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Business Performance in Japan:
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Abstract

This paper examines the relationship between the level of Japanese business managers' compensation and the quality of corporate governance, and whether weaker governance structures lead to poorer future performance. The conclusions of this paper are as follows. First, the level of Japanese business managers' compensation increases as the percentage of 'old', 'bank' and 'gray' outside directors increases. Compensation also increases with board stockholding and block holding. This suggests weak monitoring by old, bank and gray outside directors and block holders. Second, our results show that firms with weaker governance structures have poorer performance. These results suggest the existence of an overcompensation problem with Japanese managers similarly to the US.

JEL classifications: G30; G32; J33; L22

Keywords: Board of Directors, Corporate Governance, Managers' Compensation, Ownership Structure.

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. Introduction

In Japan, firms are regarded as being managed by all of the board members. Under Japanese commercial law all board members, including inside directors, have management responsibility. The Tokyo Stock Exchange (2004), for instance, states the following: *The term "management" means the persons recognized by the company to have actually been involved in the management of the company, including representative directors and executive officers, which in turn include representative executives and executives.* (p.12). On the other hand, in the US the role of board members is merely to elect and monitor the chief executive officer (CEO) who, in turn, has responsibility for day-to-day management. This is the main difference between Japanese and US commercial law. However, past empirical studies do not confirm whether the corporate governance of Japanese firms' management style is weak. The objective of this paper is to examine whether there is a relation between the level of business managers' compensation and the quality of corporate governance, and whether firms with weaker governance structures have poorer future performance.

Theoretical studies by Holmstrom (1979; 1982) analyze the management compensation problem using a principal–agent model. They show that the compensation of agents (managers) becomes pay-for-performance so as to maximize value for shareholders (principals) when ex post business performance represents the manager's level of effort. Ozerturk (2005) presents a theoretical model concerning the degree of manager (CEO) independence. His model proves that the board of directors will monitor the CEO less when it is less independent of the CEO.

Previous empirical papers in the US examine the relation between the level of compensation for boards of directors and firms' performances. Sloan (1993) concludes that CEO cash compensation is positively related to business profit. Joskow and Rose (1994) show that CEO compensation is related both to firms' profits and stock returns. Their paper reports that CEO compensation increases by 6.8% as business profit increases by 10%, and by 0.8% as stock returns increase by 10%.

There are several studies that examine the relation between the level of CEO compensation and the quality of corporate governance. Yermack (1996) provides evidence that business value and performance is a decreasing function of board size, suggesting that the board of directors monitors the CEO less as the number of directors on the board increases. Core et al. (1999) point out the possibility that the board of directors tends to be dependent on the CEO when the CEO influences the board of

directors. They indicate the possibility that monitoring proxies, such as the board of directors' characteristics and ownership structure, are significantly related to CEO compensation. They also prove that CEO compensation increases as the result of insufficient monitoring of the board of directors and ownership structure. In addition, their paper shows that firms with weaker governance structures often have poorer future performance.

A number of past empirical papers also compare US and Japanese CEOs in terms of compensation for performance. Kato and Rockel (1992), for example, regress CEO compensation against stock returns, the return on equity (ROE), and CEO characteristics. They find that Japanese CEOs' compensation is positively related to business size but is not significantly related to either ROE or CEO characteristics. Kaplan (1994) regresses Japanese CEO compensation against stock returns, the growth rate of sales, return on assets (ROA), and a loss dummy variable using Japanese CEO compensation data from 1980 to 1988. He finds that the loss dummy variable is significantly related to CEO compensation. Finally, Kato (1997) examines the relationship between six main bank keiretsu dummy variables and CEO compensation in Japan. As with previous work, Kato (1997) confirms that CEO compensation is positively related to business performance. However, these studies generally examine the relationship between the level of CEO compensation and each firm's profits. Accordingly, there is no consideration given to the relationship between the level of managers' compensation and the quality of corporate governance, and whether firms with weaker governance structures have poorer future performance.

The conclusion of this paper is that Japanese managers are overcompensated because they are weakly monitored. We find that Japanese managerial compensation increases as the percentage of old, bank and gray outside directors increases. We also find that Japanese managers' compensation is higher in firms with block holders. These relationships suggest that monitoring of the role of old, bank, and gray outside directors is weak, as is monitoring of board stockholding and block holders. In order to examine whether firms with weaker governance structures have poorer future performance, we regress the predicted component of compensation arising from the quality of firms' corporate governance, such as the board and ownership structure variables, against future business performance. The results show that the predicted component of compensation is negatively related to future business performance, and that Japanese managers have an overcompensation problem as in the US.

The remainder of this paper is organized into five sections. In Section II we estimate the managers' compensation equation and make two hypotheses concerning

Japanese managers' compensation. In Section III the sample is described and the variables are defined. Section IV describes and interprets the empirical results. A summary and conclusion is provided in Section V.

. Empirical Model

Previous studies of Japanese CEOs' compensation assume that principals are outside shareholders and the agent (or manager) is the CEO. Japanese commercial law determines that all of board members, excluding outside directors and auditors, have some responsibility for management. This paper assumes that principals are outside shareholders, and agents (or managers) comprise all board members, excluding outside directors and auditors. We then examine whether outside directors sufficiently monitor managers.

In Section II.1, we present the methodology to test whether there is a relationship between the level of managers' compensation and the quality of corporate governance. Variables are defined in Section II.2. In Section II.3, we test whether firms with weaker governance structures have poorer future performance.

II.1 The determinants of managers' compensation

This paper examines whether there is a relation between the level of a Japanese business manager's compensation and the quality of the firm's corporate governance as in Core et al. (1999)¹.

We regress Japanese business managers' compensation against monitoring proxy variables that represent board of director characteristics and ownership structure after controlling for variables that represent business performance. The Japanese business managers' compensation regression is represented in equation (1).

$$\begin{aligned} \text{compensation}_{it} = & \beta_j(\text{performance}_{it}) + \delta_k(\text{board characteristics}_{it}) \\ & + \eta_l(\text{stock ownership}_{it}) + c_i + d_t + \varepsilon_{it} \end{aligned} \quad (1)^2$$

¹ Previous studies of Japanese CEO compensation such as Kaplan (1994) and Kato (1997) examine whether CEO compensation is positively related to business profit, but do not investigate whether or not CEO compensation is well monitored.

c_i = industry effect (dummy variables), d_t = time effect

When we relate compensation to corporate governance, the null hypothesis means that the estimated coefficients of monitoring proxy variables are equal to zero ($\delta_k = \eta_l = 0$). Accordingly, we can check the significance of the null hypothesis using the following F-test.

$$H_{1N} : \delta_k = \eta_l = 0 (\forall k,l) \text{ vs. } H_{1A} : \text{otherwise}$$

II.2 The managers' compensation estimation

We analyze the effectiveness of board and shareholders' monitoring of managers' compensation. Compensation is determined by each firm's performance and monitoring proxy variables when the null hypothesis ($H_{1N} : \delta_k = \eta_l = 0 (\forall k,l)$) is rejected. The definitions of all independent variables are provided in Table 1.

We employ four economic variables as determinants. Positive signs are hypothesized for the two business performance proxy variables: the growth rate of sales and ROA. Xu (1997) argues that a profit and/or loss statement is necessary when salary is paid. Therefore, we adopt the loss/profit dummy variable to check whether salary is reduced when a loss is reported. Managerial compensation in a larger firm is thought to be higher. This is because larger business size needs higher management abilities. As a result, managers' compensation is used to control for the effect of business size, and the sign condition of business size is positive.

We also include six types of board characteristics: the percentage of busy outside directors, gray outside directors, old outside directors, bank directors, government directors and corporate directors. Table 1 presents the definition of the six variables. Each of the variables representing the lack of outside directors' independence toward managers has a positive relation with managerial compensation.

There is mixed evidence about the sign condition of busy outside directors. Core et al. (1999) point out the possibility that their monitoring role is weak. On the other hand, busy outside directors improve their monitoring ability by holding the additional posts as other firms' directors. As a result, the sign condition of the percentage of busy outside directors cannot be determined. Core et al. (1999) suggest that the monitoring of gray and old outside directors is also weak: the sign condition of their monitoring is positive.

² Table 1 presents the definitions of all variables that represent performance, board characteristics, and stock ownership.

There is mixed evidence about the sign condition of the percentage of bank directors. In Japan, it has been argued that commercial banks monitor the management of firms, and so bank directors play a role in monitoring firms. If this is the case, then managers' compensation may be reduced by bank directors. On the other hand, Morck and Nakamura (1999) point out that the restructuring of firms does not progress after directors from the banking sector have joined the firm. Therefore, we cannot decide the sign condition.

There is mixed evidence about the sign condition of government directors. In the first instance, they are thought to play the role of an outside director as in Aoki et al. (1994). If this is the case, then sign condition is negative. On the other hand, Kaplan and Minton (1994) insist that government directors do not play the role of an outside director. In other words, they assume that the monitoring of government directors is weak because retired government officials tend to be firms' directors³. According to the assumptions of Kaplan and Minton (1994), government directors take a similar role to that of gray outside directors, and the sign condition is positive. Accordingly, we cannot decide the sign condition. Corporate directors are appointed by firms that hold more than 20% of stocks and are the largest stockholders. These also play a monitoring role. Therefore, the sign condition is negative.

We adopt two stock ownership variables: percentage of board stock ownership and block holder dummy variable. The sign condition of board stock ownership is defined as positive because the proportion of voting rights the board represents in a stockholders' meeting is higher when stock ownership is higher. The sign condition of the block holder dummy variable is negative as in Core et al. (1999). They point out that the role of block holders' monitoring is effective. Accordingly, the sign condition is negative.

II.3 The excess compensation hypothesis

We find that monitoring proxies are significantly related to managers' compensation when the null hypothesis (H_{1N}) is rejected. There are two possibilities if the null hypothesis is rejected. One possibility is that managers' compensation is well monitored. The terms of the monitoring proxies are positively related to future business performance when Japanese managers' compensation is well monitored. In other words, there is no excess compensation. We call this hypothesis the efficient compensation hypothesis.

The other possibility is that managers' compensation is weakly monitored. The

³ This is known as a 'descent from heaven'.

terms of the monitoring proxies are negatively related to future business performance when Japanese managers' compensation is weakly monitored. In other words, the terms indicate excess compensation. We call this hypothesis the excess compensation hypothesis.

In order to identify these two possibilities, future business performance is regressed against the terms representing the monitoring proxies (predicted excess compensation). The interpretation of the excess compensation hypothesis is that the predicted excess compensation (PEC) corresponds to managers' overcompensation when PEC is negatively related to future business performance. PEC arises from the quality of firms' corporate governance such as the board and ownership structure variables. As in Core et al. (1999), we define the monitoring proxy terms

($\hat{\delta}_k(\text{board characteristics}_{it}) + \hat{\eta}_l(\text{stock ownership}_{it})$) as PEC.

$$PEC_{it} = \hat{\delta}_k(\text{board characteristics}_{it}) + \hat{\eta}_l(\text{stock ownership}_{it}) \quad (2)$$

where the coefficients on the governance variables ($\hat{\delta}_k(\text{board characteristics}_{it}) + \hat{\eta}_l(\text{stock ownership}_{it})$) are estimated with estimation (1).

To identify whether PEC (PEC_{it}) is positively or negatively related to future business performance, we regress future business performance ($ROA_{i,t+h}$) on PEC (PEC_{it}). Using a single control variable to represent business performance, we estimate the following equation.

$$ROA_{i,t+h} = \zeta_1 PEC_{it} + \zeta_2 \text{sale}_{it} + c_i + d_t + \varepsilon_{it} \quad (3)$$

c_i = industry effect (dummy variables), d_t = time effect

$$H_{3N} : \xi_1 \geq 0 \quad \text{vs.} \quad H_{3A} : \xi_1 < 0$$

We test the sign condition of equation (3) PEC (ξ_1) to examine whether the predicted efficient compensation hypothesis is accepted or rejected. The null hypothesis represents a positive sign condition ($H_{3N} : \xi_1 \geq 0$), and the alternative hypothesis represents a negative sign condition ($H_{3A} : \xi_1 < 0$). The dependent variable is a profit

index of both ROA in the next fiscal year and the average ROA for the next five fiscal years.

The sign condition of PEC (ξ_1) is negative when managers are weakly monitored. Then, future ROA goes down when PEC goes up, and there are excess components in managers' compensation. Core et al. (1999) report that the sign condition of PEC (ξ_1) is negative, and conclude that US CEO compensation includes excess components.

III. Data

We use data from the Nikkei NEEDS database along with hand-collected data. The Nikkei NEEDS data is from company annual reports, which contain a panel of cash compensation data in the financial statements and list of stock holders. Data on the board of director characteristics are collected from *Yakuin Shiki Ho*. *Yakuin Shiki Ho* defines 'outside' directors as those directors who have become directors in the last four years, and 'busy' outside directors as those who serve on two or more other boards.

We remove firms if there is any missing compensation data, no data in *Yakuin Shiki Ho*, and no change of their account day. The final sample consists of 2,610 observations over a five-year period (from 1991 to 1995) for 522 Japanese manufacturing firms publicly traded on the Tokyo Stock Exchange. The firms are divided into fifteen manufacturing industry groups⁴.

We specify each manager's cash compensation as the sum of salary and bonus earned per director. There is no publicly available data on CEO and individual compensation in Japan. Only total compensation data, including all directors and all auditors, is available in the Nikkei NEEDS database.

We obtain the survey data of compensation characteristics for the board of directors from *Yakuin no Hoshu, Shoyo, Nenshuu*. These survey data are collected from 86 firms publicly traded on the Tokyo Stock Exchange. The compensation data collected cover the CEO (or president), Senmu (senior managing director), Joumu (managing director), Torisimariyaku (junior directors), and the full-time and part-time auditors.

We can calculate the average compensation of all board members, excluding outside junior directors, full-time auditors and part-time auditors, with the data from *Yakuin Shiki Ho* and *Yakuin no Hoshu, Shoyo, Nenshuu*. The average compensation of all board members excluding outside directors and auditors is used as the manager's

⁴ Japan's Standard Industrial Classification divides manufacturing industry firms into 24 groups.

compensation proxy variables. The manner of calculating the average manager's compensation is explained in the Appendix.

Descriptive statistics of the variables in equation (1) are provided in Table 2. As compared with the data in Core et al. (1999), the level of ROA and the growth rate of sales are lower because of the bursting of the bubble economy in 1990. Our sample contains many firms whose statements of accounts indicate losses, with 11.7% of firms earning negative profits. The average size of assets is about 200 billion yen. The number of directors in our sample is about 12, and this is larger than in Core et al. (1999). The average percentage of board members' stock ownership is 2.2%, and lower than that in Core et al. (1999). The average percentage of bank stock ownership is 41%, and of firms' stock ownership is 26%. Table 3 represents the descriptive statistics of the variables in equation (3). The level of average ROA after one fiscal year and for five fiscal years is low.

IV. Results

In this section, we estimate two equations and test two hypotheses. First, in Section IV.1 we estimate equation (1), and test whether there is a relation between the level of Japanese business manager's compensation and the quality of corporate governance. Second, in Section IV.2 equation (3) is estimated, and tests whether the excess compensation hypothesis is accepted or rejected.

IV.1 The managers' compensation estimation

Table 4 reports the results of estimation of equation (1). As for board characteristics, estimated equation (i) includes five types of variables excluding the percentage of gray outside directors, and (ii) includes six types of variables including the percentage of gray outside directors.

We test the null hypothesis (H_{1N}) using estimated equation (1) (i) and (ii). The null hypothesis is rejected with the governance test, and the result is common to both (i) and (ii). Therefore, we find that managers' compensation is significantly related to the quality of a firm's corporate governance.

Table 4 demonstrates that the level of managers' compensation is related to business performance. As for economic determinants, the estimated coefficients of the growth rate of sales, ROA, and size of assets are consistent with their sign conditions,

and are positively significant at the 1% level. Similarly, the estimated coefficient of the loss dummy variable is consistent with the sign condition, and is negatively significant at the 1% level⁵.

The estimated equations (i) and (ii) of board characteristics are interpreted as follows. The estimated coefficient of the percentage of busy outside directors is not consistent with the sign condition, but is not significantly negative. This result is different from Core et al. (1999), and we can interpret this as busy outside directors developing their monitoring ability while they hold the additional posts as other firms' directors. The estimated coefficient of the percentage of old and gray outside directors is consistent, but not significantly positive. This result is consistent with Core et al. (1999), and supports the notion that their monitoring role is weak. The estimated coefficient of the percentage of bank directors is not significant, but positive. This result also supports assessment of their monitoring role as weak. The estimated coefficient of the percentage of government directors is not significant, but negative. The estimated coefficient of the percentage of corporate directors is consistent with the sign condition. As for the estimated equation (i), the estimated coefficient is not significant. It is, however, significant at the 10% level in equation (ii). This implies that corporate directors monitor their parent company, and that managers' compensation falls with their monitoring.

As for stock ownership, the percentage of stock ownership per board member and block holder dummy is positive at the 1% level. The estimated coefficient of percentage stock ownership per board member satisfies the sign condition. This is a different result to that of Core et al. (1999)⁶.

IV.2 Predicted excess compensation hypothesis

In this section, we examine whether the terms of monitoring proxies are positively related to future business performance or negatively related. We can deduce that managers receive overcompensation when the terms of monitoring proxies are

⁵ We find that managers' compensation goes up by about 17 thousand yen as the growth rate of sales increases by 1%, and compensation goes up by about 300 thousand yen as ROA increases by 1%. We also find that managers' compensation goes down by about 1.3 million yen when the previous year's statement of accounts reports a negative profit.

⁶In both (i) and (ii), managers' compensation increases by about 140 thousand yen as the percentage of stock ownership per board member increases by 1% or when ROA increases by 0.5%. Managerial compensation in companies where block holders exist is about 900 thousand yen lower than in those companies where block holders do not exist.

negatively related to future business performance.

Table 5 presents the results of equation (3). Equation (3), (i) and (ii), shows that the coefficient of PEC (ξ_1) is negative both for next year's ROA and the average ROA for the next five years, but these values are not significant. The result shows that the negative sign of the PEC coefficient is robust, and the effect of PEC in reducing business profits persists for long periods. The effect of PEC decreases and this is consistent with Core et al. (1999). We find that ROA decreases by about 0.1% as PEC increases by one unit year⁷, and, from (3) (i), that a cumulative loss in ROA decreases by -0.09% over one year and by -0.3% over five years, and from (3) (ii) that it decreases by -0.012% over one year and by -0.45% over five years. This effect is smaller than that found in Core et al. (1999). Compared with US managers' overcompensation, managers' compensation in Japan is relatively smaller.

Overall, the effect of PEC implies negative business performance. These results show that there is a manager overcompensation problem in Japan as in the US, but it is relatively smaller in the case of the former.

V. Conclusion

This paper examines whether managers' compensation is efficiently determined or overcompensated because of weak monitoring. As a result, there are three findings about Japanese managers' compensation. First, Japanese managers' compensation is related to the corporate governance of firms. Second, the monitoring role of old, bank, and gray outside directors is weak. The role of board members and block holders as stock holders is also weak. Third, the effect of PEC is negative to firms' performance, but the efficient compensation hypothesis is not significantly rejected. That is to say, there is a managers' overcompensation problem as in the US. In addition, we also find that the effect of PEC in decreasing firms' profits persists for five years.

The result of this paper implies that firms in Japan can get more profit by decreasing managers' overcompensation. In other words, Japanese firms can make more profit by decreasing the number of outside directors such as the old, the gray, and those from the banking sector.

⁷ The coefficient implies a per-year loss in ROA of 0.09%, 0.06%, 0.12%, and 0.09%, over one year by (3) (i), five years by (3) (i), one year by (3) (ii), and five years by (3) (ii).

Appendix

This appendix discusses the way in which the average compensation of all board members excluding outside directors and auditors is used as managers' compensation proxy variables. We divide all 86 firms in the sample into three groups to control for the size effect of board members' total compensation. These groups comprise small (28 firms), medium (29 firms), and large (29 firms) compensation groups. The data comprise compensation for CEOs (or presidents), Senmu (senior managing directors), Joumu (managing directors), Torisimariyaku (junior directors), full-time auditors and part-time auditors.

Example1: An example of average compensation data in *Yakuin no Hoshu, Shoyo, Nenshuu*

| CEO | Senmu | Joumu | Torisimariyaku from inside | Torisimariyaku from outside | full-time auditors | part-time auditors |
|-----|-------|-------|-------------------------------|--------------------------------|-----------------------|-----------------------|
| A | B | C | D | E | F | G |

Characteristics data of the boards of directors are composed of the number of CEOs, Senmu, Joumu, Torisimariyaku from inside, Torisimariyaku from outside, full-time auditors, and part-time auditors. The number in each firm is as follows.

Example2: An example of number data in *Yakuin Shiki Ho*

| CEO | Senmu | Joumu | Torisimariyaku from inside | Torisimariyaku from outside | full-time auditors | part-time auditors |
|-----|-------|-------|-------------------------------|--------------------------------|-----------------------|-----------------------|
| a | b | c | d | E | f | g |

We calculate the average compensation of all board members excluding outside directors and auditors as follows. First, we calculate the average compensation of Torisimariyaku from outside ($e * E$), full-time auditors ($f * F$), and part-time auditors ($g * G$) in each of the three groups. Second, we calculate the total average compensation of Torisimariyaku from outside, full-time auditors, and part-time auditors ($e * E + f * F + g * G$) in each of the three groups. Third, we calculate the total average compensation of all board members excluding Torisimariyaku from outside, full-time auditors, and part-time auditors as follows.

$$\text{Manager's Compensation} = \frac{(\text{Total compensation} - (e * E + f * F + g * G))}{\text{number of managers}}$$

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Table 1 Definitions of variables

| Variable | Definition |
|--|--|
| Dependent Variables | |
| Compensation per manager (Ten Thousands of Yen) | Average estimated compensation of all board members, excluding outside directors and auditors |
| Performance (Economic Determinants) | |
| The growth rate of sales (%) | Previous year's growth rate of sale |
| Return on assets (ROA) (%) | ROA divided by the profit of the previous year |
| Loss/profit dummy | The dummy variable for negative pretax income |
| log (Size of assets) | Log-transfer size of asset |
| Board Characteristics | |
| Busy outside directors (% of outside directors) | The percentage of outside directors who serve on two or more other corporate boards |
| Old outside directors (% of outside directors) | The percentage of outside directors who are 65 years of age or older |
| Gray outside directors (% of outside directors) | The percentage of the outside directors who are less independent |
| Bank directors (% of outside directors) | The percentage of outside directors who are from commercial banks |
| Government directors (% of outside directors) | The percentage of directors who are appointed by the government |
| Corporate directors (% of outside directors) | The percentage of outside directors who are from firms holding more than 20% of stocks and that are the largest stockholders |
| Stock Ownership | |
| Board stock ownership (%) | The percentage of shareholdings owned by the board |
| Block holder dummy | The existence of an external party that owns at least 10% of outstanding shares. |

Table 2 Descriptive statistics

| Variable | Mean | Median | Std. Dev |
|--------------------------|----------|----------|----------|
| Dependent Variables | | | |
| Compensation per manager | 1435.588 | 1337.007 | 621.113 |
| Performance | | | |
| The growth rate of sales | 1.483 | 0.288 | 19.375 |
| Return on assets (ROA) | 1.600 | 1.580 | 2.886 |
| Loss/profit dummy | 0.117 | 0.000 | 0.322 |
| Size of assets | 19.821 | 8.048 | 39.050 |
| Board Characteristics | | | |
| Busy outside directors | 31.395 | 0.000 | 37.945 |
| Old outside directors | 12.553 | 0.000 | 26.737 |
| Gray outside directors | 32.324 | 0.000 | 38.561 |
| Bank directors | 21.075 | 0.000 | 32.042 |
| Government directors | 4.374 | 0.000 | 16.805 |
| Corporate directors | 14.844 | 0.000 | 31.562 |
| Stock Ownership | | | |
| Board stock ownership | 2.142 | 0.398 | 4.114 |
| Block holder dummy | 0.364 | 0.000 | 0.481 |

Table 3 Descriptive statistics (2)

| Variable | Mean | Median | Std. Dev |
|-----------------------------------|--------|--------|----------|
| Dependent Variables | | | |
| ROA over one year (%) | 1.193 | 1.284 | 3.037 |
| Average ROA over five years (%) | 1.128 | 1.171 | 2.404 |
| Independent Variables | | | |
| PEC by Eq(1) (i) (Millions Yen) | 0.520 | 0.340 | 0.668 |
| PEC by Eq(1) (ii) (Millions Yen) | 0.639 | 0.456 | 0.679 |
| Sales (Tens of Billions of Yen) | 18.309 | 7.138 | 39.141 |

Table 4 Estimated coefficients for equation (1)

| Independent Variables | Predicted Sign | Regression(i) | Regression(ii) |
|-------------------------------|----------------|------------------------------------|------------------------------------|
| Performance | | | |
| Growth rate of sales | + | 1.697 ^{***} (0.006) | 1.686 ^{***} (0.007) |
| Return on assets (ROA) | + | 29.761 ^{***} (0.000) | 29.950 ^{***} (0.000) |
| Loss/profit dummy | - | -128.048 ^{***} (0.005) | -127.271 ^{***} (0.005) |
| log (Size of assets) | + | 106.805 ^{***} (0.000) | 108.488 ^{***} (0.000) |
| Board Characteristics | | | |
| Busy outside directors | + | -0.170 (0.605) | -0.257 (0.457) |
| Old outside directors | + | 0.651 (0.143) | 0.635 (0.154) |
| Gray outside directors | + | | 0.288 (0.411) |
| Bank directors | ? | 0.185 (0.618) | 0.286 (0.464) |
| Government directors | ? | -1.027 (0.139) | -0.911 (0.198) |
| Corporate directors | - | -0.826 [*] (0.075) | -0.700 (0.152) |
| Stock Ownership | | | |
| Board stock ownership | + | 13.943 ^{***} (0.000) | 13.855 ^{***} (0.000) |
| Block holder dummy | - | 88.519 ^{***} (0.004) | 91.520 ^{***} (0.003) |
| Adjusted R-squared | | 0.8827 | 0.8827 |
| F-statistic | | 655.73 ^{***} | 634.52 ^{***} |
| Pooled test (F-statistic) | | 4.21 ^{***} | 4.25 ^{***} |
| Governance test (F-statistic) | | 4.83 ^{***} | 4.31 ^{***} |

Note. P-values are in parentheses. Superscripts *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. The null hypothesis of the pooled test is that all

of industrial dummy variables equal zero.

Table 5 Estimated coefficients for equation (3)

| Independent Variables | (i) 1 year | (i) 5 years | (ii) 1 year | (ii) 5 years |
|-----------------------|----------------------|----------------------|----------------------|----------------------|
| PEC | -0.09 (0.295) | -0.06 (0.387) | -0.12 (0.166) | -0.09 (0.183) |
| Size of sales | -0.0002 (0.893) | 0.0004 (0.777) | -0.0003 (0.832) | 0.0002 (0.854) |
| Adjusted R-squared | 0.168 | 0.213 | 0.168 | 0.2137 |
| F-statistic | 26.08 ^{***} | 34.71 ^{***} | 26.13 ^{***} | 34.77 ^{***} |
| Pooled test (F value) | 6.91 ^{***} | 8.34 ^{***} | 6.92 ^{***} | 8.36 ^{***} |

Note. P-values are in parentheses. Superscripts *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. The null hypothesis of the pooled test is that all industrial dummy variables equal zero.