaced.

Although there are various reasons for top executive turnover, we can observe two types of turnover—normal turnover that occurs after a top executive serves for a certain period and then voluntarily resigns, and disciplinary turnover that is forced after problems arise with regard to managerial ability and low level of effort. Needless to say, governance research should pay attention to disciplinary turnover, and distinguish disciplinary turnover from normal turnover.

Up until now, research has devoted considerable effort to drawing this distinction. Previous studies in the U.S. (for example, Parrino, 1997) distinguished forced turnover from normal turnover (voluntary departures) by consulting news stories in the Wall Street Journal.[3]

The standard practice for Japanese firms has been to appoint the incumbent president to the post of chairman or vice chairman after the conclusion of his tenure, as the presidency is filled by a successor promoted from within the firm. Consequently, previous studies in Japan (for example, Kaplan, 1994) assumed that if the resigning president does not take up the post of chairman or vice chairman, the turnover is assumed to have a disciplinary component of some kind, and thus, the turnover is considered to be forced. However, there are some Japanese firms that have adopted a custom of not appointing a retiring president to the post of chairman or vice chairman (for example, Honda Motor Co., Ltd.). Even in such cases, the retiring president is normally appointed advisory director; therefore, when a retiring top executive does not

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[3] Kaplan and Minton (2012) asserted that this determination could not be made from reading news stories, and instead analyzed all CEO turnover.

remain as a board member, the disciplinary aspect is even more pronounced. Thus, this study defines the forced turnover as the case in which a top executive does not remain with the firm as a director, a status that may also include the posts of chairman or vice chairman.[4] In contrast, when a resigning top executive remains on the board, the turnover is classified as the normal turnover.

In addition, a different type of turnover that includes a disciplinary element would occur when the incumbent top executive loses his position due to a takeover, business integration, or business failure. Kaplan and Minton (2012) refer to such cases as external turnover to distinguish them from cases of normal or forced turnover. External turnover was rare in Japanese firms prior to the first half of the 1990s, when there was little merger and acquisition (M&A) activity, and firms facing financial hardship were primarily rescued through private main bank bailouts. However, after the banking crisis, there was a rapid increase in delisting due to M&A and business failure. To identify external turnover, in M&A and distress cases based on Corporate Rehabilitations Law that allowed the top executives to remain (debtor-in-possession), we followed top executive turnover in such firms even after the delisting.[5] For example, when top executive turnover follows after acquisition, we consider this to be a forced nature, in contrast to cases in which there is no turnover as the top executive remains after acquisition.

When categorizing top executive turnover as normal or forced, our yardstick is whether the top executive was serving as chairman, vice chairman, or director one year after resigning as top executive.

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[4] In employing the above distinctions, it is necessary to exclude retirement triggered by death or illness. We checked whether such circumstances played a role by consulting newspapers.

[5] The number of de-listed firms that we examined top executive turnover is 15 in Period I, 55 in Period II and 58 in Period III.

3.3. Turnover Pattern: Stylized Facts

Table 2 and Figure 2 summarize top executive turnovers trends for 1990 to 2013. The top executive turnover ratio for 1990 to 2013 was 14.9%, with an average turnover ratio for 1990 to 1997 of 13.5%, rising to 15.8% for 1998 to 2005, and dipping to 15.2% for 2006 to 2013. Although the turnover ratio fell somewhat in 2013, we conclude that the turnover probability has been on an upward trend since 1990.

== Table 2 and Figure 2 about here ==

Examining long-term trends in the tenure of incumbent top executives, we found that the average tenure of top executives who retired between 1990 and 2013 was 7.9 years. The length of tenure, aggregated by sub-period, declined from 8.2 years in 1990 to 1997, to 7.7 years in 1998 to 2005, and then to 6.9 years in 2006 to 2013.

Compared with the result of Kaplan and Minton (2012) that the average CEO turnover probability at the U.S. *Fortune* 500 firms between 1990 and 2005 was 15%, top executive turnover in Japanese firms occurred at largely the same degree of frequency. Furthermore, since Kaplan and Minton (2012) also pointed out that the average turnover probability at *Fortune* 500 firms increased 3.7% points, from 13.2% in 1990 to 1997, to 16.9% in 1998 to 2005, the upward trend in Japanese top executive turnover could be considered part of a global trend.

We examined at type of top executive turnover and found that the frequency of forced turnover increased during our sample period. Table 2 shows that forced turnover ratio during the sub-period from 2006 to 2013 (Period III) is about twice of that during the sub-period from 1990 to 1997 (Period I). In addition, the ratio of forced turnover to total turnover also increased dramatically. This ratio is 18.6% in the Period I

comparable to 34.1% in the Period III.

4. Has the Sensitivity of Top Executive Turnover to Performance Changed?

4.1. Estimation Model

Previous section shows that top executive turnover was increasing recently. In this section, we examine how the turnover sensitivity to firm performance changes during our sample period. Using a probit model, we estimated the following standard model.

$$TURN_{i,j,t} = F(P_{i,t}, SIZE_{i,t}, TENU_{i,t}, AGE_{i,t}, FAM_{i,t}, SUB_{i,t}, FAM_{i,t}*P_{i,t}, SUB_{i,t}*P_{i,t})$$

$$(1)$$

Here, $TURN_{i,j,t}$ is top executive turnover dummy for firm i at period t, and j is comprised of total turnover, normal turnover, and forced turnover. $P_{i,t}$ is corporate performance for period t, consisting of ROA, ROE, or stock returns (RET). Following Kaplan and Minton (2012), we use industry-adjusted performance. Industry-adjusted performance is calculated by subtracting the industry median value calculated from all firms listed in First Section of the Tokyo Stock Exchange operating in the same industry.

It appears that up until now, disciplining of top executive through intervention by banks (main banks) relied on performance prior to interest payments (ROA) as an indicator. Thus, previous studies show that turnover in Japan is most sensitive to earnings performance indicators. However, one issue that we will devote considerable attention to is whether, as a result of the evolution of the corporate governance system after the banking crisis, the top executive turnover sensitivity to performance shifted to

15

ROE or stock return as indicators, which are indicators of the direct interests of shareholders.[6]

$SIZE_{i,t}$ is a variable reflecting a company size at firm i for period t. The log of sales is a proxy for company size in this study. $TENU_{i,t}$ is a variable denoting the length of top executive tenure at firm i for period t, and is introduced to capture the seniority-system aspect that has been said to have played a role in top executive appointments. We constructed dummy variables for length of tenure: one to two years; three to four years; seven to eight years; and nine or more years. Thus, the coefficients for the various dummy variables are indicators of the divergence from the turnover probability of a top executive, with the benchmark tenure lasting five to six years. $AGE_{i,t}$ is a dummy variable, which takes one when a top executive is older than 70 years. The survey result shows that many Japanese firms set retirement age at 70 for top executives.[7]

$FAM_{i,t}$ is the family-run firm dummy. Saito (2008) shows that founding families are a prevalent and important class of shareholders and top executive in Japan. Generally, top executive turnover at family-run firms occurs through hereditary succession; thus, previous studies show that turnover sensitivity to performance decreases with managerial ownership and when the manager is a member of the founding family of the company (for example, Denis et al., 1997). *FAM* and *FAM*P* were introduced to control for this factor. We defined a family-run firm to be a firm in which the founding family held 5% or more of shares, and the top executive is either the founder or related to the founder. We found that 15.7% of the firms in our total sample met these criteria.

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[6] ROA = (operating profit + non-operating profit) / total assets; ROE = net income / shareholders' equity; RET = (stock price at end of fiscal year − stock price at end of previous fiscal year + dividend per share) / stock price at end of previous fiscal year.
[7] See, SANRO Research Institute, "Yakuin hoshu no jittai ni kansuru chosa (Survey of executive compensation)," *Chingin Jijo*, January 5, 2016.

$SUB_{i,t}$ is the subsidiary dummy. Saito (2008) also shows that listed subsidiary firms are a prevalent organization form in Japan. It is common that the appointment of the top executive at a firm that has another listed firm (listed holding company) as its controlling shareholder is made as part of the personnel policy of the entire group. For example, Aisin Seiki Co., Ltd., Toyota Industry Co., Ltd., Toyota Auto Body, Co., LTD., and Toyota Tsusho Corporation are listed subsidiary firms of Toyota Motor Corporation. Top executive turnovers of these four subsidiaries are announced at the same time, and successors are from Toyota Motor. Under such conditions, it is assumed that top executive turnover sensitivity to performance is low. SUB and $SUB*P$ were introduced to control for this influence on listed subsidiaries. A shareholding ratio of 30% held by another corporation was set as the threshold for subsidiaries. This dummy was employed for 14.1% of the firms in our sample.

4.2. Estimation Results

The basic estimation results are shown in Table 3. The table shows the marginal effect of each variables. There are three notable points concerning the top executive turnover in Japan.

== Table 3 about here ==

First, top executive turnover was overall significantly negatively sensitive to all of the performance indicators: industry-adjusted ROA, ROE, and RET. A one standard deviation (4.1%) decrease in ROA increased the top executive turnover probability by 3.2%, which corresponds to 20% of the average turnover probability of 14.9%. Furthermore, top executive turnover had a high correlation with tenure. According to Model 1, holding all other variables in the model at their means, the probability of top

executive turnover in years one or two after assuming office is 16.8% lower than the benchmark probability for a top executive in years five and six of his tenure, and the turnover probability was 7.1% lower for a top executive in years three and four of his tenure.

Second, the results for top executive turnover, when classified as normal turnover and forced turnover, are presented in Models from 4 to 9 in Table 3. While normal turnover was insensitive to performance, it was significantly sensitive to the one- to two-year tenure, and three- to four-year tenure dummies. On the other hand, while the tenure dummy effect was small for forced turnover, the performance indicators: ROA, ROE, and RET were all significantly negative for forced turnover. For example, a one standard deviation increases in ROA produced a 2.0% increase in the probability of forced turnover, which is approximately half of the average of 4.1%.

Finally, we can verify the substantial influence of family succession and parent firms on top executive turnover. As is often pointed out, the frequency of top executive turnover is lower in family firms. The coefficient of Family-run firm dummy is negative, and the coefficient of the interaction term is positive. According to Model 1, the turnover probability at family-run firms is 8.5% lower than it is for other firms. Furthermore, turnover sensitivity to performance (for example, -0.79 in Model 1) is largely cancelled out by the characteristics of the family-run firm (interaction term coefficient of 0.60).

In cases in which another corporation holds 30% or more shares, the constant term (Subsidiary) was significantly positive in contrast to family-run firms. On the other hand, we were not able to obtain significant results for the interaction term coefficient. At such firms, where there was a strong tendency to appoint a top executive as part of

the overall personnel policy for the corporate group as a whole, the frequency of top executive turnover, compared to firms whose shares were dispersed, was estimated to be 7% higher overall, and 3% higher for forced turnover.

4.3. Period Effect and Performance Indicators

Next, we examine whether the probability of top executive turnover varied by periods. Panel 1 of Table 4, we added period dummies to equation (1) for Period II (1998–2005) and Period III (2006–2013), and report only the estimation results for the period dummies.[8]

== Table 4 about here ==

The coefficients for the period dummies are all significantly positive. When looking at all turnovers, the top executive turnover probability for Period II is 3.5% higher than for Period I (1990-1997), and that for Period III is 2.7% higher than for Period I due to factors that cannot be traced to performance and the incumbent top executive's term in office. This period effect is relatively larger for forced turnover, and when ROA is used as the performance indicator for Periods II and III, the turnover probability is 1.9% and 2.4% higher than in Period I. Since the difference in forced turnover ratio between Period I and Period III is 2.7%, this means that most of the incremental forced turnover probability is not attributed to firm performance and the

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[8] The correlation between ROA, ROE, and stock returns for each period are as follows:

	Period I	Period II	Period III
ROA-ROE	0.39	0.39	0.56
ROA-RET	0.23	0.19	0.29
ROE-RET	0.12	0.16	0.18

period of incumbency.[9] These results show that top executive turnover mechanism of Japanese firms has changed during our sample period from 1990 to 2013.

4.4. Did the Degree of Top Executive Turnover Sensitivity to Performance Change?

The change in the governance arrangement of Japanese corporations in the 1990s was triggered by the declining status of creditors as debt contracted, and the rising status of shareholders as institutional investors expanded. Such changes in the corporate governance arrangement lead to the expectation of a shift in the performance indicators related to top executive turnover. Thus, we have estimated equation (1) above for each period to shed light on this point.

According to Panel 2 of Table 4, while the coefficient of ROA for Period III declined to almost half of that for Periods I and II for all top executive turnover, the ROE coefficient nearly doubled from -0.16 to -0.29. This trend becomes even more apparent when we turn our attention to forced turnover, where the coefficient for ROE for Period III declined to less than a third of that for Period I, from -0.46 to -0.131.[10] When the size of the ROE is measured by multiplying one standard deviation by the coefficient, we find that it rises from 0.7% in Period I to 2.0% in Period III. Since a one standard deviation declines in ROA increases the likelihood of forced turnover by 1.9% in Period III, we confirmed that ROE had become an important performance indicator that forced turnover is sensitive to. Furthermore, in Period III, forced turnover becomes significantly sensitive toward stock returns. The above results are consistent with the

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[9] During our sample period, there was no large variation in the effect of seniority factors (number of years worked) for each period.

[10] To check the significance, we estimated equation based on equation (1) by adding time period dummies for Period II and Period III and the interaction term between time period dummy and firm performance. The interaction term with ROE is negative and significant at 5% level, indicating that change in forced turnover sensitivity to ROE is statistically significant.

view that the governance structure of Japanese corporations had begun to shift toward a structure that places more emphasis on shareholders.[11]

We checked the robustness of the above results using the following methodology. First, according to previous research, including Kaplan and Minton (2012), focused on the change in profits, and not the profit level prior to turnover, we used changes in industry-adjusted ROA and ROE as performance indicators. The results are basically unchanged. Second, the sample for this study is comprised of firms that were listed in the First Section of the Tokyo Stock Exchange as of 1990, and newly emergent firms that were subsequently listed. Therefore, considering a possibility that the differences in the characteristics of these two groups of firms could determine a change between the above noted periods, we limited to Sample 1 for already existing firms, and attempted an estimation. We found that there were no major differences in the results regarding the rising trend in top executive turnover, top executive turnover sensitivity to performance, and the shift in performance indicators from ROA to ROE and stock returns.

Overall, top executive turnover at Japanese corporations, even during the period from 1990 to 2013 when corporate governance in Japanese firms was questioned, was significantly sensitive to performance, and thus it cannot be said that there has been a large void in corporate governance. However, we can assert that with regard to top executive turnover sensitivity to performance indicators, those indicators that directly represent the interests of shareholders, such as ROE and stock returns, have grown in importance.

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[11] The shift of performance indicators in the executive turnover might be a result of the increasing importance of the impairment loss caused by external shocks such as stock price collapse or financial crisis under the current accounting standard.

5. The Role of Institutional Investors

5.1. Increase in Institutional Ownership and Top Executive Turnover

The previous section shows that a change in important performance indicator for top executive turnover in Japan. In the following sections, we consider possible sources of this change; institutional shareholders, independent outside directors and main bank.

Firstly, we examine whether institutional investors, who have rapidly increased their presence since the end of the 1990s, have actually influenced decision making on top executive turnover through their voice and exit.[12] For this purpose, we estimated equation (2) based on equation (1) by adding a variable denoting the institutional shareholders.

$$TURN_{i,j,t} = \text{F} \ (P_{i,t}, \ INSTI_{i,t}, \ INSTI_{i,t}*P_{i,t} \ SIZE_{i,t}, \ TENU_{i,t}, \ AGE_{i,t}, \ FAM_{i,t}, \ SUB_{i,t},$$
$$FAM_{i,t}*P_{i,t}, \ SUB_{i,t}*P_{i,t}) \qquad (2)$$

The *INSTI* is a variable reflecting an institutional ownership. It is the total ownership of domestic and foreign institutional investors, of which domestic institutional investors (funds managed by trust banks and asset management) are mainly capital investors for

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[12] Institutional investors became active to exercise their voting right in the 2000s, as its guideline was established. For example, JP Morgan made clear its criteria against the company proposal of the election of directors, if ROE of a firm will be chronically low. At the backdrop of this, the vote against companies' proposals by institutional investors has risen substantially. On the other hand, as the share of foreign investors over total trading volume exceeded over 60% in the middle of 2000, the exit of foreign institutional investors increasingly affected on the stock price. Miyajima and Hoda (2015) estimated that one standard deviation of the increase in the percentage share of foreign institutional investors in a firm is associated with 6.7% increase of its TOPIX standardized stock price for 1998-2005 and 4.5% for 2006-2013 on average. However, such changes remain the governance environment, and does not indicate direct mechanism. Since it is well known that hostile takeovers and proxy fights are not popular in Japan, how the voice or exit of institutional investors did trigger the executive turnover is further our research agenda.

pension funds.[13] The ownership of foreign institutional investors represents foreigners with the shareholdings of foreign business corporations excluded. The estimation results are summarized in Table 5.

== Table 5 about here ==

Panel 1 presents results for the total institutional ownership, and Panel 2 presents results for the foreign institutional ownership. The results for both panels are similar. For forced turnover, the interaction term for the institutional ownership and performance is at the 1% level of significance for ROE; a high institutional ownership or foreign institutional ownership increased the forced turnover sensitivity to ROE. When the foreign institutional ownership ratio was 20%, a one standard deviation decline in ROE led to a 0.68% (0.002 * 0.17 * 20%) increase in the forced turnover ratio.[14] Thus, the level of the institutional ownership at the beginning of the firm-year influences the decision of top executive turnover.

Furthermore, Panel 3 presents the results obtained after narrowing the institutional investor effect down to that of foreign institutional investors, and running estimations for each period. We found that there was a significant influence of foreign institutional investors on forced turnover-ROE sensitivity in Periods II and III.[15] In Periods II, when

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[13] It does not include insurance firms. For details, see Miyajima et al. (2015). The share of domestic investors are not fully captured, because it is based on the largest 30 shareholders list.

[14] To check the robustness, we created a dummy variable for foreign institutional ownership, which takes a value of one, for firms whose foreign institutional ownership exceed 20%. When the foreign institutional ownership was replaced in the aggregate value with the 20%+ shareholding dummy, the result was the same. The coefficient of interaction term between 20%+ shareholding dummy and ROE is positive and 5% significance level.

[15] The marginal effect of the interaction term between foreign institutional ownership and ROE is -0.004 and significance at 5% level in Period II, and -0.001 and significance at 10% level in Period III. This decreasing of the marginal effect might look like that the effect of foreign institutional investors becomes weaker. However, the effect of ROE on the probability of forced turnover becomes stronger from the Period II to Period III. The marginal effect is -0.057 in Period II and -0.119 in Period III. During the same period, mean foreign institutional ownership increases from 8.4% to 14.0%. Thus, we presume that the increase in the effect of ROE is partly driven by the increase in the average value of

a one standard deviation declines in ROE, likelihood of forced turnover for firms with 20% foreign institutional ownership is 1.4% (0.0042*0.17*20%) higher than that for firms without foreign institutional ownership. Moreover, when the foreign institutional ownership was replaced with the 20%+ shareholding dummy variable, the results were nearly identical, suggesting the effect of foreign institutional investors on forced turnover-ROE sensitivity is stronger in more recent periods.

Overall, these results might show that the increase in top executive turnover sensitivity to ROE could be partly attributed to the increases in institutional ownership. In the next subsection, we examine the mechanism that leads to higher sensitivity.

5.2. Engagement of Blockholders

A rise in the institutional ownership can influence top executive turnover when institutional investors who hold a certain level of shares exercise their voting rights, or engage with the firm. Kaplan and Minton (2012) show that institutional blockholder ownership significantly increases the sensitivity of CEO turnover to stock return.

In addition, there is a possibility that the two types of blockholders – domestic institutional investors and foreign institutional investors – perform different roles in this regard. While domestic institutional investors, who may have a business relationship

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foreign institutional ownership, because the marginal effect is calculated at the average of the independent variables.

To clarify this point, we calculate the change in forced turnover probability for the firm with mean foreign institutional ownership in each subperiod, when industry-adjusted ROE declines by one standard deviation (0.17). We assume that sales and industry ROE take the mean value during our whole sample period, age of top executive is below 69, tenure is 5 or 6 years, the top executive is not a member of the founding family, and the firm is not subsidiaries. The change in probability is 1.05% in Period I (mean foreign institutional ownership is 5.2%), 2.85% in Period II (mean foreign institutional ownership is 8.4%), and 4.95% in Period III (mean foreign institutional ownership is 14.0%). In this way, the forced turnover for firms with mean foreign institutional ownership becomes more sensitive to ROE in recent years. This simulation result might imply that the increase in mean foreign institutional ownership raised the sensitivity of forced turnover to ROE during our sample period.

with the firm, may wield less influence, foreign institutional investors, who have a higher degree of independence from the firm, are able to exercise more actual influence (Ferreira and Matos, 2008; Giannetti and Laeven, 2009).

To examine the influence of blockholders, we replaced the institutional ownership with a dummy variable, which takes the value of one when a single entity institutional investor holds more than 3% ownership.[16] This analysis was made possible for the first time by utilizing data supplied by FactSet Ownership Database. Previous empirical analysis has not sufficiently taken into account the fact that the assets of institutional investors (securities firms and asset management firms) had been entrusted to trust banks as custodians (for example, The Master Trust Bank of Japan, Ltd. and for foreign institutional investors, State Street Corporation), and that most of the top shareholders on the lists of the 10 largest shareholders of firms with high institutional investor shareholding were occupied by such custodians. The shareholdings of these custodians included the holdings by multiple institutional investors, and thus was not an indication of the actual shareholdings of each investing entity. While caution needs to be exercised when using FactSet data,[17] which were not obtained from a comprehensive survey, they are valuable for the reporting of the ultimate holding entity, and we use such data to analyze the effect of blockholders. The estimation is for the period after 2006 when the

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[16] Existing research has used a threshold value of 5% (Holderness, 2009), which is a standard that matches the reporting requirements for large shareholding reports. However, there is no clear basis for the 5% threshold, and since there is a tendency for investors to keep their shareholding ratio below the large shareholding reporting threshold, we used a threshold of 3%, the level at which the rights of minority shareholders are protected. In Japan, shareholders having more than 3% have the special rights (for example, calling the shareholder meeting and the election of inspector of execution of operation). The incidence of ratios at 5% or higher is 19.7%, comparing to that at 3% or higher 37.9% from 2006 to 2013.

[17] FactSet Ownership Database does not cover all listed firms and all institutional investors. In Period III, FactSet covers about 90% of our sample observations, and around 60% of foreign institutional investors.

institutional investor shareholding ratio peaked.[18]

Table 6 presents the distribution of institutional investor blockholders. Around 40% of the sample firms had institutional investors that held 3% or larger blocks. Of these, domestic institutional investors had invested in 23% of the sample firms and foreign institutional investors around 27% in 2013. We should make the following two points with regard to institutional blockholders.

== Table 6 about here ==

First, the ownership of institutional investors increased, and the emergence of such outsider blockholders has been part of a major evolution since the mid-2000s, however the presence of these blockholders is still quite low when compared to the situation in the U.S. and the U.K. For example, in the U.S., where the stock ownership structure is understood to have a high degree of dispersion, and ownership of the shares of listed firms by other businesses and banks is considered to be rare, 89% of the firms on the S&P 500 report the existence of blockholders owning 5% or more of shares (Holderness, 2009).

Second, there are huge biases in the dispersion of blockholders by firm size. As emphasized in an earlier study (Miyajima and Hoda, 2015), institutional investors, and foreign institutional investors in particular, have a strong investment bias toward size and liquidity, which is shown in Panel 2 of Table 6. When divided into quartiles by market capitalization, 33.3% of firms in the fourth quartile (¥145 billion or more) have at least one foreign institutional investor holding 3% or more, while only 9.3% of firms in the first quartile have a foreign institutional investor holding a block of 3% or more.

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[18] We have not conducted an estimation for 2005 or the preceding years because we have reservations pertaining to the FactSet's coverage of these years.

On the other hand, domestic institutional investors target somewhat different firms, with blockholder shareholdings the highest in the third quartile.

Estimation results are summarized in Table 7, where we replace the institutional ownership with the blockholder dummy. When we did not distinguish between domestic and foreign institutional investors, and added a 3% blockholder dummy to the explanatory variable, the coefficient of the interaction term with performance was in all cases not significant. However, what is worthy of attention is that when a distinction is drawn between domestic institutional blocks and foreign institutional blocks, the results differ dramatically. These results are shown in the lower part of Table 7.

== Table 7 about here ==

The sign of the interaction term for the presence of domestic institutional blockholders and performance is positive, and when ROA is used as the performance variable, it is significant at the 5% level for both all turnover and forced turnover. This is consistent with the view that the actions of domestic institutional investors are constrained by business ties with client firms (Ferreira and Matos, 2008). In contrast, the sign of the coefficient of the interaction term for the presence of foreign institutional blockholders and performance is negative, and when ROE is used as the performance variable, the results are significant at the 5% level for both all turnover and forced turnover.[19] The existence of foreign institutional blockholders who, unlike domestic institutional investors, are unencumbered by business ties with client firms, particularly with respect to ROE (a direct indicator of the interests of shareholders), increased top executive turnover sensitivity to performance to a statistically significant degree.

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[19] To check the robustness, we use change in industry-adjusted ROE as a performance indicator. Consistent with the results in Table 7, we find that the interaction term with domestic institutional blockholders is positive and significant at 5% level, and the interaction term with foreign institutional blockholders is negative and significant at 5% level.

Although there were only 27% of companies in which foreign institutional investors were blockholders, once foreign institutional investors possess blocks of shares, we can assume that they influence top executive turnover through the exercise of their voting rights and engagement or the threat of exit.

6. The Role of Independent Outside Directors

Traditionally, the majority of Japanese public corporations did not have outside directors on their boards. In other words, boards were entirely composed of inside directors. One of the changes in Japanese corporate governance in the 2000s has been that as board reform has led to the introduction of independent outside directors, their traditional function as management boards involved in the execution of managerial policy has gradually transformed into monitoring boards, with the primary function to monitor management. In this section, we examine the degree of influence that appointments of independent outside directors have had on the increase in top executive turnover and changes to the performance indicators that such turnover is sensitive to in the 2000s.

We define independent outside director as an outside director who has no affiliation with bank or parent firm. Weisbach (1988) shows that gray outside directors from an entity with business dealings with the firm do not have a significant influence on CEO turnover. To check the background of outside directors, we use Nikkei NEEDS-Cges (corporate governance evaluation system). We make a dummy for firms that appointed at least one independent outside director, which takes the value of one, and a dummy for firms that appointed three or more independent outside directors, which takes a value of one. The incidence of the independent outside director dummy

and the three or more independent outside directors dummy was 30.5% and 5.2% respectively for the year of 2006, and 56.6% and 10.1% for the year 2013.

In our estimation model, we replaced the *INSTI* variable in equation (2) with independent outside director dummy. The estimation results are presented in Table 8. Panel 1 shows the results for the presence of the independent outside director dummy, and reveals that for all performance indicators, the coefficient for the interaction for independent outside directors and performance was, against our expectations, positive and partly significant. According to model 5, firms that appointed independent outside directors had top executive turnover sensitivity to performance (ROE) 30% lower than firms without independent outside directors (0.047/-0.152). There was a tendency for independent outside directors to reduce top executive turnover sensitivity to performance.

== Table 8 about here ==

When we add the dummy variable for three or more independent outside directors, the interaction term between the presence dummy and ROE is still positive and significant, and the interaction term between the dummy for three or more is negative, but not significant. By comparison with the coefficients, the presence dummy effect (0.053) is larger than the effect of the dummy for three or more independent outside directors (-0.037). Thus, we cannot find the evidence that independent outside directors increase the sensitivity of forced turnover to ROE.

On the other hand, the interaction term between the dummy for three or more and ROA is negative at a 1% level of significance for forced turnover, indicating that forced turnover is more sensitive to ROA when boards have three or more independent outside directors than boards have only one outside director. These results suggest that the

appointment of only one independent outside director not only does not increase turnover sensitivity to performance, but also has a potential window-dressing effect that reduces sensitivity. In contrast, the appointment of three or more independent outside directors may increase turnover sensitivity to ROA, although those cases are still quite limited.[20]

In order to test the robustness, we also conducted the following estimations. We constructed dummy variables for cases in which firms had one, two, or three or more independent outside directors. We replaced the dummy variable for three or more independent outside directors with a dummy variable for a 30% or more independent outside director ratio, and then conducted estimations for both cases. The results in all estimations were similar to those presented.

From the above results, we can conclude that the increase in top executive turnover sensitivity to ROE could not be attributed to the increases in independent outside directors. The results also show that the relationship between independent outside directors and top executive turnover sensitivity to performance was not linear, and that there were clear thresholds for three directors, or for a board composition of 30%.

7. The Role of Main Banks

Previous research showed that main banks play the role of imposing discipline on the managers of Japanese firms. Especially, when earnings performance declines decisively, the bank will begin initiatives for the top executive's removal (Kang and Shivdasani, 1995). However, following the process of financial deregulation and the

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[20] The ratio of firms with three or more independent outside directors in Period III is about 8% of our sample, and the number of forced turnovers is only 14 cases for those firms out of 166 total forced turnover in this period.

collapse of the Japanese bubble economy in the early 1990s, the bank-centered corporate governance system deteriorated. The shift in performance indicators from ROA to ROE and stock returns might reflect the deleveraging among Japanese firms and the deterioration of main bank system in particular.

In this subsection, we examine whether main banks are still capable of disciplining management. For this purpose, we replaced the *INSTI* variable in equation (2) with main bank dummy, which shows the strong ties with main bank. To construct the main bank dummy variable, we first identify a bank as a main bank if it is designated by the client as the primary source of its banking transactions (based on the *Kaisha Shikiho* by *Toyo Keizai Shinposha*). We then check whether the main bank meets the following criteria. 1), the relationship with the main bank is stable; namely, the main bank has not changed in five years. 2), substantial loan dependence. Since a main bank relationship assumes that the client's dependency on loans from the main bank is at or above a certain level, the degree of loan dependency must be at or above the industry median for each year. 3), directors have been dispatched from the main bank. We constructed the main bank dummy for when all three conditions were met. The percentage of firms with a positive main bank dummy was 26.8% for 1990 in Period I, 23.9% for 1998 in Period II, 15.0% for 2006 and 13.0% for 2013 in Period III. The estimation results are summarized in Table 9.

== Table 9 about here ==

The forced turnover sensitivity to performance did lead to an increase limited to the ROA indicator, but the significance level was not sufficiently high. On the other hand, the coefficient of the interaction term for ROE was rather positive, although not sufficiently significant, suggesting that a strong main bank relationship, in fact, reduces

turnover sensitivity to ROE, which is a direct indicator of the interests of shareholders.

When examining this in each period (Panel 2), we found the interaction term for ROE is positive and significant in Period I, indicating that strong main bank relationship reduces forced turnover sensitivity to performance in 1990s. The diminished effect that we found in the estimations for all periods (Panel 1) was primarily a reflection of the relationship found in this first period, and is consistent with the conventional understanding (Hoshi and Kashyap, 2001) that the additional financing supplied by main banks in the 1990s impeded business reorganization. In contrast, in Period II, the coefficient of the interaction term for ROA had a negative sign for both all turnover and for forced turnover, but was not statistically significant. In Period III, which coincided with a waning in main bank relationships, the sign of the coefficient of the interaction term for ROA was negative and statistically significant at the 10% level. These results indicate that main banks continued to influence top executive turnover even after 2006.

The above results suggest that the number of firms with intimate relationships with main banks declined dramatically over the past 20 years, but these relationships continue to play an important role in corporate governance.

8. Conclusion

In our analysis, we explored the relationship between top executive turnover and firm performance for 1990 to 2013. Entering the 1990s, top executive turnover at Japanese firms increased. Furthermore, Japanese top executive turnover was negatively sensitive to performance to a significant degree. Therefore, in spite of skepticism on the effectiveness of corporate governance in Japan, our results suggest that the relationship between a firm's declining performance and top executive turnover has not been

severed over the past 20 years. In fact, the biggest change that has occurred during this period is that the performance indicator that top executive turnover is sensitive to has shifted from ROA, a measure of performance preceding interest payments, to ROE and stock returns, which are directly related to shareholder interests. This result is consistent with the evolution of the corporate governance arrangement as seen in the dissolution of cross-shareholding, the increase in foreign institutional investor ownership, and board reform.

The rapid increase in institutional ownership, and foreign institutional ownership in particular since the end of the 1990s, has not only increased top executive turnover but also increased turnover sensitivity to ROE. These results allow us to interpret that institutional investors have supplanted the main bank system and begun to function as a mechanism for disciplining management through their voice and exit. However, it is important to pay note that the functioning of these mechanisms is limited to firms with large market capitalization and high liquidity.

We do not find that independent outside directors have any significant effect of enhancing turnover sensitivity to ROE. However, turnover is more sensitive to ROA when boards have three or more independent outside directors than boards have only one outside director. This result might show that when only one or two such directors are appointed to a board, the window-dressing effect exceeds the management-disciplining effect. In order to have an actual effect on top executive turnover, the important conditions would be that at least three independent outside directors must be appointed to the board.

Finally, the traditional main bank system has not been entirely deprived of its management-disciplining function. While the scope of the main bank authority have

33

substantially contracted, for firms that are highly dependent on banks for loans, and to which main banks have dispatched directors, main banks continue to perform a certain role in disciplining management.

There has clearly been a change in the relationship between top executive turnover and performance between 2006 and 2013 as compared to the relationship that existed prior to 1998. Although there has been such substantial change, however, this does not mean top executive turnover at Japanese firms in recent years has become highly sensitive to ROE and stock returns that directly reflect shareholder value. It is believed that their influence is not as strong as it has been in the U.S., where CEO turnover has traditionally been sensitive to stock returns, and where the degree of this sensitivity has increased in recent years. It is probably appropriate to describe the current situation as falling somewhere between behavior exhibited by Japanese firms and American firms in the past. We will have to continue to examine this situation closely while monitoring future developments to determine whether Japanese firms are in a transitional phase that is converging to the U.S. model of corporate governance or have achieved a new phase of stable corporate governance.

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35

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Table 1. Corporate Governance of Sample Firms

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. Sample 1 consists of 400 firms chosen from 1,070 non-financial corporations listed as of 1990. Sample 2 consists of 100 firms randomly selected from the 393 non-financial corporations that were either newly listed or had migrated their listing status on the First Section of the Tokyo Stock Exchange from 1991 to 2006. When the firm has a stable relationship with a bank that it has designated as being responsible for most of its banking transactions (*Kaisha Shikiho* published by *Toyo Keizai Shinposha*), the bank is considered to be its main bank. Family-run firm is a firm in which the founding family held 5% or more of shares, and the top executive is either the founder or related to the founder. Subsidiary firm is a firm in which another corporation held 30% or more of shares. Data on ownership are from the Corporate Financial Databank, compiled by the Development Bank of Japan. The information on the directors is from the *Yuka Shoken Hokokusho* (Securities Report), Nikkei NEEDS-Cges, and *Yakuin Shikiho* (Directory of Directors) published by *Toyo Keizai Shinposha*.

	1990	1996	1999	2001	2006	2009	2013	All
Sample (Number of firms)	400	413	414	443	426	401	376	9859
Sample 1	400	394	380	372	330	302	277	8466
Sample 2	0	19	34	71	96	99	99	1393
Mean family ownership (%)	3.93	4.66	5.08	6.62	6.70	6.78	6.81	5.74
Percentage of family-run firms	16.50	15.98	15.46	17.16	14.55	13.47	13.83	15.69
Percentage of subsidiary firms	13.25	12.35	13.04	13.09	16.20	16.71	15.96	14.15
Mean institutional ownership (%)	8.90	11.73	11.17	13.13	21.68	21.70	24.94	15.72
Mean foreign institutional ownership (%)	3.28	6.94	6.68	6.44	14.48	13.09	16.64	9.18
Percentage of firms with foreign institutional ownership 20% or more	0.00	4.36	9.42	7.45	29.81	25.19	35.64	13.99
Mean main bank ownership (%)	4.11	4.06	3.84	3.34	2.43	2.32	2.17	3.20
Percentage of firms with main bank ownership 3% or more	85.30	83.29	77.29	64.56	42.25	40.15	36.70	61.76
Percentage of firms with directors dispatched from main bank	43.50	36.08	35.99	32.73	27.93	22.94	22.61	32.32
Percentage of firms with independent outside director	NA	NA	NA	NA	30.52	38.25	56.65	NA
Percentage of firms with 3 or more independent outside directors	NA	NA	NA	NA	5.16	8.50	10.11	NA
Mean ratio of independent outside directors to total directors (%)	NA	NA	NA	NA	5.66	7.65	11.61	NA

Table 2. Trends in Top Executive Turnover

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. The position of the top executive after resigning is the position held one year after retirement. Top executive is the representative of corporation on the *Yuka Shoken Hokokusho* (Securities Report). Forced turnover is defined to occur when the top executive does not take up the post of chairman, vice chairman, or other directorship after resigning as top executive. Resignations due to death and illness are excluded. The information on the top executive and directors from Nikkei NEEDS-Cges, and *Yakuin Shikiho* (Directory of Directors) published by *Toyo Keizai Shinposha*.

	Sample size	Top executive turnover	Ratio	Turnover after M&A	Turnover after collapse	Chairman, vice chairman after resigning	Directorship after resigning	Ratio	Forced turnover	Forced turnover ratio
	(a)	(b)	(b)/(a)			(c)	(d)	((c)+(d))/(b)	(e)	(e)/(a)
1990	400	48	0.12	0	0	36	8	0.92	4	0.01
1991	400	55	0.14	2	0	46	4	0.91	5	0.01
1992	401	65	0.16	1	0	45	8	0.82	12	0.03
1993	401	39	0.10	1	0	29	4	0.85	6	0.01
1994	403	64	0.16	2	0	38	10	0.75	16	0.04
1995	405	53	0.13	0	0	43	7	0.94	3	0.01
1996	413	60	0.15	1	2	34	7	0.68	19	0.05
1997	414	52	0.13	1	3	29	7	0.69	16	0.04
1998	414	68	0.16	3	1	39	9	0.71	20	0.05
1999	414	66	0.16	3	3	40	8	0.73	18	0.04
2000	438	69	0.16	0	0	36	9	0.65	24	0.05
2001	443	62	0.14	3	11	33	5	0.61	24	0.05
2002	429	91	0.21	3	0	58	12	0.77	21	0.05
2003	430	66	0.15	1	1	42	5	0.71	19	0.04
2004	429	60	0.14	2	0	37	6	0.72	17	0.04
2005	430	61	0.14	4	0	36	11	0.77	14	0.03
2006	426	77	0.18	2	0	41	7	0.62	29	0.07
2007	418	63	0.15	1	0	43	5	0.76	15	0.04
2008	412	72	0.17	5	1	36	7	0.60	29	0.07
2009	401	62	0.15	2	0	28	9	0.60	25	0.06
2010	395	61	0.15	1	1	32	4	0.59	25	0.06
2011	387	50	0.13	2	1	30	2	0.64	18	0.05
2012	380	58	0.15	1	0	39	2	0.71	17	0.04
2013	376	44	0.12	3	0	33	3	0.82	8	0.02
Total	9,859	1,466	0.15	44	24	903	159	0.72	404	0.04
1990-1997	3,237	436	0.13	8	5	300	55	0.81	81	0.03
1998-20	3,427	543	0.16	19	16	321	65	0.71	157	0.05

05										
2006-2013	3,195	487	0.15	17	3	282	39	0.66	166	0.05

Table 3. Analysis of Influence of Corporate Performance on Top Executive Turnover

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. The period of analysis is 1990 to 2013. Normal turnover is defined to occur when the top executive takes up the directorship after resigning as top executive. Forced turnover is defined to occur when the top executive does not take up the post of chairman, vice chairman, or other directorship after resigning as top executive. Industry-adjusted performance is calculated by subtracting the median of the industry to which each firm belongs from each firm's performance. Family-run firm is a firm in which the founding family held 5% or more of shares, and the top executive is either the founder or related to the founder. Subsidiary firm is a firm in which another corporation held 30% or more of shares. The analysis was conducted using a probit model. Marginal effects are in the upper row, and cluster-robust standard errors are in the lower row. The clusters are at the firm and year level. *** denotes 1% level of significance, ** 5% level of significance, and *10% level of significance.

Dependent variable =	All turnover	All turnover	All turnover	Normal turnover	Normal turnover	Normal turnover	Forced turnover	Forced turnover	Forced turnover
Performance indicator =	ROA	ROE	RET	ROA	ROE	RET	ROA	ROE	RET
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Industry performance (median)	-0.424 (0.279)	-0.261 (0.237)	0.002 (0.021)	-0.167 (0.199)	-0.174 (0.150)	0.004 (0.012)	-0.233 * (0.113)	-0.074 (0.083)	-0.001 (0.012)
Industry-adjusted performance	-0.785 * (0.151) **	-0.179 * (0.024)	-0.038 * (0.017)	-0.170 (0.110)	-0.035 * (0.018)	0.000 (0.002)	-0.482 *** (0.083)	-0.079 *** (0.008)	-0.031 ** (0.013) **
Log (sales)	0.003 (0.003) **	0.003 (0.003) **	0.001 (0.003)	0.008 *** (0.002)	0.009 *** (0.002)	0.008 *** (0.002)	-0.004 *** (0.001)	-0.005 *** (0.001)	-0.007 * (0.001) **
Tenure 1 to 2 years (dummy)	-0.168 * (0.013) **	-0.168 * (0.012) **	-0.168 *** (0.013)	-0.130 *** (0.010)	-0.130 *** (0.010)	-0.130 *** (0.010)	-0.027 *** (0.004)	-0.028 *** (0.004)	-0.028 * (0.004)
Tenure 3 to 4 years (dummy)	-0.071 * (0.010)	-0.070 * (0.009)	-0.070 *** (0.010)	-0.065 *** (0.007)	-0.065 *** (0.007)	-0.065 *** (0.007)	0.001 (0.003)	0.002 (0.004)	0.001 (0.004)
Tnure 7 to 8 years (dummy)	-0.004 (0.011)	-0.004 (0.011)	-0.006 (0.012)	0.000 (0.007)	0.000 (0.008)	0.000 (0.007)	-0.004 (0.005)	-0.003 (0.005)	-0.005 (0.005)

42

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Tenure 9 or more years (dummy)	-0.039***	-0.041***	-0.044***	-0.016**	-0.016**	-0.017**	-0.022***	-0.024***	-0.026***
	(0.010)	(0.010)	(0.010)	(0.008)	(0.008)	(0.008)	(0.004)	(0.004)	(0.004)
Age 70 or older (dummy)	0.139***	0.144***	0.143***	0.108***	0.110***	0.109***	0.020***	0.022***	0.023***
	(0.018)	(0.018)	(0.018)	(0.015)	(0.015)	(0.016)	(0.006)	(0.007)	(0.007)
Family-run firm (dummy)	-0.085***	-0.084***	-0.087***	-0.054***	-0.056***	-0.054***	-0.022***	-0.023***	-0.028***
	(0.008)	(0.008)	(0.008)	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)
Family-run firm * Industry-adjusted performance	0.596***	0.023	-0.050*	0.061*	-0.084*	-0.070***	0.359*	0.501*	0.020
	(0.124)	(0.062)	(0.023)	(0.127)	(0.045)	(0.020)	(0.211)	(0.277)	(0.026)
Subsidiary firm (dummy)	0.072***	0.077***	0.070***	0.030***	0.032***	0.029***	0.032***	0.036***	0.031***
	(0.008)	(0.009)	(0.017)	(0.008)	(0.007)	(0.009)	(0.004)	(0.005)	(0.005)
Subsidiary firm * Industry-adjusted performance	0.084	0.078	0.017	0.248	0.036	0.012	0.067	0.034*	0.014
	(0.290)	(0.058)	(0.052)	(0.243)	(0.056)	(0.042)	(0.097)	(0.018)	(0.019)
Pseudo R-squared	0.096	0.100	0.090	0.100	0.101	0.100	0.104	0.104	0.075
Number of observations	9857	9854	9837	9857	9854	9837	9857	9854	9837

Table 4. Changes in Top Executive Turnover Sensitivity to Performance

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. The period of analysis is 1990 to 2013. Normal turnover is defined to occur when the top executive takes up the directorship after resigning as top executive. Forced turnover is defined to occur when the top executive does not take up the post of chairman, vice chairman, or other directorship after resigning as top executive. Industry-adjusted performance is calculated by subtracting the median of the industry to which each firm belongs from each firm's performance. Control variables include log of sales, tenure dummies, age dummy, family-run firm dummy and subsidiary firm dummy. The analysis was conducted using a probit model. Marginal effects are in the upper row, and cluster-robust standard errors are in the lower row. The clusters are at the firm and year level. *** denotes 1% level of significance, ** 5% level of significance, and *10% level of significance.

Panel 1. The effect of time period dummy

Dependent variable =	All turnover	Normal turnover	Forced turnover	Forced turnover	Forced turnover
Performance indicator =	ROA	ROA	ROA	ROE	RET
	Model 1	Model 2	Model 3	Model 4	Model 5
Industry-adjusted performance	-0.797 ***	-0.170	-0.220 ***	-0.078 ***	-0.030 **
	(0.149)	(0.110)	(0.037)	(0.008)	(0.012)
Period II (1998 to 2005) (dummy)	0.035 ***	0.015 *	0.019 ***	0.017 *	0.024 ***
	(0.010)	(0.008)	(0.006)	(0.007)	(0.007)
Period III (2006 to 2013) (dummy)	0.027 *	0.000	0.024 ***	0.025 ***	0.025 ***
	(0.011)	(0.006)	(0.007)	(0.008)	(0.008)
Control variables	YES	YES	YES	YES	YES
Pseudo *R*-squared	0.099	0.100	0.113	0.114	0.085
Number of observations	9857	9857	9857	9854	9837

Panel 2. The effect of industry-adjusted performance, estimation by period

44

Dependent variable = Performance indicator =	All turnover			Normal turnover			Forced turnover		
	ROA	ROE	RET	ROA	ROE	RET	ROA	ROE	RET
Period I (1990 to 1997)	-1.125 ***	-0.157 ***	-0.083 *	-0.548 ***	-0.075 *	-0.044 *	-0.403 **	-0.046 **	-0.032
	(0.210)	(0.036)	(0.034)	(0.103)	(0.041)	(0.020)	(0.119)	(0.014)	(0.021)
Period II (1998 to 2005)	-0.970 ***	-0.144 ***	-0.036 *	-0.191	-0.009	-0.009	-0.625 *	-0.076 *	-0.023
	(0.264)	(0.028)	(0.020)	(0.158)	(0.017)	(0.015)	(0.155)	(0.007)	(0.019)
Period III (2006 to 2013)	-0.537 ***	-0.291 ***	-0.015	0.039	-0.022	0.040 *	-0.428 *	-0.131 *	-0.046 *
	(0.202)	(0.049)	(0.039)	(0.164)	(0.040)	(0.022)	(0.119)	(0.011)	(0.024)

45

Table 5. Effect of Institutional Investors on the Sensitivity of Top Executive Turnover

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. The period of analysis is 1990 to 2013. Forced turnover is defined to occur when the top executive does not take up the post of chairman, vice chairman, or other directorship after resigning as top executive. Estimation results for the institutional ownership are presented in Panel 1, and for the foreign institutional ownership in Panels 2 and 3. Panel 3 presents analytical results by period. Industry-adjusted performance is calculated by subtracting the median of the industry to which each firm belongs from each firm's performance. Control variables include log of sales, tenure dummies, age dummy, family-run firm dummy and subsidiary firm dummy. The analysis was conducted using a probit model. Marginal effects are in the upper row, and cluster-robust standard errors are in the lower row. The clusters are at the firm and year level. *** denotes 1% level of significance, ** 5% level of significance, and *10% level of significance.

Panel 1. The effect of institutional ownership

Dependent variable =	All turnover	All turnover	All turnover	Forced turnover	Forced turnover	Forced turnover
Performance indicator =	ROA	ROE	RET	ROA	ROE	RET
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Industry-adjusted performance	-1.116 *** (0.218)	-0.154 ** * (0.026)	-0.057 *** (0.025)	-0.566 *** (0.089)	-0.064 *** (0.009)	-0.034 * (0.020)
Institutional ownership	0.002 (0.005)	0.001 (0.004)	-0.003 (0.005)	0.003 (0.002)	0.000 (0.003)	-0.001 (0.003)
Institutional ownership *Industry-adjusted performance *	0.0150 * (0.076)	-0.0029 * (0.016)	0.0010 (0.008)	0.0032 (0.042)	-0.0020 *** (0.004)	0.0001 (0.006)
Control variables	YES	YES	YES	YES	YES	YES
Pseudo *R*-squared	0.097	0.100	0.089	0.103	0.106	0.074
Number of observations	9673	9670	9666	9673	9670	9666

Panel 2. The effect of foreign institutional ownership

Dependent variable =	All turnover	All turnover	All turnover	Forced turnover	Forced turnover	Forced turnover
Performance indicator =	ROA	ROE	RET	ROA	ROE	RET
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Industry-adjusted performance	-1.021 *** (0.190)	-0.165 ** * (0.024)	-0.040 * (0.023)	-0.533 *** (0.083)	-0.069 *** (0.008)	-0.030 * (0.016)
Foreign institutional ownership	0.006	0.003	-0.001	0.005	0.002	0.001

	(0.0006)	(0.0005)	(0.0006)	(0.0002)	(0.0003)	(0.0003)
Foreign institutional ownership * Industry-adjusted performance	0.0151 (0.0102)	-0.0027 (0.0023)	0.0002 (0.0011)	0.0033 (0.0053)	-0.0020 *** (0.0005)	-0.0001 (0.0006)
Control variables	YES	YES	YES	YES	YES	YES
Pseudo *R*-squared	0.097	0.100	0.090	0.106	0.108	0.075
Number of observations	9856	9853	9837	9856	9853	9837

Panel 3. The effect of foreign institutional ownership, estimation by period

Dependent variable =	All turnover	All turnover	All turnover	Forced turnover	Forced turnover	Forced turnover
Performance indicator =	ROA	ROE	RET	ROA	ROE	RET

Period I (1990 to1997)

Industry-adjusted performance	-1.363 *** (0.279)	-0.152 ** * (0.046)	-0.085 * * (0.042)	-0.316 * (0.142)	-0.044 * (0.020)	-0.044 * * * (0.019)
Foreign institutional ownership	-0.0005 (0.0016)	-0.0012 (0.0017)	-0.0012 (0.0019)	-0.0001 (0.0006)	-0.0003 (0.0006)	-0.0004 (0.0005)
Foreign institutional ownership * Industry-adjusted performance	0.0442 * * (0.0201)	-0.0004 (0.0064)	0.0012 (0.0048)	-0.0176 (0.0113)	-0.0004 (0.0035)	0.0022 * * (0.0009)

Period II (1998 to 2005)

Industry-adjusted performance	-1.198 *** (0.267)	-0.118 ** * (0.024)	-0.046 (0.033)	-0.646 *** (0.163)	-0.057 *** (0.007)	-0.024 (0.023)
Foreign institutional ownership	-0.0010 * (0.0006)	-0.0012 (0.0008)	-0.0019 * (0.0008)	-0.0001 (0.0005)	-0.0008 (0.0006)	-0.0009 (0.0006)
Foreign institutional ownership * Industry-adjusted performance	0.0257 * (0.0153)	-0.0051 (0.0060)	0.0012 (0.0016)	0.0032 (0.0116)	-0.0042 * (0.0020)	0.0003 (0.0010)

47

Period III (2006 to 2013)

Industry-adjusted performance	-0.596 *	-0.288 ** *	0.001 ***	-0.470 ***	-0.119 ***	-0.038
	(0.306)	(0.051)	(0.046)	(0.119)	(0.011)	(0.030)
Foreign institutional ownership	0.0009	0.0005	0.0005	0.0004	0.0000	0.0001
	(0.0008)	(0.0006)	(0.0007)	(0.0003)	(0.0003)	(0.0003)
Foreign institutional ownership * Industry-adjusted performance	0.0005	-0.0002	-0.0011	0.0018	-0.0010 *	-0.0006
	(0.0127)	(0.0024)	(0.0018)	(0.0059)	(0.0005)	(0.0010)

Table 6. Distribution of Institutional Blockholder

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. Blockholder is a single entity institutional investor holds more than 3% ownership. Data pertaining to blockholders were obtained from FactSet Ownership Database. Since some firms have both domestic and foreign blockholders, the total number of firms reporting domestic blockholders and foreign blockholders exceeds the total number of firms reporting blockholders. The market capitalization quartiles in Panel 2 were demarcated at ¥16.5 billion, ¥40.6 billion, and ¥145.0 billion.

Panel 1. Firms with blockholders with 3% or larger shareholdings

	Blockholders		Blockholder breakdown	
	None	Exist	Domestic	Foreign
2006	204	154	110	72
2007	197	163	109	96
2008	208	153	101	80
2009	234	127	83	69
2010	251	111	62	74
2011	244	118	62	78
2012	242	119	65	74
2013	213	148	82	98

Panel 2. Quartile of market capitalization and blockholder ratio

	Smaller←Market capitalization→Larger			
	1	2	3	4
Ratio of firms with blockholders	19.0%	29.5%	51.1%	49.9%
Ratio of firms with domestic institutional blockholders	12.5%	19.6%	33.1%	27.3%
Ratio of firms with foreign institutional blockholders	9.3%	15.3%	29.4%	33.2%

49

Table 7. Effect of Institutional Blockholders on the Sensitivity of Top Executive Turnover

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. The period of analysis is 2006 to 2013. Forced turnover is defined to occur when the top executive does not take up the post of chairman, vice chairman, or other directorship after resigning as top executive. Industry-adjusted performance is calculated by subtracting the median of the industry to which each firm belongs from each firm's performance. Blockholder is a dummy variable which takes one when single entity institutional investor holds more than 3% ownership. Log of sales, tenure dummies, age dummy, family-run firm dummy and subsidiary firm dummy are controlled. The analysis was conducted using a probit model. Marginal effects are in the upper row, and cluster-robust standard errors are in the lower row. The clusters are at the firm and year level. *** denotes 1% level of significance, ** 5% level of significance, and *10% level of significance.

Dependent variable =	All turnover	All turnover	All turnover	Forced turnover	Forced turnover	Forced turnover
Performance indicator =	ROA	ROE	RET	ROA	ROE	RET
1. Presence of blockholders						
Industry-adjusted performance	-0.316 *	-0.165 ***	-0.014	-0.390 ***	-0.100 ***	-0.020
	(0.185)	(0.054)	(0.032)	(0.046)	(0.020)	(0.012)
Institutional blockholders (dummy)	-0.017	-0.018	0.021	0.006	0.003	0.001
	(0.016)	(0.017)	(0.017)	(0.008)	(0.007)	(0.004)
Institutional blockholders * Industry-adjusted performance	0.120	-0.118	0.016	0.233	-0.016	0.009
	(0.293)	(0.135)	(0.056)	(0.175)	(0.049)	(0.013)
2. Blockholder breakdown						
Industry-adjusted performance	-0.257	-0.162 ***	-0.015	-0.314 ***	-0.095 ***	-0.021 *
	(0.186)	(0.052)	(0.033)	(0.049)	(0.019)	(0.012)
Domestic institutional blockholders (dummy)	-0.018	-0.009	-0.016	0.001	0.003	0.000
	(0.020)	(0.019)	(0.021)	(0.007)	(0.006)	(0.003)
Domestic institutional blockholders * Industry-adjusted performance	0.741 *	0.270	0.035	0.335 *	0.074	0.0140 *
	(0.314)	(0.218)	(0.046)	(0.188)	(0.066)	(0.012)
Foreign institutional blockholders (dummy)	-0.011	-0.024	-0.017	0.001	-0.005	0.000
	(0.012)	(0.016)	(0.013)	(0.008)	(0.009)	(0.004)
Foreign institutional blockholders * Industry-adjusted performance	-0.067 **	-0.426 **	-0.021	-0.236 **	-0.093 **	0.000
	(0.029)	(0.194)	(0.040)	(0.108)	(0.040)	(0.014)

50

Table 8. Effect of Independent Outside Directors on the Sensitivity of Top Executive Turnover

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. The period of analysis is 2006 to 2013. Forced turnover is defined to occur when the top executive does not take up the post of chairman, vice chairman, or other directorship after resigning as top executive. Industry-adjusted performance is calculated by subtracting the median of the firm's industry from each firm's performance. The independent outside director dummy takes 1 if at least one independent outside director has been appointed. The three or more independent outside directors dummy takes 1 if three or more independent outside directors have been appointed. Control variables include log of sales, tenure dummies, age dummy, family-run firm dummy and subsidiary firm dummy. The analysis was conducted using a probit model. Marginal effects are in the upper row, and cluster-robust standard errors are in the lower row. The clusters are at the firm and year level. *** denotes 1% level of significance, ** 5% level of significance, and *10% level of significance.

Panel 1. The effect of the presence of independent outside directors

	All turnover	All turnover	All turnover	Forced turnover	Forced turnover	Forced turnover
Dependent variable =						
Performance indicator =	ROA	ROE	RET	ROA	ROE	RET
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Industry-adjusted performance	-0.604 ***	-0.295 ***	-0.005 *	-0.529 **	-0.152	-0.063 *
	(0.163)	(0.042)	(0.003)	(0.109)	(0.015)	(0.028)
Independent outside director (dummy)	0.012	0.011	0.015	0.003	0.003	0.002
	(0.011)	(0.012)	(0.009)	(0.007)	(0.006)	(0.007)
Independent outside director * Industry-adjusted performance	0.169	0.013	-0.024	0.237	0.047 *	0.040 *
	(0.375)	(0.077)	(0.035)	(0.149)	(0.023)	(0.016)
Control variables	YES	YES	YES	YES	YES	YES
Pseudo *R*-squared	0.092	0.104	0.090	0.107	0.131	0.095
Number of observations	3188	3188	3188	3188	3188	3188

Panel 2. The effect of the number of independent outside directors

	All turnover	All turnover	All turnover	Forced turnover	Forced turnover	Forced turnover
Dependent variable =						
Performance indicator =	ROA	ROE	RET	ROA	ROE	RET
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6

	(1)	(2)	(3)	(4)	(5)	(6)
Industry-adjusted performance	-0.591 ***	-0.290 ***	-0.005	-0.485 ** *	-0.151 ***	-0.063 *
	(0.160)	(0.041)	(0.047)	(0.104)	(0.015)	(0.029)
Independent outside director (dummy)	0.008	0.010	0.012 *	0.001	0.001	0.000
	(0.009)	(0.016)	(0.007)	(0.008)	(0.008)	(0.006)
Independent outside director * Industry-adjusted performance	0.441	0.042	-0.029	0.352 ** *	0.053 * *	0.039 * *
	(0.355)	(0.061)	(0.037)	(0.133)	(0.025)	(0.016)
3 or more independent outside directors (dummy)	0.020 *	0.008	0.013	-0.001	0.012	0.016
	(0.011)	(0.012)	(0.011)	(0.009)	(0.014)	(0.014)
3 or more independent outside directors * Industry-adjusted performance	-1.972 * *	-0.188 * *	0.028	-1.436 ** *	-0.037	0.001
	(0.935)	(0.093)	(0.095)	(0.353)	(0.029)	(0.045)
Control variables	YES	YES	YES	YES	YES	YES
Pseudo R-squared	0.095	0.105	0.090	0.118	0.132	0.096
Number of observations	3188	3188	3188	3188	3188	3188

Table 9. Effect of Main Bank on the Sensitivity of Top Executive Turnover

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. The period of analysis is 1990 to 2013. Forced turnover is defined to occur when the top executive does not take up the post of chairman, vice chairman, or other directorship after resigning as top executive. Industry-adjusted performance is calculated by subtracting the median of the industry to which each firm belongs from each firm's performance. If borrowing from the main bank exceeds the industry median, and the relationship with the main transactional bank is stable, and the main bank has dispatched a director to the firm, the main bank dummy takes the value of 1. Of the analytical results obtained per period, Panel 2 presents the results of the main bank dummy, performance and interaction term. Control variables include log of sales, tenure dummies, age dummy, family-run firm dummy and subsidiary firm dummy. The analysis was conducted using a probit model. Marginal effects are in the upper row, and cluster-robust standard errors are in the lower row. The clusters are at the firm and year level. *** denotes 1% level of significance, ** 5% level of significance, and *10% level of significance.

Panel 1. The effect of main bank

Dependent variable =	All turnover	Forced turnover	Forced turnover	Forced turnover
Performance indicator =	ROA	ROA	ROE	RET

	Model 1		Model 2		Model 3		Model 4	
Industry-adjusted performance	-0.667 (0.145)	***	-0.436 (0.085)	***	-0.085 (0.010)	***	-0.030 (0.011)	***
Main bank (dummy)	0.006 (0.010)		0.008 (0.005)	*	0.013 (0.004)	***	0.018 (0.005)	***
Main bank * Industry-adjusted performance	-0.693 (0.271)	***	-0.171 (0.106)		0.019 (0.012)		-0.001 (0.025)	
Control variables	YES		YES		YES		YES	
Pseudo *R*-squared	0.097		0.107		0.107		0.080	
Number of observations	9857		9857		9854		9837	

Panel 2. The effect of main bank, estimation by period

Dependent variable =	All turnover		Forced turnover		Forced turnover		Forced turnover	
Performance indicator =	ROA		ROA		ROE		RET	
	Model 1		Model 2		Model 3		Model 4	
Period I (1990 to 1997)								
Industry-adjusted performance	-9.730 (1.974)	***	-0.390 (0.124)	***	-0.058 (0.014)	***	-0.044 (0.026)	*
Main bank (dummy)	0.040 (0.014)	***	0.015 (0.006)	***	0.021 (0.005)	***	0.019 (0.005)	***
Main bank * Industry-adjusted performance	-0.325 (0.570)		0.056 (0.136)		0.036 (0.018)	**	0.030 (0.034)	
Period II (1998 to 2005)								
Industry-adjusted performance	-0.790 (0.244)	***	-0.544 -(0.168)	***	-0.072 (0.015)	***	-0.019 (0.013)	
Main bank (dummy)	-0.020 (0.018)		0.015 (0.007)	**	0.018 (0.005)	***	0.030 (0.007)	***
Main bank * Industry-adjusted performance	-1.225 (0.364)	***	-0.217 (0.150)		0.002 (0.022)		-0.006 (0.024)	
Period III (2006 to 2013)								
Industry-adjusted performance	-0.472 (0.205)	**	-0.388 (0.120)	***	-0.126 (0.018)	***	-0.039 (0.022)	*
Main bank (dummy)	0.006 (0.022)		-0.002 (0.006)		0.004 (0.007)		0.005 (0.007)	
Main bank *	-0.460		-0.285	*	-0.015		-0.036	

| Industry-adjusted performance	(0.438)	(0.176)	(0.033)	(0.036)

Figure 1. Trends in Main Bank and Foreign Institutional Ownership

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. Data on ownership are from the Corporate Financial Databank, compiled by the Development Bank of Japan. Panel 1 shows the 25, 50 (median), and 75 percentile values for main bank ownership. Main bank is a bank that is designated as the primary source of its banking transactions by the client (based on the *Kaisha Shikiho* published by *Toyo Keizai Shinposha*). The legal limit of main bank ownership fell to 5% of outstanding shares. Panel 2 shows the 25, 50 (median), and 75 percentile values for foreign institutional ownership.

Panel 1. Main bank ownership (%)
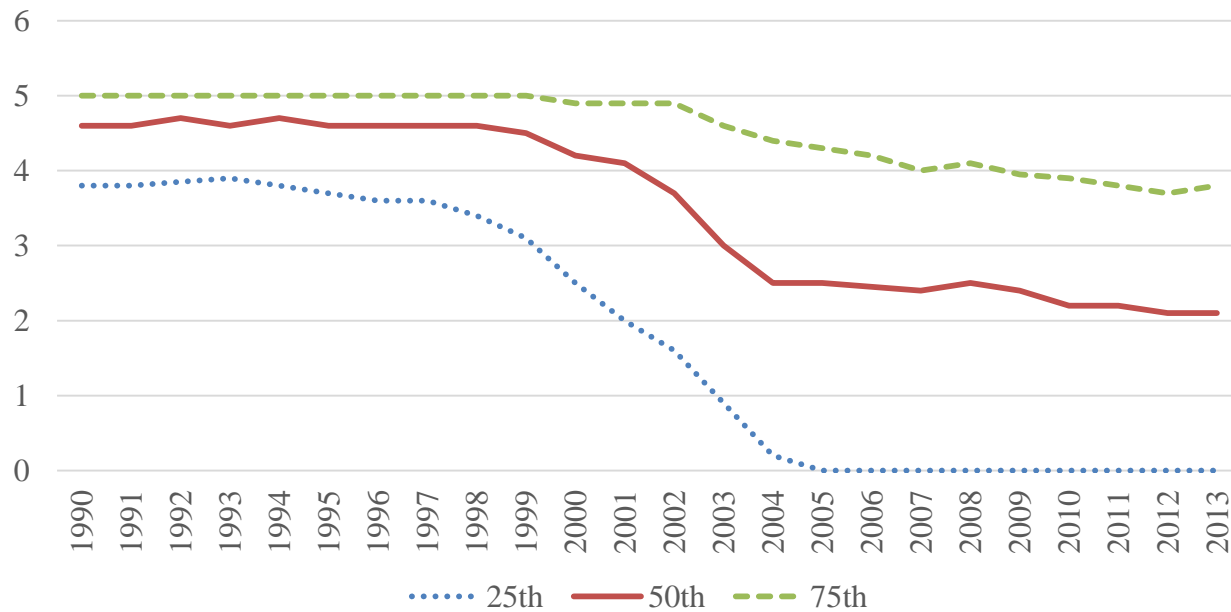
Panel 2. Foreign institutional ownership (%)
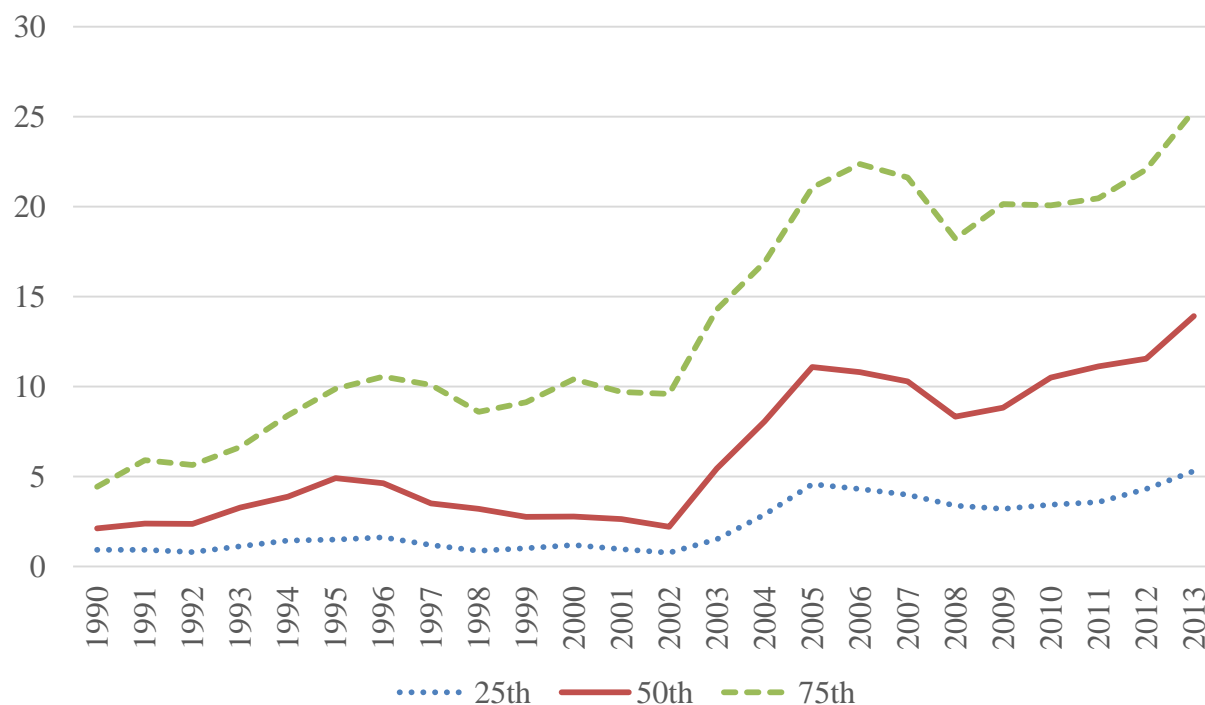
Figure 2. Trends in the Top Executive Turnover Ratio

The sample consists of 500 firms randomly selected from the First Section of the Tokyo Stock Exchange. The top executive turnover ratio is calculated by dividing the annual number of top executive turnovers by the sample size. The forced turnover ratio is calculated by dividing the annual number of forced turnovers by the sample size. Forced turnover is defined as when the top executive does not take up the post of chairman, vice chairman, or other directorship after resigning as top executive. Resignations due to death and illness are excluded.