

# **Executive directors, pay disclosures, and incentive compensation in large European companies**

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*Data Availability:* Data used in this study is available from public sources identified in the study as well as a hand-collected data set on executive compensation and disclosures in European companies.

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## 1. Introduction

Worldwide escalation in executive compensation has attracted significant interest from investors and researchers. However, a lack of data on international pay has led researchers to focus on a single country—most often the United States—when performing tests of agency theory (Conyon and Schwalbach [1999]).<sup>1</sup> Single-country studies arguably do not yield strong empirical tests because of similar pay practices and institutional characteristics across observations. This concern is especially germane to studies seeking to distinguish between out-of-equilibrium and equilibrium explanations, such as whether executives extract rents through their pay contracts, *the opportunism hypothesis*, or whether pay contracts are set to maximize share value, *the contracting hypothesis* (Hermalin and Weisbach [2003]).<sup>2</sup>

As regulations have tightened and investor demand has risen, many European companies recently commenced transparent disclosures about executive pay (Ferrarini, Moloney, and Vespro [2003]). I have capitalized on this new European data environment by hand-collecting pay data and testing two hypotheses relating executive pay to the influence those executives have on the board of directors. The *opportunism* hypothesis predicts that companies with influential executives on their boards would not be transparent about executive pay. In addition, executive pay would be less sensitive to performance. In contrast, the *contracting* hypothesis predicts that companies with influential executives on their boards would make transparent disclosures to assure outsiders that executives do not receive inefficient pay. Furthermore, executive pay would be more sensitive to performance to offset greater monitoring problems.

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<sup>1</sup> The non-U.S. studies mostly examine descriptive aspects of executive pay in a specific country—sometimes in comparison to the United States (Conyon and Schwalbach [1999]; Conyon and Murphy [2000]). The multiple-country studies are limited in number and are descriptive at best (Ferrarini and Moloney [2005]).

<sup>2</sup> Bebchuk, Fried, and Walker (2002) discuss the opportunism hypothesis, also known as rent seeking, managerial power, or skimming hypotheses. Holmstrom (1979) and Core, Guay, and Larcker (2003) provide theory and evidence on the contracting hypothesis, also known as efficient or arm's length contracting hypotheses.

The sample in this study comprises company-level observations from the largest 158 companies in 12 European countries for the years 1999–2004, and is concentrated on large economies such as the U.K., France, and Germany. While not fully representative of the European corporate governance landscape, the sample exhibits extensive variation in executive pay, board structures, pay disclosures, and institutional characteristics and thereby enables strong empirical tests. I document two main findings. First, companies with a greater number of executives on their boards and with CEOs serving as board chairs make disclosures about executive pay that are more transparent. Second, these companies grant their executives pay that is more sensitive to performance. Both findings support the contracting hypothesis.

The findings, however, are sensitive to institutional characteristics. At the country level, the positive relation between the number of executives on company boards (hereafter, insiders) and both pay transparency and incentive pay is more pronounced in countries with strong investor protection. At the company level, two situations diminish the positive marginal effects of a greater number of insiders on pay transparency and incentive pay: i) when insiders already dominate boards (i.e., when insiders already are the majority on boards or when CEOs serve as board chairs), and ii) when executives are likely to be entrenched (i.e., executive pay or stock ownership are high). In sum, the empirical support for the contracting hypothesis is limited to situations where opportunistic actions of insiders are mitigated by country-level investor protection and large representation of independent directors on company boards.

Drawing strong causality inferences is difficult in corporate governance studies, because a company's governance structure is determined endogenously with respect to the company's contracting environment (Larcker, Richardson, and Tuna [2007]; Adams, Hermalin, and Weisbach [2008]). For instance, the number of insiders on boards increases with growth options

and uncertainty because boards need more information and discretion from insiders (Hermalin and Weisbach [1998, 2003]). At the same time, pay transparency and incentive pay increase with growth options and uncertainty because executives are harder to monitor in such settings (Smith and Watts [1992]; Nagar [2002]). Therefore, growth options and uncertainty—not necessarily boards’ deliberate actions to curb agency costs—might lead to the positive correlations between insiders and pay transparency or incentive pay documented in this paper. To distinguish between the contracting hypothesis and this alternative explanation, I control for the known determinants of executive pay (including growth and uncertainty, as well as country, industry, and year fixed effects). I also perform a two-stage regression, which uses company legal origins to proxy for board characteristics. The results are qualitatively unchanged.

Of particular interest to policy makers, my findings contribute to knowledge about how companies cope with insiders on boards. While the potential of insiders to exploit their positions for personal gain is known (Jensen [1993]), my findings suggest that companies limit executives’ opportunistic behavior of through voluntary pay disclosures and incentive pay, especially in settings of strong investor protection. Such international evidence offers a fresh perspective for those who call for universal regulations on board independence and pay restrictions.

The rest of the paper is organized as follows. Section 2 develops the competing opportunism and contracting hypotheses. Section 3 describes the sample. Section 4 presents empirical findings on pay disclosure, and Section 5 presents empirical findings on incentive pay. Section 6 examines how institutional factors and insider domination of boards affect the findings. Section 7 concludes.

## 2. Hypothesis Development

Despite significant differences in corporate governance across the world, boards of directors invariably exist with a mandate to oversee company operations.<sup>3</sup> Company boards often employ executives as directors to enhance effective communication (Fama and Jensen [1983]). Executive directors (i.e., insiders) help companies make superior decisions especially under uncertainty (Burkart, Gromb, and Panunzi [1997]). Nevertheless, insiders impair boards' monitoring ability because they fail to serve owner interests at the expense of their own interests (Hermalin and Weisbach [2003]).<sup>4</sup> Moreover, insiders generate economic and psychological incentives for other directors to be overly tolerant toward executives (Jensen [1993]). Hence, insiders might be costly to shareholders. Companies with more insiders record higher abnormal accruals (Klein [2002]) and pay CEOs more for performance beyond CEOs' control (Bertrand and Mullainathan [2001]). Moreover, companies with more insiders fail to make optimal decisions on investments and CEO turnover (Weisbach [1988]; Cotter, Shivdasani, and Zenner [1997]; Byrd and Hickman [1992]).

Given the benefits and costs of insiders, a balance of inside and outside directors is considered the optimal configuration (Johnson, Daily, and Ellstrand [1996]; Klein [1998]). In fact, distinct governance systems evolved around the world, where not only insiders but also workers, partners, and government officials serve on boards to ensure efficiency and value allocation among stakeholders (Ball, Kothari, and Robin [2000]). In light of this balance, I examine how company compensation policies relate to insiders.

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<sup>3</sup> The entity that boards primarily serve largely depends on country-specific regulations. Generally, boards in common law companies serve shareholders, whereas boards in code law companies serve stakeholders. This distinction is less critical for the current study, since it focuses on boards' monitoring of executives irrespective of the boards' patrons. Yet, for consistency of presentation, I discuss shareholders as the primary patrons of boards.

<sup>4</sup> There are some opposing arguments that insiders might improve boards' monitoring ability (Drymiotis [2007]).

### *2.1. Insiders and transparency of pay disclosures*

It is well established that executives time the release of company news for personal benefit around their stock trades and option grants (Noe [1999]; Aboody and Kasznik [2000]).<sup>5</sup> This “disclosure agency problem” is likely to be more severe when executives’ private benefits, such as pay, are at stake (Nagar, Nanda, and Wysocki [2003]). For instance, in proxy statements U.S. executives attempt to understate (or conceal) the estimated values of their option grants (Murphy [1996]; Yermack [1998]; Baker [1999]).

The opportunism hypothesis predicts that influential insiders hide information about opportunistic wealth transfers to insiders or executives in general. In contrast, the contracting hypothesis predicts that companies with influential insiders proactively make transparent disclosures to assure shareholders that such wealth transfers do not take place. Hypothesis 1 states the prediction of the contracting hypothesis.

***Hypothesis 1:** Companies with greater influence of top executives on their board of directors make disclosures about executive pay that are more transparent.*

The literature on pay disclosures and governance is limited due to low variation in pay disclosures in the United States. Aboody, Barth, and Kasznik (2006) show that U.S. companies understate executive option values when they have weak governance. Laksmana (2008) documents that independent U.S. boards make pay disclosures that are more transparent. The findings are consistent with the opportunism hypothesis.

### *2.2. Insiders and incentive pay*

Executives typically prefer riskless compensation and a diversification of their wealth and human capital (Hall and Murphy [2000]). The opportunism hypothesis predicts that

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<sup>5</sup> Executives’ timing of good and bad news is not necessarily at the expense of shareholders (Aboody and Kasznik [2000]; Core [2001]).

influential insiders on company boards manipulate compensation committees for less incentive pay *ceteris paribus*. In contrast, the contracting hypothesis predicts that companies with greater insider influence on boards grant more incentive pay to alleviate monitoring problems (Core, Guay, and Larcker [2003]). Hypothesis 2 states the prediction of the contracting hypothesis.

*Hypothesis 2: Companies with greater influence of top executives on their board of directors make executive pay more sensitive to performance.*

The literature on incentive pay and boards of directors presents mixed results in the United States. Mehran (1995) and Ryan and Wiggins (2004) find that executives receive greater equity pay when boards have more outside directors. These findings support the opportunism hypothesis. Recently, however, Fahlenbrach (2009) finds that executives' equity incentives are lower in companies with independent boards for the years 1993–2004, and Chhaochharia and Grinstein (2009) find that regulatory changes for fewer insiders on boards lead companies to grant fewer options to executives. The latter two findings support the contracting hypothesis.

### **3. Method**

Using 939 annual reports of Europe's 158 largest companies for the fiscal years 1999–2004, I collect information about executive pay and board of directors by searching for top executive names as well as the following keywords: pay, compensation, remuneration, salary, bonus, LTIP, option, grant, board, director, and governance.<sup>6</sup> Out of the sample, 741 annual reports disclose information about executive pay contracts, and thus are labeled “disclosers.” Some disclosers report individual pay contracts, whereas others report pay averages for a number of executives ranging from 2 to 60. Addressing calls to examine pay for different executive

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<sup>6</sup> The largest European companies are obtained from the “Global Top 800 List” of Forbes magazine in 2000. The list perfectly overlaps with the Compustat Global database ranked by sales in year 2000. For the sample period, 16 companies that reorganized or merged with smaller companies remain in the sample after the takeovers. Four other companies that were acquired by larger companies are removed from the sample following the year of takeovers.

levels (Core and Guay [2001]), I keep all disclosers in the sample. At the same time, I form a second set of disclosers with pay data for no more than the top five executives ( $n = 486$ ). The second set includes companies that report pay contracts of individual executives (whereby I compute the pay averages using those of the top five executives only;  $n = 411$ ) and companies that report pay averages for a maximum of the top five executives ( $n = 75$ ).

Panel A of Table I presents the sample by country. Company size is the only criterion for sample selection, because reliable data on executive pay was primarily available among large companies during the sample period (Ferrarini, Moloney, and Ungureanu [2009]). Accordingly, sample companies cluster in large economies such as the U.K. ( $n = 43$ ), France ( $n = 33$ ), and Germany ( $n = 27$ ). The uneven country distribution of the sample limits the generalization of the results to the European landscape. Panel B of Table I presents the sample by economic sector. The sample companies cluster in financial, industrial, and consumer discretionary sectors.

Table II presents descriptive statistics for board structure, pay disclosure, executive pay variables (Panel A), and determinants of pay gathered from Compustat Global and Hoover's databases (Panel B). Table III, Panel A, compares the European sample with U.S. companies matched to sample companies by sales without replacement in fiscal year 2000.<sup>7</sup> Table III, Panel B, presents mean values of selected variables by country. I discuss key variables below.

### *3.1. Board Structures*

The mean number of directors in the sample,  $N_{Director}_i$ , is 14.4, of which 2.7 are executives (insiders); 4.0 are independent; 1.8 are non-executive employees; and 5.9 are other directors, such as government officials, CEO-appointed directors, retired-executive directors, and directors in business relations with the company. The mean number of directors is higher than the U.S. mean of 12.1, reflecting a broader representation of stakeholders on European boards.

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<sup>7</sup> Empirical results are similar if the matching is based on market capitalization or both sales and industry.

I measure insider influence using two proxies. *Insider Ratio<sub>t</sub>* is the ratio of insiders on the board. *Dual CEO/Chair<sub>t</sub>* is an indicator variable equal to one if the CEO also serves as the board chair and zero otherwise. The average *Insider Ratio<sub>t</sub>* is lower in Europe than in the United States (0.21 versus 0.29). The U.K. and Italian boards have the most insiders (0.42 and 0.33, respectively). German companies have no insiders because of a ban unique to Germany. The mean *Dual CEO/Chair<sub>t</sub>* is lower in Europe than in the United States (0.30 versus 0.79). The mean *Dual CEO/Chair<sub>t</sub>* varies across countries, being highest in France and Spain (0.65 and 0.75) and lowest in Germany, Norway, and Russia (0.00). Alternative measures of insider influence, such as executive tenure and compensation committee structure, are unavailable or defined differently across observations, prohibiting their use in this study.

### 3.2. Pay disclosures

I measure the transparency of pay disclosures in the annual reports with the *Disclosure* index, which equally weights the following three aspects of pay disclosures:

*Type of disclosure (TD)* measures different types of pay disclosures. Companies reporting both base salaries (and bonuses) and equity-based grants receive 2 points; those reporting either base salaries (and bonuses) or equity-based grants receive 1 point; and those reporting neither type receive 0 points for *TD*. If companies do not grant a specific type of pay (e.g., equity), an explicit statement of this policy warrants full points for the respective disclosure.

*Amount of disclosure (AD)* measures the number of executives whose pay details are reported. Companies disclosing pay contracts of more than two executives receive 2 points; those disclosing two contracts receive 1 point; and the rest receive 0 points for *AD*. Disclosures of average pay count toward disclosure of a single contract.<sup>8</sup>

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<sup>8</sup> The cutoff point of two contracts is based on my observation that company disclosures can be grouped into four broad groups: i) those that disclose no compensation of any executive, ii) those that disclose either the mean pay of

*Quality of disclosure (QD)* measures the quality of pay disclosures. The companies receive 2 points for *QD* if they adequately discuss the following items: i) general compensation policy, and future determinants of executive pay, and ii) details of pay in the current and previous years. The companies that sufficiently disclose either item receive 1 point; those that disclose neither item receive 0 points.

$Disclosure_t$  sums *TD*, *AD*, and *QD*, and spans 0–6 with a mean (median) of 4.08 (4.00).<sup>9</sup> The mean values for disclosers and non-disclosers are 4.79 and 1.40, respectively. There is also significant variation within disclosers and non-disclosers: One company might not report any pay information ( $Disclosure_t = 0$ ), while another company might disclose pay levels but not its breakdown into pay types, resulting in omission from analyses (yet,  $Disclosure_t > 0$ ).<sup>10</sup>

### 3.3. Executive Compensation

Executive pay is grouped under four categories, with mean values across the sample appearing in parenthesis. *Salary<sub>t</sub>* (€792,000) is base salaries and perquisites. *Bonus<sub>t</sub>* (€544,000) is cash payments based on short- and long-term bonus plans. *Stock<sub>t</sub>* (€404,000) is the value of stock grants based on LTIPs and deferred bonus plans (valued at 100% of face value for performance-contingent awards).<sup>11</sup> *Option<sub>t</sub>* (€737,000) is the Black-Scholes value of option grants and stock appreciation rights (SARs). The terms of stock and option grants across Europe are similar to those in the United States; options are typically granted at the money with vesting periods of three to five years and maturity periods of five to ten years.

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top executives or the CEO pay only, iii) those that disclose both the mean pay of top executives and the CEO pay, and iv) those that disclose compensation of individual top executives (usually the top five executives or more).

<sup>9</sup> The choice of *TD*, *AD*, and *QD* roughly coincide with Ferrarini et al. (2009), who document significant cross-country differences in executive pay disclosure in 2007.

<sup>10</sup> The  $Disclosure_t$  index unavoidably relies on subjective choices. To build confidence on  $Disclosure_t$ 's reliability, Section 4.2.1 employs alternative measures to  $Disclosure_t$  (such as different components of  $Disclosure_t$ , or the length of the compensation section in annual reports) and documents that empirical results are insensitive to design choices.

<sup>11</sup> While performance-contingent stock awards are typically valued at 100% by academics and the media (Conyon, Core, and Guay [2009]), some studies use a lower valuation rate (e.g., 80% in Conyon and Murphy [2000]). Sensitivity analyses show that my findings do not change with a lower valuation rate (between 50% and 100%).

Overall, a top European executive earns €2.5 million per year, faring worse than a U.S. executive (€6.6 million).<sup>12</sup> The Swiss and Italian companies pay the highest (€4.3 and €4.0 million), and Belgian and Swedish companies the lowest (€1.2 and €1.1 million). Executives higher in the corporate hierarchy receive relatively greater pay. The mean pay is €2.3 million for all reported executives ( $n = 741$ ), €2.5 million for top-five executives ( $n = 486$ ), €3.0 million for insiders ( $n = 398$ ), and €3.9 million for CEOs ( $n = 527$ ).

Incentive pay, the key variable of interest in this study, measures the sensitivity of an executive's wealth to company performance. The components of this sensitivity are i) the executive's outstanding stock and option portfolios at the beginning of the year, ii) changes in current pay, and iii) level of future pay and probability of dismissal. Of these, stock and option portfolios provide the most incentive (Jensen and Murphy [1990]; Hall and Liebman [1998]; Core et al. [2003]). Therefore, as the primary measure for incentive pay, I use pay-for-performance sensitivity ( $PPS_{t-1}$ ), change in the value of an executive's stock and option portfolio as a result of a 1% change in stock price at the beginning of year  $t$ .

A top European executive holds company stocks and options worth €4.3 million and €1.3 million, respectively, which are values lower than those of a U.S. executive (€181 million and €18 million). Consequently, a top European executive's wealth goes up by €85,440 as a result of a 1% increase in company stock price (versus €2,175,000 for a U.S. executive). Mean  $PPS_{t-1}$  varies across European countries, with Finnish, Swiss, and Italian companies demonstrating the highest  $PPS_{t-1}$  (€128,000, €125,000, and €121,000, respectively) and Norwegian, Belgian, and Swedish companies having the lowest  $PPS_{t-1}$  (€4,000, €7,000, and €20,000).

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<sup>12</sup> Pension contributions are excluded because of the incomparable pension plan types, actuarial computations, and reporting quality across sample companies. The exclusion does not affect the regression results, since pension contributions are largely unrelated to the main variable of interest, i.e., pay-for-performance sensitivity.

Similar to pay levels, incentive pay is higher for executives higher in corporate hierarchy. The mean  $PPS_{t-1}$  is €67,630 for all executives, €85,440 for top-five executives, €97,850 for insiders, and €153,920 for CEOs. For comparison, I follow Core and Guay (2002) to compute  $PPS_{t-1}$  of U.S. companies using the Execucomp database. Table III, Panel A, shows that mean  $PPS_{t-1}$  is significantly higher in the United States, €2,175,000 for top-five executives and €6,393,000 for CEOs. A comparison between the mean  $PPS_{t-1}$  values of the CEO and top-five executives shows that  $PPS_{t-1}$  of a top executive is 70% that of the executive's immediate superior in Europe (e.g., second-ranked executive versus CEO). This "incentives persistence coefficient" is 40% in the United States, indicating a larger incentive gap between CEOs and other top executives in the United States.

#### 3.4. Unconditional correlations between insiders, disclosure, and pay-for-performance

Table IV presents correlations among key variables.  $Disclosure_t$  positively correlates with  $Insider\ Ratio_t$  and  $Dual\ CEO/Chair_t$  (Spearman correlation coefficients, 0.50 and 0.08, respectively).  $PPS_{t-1}$  also positively correlates with  $Insider\ Ratio_t$  and  $Dual\ CEO/Chair_t$  (0.40 and 0.29). Similarly, the country-average correlations of  $Disclosure_t$  and  $PPS_{t-1}$  with  $Insider\ Ratio_t$  (0.20 and 0.17) and  $Dual\ CEO/Chair_t$  (0.17 and 0.51) are significant and positive. One should interpret the correlations with caution because pay disclosures and incentive pay depend upon multiple factors, such as size, growth options, and institutional characteristics.

#### 4. Results: Insider directors and pay disclosures (Hypothesis 1)

This section describes the relation between insiders and pay disclosures, conditional on factors that affect both. I expect that company disclosures on executive pay and other disclosures share the same determinants, such as size, performance, and uncertainty (Lang and Lundholm [1993]). I also anticipate companies with small boards to make more transparent disclosures

about executive pay for stakeholders who are not represented on company boards. Moreover, cross-listings in countries with high disclosure standards should improve pay disclosures (Khanna, Palepu, and Srinivasan [2004]). Potential determinants specific to pay disclosures are the level of pay (Coulton, James, and Taylor [2003]), country of origin, and year.<sup>13</sup> In light of the above factors, I estimate the following OLS regression for the full sample:<sup>14</sup>

$$\begin{aligned} Disclosure_t = & \alpha_0 + \alpha_1 Insider\ Ratio_t + \alpha_2 Dual\ CEO/Chair_t + \alpha_3 \ln(Size_t) + \alpha_4 Net\ income_t \\ & + \alpha_5 Book\text{-to}\text{-market}_t + \alpha_6 Sales\ volatility_t + \alpha_7 N\_Director_t + \alpha_8 U.S.\ listed_t \\ & + \alpha_9 U.K.\ listed_t + \theta Industry + \delta Country + \lambda Year_t + \gamma Country*Year_t + \varepsilon_t \end{aligned} \quad (1)$$

where  $Disclosure_t$  is the index of pay transparency during fiscal year  $t$ ;  $Insider\ Ratio_t$  is the ratio of insiders to the total number of directors;  $Dual\ CEO/Chair_t$  is an indicator variable equal to one if the CEO serves as the chair of the board and zero otherwise;  $\ln(Size_t)$  is the natural logarithm of company sales;<sup>15</sup>  $Net\ income_t$  is net income of the company deflated by sales;  $Book\text{-to}\text{-market}_t$  is the ratio of the book-to-market value of assets (sum of equity and debt) measured at the fiscal year end;  $Sales\ volatility_t$  is the coefficient of variation of company sales, i.e., the standard deviation of sales over the prior six years divided by its mean;  $N\_Director_t$  is the number of directors on the board;  $U.S.\ listed_t$  is an indicator variable equal to one if the company is listed as a non-ADR in the U.S.; and  $U.K.\ listed_t$  is an indicator variable equal to one if a non-U.K. company is listed in the U.K.

Table V presents estimated regression coefficients using standard errors clustered by firm. The coefficients on  $Insider\ Ratio_t$  (Column 1) and  $Dual\ CEO/Chair_t$  (Column 2) are positive and significant, consistent with the contracting hypothesis. When both  $Insider\ Ratio_t$  and

<sup>13</sup> “EU businesses face new push on transparency”, *The Wall Street Journal*, October 6, 2004. A17, col 3, “CEO leads Swiss backlash over executive pay”, *The Wall Street Journal*, May 26–27, 2007. A4, col. 1, and “Porsche CEO adds to pay debate”, *The Wall Street Journal*, December 1–2, 2007. A7, col. 1.

<sup>14</sup> I choose OLS over a probit regression model, which uses the ordinal nature of  $Disclosure_t$ , because OLS test statistics are better specified, especially in small samples (Noreen [1988]). In untabulated sensitivity analyses, I find that the ordered probit regression yields similar coefficients as the reported OLS coefficients.

<sup>15</sup> Given cross-country differences in asset recognition rules and choices, I measure company size by sales (Wysocki [2004]). Alternative proxies such as total assets or market capitalization do not materially change the results.

*Dual CEO/Chair<sub>t</sub>* are included in the regression in Column 3, the coefficients on *Insider Ratio<sub>t</sub>* ( $\alpha_1 = 0.63, t = 1.66$ ) and *Dual CEO/Chair<sub>t</sub>* ( $\alpha_2 = 0.36, t = 2.96$ ) remain positive and significant.

The estimated coefficients on control variables are in line with the predictions. The transparency of pay disclosures improves with company size and performance and reduces with board size. The U.S. listings improve pay disclosures. Untabulated sensitivity analyses show that the number of exchange-listings does not significantly affect pay disclosure beyond the effect of the listing in the United States. The coefficients on sales volatility and book-to-market ratio have the predicted signs but are insignificant. The (untabulated) indicators for the U.K., Holland, Finland, and consumer discretionary sector are significant and positive across all models. Furthermore, indicators for years 2002, 2003, and 2004 are significant and positive. The untabulated tests show that indicator variables for earlier years are not statistically significant, and they are significantly lower than those for 2002 onwards, indicating significant differences between the first and second halves of the sample period. This finding is not surprising, because the second half of the sample period coincides with significant regime shifts across the world—triggered by corporate scandals—for more transparency, shareholder participation in decision making, and augmented CEO/CFO accountability (Wallace, Krivogorsky, and Ferris [2009]). For instance, the U.S. Sarbanes-Oxley Act enacted in July 2002 improves internal controls and imposes criminal penalties on CEOs and CFOs for false certification of company earnings and internal controls. The Securities and Exchange Commission tightened regulations on pay disclosures. Similarly, the E.U. and many European companies introduced regulations to improve corporate disclosures on executive pay after 2002 (Ferrarini et al. [2003]).

In Column 4 of Table V, I address the concern that *Disclosure<sub>t</sub>* might not be measured reliably for non-disclosers and re-estimate Eq. (1) for disclosers only. The model also includes

$\ln(\text{Total pay}_t)$  as a control variable. The coefficients on *Insider Ratio*<sub>*t*</sub> ( $\alpha_1 = 1.03$ ,  $t = 4.57$ ) and *Dual CEO/Chair*<sub>*t*</sub> ( $\alpha_2 = 0.21$ ,  $t = 2.31$ ) are significant and positive. In Column 5 of Table V, I address the concern that observations are significantly dependent within companies and re-estimate Eq. (1) using company mean values for dependent and independent variables. The results show a positive and significant coefficient on *Insider Ratio*<sub>*t*</sub> ( $\alpha_1 = 1.86$ ,  $t = 2.28$ ), but an insignificant coefficient on *Dual CEO/Chair*<sub>*t*</sub> ( $\alpha_2 = 0.51$ ,  $t = 1.55$ ).

Eq. (1) uses country fixed effects to control for country regulations deemed exogenous in the literature (Core [2001]). In addition to country and year fixed effects, Eq. (1) includes country\*year interactions to control for tightening disclosure rules over time (e.g., France in 2001). In this regard, Germany presents an interesting case. *Insider Ratio*<sub>*t*</sub> and *Dual CEO/Chair*<sub>*t*</sub> are zero due to German regulations, making it impossible to distinguish between the board dependence variables and German fixed effects. Despite this caveat, I choose to leave German companies in the analysis to present pay practices comprehensively across top European economies. Unreported regression analyses excluding German companies produce results similar to those in Table V.

#### *4.1. Insiders and pay disclosures across countries*

In order to build confidence that the findings in Table V are not a product of pooling across countries, I re-estimate Eq. (1) for U.K. companies only (Column 1 of Table VI), French companies only (Column 2), and companies not headquartered in the U.K., France, or Germany (Column 3).<sup>16</sup> The results suggest varying levels of support for the contracting hypothesis across countries. Both *Insider Ratio*<sub>*t*</sub> and *Dual CEO/Chair*<sub>*t*</sub> improve pay disclosures in the U.K. and

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<sup>16</sup> Column 3 in Table VI excludes German companies and shows that the empirical results are not sensitive to inclusion of German companies.

marginally in countries other than the U.K., France, and Germany. French companies do not exhibit any significant relation between insiders and pay disclosures.<sup>17</sup>

#### *4.2. Alternative Explanations and Sensitivity Checks*

##### *4.2.1. Empirical validity of the Disclosure index*

A number of findings suggest validity of  $Disclosure_t$ . First, the components of  $Disclosure_t$  (i.e.,  $TD$ ,  $AD$ , and  $QD$ ) are highly correlated, consistent with Botosan (1997). Second, the Cronbach's coefficient alpha is 0.72, indicating that each component incrementally contributes to  $Disclosure_t$  (Nunnally [1978]). Third, replacing  $Disclosure_t$  with its individual components yields similar results. Fourth, substituting  $AD$  by the number of executives with disclosed pay details (number of executives ranked on a 0–2 scale to match with other  $Disclosure$  components) does not qualitatively change the results. Fifth, the length of pay disclosures, i.e., the number of words in the compensation section of the annual report, is highly correlated with  $QD$  (Pearson correlation coefficient, 0.80). Replacing  $QD$  by the number of words or adding the number of words (number of words ranked on a 0–2 scale to match with the level of other  $Disclosure$  components) as an independent component to  $Disclosure$  does not change the results. Finally, I find similar results excluding companies with zero  $Disclosure_t$  values.

##### *4.2.2. Endogeneity between board composition and pay disclosure*

The regressions in Table V follow prior literature in assuming exogenous board structures (Ryan and Wiggins [2004]; Hermalin and Weisbach [2003]). However, pay disclosure and board characteristics are likely to be endogenous, confounding the interpretation of OLS coefficients. I address this possibility by performing a two-stage least-squares (2SLS) regression. In the first stage, I use a company's German, British, French, or Scandinavian origin to estimate  $InsiderRatio_t$  and  $Dual\ CEO/Chair_t$  (La Porta, Lopez-De-Silanes, Shleifer, and Vishny [1998]).

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<sup>17</sup> Annual regressions of Eq. (1) show similar relations between insiders and pay disclosures across years.

The Appendix favors the choice of instruments. First, companies of the same legal origin have similar board structures yet diverse pay disclosures. Second, first-stage regressions of  $InsiderRatio_t$  and  $Dual\ CEO/Chair_t$  on the legal origins result in significant coefficients. The second-stage regression of  $Disclosure_t$  on the predicted values of  $InsiderRatio_t$  and  $Dual\ CEO/Chair_t$ , as well as control variables result in positive and significant coefficients for both  $InsiderRatio_t$  and  $Dual\ CEO/Chair_t$ .

## 5. Results: Insider directors and incentive compensation (Hypothesis 2)

This section tests the relation between insiders and incentive pay conditional on factors that affect both. Incentive pay increases with size, uncertainty (Core et al. [2003]), and growth options (Baber, Janakiraman, and Kang [1996]; Smith and Watts [1992]). Incentive pay is also expected to relate to cash availability, foreign listings, and board size. Furthermore, low-level executives with little ability to affect stock prices should receive low incentive pay (Core and Guay [2001]; Ittner, Larcker, and Rajan [1997]). Finally, incentive pay can be affected by country-specific factors, such as minor differences in the tax treatment of options (Main [1999]) and different levels of social benefits or purchasing power. In light of these factors, I estimate the following OLS regression model:

$$\begin{aligned} \frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}} = & \alpha_0 + \alpha_1 \frac{N\_Insider_{t-1}}{N\_Director_{t-1}} + \alpha_2 Dual\ CEO/Chair_{t-1} + \alpha_3 \ln(Size_{t-1}) \\ & + \alpha_4 Book\text{-}to\text{-}market_{t-1} + \alpha_5 Sales\ volatility_{t-1} + \alpha_6 Cash_{t-1} + \alpha_7 Cash_{t-1} * Financials \\ & industry\ indicator + \alpha_8 N\_Executive_{t-1} + \alpha_9 N\_Director_{t-1} + \alpha_{10} U.S.\ listed_{t-1} \\ & + \alpha_{11} U.K.\ listed_{t-1} + \alpha_{12} Tax\ differential_{t-1} + \alpha_{13} Purchasing\ power_{t-1} \\ & + \alpha_{14} Social\ spending_{t-1} + \theta Industry + \delta Country + \lambda Year_{t-1} + \varepsilon_{t-1} \end{aligned} \quad (2)$$

where  $\frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}}$ , or  $PPS_{t-1}$ , is defined as the change in an executive's stock and option

portfolio at the beginning of year  $t$  if the company stock price increases by 1%;  $\frac{N\_Insider_{t-1}}{N\_Director_{t-1}}$ ,

or  $Insider\ Ratio_{t-1}$ , is the ratio of insiders to total number of directors;  $Cash_{t-1}$  is cash and short-

term investments deflated by total assets ( $Cash_{t-1} * Financials$  industry indicator is included because of unique practices of cash management in the financial sector);  $N\_Executive_{t-1}$  is the number of executives used to compute mean values about executive pay;  $Tax\ differential_{t-1}$  is the country-specific difference between effective tax rates on capital and labor income (Carey and Tchilinguirian [2000]);  $Purchasing\ power_{t-1}$  is the country's purchasing power parity from the OECD; and  $Social\ spending_{t-1}$  is the country's public and private social spending per capita from the OECD. Other variables follow from Eq. (1). Similar to Section 4, the sample includes German companies, which have zero  $Insider\ Ratio_t$  and  $Dual\ CEO/Chair_t$  by law.<sup>18</sup>

Table VII, Panel A, presents the results of Eq. (2) for different levels of executives. The first column shows that CEO pay-for-performance sensitivity does not depend on the ratio of insiders ( $\alpha_1 = 420.50$ ,  $t = 1.45$ ), but on whether the CEO is the board chair ( $\alpha_2 = 238.21$ ,  $t = 1.83$ ). The coefficients suggest that an insider CEO's wealth increases by €238,210, compared with that of a CEO who is *not* a board chair, if company stock price increases by 1%. The second column shows that insiders' wealth is higher when the number of insiders is greater ( $\alpha_1 = 260.72$ ,  $t = 2.40$ ) and when the CEO is the board chair ( $\alpha_2 = 70.22$ ,  $t = 2.60$ ). Similarly, the third column shows that the wealth of an executive ranked in the top five is higher by €251,920 (€55,450) as a result of a 1% increase in stock price when all directors are executives (CEO is the chair) relative to when none of the directors are executives (CEO is not the chair). The fourth column shows that the mean wealth of all executives rises by €191,960 (€45,300) as a result of a 1% increase in stock price when all directors are executives (CEO is the chair) relative to when none of the directors are executives (CEO is not the chair).

The coefficients in Column 1 suggest that CEO pay-for-performance is primarily associated with the CEO's position with the board rather than the proportion of insiders.

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<sup>18</sup> Unreported sensitivity checks excluding German companies produce similar results to those reported.

Similarly, declining coefficient estimates on *Insider Ratio*<sub>*t*-1</sub> across Columns 2 to 4 (differences are significant at 5% level) suggest that incentive pay to different top executives depends on the agency costs related to these very executives.

Incentive pay increases with size and operational complexity and decreases with cash balances (the effect of cash balance is muted in financial companies). The other control variables are not statistically significant, because industry, year, and country fixed effects subsume the control variables. The untabulated indicators for Holland, industrials and IT sectors, and years 2003 and 2004 are significant and positive. Untabulated regressions without the fixed effects generate significant coefficients for *Book-to-market*<sub>*t*-1</sub>, *U.S. listed*<sub>*t*-1</sub>, and *N\_Executive*<sub>*t*-1</sub>.

The results are also insensitive to i) re-estimating Eq. (2) using company mean values, ii) controlling for the ratio of long-term debt to total assets (to proxy for monitoring of debtholders) and/or global operations intensity, defined as international sales to total sales, iii) excluding Cash and/or Cash\*Financials industry indicators, or iv) using alternative variables, e.g., the ratio of the sum of bonus, stock, and option grants to total pay, instead of *PPS*<sub>*t*-1</sub>; total assets or MCap instead of sales; and net profit volatility instead of sales volatility.

### *5.1. Insiders and incentive compensation across countries*

To ensure that the results are not a product of pooling across countries, I re-estimate Eq. (2) for individual countries using CEOs (Table VIII, Panel A) and top-five executives (Panel B). Each panel reports results for U.K. companies (Column 1), French companies (Column 2), and companies not headquartered in U.K., France, or Germany (Column 3), and for comparable U.S. companies (Column 4). Table VIII, Panel A, shows that pay-for-performance sensitivity of a CEO depends on whether the CEO is the board chair, but not on the ratio of insiders, in all European countries except France. In contrast, pay-for-performance sensitivity of a U.S. CEO

depends on the ratio of insiders, but not on whether the CEO is the board chair. Table VIII, Panel B, shows that pay-for-performance sensitivity of a top executive depends on the ratio of insiders, but not on whether the CEO is the board chair, in all European countries except France. A similar result holds for the United States—yet with larger coefficients. The wealth of a top U.S. executive is higher by €4,408,000 as a result of a 1% increase in stock price when all board members are insiders relative to when none of the members are insiders. This figure is €349,000 in the U.K.; indifferent from €0 in France; and €330,000 in other European countries. Overall, the results show varying levels of support for the contracting hypothesis in different countries.<sup>19</sup>

## *5.2. Alternative Explanations and Sensitivity Checks*

### *5.2.1. Endogeneity between board composition and incentive compensation*

Similar to Section 4.2.2, I address the possibility of an endogenous relation between board composition and incentive pay using a 2SLS estimation, in which a company's legal origin is used as an instrument for *InsiderRatio<sub>t</sub>* and *Dual CEO/Chair<sub>t</sub>*. The Appendix favors this choice. First, companies of the same legal origin have similar board structures but diverse pay practices. Second, first-stage regressions of *InsiderRatio<sub>t</sub>* and *Dual CEO/Chair<sub>t</sub>* on legal origins result in significant coefficients and a high goodness-of-fit. The second-stage regression of *PPS<sub>t</sub>* on the predicted values of *InsiderRatio<sub>t</sub>* and *Dual CEO/Chair<sub>t</sub>* result in positive coefficients on *InsiderRatio<sub>t</sub>* (significant) and *Dual CEO/Chair<sub>t</sub>* (marginally significant).

### *5.2.2. Endogeneity between incentive compensation and the level of compensation*

Insiders may prefer incentive pay over base salaries to camouflage excessive pay levels (Bebchuk, Fried, and Walker [2002]). Such camouflage may take the form of linking better performing measures in pay packages (Morse, Nanda, and Seru [2008]) or even illegally linking

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<sup>19</sup> Annual regressions of Eq. (2) show similar relations between insiders and incentive pay across years.

ex-post information to pay (Lie [2005]). Such rigged incentive contracts inflate both the pay levels and incentive pay, spuriously supporting the contracting hypothesis.

I find little support for this explanation. First, the coefficient on *Insider Ratio*<sub>*t*-1</sub> remains significant when Eq. (2) includes *Total pay*<sub>*t*</sub>, defined as the mean executive pay deflated by company sales as a control variable. Second, a 2SLS regression, which uses company size and mean pay of the company's industry and country as instruments for *Total pay*<sub>*t*</sub>, results in positive and significant coefficients for *Insider Ratio*<sub>*t*-1</sub>. Third, when mean executive pay is regressed on *Insider Ratio*<sub>*t*-1</sub>, *Dual CEO/Chair*<sub>*t*-1</sub>, and control variables, the coefficients for *Insider Ratio*<sub>*t*-1</sub> and *Dual CEO/Chair*<sub>*t*-1</sub> are insignificant (*ln(Size*<sub>*t*-1</sub>), *Book-to-market*<sub>*t*-1</sub>, *Sales volatility*<sub>*t*-1</sub>, and *U.S. listed*<sub>*t*-1</sub> load significantly). Finally, Eq. (2), which uses the value of stock and option grants deflated by total pay as an alternative measure of incentive pay, continues to result in positive coefficients for *InsiderRatio*<sub>*t*</sub> and *Dual CEO/Chair*<sub>*t*</sub>.

### 5.2.3. Missing Black-Scholes parameters

One third of the sample lacks information on three Black-Scholes parameters, namely stock volatility, dividend yield, and risk-free rate. Following the Execucomp database, I estimate missing parameters as follows: Stock volatility is estimated by the standard deviation of daily stock prices over the prior 60 months. Dividend yield is estimated by the dividend yield of a matching company in the same industry and that is closest in performance. The risk-free rate is estimated by the annual yield of a U.S. Treasury bond carrying a seven-year term. The untabulated sensitivity analyses show that coefficients in Table VIII fluctuate by less than 15% in response to a ±50% change on estimated parameters.

#### 5.2.4. Sample Selection Bias

The above analyses exclude non-disclosers, raising concerns about selection bias. I explore two possibilities regarding the effect of selection bias on the empirical results. First, non-disclosers might not report their option grants due to proprietary costs. To test this possibility, I re-run Eq. (2) for the full sample, assuming executives of non-disclosers receive the mean value of their industry and country  $PPS_{t-1}$ . The untabulated results show a positive and significant coefficient on  $Insider\ Ratio_{t-1}$  ( $\alpha_1 = 103.20$ ,  $t = 2.15$ ) and an insignificant coefficient on  $Dual\ CEO/Chair_{t-1}$ . The second possibility is that non-disclosers do not grant incentive pay. This is a realistic possibility, because companies who started pay disclosures after 1999 report low executive equity holdings (mean  $PPS_{t-1}$ , €38,500) relative to disclosers for the full sample period (€90,300). To test for this, I re-run Eq. (2) for the full sample, assuming zero  $PPS_{t-1}$  for non-disclosers. The untabulated results show a positive and significant coefficient on  $Insider\ Ratio_{t-1}$  ( $\alpha_1 = 123.05$ ,  $t = 2.50$ ) and an insignificant coefficient on  $Dual\ CEO/Chair_{t-1}$ . While executive pay of non-disclosers is ultimately not known, the selection bias seems unlikely to confound the empirical support for the contracting hypothesis if i) non-disclosers follow pay practices of disclosers in their country and industry, or ii) non-disclosers grant relatively less incentive pay than disclosers do.

### 6. The validity of the contracting hypothesis across sample segments

#### 6.1. Country-specific characteristics representing alternative governance mechanisms

The marginal influence of insiders on pay transparency and incentive pay must be greater when investors are not protected through alternative mechanisms. To investigate, I re-run Eqs. (1) and (2) using sub-samples partitioned according to five country characteristics, which are tabulated in the Appendix. The first partition is based on whether a company is operating under

code or common law (La Porta et al. [1998]). The second partition is based on the *Importance of equity market index*, which aggregates stock market capitalization held by outside shareholders, number of listed domestic firms, and the number of IPO's (Leuz, Nanda, and Wysocki [2003]). The third partition is based on the *Outside investor rights index*, which ranks outside shareholder rights (La Porta et al. [1998]). The fourth partition is based on the *Global governance index*, *GOV<sub>44</sub>*, which aggregates various attributes of corporate governance, covering board, audit, anti-takeover, compensation, and ownership (Aggarwal, Erel, Stulz, and Williamson [2009]). The final partition is based on the *Ownership concentration index*, which ranks the median percentage of shares owned by the largest three shareholders in a country (La Porta et al. [1998]). Contrary to the first four partitions, ownership concentration does not necessarily measure outside shareholder protection. Firms with family or block owners experience fewer problems arising from the separation of ownership and management (Type I agency costs), but more severe problems between controlling and non-controlling shareholders (Type II agency costs) (Ali, Chen, and Radhakrishnan [2007]; Bar-Yosef and Prencipe [2009]).

## 6.2. Empirical results across country-specific characteristics

Panel A of Table IX presents mean  $Disclosure_t$  values and results of Eq. (1) for each partition. For the first four partitions,  $Disclosure_t$  is higher in countries with alternative institutions to protect outside investors. Furthermore, the positive relation between insiders and  $Disclosure_t$  is significant only in these countries. For the fifth partition,  $Disclosure_t$  is lower in countries with high ownership concentration. Furthermore, the positive relation between insiders and  $Disclosure_t$  is significant only in countries with low ownership concentration.

Panel B of Table IX reports mean  $PPS_{t-1}$  values and the results of Eq. (2) for each partition. The mean value of  $PPS_{t-1}$  is not statistically different between countries with more or

less outside shareholder protection. For all partitions, the coefficients on *Insider Ratio*<sub>*t*-1</sub> are significantly positive. For the first three partitions, the coefficients on *Insider Ratio*<sub>*t*-1</sub> are higher in companies with more effective institutions (the differences are significant at 5%); for the fourth and fifth partitions, coefficient estimates on *Insider Ratio*<sub>*t*-1</sub> are not different.

Overall, Table IX suggests that companies make disclosures that are more transparent (Hypothesis 1) and grant greater incentive pay (Hypothesis 2) in response to insiders when country-specific institutions better protect outside shareholders.

### *6.3. Insider-dominated boards*

The contracting hypothesis predicts that boards with more insiders comply with outsider demands for transparent pay disclosures and greater incentive pay. An important question is whether this relation continues to hold for boards dominated by insiders (Bebchuk et al. [2002]). To investigate, I re-run the tests for Hypotheses 1 and 2 using sub-samples partitioned according to whether insiders are likely to dominate the boards and whether executives are likely to be entrenched. The first partition is based on whether insiders have the majority and hence the voting power on boards (Weisbach [1988]). The second partition is based on whether CEOs serve as board chairs and hence have authority to set board agendas (Bebchuk et al. [2002]). The third partition is based on excessive pay to top executives, which indicates managerial entrenchment and weak governance (Core, Holthausen, and Larcker [1999]). This partition ranks the sample by mean level of executive pay deflated by sales, and it defines the top 25% (at the cutoff value of 0.00016) as companies with relatively excessive pay. The fourth partition is based on non-option-related stock holdings of executives as a result of entrenchment (Nagar et al. [2003]; Ang, Cole, Lin [2000]). This partition ranks the sample by the mean value of stocks held

by top executives and defines the top 25% (at the cutoff value of €2.1 million) as companies with significant insider ownership.

#### 6.4. Empirical results across insider-dominated boards

Panel A of Table X presents the mean  $Disclosure_t$  values and results of Eq. (1) for each partition. The mean value of  $Disclosure_t$  is higher for insider dominated boards, but is not statistically different across partitions except the first partition. The results of Eq. (1) for the first partition show that the coefficient on  $Insider Ratio_t$  is positive and significant only when insiders do not have board majority. The second partition by  $Dual CEO/Chair_t$  does not result in significant coefficients for  $Insider Ratio_t$ . The third partition shows that the coefficient on  $Insider Ratio_t$  is positive and significant only for companies without excessive pay.<sup>20</sup> The fourth partition shows that the coefficient on  $Insider Ratio_t$  is positive and significant only when executives are not significant shareholders.<sup>21</sup> The findings are generally consistent with the evidence in Larcker et al. (2007) that insider power (executive ownership and inside board membership) relates to bad disclosure quality as measured by restatements.

Panel B of Table X reports mean  $PPS_{t-1}$  values and the results of Eq. (2) for each partition. The mean levels of  $PPS_{t-1}$  are higher for companies with insider-dominated boards. However, the positive relation between insiders and incentive compensation is significant only i) when insiders do not have board majority, ii) when the CEO is not board chair, and iii) when executive pay does not rank in the top 25% of the sample. The fourth partition does not show significant coefficients for sub-samples of high and low stock ownership.

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<sup>20</sup> The empirical results are essentially the same when the cutoff for excessive compensation is 10%, 20%, and 30% of the sample; or when the partition is made using residuals from the regression of  $Total\ pay$  on  $\ln(Size)$ ,  $Net\ income$ ,  $Book-to-market$ ,  $Sales\ volatility$ ,  $U.S.\ listed$ ,  $U.K.\ listed$ , and industry, year, and country controls.

<sup>21</sup> The empirical results are similar when the cutoff for stock ownership is 10%, 20%, 30%, or 40% of the sample.

Overall, Table X suggests that companies make disclosures that are more transparent (Hypothesis 1) and grant greater incentive pay (Hypothesis 2) in response to insiders only when insiders do not dominate the boards and executives are not entrenched. In other words, the opportunism hypothesis cannot be ruled out for companies under intense insider influence.

## **7. Conclusion**

This study investigates the relation between executive directors (i.e., insiders) and executive pay in large European companies. The cross-country and company-level nature of the sample brings extensive variation to key variables of interest and enables strong tests of agency theory predictions. The empirical analyses document that companies with a greater proportion of insiders on their boards of directors make disclosures about executive pay that are more transparent and grant their executives more incentive pay. Overall, the findings are consistent with the contracting hypothesis, which predicts “substitutability of alternative governance mechanisms.” Such substitutability has previously been documented in different settings, such as ownership concentration versus legal protection for investors (La Porta et al. [1998]); ownership concentration versus independent boards (Kim, Kitsabunnarat-Chatjuthamard, and Nofsinger [2007]); independent boards versus shareholder protection in company charter provisions (Gillan, Hartzell, and Starks [2007]); and threat of dismissal versus pay-for-performance (Hallman, Hartzell, and Parsons [2005]).

However, the support for the contracting hypothesis is not universal. The findings are more pronounced in countries with stronger institutions to protect outside investors. The findings also hold only when insiders are unlikely to dominate the board of directors and when managers are unlikely to be entrenched. Overall, there seems to be multiple equilibria in European corporate governance. Board monitoring and executive pay serve as substitute mechanisms

where outside shareholders are protected through alternative mechanisms. In contrast, reduced board monitoring *and* non-optimal pay likely coexist in companies where outside shareholders are not protected through alternative mechanisms.

I conclude with three caveats. First, due to data limitations, the influence of insiders on boards is measured with only two proxies: i) the ratio of executive directors to total number of directors and ii) dual CEO/Chairs. Accordingly, empirical tests omit important information regarding insider influence, such as executive tenure, gray directors, and CEO-appointed directors. Second, due to data limitations, the sample is concentrated on large economies in Europe, and therefore might not be representative of the European governance landscape. Third, empirical analyses might not perfectly account for the endogenous relations between executive pay and companies' contracting environment. For instance, shareholders might not perceive insiders as opportunistic, given company- and country-level traditions, and, therefore, company actions against insiders may be muted. In light of the international trend toward more transparent disclosures extending to small companies and traditionally opaque countries, future research might be able to compare executive pay in companies that improve disclosures voluntarily with those that do so due to regulatory changes. Such a study has the potential to address concerns about generalizability and causality, which confound the conclusions in extant governance studies (Larcker et al. [2007]).

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**Table I**  
**Sample selection**

*Panel A: Breakdown of the sample by country*

Country	No. unique companies	No. annual observations	No. annual observations with pay data for top five executives	No. annual observations with pay data for all top executives
U.K.	43	254	244	250
France	33	193	58	139
Germany	27	162	49	126
Holland	11	66	54	60
Switzerland	11	66	16	46
Italy	9	54	6	33
Spain	6	36	23	26
Sweden	6	36	18	23
Belgium	5	30	9	24
Finland	3	18	9	11
Russia	3	18	0	0
Norway	1	6	2	3
	158	939	486	741

The sample consists of the largest 158 European companies by sales in year 2000. The sample period is 1999–2004.

*Panel B: Breakdown of the sample by economic sector*

Economic Sector	No. unique companies	No. annual observations	No. annual observations with pay data for top five executives	No. annual observations with pay data for all top executives
Financials	43	254	138	200
Industrials	24	142	62	115
Consumer Discretionary	21	126	70	101
Materials	13	75	27	59
Consumer Staples	11	66	43	62
Information Technology	11	66	36	58
Energy	11	66	26	35
Health Care	9	54	37	48
Utilities	8	48	18	30
Telecom. Services	7	42	29	33
	158	939	486	741

The sample is divided across the following ten Global Industry Classification Standard (GICS)<sup>SM</sup> economic sectors: **Financials** includes commercial banks, thrifts and mortgage finance, diversified financial services, consumer finance, capital markets, insurance, REIT, and real estate management and development industry groups. **Industrials** includes aerospace & defense, building products, construction & engineering, electrical equipment, industrial conglomerates, machinery, trading companies & distributors, commercial services & supplies, air freight & logistics, airlines, marine, road & rail, and transportation infrastructure industry groups. **Consumer Discretionary** includes automobiles, auto components, household durables, leisure equipment and products, textiles, apparel & luxury goods, hotels, restaurants & leisure, diversified consumer services, media, distributors, internet & catalog retail, multi-line retail, and specialty retail industry groups. **Materials** includes chemicals, construction materials, containers & packaging, metals & mining, and paper & forest products industry groups. **Consumer Staples** includes food & staples retailing, beverages, food products, tobacco, household products, and personal products industry groups. **Information Technology** includes internet software & services, IT services, software, communications equipment, computers & peripherals, electronic equipment & instruments, office electronics, and semiconductors & semiconductor equipment industry groups. **Energy** includes energy equipment & services, gas & consumable fuels, and oil industry groups. **Health Care** includes health care equipment, supplies & services, health care technology, biotechnology, pharmaceuticals, and life sciences tools & services industry groups. **Utilities** includes electric, gas, water, multi-utilities, and independent power producers & energy traders industry groups. **Telecommunication Services** includes diversified and wireless telecommunication services industries.

**Table II**  
**Descriptive statistics**

*Panel A: Board structure, pay disclosure, and executive compensation*

	<i>n</i>	mean	Q1	Q2	Q3
<b>Board Structure</b>					
<i>N_Insider<sub>t</sub></i>	939	2.72	0	2	5
<i>N_Independent director<sub>t</sub></i>	939	3.99	0	0	8
<i>N_Employee director<sub>t</sub></i>	939	1.80	0	0	3
<i>N_Other director<sub>t</sub></i>	939	5.89	0	6	10
<i>N_Director<sub>t</sub></i>	939	14.42	11	13	18
<i>Insider Ratio<sub>t</sub></i> = $\frac{N\_Insider_t}{N\_Director_t}$	939	0.21	0.00	0.13	0.37
<i>Dual CEO/Chair<sub>t</sub></i>	939	0.30	0	0	1
<b>Pay Disclosure</b>					
<i>Type of disclosure (TD)</i>	939	1.75	2.00	2.00	2.00
<i>Amount of disclosure (AD)</i>	939	1.06	0.00	1.00	2.00
<i>Quality of disclosure (QD)</i>	939	1.27	1.00	2.00	2.00
<i>Disclosure<sub>t</sub></i>	939	4.08	3.00	4.00	6.00
<b>Executive Compensation</b>					
<i>N_Executive<sub>t</sub></i>	486	4.27	4	5	5
<i>Salary<sub>t</sub></i> ('000 €)	486	792	550	707	927
<i>Bonus<sub>t</sub></i> ('000 €)	486	544	171	372	713
<i>Stock<sub>t</sub></i> ('000 €)	486	404	0	20	524
<i>Option<sub>t</sub></i> ('000 €)	486	737	17	295	732
<i>Total pay<sub>t</sub></i> ('000 €)	486	2,479	1,198	1,827	2,849
<i>Total pay<sub>t</sub></i> (x1,000)	486	0.17	0.05	0.09	0.16
<i>ln(Total pay<sub>t</sub>)</i>	486	7.54	7.09	7.51	7.95
<i>Stock portfolio<sub>t-1</sub></i> ('000 €)	486	4,343	52	601	2,063
<i>Option portfolio<sub>t-1</sub></i> ('000 €)	486	1,258	66	417	1,342
<i>Stock portfolio PPS<sub>t-1</sub></i> ('000 €)	486	44.02	0.53	6.15	21.20
<i>Option portfolio PPS<sub>t-1</sub></i> ('000 €)	486	41.42	3.83	16.70	43.67
<i>PPS<sub>t-1</sub></i> = $\frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}}$	486	85.44	10.81	31.94	77.35
<i>Insider total pay<sub>t</sub></i> ('000 €)	398	2,981	1,361	2,114	3,542
<i>Insider PPS<sub>t-1</sub></i> = $\frac{\sum PPS_{t-1}^{Insider}}{N\_Insider_{t-1}}$	398	97.85	16.08	38.56	89.17
<i>CEO total pay<sub>t</sub></i> ('000 €)	527	3,878	1,657	2,625	4,328
<i>CEO PPS<sub>t-1</sub></i> = $PPS_{t-1}^{CEO}$	527	153.92	13.20	47.35	117.88

## Board Structure

$N\_Insider_t$  is the number of company executives who also serve as directors in a company for year  $t$ .  $N\_Independent\ director_t$  is the number of independent directors.  $N\_Employee\ director_t$  is the number of directors who are employees but not executives.  $N\_Other\ director_t$  is the number of non-employee directors who are not classified as independent.  $N\_Director_t$  is the total number of directors.  $Insider\ Ratio_t$  is the ratio of the number of insiders to the total number of directors.  $Dual\ CEO/Chair_t$  is an indicator variable equal to one if the CEO serves as the chair of the board and zero otherwise.

## Pay Disclosure

**Type of disclosure (TD)** measures whether company annual reports disclose base salaries and stock-based grants.  $TD$  is 2 if both types of pay are reported; 1 if either base salaries or stock-based grants is reported; and 0 if neither type is reported. **Amount of disclosure (AD)** measures the number of pay contracts disclosed in the company annual reports.  $AD$  is 2 if a company discloses more than two contracts; 1 if it discloses two contracts; and 0 if it discloses mean executive pay or the contract of one executive. **Quality of disclosure (QD)** measures the extent to which company annual reports adequately discuss: (1) compensation policy and future determinants of compensation, and (2) details of executive compensation in the current year and in previous years.  $QD$  is 2 if a company discusses both of the above items; 1 if it discusses one of the items; and 0 if it discusses neither item.  $Disclosure_t$  is the overall measure for the type, amount, and quality of executive pay disclosure. Disclosure is the sum of  $TD$ ,  $AD$ , and  $QD$ , and ranges 0–6. A higher value for  $Disclosure_t$  indicates a more transparent disclosure of executive compensation.

## Executive Compensation

$N\_Executive_t$  is the number of executives used to compute mean values of executive pay for each company-year observation.  $N\_Executive_t$  is capped at five for main analyses.  $Salary_t$  is the average base salary per executive.  $Bonus_t$  is the mean bonus per executive.  $Stock_t$  is the average value of stock grants, calculated as the product of the number of shares granted and the annual mean stock price.  $Option_t$  is the mean Black-Scholes value of option grants per executive.  $Total\ pay_t$  is the sum of  $Salary_t$ ,  $Bonus_t$ ,  $Stock_t$ , and  $Option_t$ .  $Total\ pay_t (x1,000)$  is the total annual compensation per executive divided by company sales.  $Stock\ portfolio_{t-1}$  and  $Option\ portfolio_{t-1}$  are respective mean values of stocks and options held per executive at the beginning of the fiscal year  $t$ .  $Stock\ portfolio\ PPS_{t-1}$  is the change of an executive's stock portfolio value at the beginning of the fiscal year  $t$  if company stock price increases by 1%.  $Option\ portfolio\ PPS_{t-1}$  is the change of executive's option portfolio value at the beginning of the fiscal year  $t$  if company stock price increases by 1%.  $PPS_{t-1}$  is the change in executive's wealth related to the executive's stock and option portfolio at the beginning of the fiscal year  $t$  if company stock price increases by 1%.

$Insider\ total\ pay_t$  is the mean total pay for an executive who is also a director (insider).  $Insider\ PPS_{t-1}$  is the change in an insider's wealth related to the insider's stock and option portfolio at the beginning of the fiscal year  $t$  if company stock price increases by 1%.  $CEO\ total\ pay_{t-1}$  is the sum of base salary, bonus, and values of stock and option grants to the CEO.  $CEO\ PPS_{t-1}$  is the change in CEO's wealth related to CEO's stock and option portfolio at the beginning of the fiscal year  $t$  if company stock price increases by 1%.

Panel B: Economic determinants of executive pay

	<i>n</i>	mean	Q1	Q2	Q3
<i>Sales<sub>t</sub></i> (mn €)	486	28,868	12,307	19,184	36,126
<i>ln(Size<sub>t</sub>)</i>	486	9.90	9.42	9.86	10.49
<i>MCap<sub>t</sub></i> (mn €)	486	32,273	6,512	14,999	39,123
<i>Total assets<sub>t</sub></i> (mn €)	486	138,486	12,224	26,648	158,539
<i>Cash<sub>t</sub></i> (mn €)	486	11,108	714	1,882	6,860
<i>Cash<sub>t</sub></i>	486	0.09	0.04	0.06	0.11
<i>Net income<sub>t</sub></i> (mn €)	486	1,221	190	669	2,197
<i>Net income<sub>t</sub></i>	486	0.05	0.01	0.04	0.08
<i>Return<sub>t</sub></i>	486	0.03	-0.19	0.01	0.19
<i>Book-to-market<sub>t</sub></i>	486	0.80	0.62	0.87	0.98
<i>Sales volatility<sub>t</sub></i>	486	0.24	0.11	0.18	0.29
<i>Global operations<sub>t</sub></i>	445	0.53	0.28	0.58	0.75
<i>U.S. listed<sub>t</sub></i>	486	0.52	0.00	1.00	1.00
<i>U.K. listed<sub>t</sub></i>	486	0.11	0.00	0.00	0.00

*Sales<sub>t</sub>* (mn €) are total net sales during the year. *ln(Size<sub>t</sub>)* is the natural logarithm of total net sales during the year. *MCap<sub>t</sub>* (mn €) is the market capitalization of equity at the fiscal year end. *Total assets<sub>t</sub>* (mn €) is the total assets at the fiscal year end. *Cash<sub>t</sub>* (mn €) is the cash and short-term investments of a company at the fiscal year end. *Cash<sub>t</sub>* is cash and short-term investments deflated by company total assets at the fiscal year end. *Net income<sub>t</sub>* (mn €) is the net income during the year. *Net income<sub>t</sub>* is net income divided by company sales during the year. *Return<sub>t</sub>* is the annual stock return in the primary stock exchange of the company. *Book-to-market<sub>t</sub>* is book value of total assets (sum of equity and debt) divided by the market value of assets (sum of equity and debt) at the fiscal year end. *Sales volatility<sub>t</sub>* is the coefficient of variation of company sales, computed as the time-series standard deviation of sales over the six years before (and including) the current year divided by time-series average of sales. A high value of Sales volatility<sub>t</sub> indicates volatile company sales. *Global operations<sub>t</sub>* is the ratio of international sales to total company sales. *U.S. listed<sub>t</sub>* is an indicator variable equal to one if a company's shares are listed as ADR or OTC in the U.S. and zero otherwise. *U.K. listed<sub>t</sub>* is an indicator equal to one if a non-U.K. company's shares are listed in the U.K. and zero otherwise.

**Table III**  
**Executive compensation across countries**

*Panel A: Top European companies versus U.S. matches*

	Europe			U.S.	
	Mean	Median		Mean	Median
<b>Board Structure</b>					
$N\_Director_t$	14.4	13.0	>	12.1	12.0
$Insider\ Ratio_t$	0.21	0.13	<	0.29	0.27
$Dual\ CEO/Chair_t$	0.30	0.00	<	0.79	1.00
<b>Executive Compensation</b>					
$Salary_t$ (‘000 €)	792	707	≈	1,022	720
$Bonus_t$ (‘000 €)	544	372	<	1,456	875
$Stock_t$ (‘000 €)	404	20	<	938	140
$Option_t$ (‘000 €)	737	295	<	3,224	1,736
$Total\ pay_t$ (‘000 €)	2,479	1,827	<	6,640	4,321
$Stock\ portfolio_{t-1}$ (‘000 €)	4,343	601	<	180,811	7,850
$Option\ portfolio_{t-1}$ (‘000 €)	1,258	417	<	18,091	7,963
$PPS_{t-1}$ (‘000 €)	86	32	<	2,175	322
$CEO\ total\ pay_t$ (‘000 €)	3,878	2,625	<	13,218	8,865
$CEO\ PPS_{t-1}$ (‘000 €)	154	47	<	6,393	735
<b>Economic Determinants of Executive Compensation</b>					
$Sales_t$ (mn €)	28,868	19,184	≈	28,629	17,892
$MCap_t$ (mn €)	32,273	14,999	<	41,888	16,798
$Total\ assets_t$ (mn €)	138,486	26,648	>	76,527	20,123
$Net\ income_t$ (mn €)	1,221	669	<	1,528	787
$B/M_t$	0.80	0.87	>	0.68	0.74

The panel compares the 486 annual observations from 158 largest European companies with those of U.S. companies matched (without replacement) to the European companies by sales in year 2000. The European companies are presented in the “Global Top 800 List” by *Forbes* magazine in year 2000. The U.S. data are obtained from the Compustat Execucomp and IRRC databases. The sample period is 1999–2004. To mitigate the effect of differences in managerial level, executive pay averages are computed using pay information of top five officers of each company. Differences in all variables are significant at 1% level, unless otherwise noted by symbol ‘≈’. Variable definitions appear in Table II.

*Panel B: Mean values of selected variables across sample countries*

Country	Company-specific variables									Country-specific variables		
	<i>Insider Ratio<sub>t</sub></i>	<i>Dual CEO/Chair<sub>t</sub></i>	<i>Disclosure<sub>t</sub></i>	<i>Salary<sub>t</sub></i> (`000 €)	<i>Bonus<sub>t</sub></i> (`000 €)	<i>Stock<sub>t</sub></i> (`000 €)	<i>Option<sub>t</sub></i> (`000 €)	<i>Total pay<sub>t</sub></i> (`000 €)	<i>PPS<sub>t-1</sub></i> (`000 €)	<i>Tax differential</i>	<i>Purchasing power<sub>t</sub></i>	<i>Social spending<sub>t</sub></i> (€)
U.K.	0.42	0.29	5.84	805	486	615	605	2,512	110	-17.4%	0.96	5,553
France	0.18	0.65	3.53	478	597	61	1,136	2,272	70	16.6%	1.03	7,620
Germany	0.00	0.00	3.18	768	770	125	352	2,034	27	16.0%	1.05	7,074
Holland	0.09	0.11	5.15	829	441	106	641	2,017	54	16.3%	1.01	6,016
Switzerland	0.10	0.27	3.18	938	1,081	1,600	680	4,299	125	5.1%	0.75	6,094
Italy	0.33	0.33	2.67	930	628	209	2,186	3,953	121	5.3%	1.17	6,293
Spain	0.28	0.75	2.97	1,403	745	115	487	2,750	35	9.8%	1.26	4,616
Sweden	0.04	0.08	4.28	725	187	1	209	1,120	20	18.0%	0.87	8,432
Belgium	0.20	0.00	3.07	753	235	36	200	1,225	7	8.9%	1.06	7,329
Finland	0.12	0.50	4.33	663	346	0	2,377	3,386	128	25.0%	0.97	5,927
Russia	0.12	0.00	0.33	—	—	—	—	—	—	—	3.60	—
Norway	0.00	0.00	3.17	705	87	600	0	1,392	4	15.3%	0.88	8,622
Sample mean	0.21	0.30	4.08	792	544	404	737	2,479	86	-1.1%	0.99	6,149

The number of observations for each country (company-specific variable definitions) appears in Table II. To mitigate the effect of differences in managerial level, executive pay means are computed using pay information of top five officers of each company. Country-specific variables are defined as follows. **Tax differential** is the country-specific difference between effective tax rates on capital and labor income, from Carey and Tchilinguirian (2000). **Purchasing power<sub>t</sub>** is the country- and year-specific purchasing power parity, from the OECD statistics portal. **Social spending<sub>t</sub>** is the country- and year-specific public and private social spending per capita, from the OECD social expenditure database (SOCX).

**Table IV**  
**Correlations among selected variables**

	<i>Disclosure<sub>t</sub></i>	<i>PPS<sub>t-1</sub></i>	<i>Insider Ratio<sub>t</sub></i>	<i>Dual CEO/Chair<sub>t</sub></i>	<i>Total pay<sub>t</sub></i>	<i>Log (Size<sub>t</sub>)</i>	<i>Net income<sub>t</sub></i>	<i>Book-to-market<sub>t</sub></i>	<i>Sales volatility<sub>t</sub></i>	<i>Global operations<sub>t</sub></i>
<i>Disclosure<sub>t</sub></i>		0.16***	0.34***	0.04	0.10***	0.01	-0.06*	-0.12***	-0.11***	0.06
<i>PPS<sub>t-1</sub></i>	0.37 ***		0.20***	0.11**	0.04	0.03	0.00	-0.13***	0.06	0.06
<i>Insider Ratio<sub>t</sub></i>	0.50 ***	0.40***		0.26***	0.13**	-0.18***	-0.05	-0.09***	0.01	-0.19 ***
<i>Dual CEO/Chair<sub>t</sub></i>	0.08 **	0.29***	0.29***		0.03	-0.03	-0.02	-0.15***	-0.04	-0.01
<i>Total pay<sub>t</sub></i>	0.271 ***	0.24***	0.30***	0.09**		-0.60***	0.25***	-0.14***	0.29 ***	0.02
<i>ln(Size<sub>t</sub>)</i>	-0.10 ***	0.17***	-0.23***	-0.08**	-0.57***		-0.18***	0.03	-0.07 **	0.03
<i>Net income<sub>t</sub></i>	0.11 ***	0.21***	0.05	0.06	0.08**	0.06*		-0.08**	0.09 ***	-0.03
<i>Book-to-market<sub>t</sub></i>	-0.19 ***	-0.26***	-0.23***	-0.19***	-0.20***	0.09**	-0.30***		0.16 ***	-0.05
<i>Sales volatility<sub>t</sub></i>	0.11 ***	0.04	0.04	-0.04	-0.02	0.08**	-0.06	0.07*		-0.01
<i>Global operations<sub>t</sub></i>	0.02	0.04	-0.19***	-0.00	0.07*	-0.04	-0.04	-0.08*	0.04	

\*\*\*, \*\*, \* correspond to significance at 1%, 5%, and 10% levels.

The table presents pairwise Pearson (above the diagonal) and Spearman (below the diagonal) correlations among the selected variables. Variable definitions appear in Table II.

**Table V**  
**Insiders and transparency of pay disclosure**

	Predicted sign	Full sample	Full sample	Full sample	Disclosers	Company means
<i>Insider Ratio<sub>t</sub></i>	+ / -	0.83** (2.18)		0.63* (1.66)	1.03*** (4.57)	1.86** (2.28)
<i>Dual CEO/Chair<sub>t</sub></i>	+ / -		0.38*** (3.19)	0.36** (2.96)	0.21** (2.31)	0.51 (1.55)
<i>Log(Total pay<sub>t</sub>)</i>	+				0.15*** (2.52)	
<i>Log(Size<sub>t</sub>)</i>	+	0.33*** (4.88)	0.33*** (4.89)	0.35*** (5.05)	0.03 (0.49)	0.46*** (2.88)
<i>Net income<sub>t</sub></i>	+	0.45*** (3.13)	0.31*** (2.63)	0.45** (3.13)	0.01 (0.08)	1.17*** (2.55)
<i>Book-to-market<sub>t</sub></i>	-	-0.06 (-0.34)	0.09 (0.50)	-0.00 (0.01)	0.34* (1.88)	-0.10 (-0.28)
<i>Sales volatility<sub>t</sub></i>	+	0.24 (1.05)	0.19 (1.11)	0.26 (1.20)	0.21 (1.27)	0.72** (1.44)
<i>N_Director<sub>t</sub></i>	-	-0.04*** (-3.09)	-0.04*** (-3.24)	-0.05*** (-3.61)	0.01 (0.99)	-0.09** (-2.52)
<i>U.S. listed<sub>t</sub></i>	+	0.22** (2.11)	0.24** (2.22)	0.22** (2.06)	-0.01 (-0.15)	0.17 (0.74)
<i>U.K. listed<sub>t</sub></i>	+	0.01 (0.03)	-0.04 (-0.23)	-0.03 (-0.17)	0.06 (0.42)	-0.03 (-0.09)
Industry, country, year, and country*year fixed effects		Yes	Yes	Yes	Yes	Yes
<i>R</i> <sup>2</sup>		58.5%	54.9%	59.0%	61.6%	71.6%
<i>n</i>		939	939	939	741	158

\*\*\*, \*\*, \* correspond to significance at 1%, 5%, and 10% levels.

The table reports results of the following OLS regressions with *Disclosure<sub>t</sub>* as the dependent variable:

$$\begin{aligned}
 Disclosure_t = & \alpha_0 + \alpha_1 Insider Ratio_t + \alpha_2 Dual CEO/Chair_t + \alpha_3 \ln(Size_t) + \alpha_4 Net income_t \\
 & + \alpha_5 Book-to-market_t + \alpha_6 Sales volatility_t + \alpha_7 N\_Director_t + \alpha_8 U.S. listed_t \\
 & + \alpha_9 U.K. listed_t + \theta Industry + \delta Country + \lambda Year_t + \gamma Country*Year_t + \varepsilon_t
 \end{aligned}$$

The sample consists of annual observations of the 158 largest European companies over six years ( $t = 1999$  to  $2004$ ). Variable definitions appear in Table II. The first three columns use the full sample. The fourth column uses observations from disclosers, and includes  $\ln(Total Pay_{t-1})$  as an additional independent variable. The fifth column uses time-series company averages of dependent and independent variables. The  $t$ -statistics (reported in parentheses) are based on the Huber-White robust standard errors adjusted for firm-level clustering (Rogers [1993]).

**Table VI**  
**Insiders and transparency of pay disclosure in different countries**

	Predicted sign	U.K. companies	French companies	Companies not headquartered in the U.K., France, or Germany
<i>Insider Ratio<sub>t</sub></i>	+ / -	1.13*** (3.57)	0.78 (0.90)	0.65 (1.64)
<i>Dual CEO/Chair<sub>t</sub></i>	+ / -	0.29*** (4.05)	0.16 (0.52)	0.36* (1.90)
<i>ln(Size<sub>t</sub>)</i>	+	0.09 (1.32)	1.13*** (3.85)	0.45*** (3.49)
<i>Net income<sub>t</sub></i>	+	-0.23 (-1.48)	0.93 (0.53)	0.43** (2.30)
<i>Book-to-market<sub>t</sub></i>	-	-0.09 (-0.43)	-0.01 (-0.01)	-0.42 (-1.48)
<i>Sales volatility<sub>t</sub></i>	+	0.57*** (4.02)	-1.84*** (-3.94)	0.73 (1.64)
<i>N_Director<sub>t</sub></i>	-	-0.00 (-0.29)	0.05 (1.30)	-0.12*** (-4.24)
<i>U.S. listed<sub>t</sub></i>	+	-0.02 (-0.35)	0.52 (1.59)	0.76*** (3.07)
<i>U.K. listed<sub>t</sub></i>	+	—	-0.37 (-0.57)	-0.11 (-0.47)
Industry, year, country, country*year fixed effects		Yes	Yes	Yes
<i>R</i> <sup>2</sup>		29.2%	33.4%	64.0%
<i>n</i>		254	193	330

\*\*\*, \*\*, \* correspond to significance at 1%, 5%, and 10% levels.

The table reports results of the following OLS regressions across different countries with *Disclosure<sub>t</sub>* as the dependent variable:

$$\begin{aligned}
 Disclosure_t = & \alpha_0 + \alpha_1 Insider\ Ratio_t + \alpha_2 Dual\ CEO/Chair_t + \alpha_3 \ln(Size_t) + \alpha_4 Net\ income_t \\
 & + \alpha_5 Book\ to\ market_t + \alpha_6 Sales\ volatility_t + \alpha_7 N\_Director_t + \alpha_8 U.S.\ listed_t \\
 & + \alpha_9 U.K.\ listed_t + \theta Industry + \delta Country + \lambda Year_t + \gamma Country*Year_t + \varepsilon_t
 \end{aligned}$$

The sample consists of annual observations of the 158 largest European companies over six years ( $t = 1999$  to 2004). Variable definitions appear in Table II. Variable definitions appear in Table II. The  $t$ -statistics (reported in parentheses) are based on the Huber-White robust standard errors adjusted for firm-level clustering (Rogers [1993]).

**Table VII**  
**Insiders and pay-for-performance sensitivity**

	Predicted sign	CEO	Insiders	Top five executives	All executives
		$PPS_{t-1}^{CEO}$	$\frac{\sum PPS_{t-1}^{Insider}}{N\_Insider_{t-1}}$	$\frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}}$	$\frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}}$
$N\_Insider_{t-1}$	+ / -	420.50 (1.45)	260.72** (2.40)	251.92** (3.12)	191.96*** (2.91)
$N\_Director_{t-1}$	+ / -	238.21* (1.83)	70.22*** (2.60)	55.45* (1.89)	45.30** (1.96)
$Dual\ CEO/Chair_{t-1}$	+ / -	58.48* (1.84)	3.05 (0.29)	21.29** (2.15)	26.51*** (3.84)
$\ln(Size_{t-1})$	+	401.93* (1.74)	129.09** (2.29)	36.82 (0.85)	38.47 (0.94)
$Book\text{-}to\text{-}market_{t-1}$	-	170.51 (1.06)	18.26 (0.31)	101.33* (1.79)	71.93** (2.11)
$Sales\ volatility_{t-1}$	+	-13.52** (-2.27)	-8.01*** (3.96)	-5.64*** (-3.09)	-4.17*** (-3.25)
$Cash_{t-1}(x100)$	-	11.03* (1.89)	10.41*** (4.20)	10.53*** (3.63)	5.72*** (3.84)
$Cash_{t-1}(x100)*$ <i>Financials industry</i>	?	—	-0.15 (-0.03)	2.10 (0.27)	0.61 (0.98)
$N\_Executive_{t-1}$	-	-10.61 (-0.92)	-5.55 (-1.47)	0.09 (0.02)	0.16 (0.09)
$N\_Director_{t-1}$	-	-199.51** (-2.08)	-13.03 (-0.62)	-8.15 (-0.39)	-9.99 (-0.58)
$U.S.\ listed_{t-1}$	+	24.20 (0.39)	41.08 (1.10)	2.53 (0.09)	-20.45 (-1.50)
$U.K.\ listed_{t-1}$	+	3.69 (0.91)	5.79 (0.95)	2.44 (1.58)	1.73 (1.44)
$Tax\ differential_{t-1}$	+	16.70 (0.02)	495.28 (1.62)	331.00 (1.35)	218.94 (1.15)
$Purchasing\ power_{t-1}$	?	0.33 (1.47)	-0.04 (-0.53)	0.10 (1.36)	0.05 (0.98)
$Social\ spending_{t-1}$	?				
Industry, country, and year fixed effects		Yes	Yes	Yes	Yes
$R^2$		21.9%	45.69%	29.74%	25.1%
$n$		527	398	486	741

\*\*\*, \*\*, \* correspond to significance at 1%, 5%, and 10% levels.

$N\_Executive$  is replaced by  $N\_Insider$  when Insider  $PPS_{t-1}$  is the dependent variable (the second column).

The table reports results of the following OLS regressions with pay-for-performance sensitivity from the portfolio holdings of different levels of executives ( $PPS_{t-1}$ ) as the dependent variable (for years  $t = 1999$  to 2004):

$$\begin{aligned}
PPS_{t-1} = & \frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}} = \alpha_0 + \alpha_1 \frac{N\_Insider_{t-1}}{N\_Director_{t-1}} + \alpha_2 Dual\ CEO/Chair_{t-1} + \alpha_3 \ln(Size_{t-1}) \\
& + \alpha_4 Book\text{-}to\text{-}market_{t-1} + \alpha_5 Sales\ volatility_{t-1} + \alpha_6 Cash_{t-1} \\
& + \alpha_7 Cash_{t-1} * Financials\ industry\ indicator + \alpha_8 N\_Executive_{t-1} + \alpha_9 N\_Director_{t-1} \\
& + \alpha_{10} U.S.\ listed_{t-1} + \alpha_{11} U.K.\ listed_{t-1} + \alpha_{12} Tax\ differential_{t-1} + \alpha_{13} Purchasing\ power_{t-1} \\
& + \alpha_{14} Social\ spending_{t-1} + \theta Industry + \delta Country + \lambda Year_{t-1} + \varepsilon_{t-1}
\end{aligned}$$

The first column uses available pay data for CEOs in the regression model. The second column uses pay data for insiders only. The third column uses pay data for the top five company executives. The fourth column uses pay data for all executives reported by their companies. Variable definitions appear in Table II. The  $t$ -statistics (reported in parentheses) are based on the Huber-White robust standard errors adjusted for firm-level clustering (Rogers [1993]).

**Table VIII**  
**Insiders and pay-for-performance sensitivity in different countries**

Panel A: CEOs only

	Predicted sign	$PPS_{t-1}^{CEO}$ in			
		U.K. companies	French companies	Companies not headquartered in the U.K., France, or Germany	U.S. companies
$N\_Insider_{t-1}$	+ / -	841.29	17.66	-133.37**	27,115***
$N\_Director_{t-1}$		(1.39)	(0.17)	(-2.04)	(2.92)
$Dual\ CEO/Chair_{t-1}$	+ / -	329.25*	30.23	85.41***	2,596
		(1.68)	(0.96)	(2.90)	(0.93)
$ln(Size_{t-1})$	+	-71.68	118.64***	4.29	2,756**
		(-1.00)	(3.86)	(0.54)	(2.55)
$Book-to-market_{t-1}$	-	491.30*	28.73	-103.09*	-9,269**
		(1.78)	(0.26)	(-1.66)	(-2.56)
$Sales\ volatility_{t-1}$	+	-252.09*	-221.91***	55.30	14,521**
		(-0.74)	(-3.03)	(1.58)	(2.23)
$Cash_{t-1}(x100)$	-	-34.76***	-1.89	2.32	997.29***
		(-2.62)	(-0.69)	(1.58)	(2.81)
$Cash_{t-1}(x100) * Financials\ industry$	?	45.08**	-1.95	-2.78	-1,077.54***
		(1.96)	(-0.30)	(-1.46)	(-2.78)
$N\_Director_{t-1}$	-	-27.34	2.00	6.23*	-1,975***
		(-1.07)	(0.52)	(1.88)	(-2.71)
$U.S.\ listed_{t-1}$	+	-339.90**	23.40	18.82	—
		(-2.41)	(0.82)	(0.49)	
$U.K.\ listed_{t-1}$	+	—	-12.53	6.24	-541
			(-0.26)	(0.37)	(-0.42)
$Tax\ differential_{t-1}$	+	—	—	-16.92*	—
				(-1.76)	
$Purchasing\ power_{t-1}$	?	—	—	-2.83	—
				(-0.01)	
$Social\ spending_{t-1}$	?	0.27**	-0.05	0.12*	-7.38
		(2.41)	(-0.72)	(1.74)	(-1.52)
Industry, country, and year fixed effects		Yes	Yes	Yes	Yes
$R^2$		38.8%	48.9%	45.9%	21.2%
$n$		249	100	151	860

\*\*\*, \*\*, \* correspond to significance at 1%, 5%, and 10% levels.

Panel B: Top five company executives

		$\frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}}$ for top five company executives in			
	Predicted sign	U.K. companies	French companies	Companies not headquartered in the U.K., France, or Germany	U.S. companies
$N\_Insider_{t-1}$	+ / -	348.66*	111.26	330.25*	4,408*
$N\_Director_{t-1}$		(1.82)	(0.62)	(1.86)	(1.95)
$Dual\ CEO/Chair_{t-1}$	+ / -	80.78**	-23.14	46.97	-240
		(2.23)	(-0.47)	(1.47)	(-0.27)
$\ln(Size_{t-1})$	+	-11.84	93.51***	-14.51	1,281***
		(-0.55)	(3.58)	(-1.04)	(3.52)
$Book\text{-}to\text{-}market_{t-1}$	-	76.81	-115.23	-15.01	3,431***
		(1.28)	(-0.87)	(-0.30)	(-3.46)
$Sales\ volatility_{t-1}$	+	-33.95	-20.52	-24.22	1,342
		(-0.47)	(-0.43)	(-0.49)	(0.86)
$Cash_{t-1}$	-	-11.25***	-2.40	-0.96	364.47***
		(-3.79)	(-0.64)	(-0.53)	(2.88)
$Cash_{t-1}^*$	?	24.57**	2.23	9.35***	-354.84***
$Financials\ industry$		(2.40)	(0.60)	(2.50)	(-2.70)
$N\_Executive_{t-1}$	-	14.86	15.67**	-1.99	-47,307***
		(0.75)	(2.08)	(-0.22)	(-7.20)
$N\_Director_{t-1}$	-	-10.96	5.32	3.24	-431**
		(-1.64)	(1.05)	(0.57)	(-2.33)
$U.S.\ listed_{t-1}$	+	-56.50*	5.42	59.38	—
		(-1.69)	(0.23)	(2.39)	
$U.K.\ listed_{t-1}$	+	—	1.07	10.71	-6.05
			(0.02)	(0.44)	(-0.02)
$Tax\ differential_{t-1}$	+	—	—	-0.45	—
				(-0.03)	
$Purchasing\ power_{t-1}$	?	—	—	-209.23	—
				(-0.77)	
$Social\ spending_{t-1}$	?	0.06*	-0.02	0.10	-2.00
		(1.73)	(-0.47)	(1.31)	(-1.64)
Industry, country, and year fixed effects		Yes	Yes	Yes	Yes
Adjusted $R^2$		54.4%	57.2%	61.9%	45.5%
$n$		244	58	135	863

\*\*\*, \*\*, \* correspond to significance at 1%, 5%, and 10% levels.

The table reports results of the following OLS regressions across different countries with pay-for-performance sensitivities of the CEO (Panel A) and top five company executives (Panel B) as dependent variables (for years  $t = 1999$  to 2004):

Panel A:

$$\begin{aligned}
 PPS_{t-1}^{CEO} = & \alpha_0 + \alpha_1 \frac{N\_Insider_{t-1}}{N\_Director_{t-1}} + \alpha_2 Dual\ CEO/Chair_{t-1} + \alpha_3 \ln(Size_{t-1}) \\
 & + \alpha_4 Book\text{-}to\text{-}market_{t-1} + \alpha_5 Sales\ volatility_{t-1} + \alpha_6 Cash_{t-1} \\
 & + \alpha_7 Cash_{t-1} * Financials\ industry\ indicator + \alpha_8 N\_Director_{t-1} + \alpha_9 U.S.\ listed_{t-1} \\
 & + \alpha_{10} U.K.\ listed_{t-1} + \alpha_{11} Tax\ differential_{t-1} + \alpha_{12} Purchasing\ power_{t-1} + \alpha_{13} Social\ spending_{t-1} \\
 & + \theta Industry + \delta Country + \lambda Year_{t-1} + \varepsilon_{t-1}
 \end{aligned}$$

Panel B:

$$\begin{aligned}
 PPS_{t-1} = & \frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}} = \alpha_0 + \alpha_1 \frac{N\_Insider_{t-1}}{N\_Director_{t-1}} + \alpha_2 Dual\ CEO/Chair_{t-1} + \alpha_3 \ln(Size_{t-1}) \\
 & + \alpha_4 Book\text{-}to\text{-}market_{t-1} + \alpha_5 Sales\ volatility_{t-1} + \alpha_6 Cash_{t-1} \\
 & + \alpha_7 Cash_{t-1} * Financials\ industry\ indicator + \alpha_8 N\_Executive_{t-1} + \alpha_9 N\_Director_{t-1} \\
 & + \alpha_{10} U.S.\ listed_{t-1} + \alpha_{11} U.K.\ listed_{t-1} + \alpha_{12} Tax\ differential_{t-1} + \alpha_{13} Purchasing\ power_{t-1} \\
 & + \alpha_{14} Social\ spending_{t-1} + \theta Industry + \delta Country + \lambda Year_{t-1} + \varepsilon_{t-1}
 \end{aligned}$$

U.S. companies are matched to the European sample with respect to € sales in year 2000. Variable definitions appear in Table II. The  $t$ -statistics (reported in parentheses) are based on the Huber-White robust standard errors adjusted for firm-level clustering (Rogers [1993]).

**Table IX**  
**The effect of country-specific institutional characteristics on the relation between insiders and compensation policies**

Panel A: Insiders and transparency of pay disclosure (Hypothesis 1)

Partitions		n	Mean <i>Disclosure<sub>t</sub></i>	Coefficient for <i>Insider Ratio<sub>t</sub></i>		<i>R</i> <sup>2</sup>
				Estimate	<i>t</i>	
1. Legal tradition	Code	685	3.43	0.68	1.38	41.9%
	Common	254	5.84	1.01***	3.25	23.5%
2. Importance of equity market	Low	493	3.14	0.14	0.24	34.3%
	High	446	5.12	0.97***	3.71	67.7%
3. Outside investor rights	Low	625	3.54	0.75	1.43	36.8%
	High	314	5.15	0.78**	2.17	86.2%
4. Global governance	Low	355	3.37	0.34	0.58	31.5%
	High	584	4.51	1.19***	4.73	72.6%
5. Ownership concentration	Low	555	4.83	0.866**	2.08	53.7%
	High	384	3.00	0.113	0.15	46.8%

Panel A reports number of observations, average *Disclosure<sub>t</sub>*, and coefficient estimates for *Insider Ratio<sub>t</sub>* and *R*<sup>2</sup> of the following OLS regression run separately for the sample segments partitioned according to country-specific institutional characteristics:

$$\begin{aligned}
 Disclosure_t = & \alpha_0 + \alpha_1 Insider Ratio_t + \alpha_2 \ln(Size_t) + \alpha_3 Net\ income_t + \alpha_4 Book\text{-}to\text{-}market_t \\
 & + \alpha_5 Sales\ volatility_t + \alpha_6 N\_Director_t + \alpha_7 U.S.\ listed_t + \alpha_8 U.K.\ listed_t \\
 & + \theta Industry + \delta Country + \lambda Year_t + \gamma Country * Year_t + \varepsilon_t
 \end{aligned}$$

The sample consists of annual observations of the 158 largest European companies over six years ( $t = 1999$  to 2004). Variable definitions appear in Table II. The *t*-statistics are based on the Huber-White robust standard errors adjusted for firm-level clustering (Rogers [1993]).

The five independent partitions in the panel divide the sample according to whether country-specific institutional characteristics provide effective alternative protection for outside shareholders. The first partition divides the sample into **common** and **code law** companies. U.K is the only common law country in the sample. Each of the remaining partitions divides the sample according to whether the relevant measure for a company is above or below the median value (in parentheses) of the measure over the sample countries: **Importance of equity market index** (12.5), **Outside investor rights index** (3), **Global governance index**, GOV<sub>44</sub> (49), **Ownership concentration index** (0.34).

Panel B: Insiders and pay-for-performance sensitivity (Hypothesis 2)

Partitions		n	Mean <i>PPS</i> <sub><i>t-1</i></sub>	Coefficient for <i>Insider Ratio</i> <sub><i>t</i></sub>		<i>R</i> <sup>2</sup>
				Estimate	<i>t</i>	
1. Legal tradition	Code	242	61.0	127.4***	3.28	43.4%
	Common	244	109.7	327.3*	1.73	53.1%
2. Importance of equity market	Low	157	56.3	212.5***	4.05	48.8%
	High	329	99.3	306.2***	2.73	39.6%
3. Outside investor rights	Low	222	63.6	135.0***	3.19	46.5%
	High	264	103.8	287.1*	1.75	53.1%
4. Global governance	Low	116	66.1	242.4***	4.22	57.0%
	High	370	91.5	235.9**	2.22	30.1%
5. Ownership concentration	Low	364	93.0	311.1***	3.24	38.9%
	High	122	62.9	331.0***	4.08	64.3%

\*\*\*, \*\*, \* correspond to significance at 1%, 5%, and 10% levels.

Panel B reports number of observations, mean *PPS*<sub>*t-1*</sub> for top five company executives, and coefficient estimates for *Insider Ratio*<sub>*t*</sub> and *R*<sup>2</sup> of the following OLS regression run separately for the sample segments partitioned according to country-specific institutional characteristics (for years *t* = 1999 to 2004):

$$\begin{aligned}
 PPS_{t-1} = & \frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}} = \alpha_0 + \alpha_1 \frac{N\_Insider_{t-1}}{N\_Director_{t-1}} + \alpha_2 \ln(Size_{t-1}) + \alpha_3 Book\text{-}to\text{-}market_{t-1} \\
 & + \alpha_4 Sales\ volatility_{t-1} + \alpha_5 Cash_{t-1} + \alpha_6 Cash_{t-1} * Financials\ industry\ indicator \\
 & + \alpha_7 N\_Executive_{t-1} + \alpha_8 N\_Director_{t-1} + \alpha_9 U.S.\ listed_{t-1} + \alpha_{10} U.K.\ listed_{t-1} \\
 & + \alpha_{11} Tax\ differential_{t-1} + \alpha_{12} Purchasing\ power_{t-1} + \alpha_{13} Social\ spending_{t-1} \\
 & + \theta Industry + \delta Country + \lambda Year_{t-1} + \varepsilon_{t-1}
 \end{aligned}$$

Variable definitions appear in Table II, and Panel A elaborates on the five partitions. The *t*-statistics are based on the Huber-White robust standard errors adjusted for firm-level clustering (Rogers [1993]).

**Table X**  
**The effect of insider-dominated boards on the relation between insiders and compensation policies**

Panel A: Insiders and transparency of pay disclosure (Hypothesis 1)

Partitions		n	Mean <i>Disclosure<sub>t</sub></i>	Coefficient for <i>Insider Ratio<sub>t</sub></i>		<i>R</i> <sup>2</sup>
				Estimate	<i>t</i>	
1. Insider majority	No	860	3.99	1.04**	2.05	57.7%
	Yes	79	5.03	-3.09	-1.55	92.9%
2. Dual CEO/Chair	No	655	4.02	0.39	0.77	66.7%
	Yes	284	4.21	0.39	0.50	56.3%
3. Top executives are granted relatively excess pay	No	363	5.24	1.05***	2.98	57.2%
	Yes	123	5.60	-0.49	-1.09	94.0%
4. Top executives own relatively more company stocks	No	363	5.20	0.90***	2.98	56.9%
	Yes	123	5.71	-0.15	-0.83	91.1%

\*\*\*, \*\*, \* correspond to significance at 1%, 5%, and 10% levels.

Panel A reports number of observations, mean *Disclosure<sub>t</sub>*, and coefficient estimates for *Insider Ratio<sub>t</sub>* and *R*<sup>2</sup> of the following OLS regression run separately for the sample segments partitioned according to whether inside board members are likely to dominate company boards:

$$\begin{aligned}
 Disclosure_t = & \alpha_0 + \alpha_1 Insider\ Ratio_t + \alpha_2 \ln(Size_t) + \alpha_3 Net\ income_t + \alpha_4 Book\text{-}to\text{-}market_t \\
 & + \alpha_5 Sales\ volatility_t + \alpha_6 N\_Director_t + \alpha_7 U.S.\ listed_t + \alpha_8 U.K.\ listed_t \\
 & + \theta Industry + \delta Country + \lambda Year_t + \gamma Country * Year_t + \varepsilon_t
 \end{aligned}$$

The sample consists of annual observations of the 158 largest European companies over six years ( $t = 1999$  to 2004). Variable definitions appear in Table II. The *t*-statistics are based on the Huber-White robust standard errors adjusted for firm-level clustering (Rogers [1993]).

The four independent partitions in the panel divide the sample according to whether insiders are likely to dominate company boards. The first partition divides the sample according to whether insiders have the numerical majority on the boards. The second partition divides the sample according to whether company CEOs serve as board chairs. The third partition divides the sample according to whether company executives receive relatively high compensation, i.e., whether the mean level of executive compensation deflated by annual company sales is in the top 25% of the sample. The cutoff value for mean compensation deflated by company sales is 0.00016. The fourth partition divides the sample according to whether company executives hold a relatively high number of shares, i.e., whether the value of an executive's company stock holdings is in the top 25% of the sample.

Panel B: Insiders and pay-for-performance sensitivity (Hypothesis 2)

Partitions		n	Mean <i>PPS</i> <sub><i>t-1</i></sub>	Coefficient for <i>Insider Ratio</i> <sub><i>t</i></sub>		<i>R</i> <sup>2</sup>
				Estimate	<i>t</i>	
1. Insider majority	No	430	75.3	236.9**	2.21	26.6%
	Yes	56	163.0	602.5	0.92	81.1%
2. Dual CEO/Chair	No	335	72.5	348.9**	2.30	24.1%
	Yes	151	114.2	44.3	0.40	67.9%
3. Top executives are granted relatively excess pay	No	363	81.3	371.6***	3.39	31.2%
	Yes	123	97.6	123.7	0.96	53.3%
4. Top executives own relatively more company stocks	No	363	36.7	24.5	0.98	27.2%
	Yes	123	230.9	355.9	1.45	79.0%

\*\*\*, \*\*, \* correspond to significance at 1%, 5%, and 10% levels.

Panel B reports number of observations, mean *PPS*<sub>*t-1*</sub> for top five company executives, and coefficient estimates for *Insider Ratio*<sub>*t*</sub> and *R*<sup>2</sup> of the following OLS regression run separately for the sample segments partitioned according to whether inside board members are likely to dominate company boards (for years *t* = 1999 to 2004):

$$\begin{aligned}
 PPS_{t-1} = & \frac{\sum PPS_{t-1}^{Executive}}{N\_Executive_{t-1}} = \alpha_0 + \alpha_1 \frac{N\_Insider_{t-1}}{N\_Director_{t-1}} + \alpha_2 \ln(Size_{t-1}) + \alpha_3 Book\text{-}to\text{-}market_{t-1} \\
 & + \alpha_4 Sales\ volatility_{t-1} + \alpha_5 Cash_{t-1} + \alpha_6 Cash_{t-1} * Financials\ industry\ indicator \\
 & + \alpha_7 N\_Executive_{t-1} + \alpha_8 N\_Director_{t-1} + \alpha_9 U.S.\ listed_{t-1} + \alpha_{10} U.K.\ listed_{t-1} \\
 & + \alpha_{11} Tax\ differential_{t-1} + \alpha_{12} Purchasing\ power_{t-1} + \alpha_{13} Social\ spending_{t-1} \\
 & + \theta Industry + \delta Country + \lambda Year_{t-1} + \varepsilon_{t-1}
 \end{aligned}$$

Variable definitions appear in Table II, and Panel A elaborates on the four partitions. The *t*-statistics are based on the Huber-White robust standard errors adjusted for firm-level clustering (Rogers [1993]).

**Appendix**  
**Extant indices on the institutional characteristics of European countries**

Country	Legal Origin	Legal Tradition	Importance of Equity Market	Outside Investor Rights	Global Governance Index	Ownership Concentration
U.K.	English	Common	25.0 (1)	5 (1)	56 (1)	0.15 (0)
France	French	Code	9.3 (0)	3 (1)	49 (0)	0.24 (0)
Germany	German	Code	5.0 (0)	1 (0)	50 (1)	0.50 (1)
Holland	French	Code	19.3 (1)	2 (0)	51 (1)	0.31 (0)
Switzerland	German	Code	24.8 (1)	2 (0)	55 (1)	0.48 (1)
Sweden	Scandinavian	Code	16.7 (1)	3 (1)	44 (0)	0.28 (0)
Italy	French	Code	6.5 (0)	1 (0)	41 (0)	0.60 (1)
Spain	French	Code	7.2 (0)	4 (1)	47 (0)	0.50 (1)
Belgium	French	Code	11.3 (0)	0 (0)	39 (0)	0.62 (1)
Finland	Scandinavian	Code	13.7 (1)	3 (1)	57 (1)	0.34 (1)
Russia	French	Code	5.4 (0)	4 (1)	—	—
Norway	Scandinavian	Code	20.3 (1)	4 (1)	44 (0)	0.31 (0)

The appendix reports the extant indices on the institutional characteristics of the sample countries and indicators (in parentheses) that are equal to 1 if the index is above the median and 0 otherwise. **Legal origin** and **Legal tradition** are obtained from La Porta et al. (1998). **Importance of equity market** is based on Leuz et al. (2003) and is measured by the mean rank across three variables in La Porta, Lopez-De-Silanes, Shleifer, and Vishny (1997): i) the ratio of aggregate stock market capitalization held by outside shareholders to GNP, ii) the number of listed domestic firms relative to population, and iii) the number of IPOs relative to population. **Outside investor rights** is the anti-director rights index in La Porta et al. (1998). It is an aggregate measure of outside shareholder rights. **Global governance index** or **GOV<sub>44</sub>** is based on 44 attributes for good governance practices covering board, audit, anti-takeover, compensation, and ownership (Aggarwal et al. [2009]). **Ownership Concentration** is the median percentage of common shares owned by the largest three shareholders of the ten largest privately owned non-financial firms (La Porta et al. [1998]).