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# Essays on labor power and agency problem :values of cash holdings and capital expenditures, and accounting earnings informativeness

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**Essays on Labor Power and Agency Problem—  
Values of Cash Holdings and Capital Expenditures, and Accounting  
Earnings Informativeness**

**LU Yifei**

**A thesis submitted in partial fulfilment of the requirements  
for the degree of  
Doctor of Philosophy**

**Principal Supervisor: Dr. HU Bingbing**

**Hong Kong Baptist University**

**August 2015**



## **DECLARATION**

I hereby declare that this thesis represents my own work which has been done after registration for the degree of PhD at Hong Kong Baptist University, and has not been previously included in a thesis or dissertation submitted to this or any other institution for a degree, diploma or other qualifications.

Signature: \_\_\_\_\_

Date: August 2015

## **ABSTRACT**

This study consists of two essays. In the first essay, I examine the effect of employee blockholdings on the values of corporate cash and capital expenditures. I find that when employees hold large equity stake in their companies, corporate cash holdings are worth less to outside shareholders and capital expenditures contribute less to shareholder value. The negative effect of employee block ownership on the values of cash and capital expenditures is concentrated in companies with fewer anti-takeover provisions, in companies which pay their employees abnormally high wages, and in companies where managers have little equity ownership. Our findings support the hypothesis that employee blockholdings can serve as a protection for managers from the market for corporate control and allow managers to extract private benefits at the expense of shareholders.

In the second essay, I examine how labor power affects the informativeness of companies' reported earnings. Using a sample of firms in 42 countries for the period of 1990 to 2009, I find that strong union laws provide managers greater incentives to manipulate reported earnings to hide firm true performance from labor, leading to lower value relevance of earnings in these countries. Further analysis shows that firms use more negative accruals in countries with more powerful labor unions. Overall, these findings support the hypothesis that managers intentionally distort reported earnings to shelter corporate income from labor so that they can improve their bargaining position against powerful labor unions.

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# **Chapter 1: Employee Stock Ownership, Agency Problems, and the Values of Corporate Cash Holdings and Capital Expenditures**

## **1.1 Introduction**

Workers own a nontrivial fraction of corporate America through broad-based employee share ownership plans such as employee stock ownership plans (ESOPs) and 401(k) plans that invest primarily in employer stocks (KSOPs). The National Center for Employee Ownership estimated that approximately 28 million Americans own employer stock through such plans with total asset value over one trillion US dollars, with both the number of participants and assets showing strong growth<sup>1</sup>. The equity stakes workers own in their employers often provide them both significant cash flow rights and voting rights, and therefore, enable them to have considerable influences over many corporate policies and decisions. In this paper, I examine how employees, through their equity ownership in their companies, influence the agency conflicts between managers and shareholders. Specifically, I study the effect of employee blockholdings on managers' incentives and abilities to extract private benefits at the expense of shareholders.

On one hand, the cash flow rights associated with employees' equity holdings help align the interests of employees with shareholders. Therefore, employees with large equity positions in their firms may use their influence to limit managerial private benefits expropriation behavior and discourage corporate decisions that waste resources and result in poor stock price performance (Fitzroy and Kraft (1987), Jones and Kato (1995)). I term this conjecture as the "shareholder alignment" hypothesis. On the other hand, the voting rights

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<sup>1</sup> Please see the website of the National Center for Employee Ownership: <http://www.nceo.org/>

associated with employee blockholdings can play an important role in determining the likelihood and result of corporate takeovers (Chaplinsky and Niehaus (1994) and Rauh (2006)). For example, employees can use their voting power to protect managers from the market for corporate control when an effective alliance is formed between managers and workers. Pagano and Volpin (2005) develop a theoretical model and show that managers can form alliances with employees through favorable employment policies such as generous wages and salaries. In return, workers may use their influence to help managers deter outside attempts to gain corporate control, thereby allowing managers to extract private benefits without worrying about any consequence. Therefore, managers at firms with higher employee stock ownership may be likely to make corporate decisions that benefit themselves but destroy shareholder value. I term this conjecture as the “managerial entrenchment” hypothesis.

I empirically evaluate these two competing hypotheses by examining two manifestations of managerial extraction of private benefits of control. I have two sets of analyses. In first set of analysis, I examine how the employee blockholdings affect the value that investors assign to a firm’s cash holdings. Cash is the most liquid corporate asset and often provides managers with great leeway as how to spend it. I expect that managers are more likely to spend corporate cash pursuing private benefits rather than investing in NPV projects to increase shareholder value when there are agency conflicts between managers and shareholders. Managers’ incentives and ability to use corporate cash to extract private benefits may be elevated when they are protected by the worker-managers alliance, in the form of ESOPs, from the market for corporate control. Therefore, a dollar of corporate cash holding may not be worth a dollar to outside shareholders

when managers are entrenched with the help of ESOP blockholders. On other hand, if the equity ownership employees own in their companies give their incentives to align with shareholder and deter managerial rent extraction, then I would expect the value of cash to be higher when companies have ESOP blockholders. Following Faulkender and Wang (2006)'s approach to estimate the contribution of one extra dollar of cash to shareholder value, I find that the marginal value of cash is decreasing in the employees' equity stakes in the firm. Specifically, the marginal value of cash decreases by \$0.27 for one-standard-deviation increase in the employee block ownership. These results are consistent with managerial entrenchment hypothesis that shareholders anticipate expropriation of corporate cash holdings when manager-worker alliances are in place, and therefore place a lower value on the cash holdings of these companies.

Our second line of inquiry concentrates on how large employee equity stake affects the contribution of capital expenditures to shareholder value. Corporates' major capital investments are often associated with potential empire-building opportunities for managers, hence conflicts of interest between shareholders and managers are often intensified during these investment decisions. I focus on the contribution of large capital expenditure to shareholder value using the same framework I employed for the analysis of the market value of firms' cash holdings. I find that *ceteris paribus*, capital expenditures contribute significantly less to shareholder value at firms with employee blockholdings. More specifically, the marginal value of capital expenditures decreases by \$0.36 for one-standard-deviation increase in the employee block ownership. The evidence

implies that managers protected by large ESOP blockholders are more likely to abuse large capital investments for self-interests.

I next explore whether the negative effect of ESOP blockholdings on the market values of corporate cash and capital expenditures varies with firms' existing anti-takeover provisions (ATPs). I expect that large ESOPs to play a more important role in entrenching management when companies have fewer standard anti-takeover provisions in place, such as poison pills and staggered boards. Consistently, I find that the negative effect of large ESOPs on the values of cash and capital expenditures is stronger when companies have fewer anti-takeover provisions, defined as the ATP indices constructed by Gompers, Ishii, and Metrick (2003) and Bebchuk, Cohen, and Ferrell (2009).

I also investigate whether the entrenchment effect of ESOP blockholdings is stronger when the manager-shareholder conflicts of interest are more severe. I expect that managers who share less common interests with shareholders are more likely to use ESOPs to fend off hostile takeovers and have greater incentives to pursue corporate decisions that maximize their own benefits at the expense of shareholders (Jensen and Meckling (1976)). Our analysis yield evidence highly consistent with this conjecture. Specifically, I find that the negative effect of large ESOPs on acquirer returns is more pronounced for firms whose top managers hold a smaller equity stake in their companies, a measure of incentive alignment between managers and shareholders.

A natural question that immediately arises from our findings is why employees are willing to use their voting rights to protect managers from market discipline and allow them to pursue private benefits at the expenses of both shareholders and themselves. Pagano and Volpin (2005) propose a theoretical

model and argue that managers can form alliances with workers by offering workers favorable employment policies such as generous wages and salaries. To shed direct light on the mechanism through which the manager-worker alliance is formed, I follow the approach in Hanka (1998) and use the COMPUSTAT data on employee wages to estimate the abnormal wage that is paid to its employees by each firm. I then classify firms into those that pay above-market salaries to their employees and those that pay below-market salaries to their employees. I find that the negative effect of employee blockholdings on the market values of cash and capital expenditures is concentrated in firms that pay above-market worker wages. This finding provides empirical support for the prediction of Pagano and Volpin (2005)' theoretical framework that a worker-management alliance can be built on generous employment policies which in turn protects managers from the discipline of the takeover market and allows them to extract private at the expense of shareholders.

In further analysis, I address the concern that the negative effect of employee blockholdings on the values of cash and capital expenditures is driven by some omitted variables that correlate with both the shareholder value and employee block ownership. To some extent the cross-sectional variations in the negative relation between employee blockholdings and the values of cash and capital expenditures help alleviate the endogeneity concern of employee blockholdings. The reason is that any omitted variables must be able to explain not only the negative relation between employee blockholdings and the market values of cash and capital expenditures but also the many cross-sectional variations I have documented in that relation. Nevertheless, I directly address the endogeneity of employee blockholdings using two approaches. In the first approach, I employ a

firm-level fixed effects regression, which control for any time-invariant unobservable firm characteristics that may correlate with both shareholder value and the employee blockholdings. I find that the negative effects of employee block ownership on the marginal values of cash and capital expenditures continue to be significant in the firm fixed effects regressions.

In the second approach, I estimate a two-stage least squares (2SLS) regression. I use the top personal income tax rate for a company's headquartering state as the instrumental variable for employee block holdings. Chaplinsky and Niehaus (1990) point out that employees usually pay no tax on the shares allocated to their ESOP accounts or 401(k) plans until they receive distributions when they leave the firm or retire. Therefore, I expect the state personal income tax rate to be positively related to employee equity ownership, as higher tax rates may induce employees to accept their employers' stock as a substitute for cash salary in order to defer more income taxes.<sup>2</sup> The results from the 2SLS regression show that the state personal income tax rate has a significant and positive effect on employee blockholdings, while the instrumented version of employee block ownership continues to have a significant and negative effect on the market values of companies' cash holdings and capital expenditures.

Our study makes two contributions to the literature. First, I show that labor that gains substantially voting rights through ESOPs can have significant influence over a company's investment decisions. Our evidence suggests that large ESOPs contribute to heightened agency conflicts between managers and

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<sup>2</sup> Kim and Lu (2011) is the first study that uses income tax rates as an instrument for CEO stock ownership. Later studies such as Anantharaman, Fang, and Gong (2013) and Wang, Xie, and Xie (2013) also use state income tax rates as an instrument for CEOs' pension and deferred compensation.

shareholders by encouraging managerial self-dealing behaviors that destroy shareholder wealth. Our results can help explain the negative effect of labor equity ownership on Tobin's Q as documented in Faleye, Mehrotra, and Morck (2006). Our evidence is also consistent with finding in Kim and Ouimet (2013) that large ESOPs have little positive impact on employee productivity.

Second, our study also contributes to the literature on blockholders. Cronqvist and Fahlenbrach (2009) analyze the effects of heterogeneity across blockholders and find that different types of blockholders differ from each other in their incentives and influences over corporate policies. Our paper illustrates one manifestation of such heterogeneity by studying the incentive and influence of employee block holders. Our results suggest that unlike active institutional blockholders who help reduce agency problems that arise from the separation of ownership and control, employees have incentives to form alliance with managers which encourages and protects managerial rent-extraction at the expense of shareholders.

The remainder of the paper is organized as follows. Section 2 reviews literature and develops hypotheses. Section 3 describes data sources and methodology. Section 4 presents the empirical results. Section 5 concludes the paper.

## **1.2 Literature review and hypothesis development**

### ***1.2.1 Studies on employee stock ownership plans (ESOPs)***

Prior studies have argued that employee stock ownership plans (ESOPs) can be used to align the interests of shareholders and those of rank-and-file employees and thereby improve workers' efforts and productivity (Jones and Kato (1995),

Blasi, Conte, and Kruse (1996), and Freeman, Kruse, and Blasi (2010)). Workers also have incentives to use their influences to reduce managers' rents-seeking activities when they have a large stake in their companies. This is not only because a portion of their wealth is tied to the stock price performance of their employers through the ESOP, but also because workers often have their human capital heavily invested in their employers and their long-term job security and wage incomes are closely linked to the financial health of their companies. Since the large ownership workers have through ESOPs also carry significant voting rights, workers can exert their influences over corporate decisions through by voice their opinions on corporate policies through their voting power.

On the other hand, as the voting rights associated with employee block holdings can play an important role determining the likelihood and outcome of corporate takeovers (Chaplinsky and Niehaus (1994) and Rauh (2006)), they can also be used to protect managers from market discipline in corporate governance. Pagano and Volpin (2005) build a theoretical model which implies that in certain circumstances, managers can form alliances with rank-and-file employees by offering them favorable employment policies such as generous wage incomes. Workers, in turn, can use their voting rights carried in their ESOP holdings to vote against any hostile takeovers that aim to replace entrenched managers. Atanassov and Kim (2009) use labor power as a proxy for employees' influence over corporate policies and find evidence that supports the worker-management argument in the context of corporate restructuring across 41 countries. Kim and Ouimet (2014) show that ESOPs that control less than 5% of companies' shares have a positive effect on productivity and firm performance while large ESOPs that control over 5% have no such positive effect. These findings suggest that

large ESOPs, which carry significant voting power, may enable the formation of worker-managers alliance and enhance the managerial entrenchment.

### ***1.2.2 Studies on market values of cash holdings and capital expenditures***

Cash is the most liquid asset a company has and its use is unusually subject to managerial discretion. Prior studies have documented that poorly-governed firms tend to waste their cash on value-destroying investments. As a result, shareholders place a lower value on the one extra dollar of cash that these companies hold. When estimating the value of cash, researchers generally adopt the model proposed by Faulkender and Wang (2006) which explicitly estimates the marginal value of one dollar of cash. Dittmar, Mahrt-Smith (2007) link corporate governance quality, measured by the G-index in Gompers, Ishii, and Mericks (2003), to the value of cash and show that the value of one extra dollar of cash is worth less to outside shareholders when firms have lower quality corporate governance. Masulis, Wang, and Xie (2009) examine the implications of the divergence between insiders' voting rights and cash flow rights resulted from the dual-class share structure. One of their findings is that minority shareholders place a larger discount on the value of one extra dollar of cash when insiders control disproportionately higher voting rights than their cash flow rights. Both studies suggest that shareholders value cash less when a company has more agency problems and hence a higher likelihood of wasting corporate cash to benefit the interests of managers at the expenses of shareholders.

Masulis, Wang, and Xie (2009) also modify the Faulkender and Wang (2006) model to estimate the value of capital expenditure investments. They argue that capital expenditures, as an important form of corporate investments, can also be

used by managers to pursue private benefits of control. They find evidence in support of this argument by showing that value of capital expenditure investment is also lower when there are more agency conflicts.

### ***1.2.3 The effect of ESOPs on the values of cash and capital expenditures***

Based on the existing theories and empirical evidence on the effect of ESOPs on corporate policies, I develop two competing hypotheses on the effect of ESOP blockholdings on the market values of cash and capital expenditures. Specifically, if ESOP blockholdings provide workers incentives to monitor managers and mitigate rent-extraction activities, I would expect that ESOP blockholdings to have a positive effect on how outside investors value a company's cash holdings and capital expenditure investment. I call this "shareholder alignment" hypothesis. On the other hand, if ESOP blockholdings facilitate worker-manager alliances, I would expect that managers protected by such alliances are more likely to waste corporate cash and make value-destroying capital expenditure investment decisions. As a result, the market values of cash and capital expenditures decline as ESOP blockholdings increase. I term this conjecture as the "managerial entrenchment" hypothesis.

## **1.3 Sample construction and methodology**

### ***1.3.1 Sample construction***

I start with the sample of firms in Dlugosz, Fahlenbrach, Gompers, and Metrick (2006, DFGM hereafter), which includes all single-class companies in both the RiskMetrics database of takeover defenses and its director database. Firms in the RiskMetrics universe includes the S&P 1500 companies and annual

lists of the largest corporations published by Fortune, Forbes, and BusinessWeek. These companies constitute approximately 90% of the U.S. stock market value. DFGM collected information of blockholders for these companies from their annual proxy filings. Their sample consists of 7,649 firm-years from 1996 to 2001 with approximately 1,300 firms per year. Blockholders are individuals or entities that own at least 5% of a firm's common stock. Employee blockholders are usually the Employee Stock Ownership Plans that own at least 5% of their companies' shares. Since SEC only requires companies to disclose beneficial owners of at least 5% of equity ownership in their proxy statements, I am only able to identify employee equity ownership that is at least 5%. I further supplement the DFGM blockholder data with stock return information from CRSP and financial accounting variables from Compustat. Following previous literature, I also exclude financial firms (SIC codes 6000 to 6999) and utility firms (SIC codes 4900 to 4999) since these firms are regulated.

### ***1.3.2 Empirical methodology***

I focus our first line of inquiry on how employee equity stakes influence a firm's efficiency in using its cash holding. Since cash is the most liquid corporate asset, it provides managers with great leeway as how to spend it. If managers use the one extra dollar of cash held by the company on the pursuit of private benefits, it would be worth less than a dollar to shareholders. On the other hand, if the extra dollar of cash is well spent on a positive NPV project, its value may be higher than one dollar to shareholders.

I follow the methodology developed by Faulkender and Wang (2006) to evaluate the effect of employee stock ownership on the marginal value of corporate cash holdings. The regression model is as follows.

$$r_{i,t} - R_{i,t}^B = \beta_0 + \beta_1 \times \frac{\Delta Cash_{i,t}}{Mktcap_{i,t-1}} + \beta_2 \times ESO_{i,t-1} \times \frac{\Delta Cash_{i,t}}{Mktcap_{i,t-1}} + \beta_3 \times ESO_{i,t-1} + \gamma' X + \varepsilon_{i,t} \quad (1)$$

The dependent variable in equation (1) is a firm's abnormal stock return over year t, defined as the raw stock return (r) minus the Fama-French size and book-to-market portfolio returns (R).  $\Delta Cash_{i,t}$  is the change in cash holding from year t-1 to t. Its coefficient  $\beta_1$  measures the dollar change in shareholder value for one dollar change in corporate cash reserve, since  $\Delta Cash_{i,t}$  is scaled by the market value of equity at the beginning of year t. The key independent variable to focus on is the interaction term between  $ESO_{i,t-1}$ , the percentage of shares held by employee share ownership plans, and the scaled  $\Delta Cash_{i,t}$ . Our managerial entrenchment hypothesis contends that managers protected by large employee blockholdings are more likely to spend any increase in cash holdings on the pursuit of private benefits and hence predicts a negative coefficient estimate for the interaction term between employee block ownership and change in cash. However, the shareholder alignment hypothesis has the exactly opposite prediction, i.e. the coefficient of the interaction term  $\beta_2$  is positive.

Vector X includes firm-level characteristics that potentially correlate with both changes in cash and in abnormal stock returns. These firm-level variables are changes in operating profitability ( $\Delta Earnings$ ), changes in total assets net of cash ( $\Delta NetAssets$ ), changes in R&D spending ( $\Delta R\&D$ ), changes in interest expenses ( $\Delta Interests$ ), dividends ( $\Delta Dividends$ ), and market leverage, as well as the

company's net financing during fiscal year  $t$ . To match the change in cash, these variables are also scaled by the market value of equity measured at the beginning of year  $t$ . Finally, I control for year and Fama-French 48 industry fixed effects. Our final sample for analysis of value of cash consists of 5,650 firm-years for 1,431 unique firms. The number of firm-years in our sample is smaller than the number of firm-years in the DFGM data because I exclude financial firms and utility companies and I require that firms in our sample have financial data for at least two consecutive fiscal years to construct many of the independent variables in the value-of-cash model.

In our second line of inquiry, I study how shareholders assign value to the capital expenditures undertaken by firms with large employee equity ownership. To do so, I use the same methodology as in our value-of-cash analysis. Specifically, I estimate the following regression model.

$$r_{i,t} - R_{i,t}^B = \beta_0 + \beta_1 \times \frac{\Delta CapEx_{i,t}}{Mktcap_{i,t-1}} + \beta_2 \times ESO_{i,t-1} \times \frac{\Delta CapEx_{i,t}}{Mktcap_{i,t-1}} + \beta_3 \times ESO_{i,t-1} + \gamma' X + \varepsilon_{i,t} \quad (2)$$

$\Delta CapEx_{i,t}$  is the change in a company's capital expenditures over fiscal year  $t-1$  to  $t$ . As in the value-of-cash analysis,  $\Delta CapEx_{i,t}$  is also scaled by the market value of equity at the end of year  $t-1$  ( $Mktcap_{i,t-1}$ ) and therefore its coefficient measures the dollar change in shareholder value for one dollar increase in the firm's capital expenditures. As for the interaction term of  $ESO_{i,t-1}$ , the employee stock ownership variable, with scaled  $\Delta CapEx_{i,t}$ , the managerial entrenchment hypothesis predicts that its coefficient  $\beta_2$  is negative, but the shareholder alignment hypothesis predicts a positive coefficient. The control variables in the vector  $X$  are the same as those included in the value-of-cash analysis. Following

Masulis, Wang, and Xie (2009), I focus on large capital expenditure increases and only include firm-years in which the company experiences at least a 5% increase in the dollar amount of capital expenditures from the previous year. Our final sample for analysis of value of capital expenditures consists of 2,828 firm-years for 1,244 unique firms.

## **1.4 Empirical results**

### ***1.4.1 Summary statistics***

Panel A of Table 1 reports the summary statistics for the sample used in the value-of-cash analysis, while Panel B of Table 1 presents the summary statistics for the sample used in the analysis of the value of capital expenditures. All continuous variables are winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentiles of their distributions to reduce the influence of outliers. The mean (median) firm used in the value-of-cash test has a market value of equity of \$6,829 (\$1,145) millions, leverage ratio of 0.176 (0.142), and the ratio of beginning-of-year cash holdings to market capitalization of 0.090 (0.040). The annual abnormal stock returns have a mean of 0.014 and a median of -0.065. The right-skewness of the abnormal returns is also documented by Faulkender and Wang (2006) and Masulis, Wang, and Xie (2009). The ratio of the change in cash to the beginning-of-year market value of equity has a mean (median) of 1% (0.2%). Both numbers are also similar to those reported in Faulkender and Wang (2006). I also find that employee blockholders are present in 8.7% of firm-years. Employee blockholdings have a mean of 1.068% and a median of 0. Conditional on a firm having an employee blockholder, the employee equity stake has an average of 12.211% and a median of 10.3%.

For the firms used in the test of the value of capital expenditures, their mean (median) market value of equity is \$7,933 (\$1,383) millions, slightly larger than the statistics for the firms in the sample for the value-of-cash analysis. The annual abnormal stock returns for this sample has a mean (median) of 0.034 (-0.039). The ratio of the change in capital expenditures to the beginning-of-year market value of equity has a mean (median) of 2.7% (1.3%).

#### ***1.4.2 Baseline regressions***

Column (1) and (2) of Table 2 presents the baseline regression results of the value of cash analysis. I control for year and Fama French 48 industry fixed effects in all regressions. The numbers reported in parentheses are *p-values* that are based on robust standard errors with firm-level clustering (Peterson (2009)). In column (1), the key explanatory variable is the interaction between the continuous measure of employee block ownership and the change in cash holdings. Consistent with Faulkender and Wang (2006), the change in cash has a positive and significant coefficient. More importantly, the interaction term between the employee block ownership and the change in cash has a negative and significant coefficient estimate, suggesting that the marginal value of cash decreases as the percentage of shares controlled by employee blockholders rises. As for the economics significance, the coefficient estimates in column (1) indicate that *ceteris paribus*, the marginal value of cash decreases by \$0.27 for one-standard-deviation increase in the employee block ownership. These findings are consistent with the “managerial entrenchment” hypothesis that managers with the protection from employee blockholders are more likely to spend corporate cash extracting private benefits, resulting in a lower value that shareholders assign

to the company's cash holdings. To alleviate the concern that the negative coefficient of the interaction between the continuous measure of employee block ownership and the change in cash holdings is simply driven by the possible negative effect of employee blockholdings on stock returns, in column (2), I drop this interaction term while keeping employee blockholdings as one of the explanatory variables. The results show that ESO itself has a negative but insignificant effect on stock returns. This finding suggests that the significant negative effect of employee stock ownership on the value of cash does not simply reflect any direct impact of ESO on stock returns.

I also estimate the value of expenditure model as shown in equation (2) and present the results in column (2) of Table 2. The coefficient estimate of the change in capital expenditures is positive and significant, suggesting that on average these internal investments create shareholder value. More importantly, I find that the interaction term between the employee block ownership and the change in capital expenditures has a negative and significant coefficient estimate. This result indicates that the contribution of capital expenditures to shareholder wealth declines as employee blockholdings increase, again supporting our managerial entrenchment hypothesis. In terms of economic significance, the coefficient estimates in column (2) suggest that *ceteris paribus*, the market value of one extra dollar of capital expenditures decreases by \$0.36 for one-standard-deviation increase in the employee block ownership. Similar to the value-of-cash regressions, the results presented in column (4) suggests that the significant negative effect of employee stock ownership on the value of capital expenditures does not simply reflect any direct impact of ESO on stock returns.

### *1.4.3 Cross-sectional variations in the effect of employee blockholdings on the values of cash holdings and capital expenditures*

#### *1.4.3.1 Subsample analysis based on a company's existing anti-takeover provisions*

A key assumption in the theoretical work by Pagano and Volpin (2005) is that a worker-management alliance can protect managers from the discipline of the market for corporate control, since employees can serve as “while squires” and vote against any hostile takeovers when they own a significant stake in their companies. Consistent with this argument, Chaplinsky and Niehaus (1994) document that firms with ESOPs are significantly less likely to receive takeover bids and they conclude that ESOPs are strong deterrents to takeovers. Rauh (2006) reports a significant reduction in employee ownership for Delaware firms after Delaware passed a ruling to validate the use of poison pills in conjunction with a staggered board in the mid-1990s. Rauh’s findings suggest that employee share ownership plans are effective takeover defenses and can be substitutes for other anti-takeover provisions such as staggered boards and poison pills. The findings in these earlier studies have an important implication for our managerial entrenchment hypothesis. That is, the negative effect of employee block ownership on the values of cash and capital expenditures should be more pronounced when a company does not have many explicit takeover defenses and therefore is more vulnerable to takeover threat.

To test this conjecture, I partition our sample based on a firm’s vulnerability to hostile takeovers as measured by the entrenchment index (E-index) proposed by Bebchuk, Cohen, and Farrell (2009). The E-index is based on six most important takeover defenses: staggered boards, limits to shareholder bylaw

amendments, limits to shareholder charter amendments, supermajority requirements for mergers, poison pills, and golden parachutes. The E-index ranges from 0 to 6 and a higher number corresponds to more anti-takeover provisions in place and thus less vulnerability to hostile takeovers. I first partition the 5,650 firm-years based on whether a firm's E-index is above the sample median of 2 and estimate the value-of-cash regressions separately for the two subsamples. Columns (1) and (2) of Table 3 present the coefficient estimates, where column (1) is for the subsample with E-index that is below or equal to 2 and column (2) is for the subsample with E-index greater than 2. I find that employee block ownership significantly reduces the marginal value of cash only in the subsample of firms that are more vulnerable to takeovers, as evidenced by the significant and negative coefficient of the interaction term between employee blockholdings and the change in cash in column (1).

I conduct a similar split-sample test for the value-of-capital expenditures regressions. As shown in columns (3) and (4) of Table 3, I again find that employee blockholdings significantly reduce the contribution of capital expenditures to shareholder value only in the subsample of firms that are less protected from hostile takeovers, i.e. firms with fewer anti-takeover provisions. These results suggest that the channel through which employee block ownership lead to lower market values of cash and capital expenditures is by serving as a takeover defense and protecting managers from the discipline of the market for corporate control.<sup>3</sup>

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<sup>3</sup> Our results are robust to using the G-index constructed by Gompers, Ishii, and Metrick (2003) to partition the sample.

#### *1.4.3.2 Subsample analysis based on abnormal wages paid to employees*

Another key element in Pagano and Volpin (2005)'s theory of worker-management alliance is that managers use favorable employment policies such as above-market wages to induce employees to align themselves with managers when managers face the threat of hostile bids. A direct implication of this argument on the entrenchment hypothesis in our study is that the negative effect of employee blockholdings on the market values of cash and capital expenditures is likely to be more pronounced when employees receive above-market salaries.

To test this prediction, I follow Hanka (1998) and use Compustat data to estimate the abnormal wages that firms pay their employees. Specifically, I regress labor-related expenses per worker ( $\text{data42}/\text{data29}$ ) on a series of firm-level characteristics. These firm-level variables include firm size, Tobin's Q, leverage, ROA, book value of assets per worker as a measure of capital/labor ratio, the portion of a company's total assets that have been depreciated as a measure of the company's life cycle, and sales per employee as a measure of employee quality. I also control for year and Fama-French 48 industry fixed effects to account for any time and industry-wide factors that may affect the variations in labor wages. I use all Compustat firms that have available labor cost data. The number of firm-years in the wage regression is 5,600, representing 1,821 firms from 1995 to 2000.<sup>4</sup>

The results from the wage regression are presented in Panel A of Table 4. The signs and significance of the coefficients estimates are largely consistent with those reported in Hanka (1998). Specifically, I find that employee wages are

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<sup>4</sup> Disclosure of labor-related costs is voluntary for U.S. firms. Only 10% of all US Compustat firms report this data item.

higher at larger firms, at firms with higher book value of assets per employee, at firms with larger portion of assets that have been depreciated, and at firms where employee quality is higher. Employee wages are lower when firms have higher leverage, higher Tobin's Q, and higher ROA. I use the residual from the wage regression as a proxy for the abnormal wage that a firm pays to its employees. I then conduct a similar split-sample analysis for both the value-of-cash sample and the value-of-capital expenditures sample based on whether the residual from the wage regression is above zero or below zero. I define firms that have positive residuals from the wage regression as paying above-market wages to their employees and firms that have negative residuals as paying below-market wages to their employees. As shown in Panel B of Table 4, the negative effect of employee blockholdings on the market values of cash and capital expenditures is only concentrated in the subsample of firms that pay above-market salaries. These findings provide evidence that managers use favorable employment policies to form alliance with workers and such alliance can protect managers from the market for corporate control and enable managers to extract private benefits at the expense of shareholders.

#### ***1.4.3.3 Subsample analysis based on the misalignment between the interests of managers and shareholders***

Our third split-sample analysis is based on the extent to which the interests of managers and those of shareholders are misaligned. I expect that managers have greater incentives to form alliance with workers to pursue rent extraction when they have little ownership in their companies, i.e. when their interests are less aligned with those of shareholders. To test this conjecture, I obtain from

Execucomp the total percentage of ownership held by top executives and partition the samples based on whether the managerial ownership is above or below the sample median. For the value-of-cash sample, managerial ownership has a mean of 4.31% and a median of 0.84%. For the capital expenditures sample, managerial ownership has a mean of 4.34% and a median of 0.82%.<sup>5</sup> I report the split-sample regression results in Table 5. The results show that the negative effect of employee block ownership on the values of cash and capital expenditures is only concentrated in the subsample of firms where managers hold a smaller equity stake in their companies (see columns (1) and (3)). These results suggest that managers are likely to forge an alliance with workers to engage in self-interested activities when the agency conflicts between managers and shareholders are more severe.

#### ***1.4.4 Endogeneity of employee blockholdings***

In this section, I address the endogeneity of employee block ownership. Specifically, the endogeneity concern arises when some potential omitted factors that correlate with both the shareholder value and employee equity stake are not adequately controlled for in our OLS regressions. I use two approaches to address the endogeneity problem. First, I include firm fixed effects in both the value-of-cash and value-of-capital expenditures regressions, which control for any time-invariant firm-specific factors that are related to both changes in shareholder value and employee block ownership. The results from firm fixed effects

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<sup>5</sup> Due to unavailability of managerial ownership data for some firms, the number of observations for the value-of-cash analysis is reduced to 5,056 and 2,555 for the value-of-capital expenditures test.

regressions are presented in Table 6. I find that employee blockholdings continue to have a significant and negative effect on the values of cash and capital expenditures assigned by shareholders.

Secondly, I use an instrumental variable (IV) approach where I estimate the value-of-cash and value-of-capital expenditures regressions in a two-stage least squares (2SLS) framework. I select the top personal income tax rate for a firm's headquartering state as the instrumental variable for its employee block ownership. Prior studies have shown that employees usually pay no tax on the shares allocated to their ESOP accounts or 401(k) plans until they receive distributions when they leave the firm or retire (see, for example, Chaplinsky and Niehaus (1990)). Therefore, I expect that as higher tax rates may induce employees to accept their employers' stock as a substitute for cash salary in order to defer more income taxes. As a result, the state personal income tax rates should have a positive effect on employee blockholder ownership. I present the 2SLS regression results for the value-of-cash analysis in Table 7. In the first stage, the dependent variable is the percentage of block ownership held by employees. The explanatory variables include the state personal income tax rate and all the control variables in the second-stage regressions. I find that the state top personal income tax rate has a significant and positive effect on employee blockholdings, as evidenced by the coefficient estimate of 0.258 that is significant at the 10% level. The coefficient estimate is even larger and more significant using the sample for the value-of-capital expenditures analysis.<sup>6</sup> These results suggest that our instrument meets the condition of relevance. In the second stage, I replace the raw measure of

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<sup>6</sup> Specifically, the coefficient estimate of the state top personal income tax rate in the first stage for the value-of-capital expenditures sample is 0.534, significant at the 5% level.

employee block ownership with its instrumented version from the first-stage regression. I find that the instrumented version of employee block ownership continues to have a significant and negative effect on both the value of cash (as shown in the second in Panel A) and the value of capital expenditures (second column in Panel B).

#### ***1.4.5 Robustness tests***

In this subsection, I conduct several additional analyses to demonstrate the robustness of our findings. First, I examine whether the negative impacts of ESOP blockholdings simply capture the effect of industry unionization. Workers' influences on corporate policies can also be achieved through unionized activities such as strikes collective bargaining. Anatasov and Kim (2009) show that workers are more likely to form alliances with managers when the country-level labor collective bargaining power is high. To control for the effect of industry unionization, I obtain the data on unionization rate from the Union Membership and Coverage Database. The unionization rate is measured as the percentage of employed workers in an industry covered by unions in collective bargaining with employers. The Union Membership and Coverage Database define industries according to the Census Industry Classification (CIC), whose industry codes roughly correspond to 3-digit SIC industries. I interact the industry unionization rate with the change in cash (capital expenditures) and add this additional interaction term in the value-of-cash (value-of-capital expenditures) regression. The results are reported in Table 8. I find that the coefficient estimate of the interaction term between industry unionization rate and change in cash is negative, but not statistically significant at the conventional level. The coefficient of the

interaction between change in cash and employee blockholdings continues to be negative and significant, suggesting that the negative effect of employee blockholdings is beyond the effect of industry unionization. Similarly, I find that coefficient of the interaction between change in capital expenditures and unionization rate is negative but not significant and add this interaction term does not affect the negative impact of employee blockholdings on in the value of capital expenditures.

Second, I use an alternative benchmark to calculate annual abnormal returns. Masulis, Wang, and Xie (2009) point out that a potential problem with using stock returns in excess of size and book-to-market portfolio returns is that a firm's market-to-book ratio is endogenous. I follow their study and also estimate abnormal returns by subtracting the value-weighted Fama-French 48 industry returns from companies' raw returns. Results from regressions based the newly calculated excess returns are shown in Table 9.<sup>7</sup> I find that the coefficient of the interaction between the change in cash (capital expenditures) and employee blockholdings continues to be negative and significant in the value-of-cash (value-of-capital expenditures) regressions.

Third, as in Faulkender and Wang (2006), I add two additional interaction terms in the value-of-cash model. Specifically, I include the interaction between the change in cash and the level of cash holdings at the beginning of the fiscal year and the interaction between the change in cash and a firm's leverage. Results from regressions with these additional control variables are reported in Table 10.

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<sup>7</sup> Excess stock returns based on value-weighted industry returns have a mean of 0.029, and median of -0.066 for the value-of-cash sample, and a mean of 0.033 and median of -0.057 for the value-of-capital expenditures sample.

Consistent with Faulkender and Wang (2006), both the interaction term between the change in cash and beginning-of-year cash holdings and the interaction between the change in cash and leverage have negative and significant coefficient estimates, suggesting the marginal value of cash is lower when a firm has more prior cash holdings and higher leverage. More important, the interaction between the change in cash and employee block ownership continues to have a negative and significant coefficient, even after I control for these additional interaction terms.

In our last robustness test, I employ a dummy variable approach in which I create an indicator that is equal to one if a company has an employee blockholder who owns at least 5% of the company's shares, and zero otherwise. I replace the continuous employee block ownership variable with this indicator and re-estimate both the value-of-cash regressions and value-of-capital expenditures regressions. Consistent with the findings based on the continuous measure of employee block ownership, results reported in Table 11 suggest that the marginal values of cash and capital expenditures are lower in firms with presence of employee blockholders.

Finally, I rule out a potential explanation of my findings. One may argue that the findings I document so far may not result from a worker-manager alliance, but simply reflects workers' direct influences over corporate policies. Since workers are more risk-averse than other shareholders, they prefer less-risky projects. If they exert direct and significant influences over the corporate decision process, they may force the managers to take less-risky projects which in turn have lower returns. This alternative story can potentially explain why the value of cash holdings or capital expenditure is lower for companies with high employee

ownership. To test this alternative story, I randomly checked 100 firms in my sample to see whether workers have board representations, since the major corporate investment decisions such as capital expenditure investments and M&As usually need board approval. However, I didn't find any of these companies having employee representative sitting on the boards of directors. Therefore, my findings are unlikely driven by this alternative story.<sup>8</sup>

## 1.5 Conclusion

I examine the effect of employee blockholdings on the marginal values of a firm's cash holdings and capital expenditures. On one hand, employees may have incentives to discourage managerial consumption of private benefits when they own large equity stake in their employers. On the other hand, employee blockholders may use the voting power associated with their blockholdings to protect managers from the market for corporate control when an alliance is formed between managers and workers. Such an alliance can enable managers to extract private benefits without facing the threat from hostile takeovers, resulting in lower values that shareholders assign to the firm's cash holdings and capital expenditures.

Using the blockholder database compiled by Dlugosz, Fahlenbrach, Gompers, and Metrick (2006), I empirically test these two competing predictions. Our evidence supports the managerial entrenchment hypothesis, as I find that the marginal values of cash and capital expenditures decline as employee block

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<sup>8</sup> Also note that projects with lower risk do not necessarily destroy shareholder value. Similarly, projects that are risky may not necessarily value-enhancing. For example, managers could use the firm's cash to gamble in a casino. Although this investment is very risky, it certainly will destroy firm value as the NPV is negative.

ownership increases. The negative association between employee blockholdings and the values of cash and capital expenditures is robust when I employ firm fixed effects regressions and two-stage least square regressions in which I use state top personal income tax rate as an instrument for employee block ownership. I also find that such negative relation is concentrated in firms with fewer anti-takeover provisions, in firms that pay their workers above-market wages, and in firms where there is greater misalignment between interests of shareholders and managers. Overall, our findings suggest that employee block ownership can serve as an effective takeover defense when managers use favorable employment policies to form alliance with workers. This worker-manager alliance enables managers to extract private benefits at the expense of shareholders.

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**Table 1. Summary statistics**

I construct our sample based on the Dlugosz, Fahlenbrach, Gompers, and Metrick (2006) blockholder database. The sample for the value-of-cash analysis consists of 5,650 firm-years, while the sample for the value-of-capital expenditures analysis consists of 2,828 firm-years. Variable definitions are in the Appendix.

Panel A: Sample for the value-of-cash analysis					
N=5,650	Mean	Std.	Q1	Median	Q3
<i><u>Employee block ownership variables</u></i>					
Employee block ownership	1.068%	3.974%	0%	0%	0%
Employee blockholder dummy	0.087	0.282	0	0	0
Employee block ownership (if employee blockholder dummy=1)	12.211%	6.669%	7.37%	10.3%	15.2%
<i><u>Excess stock returns during the fiscal year</u></i>					
$(r - R^B)$	0.014	0.641	-0.322	-0.065	0.225
<i><u>Firm characteristics</u></i>					
Market value of equity (in millions)	6,829	25,083	443	1,145	3,496
Leverage	0.176	0.155	0.049	0.142	0.264
<i>(The variables below are scaled by the market value of equity at the beginning of fiscal year t)</i>					
Cash <sub>t-1</sub>	0.090	0.129	0.015	0.040	0.105
$\Delta$ Cash <sub>t</sub>	0.010	0.081	-0.010	0.002	0.023
$\Delta$ Earnings <sub>t</sub>	-0.0004	0.142	-0.025	0.006	0.028
$\Delta$ NetAssets <sub>t</sub>	0.050	0.325	-0.023	0.039	0.126
$\Delta$ R&D <sub>t</sub>	0.0002	0.025	0	0	0.001
$\Delta$ Interests <sub>t</sub>	0.002	0.013	-0.001	0.0002	0.004
$\Delta$ Dividends <sub>t</sub>	-0.0003	0.005	0	0	0.007
NetFinancing <sub>t</sub>	0.011	0.153	-0.039	-0.001	0.037

Panel B: Sample for the value-of-capital expenditures analysis					
N=2,828	Mean	Std.	Q1	Median	Q3
<i><u>Employee block ownership variables</u></i>					
Employee block ownership	1.012%	3.916%	0%	0%	0%
Employee blockholder dummy	0.082	0.274	0	0	0
Employee block ownership (if employee blockholder dummy=1)	12.477%	6.704%	7.36%	10.69%	15.8%
<i><u>Excess stock returns during the fiscal year</u></i>					
( $r - R^B$ )	0.034	0.595	-0.290	-0.039	0.251
<i><u>Firm characteristics</u></i>					
Market value of equity (in millions)	7,933	28,433	518	1,383	4,139
Leverage	0.156	0.144	0.035	0.124	0.236
<i>(The variables below are scaled by the market value of equity at the beginning of fiscal year t)</i>					
CapEx <sub>t-1</sub>	0.067	0.170	0.018	0.038	0.077
$\Delta$ CapEx <sub>t</sub>	0.027	0.037	0.005	0.013	0.031
$\Delta$ Earnings <sub>t</sub>	0.009	0.107	-0.011	0.009	0.029
$\Delta$ NetAssets <sub>t</sub>	0.128	0.292	0.015	0.067	0.165
$\Delta$ R&D <sub>t</sub>	0.002	0.017	0	0	0.002
$\Delta$ Interests <sub>t</sub>	0.003	0.013	-0.001	0.0003	0.004
$\Delta$ Dividends <sub>t</sub>	0.0003	0.004	0	0	0.001
NetFinancing <sub>t</sub>	0.031	0.152	-0.027	0.002	0.051

**Table 2. Baseline regressions: The effect of employee blockholdings on the values of cash and capital expenditures**

The sample consists of 5,650 firm-years for the value-of-cash regression in column (1) and (2), and 2,828 firm-years for the value-of-capital expenditures regression in column (3) and (4). The dependent variable is the size and market-to-book adjusted excess returns during fiscal year  $t$ . ESO is the equity ownership held by employee blockholders. Definitions of other explanatory variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols  $***$ ,  $**$ , and  $*$  stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions control for year and Fama-French 48 industry fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

	Dependent variable:			
	Size and market-to-book adjusted excess stock returns			
	(1)	(2)	(3)	(4)
$\Delta\text{Cash}_t$	1.935*** (0.000)	1.876*** (0.000)		
$\text{ESO}_{t-1} \times \Delta\text{Cash}_t$	-6.919** (0.033)			
$\text{Cash}_{t-1}$	0.693*** (0.000)	0.689*** (0.000)		
$\Delta\text{CapEx}_t$			1.065*** (0.010)	0.955** (0.018)
$\text{ESO}_{t-1} \times \Delta\text{CapEx}_t$			-9.289*** (0.004)	
$\text{CapEx}_{t-1}$			1.198*** (0.000)	1.185*** (0.000)
$\text{ESO}_{t-1}$	-0.058 (0.700)	-0.114 (0.461)	0.004 (0.986)	-0.310 (0.171)
Leverage $_t$	-0.861*** (0.000)	-0.861*** (0.000)	-1.405*** (0.000)	-1.400*** (0.000)
$\Delta\text{Earnings}_t$	0.710*** (0.000)	0.712*** (0.000)	1.036*** (0.000)	1.044*** (0.000)
$\Delta\text{NetAssets}_t$	0.372*** (0.000)	0.376*** (0.000)	0.287*** (0.000)	0.282*** (0.000)
$\Delta\text{R\&D}_t$	0.531 (0.289)	0.546 (0.277)	2.535*** (0.001)	2.539*** (0.001)
$\Delta\text{Interests}_t$	-2.218** (0.029)	-2.222** (0.030)	-1.293 (0.327)	-1.231 (0.351)
$\Delta\text{Dividends}_t$	1.377 (0.379)	1.364 (0.393)	-1.728 (0.484)	-1.658 (0.502)
$\text{NetFinancing}_t$	-0.441*** (0.000)	-0.449*** (0.000)	-0.120 (0.293)	-0.113 (0.321)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Number of observation	5,650	5,650	2,828	2,828
Adjusted R <sup>2</sup>	19.37%	19.28%	16.85%	16.79%

**Table 3. Subsample analysis based on a firm's vulnerability to hostile takeovers**

This table presents the results from the subsample analysis based on a firm's vulnerability to hostile takeovers. Column (1) and (2) present the results from the value-of-cash regressions, where column (1) is based on the subsample of firms that have fewer number of anti-takeover provisions (E-index $\leq$ 2) and column (2) is based on the subsample of firms that have more anti-takeover provisions (E-index $\geq$ 3). Column (3) and (4) present the results from the value-of-capital expenditures regressions, where column (3) is based on the subsample of firms that have fewer number of anti-takeover provisions (E-index $\leq$ 2) and column (4) is based on the subsample of firms that have more anti-takeover provisions (E-index $\geq$ 3). The dependent variable is the size and market-to-book adjusted excess returns during fiscal year  $t$ . ESO is the equity ownership held by employee blockholders. Definitions of other explanatory variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols \*\*\*, \*\*, and \* stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions control for year and Fama-French 48 industry fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

	Dependent variable:			
	Size and market-to-book adjusted excess stock returns			
	(1)	(2)	(3)	(4)
	Fewer ATPs	More ATPs	Fewer ATPs	More ATPs
$\Delta\text{Cash}_t$	2.226*** (0.000)	1.365*** (0.000)		
$\text{ESO}_{t-1} \times \Delta\text{Cash}_t$	-6.101* (0.082)	-4.362 (0.373)		
$\text{Cash}_{t-1}$	0.790*** (0.000)	0.620*** (0.002)		
$\Delta\text{CapEx}_t$			1.095** (0.046)	1.071* (0.064)
$\text{ESO}_{t-1} \times \Delta\text{CapEx}_t$			-11.423*** (0.002)	-1.954 (0.808)
$\text{CapEx}_{t-1}$			1.234*** (0.000)	1.508*** (0.000)
$\text{ESO}_{t-1}$	-0.402** (0.015)	0.176 (0.368)	0.232 (0.349)	-0.603 (0.141)
$\text{Leverage}_t$	-0.935*** (0.000)	-0.745*** (0.000)	-1.235*** (0.000)	-1.526*** (0.000)
$\Delta\text{Earnings}_t$	0.768*** (0.000)	0.684*** (0.000)	1.073*** (0.000)	1.091*** (0.000)
$\Delta\text{NetAssets}_t$	0.450*** (0.000)	0.255*** (0.000)	0.239*** (0.003)	0.319** (0.015)
$\Delta\text{R\&D}_t$	-0.022 (0.959)	1.356 (0.211)	1.673** (0.030)	3.394*** (0.005)
$\Delta\text{Interests}_t$	-3.648** (0.013)	-0.624 (0.644)	-1.726 (0.399)	-1.312 (0.452)
$\Delta\text{Dividends}_t$	-2.231 (0.350)	5.661*** (0.004)	2.157 (0.541)	-2.109 (0.501)
$\text{NetFinancing}_t$	-0.397*** (0.008)	-0.462*** (0.000)	-0.331** (0.031)	0.068 (0.684)

Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Number of observation	3,367	2,283	1,695	1,133
Adjusted R <sup>2</sup>	20.23%	19.03%	21.45%	14.84%

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**Table 4. Subsample analysis based on excess wages paid to workers**

This table presents the results from the subsample analysis based on whether or not a firm pays above-market wages to its workers. Panel A presents the results from the wage regression where the dependent variable, labor-related expense (\$1000s) per employee (defined as data42/data29). The residual from the wage regression is used as a proxy for excess worker wage. In Panel B, the column (1) and (2) present the results from the value-of-cash regressions, where column (1) is based on the subsample of firms that have positive excess worker wage and column (2) is based on the subsample of firms that have negative excess worker wage. Column (3) and (4) present the results from the value-of-capital expenditures regressions, where column (3) is based on the subsample of firms that have positive excess worker wage and column (4) is based on the subsample of firms that have negative excess worker wage. The dependent variable is the size and market-to-book adjusted excess returns during fiscal year  $t$ . ESO is the equity ownership held by employee blockholders. Definitions of other explanatory variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols  $^{***}$ ,  $^{**}$ , and  $^*$  stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions control for year and Fama-French 48 industry fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

Panel A: Wage regression	Dependent variable Labor-related expense (\$1000s) per employee
Log(market value of equity)	1.665*** (0.000)
Tobin's Q	-0.234** (0.044)
Leverage	-1.200 (0.567)
Return on assets	-2.092 (0.494)
Assets per employee	0.003*** (0.002)
Assets that are depreciated	32.318*** (0.000)
Sales per employee	0.032*** (0.000)
Year fixed effects	Yes
Industry fixed effects	Yes
Number of Observations	5,600
Adjusted R <sup>2</sup>	56.52%

Panel B	Dependent variable:			
	Size and market-to-book adjusted excess stock returns			
	(1)	(2)	(3)	(4)
	Above-market Worker Wage	Below-market Worker Wage	Above-market Worker Wage	Below-market Worker Wage
$\Delta\text{Cash}_t$	-0.153 (0.736)	0.685 (0.194)		
$\text{ESO}_{t-1} \times \Delta\text{Cash}_t$	-9.363* (0.076)	-4.452 (0.441)		
$\text{Cash}_{t-1}$	-0.120 (0.583)	0.292* (0.054)		
$\Delta\text{CapEx}_t$			3.526 (0.134)	0.106 (0.935)
$\text{ESO}_{t-1} \times \Delta\text{CapEx}_t$			-40.088** (0.047)	-7.553 (0.237)
$\text{CapEx}_{t-1}$			0.805 (0.292)	0.719 (0.207)
$\text{ESO}_{t-1}$	-1.710*** (0.000)	-0.195 (0.498)	1.824 (0.316)	0.440 (0.399)
$\text{Leverage}_t$	-1.303*** (0.000)	-0.679*** (0.005)	-1.498*** (0.001)	-0.852*** (0.004)
$\Delta\text{Earnings}_t$	0.678** (0.012)	0.755*** (0.000)	0.077 (0.885)	1.018*** (0.006)
$\Delta\text{NetAssets}_t$	0.007 (0.947)	0.166* (0.052)	0.091 (0.640)	0.199 (0.136)
$\Delta\text{R\&D}_t$	0.109 (0.902)	-1.017 (0.792)	0.916 (0.347)	5.820 (0.358)
$\Delta\text{Interests}_t$	2.294 (0.357)	-1.690 (0.430)	1.441 (0.737)	-2.519 (0.300)
$\Delta\text{Dividends}_t$	2.722 (0.429)	-0.005 (0.999)	-0.424 (0.935)	-8.736 (0.612)
$\text{NetFinancing}_t$	-0.331 (0.328)	-0.327** (0.036)	0.100 (0.869)	-0.205 (0.360)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Number of observation	207	306	110	155
Adjusted R <sup>2</sup>	35.83%	31.78%	40.80%	22.42%

**Table 5. Subsample analysis based on managerial stock ownership**

This table presents the results from the subsample analysis based on the misalignment between interests of managers and shareholders. Column (1) and (2) present the results from the value-of-cash regressions, where column (1) is based on the subsample of firms that have below-sample-median managerial ownership and column (2) is based on the subsample of firms that have above-sample-median managerial ownership. Column (3) and (4) present the results from the value-of-capital expenditures regressions, where column (3) is based on the subsample of firms that have below-sample-median managerial ownership and column (4) is based on the subsample of firms that have above-sample-median managerial ownership. The dependent variable is the size and market-to-book adjusted excess returns during fiscal year  $t$ . ESO is the equity ownership held by employee blockholders. Definitions of other explanatory variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols  $***$ ,  $**$ , and  $*$  stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions control for year and Fama-French 48 industry fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

	Dependent variable:			
	Size and market-to-book adjusted excess stock returns			
	(1)	(2)	(3)	(4)
	Lower Managerial Ownership	Higher Managerial Ownership	Lower Managerial Ownership	Higher Managerial Ownership
$\Delta\text{Cash}_t$	1.615*** (0.000)	2.207*** (0.000)		
$\text{ESO}_{t-1} \times \Delta\text{Cash}_t$	-10.305* (0.071)	-5.416 (0.155)		
$\text{Cash}_{t-1}$	0.952*** (0.000)	0.677*** (0.000)		
$\Delta\text{CapEx}_t$			1.946*** (0.002)	0.533 (0.290)
$\text{ESO}_{t-1} \times \Delta\text{CapEx}_t$			-15.634** (0.028)	-7.724 (0.880)
$\text{CapEx}_{t-1}$			1.240*** (0.000)	1.227*** (0.001)
$\text{ESO}_{t-1}$	0.229 (0.256)	-0.426** (0.041)	-0.296 (0.358)	0.261 (0.403)
$\text{Leverage}_t$	-1.042*** (0.000)	-0.898*** (0.000)	-1.404*** (0.000)	-1.806*** (0.000)
$\Delta\text{Earnings}_t$	0.611*** (0.000)	0.769*** (0.000)	0.945*** (0.000)	1.468*** (0.001)
$\Delta\text{NetAssets}_t$	0.287*** (0.000)	0.428*** (0.000)	0.132* (0.091)	0.517*** (0.009)
$\Delta\text{R\&D}_t$	0.628 (0.302)	0.000 (1.000)	2.103* (0.094)	3.804* (0.094)
$\Delta\text{Interests}_t$	-1.771 (0.234)	-1.316 (0.344)	-1.975 (0.208)	0.163 (0.970)
$\Delta\text{Dividends}_t$	-2.858 (0.303)	4.413** (0.032)	3.473 (0.240)	-4.507 (0.358)
$\text{NetFinancing}_t$	-0.300** (0.017)	-0.505*** (0.000)	-0.041 (0.743)	0.074 (0.776)

Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Number of observation	2,528	2,528	1,264	1,263
Adjusted R <sup>2</sup>	20.18%	19.02%	21.30%	13.08%

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**Table 6. Firm fixed effects regressions**

This table presents the results from firm-level fixed effects regressions. The sample consists of 5,465 firm-years for the value-of-cash regression in column (1), and 2,422 firm-years for the value-of-capital expenditures regression in column (2). The dependent variable is the size and market-to-book adjusted excess returns during fiscal year  $t$ . ESO is the equity ownership held by the employee blockholder. Definitions of other explanatory variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols \*\*\*, \*\*, and \* stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions also control for year fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

	Dependent variable: Size and market-to-book adjusted excess stock returns	
	(1)	(2)
$\Delta\text{Cash}_t$	2.624*** (0.000)	
$\text{ESO}_{t-1} \times \Delta\text{Cash}_t$	-12.852*** (0.005)	
$\text{Cash}_{t-1}$	2.767*** (0.000)	
$\Delta\text{CapEx}_t$		2.721*** (0.000)
$\text{ESO}_{t-1} \times \Delta\text{CapEx}_t$		-11.644* (0.060)
$\text{CapEx}_{t-1}$		4.451*** (0.000)
$\text{ESO}_{t-1}$	0.122 (0.768)	0.702 (0.289)
$\text{Leverage}_t$	-2.575*** (0.000)	-3.595*** (0.000)
$\Delta\text{Earnings}_t$	0.507*** (0.000)	1.036*** (0.000)
$\Delta\text{NetAssets}_t$	0.316*** (0.000)	0.136 (0.145)
$\Delta\text{R\&D}_t$	0.261 (0.542)	1.599* (0.051)
$\Delta\text{Interests}_t$	-0.624 (0.633)	2.599* (0.093)
$\Delta\text{Dividends}_t$	0.262 (0.884)	-5.078 (0.136)
$\text{NetFinancing}_t$	-0.345*** (0.005)	-0.007 (0.956)
Year fixed effects	Yes	Yes
Firm fixed effects	Yes	Yes
Number of observation	5,465	2,422
Adjusted $R^2$	25.44%	25.92%

**Table 7. 2SLS regressions**

This table presents the results from 2SLS regressions, where employee block ownership is instrumented by state top personal income tax rates. The sample consists of 5,650 firm-years for the value-of-cash regression in Panel A, and 2,828 firm-years for the value-of-capital expenditures regression in Panel B. Definitions of all variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols  $***$ ,  $**$ , and  $*$  stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions also control for year fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

Panel A: Value-of-cash regression	Dependent variable	
	Employee block ownership (ESO)	Size and market-to-book adjusted excess stock returns
	First-stage	Second-stage
State top personal income tax rate	0.258* (0.084)	
$ESO_{t-1} \times \Delta Cash_t$		-6.193*** (0.000)
$ESO_{t-1}$		0.076 (0.941)
$\Delta Cash_t$	-0.044 (0.501)	2.417*** (0.000)
$Cash_{t-1}$	-0.052 (0.377)	0.682*** (0.000)
Leverage $_t$	0.007 (0.852)	-0.861*** (0.000)
$\Delta Earnings_t$	-0.048 (0.228)	0.705*** (0.000)
$\Delta NetAssets_t$	0.019 (0.485)	0.370*** (0.000)
$\Delta R\&D_t$	-0.191 (0.170)	0.621 (0.205)
$\Delta Interests_t$	-0.575 (0.266)	-2.185** (0.021)
$\Delta Dividends_t$	0.165 (0.901)	1.706 (0.278)
NetFinancing $_t$	0.045 (0.431)	-0.454*** (0.000)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of observation	5,650	5,650
Adjusted R <sup>2</sup>	5.80%	19.84%

Panel B: Value-of-capital expenditures regression	Dependent variable	
	Employee block ownership (ESO)	Size and market-to-book adjusted excess stock returns
	First-stage	Second-stage
Top state personal income tax rate	0.534** (0.014)	
$ESO_{t-1} \times \Delta CapEx_t$		-1.842*** (0.001)
$ESO_{t-1}$		-0.649 (0.355)
$\Delta CapEx_t$	-0.032 (0.906)	1.089*** (0.008)
$CapEx_{t-1}$	0.400** (0.028)	1.660*** (0.000)
Leverage <sub>t</sub>	-0.091 (0.254)	-1.485*** (0.000)
$\Delta Earnings_t$	-0.097 (0.236)	0.988*** (0.000)
$\Delta NetAssets_t$	-0.019 (0.663)	0.266*** (0.002)
$\Delta R\&D_t$	-0.357 (0.346)	2.320*** (0.002)
$\Delta Interests_t$	-0.681 (0.393)	-1.708 (0.175)
$\Delta Dividends_t$	3.718** (0.017)	0.952 (0.781)
NetFinancing <sub>t</sub>	0.010 (0.895)	-0.094 (0.410)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of observation	2,828	2,828
Adjusted R <sup>2</sup>	5.47%	16.91%

**Table 8. Controlling for industry unionization rate**

This table presents the results where I control for industry unionization rate. The sample consists of 4,560 firm-years for the value-of-cash regression in column (1), and 2,275 firm-years for the value-of-capital expenditures regression in column (2). The dependent variable is the size and market-to-book adjusted excess returns during fiscal year  $t$ . ESO is the equity ownership held by the employee blockholder. Industry unionization rate is measured as the percentage of employed workers in an industry covered by unions in collective bargaining with employers. The measure is obtained the Union Membership and Coverage Database. Definitions of other explanatory variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols \*\*\*, \*\*, and \* stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions also control for year fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

	Dependent variable:	
	Size and market-to-book adjusted excess stock returns	
	(1)	(2)
$\Delta\text{Cash}_t$	2.491*** (0.000)	
$\text{ESO}_{t-1} \times \Delta\text{Cash}_t$	-3.463** (0.020)	
$\text{Unionization rate}_{t-1} \times \Delta\text{Cash}_t$	-4.552 (0.178)	
$\text{Cash}_{t-1}$	0.727*** (0.000)	
$\Delta\text{CapEx}_t$		1.141* (0.098)
$\text{ESO}_{t-1} \times \Delta\text{CapEx}_t$		-9.044*** (0.000)
$\text{Unionization rate}_{t-1} \times \Delta\text{CapEx}_t$		-1.163 (0.578)
$\text{CapEx}_{t-1}$		1.134*** (0.000)
$\text{ESO}_{t-1}$	-0.096 (0.576)	0.186 (0.399)
$\text{Unionization rate}_{t-1}$	0.029 (0.748)	-0.178** (0.049)
$\text{Leverage}_t$	-0.827*** (0.000)	-1.404*** (0.000)
$\Delta\text{Earnings}_t$	0.716*** (0.000)	1.026*** (0.000)
$\Delta\text{NetAssets}_t$	0.357*** (0.000)	0.277*** (0.003)
$\Delta\text{R\&D}_t$	1.405 (0.129)	2.612*** (0.002)
$\Delta\text{Interests}_t$	-2.096* (0.082)	-1.176 (0.435)
$\Delta\text{Dividends}_t$	1.199 (0.522)	-3.035 (0.355)
$\text{NetFinancing}_t$	-0.488*** (0.000)	-0.158 (0.188)

Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of observation	4,560	2,275
Adjusted R <sup>2</sup>	19.16%	16.27%

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**Table 9. Robustness test: Using industry-adjusted returns as the dependent variable**

The sample consists of 5,650 firm-years for the value-of-cash regression in column (1), and 2,828 firm-years for the value-of-capital expenditures regression in column (2). The dependent variable is the industry-adjusted excess returns during fiscal year  $t$ . ESO is the equity ownership held by the employee blockholder. Definitions of other explanatory variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols \*\*\*, \*\*, and \* stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions control for year and Fama-French 48 industry fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

	Dependent variable:	
	Industry-adjusted excess stock returns	
	(1)	(2)
$\Delta\text{Cash}_t$	2.021*** (0.000)	
$\text{ESO}_{t-1} \times \Delta\text{Cash}_t$	-6.110** (0.033)	
$\text{Cash}_{t-1}$	0.775*** (0.000)	
$\Delta\text{CapEx}_t$		1.233*** (0.002)
$\text{ESO}_{t-1} \times \Delta\text{CapEx}_t$		-9.890*** (0.003)
$\text{CapEx}_{t-1}$		1.466*** (0.000)
$\text{ESO}_{t-1}$	0.002 (0.991)	0.093 (0.697)
$\text{Leverage}_t$	-0.844*** (0.000)	-1.464*** (0.000)
$\Delta\text{Earnings}_t$	0.711*** (0.000)	1.034*** (0.000)
$\Delta\text{NetAssets}_t$	0.350*** (0.000)	0.251*** (0.002)
$\Delta\text{R\&D}_t$	0.612 (0.251)	2.763*** (0.000)
$\Delta\text{Interests}_t$	-1.866* (0.071)	-0.712 (0.597)
$\Delta\text{Dividends}_t$	0.645 (0.671)	-2.214 (0.396)
$\text{NetFinancing}_t$	-0.487*** (0.000)	-0.158 (0.178)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of observation	5,650	2,828
Adjusted $R^2$	23.25%	19.76%

**Table 10. Robustness test: Adding two additional interaction terms in the value-of-cash model**

This table presents the results from a robustness test where I control for two additional interaction terms in the value-of-cash regressions, as in Faulkender and Wang (2006). The sample consists of 5,650 firm-years. The dependent variable in column (1) is the size and market-to-book adjusted excess returns during fiscal year  $t$ . The dependent variable in column (2) is the industry-adjusted excess returns during fiscal year  $t$ . ESO is the equity ownership held by the employee blockholder. Definitions of other explanatory variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols  $***$ ,  $**$ , and  $*$  stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions also control for year fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

	Dependent variable:	
	Size and market-to-book adjusted excess stock returns	Industry-adjusted excess stock returns
	(1)	(2)
$\Delta\text{Cash}_t$	3.120*** (0.000)	3.251*** (0.000)
$\text{ESO}_{t-1} \times \Delta\text{Cash}_t$	-6.512** (0.044)	-5.682** (0.046)
$\text{ESO}_{t-1}$	-0.027 (0.856)	0.034 (0.807)
$\text{Cash}_{t-1} \times \Delta\text{Cash}_t$	-2.026** (0.020)	-2.118** (0.015)
$\text{Cash}_{t-1}$	0.626*** (0.000)	0.706*** (0.000)
$\text{Leverage}_t \times \Delta\text{Cash}_t$	-3.199*** (0.001)	-3.304*** (0.001)
$\text{Leverage}_t$	-0.845*** (0.000)	-0.827*** (0.000)
$\Delta\text{Earnings}_t$	0.717*** (0.000)	0.720*** (0.000)
$\Delta\text{NetAssets}_t$	0.380*** (0.000)	0.359*** (0.000)
$\Delta\text{R\&D}_t$	0.676 (0.131)	0.762 (0.104)
$\Delta\text{Interests}_t$	-2.266** (0.033)	-1.919* (0.075)
$\Delta\text{Dividends}_t$	0.457 (0.771)	-0.309 (0.839)
$\text{NetFinancing}_t$	-0.452*** (0.000)	-0.498*** (0.000)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of observation	5,650	5,650
Adjusted $R^2$	20.38%	24.26%

**Table 11. Robustness test: A dummy variable approach**

The sample consists of 5,650 firm-years for the value-of-cash regression in Panel A, and 2,828 firm-years for the value-of-capital expenditures regression in Panel B. ESOD is a dummy variable that is equal to one if a firm has an employee blockholder, and zero otherwise. Definitions of other explanatory variables are in the Appendix. Financial variables, except leverage, are scaled by the market value of equity at the beginning of fiscal year  $t$ . In parentheses are  $p$ -values based on robust errors adjusted for firm-level clustering (Peterson (2007)). The symbols \*\*\*, \*\*, and \* stand for statistical significance based on two-sided tests at the 1%, 5%, and 10% level, respectively. All regressions control for year and industry fixed effects, whose coefficient estimates are suppressed. The coefficient of the intercept is also suppressed.

Pane A: Value-of-cash regression	Dependent variable:	
	Size and market-to-book adjusted excess stock returns	Industry-adjusted excess stock returns
	(1)	(2)
$\Delta\text{Cash}_t$	3.155*** (0.000)	3.285*** (0.000)
$\text{ESOD}_{t-1} \times \Delta\text{Cash}_t$	-1.310*** (0.002)	-1.176*** (0.002)
$\text{ESOD}_{t-1}$	0.001 (0.936)	0.011 (0.549)
$\text{Cash}_{t-1} \times \Delta\text{Cash}_t$	-2.047** (0.018)	-2.136** (0.014)
$\text{Cash}_{t-1}$	0.625*** (0.000)	0.705*** (0.000)
$\text{Leverage}_t \times \Delta\text{Cash}_t$	-3.207*** (0.001)	-3.311*** (0.001)
$\text{Leverage}_t$	-0.844*** (0.000)	-0.826*** (0.000)
$\Delta\text{Earnings}_t$	0.717*** (0.000)	0.719*** (0.000)
$\Delta\text{NetAssets}_t$	0.381*** (0.000)	0.359*** (0.000)
$\Delta\text{R\&D}_t$	0.669 (0.134)	0.756 (0.107)
$\Delta\text{Interests}_t$	-2.314** (0.030)	-1.959* (0.069)
$\Delta\text{Dividends}_t$	0.397 (0.798)	-0.364 (0.810)
$\text{NetFinancing}_t$	-0.449*** (0.000)	-0.495*** (0.000)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of observation	5,650	5,650
Adjusted R <sup>2</sup>	20.46%	24.33%

Pane B: Value-of-capital expenditures regression	Dependent variable:	
	Size and market-to-book adjusted excess stock returns	Industry-adjusted excess stock returns
	(1)	(2)
$\Delta\text{CapEx}_t$	1.115*** (0.007)	1.294*** (0.002)
$\text{ESOD}_{t-1} \times \Delta\text{CapEx}_t$	-1.901*** (0.001)	-2.052*** (0.001)
$\text{ESOD}_{t-1}$	0.006 (0.857)	0.025 (0.438)
$\text{CapEx}_{t-1}$	1.407*** (0.000)	1.463*** (0.000)
Leverage <sub>t</sub>	-1.420*** (0.000)	-1.467*** (0.000)
$\Delta\text{Earnings}_t$	1.053*** (0.000)	1.037*** (0.000)
$\Delta\text{NetAssets}_t$	0.279*** (0.001)	0.247*** (0.003)
$\Delta\text{R\&D}_t$	2.547*** (0.001)	2.767*** (0.000)
$\Delta\text{Interests}_t$	-1.257 (0.338)	-0.739 (0.582)
$\Delta\text{Dividends}_t$	-1.453 (0.559)	-2.150 (0.411)
NetFinancing <sub>t</sub>	-0.101 (0.372)	-0.148 (0.204)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of observation	2,828	2,828
Adjusted R <sup>2</sup>	16.87%	19.79%

Appendix: Variable Definitions

Variable	Definitions	Source
ESO	The percentage of equity ownership held by employee blockholders.	Dlugosz, Fahlenbrach, Gompers, and Metrick (2006)
ESOD	Dummy variable: 1 if the firm has an employee block holder that owns at least 5%, 0 otherwise.	Dlugosz, Fahlenbrach, Gompers, and Metrick (2006)
$\Delta$ Cash	Change in cash (data 1).	Compustat
$\Delta$ CapEx	Changes in capital expenditures (data 128).	Compustat
$\Delta$ Earnings	Change in earnings before extraordinary items (data 18 + data 15 + data 50 + data 51).	Compustat
$\Delta$ NetAssets	Change in net assets (data 6 - data 1).	Compustat
$\Delta$ R&D	Change in R&D (data 46, set to 0 if missing).	Compustat
$\Delta$ Interests	Change in interests (data 15).	Compustat
$\Delta$ Dividends	Change in common dividends (data 21).	Compustat
NetFinancing	New equity issues (data 108 - data 115) + Net new debt issues (data 111 - data 114).	Compustat
Leverage	All debt (data 9 + data 34) / Market value of total assets (data 6 - data 60 + data 25 $\times$ data 199).	Compustat

## **Chapter 2: Labor Protection and Accounting Earnings Informativeness: International Evidence**

### **2.1 Introduction**

Prior studies on earning quality suggest that when managers have incentives to hide firm information to pursue private benefits, accounting earnings lose credibility to outside investors. Although most of the studies on information content of earnings are based on U.S. data, there is some evidence that the association between stock returns and accounting earnings exhibits a greater variation across countries relative to within country. While some researchers relate the differences to individual country's specific capital and loan market characteristics (Alford et al., 1993, and Ali and Hwang, 2000), others argue that the difference is due to factors that are less straightforward but have a more fundamental impact on shaping a country's financial market such as political and legal environment (Ali and Hwang, 2000, Ball et al., 2000), accounting system (Hung, 2000), ownership concentration (Fan and Wong, 2002), and investor protection (DeFond, Hung, and Trezevant, 2007). In this study, I focus on the role of another important, yet under-studied stakeholder, namely labor, in determining the informativeness of companies' earnings.

Unlike risk-neutral shareholders, workers have their human and financial capital heavily invested in their companies and therefore, their welfare and job security are closely tied to their companies' long-run financial health and performance. This may provide labor incentives to use their influences to constrain managerial self-dealing behavior, such as reporting low-quality accounting information to hide managerial rent extraction. As a result, the

presence of a strong labor force may lead to more credible and informative earnings.

On the other hand, since all stakeholders share firm resources, as one stakeholder takes a larger proportion of the economic pie, others will have less left. Traditionally, workers are viewed as a group with less bargaining power, and to prevent discrimination against employees from employers, most nations have established laws and institutions to protect workers, one of which is labors' right to claim collectively as labor unions. As stated in Botero et al (2004), "governments empower labor unions to represent workers collectively, and protect particular union strategies in negotiations with employers". In countries with strong labor protection laws, unions have bargaining advantages over management and are often able to demand a higher fraction of firm rent. To prevent unions from taking a bigger share of firm's economic stake, managers and controlling shareholders are more inclined to hide firm information and income from labor through accounting manipulation. Anticipating managers' earnings manipulation, investors will react less to reported financial numbers, resulting in less credibility and informativeness of earnings. Therefore, strong union protection may lead to lower level of informativeness of earnings.

Using a sample of firms covered by Worldscope for the period of 1990 to 2009, I find support for the second prediction that strong union laws have a negative effect on earnings informativeness. This negative effect is robust to controlling for other determinants of earnings informativeness, to Fama-Macbeth regressions, and to excluding countries with the top percentages of observations (i.e. U.S., Japan, and U.K.).

I also examine factors that may attenuate the negative effect of strong union laws on earnings informativeness. First, I focus on a measure of country-level disclosure intensity constructed by La Porta, Lopez-de-silanes, and Shleifer (2006). Specifically, La Porta et al. (2006) create an index that measures the strength of disclosure requirements at the country-level. This index captures the intensity of disclosure requirements in the following six aspects: (1) prospectus; (2) insiders' compensation; (3) ownership by large shareholders; (4) insider's ownership; (5) contracts outside the normal course of business; and (6) related-party transactions. Maffett (2012) show that this country-level disclosure index captures companies' information environment and firms in countries with a higher level of disclosure index have better transparency. I therefore expect disclosure intensity to attenuate the negative effect of strong union laws on earnings informativeness. Consistent with this prediction, I find that the relationship between labor power and earnings informativeness is significantly less negative in countries with higher level of disclosure requirements.

Second, I investigate how a negative shock to companies' financial conditions influences managers' incentives to hide true profits from organized labor. Specifically, I focus on the financial crisis period of 2008-2009. As the spread of financial crisis worldwide represents a negative shock to firms' financial health and creates a significant threat to many companies' survivals, the financial crisis significantly reduced workers' bargaining position because demanding a large portion of firms' financial resources would expedite their employers' bankruptcy and jeopardize their job security. Consistent with this prediction, I find the negative effect of strong union laws on earnings informativeness is significantly attenuated during the financial crisis period.

Finally, I examine the channel through which labor power reduces the informativeness of accounting earnings. I find that firms in countries with higher level of union power index use significantly more negative accruals to manage earnings downward. And the positive relationship between labor power and negative accruals is robust to controlling for a series of firm-characteristics and to the use of Fama-Macbeth regressions. Since the greater use of negative accruals distorts companies' true performance, investors likely downgrade the credibility of reported accounting earnings, resulting in a lower earnings-response coefficient.

This paper contributes to the literature in several ways. First, it extends the line of research on cross-country variations in earnings quality by identifying union power as one of the institutional factors that can influence such variations. Many prior studies on market response to accounting information are limited to the U.S. or a single country setting. An emerging line of accounting research has been focusing on cross-country study not only because it has the methodology advantage of greater heterogeneity, but also because it helps explain the greater differences of markets reaction to earnings cross-country than within-country (Fan and Wong, 2002, Francis, Schipper, and Vincent, 2005, and Haw, Qaqing, and Wu, 2000). Most of these papers investigate the effect of legal protection of investors and show that earnings tend to have higher quality and stock price can better incorporate accounting information countries with better shareholder protection (Leuz et al, 2003; Bhattacharya et al, 2003; Wysocki, 2005, DeFond et al, 2007). Our paper extend this literature by documenting a negative effect of labor power on earnings informativeness.

Second, our study identifies a channel through which union power increases companies' cost of capital. Recent study by Chen, Kacperczyk, and Ortiz-Molina (2011) argues that unions have pervasive effects on firms' ability to adjust capital and labor inputs, causing lower operating flexibility and higher cost of equity. They report empirical findings in supportive of their conjectures. Chu et. al. (2013) focuses on an international setting and also document higher cost of equity for firms from countries with stronger labor protection. However, no studies so far have provided a channel through which labor power increases a firm's cost of equity. Our study bridges the gap between labor protection and cost of equity by showing that labor power reduces the quality of reported earnings.

Third, the paper adds to the emerging line of research that studies the influence of labor on various corporate decisions. For example, previous studies have examined the effect of labor on capital structure (Matsa, 2010), corporate restructuring activities (Atanassov and Kim, 2009), and executive compensation (Gomez and Tzioumis, 2011). The findings of our study show that labor can also influence companies' financial reporting quality.

The remainder of this paper proceeds as follows. Section 2 develops hypothesis. Section 3 describes empirical design and findings. Section 4 concludes.

## **2.2 Hypothesis Development**

Most existing finance and accounting research emphasize agency problems arising from the conflicts of interest between managers and shareholders and between controlling and minority shareholders due to the fact that these conflicts have the greatest impact on firm value and represent the keenest agency

problems. Workers, as another important stakeholder of a firm, may have interests that can conflict with those of shareholders as well. Prior literature suggests that given labor unions' distinct motivations and risk preferences, they tend to be more conservative in investment and financial reporting policies (Faleye, Mehrotra, and Morck, 2006; Leung, Li, and Rui, 2012). Under the assumption that conflicts will be more acute when a company is in financial stress, Atanassov and Kim (2007) investigate how labor power affects restructuring decisions made by poorly-performing firms. They provide evidence that corporate governance mechanism fails to some extent when workers' interests overpower those of investors, and managers may not make optimal decisions under the influence of power labor. Specifically, they find that when union law is strong and shareholder protection is weak, poorly-performing managers are more likely to ally with workers to retain their jobs. As a result, managers make value-reducing assets sales to prevent workers from layoffs and wage cuts.

Both theory and empirical studies have also discussed the channels through which powerful labor can exert influences over company decisions. Threat of strike is the most commonly used way to show workers' disagreement with management. Besides strikes, unions can also intervene with company decisions by appointing representatives onto the board of directors, setting top management compensation, and voting as shareholders through employee stock ownership plans. Other indirect channels include passive production performance and seeking political support from government or activists (Kim, 2009).

Because of labors' private-interest-pursuing behavior, labor economic theories picture union as rent seekers, who would demand a higher proportion of firm income and resources, especially when their companies report positive

earnings. Since union's bargaining power is endorsed and backed by legal institutions and legislation enforcement, in countries with strong labor protection laws, unions would be in a better bargaining position compared to those in countries with weak labor protection. To prevent labor's expropriation of corporate income, managers are likely to choose sub-optimal decisions to shelter income from labor. Existing studies have shown the bargaining between labor and managers can have influences over company policies and decisions. For example, Matsa (2010) focuses on companies' capital structure and show that firms with strong unions are more likely to choose debt financing as a high level of liquidity is likely to lead to high wage demand from workers. D'Souza, Jacob, and Ramesh (2001) study U.S. managers' discretionary choices when adopting SFAS 106, Employers' Accounting for Postretirement Benefits Other Than Pensions, and find that firms are more likely to adopt immediate recognition when they are more unionize. This is because immediate recognition can strengthen managers' bargaining power in their negotiation with unions to reduce plan benefits and improve future reported income.

Managers can also increase the information asymmetry faced by workers since a lower level of information sharing can reduce workers' bargaining power to extract resources. Hilary (2006) provides empirical support for this conjecture by showing that strong and organized labor forces are positively associated with bid-ask spreads and probabilities of informed trading (PIN) but negatively associated with trading volume and analyst coverage. Finally, managers can also intentionally reduce the holdings of liquid assets to increase their bargaining position against labor, since the risk of liquidity shortage can pose credible threat to workers' job security. Klasa, Maxwell, and Ortiz-Molina (2009)

empirically test this hypothesis and find that companies in unionized industries hold a lower level of cash.

Our study focuses on firms' financial reporting policies and proposes that managers may manipulate firms' financial numbers to hide income from organized labor. These earnings manipulations cause outside investor to discount the information conveyed by the reported financial numbers, leading to a lower level of earnings informativeness. I state this hypothesis as follows.

H: Earnings are less informative for firms from countries with more powerful labor.

## **2.3 Empirical Analysis**

### ***2.3.1 Sample description***

I start with all public non-financial firms in Worldscope during the period of 1990 to 2009. Our sample period starts from 1990 because Worldscope's coverage is poor for many countries prior to 1990. I then obtain monthly stock returns from Datastream, which are used to compute companies' annual stock price performance. For each fiscal year, I require firms in the sample to have stock return data for 12 consecutive months to compute annual stock returns. I also trim firm stock return variable and all company financial variables at the 1% tails to remove outliers<sup>9</sup>. Finally, I exclude countries that have fewer than 10 firms in the Worldscope database during the sample period. The final sample consists of 12,926 companies (88,610 firm-years) from 42 countries.

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<sup>9</sup> For leverage, I drop firm-years with book leverage ratio that is greater than 1. All the results are robust to winsorizing continuous variables at the 1 and 99 percentiles.

Table 1 presents the sample distribution by country. Column (1) lists the number of firm-years for each country, while column (2) reports the number of firm-years from each country as a percentage of the whole sample. The top 3 countries are U.S., Japan, and U.K., representing 37%, 14%, and 8% of all firm-years, respectively. To alleviate the concern that the findings are primarily driven by these three countries, I later conduct a robustness test in which firm-years from U.S., Japan, and U.K are excluded. I find that all results continue to hold.

### ***2.3.2 Earnings informativeness***

Prior literature defines earnings informativeness as “the slope coefficient relating returns to earnings ..., obtained both from regressions of annual returns and annual earnings, and from regressions of three-day abnormal returns on news conveyed by earnings announcements” (Francis, Schipper, and Vincent, 2005). To measure the value relevance of accounting earnings, I follow Fan and Wong (2002)’s model to test the analytical relation between equity share price responses to earning and the precision of the earnings signal. Specifically, I measure earnings informativeness by the estimated coefficient on earnings in the following earnings-return regression model:

$$RET_{i,t} = \beta_0 + \beta_1 EARN_{i,t} + \varepsilon_{i,t}$$

Where  $RET_{i,t}$  is firm  $i$ 's buy-and-hold stock returns over a 12-month period from nine months prior to the end of fiscal year  $t$  to three months after the end of the fiscal year  $t$ .  $EARN_{i,t}$  is firm  $i$ 's earnings before extraordinary items at the end of

fiscal year  $t$  scaled by its market value of equity measured at the beginning of year  $t$ . A higher positive value of  $\beta_1$  indicates more informative earnings.

To examine the effect of labor regulation on companies' earnings informativeness, I augment the earning-return regression model by adding country-level labor power index and its interaction with earnings, while controlling for a series of firm characteristics that have been shown related to earnings informativeness. Specifically, I estimate the following regression model:

$$\begin{aligned}
 RET_{i,t} = & \beta_0 + \beta_1 EARN_{i,t} + \beta_2 EARN_{i,t} * LaborPowerIndex_j + \beta_3 LaborPowerIndex_j \\
 & + \beta_4 EARN_{i,t} * FirmSize_{i,t} + \beta_5 FirmSize_{i,t} + \beta_6 EARN_{i,t} * Leverage_{i,t} \\
 & + \beta_7 Leverage_{i,t} + \beta_8 EARN_{i,t} * MB_{i,t} + \beta_9 MB_{i,t} + \beta_{10} EARN_{i,t} * LOSS_{i,t} \\
 & + \beta_{11} LOSS_{i,t} + \beta_{12} EARN_{i,t} * AntiDir_j + \beta_{11} AntiDir_j \\
 & + \text{year fixed effects} + \text{industry fixed effects} + \varepsilon_{i,t}
 \end{aligned}$$

“Labor Power Index” is the collective relations law index in Botero, Djankov, La Porta, Lopez De Silanes, and Shleifer (2004). It measures the power of labor unions and the legal protection of workers engaged in collective disputes. Specifically, it is equal to the average of labor union power index and collective disputes index. If managers strategically manager earnings downward to increase their bargaining position over labor unions, especially when laws and regulations give labor more power and protection, then I would expect the coefficient on the interaction term between earnings and labor power index,  $\beta_2$ , to be negative and significant. I also control for several firm-level financial variables that are likely

affect earnings-return relation. Following prior literature (e.g., Fan and Wong (2002), Francis, Schipper and Vincent (2005)), I interact earnings with firm size, leverage, market-to-book ratio (MB), and an indicator for negative earnings (LOSS). Firm size is a company's market value of equity measured at the beginning of fiscal year  $t$ . Leverage is defined as book value of all debt scaled by book value of total assets, all measured at the beginning of year  $t$ . Market-to-book ratio is defined as the market value of total assets scaled by the book value of total assets, all measured at the beginning of year  $t$ . Market value of total assets is equal to book value of total assets minus book value of debt plus market value of equity. LOSS is an indicator that takes the value of one if a firm's earnings for year  $t$  is negative, and zero otherwise. AntiDir is the newly revised anti-director rights index in DLLS (2008) and captures the level of shareholder protection in each country. I control for this as prior research show that earnings are more informative in countries with better shareholder protection (DeFond, Hung, and Trezevant, 2007; Fan and Wong, 2002). Table 2 reports the summary statistics of firm-level variables used in the regression analysis.

### ***2.3.3 Baseline regression results***

I present the results from baseline regressions in Table 3. The numbers reported in parentheses are *p-values* that are based on robust standard errors with firm-level clustering (Peterson (2009)). I find that the coefficient estimate of earnings is positive and significant, suggesting that earnings are informative for the whole sample during our sample period. More importantly, in column (1), the coefficient estimate of the interaction term between earnings and labor power index is negative and significant at better than 1% level. This finding is in line of

the prediction that firms in countries with higher level of union power intentionally hide their true performance through earnings manipulation, thereby making earnings less informative. I also use an indicator that is equal to one for countries with above-sample-median labor power index, and zero otherwise. I then interact this indicator with earnings and present the results in column (2). Consistent with the findings based on the continuous labor power measure, the coefficient of this new interaction term is also negative and significant at better than 1% level.

For other control variables, the findings are in general consistent with those in prior studies. For example, I find that earnings in large firms are more informative, a result also documented in Fan and Wong (2002). I also find that leverage has a negative effect on earnings informativeness while market-to-book ratio has a positive impact.

#### ***2.3.4 Fama-Macbeth regressions***

The baseline regressions are estimated by pooling together all firm-years from each country. To alleviate the concern that the statistical significance of the coefficient estimates is overstated due to the serial correlations in residuals, I re-estimate the earnings-return model using the Fama-Macbeth approach. Specifically, I run the cross-sectional regression for each year from 1990 to 2009 and then calculate the mean of time-series of regression coefficients. In Table 4, I report the time-series averages of slope coefficients and in parentheses the p-values based on Newey-West standard errors. The results continue to hold. For example, in column (1), the coefficient of the interaction between earnings and

labor power index is -0.304, which continues to be significant at better than 1% level.

### ***2.3.5 Excluding firms from U.S., Japan, and U.K.***

The sample distribution in Table 1 shows that firms from the top three countries, U.S., Japan, and U.K., represent almost 60% of the whole sample. To address the concern that the findings may be driven by firms from these three countries, I exclude observations from these countries and re-estimate the earnings-return model in Table 5. I find that country-level labor protection continues to have a negative and significant effect on earnings informativeness, regardless of whether I use the continuous labor power index or the high labor power indicator.

### ***2.3.6 Controlling for earnings persistence***

Prior research has shown that earnings responsive coefficients increase with earnings persistence (Collins and Kothari, 1989). In this subsection, I construct a measure of earnings persistence and include it in the earnings informativeness regressions. Specifically, earnings persistence is measured as the slope coefficient estimate from an autoregressive model of order one (AR1) for annual return on assets (ROA), where ROA is defined as earnings before extraordinary items scaled by the book value of total assets (Richardson, Sloan, Soliman, and Tuna, 2005). I then include earnings persistence and its interaction with earnings in the earnings-return regression. Since I require that at each firm-year, a company have ROA available for at least past 5 years to estimate the earnings persistence measure, the number of observations drop to 69,911. The regression results

presented in Table 6 suggests that earnings persistence has a positive effect on earnings informativeness, though the effect is statistically insignificant. More importantly, the negative effect of labor power on earnings informativeness continues to be significantly negative.

### ***2.3.7 Change regression***

To alleviate the concern that stock market may have formed some expectation about the earnings that is going to be disclosed in the next annual report, I conduct a change regression in which both the dependent variable and the independent variables are the changes from year t-1 to year t (except for country-level indices). The regression results presented in Table 7 show that the labor power index continues to reduce the earnings informativeness, as evidenced by the negative and significant coefficient estimate of the interaction between labor power index and the change in earnings.

### ***2.3.8 Cross-sectional variation in the effect of labor power on earnings informativeness***

The results so far are consistent with the hypothesis that managers manipulate earnings and hide firms' true performance from labor in order to gain bargaining advantages over labor. To provide further evidence on our hypothesis, in this section I explore the cross-sectional variations in the effect of strong union laws on earnings informativeness.

First, I focus on a country-level disclosure intensity index constructed by La Porta et al. (2006). This index measures the intensity of disclosure requirements in the following six areas: (1) prospectus; (2) insiders'

compensation; (3) ownership by large shareholders; (4) insider's ownership; (5) contracts outside the normal course of business; and (6) related-party transactions. La Porta et al. (2006) show that more intensive disclosure requirements contribute to better financial market development. Maffett (2012) find that international mutual funds have more privately informed trading in countries with more disclosure requirements. His evidence suggests that this country-level disclosure index captures companies' information environment. I expect disclosure intensity to significantly attenuate managers' leeway to distort reported financial numbers to hide true performance from organized labor. As a result, I expect to observe a less pronounced negative association between strong union laws and earnings management in countries with higher level of disclosure intensity.

To test this conjecture, I add in our regression model a three-way interaction term of earnings, labor power index. I also control for the two-way interaction terms such as the interaction of earnings with disclosure index and interaction of labor power index with disclosure index, to rule out the possibility that the effect of the three-way interaction term merely captures the effects of the two way interaction terms. The regression results are reported in Table 8. Consistent with the prediction, I find that the relationship between labor power and earnings informativeness is significantly less negative in countries with higher level of disclosure requirements, as evidenced by the significant and positive coefficient of the three-way interaction term. On the other hand, the coefficient of (earnings\*labor power index) continues to be negative and significant.

I also examine how a negative shock to companies' financial conditions influences managers' incentives to hide true profits from organized labor and hence affects the relationship between strong union laws and earnings

informativeness. I focus on the financial crisis period of 2008-2009, since the spread of financial crisis worldwide represents a negative shock to firms' financial health and creates a significant threat to many companies' survivals. As workers' future employment security and wage incomes are on the line when their employers face increased risk of bankruptcy, I expect labor more likely to have concession as doing so would increase the chance of their employers' survival during the financial crisis period. As a result, managers also have fewer incentives to manipulate earnings and hide profits from organized labor in the period of financial crisis.

To test this prediction, I construct an indicator variable, *Crisis*, that is equal to one for the period of 2008-2009 and zero otherwise. I then add a three-way interaction term of earnings, labor power index, and crisis period indicator. Similar as before, I control for the two-way interaction terms including the interaction of earnings with the crisis period indicator and interaction of labor power index with crisis period indicator. The results are presented in Table 9. The coefficient of (earnings\*labor power index) continues to be negative and significant, suggesting that strong union laws have a negative impact on earnings informativeness during non-crisis period. On the other hand, I find that the negative effect of strong union laws on earnings informativeness is significantly attenuated during the financial crisis period, as evidenced by the significant and positive coefficient of the three-way interaction term. A further statistical test suggests that the sum of the coefficient of (earnings\*labor power index) and the coefficient of (earnings\*labor power index\*crisis) is indistinguishably different from zero,

suggesting that the negative effect of strong unions law completely disappears during the financial crisis period.<sup>10</sup>

### ***2.3.9 The effect of labor power index on negative discretionary accruals***

In this section I examine the channels through which labor power reduces accounting earnings informativeness. One way for managers to underreport profitability and shelter corporate income is to use negative discretionary accruals. For example, Hall and Stammerjohan (1997) report that oil companies in the U.S. use negative discretionary accruals to shelter corporate income when facing threats of government litigation. To estimate discretionary accruals, I follow the existing studies and use the modified Jones model (Dechow, Sloan, and Sweeney (1995)) while controlling for return on assets as suggested in Kothari et al (2005). The model is specified as follows.

$$\frac{CA_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \times \frac{1}{A_{i,t-1}} + \alpha_2 \times \left[ \frac{(\Delta Sales_{i,t} - \Delta AR_{i,t})}{A_{i,t-1}} \right] + \alpha_3 \times \frac{PPE_{i,t}}{A_{i,t-1}} + ROA_{i,t-1} + \varepsilon_{i,t}$$

where  $CA_{i,t}$  is firm  $i$ 's current accruals is year  $t$ , defined as income before extraordinary items plus depreciation and amortization minus cash flow from operations.  $A_{i,t-1}$  is firm  $i$ 's book value of total assets measured at the beginning of year  $t$ .  $\Delta Sales_{i,t}$  is change in firm  $i$ 's sales from year  $t-1$  to  $t$ .  $\Delta AR_{i,t}$  is change

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<sup>10</sup> I also split the whole sample into healthy versus distressed firms. Distressed firms are defined as those with leverage ratios that fall in either sample top quartile or top ten percentile. However, I find that the significantly negative effect of labor power on earnings in formativeness exists in both subsamples and the magnitudes are also similar.

in firm  $i$ 's account receivables from year  $t-1$  to  $t$ .  $PPE_{i,t}$  is firm  $i$ 's property, plant, and equipment measured at the end of year  $t$ .  $ROA_{i,t-1}$  is firm  $i$ 's return on assets for fiscal year  $t-1$ . I estimate the accrual model using firms from all 42 countries for each year and two-digit SIC industry cohort that has at least 10 firm-year observations. The discretionary accrual for each firm-year is the residual estimated from the regression. Negative discretionary accruals are defined as discretionary accruals times  $-1$ . A large number of negative discretionary accruals correspond to more profit reduction. The number of observations is reduced to 107,852 since I cannot estimate discretionary accruals for some firms due to missing data.

I next use negative discretionary accruals as the dependent variable and regress it on the labor power index and other control variables as used in the earnings-return regressions. I present the regression results in Table 10. Panel A presents the coefficients from pooled cross-sectional regressions. Panel B reports the coefficients from the Fama-Macbeth regression. Consistent with our expectation, the coefficient estimates of labor power index are positive and highly significant, regardless of which regression method I choose. I also obtain similar results when replace the continuous labor index with the indicator for countries with higher level of labor power. Overall, our results in this section suggest one potential channel through which labor protection reduces accounting earnings informativeness. That is, managers tend to use more negative accruals to hide corporate income from power labor.

## 2.4 Conclusion

Strong labor union laws provide workers with advantageous bargaining positions against management. Managers can adjust company policies and decisions to prevent organized labor from demanding a high fraction of companies' resources. One way to do so is to manipulate the reported financial numbers to hide companies' profits from labor. I empirically test this prediction and find evidence in support of the conjecture. Specifically, using the earnings-return regression model, I show that earnings convey less information in firms from countries that have strong labor union laws. I also find that firms from these nations are more likely to use negative discretionary accruals. These findings suggest that managers intentionally underreport profits to hide income from organized labor. Overall, our findings contribute to the understanding of the influences of organized labor on company financial reporting practices.

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**Table 1. Sample distribution by country**

The sample consists of 113,709 firm-years in 42 countries for the period of 1990-2009. Labor power index is taken from BDLLS (2004) and measures the labor union power and the protection of workers during collective disputes. Country legal origins and the anti-director rights index are obtained from DLLS (2008).

<b>Country</b>	<b>Number of firm-years</b>	<b>Percentage as whole sample (%)</b>	<b>Labor power index</b>	<b>New anti-director rights</b>
<b>Argentina</b>	207	0.18	0.57738	2
<b>Australia</b>	4652	4.09	0.37202	4
<b>Austria</b>	258	0.23	0.36012	2.5
<b>Belgium</b>	502	0.44	0.42262	3
<b>Brazil</b>	423	0.37	0.37798	5
<b>Canada</b>	4672	4.11	0.19643	4
<b>Chile</b>	314	0.28	0.38095	4
<b>China</b>	2039	1.79	0.33036	1
<b>Colombia</b>	65	0.06	0.48512	3
<b>Denmark</b>	712	0.63	0.41964	4
<b>Finland</b>	941	0.83	0.31845	3.5
<b>France</b>	2997	2.64	0.66667	3.5
<b>Germany</b>	1998	1.76	0.60714	3.5
<b>Greece</b>	603	0.53	0.48512	2
<b>Hong Kong</b>	2277	2	0.45536	5
<b>India</b>	1901	1.67	0.38393	5
<b>Indonesia</b>	431	0.38	0.39286	4
<b>Ireland</b>	450	0.4	0.46429	5
<b>Israel</b>	582	0.51	0.30952	4
<b>Italy</b>	1265	1.11	0.63095	2

<b>Japan</b>	18132	15.95	0.62798	4.5
<b>South Korea</b>	2186	1.92	0.54464	4.5
<b>Malaysia</b>	3492	3.07	0.1875	5
<b>Mexico</b>	496	0.44	0.57738	3
<b>Netherlands</b>	1151	1.01	0.46429	2.5
<b>New Zealand</b>	464	0.41	0.25	4
<b>Norway</b>	833	0.73	0.64881	3.5
<b>Peru</b>	122	0.11	0.71131	3.5
<b>Philippines</b>	336	0.3	0.51488	4
<b>Poland</b>	330	0.29	0.56548	2
<b>Portugal</b>	256	0.23	0.64881	2.5
<b>Russia</b>	112	0.1	0.57738	4
<b>Singapore</b>	2444	2.15	0.34226	5
<b>South Africa</b>	1205	1.06	0.54464	5
<b>Spain</b>	819	0.72	0.58631	5
<b>Sweden</b>	1689	1.49	0.53869	3.5
<b>Switzerland</b>	1003	0.88	0.41667	3
<b>Taiwan</b>	770	0.68	0.31548	3
<b>Thailand</b>	728	0.64	0.35714	4
<b>Turkey</b>	222	0.2	0.47321	3
<b>United Kingdom</b>	10000	8.79	0.1875	5
<b>United States</b>	39632	34.85	0.25893	3

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**Table 2. Summary Statistics**

The sample consists of 113,704 firm-years in 42 countries for the period of 1990-2009. Firm annual stock returns is the buy-and-hold stock returns over a 12-month period from nine months prior to the end of fiscal year  $t$  to three months after the end of the fiscal year  $t$ . EARN is a firm's earnings before extraordinary items at the end of fiscal year  $t$  scaled by its market value of equity measured at the beginning of year  $t$ . Firm size is a company's market value of equity measured at the beginning of fiscal year  $t$ . Leverage is defined as book value of all debt scaled by book value of total assets, all measured at the beginning of year  $t$ . MB is a firm's market-to-book ratio, defined as market value of total assets divided by book value of total assets, all measured at the beginning of year  $t$ . Market value of total assets is equal to book value of total assets minus book value of debt plus market value of equity.

	Mean	Standard deviation	Q1	Median	Q3
Firm annual stock returns	0.094	0.597	-0.285	0.000	0.330
Firm size (in US\$ millions)	1319	3465	51	204	872
EARN	-0.008	0.224	-0.010	0.042	0.080
Leverage	0.226	0.189	0.057	0.203	0.347
Market-to-book ratio	1.855	1.495	1.056	1.380	2.036

**Table 3. The effect of labor protection on accounting earnings informativeness:  
Pooled cross-sectional regressions**

The sample consists of 113,704 firm-years in 42 countries for the period of 1990-2009. The dependent variable is a firm's buy-and-hold stock return over a 12-month period from nine months prior to the end of fiscal year  $t$  to three months after the end of the fiscal year  $t$ . In parentheses are two-sided  $p$ -values based on standard errors adjusted for heteroskedasticity and firm-level clustering. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Earnings	2.263*** (0.000)	2.178*** (0.000)
Earnings*labor power index	-0.302*** (0.000)	
Labor power index	-0.177*** (0.000)	
Earnings*Indicator for labor power index above sample median		-0.096*** (0.002)
Indicator for labor power index above sample median		-0.065*** (0.004)
Earnings*Firm size	0.043*** (0.000)	0.042*** (0.000)
Firm size	-0.014*** (0.000)	-0.014*** (0.000)
Earnings*leverage	-0.357*** (0.000)	-0.363*** (0.000)
Leverage	-0.033*** (0.000)	-0.036*** (0.000)
Earnings*Market-to-book	0.064*** (0.000)	0.065*** (0.000)
Market-to-book	-0.006*** (0.000)	-0.006*** (0.000)
Earnings*Indicator for negative earnings	-2.208*** (0.000)	-2.202*** (0.000)
Indicator for negative earnings	-0.034*** (0.000)	-0.034*** (0.000)
Earnings*Anti-director index	0.116* (0.088)	0.110 (0.107)
Anti-director index	0.127*** (0.000)	0.129*** (0.000)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of Observations	113,704	113,704
Adjusted R <sup>2</sup>	21.85%	21.86%

**Table 4. The effect of labor protection on accounting earnings informativeness:  
Fama-Macbeth regressions**

The sample consists of 113,704 firm-years in 42 countries for the period of 1990-2009. The dependent variable is a firm's buy-and-hold stock return over a 12-month period from nine months prior to the end of fiscal year  $t$  to three months after the end of the fiscal year  $t$ . The coefficient estimates are the averages of time-series of estimates from annual cross-sectional regressions. In parentheses are p-values based on Newey-West standard errors. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Earnings	2.270*** (0.001)	2.151*** (0.001)
Earnings*labor power index	-0.356** (0.013)	
Labor power index	-0.154 (0.120)	
Earnings*Indicator for labor power index above sample median		-0.1437** (0.028)
Indicator for labor power index above sample median		-0.051 (0.112)
Earnings*Firm size	0.045*** (0.001)	0.046*** (0.001)
Firm size	-0.012*** (0.002)	-0.013*** (0.001)
Earnings*leverage	-0.246*** (0.027)	-0.263** (0.013)
Leverage	-0.013 (0.591)	-0.012 (0.537)
Earnings*Market-to-book	0.100*** (0.003)	0.108*** (0.004)
Market-to-book	0.0006 (0.939)	0.0001 (0.985)
Earnings*Indicator for negative earnings	-2.235*** (0.001)	-2.235*** (0.001)
Indicator for negative earnings	-0.027** (0.014)	-0.027** (0.027)
Earnings*Anti-director index	0.006 (0.971)	0.062 (0.600)
Anti-director index	0.109 (0.134)	0.097 (0.151)

**Table 5. The effect of labor protection on accounting earnings informativeness:**

**Pooled cross-sectional regressions excluding U.S., Japan, and U.K.**

This table presents regression results after firms from U.S., Japan, and U.K. are excluded from the sample. The dependent variable is a firm's buy-and-hold stock return over a 12-month period from nine months prior to the end of fiscal year  $t$  to three months after the end of the fiscal year  $t$ . In parentheses are two-sided  $p$ -values based on standard errors adjusted for heteroskedasticity and firm-level clustering. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Earnings	2.102*** (0.000)	1.962*** (0.000)
Earnings*labor power index	-0.400*** (0.002)	
Labor power index	-0.042** (0.041)	
Earnings*Indicator for labor power index above sample median		-0.149*** (0.001)
Indicator for labor power index above sample median		-0.019*** (0.005)
Earnings*Firm size	0.053*** (0.000)	0.052*** (0.000)
Firm size	-0.019*** (0.000)	-0.019*** (0.000)
Earnings*leverage	-0.380*** (0.000)	-0.371*** (0.000)
Leverage	-0.022 (0.175)	-0.025 (0.120)
Earnings*Market-to-book	0.113*** (0.000)	0.113*** (0.000)
Market-to-book	-0.005** (0.033)	-0.006** (0.026)
Earnings*Indicator for negative earnings	-2.090*** (0.000)	-2.089*** (0.000)
Indicator for negative earnings	-0.037*** (0.000)	-0.037*** (0.000)
Earnings*Anti-director index	0.176** (0.029)	0.246*** (0.005)
Anti-director index	0.082*** (0.000)	0.091*** (0.000)

Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of Observations	45,946	45,946
Adjusted R <sup>2</sup>	25.66%	25.64 %

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**Table 6. The effect of labor protection on accounting earnings informativeness:  
Controlling for earnings persistence**

The sample consists of 69,911 firm-years in 42 countries for the period of 1990-2009. The dependent variable is a firm's buy-and-hold stock return over a 12-month period from nine months prior to the end of fiscal year  $t$  to three months after the end of the fiscal year  $t$ . In parentheses are two-sided  $p$ -values based on standard errors adjusted for heteroskedasticity and firm-level clustering. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Earnings	2.009*** (0.000)	1.919*** (0.000)
Earnings*labor power index	-0.340*** (0.001)	
Labor power index	-0.089*** (0.000)	
Earnings*Indicator for labor power index above sample median		-0.102** (0.013)
Indicator for labor power index above sample median		-0.042*** (0.000)
Earnings*Persistence	0.004 (0.519)	0.005 (0.482)
Persistence	0.001 (0.459)	0.002 (0.424)
Earnings*Firm size	0.049*** (0.000)	0.048*** (0.000)
Firm size	-0.015*** (0.000)	-0.015*** (0.000)
Earnings*leverage	-0.354*** (0.000)	-0.363*** (0.000)
Leverage	-0.011 (0.339)	-0.012 (0.278)
Earnings*Market-to-book	0.074*** (0.000)	0.075*** (0.000)
Market-to-book	-0.005** (0.024)	-0.005** (0.014)
Earnings*Indicator for negative earnings	-1.995*** (0.000)	-1.986*** (0.000)
Indicator for negative earnings	-0.040*** (0.000)	-0.041*** (0.000)
Earnings*Anti-director index	0.126 (0.149)	0.101 (0.263)
Anti-director index	0.063*** (0.000)	0.078*** (0.000)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes

Number of Observations	69,911	69,911
Adjusted R <sup>2</sup>	24.18%	24.21 %

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**Table 7. The effect of labor protection on accounting earnings informativeness:  
Change regressions**

The sample consists of 97,470 firm-years in 42 countries for the period of 1990-2009. Both the dependent variable and independent variables are their respective changes from year t-1 to year t. In parentheses are two-sided *p*-values based on standard errors adjusted for heteroskedasticity and firm-level clustering. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)
Delta Earnings	0.585*** (0.000)	0.383*** (0.000)
Delta Earnings*labor power index	-0.726*** (0.000)	
Labor power index	-0.097*** (0.000)	
Delta Earnings*Indicator for labor power index above sample median		-0.254*** (0.000)
Indicator for labor power index above sample median		-0.039*** (0.000)
Delta Earnings*Delta Firm size	0.008 (0.699)	0.005 (0.802)
Delta firm size	-0.669*** (0.000)	-0.669*** (0.000)
Delta Earnings*Delta leverage	-0.068 (0.549)	-0.078 (0.487)
Delta leverage	-0.186*** (0.000)	-0.187*** (0.000)
Delta Earnings*Delta market-to-book	-0.088*** (0.000)	-0.087*** (0.000)
Delta market-to-book	-0.023*** (0.000)	-0.023*** (0.000)
Delta Earnings*Delta (Indicator for negative earnings)	-0.074*** (0.001)	-0.075*** (0.001)
Delta (Indicator for negative earnings)	-0.070*** (0.000)	-0.070*** (0.000)
Delta Earnings*Anti-director index	0.286** (0.016)	0.312*** (0.008)
Anti-director index	0.032*** (0.000)	0.039*** (0.000)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of Observations	97,470	97,470
Adjusted R <sup>2</sup>	32.36%	32.36 %

**Table 8. Cross-sectional variation in the effect of labor protection on accounting earnings informativeness: Country-level disclosure requirements**

The sample consists of 113,704 firm-years in 42 countries for the period of 1990-2009. The dependent variable is a firm's buy-and-hold stock return over a 12-month period from nine months prior to the end of fiscal year  $t$  to three months after the end of the fiscal year  $t$ . Disclosure is an index from La Porta et al. (2006) that proxies for country-level disclosure intensity. In parentheses are two-sided  $p$ -values based on standard errors adjusted for heteroskedasticity and firm-level clustering. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% level, respectively.

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Earnings	3.017*** (0.000)
Earnings*Labor power index	-1.400*** (0.007)
Labor power index	-0.330*** (0.000)
Earnings*Labor power index*Disclosure	1.082** (0.046)
Disclosure	0.105** (0.020)
Earnings* Disclosure	0.699** (0.013)
Labor power index* Disclosure	0.170** (0.047)
Earnings*Firm size	0.041*** (0.000)
Firm size	-0.008*** (0.000)
Earnings*leverage	-0.350*** (0.000)
Leverage	-0.026*** (0.006)
Earnings*Market-to-book	0.060*** (0.000)
Market-to-book	-0.011*** (0.000)
Earnings*Indicator for negative earnings	-2.264*** (0.000)
Indicator for negative earnings	-0.026*** (0.000)
Earnings*Anti-director index	0.077 (0.277)
Anti-director index	0.104*** (0.000)
Year fixed effects	Yes
Industry fixed effects	Yes

Number of Observations	113,704
Adjusted R <sup>2</sup>	21.77 %

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**Table 9. The effect of labor protection on accounting earnings informativeness during financial crisis period**

The sample consists of 113,704 firm-years in 42 countries for the period of 1990-2009. The dependent variable is a firm's buy-and-hold stock return over a 12-month period from nine months prior to the end of fiscal year  $t$  to three months after the end of the fiscal year  $t$ . *Crisis* is an indicator variable that is equal to one for the period of 2008-2009, and zero otherwise. In parentheses are two-sided  $p$ -values based on standard errors adjusted for heteroskedasticity and firm-level clustering. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% level, respectively.

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Earnings	2.351*** (0.000)
Earnings*Labor power index	-0.344*** (0.000)
Labor power index	-0.170*** (0.000)
Earnings*Labor power index*Crisis	0.375*** (0.002)
Crisis	-0.344*** (0.000)
Earnings* Crisis	-0.224*** (0.000)
Labor power index* Crisis	0.028 (0.164)
Earnings*Firm size	0.043*** (0.000)
Firm size	-0.008*** (0.000)
Earnings*leverage	-0.364*** (0.000)
Leverage	-0.026*** (0.007)
Earnings*Market-to-book	0.060*** (0.000)
Market-to-book	-0.011*** (0.000)
Earnings*Indicator for negative earnings	-2.272*** (0.000)
Indicator for negative earnings	-0.025*** (0.000)
Earnings*Anti-director index	0.105 (0.124)
Anti-director index	0.115*** (0.000)
Year fixed effects	Yes
Industry fixed effects	Yes

Number of Observations	113,704
Adjusted R <sup>2</sup>	21.77 %

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**Table 10. The effect of labor protection on negative discretionary accruals**

The sample consists of 107,852 firm-years in 42 countries for the period of 1990-2009 that have available financial data to compute discretionary accruals. The dependent variable is a firm's discretionary accruals time -1. Panel A reports coefficients estimates from pooled cross-sectional regressions. In parentheses are two-sided  $p$ -values based on standard errors adjusted for heteroskedasticity and firm-level clustering. Panel B reports coefficients estimates from Fama-Mabeth regressions, i.e. the averages of time-series of estimates from annual cross-sectional regressions. P-values in Panel B are based on Newey-West standard errors. \*\*\*, \*\*, and \* stand for statistical significance at the 1%, 5%, and 10% level, respectively.

Panel A: Pooled cross-sectional regression	(1)	(2)
Labor power index	0.015*** (0.000)	
Indicator for labor power index above sample median		0.005*** (0.000)
Firm size	0.002*** (0.000)	0.002*** (0.000)
Leverage	-0.002** (0.049)	-0.002** (0.076)
Market-to-book	0.0003 (0.155)	0.0003 (0.196)
Indicator for negative earnings	0.021*** (0.000)	0.021*** (0.000)
Anti-director index	-0.010*** (0.000)	-0.009*** (0.000)
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Number of Observations	107,852	107,852
Adjusted R <sup>2</sup>	2.68%	2.65 %

Panel B: Fama-Macbeth regression	(1)	(2)
Labor power index	0.012*** (0.006)	
Indicator for labor power index above sample median		0.004*** (0.005)
Firm size	0.002*** (0.000)	0.002*** (0.000)
Leverage	-0.003** (0.029)	-0.003** (0.040)
Market-to-book	0.0004 (0.127)	0.0004 (0.141)
Indicator for negative earnings	0.020*** (0.000)	0.020*** (0.000)
Anti-director index	-0.008*** (0.005)	-0.007*** (0.006)

## **CURRICULUM VITAE**

Academic qualifications of the thesis author, Ms. LU Yifei:

- Received the degree of Bachelor of Business (Economics) from Zhejiang University, July 1999.
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