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## **Public and Private Firm Compensation Compared: Evidence from Japanese Tax Returns**

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### **ABSTRACT**

Most studies of executive compensation focus on publicly traded companies. The high levels of compensation in public companies are often attributed to agency slack arising from ownership by diffused shareholders. If so, pay at private companies, more closely held, should be lower. Governments in the United States and elsewhere do not require private companies to disclose the pay of their executives, but until 2004 the tax office of Japan published the name and tax liability of any individual paying over some \$100,000 in tax. We match this tax data with executive rosters of about 1,400 public and 4,100 private corporations. We find that public and private company presidents have similar incomes. Incomes rise with company size and profitability in both, but incomes are more sensitive to profitability at public firms. In Japan, at least, public firms pay their presidents no more than private firms do, and they tie that compensation more closely to observable performance benchmarks, not less.

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Using individual-level tax liability data from Japan, we compare compensation patterns at privately and publicly held firms. To date, most scholars of executive compensation have used regulatory filing data on American firms, data that as Cadman, Klasa, and Matsunaga (2006) describe is usually obtained through the ExecuComp database. Scholars have had access to this information because publicly traded U.S. corporations must disclose executive compensation data along with their financial accounting records. Unfortunately for studying agency slack, however, privately held firms need not disclose what they pay their executives.

Compensation practices at privately held firms matter to what we think about governance at publicly held firms. Some observers suggest that public firms pay their executives too much. Often, they explain the phenomenon as a collective action problem among widely dispersed shareholders. Owners of private firms should face fewer such problems. If collective action problems drive compensation at public firms and prevent salaries from equalizing across the public-company and private-company markets for executives, then compensation at private firms should differ significantly from public firms in level and contract design.

To explore this issue, we use Japanese income tax data on individual taxpayers. Japanese securities law does not require either public or private firms to disclose executive pay. Until recently, however, the tax office published the names, addresses, and tax liabilities of everyone owing more than 10 million yen in taxes (the high-income taxpayer list, or “HIT list” as we shall call it). We found personal and company information for the approximately 1,600 company presidents on the list, and on 3,900 presidents not on the list whose tax bills we know (since they do not appear) must be less than 10 million yen.<sup>1</sup>

The fact that public firms pay less in Japan than in America (as measured in Nakazato, Ramseyer & Rasmusen, 2006) plausibly suggests that Japanese firms do not suffer collective action problems as severe as those critics attribute to U.S. firms. As a result, one might reasonably prefer a comparison of U.S. private and public firm compensation practice. Given its infeasibility, however, we offer the Japanese contrast as a potentially instructive substitute.

Our focus on taxable income rather than corporate compensation brings both benefits and costs. On the one hand, the information on total income allows us to study how an executive’s aggregate financial welfare varies with company performance, something his salary alone would not disclose. On the other hand, with only income we cannot directly learn how highly the company values an executive’s labor services or how much he is extracting from the company.

Nevertheless, though we do not have labor income broken out separately, we do know which executives are most likely to have substantial investment income. We place an executive in this category (a “Capitalist” as opposed to a “Company Man”) if he is the firm’s top shareholder, if his family controls his firm,<sup>2</sup> if he has long had high income, or

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<sup>1</sup> Some Japanese firms cross-list on American exchanges. Cross-listed foreign firms do have to disclose some financial numbers to the SEC, but not executive pay.

<sup>2</sup> We define a private firm as a family firm if the president’s family holds a majority of its stock. We define a public firm in the same way as Nakazato, Ramseyer & Rasmusen (2006).

if he rose to the rank of president at a young age. We separate the two groups of presidents to generate a set of executives with little capital income, whose income will most closely reflect the pay from their firms.

We find that executives in private and public firms earn similar incomes, suggesting that in Japan, at least, collective action problems do not cause public firms to pay too much. Compensation rises with firm size whether the firm is public or private. Accounting profitability also affects presidential income, but more strongly at public firms than at private firms.

We begin by summarizing the literature (Section I), our data (Section II), and the Japanese tax law (Section III). We then explore the levels of executive compensation in public and private firms (Section IV. A.), and its determinants (Section IV. B. and IV.C.).

### I. The Literature

Our taxpayer-level data from Japan let us tackle several longstanding questions about executive pay from a new angle. Individual shareholders usually own too few shares to wish to exert themselves to monitor a public firm. Bebchuk & Fried (2004) argues that the boards therefore pay excessively high salaries. At privately held firms, however, shareholding is more concentrated so monitoring has a higher individual payoff. Might private firms therefore pay their executives less? Or is the experience of Holmstrom (2005) more typical, and private firms match public firms because boards think talented and happy executives really are worth an astonishingly high level of pay?

Firm size should affect compensation levels at both public and private firms if an executive's marginal product is bigger at a bigger firm and his pay rises with marginal product rather than being determined purely by director slack. Gabaix & Landier (2006) constructs a matching model of the supply and demand of top executives and provides empirical evidence suggesting that a firm's market value and the market value of other firms in its industry are all that is needed to explain executive compensation (their model is further developed in Baranchuk, MacDonald, & Yang (2006)). Kaplan & Rauh (2006) concludes that the recent rise in the incomes of the highest earning Americans reflects (in addition to returns to superstars and the effect of skill-based technological change) increases in firm size. And Nakazato, Ramseyer & Rasmusen (2006) find that firm size has a strong impact on executive pay at public Japanese firms.

How does pay relate to performance? Perhaps companies can and do use variable pay to give their executives proper incentives ---though Jensen & Murphy (1990) finds only a minimal relation between pay and performance, a finding confirmed in Japan for publicly listed firms by Nakazato, Ramseyer & Rasmusen (2006)). Yet if shareholders at private firms monitor executives more closely than at public firms, private firms might be able to use subjective (but accurate) measures of pay while public firms may have to use formal contracts that rely more narrowly on verifiable performance benchmarks.

Extant studies of Japanese executive compensation leave several issues unanswered. The best-known comparison of American and Japanese executives is Kaplan (1994). It limits itself to the largest 121 companies, and takes as its measure of compensation the mean amounts paid to the some 22 (on average) members of the board of directors. He uses this crude pay measure because, though Japanese firms do not need to disclose any single executive's pay, they do report the total amount they pay their board. John (1999) also uses average board compensation, but for 796 firms from 1968

to 1992. Other studies of Japanese executive pay, such as Abowd & Bognanno (1995), Xu (1997) and Kato & Kubo (2006), use data created by management consulting firms. Although this data can be very rich (Kato & Kubo tracks 51 firms for 10 years), the selection of companies is nonrandom and the samples are small. Kato & Rockel (1992) and Kato (1997) do use the same tax-reporting data source that we do. They examine only 599 managers of public companies in 1985, however, and ignore the truncation problem caused by the data's minimum tax requirement.

In a comment on Gabaix & Landier (2006), Stein (2006) notes that pay levels should equilibrate between high- and low-agency-slack firms in a single labor market. Suppose that the owners of one population of firms (e.g., private firms) monitor their executives more closely than the owners of another population (e.g., public firms). If executives can move from one to another, Stein argues, the agency slack in the high-slack population should raise compensation levels at the low-slack population too. An observer would see the same pay level in both, yet to conclude that their levels of slack were equal would be mistaken.

Stein's argument depends crucially on competition among firms for executives, however. If an executive at a low-slack firm cannot leave for a more attractive job at a high-slack firm, the salaries will not equilibrate. The presence of slack itself can separate the markets; if high-slack firms promote internally or for some other reason fail to offer jobs to low-slack firm candidates then compensation at the low-slack firms will be unaffected.

Although the popular press routinely exaggerates the lack of lateral mobility among Japanese executives, the large publicly traded firms rarely hire their presidents from private firms. Any mobility instead moves the other way: from public firms to private. To the extent that the shadow market for private firm executives excludes jobs at public firms, the agency slack among public firms (if any) should have relatively little effect on pay at private firms.

## II. The Data

For information on an executive's income, we turn to his tax liability in 2004. This is not information we obtain from his company. Instead, it is information available by traditional -- but now discontinued -- Japanese government policy. Through 2004, the tax office published the names, addresses, and tax liabilities of all high-income taxpayers. The tax threshold that triggered public disclosure varied over the years, but in 2004 stood at 10 million yen (about \$97,000 in taxes, at the end-of-2004 exchange rate of 102 yen/\$.).

Japanese taxpayers pay a tax of 37 percent on ordinary income beyond 18 million yen.<sup>3</sup> For a crude approximation of income from tax liability, readers can divide the tax liability by .37. Table I illustrates a more nuanced approach. There, we use standard deductions and credits to calculate the income that would generate a given tax level. By this approach, to owe 10 million yen in taxes, a president would need to make about 39.9 million yen (\$392,000). By the crude approach, he would need about 27.0 million yen

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<sup>3</sup> Shotoku zei ho [Income Tax Act], Law No. 33 of 1965, Sec. 89, as amended by Shotokuzeito futan keigen sochi ho [Act for Measures to Reduce the Burden of the Income and Other Taxes], Law No. 8 of 1999, as amended by Law No. 21 of 2005.

(\$265 thousand). Obviously (given how progressive tax schedules work), the higher the income, the more closely the two approaches will converge.

[Insert Table I about here.]

In 2004, some 73,000 Japanese paid 10 million yen or more in taxes, fewer than one would expect from an American tax population. Japan has about half the population of the United States and roughly the same median household income, yet in 2003, U.S. taxpayers filed 536,000 returns with adjusted gross incomes over \$500,000, and nearly 181,000 returns with incomes over \$1,000,000 ([www.irs.gov](http://www.irs.gov)). According to Piketty & Saez (2006), the difference is largely a function of the increasing dispersion of income in the U.S. since the mid-1980s.

Although the tax bills of the wealthy were public information, the Japanese government did not provide the data in convenient form. Therefore, we obtained our tax data from the Japanese affiliate of the D&B credit-rating service, Tokyo shoko risaachi (TSR, 2005), which uses the data for credit reports. In some cases, TSR added the professional affiliation of the taxpayers. Where it did so, we generally followed its identification.

Tax liabilities are now confidential. Under the newly passed Personal Information Protection Act, the government may not release a variety of private data, including tax liabilities.<sup>4</sup> Our 2004 dataset thus represents the last available installment for studies like ours.

We focus on a firm's "president." Generally, the president will also be the C.E.O. Because all firms disclose the identity of the president but few name the C.E.O., we focus on the former. Because banks differ from other firms on a wide number of dimensions, we exclude banks from our dataset.

Given that many executives pay less than 10 million yen in taxes, we do not have tax data on all executives. Instead, our dataset is censored at the lower levels. Others using this data to estimate Japanese executive compensation (Kato & Rockel, 1992; Kato, 1997) limited their studies to those executives who do pay more than 10 million yen in taxes. This has several problems.

First, the results do not necessarily apply to companies that pay their executives lower salaries -- there is selection for companies with a policy of paying high salaries.

Second, ordinary least squares and other linear estimators are biased. This is because observations with negative disturbances are more likely to result in incomes below the threshold and drop out of the sample. An estimation technique should be used that takes into account this truncation.

Third, examining only those executives paying more than the threshold tax discards useful information. Our data set is actually censored, not truncated. We do not observe income below the 10 million yen threshold, but we do observe other things about those executives. We do not know their exact income, but we do know something about it: their income generated a tax liability below 10 million yen. This is relevant information, and we have just as good information for low-tax executives as we do for

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<sup>4</sup> Kojin joho no hogo ni kansuru horitsu [Act Relating to the Protection of Personal Information], Law No. 57 of 2003.

high-tax executives on personal characteristics such as age and firm characteristics such as company size.

To exploit the full dataset, we thus employ tobit, a standard technique for censored data. This both eliminates sample selection bias and increases the amount of information in our regression analysis. Of the corporate presidents in our sample, 1,431 led non-bank firms listed on Section 1 of the Tokyo Stock Exchange. Another 4,155 led non-bank firms catalogued as major private firms by Toyo (2005e). We obtained our firm financial data from Nihon keizai (2005, 2006) and Toyo (2005b, 2005d, 2005e). We obtained the identity of the presidents from Toyo (2005d, 2005e).

In many tobit regressions (e.g., those in Ramseyer & Rasmusen (2003)), the regression coefficients have little meaning in themselves and must be converted to “marginal effects” by seeing how their effect on the underlying indicator variable translates into a change in the expected value of the observed variable that is observed. If observed product quality is bounded below at zero, for example, the effect of age on quality cannot generate negative values and the expected value is a weighted average of zero and higher qualities. That does not apply here. Here, we use tobit because we do not observe levels of taxes paid if they are below 10 million yen, not because the minimum level is 10 million regardless of income. We are not interested in how firm size affects the observed level of tax, which is usually the censoring bound of 10 million, but in how it affects the tax itself. A predicted tax level below the censoring bound—8 million, for example—makes sense in our regression, unlike in the typical tobit setting. Thus, the tobit coefficient itself, the “linear predictor”, is the correct measure of the marginal effect.

### III. Tax Law

#### A. Real Income and Reported Income:

For several obvious reasons, an executive’s reported income will only imperfectly reflect his real income. First, most firms structure compensation packages to minimize the executive’s tax liability. Indeed, Japanese executives receive from their employers a wide array of untaxed perquisites (estimated in Abowd & Bognanno, 1995). To that extent, an executive’s reported taxable income will understate his real income.

Second, most executives also earn taxable income from other sources. Being rich, many of these men will receive substantial investment income. To the extent that they do, their taxable income will overstate their firm compensation.

Last, some executives will use illegal (or quasi-legal) means to conceal their income or avoid the HIT list. At least hypothetically, executives at smaller private firms might be better able to hide income than their counterparts at the larger public firms. What is more, wealthy Japanese (even if they did not hide their income from the tax office) could do one of two things to avoid the HIT list: (a) they could pay a penalty and submit their returns late, since the tax office included on the HIT list only those taxpayers who filed within 2 weeks of the March 15 tax-return deadline; or (b) they could file an initial return that included only income below the amount that triggered disclosure, and later submit an amended return that included the remaining income.

To explore these issues, we compare the reported tax liabilities of Tokyo-area executives on the TSR list with the average residential land price of the ward in which they live (from Toyo, 2005c). If executives routinely hide their income, then the

correlation between income and land price should be low. If private firm presidents hide more income than public firm presidents, then the correlation should be higher among the public firm presidents than the private.

In fact, the correlation between income and land price is high, and higher at the private firms than at the public. In a related study of executives at public firms, we find a correlation is .11, significant at the 1 percent level (Nakazato, Ramseyer & Rasmusen, 2006a). Among the presidents of the private firms, however, the correlation is .27, significant at more than the 0.1 percent level. Presidents reporting higher incomes do indeed live in more expensive neighborhoods, but the phenomenon is more pronounced among the presidents of the private firms than the public.<sup>5</sup>

#### B. Dividend Income:

Many presidents receive substantial dividend income from the firms they head. Unfortunately, the Japanese tax treatment of dividend income is extraordinarily complex. For most presidents of the public firms in our data base, the TSR data will not include dividend income from their firm; for the presidents of the private firms, the data will (we return to this issue when we compare the incomes of Company Men presidents -- those least likely to have investment income -- at the two sets of firms).

Through March 31, 2004, dividends (typically paid in June and December) were subject to a national withholding tax of 15 percent and a uniform local tax (collected by the national government) of 5 percent. After April 1, they were subject to a national withholding tax of 7 percent and local tax of 3 percent. Because the withholding sometimes satisfied an investor's liability with respect to that income, he was not required to include it on his return. If he opted to exclude it, the tax he paid on the dividends did not appear in our TSR database.

This rule had two qualifications. First, an investor could exclude only dividends from an exchange-listed firm. As a result, private-firm president income *would* include dividends from the firms they headed in their reported income (and thus in the TSR data).

Second, an investor could exclude dividends from a public firm only if he owned less than 5 percent of the firm's stock. Of the 1,431 public-firm presidents in our data base, 1,253 owned less than 5 percent of their firm's stock.

An investor who received dividends from a public firm of which he held less than 5 percent generally would opt to exclude the dividends from his return. If he did, the tax on that dividend would not have appeared in the TSR data base. In effect, he could either (a) pay the 7 percent national withholding tax and exclude the dividend income; or (b) pay the 7 percent tax, include the dividend income on his return, and take a credit against his aggregate tax liability. If he took option (b), the dividend income would be subject to the much higher marginal rates these executives faced on their other income. As a result, despite the dividends-received tax credit, they generally would choose option (a): pay the withholding tax and exclude the dividend income.<sup>6</sup>

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<sup>5</sup> In Nakazato, Ramseyer & Rasmusen (2006b), we examine the correlation between reported tax liability and residential real estate value for attorneys. We find a correlation of .19.

<sup>6</sup> In 2004, the national government withheld taxes on 7.6 trillion yen in dividend income paid to individual taxpayers; those taxpayers included only 406 billion in dividend income on their returns. Compare National Tax Office statistics at

### C. Other Tax Rules:

As with dividends, investors paid tax on their gains from the sale or exchange of securities in 2004 at a national income tax rate of 7 percent and a local tax rate of 3 percent. In this context, the law did not distinguish between long-term and short-term gains. And again as with dividends, investors could elect whether (i) to satisfy the tax through withholding and exclude the gains from their returns, or (ii) to include the gains in their returns.

Unlike the case of dividends, however, the question of whether to include securities gains and losses had no clear answer. As the stock market began to recover in 2004, some investors would have found themselves with substantial capital appreciation. Whether our dataset captures any gains they chose to recognize by selling the stock, however, we cannot say. Regardless of whether an investor elected to include the gains on his return, he faced the same 7 percent tax rate. In either case he had the same right to carry forward any losses for three years. And in either case he had the same ability to time his gains and losses by choosing when to sell which securities.

Gains from the sale or exchange of real estate are also taxed at separate rates, but not through withholding. Instead, investors must include the gains on their returns. They will pay a 15 percent tax if they held the property over 5 years, and 30 percent if they held it for 5 years or less. Of all taxpayers reporting more than 30 million yen in income in 2004, 19 percent reported some capital gains income.<sup>7</sup>

Note also the following. In Japan, couples may not file joint returns; taxpayers with rising incomes may not “average” their income across years; and pension payments are taxed at lower rates than salaries.

## IV. Results

### A. Levels:

Presidents at private Japanese firms report incomes roughly comparable to those reported by the presidents of the public firms. As shown in Table II, the highest paid president of a public firm, Yoshitaka Fukuda of the Aifuru financial services firm, paid taxes of \$9,089,000 (927,083,000 yen) -- implying taxable income of perhaps \$30 million. The median president among the top 100 presidents of public firms paid taxes of about \$732,000 (74,634,000 yen) and the median president at the top 500 paid about \$219,000 (22,330,000 yen). Of all presidents of the 1,430 public firms, 42 percent appeared on the high-income list.

[Insert Table II about here.]

Of private firms, the highest paid president, Ikuo Sakiyama of Digital Technologies, paid taxes of \$6,241,000 (636,563,000 yen). The median president of the

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<http://www.nta.go.jp/category/toukei/tokei/menu/gensen/h16/data/02.pdf> (amounts withheld) with [/menu/shinkoku/h16/data/01.pdf](http://www.nta.go.jp/category/toukei/tokei/menu/shinkoku/h16/data/01.pdf) (amounts reported on returns) (last visited March 29, 2006).

<sup>7</sup> Whether securities, real estate, or other capital gains. National Tax Office statistics, <http://www.nta.go.jp/category/toukei/tokei/menu/shinkoku/h16/data/01.pdf> (last visited on March 29, 2006).

top 100 paid taxes of \$983,000 (100,315,000 yen), and of the top 500 paid \$325,000 (33,137,000 yen). Of all presidents of the 4155 private firms, 26 percent appeared on the high-income list. To preserve comparability to our public firm dataset, if we take only the highest-paid 1,430 presidents of the private firms 76 percent appeared on the list.

Of course, corporate presidents typically hold substantial investment portfolios. Among the 264 presidents of the public firms least likely to have much investment income (the Company Man presidents), the tax liability ranged up to \$3,340,000 (344 million yen); the median president in this group paid taxes of \$147,000 (15 million yen). Among the 176 Company Man presidents at the private firms, the tax liability ranged up to \$755,000 (77 million yen); the median Company Man paid taxes of \$137,000 (14 million yen).

As explained below, presidential compensation depends heavily on firm size, and public firms are bigger than the private firms. The median-sized firm in our database had assets of about 40 billion yen. Of the presidents the 108 public firms with assets between 40 and 50 billion yen, 33 percent appeared on the HIT list. At the 114 private firms in the same asset size range, 41 percent appeared (Table II Panel A). Given the same size, more private-firm presidents reported high incomes than public-firm presidents.

Private firm presidents earn more stable incomes than the public firm cohort. Of the 1093 private firm presidents on the HIT list, 87 percent had been on the list in 2003 as well. On average, they had been on the list 9.1 times. Of the 593 public firm presidents on the HIT list, only 82 percent had been on the list in 2003, and they had been on it only 7.3 times (note that the public firm presidents are older than the private presidents). The difference between 2004 and 2003 income averaged 42 percent for the public firm presidents with a standard deviation of 1.60. Among the private firm presidents, the difference averaged 29 percent with a standard deviation of 1.29.

## B. Variables

To study the determinants of presidential compensation, we create the following variables. Firm-level financial values reflect the fiscal year ending in 2004. We include selected summary statistics and industry composition data in Table III (for industry composition, see Table V displayed later).

[Insert Table III about here.]

### 1. President variables. --

**Ln Tax 2004:** Logged amount of taxes paid by a president in 2004 (/1000 yen), in logs; log of 10,000 if not on HIT list

**Ln Tax 2003:** Logged amount of taxes paid by a president in 2003 (/1000 yen), in logs, conditional on appearing on the 2004 HIT list.

**Exec Age:** 2004 minus the birth year of a president.

**U Tokyo:** 1 if the president attended the traditionally most selective University of Tokyo; 0 otherwise.

**Other Imp U:** 1 if a president attended one of the six other formerly imperial (and still selective) universities; 0 otherwise.

**High School:** 1 if a president did not graduate from a university; 0 otherwise.

**Prez Share %:** Percent of shares held by the president as given in the firm directory; 0 if the president is not listed as a shareholder. Note that our source for the

public firms generally gives the top 10 shareholders, while the source for the unlisted firms gives only the top 6 shareholders.

**Prez Top Dummy:** 1 if the president is the top shareholder in the firm; 0 otherwise.

**HIT Dummy:** 1 if the president appears on HIT list; 0 otherwise.

**Num Appearances:** The number of times a president has appeared on the HIT, conditional on appearing on the 2004 list.

**Company Man** = 1 unless the president satisfies any one of the following criteria: (a) he is the top shareholder for his firm; (b) he serves at his family firm; (c) he is under age 40; or (d) he has appeared on the high-income taxpayer list more than five times.

2. Firm variables. --

**Public:** 1 if the firm lists its stock on the Tokyo Stock Exchange; 0 otherwise.

**Top Shareholder %:** Percent of shares held by the largest shareholder of a firm.

**Ln Assets:** Firm assets in 2004 (so shisan; /million yen), in logs.

**Profitability:** Ordinary profits (keijo rieki)/capital (shihon) for fiscal year ending in 2004.

**Industry dummies.** -- 32 industry categories, as used in the Nihon (2005).

C. Determinants:

1. Size and profitability. -- In the following tables, we regress the log of a president's income on several key variables concerning the firm, the president himself, and the firm's ownership structure. We add a dummy variable equal to 1 if the firm is listed on Section 1 of the TSE (**Public**), and interact that dummy with the others. We include industry dummies in all regressions.

[Insert Table IV about here.]

Consider first Regression (1) of Table IV: a tobit regression of logged income on the size, profitability, and listing status of the firm. In the first column we give the coefficient on the independent variable, followed by the absolute value of the corresponding t-statistic; in the second column we give the coefficient and t-statistic on the variable interacted with **Public**. The first column thus gives the effect of the variable on all firms; the second column gives any additional effect it has on public firms.

The regression shows three phenomena. First, presidential incomes rise with firm size. The insignificant interacted coefficient indicates that the same phenomenon occurs at public and private firms alike. The result tracks executive compensation studies in the U.S.

Second, presidential incomes rise with firm profitability. At both the public and the private firms, presidents heading profitable firms report higher incomes than those heading less profitable ones. Curiously, however, income rises most steeply at the public firms. We offer two potential explanations for this. On the one hand, perhaps private firm shareholders can monitor their executives more closely than widely dispersed

shareholders can. If public firm shareholders find monitoring harder, then they may rationally choose to tie compensation more closely to verifiable indices of performance.

On the other, the greater apparent sensitivity of compensation to profitability at public firms may just reflect more aggressive "earnings management." Table III, Panel A, shows that profitability varies more widely at private firms (a standard deviation of 13.081) than at public firms (a standard deviation of .718). If this difference reflects different earnings management, then the figures will under-state true profitability at the better-performing public firms and over-state it at the rest. To the extent that this occurs, any calculated coefficient on accounting profitability would be higher at the public than at the private firms.

Third, with size and profitability held constant, presidential incomes do not vary with listing status. Public firms do not pay more than the private. Instead, the coefficient on **Public** is uniformly insignificant.

2. Presidential shareholdings. -- In Specification (2) of Table IV, we add the percentage of shares a president holds in the firm. Not surprisingly, income rises with a president's share. Both at public and at private firms, the more stock a president holds in the firm, the higher the income he reports.

This sensitivity to shareholdings could reflect either investment income outside the firm or agency slack within it. A president who holds more stock is a richer man, and will have greater investment income generally -- from both the firm he heads and elsewhere. Yet a president who holds more stock is also more likely to be able to manipulate the board and extract greater resources for himself.

To explore why shareholdings increase income, in Regression (3) we add two variables: the percentage of shares the firm's top shareholder holds (**Top Shareholder %**), and a dummy variable equal to 1 if that top shareholder is the president (**Prez Top Dummy**). If agency slack accounts for the phenomenon, then a president should earn less when the firm's top shareholder owns more. And indeed, the presidents of firms with a top shareholder who holds bigger stakes do report lower incomes. Yet if agency slack accounts for the results, then a president should also report higher incomes where he owns the most shares. Curiously, however, **Prez Top Dummy** seems not to affect his income.

To study this issue further, in Regression (2) of Table V we introduce a series of spline variables: the **Prez Share %** divided by decile. If agency slack drives the sensitivity of presidential income to shareholdings, then the decile giving the president effective control should generate the largest coefficient. At a public firm, a president with 10 percent of the stock may well have the clout to extract a supra-market compensation package. But at a private firm, the largest break should appear at 50 percent. At a private firm, a president with less than half the stock will often find himself constrained by other shareholders. With over half, only reputational concerns and the fear of a derivative suit will hold him in check.

According to Regression (2), the private firm break does not appear at 50 percent. Instead, the marginal effect of a president's shares is positive but declines with each level of shareholding. Column (2) tells us that the "extra effect" at the public firms similarly rises but at a declining rate. If investment income rather than agency slack accounted for the phenomenon, presidential incomes would rise proportionally with presidential assets.

With the dependent variable in logs, we would then expect to see the size of the coefficients on the spline variables to be positive but declining with the amount of the shareholdings -- exactly what we observe. Because public firms are larger than private firms, a given fractional interest in a public firm would generate more income than the same interest in a private firm. If so, then the coefficient on the interacted spline variables should be positive as well -- and so we see.

3. University. -- In Regression (1) of Table 5, we explore the relation between university degree and income. Traditionally, the University of Tokyo and the six other "imperial" universities were the most prestigious and selective (admission was and is by blindly graded exam). Their graduates readily found management-track jobs at the most prestigious firms. And according to Table III Panel B, nearly a quarter of the public firm presidents did attend one of these seven schools. By contrast, only 9 percent reported no university degree.

The private firms, newer institutions, are sometimes still headed by their founder or his son. These men have less prestigious educations. Only 15 percent attended one of the imperial universities, and 12 percent reported no university degree at all. On average, of course, the elite university graduates are more likely to have worked their way up the corporate ladder (like their peers at the public firms); the others are more likely to have founded the firms themselves. According to Regression (1), the latter (the men without elite credentials) report the highest incomes.

Because founders control fewer of the public firms, these firms exhibit a different phenomenon. Their presidents are not entrepreneurs; they are men who survived a four-decade-long tournament within the firm. We would not expect university affiliation to matter at the end of that tournament -- and largely that is what we find. The two coefficients on **Other Imperial University** cancel much of the effect on each other, and the coefficients on **University of Tokyo** cancel each other nearly completely.

4. Robustness checks. -- In Table VI, we limit ourselves to the "Company Men" presidents. As defined above, these are the 338 men least likely to have significant outside income -- and whose reported income will most closely reflect the salaries they receive from the firm. The smaller sample size reduces significance levels. Where significant, however, the signs tend to track the signs of the coefficients in Table IV: (a) income rises with profitability at the public firms; and (b) income rises with executive shareholdings at both private and public firms, but especially at the public firms. Oddly, the more shares the top shareholder of a firm holds (by definition, a Company Man is never the top shareholder), the higher the president's income.

In Table VII, we reproduce the industry composition of our data base, and report the coefficients on the industry dummies in our earlier regressions. None of the coefficients is statistically significantly different from 0.

In Table VIII, we offer three robustness checks. In Regression (1), we limit ourselves to the presidents who appeared on the HIT list, and recalculate our earlier regressions with OLS (this is the regression analogous to that used by Kato & Rockel (1992)). In Regression (2), we use as our dependent variable a dummy equal to 1 if a president was on the HIT list, and use probit. In regression (3) we use as our dependent variable the number of times a president appeared on the HIT list (conditional on

appearing in 2004), and use Poisson. In each of these regressions, the results are close enough to those in our main regression (Table IV) to reassure us that our results are not an artifact of regression technique.

## V. Conclusions

Unfortunately for scholars, government rules in the United States require only public firms to disclose the amounts they pay their executives. As a result, scholars who hope to study compensation practices at private firms have found themselves stymied. Yet private firm compensation matters. Bebchuk & Fried (2004) and others argue that public firms pay their executives inappropriately high compensation because of (*inter alia*) collective action problems among their owners. Owners of private firms face fewer such problems. If collective action problems generate excessively high pay at the public firms, then private firms should pay their executives significantly less.

We explore this issue with Japanese income tax data. Through 2004, but no longer, the Japanese tax office published the names and tax liabilities of all taxpayers reporting tax liabilities of more than 10 million yen. We identify the corporate presidents among them, add information on the firms they head, and compare the incomes of public and private firm presidents. Apparently, private firms do not pay their presidents less than public firms.

Data from Japan do not directly test whether public U.S. firms pay too much. Yet we know of no legal or regulatory reason that would account for any difference in pay practices between the two countries. In the absence of data about private firm compensation in the U.S. and other countries, we offer this study of the contrasting compensation practices of public and private Japanese firms as a start toward understanding how ownership patterns might or might not affect executive compensation.

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**Table I: Calculating Income from Tax Liability**

The amount of income that would generate a tax liability of 10 million yen is about 39.9 million yen. To reach this conclusion, we make the following calculations:

A. The Principles:

1. Assume the taxpayer has only salary income. If so, he will have the standard salary income deduction of 5 percent plus 1,700,000 yen. See Shotoku zei ho [Income Tax Act], Law No. 33 of 1965, Sec. 28.

2. Assume further that this taxpayer has no children, no life insurance, no charitable donations, no medical expenses, etc.. If so, he will have only the three basic personal deductions: his own deduction, his spouse' deduction, and a social security deduction. Assume the last equals 1 million yen (in fact, it varies by salary level). See Shotoku zei ho, Secs. 74, 83, 86.

* Basic personal deduction	380,000 yen
* Spousal deduction	380,000
* Social security deduction	1,000,000

3. A taxpayer with an income in this range will face the full maximum marginal rate: 37 percent. The actual amount of the tax is given as 37 percent of his income, less a deduction of 2.49 million yen.

4. This taxpayer will also have the currently standard lump-sum tax credit of 250,000 yen. Shotokuzei to futan keigen sochi ho [Act to Reduce the Burden of the Income Tax], Law. xx of 19xx, Sec. 6.

B. Tax calculation:

Gross income:		39,900,000
Salary income:		
$39,900,000 \times .95 - 1,700,000 =$		36,205,000
Taxable income:		
36,205,000		
380,000		
380,000		
- 1,000,000		
<u>34,445,000</u>		34,445,000
Income Tax:		
$34,445,000 \times .37 - 2,490,000 =$		10,254,650
Less lump-sum tax credit:		
$10,254,650 - 250,000 =$		10,004,650

**Table II:**  
**Incomes of Presidents at Public and Private Firms:**

A. Fraction Presidents on High-Income Taxpayer List

	n	% HIT
<i>All presidents</i>		
Public Firms	1430	.415
Private Firms	4155	.263
<i>At firms with assets of 40-50 billion yen*</i>		
Public Firms	108	.333
Private Firms	114	.412

\* The median firm in our dataset had assets of about 40 billion yen.

B. Selected Corporate Presidents:

Rank	Name	Firm	Industry	Firm Assets	Tax Liability
<i>Public firms</i>					
1	Yoshitaka Fukuda	Aifuru	Financial	8,332	927,083
2	Ikuo Kimura	Invoice	Information	355	855,686
3	Hajime Satomi	Sega samii	Machinery	2,729	852,031
4	Masato Kumagai	GMO Internet	Information	331	344,409
5	Masayoshi Son	Softbank	Wholesale	16,240	332,428
50	Kazuhisa Tatsumi	Nihon chusha	Real Estate	485	74,634
250	Toshiaki Takeuchi	Nihon dempa	Elec. Pdts	1,065	22,330
<i>Private firms</i>					
1	Ikuo Sakiyama	Digital Tech	Wholesale	18	636,563
2	Kikuji Yamaguchi	Japan Royal	Food Pdts		625,033
3	YoshioTsuchiya	Beishia	Wholesale	54	573,961
4	Hideto Maeda	Hanamaru	Food Pdts	3	491,369
5	Seiji Shibuya	Akagi	Wholesale	15	477,756
50	Seigo Nitta	Daishin	Construction		100,315
250	Chozo Miyashita	Union Mach.	Elec. Pdts	7,967	33,137

Notes: Firm assets are given in billion yen; tax liability is in 1000 yen.

Sources: Tokyo shoko risaachi, Zenkoku kogaku nozeisha meibo [Roster of High-Income Taxpayers] (Tokyo: Tokyo shoko risaachi, 2005).

Table III: Selected Summary Statistics

	Public					Private				
	n	Min	Median	Mean	Max	n	Min	Median	Mean	Max
<b>A. Firm Characteristics</b>										
Assets	1431	1.4	83.1	386	19100	2861	0.5	13.7	47.2	11600
Profitability	1364	-.789	.327	.534	9.602	3313	-15.0	1.11	4.20	265.1
Top S/h %	1431	3.1	11.9	18.1	74.2	3756	1	46	52.4	100
Prez Top S/h	1431	0	0	7.8	1	4155	0	0	0.22	1
<b>B. Presidential Characteristics</b>										
Age	1418	32	61	60.6	89	4041	26	60	58.5	90
U Tokyo	1312	0	0	.10	1	3788	0	0	.06	1
Oth Imperial U	1312	0	0	.13	1	3788	0	0	.09	1
High School	1312	0	0	.09	1	3788	0	0	.12	1
Prez. Share %	1431	0	0	2.3	60.7	4155	0	0	11.8	100

Notes: Assets are in billion yen.

Sources: Nihon keizai shimbun sha, Nikkei kaisha joho: Natsu [Nikkei Corporate Information: Summer] (Tokyo: Nihon keizai shimbun sha, 2005); Nihon keizai shimbun sha, Nikkei Economic Electronic Databank System (NEEDS) (Tokyo: Nihon keizai shimbun sha, 2006); Tokyo shoko risaachi, Zenkoku kogaku nozeisha meibo [Roster of High-Income Taxpayers] (Tokyo: Tokyo shoko risaachi, 2005); Toyo keizai shimposha, Kaisha shiki ho: Natsu [Corporate Report: Summer] (Tokyo: Toyo keizai shimposha, 2005); Toyo keizai shimposha, Yakuin shikiho: jojo gaisha ban [Board of Directors Report: Listed Companies] (Tokyo: Toyo keizai shimposha, 2005); Toyo keizai shimposha, Kaisha shikiho: Mijojo kaisha (Tokyo: Toyo keizai shimposha, 2005 II);

**Table IV: Determinants of Taxable Income  
(All Presidents)**

Dependent Variable: Ln Tax 2004

	(1)		(2)		(3)	
	Private Firms	Pub Firm Extra Eff	Private Firms	Pub Firm Extra Eff	Private Firms	Pub Firm Extra Eff
Ln Assets	.159 (5.20)	-.001 (0.01)	.256 (9.09)	.008 (0.22)	.311 (10.46)	-.064 (1.70)
Profitability	.016 (8.44)	.333 (6.63)	.011 (6.20)	.209 (4.64)	.009 (5.11)	.235 (5.36)
Prez Share %			.026 (15.77)	.050 (10.29)	.027 (10.55)	.038 (5.03)
Top S/h %					-.010 (9.46)	-.003 (1.07)
Prez Top Dum					.102 (0.94)	.337 (1.65)
Public Dummy		.072 (0.16)		-.203 (0.50)		.349 (0.85)
Industry Dummies	Yes		Yes		Yes	
n	3805		3805		3637	

Notes: All regressions are tobit, and include a constant term. The t-statistics are in parentheses under the coefficients. The first column for each specification gives the coefficient on that variable; the second column gives the coefficient on that variable interacted with the Public variable.

Sources: See Table III.

**Table V: Determinants of Taxable Income:  
The Effect of University Status and Executive Shareholdings  
(All Presidents)**

<i>Dependent Variable: Ln Tax 2004</i>				
	(1)		(2)	
	Private Firms	Public Firm Extra Effect	Private Firms	Public Firm Extra Effect
Ln Assets	.271 (9.52)	.010 (0.27)	.290 (10.52)	.012 (0.32)
Profitability	.010 (5.87)	.174 (3.83)	.012 (6.99)	.175 (4.03)
Prez Share %	.024 (13.92)	.056 (10.69)		
Univ of Tokyo	-.478 (3.59)	.313 (1.77)		
Other Imperial University	-.571 (4.98)	.132 (0.82)		
High School	.122 (1.37)	.103 (0.70)		
Prez Sh 0-10			.108 (7.70)	.097 (4.25)
Prez Sh 10-20			.064 (10.00)	.070 (6.35)
Prez Sh 20-30			.051 (11.46)	.030 (2.70)
Prez Sh 30-40			.034 (9.13)	.036 (4.79)
Prez Sh 40-50			.033 (9.25)	.016 (1.57)
Prez Sh $\geq$ 50			.020 (10.98)	-.112 .
Public Dummy		-.310 (0.76)		-.272 (0.68)
Industry Dummies	Yes		Yes	
n	3520		3805	

Notes: All regressions are tobit, and include a constant term. The t-statistics are in parentheses under the coefficients. The first column for each specification gives the coefficient on that variable; the second column gives the coefficient on that variable interacted with the Public variable.

Sources: See Table III.

**Table VI: Determinants of Taxable Income  
(Company Men Only)**

Dependent Variable: Ln Tax 2004

	(1)		(2)		(3)	
	Private Firms	Pub Firm Extra Eff	Private Firms	Pub Firm Extra Eff	Private Firms	Pub Firm Extra Eff
Ln Assets	-.014 (0.33)	.053 (1.11)	-.001 (0.03)	.072 (1.57)	-.005 (0.10)	.075 (1.48)
Profitability	-.006 (0.67)	.157 (4.47)	-.006 (0.71)	.158 (4.78)	-.002 (0.17)	.144 (4.28)
Prez Share %			.018 (2.09)	.054 (3.77)	.024 (2.70)	.049 (3.37)
Top S/h %					.003 (2.49)	.000 (0.14)
Prez Top Dum					omitted	omitted
Public Dummy		-.568 (1.10)		-.850 (1.70)		-.713 (1.31)
Industry Dummies	Yes		Yes		Yes	
n	348		348		338	

Notes: All regressions are tobit, and include a constant term. The t-statistics are in parentheses under the coefficients. The first column for each specification gives the coefficient on that variable; the second column gives the coefficient on that variable interacted with the Public variable. Regression (3) omits "Prez Top Dum", unlike in Table IV, because by definition a Company Man is not the top shareholder in his firm.

Sources: See Table III.

**Table VII: Industry Composition (%) and Effect on Presidential Income**

	Public	Private	Effect on Income .
Pharmaceuticals	2.3	1.3	.808 (0.99)
Chemicals	7.3	3.5	.556 (0.69)
Machinery	7.8	4.7	.507 (0.63)
Electrical Products	9.8	6.2	.612 (0.76)
Transportation Equipment	3.8	2.9	.558 (0.69)
Precision Equipment	1.5	2.5	.902 (1.10)
Textiles	3.3	1.2	.699 (0.86)
Other Products	3.0	12.1	.657 (0.82)
Fisheries	0.4	0.1	.712 (0.75)
Foods	4.9	4.5	.750 (0.93)
Petrochemicals	0.6	0.3	-.028 (0.03)
Mining	0.5	0.3	-.132 (0.14)
Paper & Pulp	0.9	0.4	.298 (0.35)
Rubber	7.7	0.5	.407 (0.47)
Glass	1.5	1.3	.306 (0.37)
Steel	2.2	0.7	-.099 (0.12)
Metals	2.4	2.3	.471 (0.58)
Nonferrous Metals	1.5	1.0	.133 (0.16)
Construction	7.0	8.9	.176 (0.22)
Real estate	2.9	3.0	.620 (0.77)
Electricity & Gas	1.0	0.3	.500 (0.58)
Land Transportation	2.1	2.1	.405 (0.50)
Air Transportation	0.3	0.2	-.697 (0.65)
Sea Transportation	0.6	0.6	-.315 (0.36)
Retail	8.5	5.5	1.012 (1.26)
Wholesale	8.7	14.2	.597 (0.75)
Warehousing	1.0	0.5	.341 (0.40)
Services	4.8	7.6	.849 (1.06)
Information & Communication	5.1	7.0	.604 (0.75)
Securities	1.0	1.6	.657 (0.80)
Other Financial Services	2.0	2.3	.073 (0.09)
Insurance	0.5	0.1	Omitted

Notes: The first two columns give the percentage of public and private firms in the industry. The third column gives the coefficients and the t-statistics on the industry dummies in the Col. (1) regression in Table IV.

Sources: See Table III.

**Table VIII: Determinants of Taxable Income:  
Robustness Checks**

Dep. variable:	(1)		(2)		(3)	
	<i>Ln Tax 2004</i>		<i>HIT Dummy</i>		<i>Num. Appear. .</i>	
	Private Firms	Pub Firm Extra Eff	Private Firms	Pub Firm Extra Eff	Private Firms	Pub Firm Extra Eff
Ln Assets	.126 (4.51)	-.026 (0.78)	.301 (9.42)	-.050 (1.19)	.089 (5.62)	-.051 (2.58)
Profitability	.007 (5.09)	.127 (4.11)	.008 (3.29)	.229 (3.92)	.002 (2.38)	.020 (1.12)
Prez Share %	.008 (4.22)	.038 (7.11)	.025 (8.70)	.021 (2.21)	.005 (5.02)	.002 (0.61)
Top S/h %	.002 (1.98)	-.002 (0.89)	-.011 (10.28)	-.004 (1.26)	-.005 (8.39)	.004 (2.56)
Prez Top Dum	-.021 (0.25)	.154 (1.11)	.175 (1.43)	.313 (1.21)	.012 (0.27)	.282 (3.61)
Public Dummy		.114 (0.32)		.231 (0.50)		.035 (0.16)
<hr/>						
Industry Dummies	Yes		Yes		Yes	
n	1135		3636		1135	
	OLS		Probit		Poisson	

Notes: All regressions are tobit, and include a constant term. The t-statistics are in parentheses under the coefficients. The first column for each specification gives the coefficient on that variable; the second column gives the coefficient on that variable interacted with the Public variable.

Sources: See Table III.

**Supp. Table: Determinants of Taxable Income  
(Various Subgroups)**

*Dependent Variable: Ln Tax 2004*

	Private Firms	Pub Firm Ex Eff	Private Firms	Pub Firm Ex Eff	Private Firms	Pub Firm Ex Eff	Private Firms	Pub Firm Ex Eff .
Ln Assets	.204 (5.94)	.089 (2.04)	.161 (3.92)	.009 (0.18)	.180 (4.89)	.100 (2.24)	.111 (1.67)	.096 (1.21)
Profitability	.019 (6.03)	.227 (4.09)	.013 (3.08)	.312 (5.86)	.015 (3.99)	.204 (3.96)	.008 (1.36)	.152 (1.05)
Public	-1.013 (2.12)		.381 (0.73)		-.902 (1.87)		-.727 (0.82)	
Industry Dummies	Yes		Yes		Yes			
	Prez holds no stock		Family firm (not prez fam)		Prez 0 st & Oth fam firm		Imperial U grads only	
n	2778		2758		2376		674	

Notes: The usual.

Sources: See Table III