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Abstract

Using a broad sample of the largest European companies, I examine whether the two governance mechanisms, namely (i) independent monitoring by a board of directors and (ii) grants and disclosures of incentive-based executive pay, are substitutes for one another. I find that companies with proportionately more executives on their boards of directors grant greater incentive-based pay to their executives, and improve the transparency of their pay disclosure. The findings are consistent with the efficient contracting argument, which predicts that greater incentive-based pay and pay disclosure transparency mitigate agency problems generated by boards dependent upon management.

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1. Introduction

Boards of directors (boards) are rarely fully independent of management. Shareholder activists and academics often argue that executives who serve as directors on boards (executive directors) and CEOs who serve as board chairs (CEO-Chairs) render boards more dependent upon management, and that dependent boards do not necessarily maximize share value (Jensen, 1993). Specifically, executive directors and CEO-Chairs control information flow to outsiders, reduce boards' monitoring efficiency, and eventually exploit the boards' authority for their own benefit. Notwithstanding the arguments in the literature about the operational efficiencies created by executive directors (Johnson et al., 1996), the agency problem associated with the presence of executive directors and CEO-Chairs is widely accepted as fact.

However, much controversy remains on whether companies adopt alternative governance measures in equilibrium to counter the adverse effects of board dependence (Bushman and Smith, 2001). If companies are able to effectively implement such alternative measures, allegations of real costs to shareholders due to board dependence may be less significant. In this paper, I shed light on this debate by examining whether and how executive compensation contracts are crafted to mitigate the effects of dependent boards. Specifically, I examine whether companies with CEO-Chairs and more executive directors make more extensive use of incentive-based pay (i.e., bonuses, stock grants, and option grants), and therefore better align executives' interests with those of shareholders.

There are two opposing arguments about the relation between board dependence and incentive-based pay. The *skimming* or *managerial opportunism* argument asserts that companies fail to protect shareholders against executive directors. Executive directors exploit their presence on the board at the expense of shareholders. Consequently, risk-averse executives grant

themselves more cash-based pay (lower incentive-based pay) than what economic variables suggest (Mehran, 1995). In contrast, the *efficient contracting* argument claims that companies with dependent boards implement alternative measures more extensively in equilibrium to minimize agency costs (Watts and Zimmerman, 1990; Bertrand and Mullainathan, 1999). Therefore, when executive directors are heavily represented on company boards, the boards tend to grant greater incentive-based executive pay in order to mitigate the executive directors' opportunistic behavior.

Methodology and evidence. Governance studies to date have focused on U.S. companies, primarily due to the lack of available international data. Since governance structures in the U.S. are similar in the cross-section, tests carried out with only U.S. data lack statistical power. I therefore hand-collect and examine data on European companies, which exhibit diverse corporate governance structures, in order to obtain more powerful results. In a sample of the largest 158 European companies in the years 1999 through 2001, I find evidence consistent with the efficient contracting argument that companies with proportionately more executive directors grant greater incentive-based executive pay. Moreover, I find that companies with proportionately more executive directors also increase the disclosure transparency of executive pay. This finding indicates that companies use transparency of pay disclosure as another control mechanism in addition to incentive-based pay. Furthermore, transparency of pay disclosure increases with incentive-based pay grants. The findings are robust to alternative explanations and sensitivity checks.

The above evidence is consistent with the efficient contracting argument for the whole sample. In short, companies appear to compensate for the lack of board independence and the potential opportunistic behavior of executive directors through greater incentive-based executive

pay and disclosure transparency. Therefore, my findings are consistent with the assertion that ownership structures, executive compensation, and board composition are jointly determined (Jensen and Meckling, 1976; Mehran, 1995). However, for a small subset of companies that are most heavily dominated by executive directors, the skimming argument cannot be ruled out. Specifically, when executive directors comprise the numerical majority of the board and CEOs serve as board chairs (13 out of 333 observations), tests are inconclusive about whether executives receive optimal incentive-based pay.

Contribution. This paper makes four major contributions. First, it distinguishes between the efficient contracting and the skimming arguments, which have different predictions on the relation between executive directors and executive compensation. Second, it extends the scope of executive compensation studies by using European data, which exhibit greater variation in the parameters underlying my hypotheses. It therefore provides more powerful tests than studies with U.S. data alone. Third, it draws on hand-collected data from the annual reports of a large number of top European companies, which yields results potentially more reliable than those inferred from survey data (Conyon and Schwalbach, 1999; Kaplan, 1997). Finally, it examines transparency of pay disclosure, which is relatively unexplored in the literature.

Outline of the paper. Section 2 reviews previous literature, and develops hypotheses. Section 3 presents the data and descriptive statistics. Section 4 documents results for the relation between board independence and executive pay. Section 5 documents results for the relation between board independence and transparency of pay disclosure. Section 6 presents conclusions.

2. Hypothesis Development

A board of directors (board) monitors and supervises management on behalf of shareholders. This responsibility shows minimal variation across countries. The literature lists a number of board features as root causes for inefficient board monitoring. Specifically, inefficient monitoring results from: executive directors (Mehran, 1995); oversized boards (Jensen, 1993; Yermack, 1996); old directors, and busy directors serving on other boards (Core et al., 1999); "gray directors" who are in business relations with the company, outside directors appointed by CEOs (Lambert et al., 1993); and directors with low shareholdings (Jensen, 1993).

Among the above causes for inefficient board monitoring, I focus on executive directors. Independent directors, and in turn shareholders, incur the risk of receiving misleading guidance from executive directors, who have personal incentives conflicting with shareholder interests. Additionally, private relations between executive directors and independent directors reduce boards' monitoring efficiency. In other words, executive directors create a setting on the boards where "politeness and courtesy dominate at the expense of truth and frankness" (Jensen, 1993). Similarly, CEOs who serve as board chairs (CEO-Chairs) are considered to impair the efficiency of board monitoring, because board chairs are influential in directing information flow and in setting company agendas at the board meetings (Jensen, 1993; Yermack, 1996). Consequently, both executive directors and CEO-Chairs result in companies with dependent boards.

The literature documents several adverse implications of dependent boards relative to independent boards. Companies with dependent boards pay CEOs more for luck (Bertrand et al., 2001), and record greater abnormal accruals (Peasnell et al., 2000; Klein, 2002). In contrast, independent boards better represent shareholder interests in various contexts, including CEO turnovers and company takeovers (Yermack, 1996). Independent boards successfully remove

poorly-performing management, and thus generate potential positive stock returns (Weisbach, 1988). Consequently, appointment of outside directors generates positive stock returns (Rosenstein and Wyatt, 1990).

Preceding discussion focuses on the possible opportunistic behaviors of executive directors. However, executive directors may also serve for reasons of efficiency (Johnson et al., 1996; Brickley et al., 1997). First, executive directors provide potentially better information to the board, since they know more about the company operations than the outside directors (Fama and Jensen, 1983). Second, the presence of executive directors increases the scope of managerial discretion and initiative, which are ex-ante beneficial especially in uncertain environments (Burkart et al., 1997). On balance, companies cannot fully abandon executive directors despite the associated agency costs. The question then is whether companies can mitigate the agency costs due to executive directors through alternative governance mechanisms.

2.1. Incentive-based pay (Hypothesis 1)

The literature occasionally examines whether companies that lack certain governance mechanisms tend to substitute alternative measures. For instance, LaPorta et al. (1998) find that weak legal protection of investors leads to closer monitoring by large shareholders. Bertrand and Mullainathan (1999) find that reduced threats of takeover increase the level of executive pay and pay for accounting performance.

In this study, I examine the use of alternative governance mechanisms in response to the lack of independent board monitoring. In order to minimize agency costs due to executive directors, companies can employ a number of potential mechanisms, which include incentive-based pay, concentrated ownership, legal protection, and capital market discipline using market transactions, takeovers, or shareholder voting. Among them, incentive-based pay, defined as

executive pay tied to performance measures, is one of the most prominent mechanisms. Incentive-based pay includes bonuses, stock and options grants. Theoretically, it aligns executives' interests with the shareholders' by linking pay to performance measures, and motivates managers to maximize performance, when performance measures are congruent with performance (Datar, Kulp, and Lambert, 1999). Moreover, incentive-based pay schemes can be initiated and modified with little effort. With shareholder consent, boards can easily tailor pay contracts.[1] In contrast, other measures require time or greater effort. They are sometimes ineffective (Porter, 1992), and are frequently irreversible.

The efficient contracting argument suggests that boards form optimal pay contracts in order to reduce the agency problems due to executive directors and maximize net expected share value. Therefore, executive compensation is a measure against the existing agency problem. In contrast, the skimming argument suggests that executive directors exploit their presence on the board and structure their own compensation. Therefore, executive compensation is a result of the agency problem.

The two arguments are separated in their predictions on the form of executive pay. The efficient contracting argument predicts that when the proportion of executive directors increases, boards grant higher incentive-based pay in order to prevent managerial abuse. On the other hand, the skimming argument predicts that when the proportion of executive directors increases, boards grant lower incentive-based pay, because risk-averse executives prefer cash

[1] For instance, Perry and Zenner (2001) find swift changes in both the structure and level of executive compensation in response to changes in SEC requirements and the tax code.

compensation (Mehran, 1995).[2] In Hypothesis 1, I test the predictions of the two opposing arguments.

Hypothesis 1: *All else constant, incentive-based executive pay, which is the ratio of bonus, stock, and option pay to total pay, is greater in companies with CEO-Chairs and proportionately more executive directors.*

Previous studies about the relation between executive directors and executive pay have resulted in conflicting evidence (Core et al., 2001b). Core et al. (1999) document that CEOs earn higher salaries in weak governance structures, which are represented by many variables but not by the executive directors. On the contrary, they find a negative relation between the ratio of executive directors and the level of executive pay. Lambert et al. (1993) hypothesize that executive directors exploit the company through excessive pay grants, but they fail to find significant results. Bertrand and Mullainathan (2001) find that companies with greater insider presence on boards pay their CEOs more for performance that is beyond the CEOs' control. The above mentioned papers focus on executive pay levels, while I examine the form of executive pay. In his study that is the closest to this paper, Mehran (1995) examines 153 U.S. manufacturing firms in years 1979 and 1980, and documents, among his other findings, that companies with dependent boards grant proportionately more cash compensation. Mehran explains his findings, which are consistent with the skimming argument, by managerial risk

[2] An alternative interpretation of the skimming argument confounds the above differentiation: Overconfident executive directors might voluntarily choose stock and option grants instead of cash payments of equal value. I believe that this is not an optimal choice for executives. Relative to stock-based grants of equal-value, stock purchases from the secondary markets are more valuable for the management, because stock purchases provide executives with flexibility in the quantity and timing of the purchase with no contractual restrictions.

aversion and preference for getting an assured level of pay.

The level of incentive-based pay is unlikely to be determined by the ratio of executive directors alone (Mehran, 1995). The availability and use of alternative mechanisms render the use of incentive-based pay less critical. First, legal protection and law enforcement contribute to good governance (Shleifer and Vishny, 1997). Second, concentrated ownership results in good governance for both U.S. companies (Mehran, 1995), and foreign companies (LaPorta et al., 2000; Core et al., 1999). Third, small boards are more effective in supervising executives (Yermack, 1996). I incorporate the above factors into the empirical tests.

2.2. Pay Disclosure (Hypothesis 2)

Executives are more likely to manage pay disclosure when pay levels are abnormally high or when the company performance is poor (Aboody et al., 2001). This finding indicates that shareholders incur the governance-related risk of receiving manipulated pay information. Shareholders of companies with more dependent boards find themselves at greater risk for two reasons. First, a larger number of executive directors can exert greater influence in favor of non-transparent disclosure, particularly when they have incentives to manipulate pay information. Second, outside directors, who can provide shareholders with additional private information about executive pay, are fewer in dependent boards.

As a result, the shareholders of companies with dependent boards demand and value pay disclosure more than the shareholders of companies with independent boards. Accordingly, companies with proportionately more executive directors disclose more to convince shareholders that insiders are not transferring wealth to themselves. In effect, pay disclosure serves as an alternative governance mechanism. Consequently, in the first part of Hypothesis 2, I predict that companies with dependent boards disclose pay more transparently.

In the second part of Hypothesis 2, I examine the incremental effect of incentive-based pay on the transparency of pay disclosure, after controlling for the level of board dependence. First, Nagar et al. (2003) find that stock-based incentives amplify managers' tendency to disclose company information to capture the associated benefits of disclosure. Pay disclosure is one such company information.[3] Second, increased complexity of pay structures as a result of incentive-based pay can influence pay disclosures. Conditional bonuses, long term pay plans, and stock and option grants increase the possible range of future pay levels. This, in turn, attracts closer investor attention, and increases the chances of shareholder litigation in case of the--now more probable--substantial pay levels. Therefore, better-aligned managerial interests and the managerial motivation to avoid future litigation make executives, who receive more incentive-based pay, to disclose more transparent pay information.

Hypothesis 2: (a) *All else constant, companies with CEO-Chairs and proportionately more executive directors disclose pay more transparently.*

(b) *All else constant, incentive-based pay increases the transparency of pay disclosure.*

Coulton et al. (2001) examine determinants of CEO pay disclosure in Australia. They find that the transparency of pay disclosure depends only on pay level and firm size, but not on any other governance variables. Relative to their study, I use broader data from different countries and non-CEO executives, and examine different aspects of pay disclosure.

[3] Coulton et al. (2001) argue that, regardless of the form of compensation, pay disclosure is the information type for which the possibility of a conflict of interest between managers and shareholders is the greatest. Hence, the predictions of Nagar et al. (2003) are possibly the least effective in pay disclosure.

3. Data

3.1. Sample Selection

I hand-collect pay data for years 1999 through 2001 from the annual reports of the largest 158 European companies presented in the Forbes 2000 Global Top 800 list. I use the Global Access (Thomson Financial) database and company web sites to obtain annual reports. I complete and double-check company information from the Hoover's database. Table 1 Panel A summarizes sample selection. Forty-six companies have absent or insufficient pay data.[4] The final data set includes 333 annual observations from 111 companies. Table 1 Panel B (Panel C) summarizes the country (industry) breakdown of the data set.

3.2. Variables

Table 2 presents descriptive statistics of all variables; and industry, country, and annual breakdown of selected variables for the disclosing 111 companies. For comparison purposes, Table 3 Panel A presents descriptive statistics of the 46 non-disclosing companies; and Table 3 Panel B presents descriptive statistics of the 150 top U.S. companies in the same period.

3.2.1. Board Dependence (Proxy variables: ExecRatio and CEO-Chair)

Board dependence can be measured by several variables including: number of executives on the board; number of employees on the board; number of directors who are relatives of executives or employees; average tenure of executive directors; number of affiliate directors who are in business relations with the company; and number of interlocked directors who are executives in firms with whom the company is in material relations. I use the ratio of executive directors to total directors (ExecRatio), and the dummy variable for the CEO serving

[4] I also exclude one company that has the highest studentized residual value, and is nearly three standard deviations from the mean in number of executive directors. Exclusion of this company does not change the documented results.

simultaneously as board chair (CEO-Chair) as proxies of board dependence. The other definitions are mostly not available in the annual reports. Moreover, some of the other variables, e.g., number of affiliated directors, or number of interlocked directors, are defined loosely and differently across companies even in the U.S. (NYSE Corporate Governance Guidelines, 2002).

ExecRatio (CEO-Chair) has a mean of 0.24 (0.30), and a median of 0.20 (0). ExecRatios are above 50% in only 46 observations. Therefore, executives in only one seventh of the companies comprise a numerical majority on the boards. Some code law companies, e.g., Germany, ban executive directors. ExecRatio (CEO-Chair) are zero for 90 (233) observations.

The reported U.S. ExecRatio in Table 3 Panel B is defined as the ratio of executive directors for the given set of executives in the ExecuComp database, and has a mean of 0.39. I use a different definition for ExecRatio, which is the ratio of executive directors to all directors on the board. Using the latter definition, Perry (1999) finds an ExecRatio of 0.25 for 3,733 U.S. companies. Given the European ExecRatio mean of 0.24 in this paper, I conclude that the ratio of executive directors of the top U.S. and European companies are similar.

3.2.2. Pay Structure (Proxy variables: IncentivePay and StockPay)

For the empirical tests, I use average pay data of the top executives for each company. N_ExecSample denotes the number of top executives whose pay data are included in the calculations. N_ExecSample has a median of five. Executive pay has four major components (with medians in parentheses): cash payments (€ 630,000), bonus payments (€ 213,000), present value of stock grants (€ 0), and present value of option grants (€ 245,000). Bonus payments include variable payments for short- and long-term incentive plans. The value of stock and

option grants includes all explicit current grants that have only vesting period stipulations.[5] Any grants conditional on future performance are not included, since their value cannot be assessed accurately. Overall, a typical top European manager earns a median gross income of € 1.4 millions; and holds € 0.1 millions worth of company stocks and € 0.5 millions worth of company options. I develop two definitions for incentive-based pay, namely IncentivePay and StockPay. The primary variable, IncentivePay, is the ratio of the sum of bonus, and present value of stock and option grants, to total current pay. StockPay is the ratio of the present value of stock and option grants to total current pay. Due to data limitations, IncentivePay and StockPay definitions are different from the standard pay-for-performance definition, which is the "change in the dollar value of the CEO's stock and options for a 1% (or $1) change in stock price" (Core and Guay, 1999). However, the literature also uses variables similar to IncentivePay as defined in this paper (Mehran, 1995, Core et al., 1999). Table 3 Panel B shows that, for a median of top five executives, the largest 150 U.S. companies grant greater total pay ($5.3 millions vs. € 1.4 millions) and greater incentive-based pay (0.83 vs. 0.53) than their European counterparts.

3.2.3. Transparency of Pay Disclosure (Proxy variable: Disclosure)

Disclosure is the composite proxy for the type, quality, and level of pay disclosure.

Type of Pay Disclosure: A company receives one point for each disclosure on cash pay (*CashDiscl*), bonus pay (*BonusDiscl*), and stock or option pay (*StockDiscl*) in its annual report. It receives no points for the undisclosed types of pay.

[5] I calculate the present value of stock grants as the number of stock grants multiplied by the annual average stock price. Assuming that managers can rebalance their personal portfolios (Core and Guay, 2001), I value options by the Black-Scholes model. Current and exercise stock prices, risk-free rate, volatility, and dividend yield data are obtained from the DataStream database unless provided specifically in the annual reports. If no data exist in the annual reports or in DataStream, hurdle rates of 4.7% as risk-free rate, 30% as volatility, and 2% as dividend yield are used. Following the method in the U.S. ExecuComp database, I take the maturity period for options as 70% of the specified expiration period. Sensitivity checks for the hurdle rates are provided in Section 4.2.

Quality of Pay Disclosure: QualityDiscl measures a company's explicit statements about its: (i) compensation policy and targets, (ii) guidelines for calculating pay for specific positions, (iii) previous pay data, and (iv) possible contract details about future determinants of pay. Companies that disclose: none of the listed items above receive zero points; some items receive one point; and all items receive two points.

Level of Pay Disclosure: QuantityDiscl measures the number of disclosed pay contracts. Disclosures of average pay figures or a single pay contract are assigned no points. Disclosures of two pay contracts receive one point. Disclosures of more than two pay contracts receive two points.

Disclosure is the sum of the above variables representing different aspects of the pay disclosure practice in the annual reports. It has seven as its highest value, and zero as its lowest value.

Disclosure = *CashDiscl* + *BonusDiscl* + *StockDiscl* + *QualityDiscl* + *QuantityDiscl.*

3.2.4. Control Variables

I control for other economic factors on the hypothesized relations. Each factor may be represented by more than one proxy. Unless stated otherwise, I use the first reported proxy as the primary proxy in the empirical tests in Sections 4.1 and 5.1. I also run sensitivity checks for the alternative proxies in Sections 4.2 and 5.2. Financial variables except for the company size are deflated by contemporaneous total assets.[6]

Stock-based Holdings: Executives hold a portfolio of stocks and options that were granted or purchased in the previous years. The stocks and options held provide additional incentives besides those of current grants. The incentives generated by stocks and options held

[6] Each deflated proxy is added the prefix 'D_' to stand for 'Deflated by contemporaneous total assets'.

cannot be measured by current grants (Yermack, 1995; Core et al., 2001b). I define StockHeld, which is the ratio of the present value of stock and option holdings to the total annual pay. I predict that IncentivePay will be lower when StockHeld is higher.

Level of Compensation: Incentive-based pay is positively correlated with the level of compensation. In order to control for the level of compensation on the hypothesized relations, I use TotalComp, which is the value of the total annual pay of an average executive for each company. I expect higher IncentivePay when TotalComp is greater.

Company Size: Agency costs increase with company size. I predict that incentive-based pay and pay disclosure also increase with company size. Log(TotalAssets), Log(Sales), Log(MCap), and number of employees, N_Employee, are proxies for company size.

Marginal Tax Rate: Unlike cash compensation, stock and option grants are not tax-deductible. I expect to find lower incentive-based pay when the marginal tax rate is greater. Profitable companies arguably have greater marginal tax rates. Therefore, I use deflated net income, D_NetIncome, as the proxy for marginal tax rate.

Company Performance: Good performance inherently increases incentive-based pay through increases in bonuses and stock and option values. I also expect pay disclosure to increase with good performance. I measure company performance by annual stock return, StockReturn; deflated net income, D_NetIncome; and deflated operating income, D_OpIncome.

D_NetIncome has conflicting predictions for marginal tax rate and company performance factors. Hence, I use both StockReturn and D_NetIncome as proxies for company performance.

Working Capital: I expect to find higher agency costs and incentive-based pay for companies with greater working capital balances. I use deflated working capital, D_WorkingCap, as the proxy for working capital.

Assets-in-Place and Debt: Long-term assets reduce managers' ability to expropriate internal funds (Mehran, 1995; Kroszner and Strahan, 2001). Moreover, long-term assets are assumed to be negatively correlated with growth opportunities. Accordingly, I expect lower agency costs and incentive-based pay with greater assets-in-place. I proxy Assets-in-Place by deflated long-term assets, D_LTAssets. A similar argument also applies for debt obligations. I use deflated total financial debt, D_TotalDebt, as a second proxy.

Operational Complexity: Agency costs grow with more complex operations. I represent operational complexity in two separate proxies. The first proxy, CV_OpProfit, is the coefficient of variation of a company's operating profit (Mehran, 1995). CV_OpProfit is defined for each company as the standard deviation of the operating profit divided by its time-series mean. The second proxy, SalesComplex, indicates sales dispersion in product type, ProductComplex, and geographical location, GeogComplex. I first compute ProductComplex and GeogComplex using the Herfindahl-Hirschman method.[7] I then take the average of ProductComplex and GeogComplex to find SalesComplex. SalesComplex is available for 234 companies. I expect that incentive-based pay and disclosure increase with CV_OpProfit and decrease with SalesComplex.

Growth Opportunities: Best future managerial actions are not well-defined in companies with growth opportunities (Morgan and Poulsen, 2001). Therefore, agency costs are predictably higher with growth opportunities. Core et al., (2001) and Nagar (2002) document a positive relation between growth opportunities and incentive-based pay for both CEOs and divisional managers. Moreover, stock returns around the announcements on stock-based pay schemes are greater in companies with higher growth opportunities (Morgan and Poulsen, 2001). I expect to

[7] The Herfindahl-Hirschman method is a popular method to measure concentration. It is calculated as the sum of the squares of fractions that sum to unity. The index takes values between 0 and 1, higher (lower) values indicating greater concentration (dispersion).

find higher incentive-based pay and greater transparent pay disclosure in companies with higher growth opportunities. The proxies for growth opportunities are market-to-book ratio, M/B; deflated research and development costs, D_R&D; and deflated capital expenditures, D_CAPX.

Legal Protection: Legal investor protection and efficient law enforcement result in more prudent management and less agency costs (La Porta et al., 2000). I expect to find lower incentive-based pay with higher legal protection. However, the associated prediction on transparent disclosure is ambiguous. Higher legal protection can reduce disclosure transparency since it lowers agency costs. However, higher legal protection can also lead to stricter regulations for increased disclosure. According to the country of location for each company, I define LawIndex, a composite measure for the "enforceability of contracts" from Gul (2000) that aggregates judicial efficiency, rule of law, and the corruption perception indices.[8]

Level of Management: The number of managers included in the empirical tests, N_ExecSample, differs for each company. On average, low-level managers receive lower incentive-based pay than top management. Therefore, I expect to find lower incentive-based pay as N_ExecSample is greater.

Board Size: Smaller boards are more effective in monitoring management and creating value (Yermack, 1996). The total number of directors, N_TotalDirector, is the proxy for board size. The impact of N_TotalDirector on IncentivePay and Disclosure is ambiguous. Smaller boards can reduce agency costs, which can, in turn, result in lower incentive-based pay and less investor demand for disclosure. In contrast, small boards can use incentive-based pay and

[8] Judicial efficiency index (La Porta et al., 1998): A higher score meaning a more efficient legal system from the perspective of foreign business people. Rule of law index (La Porta et al., 1998): A higher score meaning a stronger tradition of law and order. Corruption perception index (Transparency International, 1999): A higher score meaning less degree of corruption as seen by business people, risk analysts and the general public.

transparent disclosure more extensively in order to reduce agency costs.

Blockholdings: Blockholdings contribute to good governance (LaPorta et al., 2000). I expect that greater blockholdings lead to lower incentive-based pay and lower transparency of pay disclosure. I use Block, the sum of the largest three institutional shareholdings, as the proxy for blockholdings. Block is employed for the sensitivity checks only in Sections 4.2 and 5.2, since it is available for 156 observations out of the 333 observations.

Cross-Listings: I use the number of listings at different exchanges, N_Listed, as the primary proxy. I expect to find higher transparency of pay disclosure, when N_Listed is greater (Khanna et al., 2003). Furthermore, companies listed in the U.S. are subject to stricter regulations. I use dummies for ADR listing in the U.S., ADR; OTC listing in the U.S., OTC; and the local market listing only, Local.

Industry: The use of incentive-based payments is different across industries (Core and Guay, 2001b). I group companies into 9 major industry segments as shown in Table 1.

Year: The years between 1999 and 2001, is an interesting period to examine stock-based compensation. Many code law companies that are traditionally far from the Anglo-American model have recently started to change their governance practices due to growing equity culture, securities market reforms in the European Union, activism by foreign and domestic institutional investors, and international competition in the market of executives (Ferrarini et al., 2003). I also observe that code law companies use stock-based compensation increasingly through time. Therefore, I expect that incentive-based pay is more prevalent in 2001 relative to 1999.

Uncontrolled Factors: Similar tax policies exist about option grants across countries in Europe (Carriere et al., 2002). Therefore, I do not control for country-specific rates of income tax on option grants.

4. Testing Hypothesis 1

First, I present OLS results for the association between incentive-based executive pay and executive directors. Second, I provide sensitivity checks on the alternative proxies and testing methodologies. Third, I examine alternative explanations for Hypothesis 1.

4.1. Primary OLS Tests

The primary OLS test for Hypothesis 1 is:

*IncentivePay = ƒ (ExecRatio, CEO-Chair, ExecRatio*CEO-Chair, StockHeld, TotalComp, Log(TotalAssets), StockReturn, D_NetIncome, D_WorkingCap, D_LTAssets, CV_OpProfit, M/B, LawIndex, N_ExecSample, N_TotalDirector, Industry, Year)*

The independent variables of interest are the board dependence variables, i.e., ExecRatio, CEO-Chair, and ExecRatio*CEO-Chair. I predict positive coefficients on ExecRatio and CEO-Chair. I argue that ExecRatio and CEO-Chair are substitutes: The marginal effect of one variable on IncentivePay reduces as the other variable increases. Therefore, I predict a negative coefficient on ExecRatio*CEO-Chair.

Table 4 Panel A presents empirical results for: model (1), which only includes board dependence proxies, i.e., ExecRatio, CEO-Chair, and the interactive term; model (2), which includes proxies in model (1) and control variables; and model (3), which includes proxies in model (2) and industry and time fixed-effects. Hypothesis 1 is confirmed. The coefficient estimates for ExecRatio and CEO-Chair are significantly positive. In model (3), given that CEO is not the board chair, appointment of an executive director to a board of nine independent directors increases IncentivePay by 0.02. Appointment of the CEO as the board chair increases IncentivePay by 0.14. The negative sign of the interactive coefficient estimate, though significant only in model (1), is consistent with the prediction that CEO-Chair and executive

directors are substitutes.

The coefficient estimate for the interactive term is greater in magnitude, -0.36 in model (1), than the coefficient estimates for ExecRatio, 0.18, and CEO-Chair, 0.19. There are two possible explanations for this finding. First, the model may be misspecified. For instance, ExecRatio and IncentivePay may be related nonlinearly. Second, CEO-Chairs might be dominant relative to the presence of executive directors. Companies might even prefer a board full of executives and CEO-Chair to a board with independent directors and CEO-Chair, in order to reduce the influence of CEO-Chairs. For instance, Adams et al., (2003) find that firms whose CEOs have more decision-making power incur more variability in company performance. Backed by this evidence, one might argue that companies benefit from the presence of executive directors, because executive directors reduce company's dependence on CEO-Chairs. This explanation is not entirely compelling. First, CEOs can always potentially influence the decisions of executive directors. Second, executive directors and CEO-Chairs can inherently have similar personal motivations at the expense of shareholders. Furthermore, Table 4 Panel B documents the results of the primary OLS test when database is split according to CEO-Chair. In both cases, the coefficients on ExecRatio are positive (significant when CEO-Chair is 0). I elaborate more on the issue in Section 4.2.

The control variables on the level of compensation, working capital, growth opportunities, legal protection, level of management, and board size are significant at 10% two-tailed levels. However, control variables on stock-based holdings, company size, performance, assets-in-place, and operational complexity have the predicted signs, but are not significant. Inclusion of control variables (from model (1) to model (2)) and time and industry fixed-effects (from model (2) to model (3)) increase the goodness-of-fit. Unreported coefficients on industry

and year variables of model (3) show no material effect of industry membership on IncentivePay. Year 2001, however, is positively associated with IncentivePay, consistent with the increases in stock and option grants of code law companies, which have recently initiated such incentive programs.

4.2. Sensitivity Checks

4.2.1. Executive Dominance on the Boards

In the previous section, I find that the efficient contracting argument is valid for the whole sample. In this section, I examine the validity of the efficient contracting argument in cases where executive directors possibly dominate the boards. Dechow et al. (1996) argue that boards are independent primarily when independent directors comprise majority on the board. I define a dummy variable, ExecMajority, which takes 1 if executive directors comprise the numerical majority of the board, and 0 otherwise (Klein, 2002). I substitute ExecMajority for ExecRatio of the primary test in Section 4.1.

*IncentivePay = f (ExecMajority, CEO-Chair, ExecMajority*CEO-Chair, StockHeld, TotalComp, Log(TotalAssets), StockReturn, D_NetIncome, D_WorkingCap, D_LTAssets, CV_OpProfit, M/B, LawIndex, N_ExecSample, N_TotalDirector, Industry, Year)*

Table 5 Panel A documents positive coefficient estimates for ExecMajority and CEO-Chair, and a negative coefficient estimate for the interactive term. The test for the whole sample confirms the predictions of the efficient contracting argument. I then split the data set according to CEO-Chair. When CEO-Chair is 0 (1), the coefficient estimate on ExecMajority is positive (insignificant and negative). A chi-square test shows that the two coefficient estimates for ExecMajority are significantly different from each other. Similar to the finding in Section 4.1, the results suggest that a majority of executive directors on the board leads to lower incentive-

based pay for companies where board chairs are CEOs relative to companies where board chairs are not CEOs.

For a more complete examination, I then split the data set into four groups according to whether executive directors are the majority and CEOs are board chairs. Table 5 Panel B shows that the presence of executive directors significantly increases incentive-based pay for all groups, except where executive directors are the majority and board chairs are CEOs. For the latter group which comprise 13 company-year observations (or 4% of the sample), the ratio of executive directors does not increase incentive-based pay. Unreported sensitivity checks show that with all sub-groups where CEO-Chair is 1 and ExecRatio is as low as 0.2 (26 observations), incentive-based pay and executive ratio are still not significantly positively associated. I conclude that the efficient contracting argument for the relation between executive directors and incentive-based pay persists for the whole sample, but the managerial opportunism explanation for the subset of firms that are heavily dominated by executive directors cannot be ruled out.

4.2.2. Nonlinearity

Hypothesis 1 predicts a monotonic--but not necessarily a linear--relation between incentive-based pay and the ratio of executive directors. Graph 1 depicts a nonlinear (concave) relation between the two variables. Moreover, I find that residuals of the primary regression in Section 4.1 are negative when ExecRatio is high, or when CEO-Chair is 1. Therefore, I check for nonlinearity. First, unreported decile rank regressions generate goodness-of-fit measures close to that in Section 4.1. Second, when ExecRatio is replaced by its square root, the goodness-of-fit measure and significance of the coefficient estimates are comparable to those in Section 4.1. The tests suggest that the relation between executive directors and incentive-based pay is possibly concave. When executive directors are few, incentive-based pay increases more strongly with

ExecRatio. When executive directors are many, incentive-based pay does not increase as strongly with ExecRatio.

4.2.3. Tobit Regression

IncentivePay can be interpreted as a censored dependent variable and requires Tobit regression, because it cannot take values below zero and above one. IncentivePay is zero for eleven observations, and one for one observation. Following Greene (2000), I argue that, since few observations are located at the end points, Tobit specification does not significantly add to the test power. Unreported results of the interval-censored Tobit regression yield coefficient estimates of similar magnitude and significance as those in Table 4.1.

4.2.4. Black-Scholes Parameters

I use the Black-Scholes model to calculate present values of option grants and holdings. The Black-Scholes parameters, i.e., the risk-free rate, dividend yield, stock volatility, and time-to-expiration, are obtained from the DataStream database and company annual reports. The parameters are missing for 90% of the observations. For the missing values, I use hurdle rates of 4.7% as the risk-free rate, 30% as the volatility, 70% of the vesting period as the time-to-expiration, and 2% as the dividend yield. Unreported sensitivity checks show that the goodness-of-fit measures and the coefficient estimates on board dependence variables change by less than 10% in response to the ±40% changes on the hurdle rates. Significance of the coefficient estimates remains unchanged.

4.2.5. Blockholdings

The primary test in Section 4.1 excludes the Block variable, which is missing for more than half of the sample. Companies with and without Block values are not significantly different in any financial or governance variables. Block is negatively correlated with ExecRatio (-0.22),

CEO-Chair (-0.22), and IncentivePay (-0.16). In equilibrium, institutional investors either create or invest in companies with independent boards, and these companies grant lower incentive-based pay. In this section, I include Block as a control variable in the empirical tests. Unreported results show that the coefficient estimate for Block is negative as predicted but insignificant. The coefficient estimate for ExecRatio remains significant. I conclude that exclusion of Block from the primary test does not create any significant correlated omitted variable problems.

4.2.6. Alternative Proxies

Unreported results show that the use of alternative proxies for control variables, or the use of StockPay instead of IncentivePay as the dependent variable, does not alter the findings.

4.3. Alternative Explanations

4.3.1. Sample Bias

Table 1 shows that nearly one third of the companies (46 out of 157) are identified as non-disclosing due to absent or insufficient pay data, and excluded from the tests. Table 3 Panel A shows that, relative to the disclosing companies, the non-disclosing companies are smaller, less profitable, and have fewer blockholders and stock listings, although none of the differences are significant at the 10% level. Moreover, mean ExecRatio (CEO-Chair) for the non-disclosing group, 0.17 (0.28), is less than that of the disclosing group, 0.24 (0.30). In this section, I test for any possible sample bias. There are two possible reasons why some companies do not disclose pay data. First, they might not implement any incentive-based pay schemes. This explanation is probable, given that many non-disclosing companies are code law companies, and do not follow Anglo-American practices in equity-based compensation. Second, regulations might not require pay disclosure, and the cost of voluntary disclosure may exceed the benefits.

All non-disclosing companies are initially excluded in Section 4.1. The results are thus potentially biased against Hypothesis 1: Non-disclosing companies have low ExecRatio's and CEO-Chair values, and many non-disclosing companies are code law companies with possibly near-zero IncentivePay. The results in Section 4.1 are already significant, although the bias works against Hypothesis 1. As a further check, I run tests for Hypothesis 1 using the combined set of disclosing and non-disclosing companies.[9] I include non-disclosing companies in the tests with an assumption that they do not implement any incentive-based pay schemes, i.e., they have zero IncentivePay. This assumption should now bias the results in favor of Hypothesis 1. Therefore, I expect greater coefficient estimates--and perhaps greater explanatory power--for the combined data set than for the disclosing companies only. Test results in Table 6 confirm my expectations. I conclude that there is no significant sample bias in the empirical tests.

4.3.2. Omitted Variables

In the previous sections, I use several control variables, and industry and time fixed-effects. Any correlated omitted variables for the specification between incentive-based pay and board dependence variables potentially bias coefficient estimates. In this section, I check for the correlated omitted variables by using several approaches.

Instrumental Variables: I run a 2SLS regression, where ExecRatios of year 1999 are used as instrumental variables of the ExecRatios for years 2000 and 2001 for each company. The underlying assumption is that ExecRatios of 1999 are related to ExecRatios of 2000 and 2001, but are exogenous to IncentivePay of 2000 and 2001. Table 7 shows that the hypothesized relation between executive directors and incentive-based pay remains significant. The results

[9] Some control variables of Section 4.1 are not available for the non-disclosing companies, and therefore are not used in the empirical tests.

have the caveat that the three-year period is short, and thus instruments might not be as strong.

Company Fixed-Effects: Undocumented results show that adding company fixed-effects to the model renders the coefficient estimates for ExecRatio, CEO-Chair, and the interactive term insignificant. Unreported differences-in-differences and logit regressions also result in insignificant coefficient estimates. Possible reasons for the insignificant estimates are numerous. First, the data set provides three annual observations only for each company. For three consecutive years, no considerable within-company variation exists for the ExecRatio variable. The correlation between ExecRatio and lagged ExecRatio is 0.81. Moreover, undisclosed F-tests show that within company variations in ExecRatio and other variables are less than cross-company variations. Second, a change in the number of executive directors may not generate timely changes in incentive-based pay for two reasons. First, pay schemes during executive turnovers are abnormal. They include lump sum payments, transfer or retirement bonuses, and indemnities. Second, bonus payments and stock-based grants are mostly preset and depend on previous years' performance.

Country Fixed-Effects: Unreported test results show that adding country fixed-effects yields insignificant but positive coefficient estimates for IncentivePay and CEO-Chair. Some country dummy estimates are significant. Companies in the same countries seem to have partially clustered incentive-based pay strategies.

Overall, while the ordinary least-squares and instrumental variable approaches confirm Hypothesis 1, company and country fixed-effects tests cannot confirm the validity of Hypothesis 1, mostly due to the lack of sufficient number of time-series observations.

5. Testing Hypothesis 2

I first present empirical results about the relation between pay disclosure and board dependence. I then provide sensitivity checks and examine alternative explanations.

5.1. Primary Tobit Tests

Hypothesis 2(a) tests for a positive relation between Disclosure and board dependence variables, i.e., ExecRatio and CEO-Chair:

*Disclosure = f (ExecRatio, CEO-Chair, ExecRatio*CEO-Chair, Log(TotalAssets), CV_OpProfit, M/B, StockReturn, D_NetIncome, N_Listed, LawIndex, N_TotalDirector, Industry, Year)*

Graph 2 depicts a monotonic relation between Disclosure and ExecRatio. Table 8 Panel A documents a significantly positive association between Disclosure and ExecRatio. The coefficient estimate for the CEO-Chair is insignificant. The coefficient estimates on size, performance, number of listings, and law protection are significant.

In Hypothesis 2(b), I test for the positive relation between Disclosure and IncentivePay. I add IncentivePay and TotalComp to the above test specification of Hypothesis 2(a). Table 8 Panel B documents a significantly positive relation between disclosure and incentive-based pay.

5.2. Sensitivity Checks

5.2.1. Alternative Proxies

Unreported results document no material change when alternative proxies substitute primary proxies.

5.2.2. Blockholdings

Due to missing observations, Block variable is not included in the primary regression in Section 5.1. Companies with and without Block values are not significantly different in any financial or governance attributes. Moreover, Block is highly negatively correlated with

Disclosure (-0.30), and ExecRatio (-0.22). In equilibrium, institutional investors either create or invest in companies with independent boards, and these companies disclose less than the average. I run empirical tests for Hypothesis 2 by including Block as a control variable. Unreported results show that coefficient estimate for Block is negative as predicted, but significant only in Model (1). The coefficient estimate for ExecRatio and IncentivePay stays significant. I conclude that exclusion of Block from the primary regression in Section 5.1 does not generate any significant correlated omitted variable problems.

5.2.3. U.S. Listing

When the control variable, N_Listed, in Section 5.1 is replaced with ADR or OTC, the coefficient estimates for ADR and OTC are positive and significant. When N_Listed is replaced by Local, which is the dummy variable for local listings only, the coefficient estimate for Local is insignificant. This finding suggests that U.S. listings and greater number of stock listings increase transparency of pay disclosure.

5.2.4. Nonparametric Tests

Disclosure is an ordinal variable. Therefore, the interpretations of the Tobit results where Disclosure is treated as a cardinal variable can be spurious. I use two separate checks. First, unreported non-parametric correlations show significant positive associations between disclosure and both IncentivePay and board dependence variables. Second, I employ decile rank regressions. Unreported results document significant associations for the hypothesized variables.

5.2.5. Omitted Variables

In order to reduce the potential problem of correlated omitted variable problems due to company- and country-specific differences, I first run 2SLS regressions. ExecRatios of year 1999 are used as instrumental variables for the ExecRatios of years 2000 and 2001 for each

company. Unreported results show that a greater ratio of executive directors or greater incentive-based pay leads to greater disclosure transparency.

Second, I run country- and company-specific Tobit regressions to filter out the effect of any correlated omitted variables. Table 9 shows that both ExecRatio and IncentivePay are positively associated with Disclosure in both specifications. Despite the relatively short period for a typical panel data study, the relations persist for within-country and within-company variation. I thus rule out the possibility that the systematic association between board composition and disclosure transparency results from company or country-specific correlated omitted variables. ExecRatio and IncentivePay are the dominant explanatory variables for pay disclosure transparency. Meanwhile, CEO-Chair is not significantly associated with disclosure transparency.

To recapitulate, the results support the predictions of Hypothesis 2 for all model specifications. Transparency of pay disclosure increases with both the ratio of executive directors and incentive-based pay.

6. Summary and Conclusions

This paper provides international evidence on whether alternative governance mechanisms, i.e., independent board monitoring, incentive-based pay, and pay disclosure, are substitutes for each other. Specifically, companies with proportionately more executive directors, or companies with CEOs who serve as board chairs, allocate a greater fraction of their executive compensation as incentive-based pay. This finding is obtained by OLS and 2SLS regressions with industry and time fixed-effects. Moreover, when companies have more executive directors, or when the proportion of incentive-based executive pay is greater, pay disclosures are more

transparent. This finding is obtained by Tobit regressions with company and country fixed-effects.

The findings on the form of executive pay extend the results of Core et al. (1999) and Bertrand and Mullainathan (2001). The tests using the whole data set is consistent with the *efficient contracting argument*. However, the *skimming*, or *managerial opportunism*, argument cannot be ruled out in weak governance structures, represented by a small number of companies with high executive domination. I believe that the increasing trend to more transparent disclosure about corporate governance in Europe will enable us further understand the dynamics of corporate governance mechanisms.

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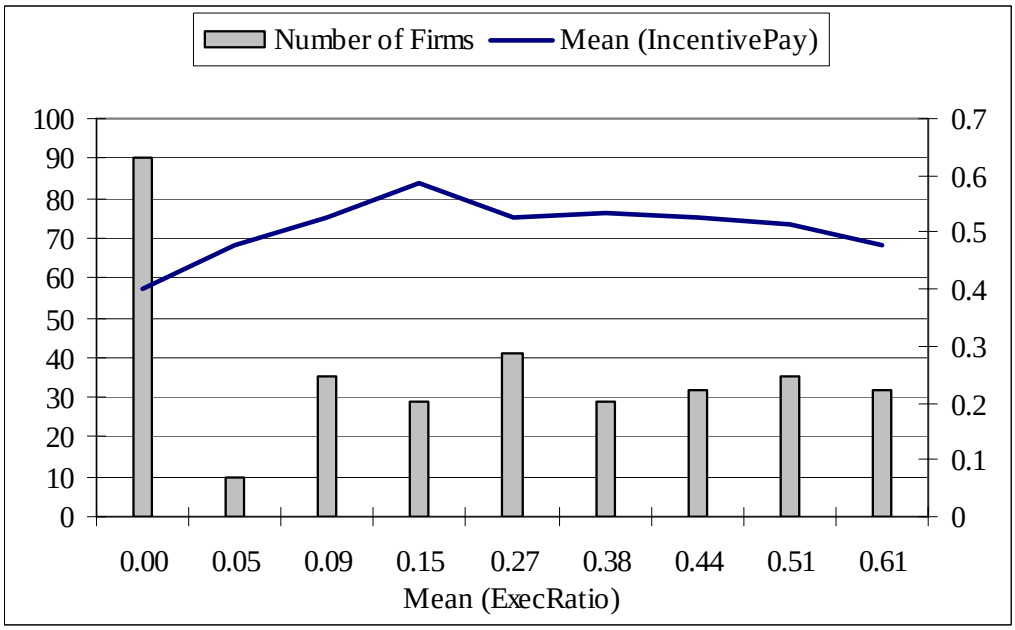
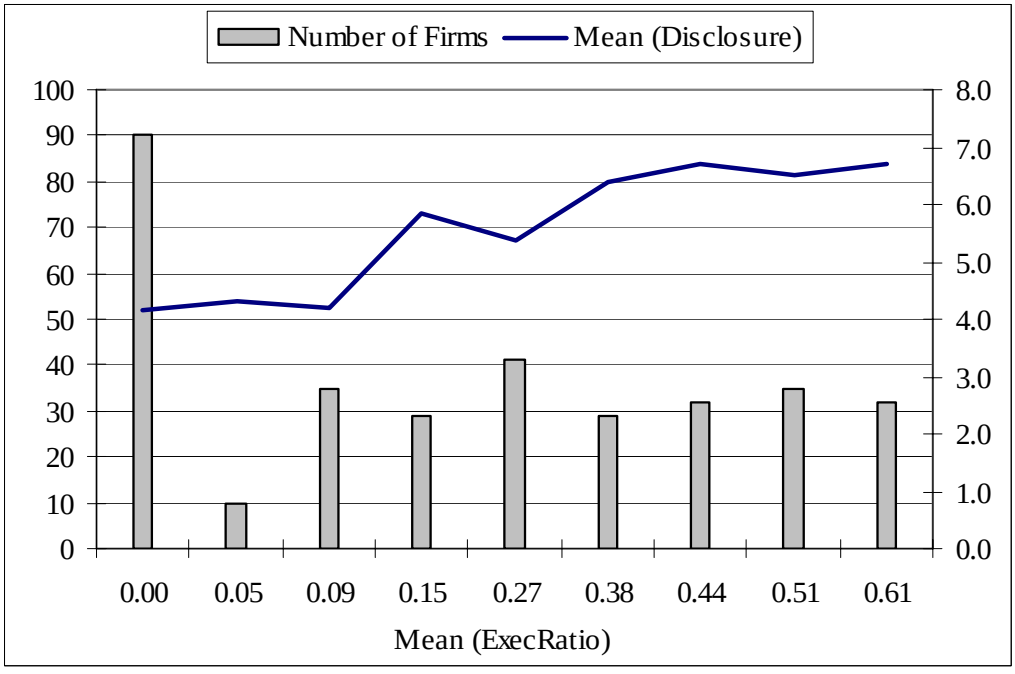
Graph 1 - Mean (IncentivePay) versus Mean (ExecRatio)



Graph 2 - Mean (Disclosure) versus Mean (ExecRatio)



ExecRatio is the ratio of executive directors to total directors on the board. IncentivePay is the ratio of the sum of bonus and value of stock and option grants to total current pay. Disclosure is an index that represents the type, level, and quality of pay disclosure. Disclosure takes integer values between 0 and 7.

Table 1 Panel A - Sample Selection

	Number of Companies	%	Number of Annual Observations
Initial sample from Forbes 2000 Top 500 International companies list	165	100%	
Repetitions of companies with double headquarters (Unilever, Fortis, Zurich Financial, Royal Dutch/Shell Group)	- 4	-2%	
Regulatory body (Bank for International Settlements)	- 1	-1%	
Merger (Glaxo Wellcome, SmithKline Beecham)	- 1	-1%	
Bankruptcy (Swissair)	- 1	-1%	
Outlier (Unilever)	- 1	-1%	
Companies examined	157	95%	
Companies with insufficient disclosure (Non-disclosing companies)	- 46	-28%	46 x 1 = 46
Final Sample (Disclosing Companies)	111	67%	111 x 3 = 333

Table 1 Panel B - Company Breakdown of the Data Set

Country	Companies examined	Non-disclosing companies	Final Sample	%
UK	43	1	42	38%
France	33	12	21	19%
Germany	27	11	16	14%
Holland	10	1	9	8%
Switzerland	11	5	6	5%
Sweden	6	1	5	5%
Italy	9	5	4	4%
Spain	6	3	3	3%
Belgium	5	2	3	3%
Finland	3	1	2	2%
Russia	3	3	0	0%
Norway	1	1	0	0%
	157	46	111	100%

Table 1 Panel C - Industry Breakdown of the Data Set

Industry	Companies examined	Non-disclosing companies	Final Sample	%
Finance, insurance, real estate	42	12	30	27%
Machinery, computers, electronics	23	3	20	18%
Wholesale and retail trade	22	4	18	16%
Chemical, petroleum, glass	26	9	17	15%
Transportation, utilities	19	8	11	10%
Primary and fabricated metal	7	3	4	4%
Food, tobacco	4	0	4	4%
Services	4	1	3	3%
Mining and construction	5	3	2	2%
Textile, wood, paper	5	3	2	2%
	157	46	111	100%

Table 2 Panel A - Descriptive Statistics

	N	Mean	Std Dev	Minimum	Q1	Median	Q3	Maximum
Board Dependence								
N_IndDirector	333	4.09	4.75	0	0	0	8	18
N_NonExecDirector	333	4.93	4.97	0	0	5	9	24
N_EmplDirector	333	1.57	3.13	0	0	0	1	11
N_ExecDirector	333	3.18	2.95	0	0	2	6	11
N_TotalDirector	333	13.8	4.40	4	11	13	16	26
ExecMajority	333	0.14	0.39	0	0	0	0	1
ExecRatio	333	0.24	0.22	0.00	0.00	0.20	0.44	0.77
CEO-Chair	333	0.30	0.46	0	0	0	1	1
Pay Structure								
N_ExecSample	333	8	8	1	5	5	9	60
CashComp	333	792	679	0	449	630	927	6,420
BonusComp	333	309	433	0	23	213	434	4,537
StockComp	333	178	511	0	0	0	54	4,227
OptionComp	333	814	2,856	0	38	245	588	46,102
TotalComp	333	2,092	3,245	94	895	1,442	2,186	49,344
D_TotalComp (x1000)	333	0.08	0.12	0.00	0.01	0.04	0.10	0.96
StockPortfolio	333	2,299	15,027	0	0	98	720	165,250
OptionPortfolio	333	1,682	3,555	0	87	455	1,477	30,464
StockPay	333	0.31	0.25	0.00	0.11	0.26	0.46	1.00
StockHeld	333	3.35	21.44	0.00	0.20	0.68	1.63	299.03
IncentivePay	333	0.49	0.25	0.00	0.30	0.53	0.68	1.00
Disclosure								
CashDiscl	333	0.98	0.14	0	1	1	1	1
BonusDiscl	333	0.79	0.41	0	1	1	1	1
StockDiscl	333	0.91	0.29	0	1	1	1	1
QualityDiscl	333	1.47	0.70	0	1	2	2	2
QuantityDiscl	333	1.25	0.86	0	0	2	2	2
Disclosure	333	5.39	1.82	0	4	6	7	7

Board Dependence

N_IndDirector is the number of independent directors with no business relations with the company. N_NonExecDirector is the number of non-executive directors who are not classified as independent. N_EmplDirector is the number of directors who are company employees. N_ExecDirector is the number of executive directors. N_TotalDirector is the total number of directors. ExecMajority is the dummy variable that takes 1 (0) if executive directors comprise majority (at least 51%) on the board. ExecRatio is the ratio of executive directors to total directors. CEO-Chair is the dummy variable that takes 1 (0) if the CEO serves (does not serve) as the chair of the board.

Pay Structure (Values reported in thousand €'s, D_X is the variable X deflated by total assets of the same year.)

N_ExecSample is number of executives used to calculate company pay averages. CashComp is annual fixed cash compensation per manager. BonusComp is annual bonus payments per manager. StockComp is average present value of annual stock grants per manager. OptionComp is average present value of annual option grants per manager according to the Black-Scholes formula. TotalComp is total annual compensation per manager, i.e., the sum of CashComp, BonusComp, StockGrants, and OptionGrants. StockPortfolio is the average value of stocks held by manager at the beginning of the fiscal year. OptionPortfolio is the average present value of options held by manager at the beginning of the fiscal year. StockPay is the ratio of the value of annual stock and options grants to TotalComp. StockHeld is the ratio of the value of stocks and options held to TotalComp. IncentivePay is the ratio of the sum of bonus and value of stock and option grants to TotalComp.

Disclosure

CashDiscl, BonusDiscl, and StockDiscl are the dummy variables that take 1 (0) if a company discloses (does not disclose) its cash compensation, bonus compensation, and stock and option grants, respectively. QualityDiscl measures disclosure quality. High, medium, low disclosure quality receives 2, 1, and 0 points, respectively. See Section 3.2.3 for details. QuantityDiscl measures the number of disclosed pay contracts. See Section 3.2.3 for details. Disclosure is the overall measure for the type, level, and quality of pay disclosure. Disclosure is the sum of CashDiscl, BonusDiscl, StockDiscl, QualityDiscl, and QuantityDiscl.

Table 2 Panel A - Descriptive Statistics, Continued

	N	Mean	Std Dev	Minimum	Q1	Median	Q3	Maximum
Financials								
TotalAssets	333	122,311	186,100	1,933	12,205	35,244	138,942	911,926
Log(TotalAssets)	333	10.66	1.48	7.57	9.41	10.47	11.84	13.72
CurrentAssets	333	61,038	124,661	246	4,752	11,705	28,777	697,800
D_CurrentAssets	333	0.44	0.22	0.00	0.26	0.43	0.60	0.94
LTAssets	333	61,273	96,984	441	6,610	18,242	62,650	510,419
D_LTAssets	333	0.56	0.22	0.06	0.40	0.57	0.74	1.00
CurrentLiabilities	333	60,849	128,126	408	4,362	10,014	26,628	736,227
D_CurrentLiabilities	333	0.41	0.22	0.00	0.27	0.38	0.54	1.02
TotalDebt	333	5,887	9,071	0	0	2,300	7,900	67,984
D_TotalDebt	333	0.19	0.17	0.00	0.00	0.17	0.29	0.84
WorkingCap	333	190	39,757	-174,805	-2,030	281	2,970	348,900
D_WorkingCap	333	0.03	0.14	-0.40	-0.07	0.01	0.10	0.42
Sales	333	28,539	24,836	3,000	12,110	21,097	37,224	200,514
Log (Sales)	333	9.98	0.74	8.01	9.40	9.96	10.52	12.21
OpProfit	333	2,927	5,382	-14,436	636	1,391	3,472	35,382
D_OpProfit	333	0.05	0.07	-0.72	0.01	0.05	0.08	0.30
R&D	333	565	1,058	0	0	25	525	6,000
D_R&D	333	0.02	0.07	0.00	0.00	0.00	0.02	0.85
NetIncome	333	1,601	2,836	-14,653	355	953	2,347	17,979
D_NetIncome	333	0.04	0.11	-0.22	0.01	0.03	0.05	1.93
CAPX	333	1,502	2,520	-647	0	554	1,722	16,300
D_CAPX	333	0.05	0.05	-0.07	0.00	0.04	0.07	0.34
M/B	333	3.16	5.42	-37.27	1.53	2.42	3.58	43.70
MCap	333	34,952	44,275	437	9,150	18,624	44,364	361,823
Log(Mcap)	333	9.84	1.17	6.08	9.12	9.83	10.70	12.80
StockReturn	333	0.06	0.60	-0.94	-0.20	-0.02	0.18	7.41
SalesComplex	231	0.45	0.19	0.17	0.28	0.40	0.56	0.96
CV_OpProfit	333	0.97	3.52	0.02	0.14	0.29	0.63	35.80
N_Employee	333	102,033	93,383	4,111	45,930	75,492	118,932	680,000

Financials (Values reported in million €'s; D_X is variable X deflated by total assets of the same year.)
TotalAssets is the total assets by fiscal year-end. CurrentAssets are current assets as reported in the companies' balance sheets by the fiscal year-end. LTAssets is long-term assets, calculated as the difference between TotalAssets and CurrentAssets. CurrentLiabilities are current liabilities as reported in the companies' balance sheets by the fiscal year-end. TotalDebt is the sum of long-term debt and the current portion of financial debt at the fiscal year-end. WorkingCap is the working capital, calculated as current assets less current liabilities. Sales are total net sales. OpProfit is the reported operating profit by the company. R&D is research and development expenses. NetIncome is reported net income. CAPX is reported capital expenditures. M/B is the market value of equity divided by the book value of equity at the fiscal year-end. MCap is the total market capitalization of equity at the fiscal year-end. StockReturn is contemporaneous stock return in the primary stock exchange the company is traded. SalesComplex is the average of product type dispersion, ProductComplex, and location dispersion, GeogComplex, of sales. ProductComplex and GeogComplex are calculated using the Herfindahl-Hirschman method, i.e., by summing the squares of the fractions of each sales share in terms of product type or location. CV_OpProfit is the coefficient of variation for operating profit, calculated as the standard deviation of operating profit divided by the mean of operating profit for each company for years 1999 through 2001. N_Employee is the number of employees at the fiscal year-end.

Table 2 Panel A - Descriptive Statistics, Continued

Governance	N	Mean	Std Dev	Minimum	Q1	Median	Q3	Maximum
ADR	333	0.56	0.50	0	0	1	1	1
OTC	333	0.20	0.40	0	0	0	0	1
Local	333	0.24	0.43	0	0	0	0	1
N_Listed	333	2.20	1.27	1	1	2	4	4
Block	156	0.23	0.17	0.00	0.08	0.20	0.30	0.89
LawIndex	333	8.75	0.80	6.59	7.86	9.06	9.06	9.93

Governance

ADR is the dummy variable that takes 1 (0) if a company's shares is (not) listed as ADR in the U.S. OTC is the dummy variable that takes 1 (0) if a company's shares is (not) traded in OTC markets in the U.S. Local is the dummy variable that takes 1 (0) if a company's shares is (not) listed only in the local exchange. N_Listed is the number of stock exchanges the company is listed. Block is the sum of percentage shares of the largest three institutional shareholders. LawIndex is the legal enforcement index from Gul (2000) that aggregates the measures of judicial efficiency, rule of law, and the corruption perception indices.

Table 2 Panel B - Correlation Coefficients (Pearson (Spearman) correlations in upper (lower) triangle). Significance levels at *** 1%, ** 5%, * 10%

	Incentive Pay	Disclosure	Exec Ratio	CEO_ Chair	Stock Held	D_Total Comp	Log_Total Assets	M_B	Stock Return	D_Net Income
IncentivePay	1.00	0.30 (***)	0.12 (**)	0.17 (***)	-0.04	0.20 (***)	0.13 (***)	0.06	0.07	0.05
Disclosure	0.22 (***)	1.00	0.57 (***)	0.08	0.10 (*)	0.22 (***)	-0.12 (**)	0.03	-0.07	0.10 (*)
ExecRatio	0.11 (**)	0.61 (***)	1.00	0.14 (***)	0.14 (***)	0.23 (***)	-0.22 (***)	-0.06	-0.07	0.08
CEO_Chair	0.17 (***)	0.05	0.19 (***)	1.00	-0.04	0.06	-0.06	-0.10 (*)	0.03	-0.01
StockHeld	0.18 (***)	0.41 (***)	0.35 (***)	0.31 (***)	1.00	0.08	-0.15 (***)	0.02	-0.02	0.02
D_TotalComp	0.17 (***)	0.23 (***)	0.23 (***)	0.04	0.09	1.00	-0.58 (***)	0.13 (**)	0.09 (*)	0.14 (***)
Log_ TotalAssets	0.15 (***)	-0.17 (***)	-0.23 (***)	-0.05	-0.05	-0.85	1.00	-0.04	-0.05	-0.18 (***)
M_B	0.16 (***)	0.04	-0.05	-0.04	0.14 (***)	0.02	0.08	1.00	0.09	0.11 (**)
StockReturn	-0.01	-0.06	-0.04	0.07	0.00	-0.04	0.03	0.16 (***)	1.00	0.05
D_NetIncome	0.07	0.15 (***)	0.15 (***)	0.06	0.11 (**)	0.50 (***)	-0.48 (***)	0.27 (***)	0.07	1.00

Table 2 Panel C - Country, industry, and annual breakdown of selected variables

Country	N	Exec Ratio	CEO_ Chair	Incentive Pay	Disclosure	Total Comp	Stock Held	Total Assets	Law Index	N_ Listed
UK	126	0.45	0.23	0.50	6.87	1,869	6.46	110,271	9.06	1.53
France	63	0.21	0.79	0.60	5.06	2,041	1.72	117,208	7.86	1.90
Germany	48	0.00	0.00	0.30	3.23	1,417	0.07	110,606	8.74	3.13
Holland	27	0.02	0.04	0.51	6.00	2,182	1.67	176,065	9.67	2.89
Switzerland	18	0.09	0.50	0.55	3.67	6,049	1.68	283,640	9.63	2.83
Sweden	15	0.05	0.07	0.53	4.80	1,487	3.33	22,467	9.80	2.60
Italy	12	0.34	0.00	0.67	4.00	3,302	0.26	90,612	6.59	3.25
Spain	9	0.25	0.67	0.45	4.44	1,268	0.69	58,053	6.88	3.33
Belgium	9	0.19	0.11	0.23	2.89	828	0.11	247,020	8.27	1.67
Finland	6	0.15	0.50	0.54	7.00	2,666	8.91	18,830	9.93	3.00
Average	333	0.24	0.30	0.49	5.39	2,092	3.35	122,311	8.75	2.20

Industry	N	Exec Ratio	CEO_ Chair	Incentive Pay	Disclosure	Total Comp	Stock Held	Total Assets	M/B
Finance, insurance, and real estate	90	0.23	0.24	0.51	5.59	2,649	1.54	365,628	2.96
Machinery, computers, and electronics	60	0.18	0.30	0.51	5.20	1,904	1.61	32,132	3.25
Wholesale and retail trade	54	0.38	0.43	0.40	5.50	1,438	13.02	18,173	2.27
Chemical, petroleum, and glass	51	0.20	0.35	0.52	4.96	2,228	0.79	38,252	3.07
Transportation and utilities	33	0.21	0.12	0.48	5.42	2,395	0.94	63,301	4.48
Primary and fabricated metal	12	0.24	0.50	0.36	5.50	777	0.94	17,096	1.01
Food and tobacco	12	0.37	0.50	0.62	5.25	2,199	1.07	29,233	3.78
Services	9	0.35	0.00	0.48	6.33	2,760	1.32	16,260	8.55
Mining and construction	6	0.23	0.50	0.60	5.00	1,436	4.37	13,921	3.51
Textile, wood, and paper	6	0.14	0.00	0.45	6.00	775	7.06	14,706	1.44
Average	333	0.24	0.30	0.49	5.39	2,092	3.35	122,311	3.16

Year	N	Exec Ratio	CEO_ Chair	Incentive Pay	Disclosure	Total Comp	Stock Held	Total Assets	M/B	Law Index	N_ Listed
1999	111	0.25	0.32	0.44	5.15	1,626	3.71	100,888	4.40	8.75	2.20
2000	111	0.24	0.31	0.49	5.33	2,394	2.71	124,578	2.64	8.75	2.20
2001	111	0.24	0.28	0.53	5.69	2,257	3.62	141,467	2.45	8.75	2.20
Average	333	0.24	0.30	0.49	5.39	2,092	3.35	122,311	3.16	8.75	2.20

Variable definitions are in Table 2 Panel A. TotalComp is in thousand €'s. TotalAssets is in million €'s.

Table 3 Panel A - Selected Descriptive Statistics of Non-Disclosing companies

	N	Mean	Std Dev	Minimum	Q1	Median	Q3	Maximum
Board								
N_TotalDirector	46	16.7	7	6	12	16	21	39
ExecRatio	46	0.17	0.23	0.00	0.00	0.08	0.31	1.00
CEO-Chair	46	0.28	0.46	0	0	0	1	1
Disclosure								
Disclosure	46	1.72	1.33	0	1	1	3	5
Financials								
TotalAssets	46	116,448	186,724	4,634	15,991	29,545	142,055	918,701
Sales	46	24,663	25,244	2,898	12,022	16,830	26,419	152,873
OpProfit	46	2,353	7,993	-11,408	413	1,174	2,268	52,343
NetIncome	46	21	2,963	-14,323	159	479	860	3,805
N_Employee	46	112,784	167,220	2,735	47,078	67,134	115,957	1,082,004
M/B	46	2.36	1.92	0.43	1.19	1.66	3.05	9.36
MCap	46	17,522	15,497	1,121	5,444	10,873	25,000	52,929
Governance								
Local	46	0.48	0.51	0	0	0	1	1
N_Listed	46	2.11	1.30	1	1	1	3	5
Block	28	0.45	0.28	0.00	0.19	0.46	0.67	0.96
LawIndex	46	8.03	1.41	4.26	7.86	8.07	8.74	9.93

Table 3 Panel B - Selected Descriptive Statistics of the top U.S. Companies

	N	Mean	Std Dev	Minimum	Q1	Median	Q3	Maximum
Board								
ExecRatio	450	0.39	0.20	0.00	0.20	0.40	0.50	1.00
Pay Structure								
N_ExecSample	450	5.43	0.80	3	5	5	6	9
CashComp	450	1,025	1,168	260	627	761	1,028	16,005
BonusComp	450	1,616	2,182	-303	432	879	1,708	15,021
StockComp	450	925	2,174	0	0	29	831	19,090
OptionComp	450	4,847	7,439	0	1,015	2,494	5,673	65,315
TotalComp	450	8,412	9,299	260	2,878	5,271	9,782	66,766
StockPortfolio	450	247,751	1,424,816	0	4,043	11,143	38,565	13,251,469
OptionPortfolio	450	22,856	60,840	0	1,247	6,325	21,109	981,136
StockHeld	450	32.17	185.01	0.00	0.52	1.45	5.01	1,721
IncentivePay	450	0.79	0.17	0.00	0.72	0.83	0.90	0.99
Financials								
TotalAssets	450	76,956	140,370	2,747	13,513	24,030	52,150	1,051,450
Sales	450	30,626	30,272	10,066	15,430	21,873	32,164	217,799
OpProfit	442	5,988	8,233	-5,743	1,600	3,135	5,741	61,188
NetIncome	450	1,769	2,858	-16,198	302	939	2,309	17,720
MCap	449	50,729	76,081	366	8,636	20,498	59,194	507,217

Variable definitions are in Table 2 Panel A. Pay structure data are in thousand €'s. Financials data are in million €'s.

Table 4 - Primary OLS regression of Hypothesis 1: Determinants of Incentive-based Pay

		Panel A			**Panel B**			
	Predicted		Whole Sample (N=333)		CEO-Chair = 0 (N=233)		CEO-Chair = 1 (N=100)	
	Sign	Model 1	Model 2	Model 3	Model 2	Model 3	Model 2	Model 3
Intercept		0.42 (18.7)***	0.48 (2.28)**	0.48 (1.67) *	0.45 (1.71) *	1.03 (3.03) ***	0.33 (1.02)	-0.76 (-1.20)
ExecRatio	+	0.18 (2.60)***	0.19 (2.64)***	0.22 (3.02) ***	0.17 (2.23) **	0.14 (1.76) *	0.17 (1.27)	0.20 (1.32)
CEO-Chair	+	0.19 (3.59)***	0.11 (2.26)**	0.14 (2.85) ***	.	.	.	.
ExecRatio*CEO-Chair	-	-0.36 (-2.34)**	-0.16 (-1.07)	-0.25 (-1.64)	.	.	.	.
StockHeld	-		0.00 (-0.67)	0.00 (-0.37)	0.00 (-0.51)	0.00 (-0.35)	-0.01 (-2.03) **	-0.01 (-1.96) **
TotalComp	+		0.02 (5.63) ***	0.02 (5.35) ***	0.05 (6.30) ***	0.05 (6.46) ***	0.01 (3.22)***	0.01 (2.93) ***
Log(TotalAssets)	+		0.02 (2.49) **	0.02 (0.93)	0.01 (0.74)	-0.05 (-2.19) **	0.05 (2.61) ***	0.10 (2.86) ***
StockReturn	+		0.04 (1.79) *	0.04 (1.59)	0.04 (1.68) *	0.03 (1.06)	0.00 (-0.07)	0.02 (0.41)
D_NetIncome	?		0.09 (0.81)	0.09 (0.78)	0.07 (0.63)	0.13 (1.08)	1.75 (2.68) ***	1.01 (1.24)
D_WorkingCap	+		0.27 (2.54) **	0.21 (1.94) *	0.05 (0.36)	0.06 (0.44)	0.44 (2.72) ***	0.43 (2.51) **
D_LTAssets	-		0.06 (0.95)	0.09 (1.47)	0.03 (0.43)	0.11 (1.36)	-0.12 (-1.12)	-0.04 (-0.37)
CV_OpProfit	+		0.00 (0.6)	0.00 (0.48)	0.01 (0.67)	0.05 (0.39)	0.00 (0.49)	0.00 (-0.38)
M/B	+		0.00 (1.44)	0.00 (1.73) *	0.00 (0.39)	0.04 (1.19)	0.00 (0.84)	0.00 (0.57)
LawIndex	-		-0.03 (-1.92)	-0.03 (-1.78) *	-0.02 (-0.76)	-0.04 (-1.77) *	-0.05 (-1.73)	-0.01 (-0.20)
N_ExecSample	-		0.00 (-1.33)	0.00 (-2.26) **	0.00 (-0.49)	0.00 (-1.46)	0.00 (0.40)	0.00 (-1.04)
N_TotalDirector	?		-0.01 (-2.32) **	-0.01 (-2.06) **	-0.01 (-0.76)	-0.01 (-1.69) *	0.00 (0.31)	0.00 (0.39)
Adjusted R^2		4.5%	17.4%	21.5%	20.4%	27.2%	27.7%	28.2%
F-statistics		6.2	5.7	4.5	5.6	4.6	3.9	2.8
N		333	333	333	233	233	100	100

Panel A and Panel B present results for the following primary OLS regression in Section 4.1:
*IncentivePay = f (ExecRatio, CEO-Chair, ExecRatio*CEO-Chair, StockHeld, TotalComp, Log(TotalAssets), StockReturn, D_NetIncome, D_WorkingCap, D_LTAssets, CV_OpProfit, M/B, LawIndex, N_ExecSample, N_TotalDirector, Industry, Year)*
***, **, * denote significance at the two-tailed 1%, 5%, 10% levels, respectively. T-statistics are presented in parentheses.
Variable definitions are in Table 2 Panel A. The prefix "D_" stands for "Deflated by contemporaneous total assets". Panel A presents regression results run with the whole sample. Panel B presents regression results run with the companies split according to the CEO-Chair variable. Model (1) includes ExecRatio, CEO-Chair, ExecRatio*CEO-Chair as independent variables. Model 2 includes independent variables in model 1 and other economic control variables. Model 3 includes independent variables in model 2 and industry and time fixed-effects. Industry and year coefficient estimates in Model 3 are not presented for brevity.

Table 5 Panel A - The effect of Executive Majority on Incentive-based Pay

	Predicted Sign	Whole Sample Model 3	CEO-Chair = 0 Model 3	CEO-Chair = 1 Model 3
Intercept		0.62 (2.16) **	1.07 (3.22) ***	-0.42 (-0.66)
ExecMajority	+	0.09 (2.27) **	0.07 (1.68) *	-0.02 (-0.35)
CEO-Chair	+	0.12 (3.67) ***	.	.
ExecMajority*CEO-Chair	-	-0.18 (-2.42) **	.	.
StockHeld	-	0.00 (-0.43)	0.00 (-0.40)	-0.01 (-1.71) *
TotalComp	+	0.02 (5.36) ***	0.05 (6.49) ***	0.01 (2.95) ***
Log(TotalAssets)	+	0.01 (0.52)	-0.05 (-2.29) **	0.08 (2.22) **
StockReturn	+	0.03 (1.46)	0.03 (1.02)	0.03 (0.53)
D_NetIncome	?	0.14 (1.18)	0.16 (1.38)	1.02 (1.24)
D_WorkingCap	+	0.19 (1.74) *	0.05 (0.33)	0.36 (2.16) **
D_LTAssets	-	0.09 (1.37)	0.10 (1.30)	-0.07 (-0.56)
CV_OpProfit	+	0.00 (0.68)	0.01 (0.70)	0.00 (-0.56)
M/B	+	0.00 (1.54)	0.00 (1.26)	0.00 (0.30)
LawIndex	-	-0.04 (-1.94) *	-0.04 (-1.85) *	-0.01 (-0.29)
N_ExecSample	-	-0.01 (-2.63) ***	0.00 (-1.71) *	0.00 (-1.33)
N_TotalDirector	?	-0.05 (-1.53)	-0.01 (-1.87) *	-0.02 (-0.43)
Adjusted R^2		21.0%	27.1%	26.7%
F-statistics		4.4	4.6	2.6
N		333	233	100

Results for the following primary OLS regression in Section 4.1, with ExecRatio replaced by ExecMajority:
*IncentivePay = ƒ (ExecMajority, CEO-Chair, ExecMajority*CEO-Chair, StockHeld, TotalComp, Log(TotalAssets), StockReturn, D_NetIncome, D_WorkingCap, D_LTAssets, CV_OpProfit, M/B, LawIndex, N_ExecSample, N_TotalDirector, Industry, Year)*
***, **, * denote significance at the two-tailed 1%, 5%, 10% levels, respectively. T-statistics are presented in parentheses.
Variable definitions are in Table 2 Panel A. The prefix "D_" stands for "Deflated by contemporaneous total assets". Model 3 is the full model above with industry and time fixed-effects. Industry and year coefficient estimates in Model 3 are not presented for brevity. Model 1 and Model 2 results are not presented for brevity.
The results in the first column are for the regression run for the whole sample. The results for the second column are for the regression run for companies where CEO is not the board chair. The results for the third column are for the regression run for companies where CEO is the board chair.

Table 5 Panel B - The Primary OLS regression with data set split according to Executive Majority and CEO-Chair

		CEO-Chair = 0	CEO-Chair = 1	Total Sample
Non-Majority of Executive Directors		Model 2	Model 2	Model 2
	Coefficient Estimate on ExecRatio	0.19 (1.86)*	0.49 (2.56)***	0.22 (2.27)**
	Adjusted R^2	17.6%	27.6%	16.9%
	F-statistics	4.3	3.4	4.9
	N	200	87	287
Majority of Executive Directors		Model 2	Model 1	Model 2
	Coefficient Estimate on ExecRatio	1.33 (1.86)*	-0.16 (-0.22)	1.28 (1.98)**
	Adjusted R^2	66.3%	86.0%	64.2%
	F-statistics	5.8	8.1	6.4
	N	33	13	46
Total Sample		Model 2	Model 2	Model 2
	Coefficient Estimate on ExecRatio	0.17 (2.23)**	0.17 (1.27)	0.21 (2.79)***
	Adjusted R^2	20.5%	27.7%	7.0%
	F-statistics	5.6	3.9	2.9
	N	233	100	333

Results for the primary OLS regression in Section 4.1, with CEO-Chair and the interactive variable excluded:
IncentivePay = ƒ (ExecRatio, StockHeld, TotalComp, Log(TotalAssets), StockReturn, D_NetIncome, D_WorkingCap, D_LTAssets, CV_OpProfit, M/B, LawIndex, N_ExecSample, N_TotalDirector)

***, **, and * denote significance at the two-tailed 1%, 5%, and 10% levels, respectively. T-statistics are presented in parentheses.
IncentivePay is the ratio of the sum of bonus and value of stock and option grants to total current pay. ExecRatio is the ratio of executive directors to total directors on the board. CEO-Chair is the dummy variable that takes 1 (0) if the CEO serves (does not serve) as the chair of the board. The prefix "D_" stands for "Deflated by contemporaneous total assets". Other variable definitions are in Table 2 Panel A.
Model 1 includes ExecRatio, CEO-Chair, ExecRatio*CEO-Chair as independent variables. Model 2 includes ExecRatio and independent control variables, but not industry and time fixed-effects. The regression is run for the data set split according to whether CEO is also a board chair, and whether executive directors hold majority on the board.

Table 6 - Sample bias checks for Hypothesis 1

	Predicted Sign	Disclosing and non-disclosing companies combined (N=379)			Disclosing Companies Only (N=333)		
		Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept		0.35 (14.8)***	-0.20 (-0.99)	0.19 (0.64)	0.42 (18.7)***	0.33 (1.53)	0.15 (0.52)
ExecRatio	+	0.28 (3.73)***	0.28 (3.57)***	0.27 (3.59)***	0.18 (2.60)***	0.20 (2.74)***	0.27 (3.56)***
CEO-Chair	+	0.20 (3.79)***	0.18 (3.53)***	0.17 (3.33)***	0.19 (3.59)***	0.15 (2.82)***	0.17 (3.27)***
ExecRatio*CEO-Chair	-	-0.46 (-3.02)***	-0.30 (-2.00)**	-0.30 (-1.91)*	-0.36 (-2.34)**	-0.20 (-1.30)	-0.28 (-1.79)*
Log(TotalAssets)	+		0.04 (3.84)***	0.04 (2.42)**		0.84 (3.89)***	0.05 (2.81)***
D_NetIncome	+		0.17 (1.30)	0.06 (0.53)		0.09 (0.75)	0.06 (0.54)
D_WorkingCap	+		0.21 (1.84)*	0.18 (1.55)		0.25 (2.30)**	0.18 (1.56)
D_LTAssets	-		0.09 (1.26)	0.11 (1.64)		0.08 (1.20)	0.11 (1.67)*
M/B	+		0.00 (1.39)	0.00 (1.68)*		0.00 (1.54)	0.00 (1.41)
LawIndex	-		0.02 (1.26)	-0.02 (-1.18)		-0.03 (-1.56)	-0.02 (-1.09)
N_TotalDirector	?		-0.01 (-3.48)***	-0.01 (-2.65)***		-0.01 (-3.03)***	-0.01 (-2.65)***
Adjusted R^2		5.2%	11.4%	13.6%	4.5%	12.0%	13.2%
F-statistics		7.9	5.9	3.5	6.2	4.4	3.7
N		379	379	379	333	333	333

The following regression is run with both disclosing and non-disclosing companies:

*IncentivePay = ƒ (ExecRatio, CEO-Chair, ExecRatio*CEO-Chair, Log(TotalAssets), D_NetIncome, D_WorkingCap, D_LTAssets, M/B, LawIndex, N_TotalDirector, Industry, Year)*

***, **, and * denote significance at the two-tailed 1%, 5%, and 10% levels, respectively. White-adjusted t-statistics are presented in parentheses.
Variable definitions are in Table 2 Panel A. The prefix "D_" stands for "Deflated by contemporaneous total assets". Model 1 includes ExecRatio, CEO-Chair, ExecRatio*CEO-Chair as independent variables. Model 2 includes independent variables in model 1 and other control variables. Model 3 includes independent variables in model 2 and industry and time fixed-effects. Industry and year coefficient estimates in Model 3 are not presented for brevity.

Table 7 - Two stage least-squares (2SLS) estimation for Hypothesis 1

	Predicted Sign	Model 1	Model 2	Model 3
Intercept		0.37 (12.6)***	0.35 (1.30)	0.25 (0.65)
ExecRatio	+	0.29 (3.07)***	0.31 (3.06)***	0.35 (3.42)***
CEO-Chair	+	0.18 (2.89)***	0.11 (1.79)*	0.13 (2.04)**
ExecRatio*CEO-Chair	-	-0.33 (-1.78)*	-0.14 (-0.73)	-0.20 (-1.02)
StockHeld	-		0.00 (-0.55)	0.00 (-0.22)
TotalComp	+		0.02 (4.39)***	0.02 (4.15)***
Log(TotalAssets)	+		0.02 (1.60)	0.02 (0.90)
StockReturn	+		0.06 (2.34)**	0.05 (1.73)*
D_NetIncome	?		0.11 (0.90)	0.10 (0.76)
D_WorkingCap	+		0.25 (1.84)*	0.16 (1.10)
D_LTAssets	-		0.05 (0.70)	0.08 (0.90)
CV_OpProfit	+		0.00 (-0.39)	0.00 (-0.53)
M/B	+		0.00 (1.15)	0.00 (1.26)
LawIndex	+		-0.02 (-1.00)	-0.02 (-0.75)
N_ExecSample	-		0.00 (-1.12)	0.00 (-1.66)
N_TotalDirector	?		-0.01 (-1.24)	0.00 (-0.91)
Adjusted R^2		6.6%	16.0%	16.9%
F-statistics		6.16	3.80	2.79
N		222	222	222

ExecRatios of year 1999 for each company are used as instrumental variables of the ExecRatios of 2000 and 2001. Predicted values for ExecRatios of 2000 and 2001 are then used for the second regression:
*IncentivePay = ƒ (ExecRatio, CEO-Chair, ExecRatio*CEO-Chair, StockHeld, TotalComp, Log(TotalAssets), StockReturn, D_NetIncome, D_WorkingCap, D_LTAssets, CV_OpProfit, M/B, LawIndex, N_ExecSample, N_TotalDirector, Industry, Year)*
***, **, and * denote significance at the two-tailed 1%, 5%, and 10% levels, respectively. T-statistics are presented in parentheses.
Variable definitions are in Table 2 Panel A. The prefix "D_" stands for "Deflated by contemporaneous total assets".
Model 1 includes ExecRatio, CEO-Chair, ExecRatio*CEO-Chair as independent variables. Model 2 includes independent variables in model 1 and other control variables. Model 3 includes independent variables in model 2 and industry and time fixed-effects. Industry and year coefficient estimates in Model 3 are not presented for brevity.

Table 8 - The Primary Tobit regression of Hypothesis 2: Determinants of Pay Disclosure

		Panel A			**Panel B**		
	Predicted Sign	H2(a) Model 1	H2(a) Model 2	H2(a) Model 3	H2(b) Model 1	H2(b) Model 2	H2(b) Model 3
Intercept		2.76 (78.1)***	-13.9 (25.8)***	-8.00 (4.7)**	-15.7 (36.5)***	-10.9 (8.4)***	-9.54 (6.4)***
ExecRatio	+	14.2 (123)***	13.2 (124)***	12.9 (124)***	12.1 (121)***	11.8 (118)***	11.8 (115)***
CEO-Chair	+	-0.02 (0.0)	0.54 (0.7)	0.31 (0.2)	0.22 (0.1)	-0.04 (0.0)	-0.22 (0.1)
ExecRatio*CEO-Chair	-	-4.69 (3.9)**	-3.20 (2.1)	-1.13 (0.3)	-2.61 (1.6)	-0.49 (0.1)	-0.14 (0.0)
IncentivePay	+				3.94 (31.3)***	3.83 (30.3)***	3.41 (25.0)***
TotalComp	+				-0.13 (6.7)***	-0.11 (5.4)**	-0.49 (5.2)**
Log(TotalAssets)	+		0.11 (0.6)	-0.40 (3.1)*	0.06 (0.2)	-0.38 (3.1)*	-0.02 (0.3)
CV_OpProfit	+		0.01 (0.0)	-0.02 (0.1)	-0.01 (0.0)	-0.03 (0.36)	0.01 (0.0)
M/B	+		0.02 (0.2)	0.02 (0.2)	0.01 (0.1)	0.01 (0.1)	-0.12 (0.2)
StockReturn	+		-0.44 (2.5)	0.01 (0.0)	-0.57 (4.9)**	-0.12 (0.2)	10.7 (5.1)**
D_NetIncome	?		9.37 (4.2)**	12.06 (6.0)***	6.17 (2.1)	8.94 (3.6)*	-0.32 (5.3)**
N_Listed	+		-0.22 (2.3)	-0.28 (3.6)*	-0.26 (3.5)*	-0.29 (4.6)**	1.77 (58.1)***
LawIndex	?		1.77 (59.7)***	1.70 (49.6)***	1.88 (75.5)***	1.83 (63.3)***	0.04 (0.8)
N_TotalDirector	?		0.00 (0.00)	0.00 (0.01)	0.02 (0.19)	0.02 (0.36)	0.02 (0.36)
Log-likelihood ratio		-338	-300	-285	-330	-284	-270
N		333	333	333	333	333	333

The Tobit regressions of Disclosure on board dependence variables:
*Disclosure = ƒ (ExecRatio, CEO-Chair, ExecRatio*CEO-Chair, IncentivePay, TotalComp, Log(TotalAssets), CV_OpProfit, M/B, StockReturn, D_NetIncome, N_Listed, LawIndex, N_TotalDirector, Industry, Year)*
***, **, and * denote significance at the two-tailed 1%, 5%, and 10% levels, respectively. Chi-square statistics are presented in parentheses.
Variable definitions are in Table 2 Panel A. The prefix "D_" stands for "Deflated by contemporaneous total assets". Panel A documents results for H2(a). Panel B documents results fro H2(b). Panel A (Panel B) includes (does not include) IncentivePay and TotalComp as independent variables.
Model 1 includes ExecRatio, CEO-Chair, ExecRatio*CEO-Chair as independent variables. Model 2 includes independent variables in model 1 and other control variables. Model 3 includes independent variables in model 2 and industry and time fixed-effects. Industry and year coefficient estimates in Model 3 are not presented for brevity.

Table 9 - Panel Data Tests for Hypothesis 2: Company and Country fixed-effects

		Country Fixed-Effects		**Company Fixed-Effects**	
	Predicted Sign	H2(a) Model 2	H2(b) Model 2	H2(a) Model 2	H2(b) Model 2
Intercept		-96.38 (0.0)	-87.6 (0.0)	71.0 (0.0)	69.4 (0.0)
ExecRatio	+	3.79 (6.7)***	3.58 (6.6)***	2.55 (3.1)*	3.27 (5.4)***
CEO-Chair	+	0.28 (0.2)	0.35 (0.3)	0.07 (0.0)	0.25 (0.3)
ExecRatio*CEO-Chair	-	-0.86 (0.2)	-0.79 (0.2)	-1.91 (1.1)	-2.63 (2.3)
IncentivePay	+		3.35 (29.5)***		1.59 (17.1)***
TotalComp	+		-0.06 (2.7)*		-0.02 (1.3)
Log(TotalAssets)	+	-0.02 (0.0)	-0.07 (0.4)	2.04 (23.4)***	1.77 (18.7)***
CV_OpProfit	+	-0.01 (0.1)	-0.02 (0.2)	-3.84 (0.0)	-3.61 (0.0)
M/B	+	-0.04 (0.9)	-0.03 (0.9)	0.00 (0.0)	0.00 (0.0)
StockReturn	+	-0.15 (0.4)	-0.22 (1.0)	0.16 (2.8)*	0.14 (2.6)*
D_NetIncome	?	4.18 (1.2)	1.83 (0.3)	2.68 (1.2)	3.83 (2.5)
N_Listed	+	0.18 (1.6)	0.10 (0.5)	0.08 (0.0)	0.32 (0.0)
LawIndex	?	11.5 (0.0)	10.5 (0.0)	-8.57 (0.0)	-8.33 (0.0)
N_TotalDirector	?	0.11 (4.7)**	0.08 (3.2)*	-0.07 (3.5)*	-0.07 (3.6)*
Log-likelihood ratio		-239	-225	-230	-222
N		333	333	333	333

The Tobit regressions of Disclosure on board dependence variables:
*Disclosure = ƒ (ExecRatio, CEO-Chair, ExecRatio*CEO-Chair, IncentivePay, TotalComp, Log(TotalAssets), CV_OpProfit, M/B, StockReturn, D_NetIncome, N_Listed, LawIndex, N_TotalDirector, Country, Company)*
***, **, and * denote significance at the two-tailed 1%, 5%, and 10% levels, respectively. Chi-square statistics are presented in parentheses.
Variable definitions are in Table 2 Panel A. The prefix "D_" stands for "Deflated by contemporaneous total assets".
Model 2 includes ExecRatio, CEO-Chair, the interactive term, and the other control variables. Country and company dummies are not presented for brevity.