Chief Executive Compensation and
Corporate Groups in Japan:
New Evidence from Micro Data

by

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ABSTRACT

This paper begins with addressing a simple empirical question: how much Japanese executives earn. By presenting the first systematic review of prior studies reporting the mean level of Japanese executive compensation, I conclude that the best available answer to this empirical question is that the average salary and bonus of CEOs of large Japanese firms during 1980s is between 30 to 45 million yen, roughly one third of what the US counterparts earn in salary and bonus. In reaching this conclusion, I also identify three major data sources available for empirical studies of Japanese executive compensation and discuss the strengths and weaknesses of each data source. The rest of the paper is devoted to a more analytical question: What is the relationship between executive compensation and financial corporate groups in Japan, an issue that has not been previously investigated. By using micro data on CEO compensation of 154 large Japanese firms consisting of 116 group-affiliated firms and 38 independent firms, I find that CEOs of group firms earn 20 to 30 % less than those of independent firms, after controlling for shareholder returns, accounting measures of profitability, alternative firm objective measures such as size and capital investment, and personal characteristics of CEOs. I also find that alternative firm objectives, measured by employment and capital investment, are more relevant to the determination of CEO compensation of group firms than that of independent firms. These findings are consistent with the recent contributions in the literature of Japanese corporate governance stressing the role of banks as monitoring agents and suggesting that managers of group firms represent not only the interest of shareholders but the interest of main banks.

CHIEF EXECUTIVE COMPENSATION AND CORPORATE GROUPS IN JAPAN: NEW EVIDENCE FROM MICRO DATA

I. Introduction

This paper addresses two important questions in a growing literature of Japanese executive compensation. The first is a purely empirical question: how much Japanese executives earn. To address the question, I present the first systematic review of prior studies reporting the mean level of Japanese executive compensation. The best available answer to this empirical question turns out that the average salary and bonus of CEOs of large Japanese firms during 1980s is between 30 to 45 million yen, roughly one third of what the US counterparts earn in salary and bonus. In reaching this conclusion, I identify three major data sources available for empirical studies of Japanese executive compensation and discuss the strengths and weaknesses of each data source, which I hope will be of use to future empirical work on the subject.

The second question is more analytical: What is the relationship between executive compensation and financial corporate groups (groups of firms linked by their relationships to a main bank and by cross-holding of equity) in Japan. I first show that in spite of rather impressive recent developments in the literature of Japanese corporate governance, no attempt has been made to relate a distinct feature of financial corporate grouping in Japan to the issue of executive compensation. I then develop three testable hypotheses by using the recent theoretical developments on Japanese corporate governance which emphasize the role of banks as monitoring agents and on compensation schemes as incentives in the principal-agent framework.

According to the "monitoring and control" view of corporate groups in Japan, the managers of group-affiliated firms are more effectively monitored than independent firms in

Japan because the system of main bank monitoring tends to be more effective than the market for corporate control in Japan. It follows that CEO compensation of group firms, which are under more effective monitoring and control by main banks, is more restrained than that of independent firms, which are under less effective monitoring and control by the market for corporate control.

As a corollary, one can also develop an efficiency wage explanation that independent firms pay their CEOs more than group firms to make managerial shirking prohibitively expensive and thus compensate for the relatively weak monitoring.

Second, the monitoring view of Japanese corporate groups imply that firm objectives other than profitability such as size and investment may be more relevant to group firms than independent firms, reflecting not only the interest of individual shareholders but the interest of main banks. Third, independent firms may be more likely to use an upward-sloping tenure-earnings profiles as an incentive scheme to compensate for the relatively weak monitoring of their CEOs.

To test these hypotheses, I extend in several ways the micro data on Japanese CEO compensation that I developed and used for my earlier work. Most importantly, I identify which CEO works for a group-affiliated firm and which works for an independent firm, which allows me to investigate empirically the relationship between executive compensation and corporate groups, thus to test the hypotheses. I find rather strong evidence for the first hypothesis (CEOs working for group firms earn 20 to 30% less than those working for independent firms); some evidence (not as strong as for the first hypothesis) for the second, especially employment and investment found to be more relevant firm objectives for group firms than for independent firms; and no evidence for the third (no significant difference in the slope of tenure-earnings profiles

for CEOs between group and independent firms).

The paper is organized as follows. In the next section, I review prior studies reporting the mean level of executive compensation. Section III develops testable hypotheses, while section IV provides the basic empirical strategy and describes the data. In section V, I present my main empirical results, followed by a concluding section.

II. Prior Studies Reporting the Mean Level of Japanese Executive Compensation

In spite of popular beliefs that Japanese executives are paid far less than their US counterparts, there is no consensus amongst scholars on exactly how much Japanese top managers earn. Table 1 summarizes a number of available estimates on the average level of executive compensation of large Japanese firms. As seen, the estimates vary, reflecting the differences in the definitions of executive compensation and data sources.

Unlike in the U.S., corporate proxy statements in Japan provide no information on the compensation of individual executives. Instead, they provide information on total salary and bonus earned by all directors. Earlier work by Japanese scholars as well as recent work by US scholars rely on this aggregate data set.[1] After presenting a number of important findings on top management turnover in large Japanese corporations, for instance, Kaplan (1992) reports that the salary and bonus of the average director of large Japanese firms is 63,900 dollars over the period of 1981-1984. This figure, however, understates the true level of a typical director of large Japanese corporations. First, the total salary and bonus data reported in corporate proxy statements include part-time directors. According to the Survey on Executive Compensation, Reward, and Pensions by Romu Gyosei Kenkyu Jo in 1988, the average part-time director earns

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[1]See, for instance, Ono (1989), Kaplan (1992), and Ang and Constand (1993).

about one quarter of what their full-time counterparts earn (see, Rosei Jiho, 1988: 14). Moreover, the same survey shows that more than 80% of firms with 1,000 or more employees have such part-time directors and amongst those firms with part-time directors, the average board of directors includes 2.5 part-time directors. Since the same survey reports that the average board includes 19.2 full-time directors, the part-time directorship is hardly negligible. The inclusion of those part-time directors will significantly lower the average salary and bonus of all directors.

Second, perhaps more importantly, in Japanese publicly held corporations, the heads (called "Bucho") of major functional departments such as marketing, accounting, and personnel, are often appointed as directors. Nonetheless, a large fraction of their salary is paid as wage payments for employees and is not reported as the salary and bonus of directors in corporate proxy statements. Again, according to the Survey on Executive Compensation, Reward, and Pensions, for those directors who are also the heads of departments, on average, only one third of the total compensation is reported as executive compensation in corporate proxy statements and the remaining two third is paid as "wage payment". Rosei Jiho (1988: 16) estimates that the inclusion of such "wage payment" will increase the average salary and bonus of all directors by more than 20%.[2]

Kato and Rockel (1992) assemble micro data on chief executive compensation by using individual income tax returns of 599 CEOs of leading Japanese corporations. They report that the average taxable income of these CEOs in 1985 is about 44 million yen (roughly 220,000 dollars). They further argue that the taxable income of these CEOs is reasonably close to their

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[2]In spite of these problems, this data set has an attractive feature. In principle, from the data, one can assemble long panel data on executive compensation of nearly all publicly traded firms in Japan. Furthermore, since the name of each corporation is not hidden, one can merge this executive compensation data set with the standard corporate accounting data to study a wide variety of issues.

total compensation by pointing out: (i) the limited loopholes for income tax available to Japanese chief executives; (ii) the rarity of significant income sources available to them other than salary and bonus from their corporations; and (iii) the limited use of stock options in Japan. As seen below, a number of small survey data collected by private consulting firms tend to support their claim.

Xu (1992) uses responses of 37 Japanese manufacturing firms listed in the first section of Japan's Stock Exchanges to a survey conducted by the Seikei Kenkyu Jo (Political Economy Research Institute), a private research and consulting firm, and report that the mean salary and bonus of CEOs of these firms during 1984-87 is 33 million in 1985 constant yen (roughly 162 thousand dollars). Rosei Jiho (1984) uses responses of 38 Japanese firms with 10 billion yen or more paid-in capital to a survey conducted by Chingin Kanri Kenkyu Jo (Wage Management Research Institute), another private consulting firm, and report that the mean salary and bonus of CEOs in 1983 is 41 million yen (roughly 122 thousand dollars), quite close to the Kato and Rockel (1992)'s taxable income figure. Finally, Rosei Jiho (1988) reports the most recent survey data results. Using responses of 45 Japanese firms with 1,000 or more employees to a survey conducted by Romu Gyosei Kenkyu Jo (Human Resource Management Research Institute), they calculate the mean salary and bonus of CEOs in 1988 to be 35 million yen (roughly 276 thousand dollars).

In sum, prior studies on Japanese executive compensation suggest that the average salary and bonus of CEOs of large Japanese firms during 1980s is between 30 to 45 million yen. To evaluate the popular belief that Japanese CEOs are paid less than their US counterparts, take the least conservative estimate of Kato and Rockel (1992), i.e., 44 million yen (220 thousand dollars) in 1985. Kato and Rockel (1992) use the Business Week's CEO 1000 to calculate the mean

salary and bonus of CEOs of 506 US firms comparable to their Japanese sample of firms. Their calculation of 695 thousand dollars for comparable US CEOs suggests that Japanese CEOs are on average paid about one third of what their US counterparts are paid.[3] It is hard to deny that Japanese CEOs are paid significantly less than their US counterparts.[4]

Rosei Jiho (1984, 1988) also report the internal pay structure of executives of large Japanese firms. I will focus on Rosei Jiho (1988) that provides more recent and more detailed information. First, according to Rosei Jiho (1988), the size of the board of directors of all firms with 1,000 or more employees is on average 21.2 directors (19.2 full-time and 2 part-time directors). The board on average consists of one CEO, 0.9 vice CEO, 1.9 Senmu (senior managing directors), 4.4 Jomu (managing directors), 7.8 Torishimari (junior directors), 1.9 Kansa (statutory auditors), 0.4 Kaicho (retired CEO remaining on the board as chairman), 0.9 other full-time directors, and 2 part-time directors. As shown in Table 1, the average salary and bonus of vice CEOs is 27 million yen (approximately 77% of the average salary and bonus of CEOs). Likewise, the average salary and bonus of senior managing directors, managing directors and statutory auditors are 22 million yen (63% of the average salary and bonus of CEOs), 18 million yen (51%), and 12 million yen (34%) respectively. As discussed above, there are two types of

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[3]Xu (1992) also calculates that Japanese CEOs are on average paid one third of what their US counterparts are paid. I am, however, aware that this kind of comparison is incomplete, for other less visible forms of CEO compensation such as stock options, deferred compensation, perks are not considered. The data on these forms of compensation are even harder to come by and I am not aware of any serious attempt to compare these forms of compensation between Japan and the US. Nonetheless, except for perks, these less visible forms of compensation may not be too important in Japan. For instance, Aoki (1988, 254) points out that stock option plans are not common in Japanese corporations.

[4]In addition, Kato and Rockel (1992) report that the average compensation of Japanese CEOs is 13 times higher than the average compensation of all employees in Japan whereas the average compensation of the US counterparts is more than 30 times higher than the average compensation of all employees in the U.S.

junior directors, junior directors with and without departmental position. The average salary and bonus of junior directors without departmental positions is 11 million yen (31% of the average salary and bonus of CEOs). The average salary and bonus of junior directors with departmental positions is 14 million yen (40%), of which only one quarter is reported as executive compensation in corporate proxy statements. In sum, internal pay differentials of executives by rank appear to be rather substantial, pointing to possibly strong financial incentives for promotion tournaments amongst managers in large Japanese corporations.[5]

III. Executive Compensation and Corporate Groups: Hypotheses

Recently a number of scholars have begun using micro data to conduct econometric studies of Japanese executive compensation. For instance, Kato and Rockel (1992) use the aforementioned micro data and find that executive compensation in Japanese corporations is structured so as to have managers penalized for job changes whereas U.S. corporations tend to reward managers for engaging in job hopping. Thus they argue that it pays Japanese managers to develop long-term relationships with the firm, an argument in sharp contrast to the cultural/traditional view stressing the importance of cultural uniqueness of the behavior of Japanese managers.

Kaplan (1992) uses the aforementioned firm-level aggregate compensation data and finds evidence for positive correlations between executive compensation and firm performance. Xu (1992) uses the aforementioned small data set and tests whether Japanese CEO compensation is structured so as to maximize the interest of shareholders or the interest of employees. His results

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[5]Kato and Taylor (1994) develops a search model of promotion tournaments and find some evidence for the relevance of promotion tournaments to the Japanese managerial labor market.

tend to favor the neo-classical hypothesis of Japanese CEO compensation structured so as to maximize the interest of shareholders.[6]

One of the most exciting recent developments in the literature of the Japanese economy is theoretical and econometric studies of Japanese financial corporate groups (financial keiretsu), or groups of firms linked by their relationships to a main bank and by cross-holding of equity.[7] Nakatani (1984) is one of the first attempts to use firm-level micro data to conduct an econometric study of the economic effects of belonging to these corporate groups. His work was followed by a serious of econometric studies examining specific effects of these groups using often more sophisticated econometric methods. For instance, Hoshi, Kashyap, Scharfstein (1990 and 1991) look at the effects on investment of belonging to corporate groups or having strong ties to main banks; Lichtenberg and Pushner (1992) study the effects on productivity and profitability of equity ownership of main banks; Morck and Nakamura (1992), Anderson, Jayaraman, Mandelker (1992), and Kaplan and Minton (1993) examine the main bank influence on the board member appointments; Weinstein and Yafeh (1993) examine the effects on price-cost margins of belonging to corporate groups; Montalvo and Yafeh (1993) investigate the effects on the acquisition of foreign technology of belonging to corporate groups; and Weinstein and Yafeh (1994) study the effects on the use of capital intensive technologies and firm performance of being a main bank client.

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[6]In addition, I am aware of a number of ongoing econometric studies on Japanese executive compensation such as Ang and Constand (1993), and Hebner and Kato (1994).

[7]There is, however, another kind of corporate groups called enterprise keiretsu, organized around a nonfinancial enterprise such as Toyota and characterized by cross-holdings of equity and very strong product-market links. These groups have not been studied as extensively as financial corporate groups. This paper will focus on financial corporate groups like most of prior work.

In spite of the recent rapid growth of both the Japanese executive compensation literature and the Japanese corporate groups literature, no attempt has been made to investigate the relationship between executive compensation and corporate groups in Japan. For the rest of the section I develop three testable hypotheses by using the recent theoretical developments on Japanese corporate governance which emphasize the role of banks as monitoring agents and on compensation schemes as incentives in the principal-agent framework. The first concerns the effects on the level of executive compensation of corporate groups and the other two concern the effects on the determinants of executive compensation of corporate groups. These hypotheses will be tested in the subsequent sections.

H_1: CEOs of group firms are paid less than those of independent firms, cetris paribus.

According to the "monitoring and control" view of corporate groups in Japan, the managers of group-affiliated firms are more effectively monitored than independent firms in Japan because the system of main bank monitoring tends to be more effective than the market for corporate control in Japan. For instance, Aoki (1988: 142-149) argues that the market for corporate control, or the takeover discipline may not be an effective mechanism for monitoring and controlling the behavior of managers in Japan. First, the board of directors of Japanese corporations "functions as a de facto substructure of the management system subordinate to the representative (and permanent) directors." Second, the general meeting of the stockholders tends to be a mere formality. Finally, takeovers in Japan tends to entail prohibitively high cost of reorganization of internal organizations of the Japanese firm with well developed internal labor markets, resulting in making takeovers an empty threat. Aoki (1988) then points to the main bank monitoring as a more effective alternative. Recent empirical studies including Morck and

Nakamura (1992) and Kaplan (1993) provide evidence for this monitoring and control view of Japanese corporate groups.

It follows that CEO compensation of group firms under more effective monitoring and control by main banks is more restrained than that of independent firms under less effective monitoring and control by the market for corporate control.

As a corollary, one can also use the efficiency wage theory to argue for the higher CEO compensation of independent firms. The absence of main banks as an effective monitor calls for an alternative to bank monitoring for independent firms. Since the market for corporate control is relatively weak in Japan, shareholders may resort to an efficiency wage solution, i.e., paying their CEO a wage sufficiently higher than his market alternative so that shirking will not pay for him.[8]

H₂: The role of alternative firm objectives in the determination of CEO compensation is more important in group firms than in independent firms.

Managers of group-affiliated firms pursue not only the interest of shareholders but the interest of main banks. It follows that firm objectives other than profitability may be more relevant to group-affiliated firms than to independent firms. In particular, recently, Weinstein and Yafeh (1993) use a formal model in which group-affiliated firms maximize a weighted average of the shareholders' and the main bank's utility function and show that group-affiliated

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[8]Though still highly speculative, one can argue that the post-retirement opportunities for CEOs may be greater for group firm CEOs than for independent firm CEOs. For instance, retiring CEOs of group firms may be able to land a lucrative job on the board of other group firms belonging to the same keiretsu group whereas this kind of opportunity may be more limited for retiring CEOs of independent firms. If this speculation is correct, it will follow that compensating wage differentials require the compensation of independent firm CEOs to be greater than that of group firm CEOs.

firms are more likely to pursue firm size and capital investment rather than profit. An intuition is that the main bank captures most of the rents through high interest payments and through pressure on member firms to use bank-financed capital inputs more than standard profit maximization dictates. Thus, CEO compensation of group firms may well be structured so as to reflect these alternative objective measures more so than that of independent firms.

H_3: Tenure-earnings profiles of CEOs of group firms are less steeper than those of independent firms.

As in the case of the efficiency wage justification for H_1, one can argue that independent firms in Japan need an alternative incentive mechanism to main bank monitoring. Aside from an efficiency wage mechanism, perhaps the more well known mechanism is upward-sloping tenure wage profiles. One can argue that tenure-earnings profiles of CEOs of independent firms need to be steeper so as to compensate for the absence of bank monitoring.[9]

IV. The Data and Empirical Strategy

As discussed above, there are three major data sources on Japanese executive compensation: (i) firm-level aggregate data on total compensation earned by all directors from corporate proxy statements; (ii) micro data on taxable income of individual CEOs from income tax returns; and (iii) small micro data on salary and bonus of individual CEOs from responses to surveys by private consulting and research firms. None of these data provides information on long-term compensation such as stock options, deferred compensation and perks. However, I argue that the neglect of these less visible forms of CEO compensation may not pose as serious

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[9]As discussed before, the use of stock options is limited in Japan.

a problem as in the case of US CEO compensation. Except for perks, these forms of compensation are probably not as wide-spread as in the US. For instance, Aoki (1988, 254) points out that stock option plans are not common in Japanese corporations. Furthermore, Lichtenberg and Pushner (1992) report that average level of equity ownership by directors (insider ownership) is quite low in Japan (6% in their Japanese sample as compared to 10.6% in a comparable US sample). Finally, even if these less visible forms of compensation are present, the neglect of these forms of compensation would not be a problem insofar as the amount of these forms of compensation are not systematically related to whether the firm is group-affiliated or independent. I am not aware of any evidence (including anecdotes) suggesting that group firms tend to use more or less these less visible forms of compensation than independent firms.

In this paper I choose to use the tax return data for a number of reasons. First, the corporate proxy data are subject to usual aggregation bias, i.e., changes in the composition of the board will affect the salary and bonus earned by all directors. In addition, as discussed above, they are subject to rather substantial underreporting of the salary and bonus earned by the average full-time director. Finally, since corporate group affiliations do not change over time,[10] the panel nature of the corporate proxy data, sometimes a major attraction of this data set, is not of great use for studying the relationships between corporate groups and executive compensation. In other words, I cannot separate the effects of group-affiliations from other time invariant firm specific effects in a fixed effect model.

Second, the private survey data do not reveal the identity of the firm. Thus, it is almost impossible to merge this compensation data with the firm accounting data available from

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[10]See, for instance, Hoshi, Kashyap and Scharfstein (1991).

corporate proxy statements. The absence of data on firm characteristics such as size, performance measures, and sales makes this data set unsuitable for multivariate analysis.[11]

I extend the taxable income data assembled by Kato and Rockel (1992) in several ways to make it suitable to the purpose of the paper.[12] First, I use Nakatani (1992)'s classification of group affiliations of 317 manufacturing firms listed in the first section of Tokyo Stock Exchange to create a dummy variable, GROUP, which is equal to unity if CEO's firm belongs to one of the six major financial corporate groups, and zero otherwise.[13] The dummy variable is successfully created for 154 CEOs (firms). As shown in Table 2, 116 of them belong to one of the six major financial corporate groups and the remaining 38 are independent.[14]

Second, for the resulting 154 CEOs (firms), I use Oriental Economist's Kaisha Shiki Ho to collect the following additional information: (i) ROA (return on asset during the 1985 accounting year as an additional accounting measure of firm's profitability); (ii) PROFIT MARGIN (profit margin during the 1985 accounting year as an additional accounting measure of firm's profitability); (iii) ASSET (total assets as of the end of the 1985 accounting year as an

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[11]In theory, it is possible to use personal characteristics of CEOs such as years as CEO along with industry classifications to identify each firm with reasonably high confidence, using one of several published directories of Japanese directors that also provide information on personal characteristics of CEOs (of course, except for compensation) and the name of the firm. Xu (1992) is able to use this method to identify 37 firms. I opt for the larger data of taxable income since the data on taxable income are quite close to the data on the salary and bonus from these private surveys as shown in Table 1.

[12]For detailed description of the sources and methods used to assemble the data, see Kato and Rockel (1992).

[13]To create the group dummy by using Nakatani (1984)'s classification, which is a refinement of Keiretsu no Kenkyu, seems to be a standard practice in the literature.

[14]This ratio of group-affiliated to independent firms is similar to what Hoshi, Kashyap, Scharfstein (1991), Anderson, Jayaraman, Mandelker (1992) report. In addition to these 154 firms, there are a handful of firms categorized as subsidiaries. Including these firms in any way does not change the results.

additional measure of firm size); (iv) INVESTMENT (plant and equipment investment during the 1985 accounting year as an alternative firm objective measure); and (v) R&D (research and development expenditures during the 1985 accounting year as an alternative firm objective measure).

As shown in Table 2, during the 1985 calendar year, the average CEO of group firms earns 40 million yen whereas the average CEO of independent firms earns 46 million yen. Though one needs to wait for the final verdict till multivariate regressions analysis is completed in the next section, this tends to favor the hypothesis of group firm CEOs being paid less than independent firm CEOs. The data allow me to use as a stock market performance measure inflation-adjusted market return to stockholding (the rate of equity appreciation plus dividends rate minus inflation rate during the 1985 calendar year), SHAREHOLDER RETURN.[15] Table 2 shows that market return to stockholding of independent firms is almost twice as high as that of group firms. Furthermore, although not as dramatic as the stock market measure, accounting measures of firm profitability (ROA and PROFIT MARGIN) are also higher for independent firms than for group firms. All these results seem to be consistent with Nakatani (1984)'s initial finding that group firms may not be a simple profit maximizer.

The data further enable me to consider five alternative firm objective measures. EMPLOYMENT (number of workers as of the end of the 1985 accounting year), SALES (sales during the 1985 accounting year), and ASSET are standard firm size measures often used in the literature to capture alternative firm objectives. INVESTMENT and R&D are considered to

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[15]Due to data availability, data on compensation and shareholder returns are for the 1985 calendar year whereas the rest of the data are for the 1985 accounting year. This discrepancy could be a problem if one extends the data to a panel data set and estimates fixed effect models. However, for a single year cross section analysis, I do not believe this imposes any serious problem.

capture specifically capital investment, and long-term performance of the firm as an alternative

firm objective. It is conceivable (and predicted from the model of group firm behavior by

Weinstein and Yafeh, 1993) that group firms maximize size and capital investment. As shown

in Table 2, employment, sales and assets of group firms are indeed larger than those of

independent firms. Moreover, group firms invest more and spend more on research and

development than independent firms. All these findings are consistent with the notion that group

firms are allowed (or forced by main banks) to pursue size, capital investment, and long-term

goals.[16]

Using panel data to estimate fixed effects models would allow me to drop all time-

invariant variables such as diverse personal characteristics of CEOs (provided that there is no

change in CEOs during the sample period). Since I cannot (and do not want to) estimate fixed

effects models, I do need to include variables to control for various personal characteristics of

CEOs. Moreover, to test H_3, I need to include tenure of CEOs. Fortunately, the data are

reasonably rich in personal characteristics, and allow me to include six variables to control for

them. Since these variables are explained in detail in Kato and Rockel (1992), I discuss them

very briefly. First, the data allow me to include YEARS AS CHIEF EXECUTIVE, the number

of years that each CEO has spent as CEO of the current firm to test H_3.

Second, the variable YEARS OUTSIDE FIRM represents the number of years that each

chief executive spent after finishing his undergraduate degree (or completing high school for

those without college degrees) and before joining his current firm. Kato and Rockel (1992) find

negative and significant correlations between this variable and CEO compensation for Japan and

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[16]That group firms invest more and spend more on R&D is also consistent with Hoshi, Kashyap, Scharfstein (1991)'s view of group firms enjoying more liquidity than independent firms.

the opposite result for the U.S.. They then argue that the structure of CEO compensation in Japan is structured so as to encourage young managers to develop long-term relationships with the firm in Japan whereas the reverse incentive exists in the U.S.

The third control variable, YEARS IN FIRM BEFORE PROMOTION, represents the number of years that each chief executive spent after joining the current firm and before becoming chief executive. In the standard human capital interpretation, YEARS IN FIRM BEFORE PROMOTION is a measure of the quantity of human capital acquired through working in the current firm prior to becoming chief executive. To the extent that this human capital improves the chief executive's abilities, it is expected to be positively correlated with compensation. Alternatively, YEARS IN FIRM BEFORE PROMOTION also measures the speed of promotion, where faster promotion may signal higher innate ability, for which the chief executive is rewarded. The signalling view predicts that YEARS IN FIRM BEFORE PROMOTION and compensation are negatively correlated. Kato and Rockel (1992) find evidence for the signaling view.

Lastly, I create several dummy variables capturing various aspects of educational credentials. The dummy variable NO COLLEGE is equal to unity if the chief executive does not hold a college degree and is zero otherwise. A similarly defined dummy variable is often used in empirical studies of wage determination. I further create a dummy variable, TOKYO, that equals to unity if CEO holds a college degree from the University of Tokyo (arguably the most effective signal of ability in the Japanese society), and zero otherwise. Finally, the data enable me to create ECONOMICS that equals to unity if CEO holds a degree in Economics and/or business and is zero otherwise.

Table 2 shows a rather interesting difference in the profiles of CEOs working for group

firms and for independent firms. CEOs working for group firms have less outside experience, more inside experience prior to the promotion to CEO, shorter tenure as CEO, and more education than CEOs working for independent firms. These profiles seem to be largely consistent with the notion that the long-term employment of managers is complementary to the bank-based corporate governance in Japan.[17]

Using the extended CEO compensation data, I estimate standard earnings functions augmented by the corporate group dummy variable, GROUP:

$$\ln(\text{CEO COMPENSATION}_i) = \alpha + \beta(\text{GROUP}_i) + \tau(\text{SHAREHOLDER RETURN}_i)$$

$$+ \mu(\text{ACCOUNTING}_i) + \Theta\ln(\text{ALTERNATIVE}_i)$$

$$+ \delta(\text{YEARS AS CEO}_i) + \lambda Z_i' + u_i \qquad (1)$$

where ACCOUNTING_i is an accounting measure of profitability of the firm for which CEO i works, measured either by ROA or PROFIT MARGIN; ALTERNATIVE_i is an alternative firm objective measure of the firm for which CEO i works, measured either by EMPLOYMENT, SALES, ASSET, INVESTMENT, or R&D; Z_i is a vector of all control variables discussed above and 10 industry dummy variables; and u_i is a disturbance term.[18] H_1 (CEOs of group firms earning less than those of independent CEOs) will be supported if the OLS estimates of β are negative and significant.

To test H_2 (alternative objectives being more important for group firms than for

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[17]See, for instance, Sheard (1992a).

[18]Using a loglinear version of the earnings function is standard practice in the related literature. We also estimated linear versions and obtained qualitatively similar results. (These, and other, unreported regression results are available from the author upon request.) Moreover, one may be tempted to include all alternative firm objective measures simultaneously as an alternative specification. Unfortunately, multicollinearity between these measures makes the parameter estimates rather imprecise. For the same reason, I prefer not to include ROA and PROFIT MARGIN simultaneously.

independent firms), I add an interaction term involving GROUP and ln(ALTERNATIVE) to Eq. (1):

$$\ln \text{ (CEO COMPENSATION}_i) = \alpha + \beta(\text{GROUP}_i) + \phi(\text{GROUP}_i)^*\ln(\text{ALTERNATIVE}_i)$$

$$+ \tau(\text{SHAREHOLDER RETURN}_i) + \mu(\text{ACCOUNTING}_i)$$

$$+ \Theta\ln(\text{ALTERNATIVE}_i) + \delta(\text{YEARS AS CEO}_i) + \lambda Z_i' + u_i \quad (2)$$

H_2 will be supported if the OLS estimates of ϕ are positive and significant.

Lastly, to test H_3 (less steeper tenure-earnings profiles for group firms than for independent firms), I add another interaction term involving GROUP and YEARS AS CEO to Eq. (2):

$$\ln \text{ (CEO COMPENSATION}_i) = \alpha + \beta(\text{GROUP}_i) + \eta(\text{GROUP}_i)^*(\text{YEARS AS CEO}_i)$$

$$+ \phi(\text{GROUP}_i)^*\ln(\text{ALTERNATIVE}_i) + \tau(\text{SHAREHOLDER RETURN}_i)$$

$$+ \mu(\text{ACCOUNTING}_i) + \Theta\ln(\text{ALTERNATIVE}_i) + \delta(\text{YEARS AS CEO}_i)$$

$$+ \lambda Z_i' + u_i \quad (3)$$

H_3 will be supported if the OLS estimates of η are negative and significant.[19]

V. Results

Table 3A report the OLS estimates of Eq.(1) with ROA used as an accounting measure of firm profitability. Regardless of the choice of ALTERNATIVE, the estimated coefficients on GROUP are always negative and significantly different from zero at the 5% level, supporting H_1 that CEOs of group firms earn less than those of independent firms, other things being equal.[20]

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[19]I also consider an alternative specification where the interaction term involving GROUP and YEARS AS CEO is added to Eq. (1) instead of Eq. (2) and find no change in the results.

[20]Since a Breusch-Pagan test rejected the hypothesis of homoskedasticity, all standard errors are calculated by using White's correction procedure for heteroskedasticity.

Furthermore the size of the estimated coefficients imply rather substantial negative effects on compensation of corporate groups, i.e., reduction of compensation due to working for group firms ranging from 21% (=$e^{0.18721}$-1) to 27% (=$e^{0.23741}$-1).

The rest of the estimates in the table reconfirm and in some instances reinforce the results of Kato and Rockel (1992): (i) positive and highly significant correlations between ALTERNATIVE and CEO COMPENSATION for all five specifications with different measures for ALTERNATIVE (pay elasticity ranging from 0.09 to 0.14); (ii) positive yet somewhat less significant correlations between ROA (accounting measure) and CEO COMPENSATION; (iii) insignificant correlations between SHAREHOLDER RETURN (stock market measure) and CEO COMPENSATION; (iv) significant upward sloping tenure-earnings profiles; and (v) negative and mostly significant correlations between YEARS OUTSIDE FIRM and CEO COMPENSATION.

To see if the above results are sensitive to the choice of an accounting measure of firm profitability, I further estimate Eq. (1) using PROFIT MARGIN instead of ROA as an accounting measure of profitability. Table 3B reports the estimates and point to the robustness of my results with respect to the choice of an accounting measure of profitability.

Tables 4A and 4B report the OLS estimates of Eq. (2). As H_2 indicates, the estimated coefficients on the interaction term involving GROUP and ln(ALTERNATIVE) are positive, suggesting that alternative firm objective measures are more relevant to group firms than to independent firms. However, the estimates are not sufficiently and consistently significant to warrant conclusive tests. Thus, insofar as EMPLOYMENT and INVESTMENT are concerned, the coefficients on the interaction term are positive and significant at the 10% level whereas the coefficients on the interaction term are positive yet not significant at the 10% level for the remaining alternative firm objective measures. In sum, I find some evidence for H_2 yet the

evidence is not as strong as the one for H_1.

Lastly, Tables 5A and 5B report the OLS estimates of Eq. (3). As shown in the tables, the estimated coefficients on the interaction term involving GROUP and YEARS AS CEO are always insignificant, offering no evidence for H_3.[21]

VI. Concluding Remarks

This paper addressed two important questions in a growing literature of Japanese executive compensation. The first was a purely empirical question: how much Japanese executives earn. By presenting the first systematic review of prior studies reporting the mean level of Japanese executive compensation, I concluded that the best available answer to this empirical question is that the average salary and bonus of CEOs of large Japanese firms during 1980s is between 30 to 45 million yen, roughly one third of what the US counterparts earn in salary and bonus. In reaching this conclusion, I also identified three major data sources available for empirical studies of Japanese executive compensation and discussed the strengths and weaknesses of each data source.

The second was a more analytical one: What is the relationship between executive compensation and financial corporate groups in Japan, an issue that has not been previously investigated. By using micro data on CEO compensation of 154 large Japanese firms consisting of 116 group-affiliated firms and 38 independent firms, I found that CEOs of group firms earn 20 to 30 % less than those of independent firms, after controlling for shareholder returns,

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[21]In addition, I also add an interaction term involving GROUP and ACCOUNTING to Eq. (1) and estimate it to see if CEO compensation of group firms is less sensitive to an accounting measure of firm profitability than that of independent firms. I find that the estimated coefficients on the interaction term are always insignificant.

accounting measures of profitability, alternative firm objective measures such as size and investment, and personal characteristics of CEOs. The finding is consistent with the recent theoretical developments on Japanese corporate governance which emphasize the role of banks as monitoring agents and on compensation schemes as incentives in the principal-agent framework. I also found that alternative firm objectives, measured by employment and investment, are more relevant to the determination of CEO compensation of group firms than that of independent firms. Though this finding is somewhat less significant than the first finding, it is consistent with the recent contributions in the literature of Japanese corporate governance stressing that managers of group firms represent not only the interest of shareholders but the interest of main banks.

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TABLE 1—STUDIES REPORTING THE MEAN LEVEL OF EXECUTIVE COMPENSATION OF LARGE JAPANESE FIRMS

Study	Data source	Time Period	Sample size	Definition of the level of executive compensation	Estimates on the mean level of executive compensation
Kaplan (1992)	Corporate Proxy Statements of 119 leading Japanese industrials which were included in Fortune Magazine's list of the 500 largest foreign industrials in 1980.	1981-1984	415	Total salary and bonus earned by all directors, divided by the number of directors.	63,900 dollars.
Kato and Rockel (1992)	Income Tax Returns of 599 individual CEOs of Japanese firms that are included in the top 1,000 firms in terms of their market values.	1985	599	Taxable income reported in 1985 income tax returns of each CEO.	44,406,000 yen (roughly 220,000 dollars).[a]
Xu (1992)	Responses of 37 Japanese manufacturing firms listed in the first section of Stock Exchanges to a survey conducted by Seikei Kenkyu Jo.	1984-1987	104	Salary and bonus earned by each CEO.	32,522,000 yen (roughly 162,000 dollars).
Rosei Jiho (1984)	Responses of 38 Japanese firms with 10 billion yen or more paid-in capital to a survey conducted by Chingin Kanri Kenkyu Jo.	1983	38	Salary and bonus earned by each CEO.	41,350,000 yen (roughly 178,000 dollars).
			Not reported.	Salary and bonus earned by each vice CEO/Senmu (senior managing director).	28,260,000 yen (roughly 122,000 dollars).
			Not reported.	Salary and bonus earned by each Jomu (managing director).	19,710,000 yen (roughly 85,000 dollars).

Rosei Jiho (1988)	Responses of 45 Japanese firms with 1,000 or more employees to a survey conducted by Romu Gyosei Kenkyu Jo.	1988	45	Salary and bonus earned by each CEO.	34,710,000 yen (roughly 276,000 dollars).
	Responses of 21 Japanese firms with 1,000 or more employees to a survey conducted by Romu Gyosei Kenkyu Jo.		Not reported.	Salary and bonus earned by each vice CEO.	27,390,000 yen (roughly 218,000 dollars).
	Responses of 42 Japanese firms with 1,000 or more employees to a survey conducted by Romu Gyosei Kenkyu Jo.		Not reported.	Salary and bonus earned by each Senmu (senior managing director).	21,760,000 yen (roughly 173,000 dollars).
	Responses of 47 Japanese firms with 1,000 or more employees to a survey conducted by Romu Gyosei Kenkyu Jo.		Not reported.	Salary and bonus earned by each Jomu (managing director).	17,560,000 yen (roughly 140,000 dollars).
	Responses of 9 Japanese firms with 1,000 or more employees to a survey conducted by Romu Gyosei Kenkyu Jo.		Not reported.	Salary and bonus earned by each torishimari (junior director) without departmental position.	10,920,000 yen (roughly 88,000 dollars).
	Responses of 44 Japanese firms with 1,000 or more employees to a survey conducted by Romu Gyosei Kenkyu Jo.		Not reported.	Salary and bonus earned by each torishimari (junior director) with departmental position.	13,730,000 yen (roughly 109,000 dollars).
	Responses of 42 Japanese firms with 1,000 or more employees to a survey conducted by Romu Gyosei Kenkyu Jo.		Not reported.	Salary and bonus earned by each kansa (statutory auditor).	12,280,000 yen (roughly 98,000 dollars).

Notes: [a]The year-end exchange rates are used for conversion. Due to large fluctuations in exchange rates, dollar equivalents are sensitive to exchange rates.

TABLE 2—SUMMARY STATISTICS: MEANS (STANDARD DEVIATION)[a]

Variables	All firms	Group firms (GROUP=1)	Independent firms (GROUP=0)
CEO COMPENSATION in yen	41577000 (39616000)	40198000 (41396000)	45788000 (33755000)
SHAREHOLDER RETURN	0.073819 (0.025537)	0.059959 (0.24899)	0.11613 (0.27299)
ROA	0.028338 (0.022940)	0.028248 (0.022573)	0.028611 (0.024338)
PROFIT MARGIN	0.026000 (0.026345)	0.025132 (0.025877)	0.028649 (0.027916)
EMPLOYMENT in thousands	7.7516 (12.451)	8.0185 (11.229)	6.9367 (15.757)
SALES in millions of yen	395340 (718780)	420640 (744260)	318120 (637680)
ASSET in millions of yen	344190 (581940)	362240 (546140)	289090 (685000)
INVESTMENT in millions of yen[b]	21907 (39005)	23347 (39651)	17547 (37148)
R&D in millions of yen[c]	18539 (45388)	20356 (45900)	12806 (43945)
YEARS OUTSIDE FIRM in years	9.2338 (13.208)	8.4483 (12.531)	11.632 (15.016)
YEARS BEFORE PROMOTION in years	24.890 (13.957)	25.690 (13.468)	22.447 (15.284)
YEARS AS CEO in years	6.4286 (7.4429)	5.7845 (7.3989)	8.3947 (7.3247)
NO COLLEGE	0.032468	0.017241	0.078947
TOKYO	0.32468	0.33621	0.28947
ECONOMICS	0.35714	0.32759	0.44737
Number of firms	154	116	38

Notes: [a]See text for definitions of the variables, and also for the sources and methods used to assemble the data.
[b]The mean and S.D. for this variable are based on 153 firms.
[c]The mean and S.D. for this variable are based on 133 firms.

TABLE 3A—EFFECTS ON THE LEVEL OF CEO COMPENSATION
OF CORPORATE GROUPS
ROA used as an accounting measure of profitability[a]

Independent Variables	Dependent Variable: ln(CEO COMPENSATION)				
	Alternative firm objectives to profitability, ALTERNATIVE is defined as:				
	EMPLOYMENT	SALES	ASSET	INVESTMENT	R&D
GROUP	-0.19932 (2.137)	-0.19539 (2.107)	-0.18734 (1.994)	-0.18721 (1.983)	-0.23741 (2.381)
SHAREHOLDER RETURN	0.0026784 (0.019)	0.043476 (0.309)	0.025849 (0.188)	0.061071 (0.448)	0.071456 (0.477)
ROA	3.7973 (1.610)	3.9316 (1.749)	4.0710 (1.744)	3.0679 (1.375)	3.9675 (1.657)
ln (ALTERNATIVE)	0.13685 (2.813)	0.13547 (2.759)	0.14200 (2.954)	0.13156 (3.567)	0.088430 (2.747)
YEARS OUTSIDE FIRM	-0.014445 (1.942)	-0.013448 (1.825)	-0.012623 (1.757)	-0.014156 (1.996)	-0.0082678 (0.975)
YEARS BEFORE PROMOTION	-0.010015 (1.323)	-0.0096726 (1.290)	-0.0088891 (1.222)	-0.010130 (1.403)	-0.0013891 (0.164)
YEARS AS CEO	0.013674 (1.789)	0.013792 (1.872)	0.015326 (2.061)	0.014954 (2.106)	0.020363 (2.247)
NO COLLEGE	0.012452 (0.092)	0.045840 (0.314)	0.066569 (0.443)	0.13609 (0.866)	-0.075830 (0.520)
TOKYO	-0.043017 (0.532)	-0.040040 (0.500)	-0.055560 (0.699)	-0.052572 (0.654)	-0.065482 (0.735)
ECONOMICS	-0.083125 (1.035)	-0.081453 (1.020)	-0.068545 (0.861)	-0.080590 (1.017)	-0.069315 (0.839)
INDUSTRY DUMMY[c]	yes	yes	yes	yes	yes
Sample size	154	154	154	153	133
R^2	0.2543326	0.2668001	0.2734047	0.2833042	0.2710859

Notes: [a]See text for definitions of the variables, and also for the sources and methods used to assemble the data.

[b]The t-ratios given in parentheses are based on the heteroscedasticity-consistent standard errors of White (1980).

[c]The data allow us to include the following 10 industry dummy variables: Foods; Pulp and paper; Chemicals; Rubber; Stone; Steel; Nonferrous Metals; Machinery; Electrical machinery; and Transportation equipment.

**TABLE 3B—EFFECTS ON THE LEVEL OF CEO COMPENSATION
OF CORPORATE GROUPS**
PROFIT MARGIN used as an accounting measure of profitability[a]

Independent Variables	Dependent Variable: ln(CEO COMPENSATION)				
	Alternative firm objectives to profitability, ALTERNATIVE is defined as:				
	EMPLOYMENT	SALES	ASSET	INVESTMENT	R&D
GROUP	-0.19264 (2.043)	-0.18738 (1.994)	-0.17917 (1.888)	-0.18122 (1.907)	-0.23447 (2.332)
SHAREHOLDER RETURN	-0.0073708 (0.053)	0.036585 (0.272)	0.012953 (0.099)	0.055588 (0.423)	0.058505 (0.403)
PROFIT MARGIN	2.5956 (1.298)	2.9240 (1.484)	2.6376 (1.338)	2.1034 (1.136)	2.5300 (1.290)
ln (ALTERNATIVE)	0.14413 (2.920)	0.14427 (2.866)	0.14430 (2.934)	0.13737 (3.693)	0.094506 (2.940)
YEARS OUTSIDE FIRM	-0.014896 (2.020)	-0.013683 (1.882)	-0.013228 (1.864)	-0.014479 (2.063)	-0.0089799 (1.064)
YEARS BEFORE PROMOTION	-0.010608 (1.403)	-0.010131 (1.360)	-0.0095118 (1.308)	-0.010592 (1.475)	-0.0021580 (0.254)
YEARS AS CEO	0.013973 (1.796)	0.014260 (1.908)	0.015468 (2.042)	0.015274 (2.128)	0.020994 (2.245)
NO COLLEGE	0.039498 (0.308)	0.075304 (0.533)	0.098302 (0.676)	0.16308 (1.080)	-0.046465 (0.331)
TOKYO	-0.051826 (0.644)	-0.051268 (0.643)	-0.061912 (0.782)	-0.060259 (0.752)	-0.077346 (0.872)
ECONOMICS	-0.070792 (0.886)	-0.069009 (0.870)	0.054549 (0.687)	-0.070701 (0.900)	-0.054249 (0.664)
INDUSTRY DUMMY[c]	yes	yes	yes	yes	yes
Sample size	154	154	154	153	133
R^2	0.2455982	0.2601055	0.2617067	0.2779059	0.2591728

Notes: [a]See text for definitions of the variables, and also for the sources and methods used to assemble the data.

[b]The t-ratios given in parentheses are based on the heteroscedasticity-consistent standard errors of White (1980).

[c]The data allow us to include the following 10 industry dummy variables: Foods; Pulp and paper; Chemicals; Rubber; Stone; Steel; Nonferrous Metals; Machinery; Electrical machinery; and Transportation equipment.

TABLE 4A—CORPORATE GROUPS AND THE ROLE OF ALTERNATIVE FIRM OBJECTIVES IN THE DETERMINATION OF CEO COMPENSATION

ROA used as an accounting measure of profitability[a]

Independent Variables	Dependent Variable: ln(CEO COMPENSATION)				
	Alternative firm objectives to profitability, ALTERNATIVE is defined as:				
	EMPLOYMENT	SALES	ASSET	INVESTMENT	R&D
GROUP	-0.35428 (2.476)	-1.6484 (1.687)	-1.7940 (1.587)	-1.2524 (1.975)	-0.86949 (1.829)
GROUP* ln(ALTERNATIVE)	0.13904 (1.875)	0.12331 (1.560)	0.13785 (1.489)	0.12206 (1.814)	0.079862 (1.484)
SHAREHOLDER RETURN	0.030598 (0.222)	0.68478 (0.489)	0.027194 (0.210)	0.085800 (0.641)	0.076101 (0.515)
ROA	3.4794 (1.589)	3.5061 (1.710)	2.3339 (1.306)	2.7966 (1.341)	3.5336 (1.551)
ln(ALTERNATIVE)	0.041542 (0.620)	0.051696 (0.682)	0.043361 (0.489)	0.048212 (0.784)	0.030168 (0.625)
YEARS OUTSIDE FIRM	-0.013651 (1.856)	-0.012712 (1.717)	-0.013163 (1.846)	-0.012413 (1.734)	-0.0077546 (0.906)
YEARS BEFORE PROMOTION	-0.0096880 (1.290)	-0.0095284 (1.267)	-0.0099225 (1.360)	-0.0092710 (1.263)	-0.0013939 (0.163)
YEARS AS CEO	0.014328 (1.894)	0.015397 (2.107)	0.016701 (2.206)	0.017308 (2.432)	0.021846 (2.350)
NO COLLEGE	0.027757 (0.196)	0.054473 (0.361)	0.10522 (0.713)	0.085655 (0.520)	-0.083998 (0.550)
TOKYO	-0.036337 (0.461)	-0.038008 (0.484)	-0.054897 (0.711)	-0.048903 (0.628)	-0.046220 (0.531)
ECONOMICS	-0.074324 (0.940)	-0.069685 (0.905)	-0.047440 (0.612)	-0.071439 (0.932)	-0.065172 (0.793)
INDUSTRY DUMMY[c]	yes	yes	yes	yes	yes
Sample size	154	154	154	153	133
R^2	0.2697229	0.2815634	0.2781140	0.3020889	0.2818158

Notes: [a]See text for definitions of the variables, and also for the sources and methods used to assemble the data. [b]The t-ratios given in parentheses are based on the heteroscedasticity-consistent standard errors of White (1980).
[c]The data allow us to include the following 10 industry dummy variables: Foods; Pulp and paper; Chemicals; Rubber; Stone; Steel; Nonferrous Metals; Machinery; Electrical machinery; and Transportation equipment.

TABLE 4B—CORPORATE GROUPS AND THE ROLE OF ALTERNATIVE FIRM OBJECTIVES IN THE DETERMINATION OF CEO COMPENSATION

PROFIT MARGIN used as an accounting measure of profitability[a]

Independent Variables	Dependent Variable: ln(CEO COMPENSATION)				
	Alternative firm objectives to profitability, ALTERNATIVE is defined as:				
	EMPLOYMENT	SALES	ASSET	INVESTMENT	R&D
GROUP	-0.35445 (2.419)	-1.7386 (1.732)	-1.7940 (1.587)	-1.2763 (1.973)	-0.92423 (1.878)
GROUP* ln(ALTERNATIVE)	0.14462 (1.903)	0.13159 (1.621)	0.13785 (1.489)	0.12543 (1.827)	0.087088 (1.564)
SHAREHOLDER RETURN	0.022517 (0.170)	0.064356 (0.480)	0.027194 (0.210)	0.081549 (0.634)	0.064976 (0.455)
PROFIT MARGIN	2.3584 (1.298)	2.6619 (1.516)	2.3339 (1.306)	1.9354 (1.125)	2.1829 (1.198)
ln(ALTERNATIVE)	0.044332 (0.655)	0.054113 (0.703)	0.043361 (0.489)	0.051191 (0.831)	0.030195 (0.616)
YEARS OUTSIDE FIRM	-0.014039 (1.930)	-0.012816 (1.755)	-0.013163 (1.846)	-0.012643 (1.789)	-0.0083739 (0.981)
YEARS BEFORE PROMOTION	-0.010224 (1.365)	-0.0098768 (1.324)	-0.0099225 (1.360)	-0.0096516 (1.324)	-0.0021113 (0.246)
YEARS AS CEO	0.014620 (1.900)	0.015964 (2.157)	0.016701 (2.206)	0.017674 (2.457)	0.022514 (2.345)
NO COLLEGE	0.053089 (0.385)	0.080979 (0.545)	0.10522 (0.713)	0.10875 (0.675)	-0.058635 (0.390)
TOKYO	-0.044015 (0.560)	-0.048473 (0.618)	-0.054897 (0.711)	-0.055973 (0.719)	-0.054487 (0.625)
ECONOMICS	-0.062691 (0.796)	-0.058026 (0.755)	-0.047440 (0.612)	-0.062233 (0.816)	-0.051393 (0.629)
INDUSTRY DUMMY[c]	yes	yes	yes	yes	yes
Sample size	154	154	154	153	133
R^2	0.2623039	0.2771046	0.2781140	0.2978058	0.2720352

Notes: [a]See text for definitions of the variables, and also for the sources and methods used to assemble the data.
[b]The t-ratios given in parentheses are based on the heteroscedasticity-consistent standard errors of White (1980).
[c]The data allow us to include the following 10 industry dummy variables: Foods; Pulp and paper; Chemicals; Rubber; Stone; Steel; Nonferrous Metals; Machinery; Electrical machinery; and Transportation equipment.

TABLE 5A—CORPORATE GROUPS AND THE ROLE OF TENURE IN THE DETERMINATION OF CEO COMPENSATION

ROA used as an accounting measure of profitability[a]

Independent Variables	Dependent Variable: ln(CEO COMPENSATION)				
	Alternative firm objectives to profitability, ALTERNATIVE is defined as:				
	EMPLOYMENT	SALES	ASSET	INVESTMENT	R&D
GROUP	-0.43702 (2.285)	-1.8252 (1.805)	-1.9282 (1.719)	-1.4434 (2.143)	-0.79357 (1.622)
GROUP*YEARS AS CEO	0.085918 (0.747)	0.010632 (0.986)	0.011624 (1.056)	0.012378 (1.131)	-0.090601 (0.766)
SHAREHOLDER RETURN	0.028291 (0.205)	0.066464 (0.474)	0.035089 (0.258)	0.083575 (0.622)	0.078481 (0.526)
ROA	3.4672 (1.606)	3.5029 (1.744)	3.7015 (1.733)	2.7822 (1.363)	3.4353 (1.507)
ln (ALTERNATIVE)	0.031464 (0.455)	0.049318 (0.657)	0.042896 (0.500)	0.043690 (0.709)	0.029513 (0.619)
GROUP* ln(ALTERNATIVE)	0.15229 (1.974)	0.13108 (1.645)	0.14075 (1.566)	0.13260 (1.939)	0.078735 (1.479)
YEARS OUTSIDE FIRM	-0.013779 (1.895)	-0.012859 (1.758)	-0.012765 (1.791)	-0.012511 (1.778)	-0.077905 (0.903)
YEARS BEFORE PROMOTION	-0.095669 (1.291)	-0.094741 (1.282)	-0.092702 (1.296)	-0.091433 (1.271)	-0.016994 (0.196)
YEARS AS CEO	0.078377 (0.679)	0.074877 (0.693)	0.079177 (0.724)	0.081961 (0.751)	0.028953 (2.644)
NO COLLEGE	0.031578 (0.022)	0.022329 (0.149)	0.041456 (0.280)	0.045113 (0.273)	-0.056609 (0.346)
TOKYO	-0.035414 (0.450)	-0.039077 (0.494)	-0.051273 (0.660)	-0.049953 (0.639)	-0.044632 (0.511)
ECONOMICS	-0.075839 (0.959)	-0.072012 (0.936)	-0.063030 (0.816)	-0.074192 (0.968)	-0.061155 (0.743)
INDUSTRY DUMMY[c]	yes	yes	yes	yes	yes
Sample size	154	154	154	153	133
R[2]	0.2720367	0.2852383	0.2925987	0.3070267	0.2836883

Notes: [a]See text for definitions of the variables, and also for the sources and methods used to assemble the data.
[b]The t-ratios given in parentheses are based on the heteroscedasticity-consistent standard errors of White (1980).
[c]The data allow us to include the following 10 industry dummy variables: Foods; Pulp and paper; Chemicals; Rubber; Stone; Steel; Nonferrous Metals; Machinery; Electrical machinery; and Transportation equipment.

TABLE 5B—CORPORATE GROUPS AND THE ROLE OF TENURE
IN THE DETERMINATION OF CEO COMPENSATION
PROFIT MARGIN used as an accounting measure of profitability[a]

Independent Variables	Dependent Variable: ln(CEO COMPENSATION)				
	Alternative firm objectives to profitability, ALTERNATIVE is defined as:				
	EMPLOYMENT	SALES	ASSET	INVESTMENT	R&D
GROUP	-0.43661 (2.246)	-1.9179 (1.847)	-1.9983 (1.731)	-1.4685 (2.140)	-0.84093 (1.672)
GROUP*YEARS AS CEO	0.085227 (0.734)	0.010828 (0.993)	0.011587 (1.033)	0.012478 (1.128)	-0.098656 (0.828)
SHAREHOLDER RETURN	0.020242 (0.153)	0.062344 (0.463)	0.023933 (0.184)	0.079335 (0.612)	0.067844 (0.471)
PROFIT MARGIN	2.3414 (1.306)	2.6709 (1.549)	2.3341 (1.331)	1.9297 (1.143)	2.0931 (1.155)
ln(ALTERNATIVE)	0.034277 (0.491)	0.051760 (0.681)	0.040022 (0.459)	0.046624 (0.756)	0.029364 (0.605)
GROUP* ln(ALTERNATIVE)	0.15778 (2.000)	0.13945 (1.704)	0.14738 (1.592)	0.13603 (1.950)	0.085765 (1.557)
YEARS OUTSIDE FIRM	-0.014170 (1.970)	-0.012958 (1.796)	-0.013347 (1.893)	-0.012737 (1.832)	-0.084131 (0.979)
YEARS BEFORE PROMOTION	-0.010107 (1.364)	-0.098141 (1.337)	-0.098892 (1.379)	-0.095180 (1.331)	-0.024425 (0.279)
YEARS AS CEO	0.081766 (0.706)	0.079154 (0.731)	0.081044 (0.734)	0.084892 (0.775)	0.030223 (2.792)
NO COLLEGE	0.028625 (0.202)	0.048195 (0.325)	0.070823 (0.482)	0.067758 (0.416)	-0.029474 (0.181)
TOKYO	-0.042995 (0.547)	-0.049654 (0.628)	-0.056282 (0.725)	-0.057030 (0.729)	-0.052251 (0.597)
ECONOMICS	-0.064216 (0.816)	-0.060431 (0.788)	-0.049875 (0.645)	-0.065064 (0.855)	-0.047362 (0.579)
INDUSTRY DUMMY[c]	yes	yes	yes	yes	yes
Sample size	154	154	154	153	133
R^2	0.2645803	0.2809158	0.2824599	0.3028241	0.2742563

Notes: [a]See text for definitions of the variables, and also for the sources and methods used to assemble the data.
[b]The t-ratios given in parentheses are based on the heteroscedasticity-consistent standard errors of White (1980).
[c]The data allow us to include the following 10 industry dummy variables: Foods; Pulp and paper; Chemicals; Rubber; Stone; Steel; Nonferrous Metals; Machinery; Electrical machinery; and Transportation equipment.