Cronqvist, Henrik; Heyman, Fredrik; Nilsson, Mattias; Svaleryd, Helena; Vlachos, Jonas

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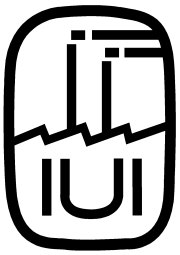

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by Henrik Cronqvist, Fredrik Heyman, Mattias Nilsson,
Helena Svaleryd and Jonas Vlachos

IUI, The Research Institute of Industrial Economics
P.O. Box 55665
SE-102 15 Stockholm
Sweden

Do Entrenched Managers Pay Their Workers More?*

Henrik Cronqvist, Fredrik Heyman, Mattias Nilsson, Helena Svaleryd, and Jonas Vlachos**

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Abstract

Analyzing a large panel that matches public firms with worker-level data, we find that managerial entrenchment affects workers' pay. CEOs with more control pay their workers more, but financial incentives through ownership of more cash flow rights mitigate such behavior. These findings do not seem to be driven by productivity differences, and are unaffected by a series of robustness tests. Further evidence suggests that higher pay comes with non-pecuniary private benefits for a CEO, such as lower-effort wage bargaining with aggressive workers and their unions. Moreover, we find that entrenched CEOs pay more to employees who are closer to them in the firm's hierarchy, such as CFOs, vice-presidents and other executives, and white-collar workers who work at or geographically close to the corporate headquarters. The evidence is consistent with an agency model in which managers have a taste for both profits and highly paid employees, and implies that corporate governance can be of importance for labor market outcomes such as workers' pay.

Keywords: Corporate governance; agency problems; private benefits; matched employer-employee data; wages

JEL classification: G32; G34; J31

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** The Ohio State University; Research Institute of Industrial Economics; Research Institute of Industrial Economics; Worcester Polytechnic Institute; and Stockholm University, respectively. Address correspondence to Henrik Cronqvist, The Ohio State University, Fisher College of Business, Department of Finance, 840 Fisher Hall, 2100 Neil Avenue, Columbus, OH 43210, or e-mail at henrik.cronqvist@cob.osu.edu.

I. Introduction

The separation of ownership and control between shareholders and managers in public corporations can play an important role in determining the level of pay to a firm's manager (whom we will interchangeably refer to as the CEO), but also the pay to the firm's workers. There is ample empirical evidence that entrenched CEOs partly set their *own* pay.[1] However, there are several reasons to suggest that the separation of ownership and control can also have an effect on the pay of a firm's *other* employees.

Thaler (1989) was among the first to recognize that "an agency model in which managers have a taste for both profits and highly paid employees" (p. 187) may explain workers' pay. The model of the world we have in mind in this paper is in the same spirit. We argue that a CEO compares his *private* benefits from the set of feasible wage policies, and selects the one that is in his own best interest, although it may not necessarily be in the best interest of value-maximizing shareholders.

There are at least two types of benefits to managers that can arise from paying workers more. First, higher wages can make relationships with workers and their unions easier and more enjoyable (Jensen and Meckling (1976)). While any CEO probably wants to enjoy such benefits, we hypothesize that only those who are entrenched or lack financial incentives to keep down the wage bill will actually be able to enjoy such benefits. Second, higher employee compensation may protect a CEO's job or other control benefits against potential raiders. Pagano and Volpin (2005) present a model of how a manager, through a high-wage policy, can create a management-worker alliance as protection against control threats.

[1] Holderness and Sheehan (1988) show that executives owning majority blocks receive larger salaries than executives in similar firms where shareholdings are more dispersed. Core, Holthausen, and Larcker (1999) present evidence consistent with CEOs at firms with greater agency problems between shareholders and managers receiving higher pay. Bertrand and Mullainathan (2000, 2001) report evidence of a "skimming model" in which CEOs working for poorly governed firms are able to pay themselves higher wages.

Data availability is an obstacle to any study of the effects of managerial entrenchment on workers' pay.[2] We overcome this obstacle by combining several databases with detailed information on firms, subsidiaries, and workers in Sweden. Data on CEOs' control and incentives (measured by their votes and cash flow rights ownership, respectively) come from the Swedish Securities Register Center, which keeps a register of all shareholders of Swedish public firms. Data on workers' pay and other worker and subsidiary characteristics are from Statistics Sweden's databases. Matching these databases results in a large employer-employee panel of close to two million firm-subsidiary-worker-year observations, which enables us to test theoretical predictions regarding managerial entrenchment and workers' pay.

We find that managerial entrenchment affects workers' pay: CEOs with more control pay their workers more, but financial incentives through ownership of more cash flow rights mitigate such behavior. These findings do not seem to be driven by productivity differences across workers, subsidiaries, or firms, and are unaffected by a series of robustness test. Further evidence suggests that higher pay comes with non-pecuniary private benefits for CEOs, such as lower-effort wage bargaining with aggressive workers and their unions. Moreover, we find that entrenched CEOs pay more to employees who are closer to them in the firm's hierarchy, such as CFOs, vice-presidents and other executives, and white-collar workers who work at or close to the corporate headquarters. Our evidence is consistent with an agency model in which managers have a taste for both profits and highly paid employees, as suggested by Jensen and Meckling (1976) and Thaler (1989), and implies that corporate governance can be of importance for labor market outcomes such as workers' pay.

[2] Consider for example wage data for U.S. firms. Compustat only reports *firm-level* wage data (Item #42; "Labor and related expenses") for about 18% of all available firm-year observations during the period 1995-2005. Most importantly, an analysis of these data suggests that companies reporting wages are not a random sample, with large, regulated, and financial firms being vastly overrepresented.

Our paper is most closely related to the recent work by Bertrand and Mullainathan (1999, 2003), who show that there was a significantly larger increase in the wage bill for firms incorporated in states that passed antitakeover laws in the U.S. in the 1980s than for a control group.[3] Our evidence complements theirs in that we find a relation between CEOs' control and financial incentives through cash flow rights ownership, respectively, and workers' pay. Moreover, by using worker-level data and examining which groups of employees get paid more by entrenched managers, our study is able to provide new evidence on *why* entrenched managers want to pay their workers more.

The rest of the paper is organized as follows. Section II provides theoretical arguments for why the separation of ownership and control between shareholders and managers may affect workers' pay. Section III provides a brief institutional background. Section IV describes the construction of our matched employer-employee panel data set and provides summary statistics. Sections V and VI report our results, and perform robustness tests. Section VII concludes and suggests some directions for future research.

II. Agency Theory and Workers' Pay

There are at least two types of potential benefits to managers from higher workers' pay: easier and more enjoyable worker relationships, and protection against control threats. In this section, we provide theoretical arguments for such benefits.

[3] In addition, Krueger (1991) investigates the effect of ownership structure on wages in the fast-food industry and reports that company-owned stores pay higher wages than franchises do. Since monitoring of workers is more difficult in company-owned stores than in franchises, Krueger suggests an efficiency wage explanation for his results. Since the separation of ownership and control is also more severe in company-owned stores than in franchises, the results may alternatively be supportive of agency problems between shareholders and managers affecting workers' pay.

A. Easier and More Enjoyable Worker Relations

Jensen and Meckling (1976) argue that managers' non-pecuniary private benefits include "the attractiveness of the secretarial staff, the level of employee discipline, …, personal relations ('love', 'respect', etc.) with employees" (p. 312). One way of enjoying such private benefits is to pay workers more. For example, while the manager himself bears the full cost of putting effort into wage bargaining with aggressive unions and their workers, the cash flow gain from a lower wage bill goes to the firm's shareholders, not the manager, unless the manager owns a substantial fraction of the firm's cash flow rights. The manager may also value, more than shareholders do, worker loyalty and better CEO-employee relationships at or outside of work, in particular with the manager's co-workers, such as other executives or employees among the manager's staff or at the corporate headquarters.

While any manager probably wants to enjoy these labor-market related private benefits, we hypothesize that only those who are entrenched or lack financial incentives to keep down the wage bill will actually be able to do so. Thus, we predict workers' pay to be positively related to measures of CEO control, but negatively related to measures of managers' financial incentives, such as ownership of cash flow rights in the firm.

B. Protection against Control Threats

Another theoretical argument why some managers may want to pay their workers more has been suggested by Pagano and Volpin (2005). They model how higher employee compensation can protect a manager's job or other control benefits against pressure from outside shareholders and potential raiders. Through generous long-term wage contracts, managers can create a management-worker alliance and turn workers and their unions into an antitakeover mechanism: the inability to renege worker wages transforms the firm into an unattractive

takeover target.[4,5] Workers prefer the incumbent manager to a raider, and they can trust him, as the high-wage policy is in the manager's own best interest.

In Pagano and Volpin's model, a manager who values his job and other control benefits, but who owns a stake lower than that required for control, may use a high-wage policy as an antitakeover mechanism. Thus, following Pagano and Volpin, we hypothesize that workers' pay is negatively related to measures of CEO control. Managers who are in control or who are otherwise not subject to any takeover pressure are not expected to use a high-wage policy.

III. Institutional Background

In this section, we briefly describe the institutional background and explain why it is suitable for testing theoretical predictions regarding managerial entrenchment and workers' pay.

A. Managerial Entrenchment and Firms' Ownership Structures

Disentangling the effect of managerial entrenchment due to ownership of control rights (votes) from the alignment-of-interest effect due to ownership of cash flow rights is problematic, if not impossible, in a one-share-one-vote setting. The task is made somewhat easier in an environment where there are frequent deviations from one-share-one-vote. Sweden provides one such setting. As pointed out by Bebchuk, Kraakman, and Triantis (2000), such deviations can stem from three sources: dual-class shares, cross ownership, and stock pyramids. In Sweden,

[4] Although there is some anecdotal evidence from the U.S. suggesting that raiders can slash wages after takeovers (e.g., the famous case of Carl Icahn in TWA during the 1980s reducing compensation to pilots and flight attendants), there is little systematic evidence that raiders on average are able to reduce workers' pay after hostile takeovers (e.g., Rosett (1990)). Labor market regulations, contracts, or other frictions may make it costly for raiders to renege or breach preexisting wage and benefits contracts, thereby suggesting that a high-wage policy may, at least in principle, be used as a credible antitakeover mechanism.

[5] A management-labor alliance may also arise from workers' ownership of employer stock. See Rauh (2006) for evidence that employee ownership of own-company stock in pension plans reduces takeover probabilities.

dual-class shares drive the divergence:[6] some CEOs own both "A shares" with up to 1,000 votes per share and "B shares," others hold the same levels of votes and cash flow rights, and still others own no shares, thus creating variation in CEOs' control and financial incentives which is suitable for testing theoretical predictions regarding managerial entrenchment and workers' pay.

Managers who are entrenched can enjoy many types of private benefits, of which those related to the labor market is only one possibility.[7] The value of higher workers' pay as a benefit to a CEO depends on institutions and economic conditions, and may vary across institutional environments. Higher workers' pay may be a relatively more valuable benefit in countries where outright stealing is costly due to stricter legal and tax enforcement. In line with Jensen and Meckling's (1976) arguments, the value to a CEO of lower-effort wage bargaining and easier labor and union relationships are for example higher when workers and unions are more aggressive and hostile. Furthermore, in line with Pagano and Volpin's (2005) arguments, the value of a high-wage policy as an antitakeover mechanism might be higher in countries where the takeover pressure is higher. Thus, while the value of private benefits related to the labor market may vary depending on the institutional environment, there is no reason to expect that such benefits have a value only in the setting which we study in this paper.

B. Labor Market Structure

Like in many European countries, centralized binding collective agreements between employer associations and unions were part of the wage-setting process in Sweden after World War II. When pay is set by centralized bargaining there is little room for wages to be affected by

[6] In many European countries, such as Italy (e.g., Zingales (1994)) and to some extent also the U.S. (e.g., Gompers, Ishii, and Metrick (2006)), the separation of ownership and control arises through dual-class shares. In contrast, in East Asia the divergence often stems from stock pyramids (e.g., Claessens, Djankov, and Lang (2000)).
[7] See Dyck and Zingales (2004) for an international comparison of private benefits.

managers' private benefits from higher employee compensation. However, a regime shift in labor relations took place in 1990 when the Swedish Employers' Confederation decided to no longer participate in centralized wage negotiations. This decision came after wages in the late 1980s had started to drift away from centralized agreements. During the period we study, the fraction with firm- and firm/industry-level negotiations averages 71-85% (96-99%) among blue-collar (white-collar) workers, meaning that wages are largely determined at the firm level.[8]

Most importantly, the 1990 regime shift provides exogenous variation in CEOs' ability to increase workers' pay, which we can exploit in our tests. We predict a stronger relation between managerial entrenchment and workers' wages under a decentralized regime than under a centralized regime, because entrenched CEOs then have the ability to pay their workers higher wages if they so choose.

IV. Data

A. Matched Employer-Employee Panel Data Set

We combine data on public firms, their subsidiaries, and workers into a large matched employer-employee data set.[9] The Appendix explains the structure of the data set. Data on workers and subsidiaries come from Statistics Sweden's databases, compiled from government-registers such as the financial statistics (FS), the regional labor market statistics (RAMS) and the wage statistics (LS). Each worker is linked to the subsidiary where he/she works through a *personnummer* (corresponding to U.S. Social Security Numbers). Each year, the data set contains a random sample of about 50% of the workers between 18 and 65 years. Each

[8] Iversen (1998) constructs an index of centralization of wage negotiations. Prior to 1990, Sweden was oftentimes in the "centralized" category, but after 1990, Sweden is classified as "intermediary centralized" together with many other countries, such as Austria, Belgium, Denmark, Finland, Germany, the Netherlands, and Norway.

[9] In Sweden, these subsidiaries (*dotterbolag*) are legal entities which make up a firm. A worker is employed in a subsidiary which, in turn, belongs to a firm. In practice, a subsidiary is a business unit or division. Thus, our data set allows us to control for economic conditions specific to each of a firm's subsidiaries.

subsidiary is linked to the public firm to which it belongs via an *organisationsnummer* (corresponding to U.S. Employer Identification Numbers). Data are available for 1995-2002, so an observation in our data set is a firm-subsidiary-worker-year. Because misreporting is prosecuted and these data have been subjected to quality controls by statisticians at Statistics Sweden, measurement errors should be rare. We exclude banks and insurance companies as they are subject to special accounting rules and regulations.

The data set contains information on worker characteristics such as compensation, work hours, education, experience, gender, and occupation. The variable *Wage* is defined as the "gross real monthly full-time-equivalent compensation" for an employee. Gross monthly nominal compensation is pre-tax earnings (wage/salary, bonus, overtime, supplementary allowance for unsocial hours and shift work, etc.). Fringe benefits are also included, so it seems unlikely that important employment-related benefits have been excluded from our wage variable. Nominal compensation is deflated by the CPI to get real compensation as of the end of 1995. Data on other firm and subsidiary characteristics come from Statistics Sweden, MM Partners and Findata, the main providers of stock market and accounting data for research purposes in Sweden.

B. Data on CEOs' Control and Incentives

We define *CEO Control* to be one if the CEO owns more votes than all other 5% blockholders together, and zero otherwise.[10] This variable captures the theoretical notion of a CEO being either "in control" or "not in control" and is a conservative measure because a CEO

[10] One issue is how to classify "ESOP-like" or employee pension plan ownership. In our sample, there is ESOP-like ownership in only five firms. In two of them, the CEO is in control regardless of whether the ESOP-like shares are included as part of the CEO's ownership. As a robustness test, we have verified that our results are unaffected if we include the ESOP-like shares with the CEO ownership when defining CEO control.

with more votes than other 5% blockholders is clearly entrenched because he can out-vote other blockholders (Cronqvist and Nilsson (2005)). This measure takes the firm's control structure into account rather than arbitrarily defining, say, 20% of the votes as a cutoff for being in control. As any empirical definition of managerial control is subject to the caveat that it is but one out of many possible proxies, we perform several robustness tests. We define *CEO Incentive* as the CEO's fraction of the firm's cash flow rights. This variable is a measure of the CEO's financial incentives and the extent to which the manager bears the full cost of a high-wage policy.[11] The CEO control and incentive variables are based on the firm's ownership structure at the beginning of the year.

C. Summary Statistics

Table I summarizes the data by year, industry, and region. Panel A shows that there are 285 firms, 1,335 subsidiaries, and 584,591 workers in our data set. Panel B shows that the most common industries belong to the manufacturing sector. The two most common industries are "Manufacturing of motor vehicles, trailers and semi-trailers" and "Manufacturing of radio, television and communication equipment," which include large well-known firms such as Scania and Ericsson. Panel C shows that 41.6% of the worker-years are from the Stockholm region.

Table II reports variable definitions and summary statistics for firm (Panel A), subsidiary (Panel B), and worker (Panel C) characteristics. The CEO control and incentive variables and the wage variable are of particular interest. 19.5% of the firm-year observations have a CEO

[11] Starting in the early 1970s, the Swedish Securities Register Center keeps a register of all shareholders of Swedish public firms. Swedish ownership data are therefore very detailed. Since 1985, news paper reporters Sven-Ivan Sundqvist and Anneli Sundin compile raw data for each year in order to create "ownership coalitions," appropriately accounting for indirect shareholdings through public or private firms, ownership by family members and foundations, and so on. The data set on CEO control and incentives used in this paper was originally hand-collected from Sundqvist and Sundin's (1995-2002) publications "Owners and Power in Sweden's Listed Companies" by Cronqvist and Nilsson (2003), whose database has been used by several other researchers in finance.

with more control rights than all other blockholders together. The mean ownership of votes (cash flow rights) is 12.3% (7.0%). Conditional on being a 5% blockholder, the mean ownership of votes (cash flow rights) is 45.7% (26.1%). Across all measures of control and incentives, we see that the variation is substantial. For example, for *CEO Votes* (*CEO Incentive*), the maximum is 92.0% (78.1%) and the minimum is 0% (0%).[12] Finally, we see that the mean monthly wage is 21,404 kronor (corresponding to an annual average wage of $38,624), and the standard deviation is 8,653 kronor (as of 12/31/1995).

V. Results

A. Model Specification

Our goal is to estimate the wage differential across firms with more and less entrenched managers. We therefore use the following model specification:

$$\begin{aligned} \log\ Wage_{ijkt} = {} & \theta Year_t + \gamma Worker_{it} + \delta Subsidiary_{jt} \\ & + \beta_C \left(CEO\ Control\right)_{kt} + \beta_I \left(CEO\ Incentive\right)_{kt} + \varepsilon_{ijkt} \end{aligned} \tag{1}$$

where *i* indexes workers, *j* indexes subsidiaries, *k* indexes firms, and *t* indexes years. $Wage_{ijkt}$ is a worker's wage as previously defined, $Year_t$ are year fixed effects, $Worker_{it}$ is a vector of worker characteristics, $Subsidiary_{jt}$ is a vector of subsidiary characteristics (including 49 two-digit industry and seven region dummies), $\left(CEO\ Control\right)_{kt}$ and $\left(CEO\ Incentive\right)_{kt}$ measure the variation in the extent of managerial entrenchment across observations, and ε_{ijkt} is an error term.

[12] The variance inflation factors (VIFs) for both *CEO Control* and *CEO Incentive*, as well as the mean VIF for all explanatory variables included in our baseline regression, are well below the commonly used threshold of 10, thereby suggesting that there is no significant multicollinearity problem in our data set in spite of the fairly high correlation (0.84) between our CEO control and incentive variables.

Our specification controls for fixed differences across industries and regions.[13] The year dummies control for aggregate variation. The estimates of the effects of CEO control and incentives, β_C and β_I, are of particular interest in the following analysis. To control for serial and cross-correlation between workers within the same firm, we use White (1980) robust standard errors adjusted for clustering of the observations at the firm level.[14]

B. Evidence on Managerial Entrenchment and Workers' Pay

In Table III, we report evidence on the effects of CEO control and incentives on workers' pay. In column (1), we estimate equation (1), only controlling for industry, region, and year fixed effects. In column (2), we include worker-level controls. This is a standard Mincer (1974) equation and includes education, experience, and experience squared, as proxies for productivity and human capital differences across workers. We also include a gender indicator variable. In column (3), we include a set of subsidiary-level controls. We include proxies for productivity (log of sales per employee), capital intensity (fixed assets, defined as net property, plant, and equipment, per employee), human capital intensity (the proportions of high- and low-skilled workers), and subsidiary size (log of the number of subsidiary-level employees). Finally, in column (4), we include both worker- and subsidiary-level controls.

Before discussing the effects of managerial entrenchment, let us briefly review some of the other determinants of workers' wages. More education and experience are associated with higher pay: those with at least an undergraduate college education are paid approximately 65.5% more than those with at most an elementary school education, and ten years of work experience

[13] An alternative specification could include firm fixed effects. However, as managerial ownership only changes slowly over time, such a specification is problematic. See Zhou (2001) for a discussion of the firm fixed effects regressions employed by Himmelberg, Hubbard, and Palia (1999) in a similar setting.

[14] This choice is based on the arguments and simulations reported in Petersen (2007). Our results are somewhat stronger if we estimate coefficients and standard errors using the Fama and MacBeth (1973) procedure.

is associated with about 22% higher pay. Consistent with a gender wage gap, we find that women are paid on average 15% less than men. Higher-paying subsidiaries seem to have a higher productivity and capital intensity, and are also more human capital intensive, like in the study by Abowd, Kramarz, and Margolis (1999). The coefficient on our proxy for subsidiary size, the log of the number of employees, is positive, but not statistically significant.

Next, we turn our focus to the effects of managerial control. We find that CEOs with more votes than all other 5% blockholders combined pay higher wages to their firms' workers: the estimated coefficient on *CEO Control* is large and statistically significant at all levels in columns (1) to (4). The estimated effect is also economically large. For example, the estimate in column (4) implies that a CEO in control pays about 5%, or $1,900 (as of 12/31/1995), higher average annual wages, all else equal. The table also provides estimates of the effects of managers' financial incentives to keep the wage bill down. Managers who own more cash flow rights in their firms pay lower wages. As for managerial control, the effect is economically large. The estimate in column (4) implies that an increase in *CEO Incentive* by one standard deviation (14.7%) is associated with 2.5% lower wages, all else equal. These results suggest that entrenched managers pay their workers higher wages: workers' pay is positively related to CEO control, but negatively related to CEOs' financial incentives through ownership of cash flow rights in the firm. This evidence is consistent with an agency model in which managers have a taste for both profits and highly paid employees, as suggested by Jensen and Meckling (1976) and Thaler (1989).

We summarize without directly reporting some robustness tests that we have performed. First, we find that our results are somewhat stronger if we rather use three-digit, rather than two-digit, industry fixed effects. Second, we have included fixed effects corresponding to 14

"collective bargaining agreement areas" as a labor-market-based industry classification, but the results are similar. Third, we add fixed effects for 26 broad classes of occupations or professions defined by Statistics Sweden, e.g., "engineering work," to control for sorting of workers that is not captured by observable worker-level characteristics already in the model. Again, our results are similar. Finally, to deal with concerns that we put a lot of weight on firms with many employees and little weight on smaller firms, we estimate the baseline specification without the CEO variables, and then collapse the worker-year residuals by firm-years and estimate the effect of CEO control and incentives in this collapsed data set, but the results are unaffected. As another alternative, we estimate the basic wage regression without the CEO variables, but with firm fixed effects, and then we regress the fixed effects on firm-average CEO control and incentives; again, the results are unaffected.

C. Wage Policy and Protection against Control Threats

Because workers' pay seems to be positively correlated with managerial control, our evidence so far does not support the prediction that CEOs who control a stake lower than that required for control are the ones who use a high-wage policy as an antitakeover mechanism. However, in Table IV we provide some additional tests of the takeover-entrenchment hypothesis. We first substitute the *CEO Control* variable for other measures to test if our above results were driven by a particular proxy for managerial control. In column (1), we use *CEO Votes*, defined as the CEO's fraction of the firm's votes. In column (2), we use *CEO Largest Owner*. In column (3), we use the indicator variable *CEO ≥20% Votes* to define "practical control" because this measure is most directly comparable to the control cutoff in the work by La Porta, Lopez-de-

Silanes, and Shleifer (1999). We see in the table that none of these alternative measures change the result that more CEO control is associated with higher employee compensation.

Another test of the takeover-entrenchment hypothesis involves identifying firms that are subject to more takeover pressure, in which case a management-labor alliance as protection against a control threat might be most valuable. In column (4), we therefore include an indicator variable, *Takeover Target*, that is one if the firm was subject to a tender offer in year *t*, and zero otherwise. These data come from the "Stockholm Stock Exchange Fact Books" (1995-2002). In column (5), we include another indicator variable, *Takeover Target Any Year*, that is one if the firm was subject to a tender offer in any year 1995-2002, and zero otherwise. However, the evidence of statistically insignificant takeover target variables is inconsistent with the takeover-entrenchment hypothesis.[15]

D. Alternative Explanations: Effects of Firm Characteristics

In this section, we consider the effects of firm-level characteristics that may be related to managerial entrenchment or workers' pay. Table V reports our results.

D.1. Productivity

Recall that in our baseline specification we include several proxies for productivity, capital intensity, and human capital intensity at the subsidiary level. However, *firm-level* productivity can also affect employee compensation. Entrenched CEOs may provide "stakeholder protection," thereby providing workers an incentive to make more firm-specific

[15] As we discussed in section III.A., the value to a manager from a high-wage policy as an antitakeover mechanism might be higher in institutional environments where the takeover pressure is overall higher, and there might be relatively few hostile takeovers in Sweden compared to for example the U.S. However, since there have been at least some hostile takeover attempts in Sweden (e.g., the recent attempt by the German truck manufacturer MAN to purchase the Swedish truck manufacturer Scania), it can be argued a priori that a high-wage policy is one way for managers to protect themselves against a control threat also in the setting studied in this paper.

human capital investments (Shleifer and Summers (1988)), which may increase the firm's profitability, and workers may therefore be paid more because of rent-sharing. In column (1) of the table, we therefore control for firm-level productivity by adding the firm's *Return on Assets* and *Market-to-Book Ratio*, as they are common proxies for firms' operating profitability and growth opportunities. We also control for the log of *Firm Size* and *Growth in Firm Size* as other proxies for productivity differences across firms. Finally, we control for the *Fixed Assets / Total Assets* as capital intense firms tend to be more productive, all else equal. We find that the relation between managerial entrenchment and workers' pay is not driven by firm-level productivity differences.

D.2. Employment Risk

Besides productivity, the other main alternative explanation is that the higher pay is a premium for a higher risk of being (arbitrarily) fired by a powerful and entrenched CEO. We address this explanation by controlling for "employment risk." In column (2), we therefore include *Employment Risk*, defined as the coefficient of variation in the number of employees at the firm level.[16] We find that the relation between managerial entrenchment and workers' pay remains after controlling for employment risk. Thus, it seems unlikely that the higher pay is a premium for a higher risk of being fired by an entrenched CEO.

D.3. Capital Structure

A firm's capital structure may also be related to managerial entrenchment (e.g., Stulz (1988) and Berger, Ofek, and Yermack (1997)). Moreover, debt may be used in bargaining with workers and their unions to keep wages down (e.g., Perotti and Spier (1993), and Matsa (2006)).

[16] The result is similar if we rather control for the net change in the number of employees at the firm level.

Therefore, we also control for the proportion of debt in the firm's capital structure. In column (3), we add *Leverage*, defined as total liabilities divided by total assets (book value). Consistent with Hanka (1998), who analyze firm-level data on workers' wages in the U.S., we find that firms with more debt pay their workers significantly lower wages. This result may arise because a higher debt level gives the CEO more bargaining power vis-à-vis workers due to the increased risk or because more debt constrains managers from diverting free cash flow (in this case through more generous wages), as argued by Jensen (1986). Most importantly, the relation between managerial entrenchment and employee compensation remains after controlling for differences in firms' capital structures.

D.4. Employee Board Representation

Employees can act as a control threat to the CEO when they are represented on the firm's board of directors. In this case, the private benefit to the CEO from a high-wage policy comes from better job protection, i.e., a lower probability of being dismissed by the board, because the CEO has "bribed" the union board representative through more generous compensation contracts to the union's workers. In column (4), we include an indicator variable *Employee Board Representation* that is one if a union member sits on the board, and zero otherwise. These data come from Sundqvist and Sundin's (1995-2002) publications "Directors and Auditors in Sweden's Listed Companies." We find that the relation between managerial entrenchment and workers' pay is not driven by employee board representation.

D.5. Blockholders

We now turn to the effects of blockholders on workers' pay. First, while Jensen and Meckling (1976) argue that managers can derive non-pecuniary private benefits related to higher

workers' pay, we do not expect large shareholders that are not CEOs to enjoy such benefits. In column (5), we include an indicator variable, *Non-CEO Controlling Owner*, which is one if a blockholder other than the CEO owns more votes than all other 5% blockholders together, and zero otherwise. We also include *Non-CEO Controlling Owner Incentive*, to measure such blockholders' financial incentives through cash flow ownership in the firm. We find opposite effects on workers' pay of CEOs and non-CEOs that are in control of a firm.

Second, in column (6) we examine the effects of non-management blockholders' presence in a firm, even if those blockholder can not be considered to be in control. We distinguish between individual and institutional blockholders. *Non-Management Individual Blockholder* is one if an individual who is not part of management controls more than 5% of the votes, and zero otherwise. *Institutional Blockholder* is one if an institution has more than 5% of the votes, and zero otherwise. This category includes banks, money managers, insurance companies, and so on. We find that both these blockholder categories are associated with lower employee compensation: non-management individual (institutional) blockholders are associated with about 4.6% (3.5%) lower employee compensation. Our evidence on blockholders is consistent with the argument that only managers can enjoy private benefits related to higher workers' pay.[17]

D.6. Other Firm Characteristics

In column (7), we examine other firm-level characteristics which theory and previous empirical evidence suggest may be related to CEO entrenchment or wages. First, because

[17] This result does not imply that non-management blockholders do not exploit minority shareholders. It merely suggests that non-management blockholders might exploit minority shareholders in ways other than through higher pay to the firm's workers. In fact, non-managerial blockholders may have an incentive to monitor management (e.g., Shleifer and Vishny (1986)) to keep the firm's wage bill down precisely so that more cash flows will be available in the firm for projects which give them valuable private benefits.

Schoar (2002) reports that workers in diversified firms are paid a premium and since entrenched CEOs may engage in more conglomerate-building, we control for *Diversification*. Second, a proxy for a firm's strategic position as "leader vs. follower" is *Export Intensity* because firms that export a larger percentage might be more likely to be market leaders. A possible proxy for "top end vs. bottom end" is *R&D Intensity* because firms that spend more on R&D are more likely to be top end producers or service providers.[18] Third, we control for *Wage Dispersion*, because tournament theories (e.g., Lazear and Rosen (1981)) suggest that in firms with entrenched CEOs, the probability of getting the "prize," i.e., becoming the CEO, is smaller. Thus, the wage dispersion might be smaller in firms with entrenched CEOs, and therefore the average wage may have to be higher as a compensating mechanism. Finally, we control for *CEO Age* because older CEOs may have weaker incentives to put effort into keeping down the firm's wage bill, and at the same time, older CEOs may be more entrenched as they have accumulated more votes. However, we see in the table that none of these additional firm characteristics can explain the relation between managerial entrenchment and workers' pay.

E. Evidence on Causality

So far we have shown that entrenched managers pay their workers more, controlling for a series of worker-, subsidiary-, and firm-level characteristics. In this section, we provide evidence on the issue of causality.

[18] Data on export and R&D intensities have been aggregated from the subsidiary level to the firm level, and are available only for the domestic parts of firms' operations.

E.1. Changes in Managerial Entrenchment and Job Switches

First, we examine changes in workers' pay following changes in managerial entrenchment and job switches. Practically, we estimate equation (1) with worker fixed effects included. In this model specification, identification of managerial entrenchment effects on workers' pay comes from (i) within-firm changes in CEOs' control status and cash flow rights ownership and (ii) workers changing jobs from a firm with one type of CEO control status to another. Because of the short time period available for analysis (1995-2002), only 10.2% of the firms experience a change in CEO control status, and only 11.1% of the workers switch jobs from one firm to another (with even fewer going from a firm with one CEO control status to another). As can be seen in column (1) of Table VI, the estimated coefficient on *CEO Control* is still positive in the worker fixed effects specification, although it is not significant at conventional levels (p-value = 0.175). The coefficient on *CEO Incentive* is still negative and statistically significant.

We have two concerns with this model specification. First, we do not expect changes in workers' pay to take place immediately following, e.g., the arrival of a CEO with different control status and cash flow rights ownership. In columns (2) to (4), we therefore include the *CEO Control* and *CEO Incentive* variables lagged one, two, and three years, respectively. We find that the effects are statistically significant and become larger in economical terms as the lag is increased. Second, identification comes in part from workers changing jobs. The choice to switch jobs might be endogenously driven by higher pay, and thus overstate the effect of managerial entrenchment on workers' pay. In column (5), we therefore include individual worker-firm fixed effects, i.e., "spell fixed effects," so that the identification comes from only changes in CEOs' control status and cash flow rights ownership. CEO changes can reasonably be assumed exogenous from the perspective of an individual worker. As an alternative, in

column (6), we exclude workers switching jobs and run a standard worker fixed effects regression. We find that the estimated coefficients on *CEO Control* and *CEO Incentive* are still significant and economically large. Our interpretation of these results is that managerial entrenchment affects workers' pay, but the effects emerge over time as a CEO has the opportunity to make his own imprints on a firm's wage policy.[19]

E.2. Centralized versus Decentralized Wage Bargaining Regimes

To more directly address the question of causality, we next exploit the shift in wage bargaining regimes described in Section III.B. This regime shift provides exogenous variation in CEOs' ability to increase workers' pay. In column (1) of Table VII, we present the relation between *CEO Control* and *CEO Incentive*, respectively, and workers' pay in 1990, when wages were largely determined by centralized negotiations. We do not have worker-level data for 1990, thereby restricting our analysis to the subsidiary level. To provide a direct comparison with the results for the 1995-2002 period with decentralized wage bargaining, we report results from collapsing our data set at the subsidiary level and re-estimating equation (1) without worker-level controls in column (2). We find different results for the two bargaining regimes: there is no relation between managerial entrenchment and workers' pay under the centralized regime, but a significant relation under the decentralized regime. This analysis provides more direct evidence that entrenched managers pay their workers more when they are able to.

VI. Why Do Entrenched Managers Pay Their Workers More?

In this section, we examine which groups of employees get paid more by entrenched managers to provide evidence on why entrenched managers pay their workers more. More

[19] In the rest of the paper, we therefore focus on CEOs who have been in a firm at least three years.

specifically, we analyze if wages differ across groups of workers in ways that are consistent with private benefits to the manager from easier and more enjoyable worker relations. Table VIII reports our results.

A. Easier Labor and Union Relations

We hypothesize that the value of the benefit to a CEO of lower-effort wage bargaining is higher when workers and their unions are more aggressive because this is when it is most costly for the manager to exert effort to pursue a policy of a lower wage bill. In Sweden, like in many other European countries, the degree of unionization is high: in year 2000, 84.7% (79.7%) of blue-collar (white-collar) workers were unionized, according to survey evidence by LO (2000). Most importantly, based on their conflict patterns, blue-collar unions are significantly more aggressive than white-collar unions. During the 1995-2002 period, 111 (87%) labor market conflicts (blockades/ boycotts, strikes, wildcat strikes, lockouts, overtime bans, slowdowns) were attributed to blue-collar unions (LO) and only 16 (13%) to white-collar unions (TCO and SACO).[20]

Comparing the estimates in columns (1) and (2) of the table, we find that the effects of *CEO Control* and *CEO Incentive* are somewhat larger and statistically more significant for blue-collar than for white-collar workers: 0.069 versus 0.047 for *CEO Control*, and −0.207 versus −0.133 for *CEO Incentive*. While we do not want to interpret this evidence too aggressively because firm- and worker-level data on unionization and labor market conflicts are not available, we note that the firms, subsidiaries, and workers in our data set were sampled to be representative of the population. Thaler (1989) noted that "the idea that managers would reduce

[20] These data were collected from the National Conciliation Board and the National Mediation Office by Henrik Lindberg at the Ratio Institute in Stockholm.

profits to enrich their employees, especially the blue collar workers far removed from the manager's milieu, is an enigma" (p. 187). The above evidence suggests an economic reason for why entrenched managers may want to pay their blue-collar workers more: private benefits to the CEO from easier labor and union relations.

B. More Enjoyable CEO-Employee Relationships

We also hypothesize that the value of the private benefits to a CEO of more enjoyable employee relationships is higher for employees with whom the CEO interacts more frequently on a regular basis. A manager may value, more than shareholders do, better manager-employee relationships, in particular with the manager's own co-workers, such as other executives or employees among the CEO's staff or at the corporate headquarters. Because we cannot explicitly measure CEO-worker interaction frequencies in our data, we propose hierarchical distance and geographical distance between a worker and the CEO as possible proxies for professional and social interactions. We hypothesize that managers interact more with employees who are closer to them in the corporate hierarchy and who work at or close to the corporate headquarters.

We measure hierarchical distance by considering whether an employee is an executive of the firm, i.e., CFOs, COOs, and division or business unit vice-presidents. This is the group of employees which CEOs are most likely to interact with. In column (3) of Table VIII, we find hierarchical distance to be of importance: the relation between managerial entrenchment and workers' pay is stronger for executives than for other white-collar workers. CEOs in control pay their executives almost 20% more.[21] The financial incentive effect is also strong when it comes

[21] Few of these executives are on the board of directors, so it is unlikely that the higher compensation acts as a "bribe" to allow the CEO to pay himself more.

to this group. Thus, we find that entrenched managers pay more to executives who are close to them in the corporate hierarchy, all else equal.

We measure geographical distance by considering whether a worker is working in the same area (i.e., municipality) as the firm's CEO.[22] While this definition includes anyone working among the CEO's staff or at the firm's headquarters, it can also include other workers if the firm has operations in the same area as the headquarters. In column (4), we find that entrenched CEOs pay more to workers who work close by. Finally, in columns (5) to (7) we find that the effects of managerial entrenchment on workers pay is strongest among white-collar workers and executives who work at or close to the corporate headquarters. The effects are weakest for blue-collar workers, possibly because CEOs are less likely to interact with blue-collar workers, even if they work close by. Thus, we find that entrenched managers pay more to white-collar workers and executives who work close to the corporate headquarters.[23]

Shleifer and Summers (1988) noted that it may be the case that "managers become 'addicted' to stakeholders who form such an important part of their life (in contrast to constantly changing shareholders)" (p. 54). The above evidence seems to be in line with such an argument: entrenched CEOs pay more to employees with whom they interact more frequently and on a regular basis, either at or outside of work.

VII. Conclusions

Using a large panel data set which matches public firms with detailed data on their workers, we find that CEOs with more control pay their workers more. Because financial

[22] There is a total of 290 municipalities, making these areas relatively small on average.
[23] These results are related to the recent evidence by Landier, Nair, and Wulf (2006), which suggests that CEOs and firms are generally "friendlier" towards employees that are located close to the corporate headquarter, in the sense that they are less likely to dismiss employees or divest operations that are close to the corporate headquarter.

incentives through cash flow rights ownership by a CEO are negatively related to employee compensation, we interpret the higher workers' pay as evidence of agency problems from the separation of ownership and control: if it were optimal for managers with more control to pay higher wages, they would pay even higher wages when they have more financial incentives to do so through more cash flow rights in their firms. Further evidence suggests that higher pay comes with non-pecuniary private benefits for a CEO, such as lower-effort wage bargaining with aggressive workers and their unions. Moreover, we find that entrenched CEOs pay more to those who are closest to them in the corporate hierarchy, and to executives and white-collar workers who work geographically closer to the corporate headquarters. Our evidence is consistent with an agency model in which managers have a taste for both profits and highly paid employees, as suggested by Jensen and Meckling (1976) and Thaler (1989), and implies that corporate governance can be of importance for labor market outcomes such as workers' pay.

Our evidence that entrenched CEOs prefer to pay higher wages rather than delivering larger residual cash flows to shareholders suggests that Bertrand and Mullainathan's (2000, 2001) notion of a "skimming model" in the pay-setting process may go beyond the CEO's own pay. Entrenched and otherwise poorly governed CEOs who have captured the pay-setting process seem to give higher pay also to their firm's employees. The effects of managerial entrenchment on compensation in public firms may therefore be much larger in dollar terms than previously considered, because the effects disseminate down and out in the corporation.

Several important questions are left for future empirical work. First, how does the institutional environment affect the value of private benefits to a CEO from higher workers' pay? Are the effects of managerial entrenchment stronger in some countries than in others, e.g., where unions are more aggressive, where the benefits of more enjoyable CEO-employee relationships

are greater, or where wage bargaining is more decentralized? Second, under what economic conditions do managers use a high-wage policy as an antitakeover mechanism? Finally, except for the recent work by Pagano and Volpin (2005) and Nair (2005), there is little theoretical modeling of the link between corporate governance and labor market outcomes, such as workers' pay and wage dispersion. The evidence of this paper suggests that more energy should be devoted to formal theoretical and empirical analysis of the interrelations between markets for capital and labor.

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Table I
The Matched Employer-Employee Data Set

The sample is a matched employer-employee panel data set collected from public firms in Sweden over the period 1995-2002. Section IV describes the sample in detail. Panel A reports the number of workers, subsidiaries, and firms by year. Panel B reports the distribution of workers across the ten most common industries. There are 49 industries, based on the European Union's two-digit standard classification of economic activities, *Nomenclature des Activités Économiques dans la Communauté Européenne* (NACE). Panel C reports the distribution of workers across regions, based on Statistics Sweden's classifications.

Panel A: Number of Workers, Subsidiaries, and Firms by Year

Year	Workers	Subsidiaries	Firms
1995	215,816	632	109
1996	257,001	412	103
1997	278,226	441	122
1998	253,441	441	136
1999	233,755	414	144
2000	252,874	450	150
2001	229,145	413	148
2002	220,310	386	153
Total year-observations	1,940,568	3,589	1,065
Unique observations	584,591	1,335	285

Panel B: Distribution of Workers across the Most Common Industries

Industry	%
Manufacturing of motor vehicles, trailers and semi-trailers	12.9
Manufacturing of radio, television and communication equipment	11.3
Construction	11.1
Manufacturing of pulp, paper and paper products	8.4
Manufacturing of machinery and non-electric equipment	8.2
Computer services (including software production and other related activities)	4.8
Manufacturing of basic metals	4.6
Other business services (e.g., legal, accounting, consulting, advertising)	4.5
Manufacturing of other transport equipment	3.6
Manufacturing of fabricated metal products, except machinery and equipment	2.5

Panel C: Distribution of Workers across Regions

Region	Definition	%
Stockholm	Metropolitan Stockholm and suburbs	41.6
Other metropolitan areas	Other metropolitan areas than Stockholm	23.7
Major cities	Municipality population ≥ 90,000 within a 30 km radius from the center	21.4
Mid-sized cities	90,000 > Municipality population ≥ 27,000 within a 30 km radius from the center, and population ≥ 300,000 within a 100 km radius	9.4
Smaller cities	90,000 > Municipality population ≥ 27,000 within a 30 km radius from the center, and population < 300,000 within a 100 km radius	3.0
Rural districts	Municipality population < 27,000 within a 30 km radius from the center	0.9

Table II
Summary Statistics

The sample is a matched employer-employee panel data set collected from public firms in Sweden over the period 1995-2002. Section IV describes the sample in detail. The table reports variable definitions and summary statistics for firm (Panel A), subsidiary (Panel B), and worker (Panel C) characteristics.

Panel A: Firm Characteristics (N=1,065)			
		Mean	St. dev.
CEO control and incentives			
CEO Control	1 if the CEO owns more of the firm's votes than all other 5% blockholders together, 0 otherwise	0.195	0.397
CEO Incentive	CEO's fraction of the firm's cash flow rights	0.070	0.147
CEO Votes	CEO's fraction of the firm's votes	0.123	0.241
CEO Largest Owner	1 if the CEO is the largest vote shareholder, 0 otherwise	0.219	0.414
CEO ≥20% Votes	1 if the CEO owns ≥20% of the votes, 0 otherwise	0.208	0.406
Founder	1 if the CEO is the firm's founder or belongs to the founder's family, 0 otherwise	0.177	0.381
Other firm-level characteristics			
Return on Assets	Earnings before interest, taxes, depreciation, and amortization / Total assets (book value)	0.096	0.163
Market-to-Book Ratio	(Market value of equity + Book value of debt) / (Book value of equity + Book value of debt)	1.88	2.05
Firm Size	Total gross sales (in billion kronor)	10.4	27.1
Growth in Firm Size	Log (Firm Size$_t$ / Firm Size$_{t-1}$)	0.121	0.469
Fixed Assets / Total Assets	Net property, plant, and equipment / Total assets	0.257	0.231
Employment Risk	Coefficient of variation in the number of employees at the firm level	0.188	0.230
Leverage	Total liabilities / Total assets (book value)	0.561	0.171
Employee Board Representation	1 if there is at least one union member on the board, 0 otherwise	0.623	0.484
Diversification	Number of two-digit industries in which the firm is operating	3.41	3.84
Export Intensity	Export sales / Sales	0.253	0.307
R&D Intensity	R&D expenses / Sales	0.759	16.7
Wage Dispersion	Coefficient of variation / 100 of monthly worker wages within the firm	0.080	0.037
CEO Age (N=1,055)	CEO's age (in years)	50.2	6.72
Non-Management Individual Blockholder	1 if an individual other than management owns ≥5% of the votes, 0 otherwise	0.583	0.493
Institutional Blockholder	1 if an institution owns ≥5% of the votes, 0 otherwise	0.331	0.471

Panel B: Subsidiary Characteristics (N=3,589)			
		Mean	St. dev.
Log (Sales / Employee)	Total gross sales / Employee (in million kronor)	7.31	0.790
Fixed Assets / Employee	Net property, plant, and equipment / Employees (in million kronor)	0.998	5.29
Employees	Average number of employees during the year	609	1,471
Proportion High-Skilled Workers	Fraction of workers with at least undergraduate college education	0.275	0.244
Proportion Low-Skilled Workers	Fraction of workers with at most 9 years of compulsory schooling	0.223	0.150

Panel C: Worker Characteristics (N=1,940,568)			
		Mean	St. dev.
Wage	Gross real monthly full-time-equivalent compensation, where monthly compensation is the sum of monthly net earnings, i.e., wage/salary, bonus, overtime, supplementary allowance for unsocial hours and shift work, and payroll taxes (in 1995 kronor).	21,404	8,653
Female	1 if the worker's gender is female, 0 otherwise	0.248	0.432
Education 1	1 if highest level of education is elementary school (<9 years), 0 otherwise	0.093	0.291
Education 2	1 if highest level of education is compulsory school (9 years), 0 otherwise	0.115	0.319
Education 3	1 if highest level of education is 2 years of upper secondary school, 0 otherwise	0.324	0.468
Education 4	1 if highest level of education is 3 years of upper secondary school, 0 otherwise	0.296	0.457
Education 5	1 if highest level of education is 4 years of upper secondary school, 0 otherwise	0.041	0.198
Education 6	1 if highest level of education is undergraduate or graduate college education, 0 otherwise	0.124	0.329
Education 7	1 if highest level of education is doctoral degree, 0 otherwise	0.007	0.084
Experience	Years since graduation from highest level of education	21.8	12.3

Table III
Evidence on Managerial Entrenchment and Workers' Pay

The table reports regressions of workers' pay on CEO ownership variables, controlling for worker and subsidiary characteristics, and fixed effects for industries, regions and years. The sample is a matched employer-employee panel data set collected from public firms in Sweden over the period 1995-2002. Section IV describes the sample in detail. The dependent variable is log (*Wage*), where *Wage* is the gross real monthly full-time-equivalent compensation (in 1995 kronor). *CEO Control* is 1 if the CEO owns more of the firm's votes than all other 5% blockholders together, 0 otherwise. *CEO Incentive* is the CEO's fraction of the firm's cash flow rights. *Education 2* to *Education 7* are dummy variables for levels of education. *Experience* is years since graduation from highest level of education. *Female* is 1 if the worker's gender is female, 0 otherwise. *Log (Sales / Employee)* is total gross sales / employee (in million kronor). *Fixed Assets / Employee* is net property, plant, and equipment / employees (in million kronor). *Employees* is the average number of employees during the year. *Proportion High-Skilled Workers* is the fraction of workers with at least undergraduate college education. *Proportion Low-Skilled Workers* is the fraction of workers with at most 9 years of compulsory schooling. Industry fixed effects are based on the two-digit NACE classification. Region fixed effects are based on Statistics Sweden's classification. We compute White's (1980) robust standard errors adjusted for clustering of the observations at the firm level. t-statistics are reported in parentheses. ***, **, * denote that the value is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table III − continued

	(1)	(2)	(3)	(4)
CEO Control	0.070	0.056	0.056	0.049
	(3.41)***	(3.80)***	(3.22)***	(4.07)***
CEO Incentive	−0.290	−0.204	−0.212	−0.169
	(4.54)***	(4.65)***	(4.41)***	(4.70)***
Worker Controls				
Education 2		0.035		0.034
		(8.43)***		(8.47)***
Education 3		0.076		0.071
		(13.69)***		(13.21)***
Education 4		0.196		0.186
		(15.75)***		(15.01)***
Education 5		0.254		0.239
		(24.49)***		(22.21)***
Education 6		0.504		0.483
		(36.54)***		(30.73)***
Education 7		0.713		0.689
		(52.94)***		(46.87)***
Experience		0.026		0.025
		(11.90)***		(11.46)***
Experience^2 / 100		−0.040		−0.040
		(10.48)***		(10.15)***
Female		−0.138		−0.138
		(21.90)***		(22.43)***
Subsidiary Controls				
Log (Sales / Employee)			0.035	0.032
			(6.95) ***	(6.84)***
Fixed Assets / Employee			0.002	0.002
			(1.75)*	(2.33)**
Proportion High-Skilled Workers			0.476	0.130
			(16.80)***	(3.99)***
Proportion Low-Skilled Workers			−0.132	−0.157
			(1.97)**	(3.00)***
Log (Employees)			−0.002	0.001
			(0.59)	(0.37)
Industry, region, and year fixed effects	Yes	Yes	Yes	Yes
N	1,940,568	1,940,568	1,940,568	1,940,568
Adjusted R-squared	0.191	0.487	0.227	0.494

Table IV
Wage Policy and Protection against Control Threats

The table reports regressions of workers' pay on CEO ownership variables and measures of takeover pressure, controlling for worker and subsidiary characteristics, and fixed effects for industries, regions and years. The sample is a matched employer-employee panel data set collected from public firms in Sweden over the period 1995-2002. Section IV describes the sample in detail. The dependent variable is log (*Wage*), where *Wage* is the gross real monthly full-time-equivalent compensation (in 1995 kronor). *CEO Votes* is the CEO's fraction of the firm's votes. *CEO Largest Owner* is 1 if the CEO is the largest vote shareholder, 0 otherwise. *CEO ≥20% Votes* is 1 if the CEO owns ≥20% of the votes, 0 otherwise. *CEO Incentive* is the CEO's fraction of the firm's cash flow rights. *CEO Control* is 1 if the CEO owns more of the firm's votes than all other 5% blockholders together, 0 otherwise. *Takeover Target* is 1 if the firm was a takeover target in a particular year. *Takeover Target Any Year* is 1 if the firm was a takeover target in any year during the sample period. Worker and subsidiary controls refer to the control variables included in column (4) of Table III. Industry fixed effects are based on the two-digit NACE classification. Region fixed effects are based on Statistics Sweden's classification. We compute White's (1980) robust standard errors adjusted for clustering of the observations at the firm level. t-statistics are reported in parentheses. ***, **, * denote that the value is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
CEO Votes	0.064				
	(2.07)**				
CEO Largest Owner		0.040			
		(3.06)***			
CEO ≥20% Votes			0.041		
			(3.34)***		
CEO Incentive	−0.159	−0.150	−0.149	−0.169	−0.169
	(2.40)***	(3.35)***	(3.45)***	(3.65)***	(3.86)***
CEO Control				0.049	0.049
				(3.31)***	(3.29)***
Takeover Target				0.002	
				(0.04)	
Takeover Target Any Year					−0.001
					(0.04)
Worker and subsidiary controls	Yes	Yes	Yes	Yes	Yes
Industry, region, and year fixed effects	Yes	Yes	Yes	Yes	Yes
N	1,940,568	1,940,568	1,940,568	1,940,568	1,940,568
Adjusted R-squared	0.494	0.494	0.494	0.494	0.494

Table V
Effects of Firm Characteristics

The table reports regressions of workers' pay on CEO ownership variables, controlling for worker, subsidiary and firm characteristics, and fixed effects for industries, regions and years. The sample is a matched employer-employee panel data set collected from public firms in Sweden over the period 1995-2002. Section IV describes the sample in detail. The dependent variable is log (*Wage*), where *Wage* is the gross real monthly full-time-equivalent compensation (in 1995 kronor). *CEO Control* is 1 if the CEO owns more of the firm's votes than all other 5% blockholders together, 0 otherwise. *CEO Incentive* is the CEO's fraction of the firm's cash flow rights. *Return on Assets* is earnings before interest, taxes, depreciation, and amortization / total assets (book value). *Market-to-Book Ratio* is (market value of equity + book value of debt) / (book value of equity + book value of debt). *Firm Size* is total gross sales (in billion kronor). *Growth in Firm Size* is Log (*Firm Size*$_t$ / *Firm Size*$_{t-1}$). *Fixed Assets / Total Assets* is net property, plant, and equipment / total assets. *Employment Risk* is the coefficient of variation in the number of employees at the firm level. *Leverage* is total liabilities / total assets (book value). *Employee Board Representation* is 1 if there is at least one union member on the board, 0 otherwise. *Non-CEO Controlling Owner* is 1 if a blockholder other than the CEO owns more of the firm's votes than all other 5% blockholders together, 0 otherwise. *Non-CEO Controlling Owner Incentive* is the blockholder's fraction of the firm's cash flow rights. *Non-Management Individual Blockholder* is 1 if an individual other than management owns ≥5% of the votes, 0 otherwise. *Institutional Blockholder* is 1 if an institution owns ≥5% of the votes, 0 otherwise. *Diversification* is the number of two-digit industries in which the firm is operating. *Export Intensity* is export sales / sales. *R&D Intensity* is R&D expenses / sales. *Wage Dispersion* is the coefficient of variation of monthly worker wages within the firm / 100. *CEO Age* is the CEO's age (in years). Worker and subsidiary controls refer to the control variables included in column (4) of Table III. Industry fixed effects are based on the two-digit NACE classification. Region fixed effects are based on Statistics Sweden's classification. We compute White's (1980) robust standard errors adjusted for clustering of the observations at the firm level. t-statistics are reported in parentheses. ***, **, * denote that the value is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table V − continued

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CEO Control	0.050	0.047	0.054	0.046	0.045	0.058	0.044
	(3.08)***	(3.32)**	(3.93)***	(2.95)***	(2.99)***	(3.84)***	(2.87)***
CEO Incentive	−0.175	−0.160	−0.193	−0.166	−0.178	−0.234	−0.152
	(3.33)***	(3.63)***	(4.21)***	(3.64)***	(3.81)***	(4.33)***	(3.16)***
Return on Assets	−0.055						
	(1.04)						
Market-to-Book Ratio	−0.000						
	(0.09)						
Firm Size	0.000						
	(0.13)						
Growth in Firm Size	0.002						
	(0.35)						
Fixed Assets / Total Assets	−0.055						
	(1.04)						
Employment Risk		−0.003					
		(0.50)					
Leverage			−0.051				
			(1.98)**				
Employee Board Representation				−0.006			
				(0.86)			
Non-CEO Controlling Owner					−0.019		
					(1.86)*		
Non-CEO Controlling Owner Incentive					0.040		
					(1.57)		
Non-Management Ind. Blockholder						−0.046	
						(2.41)**	
Institutional Blockholder						−0.035	
						(1.82)*	
Diversification							0.000
							(0.04)
Export Intensity							−0.010
							(0.57)
R&D Intensity / 100							0.028
							(4.25)***
Wage Dispersion							0.296
							(2.05)**
CEO Age							−0.000
							(0.68)
Worker and subsidiary controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, region, and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1,940,568	1,924,762	1,940,568	1,940,568	1,940,568	1,940,568	1,939,329
Adjusted R-squared	0.494	0.494	0.494	0.494	0.495	0.494	0.495

Table VI
Evidence from Changes in Managerial Entrenchment and Job Switches

The table reports regressions of workers' pay on CEO ownership variables, controlling for worker or worker-firm fixed effects. Other included control variables are time-varying worker characteristics (*Experience* and *Experience*^{2}) as well as subsidiary characteristics, and year fixed effects. The sample is a matched employer-employee panel data set collected from public firms in Sweden over the period 1995-2002. Section IV describes the sample in detail. The dependent variable is log (*Wage*), where *Wage* is the gross real monthly full-time-equivalent compensation (in 1995 kronor). *CEO Control* is 1 if the CEO owns more of the firm's votes than all other 5% blockholders together, 0 otherwise. *CEO Incentive* is the CEO's fraction of the firm's cash flow rights. Subsidiary controls refer to the control variables included in column (3) of Table III. We compute White's (1980) robust standard errors adjusted for clustering of the observations at the firm level. t-statistics are reported in parentheses. ***, **, * denote that the value is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
CEO Control	0.024					
	(1.36)					
CEO Incentive	−0.104					
	(2.78)***					
CEO Control (1 year lag)		0.059				
		(3.37)***				
CEO Incentive (1 year lag)		−0.179				
		(5.38)***				
CEO Control (2 year lag)			0.080			
			(2.80)***			
CEO Incentive (2 year lag)			−0.218			
			(3.63)***			
CEO Control (3 year lag)				0.081	0.083	0.078
				(3.21)***	(2.45)**	(2.25)**
CEO Incentive (3 year lag)				−0.227	−0.240	−0.228
				(4.47)***	(2.36)***	(2.19)**
Worker fixed effects	Yes	Yes	Yes	Yes	No	Yes
Worker-firm fixed effects	No	No	No	No	Yes	No
Job switchers included	Yes	Yes	Yes	Yes	Yes	No
Worker experience variables	Yes	Yes	Yes	Yes	Yes	Yes
Subsidiary controls	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
N	1,940,568	1,621,035	1,287,528	972,155	972,155	852,003
Adjusted R-squared	0.931	0.934	0.938	0,948	0,950	0.949

Table VII
Evidence from Centralized versus Decentralized Wage Bargaining Regimes

In this table, we analyze 1990 as a control year because wage bargaining was largely centralized till 1990. As we do not have any worker-level data for the year 1990, this is a subsidiary-level analysis where the log of mean wage at the subsidiary level is the dependent variable. The results of regressing this wage variable on CEO ownership variables are displayed in column (1), where the same subsidiary controls as in column (3) of Table III are included along with fixed effects for industries and regions. Industry fixed effects are based on the two-digit NACE classification. Region fixed effects are based on Statistics Sweden's classification. To facilitate a direct comparison, we also run a regression for the 1995-2002 sample of the log of mean wage at the subsidiary level on the CEO ownership variables, controlling for the same set of variables as for 1990, but also including fixed year effects. The result is displayed in column (2). We compute White's (1980) robust standard errors adjusted for clustering of the observations at the firm level. t-statistics are reported in parentheses. ***, **, * denote that the value is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

	Centralized regime	Decentralized regime
	(1)	(2)
CEO Control	−0.011	0.044
	(0.19)	(2.79)***
CEO Incentive	−0.105	−0.164
	(0.80)	(3.62)***
Worker controls	No	No
Subsidiary controls	Yes	Yes
Industry and region fixed effects	Yes	Yes
Year fixed effects	No	Yes
N	848	3,589
Adjusted R-squared	0.428	0.694

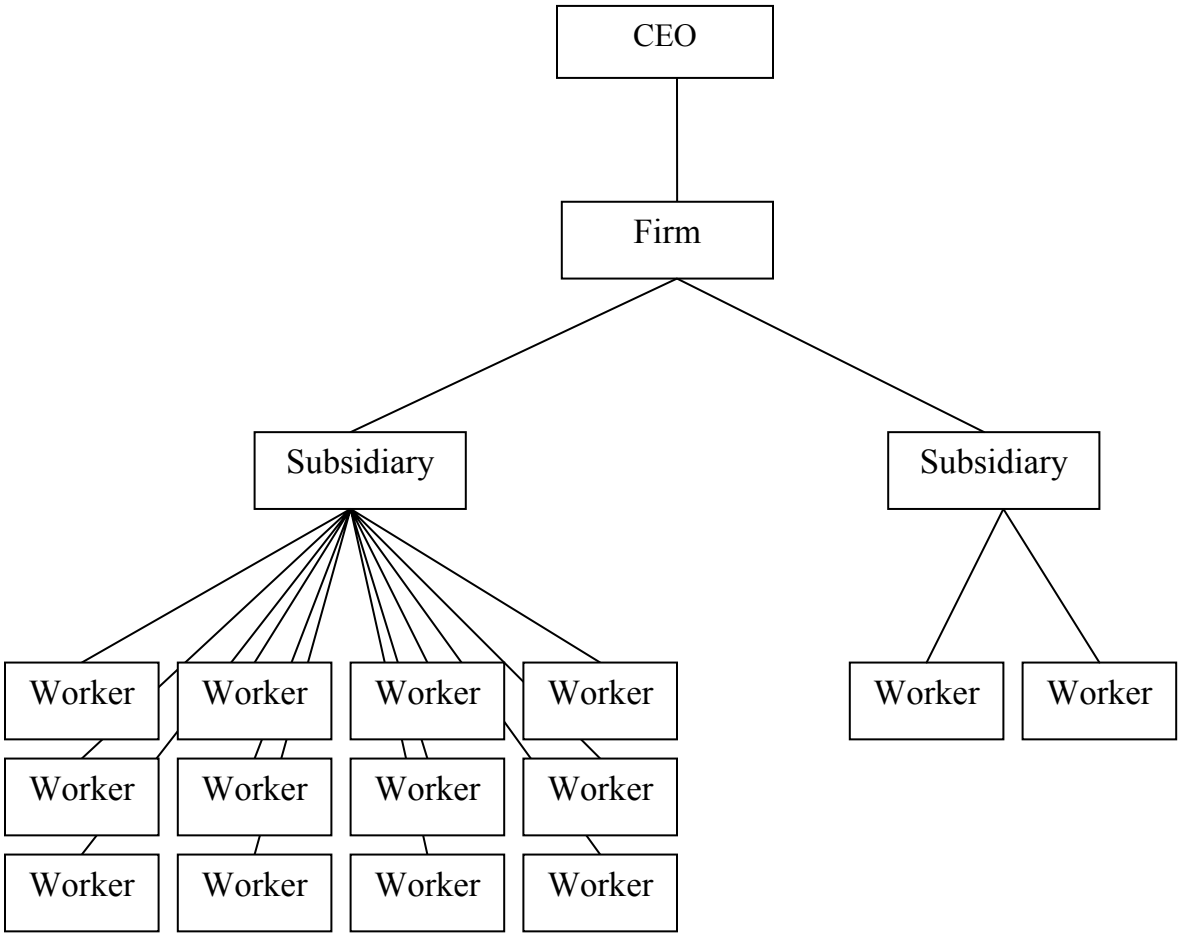
Table VIII
Effects of Union Aggressiveness and Hierarchical and Geographical Distance

The table reports regressions of workers' pay on CEO ownership variables for different groups of workers, controlling for worker and subsidiary characteristics, and fixed effects for industries, regions and years. The sample is a matched employer-employee panel data set collected from public firms in Sweden over the period 1995-2002. The sample is restricted to firms with a CEO that has at least 3 years of tenure. Section IV describes the sample in detail. The dependent variable is log (*Wage*), where *Wage* is the gross real monthly full-time-equivalent compensation (in 1995 kronor). *CEO Control* is 1 if the CEO owns more of the firm's votes than all other 5% blockholders together, 0 otherwise. *CEO Incentive* is the CEO's fraction of the firm's cash flow rights. *Executives* are CFOs, COOs, and division or business unit vice-presidents. *White-Collar Workers* are non-executive white-collar workers. *Same Municipality* is 1 if a worker is working in the same municipality as the corporate headquarters, 0 otherwise. Industry fixed effects are based on the two-digit NACE classification. Worker and subsidiary controls refer to the control variables included in column (4) of Table III. Region fixed effects are based on Statistics Sweden's classification. We compute White's (1980) robust standard errors adjusted for clustering of the observations at the firm level. t-statistics are reported in parentheses. ***, **, * denote that the value is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

	Blue-Collar Workers	White-Collar Workers	Executives	All	Blue-Collar Workers	White-Collar Workers	Executives
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CEO Control	0.069	0.047	0.182	0.018	0.048	−0.040	0.106
	(3.22)***	(2.16)**	(1.68)*	(0.60)	(1.28)	(1.49)	(0.77)
CEO Incentive	−0.207	−0.133	−0.767	−0.100	−0.295**	0.174	−0.458
	(3.83)***	(2.25)**	(2.96)***	(0.328)	(2.60)	(1.43)	(1.19)
CEO Control × Same Municipality				0.103	0.043	0.164	0.281
				(2.51)**	(1.00)	(3.47)***	(1.96)**
CEO Incentive × Same Municipality				−0.225	0.015	−0.476	−0.656
				(1.73)*	(0.11)	(2.84)***	(1.65)
Same Municipality				0.009	0.005	0.002	0.048
				(1.12)	(0.48)	(0.810)	(1.12)
Worker and subsidiary controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry, region, and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	770,296	676,906	3,371	1,621,627	646,429	543,352	2,671
Adjusted R-squared	0.392	0.503	0.437	0.496	0.395	0.508	0.467

Appendix: Structure of the Matched Employer-Employee Data Set

Each worker is linked to the subsidiary where he/she works through a *personnummer* (corresponding to U.S. Social Security Numbers). Subsidiaries (*dotterbolag*) are legal entities which make up a firm. A worker is employed in a subsidiary, which in turn belongs to a firm. In practice, a subsidiary is a business unit or a division. Each subsidiary is then linked to the public firm to which it belongs via an *organisationsnummer* (corresponding to U.S. Employer Identification Numbers).



CEO Control and Incentives: Data on ownership of votes and cash flow rights

Firm-Level Data: firm characteristics such as profitability, firm size, capital structure, etc.

Subsidiary-Level Data: accounting items, industry, region, employment variables, etc.

Worker-Level Data: wage, education, experience, gender, etc.