6-2012

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Recommended Citation

Armstrong, C. S., Ittner, C. D., & Larcker, D. F. (2012). Corporate Governance, Compensation Consultants, and CEO Pay Levels. *Review of Accounting Studies, 17* (2), 322-351. http://dx.doi.org/10.1007/s11142-012-9182-y

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Abstract
This study investigates the relation between corporate governance and CEO pay levels and the extent to which the higher pay found in firms using compensation consultants is related to governance differences. Using proxy statement disclosures from 2,110 companies, we find that CEO pay is higher in firms with weaker governance and that firms with weaker governance are more likely to use compensation consultants. CEO pay remains higher in clients of consulting firms even after controlling for economic determinants of compensation. However, when consultant users and non-users are matched on both economic and governance characteristics, differences in pay levels are not statistically significant, indicating that governance differences explain much of the higher pay in clients of compensation consultants. We find no support for claims that CEO pay is higher in potentially "conflicted" consultants that also offer additional non-compensation-related services.

Keywords
equity incentives, corporate governance, executive compensation, compensation consultants

Disciplines
Accounting | Business

Economic Characteristics, Corporate Governance, and the Influence of Compensation Consultants on Executive Pay Levels

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June 12, 2008

Abstract: This study investigates the relation between the use of compensation consultants and CEO pay levels. Using new proxy statement disclosures from 2,116 companies, we examine claims that pay is higher in clients of compensation consultants, and test whether any pay differences in users and non-users of consultants are due to differences in economic or corporate governance characteristics. We find that CEO pay is generally higher in clients of most consulting firms, even after controlling for economic determinants of compensation. However, when users and non-users are matched on both economic and governance characteristics, differences in pay levels are not statistically significant. These results are consistent with claims that compensation consultants provide a mechanism for CEOs of companies with weak governance to extract and justify excess pay. Finally, we find no support for claims that CEO pay is higher in "conflicted" consultants that also offer additional non-compensation related services.

Keywords: equity incentives; corporate governance; executive compensation; compensation consultants

This paper has benefited greatly from many insightful discussions with Paul Rosenbaum. We also thank Bo Lu for making available his code to perform the nonbipartite matching algorithm used in this study. Funding from Ernst & Young (Ittner) and the Bob and Marilyn Jaedicke Faculty Fellow Program (Larcker) is gratefully acknowledged.

Economic Characteristics, Corporate Governance, and the Influence of Compensation Consultants on CEO Pay Levels

1. Introduction

The controversy surrounding CEO compensation increasingly focuses on compensation consultants' influence on executive pay levels. Compensation consultants are generally hired by the company or its Board of Directors to assist in the design of executive compensation packages. Using their experience working with organizations, benchmarking data, and proprietary procedures, consultants can help companies choose economically-appropriate compensation levels and structures that efficiently achieve labor market objectives and provide appropriate incentives to executives. If companies' compensation decisions and compensation consultants' advice reflect underlying economic factors such as firm objectives, performance, and labor markets, any differences in executive pay levels between companies that do and do not use compensation consultants should simply reflect differences in these economic factors and efficient contracting.

In contrast, a wide range of business leaders, academics, and politicians charge that compensation consultants contribute to excessive CEO pay levels that cannot be attributed to differences in economic factors alone (e.g., Crystal, 1992; Bebchuk and Fried, 2004; Buffet, 2007; U. S. House of Representatives, 2007). According to these critics, CEOs of companies with weak governance use compensation consultants, who are beholden to clients for current and future business, to design and justify excessive pay packages.

These claims have prompted increased compensation disclosure requirements and political investigations. The Security and Exchange Commission now requires proxy statements filed on or after December 15, 2006 to disclose which, if any, consultants provide compensation advice to the company.[1] The U.S. House of Representatives Committee on Oversight and Government Reform, in turn, has held hearings on the link between compensation consultants and executive pay. A study commissioned by the Committee used data from *Fortune* 250 firms to examine whether conflicts of interest among compensation consultants are associated with higher executive pay. The study's authors conclude that executive pay in companies using compensation consultants that provide other advisory services to these clients is higher than pay in companies using specialized compensation consultants without these potential conflicts of interest (U. S. House of Representatives, 2007).

In another study highlighted in the House hearings, the Corporate Library (2007), a compensation research center, conducted pay comparisons across clients of the ten largest compensation consultants (based on market share) relative to median pay in peer groups formed on the basis of ten industry sectors and four market capitalization groups. The Corporate Library report concludes that pay levels, in general, are higher in companies using one of these ten consultants, but that the extent to which "excess" pay exists depends upon the specific consultant. Though generally consistent with claims that compensation consultants facilitate rent extraction by executives, both the U.S. House

[1] Regulation S-X 407(e)(3)(iii) states that companies are required to provide a "narrative description" of "Any role of compensation consultants in determining or recommending the amount or form of executive and director compensation, identifying such consultants, stating whether such consultants are engaged directly by the compensation committee (or persons performing the equivalent functions) or any other person, describing the nature and scope of their assignment, and the material elements of the instructions or directions given to the consultants with respect to the performance of their duties under the engagement."

Committee report and Corporate Library study have been widely criticized for inadequately controlling for the economic determinants of executive pay (Harris, 2007), leaving the relation between compensation consultants and executive pay an open question.

Given the increasing scrutiny of compensation consultants and the limited theoretical and empirical evidence on consultants' role in pay decisions, we conduct an exploratory analysis of the influence of compensation consultants on CEO pay levels using proxy disclosures by a diverse sample of 2,116 companies. Our goal is to contribute to this debate by providing the most extensive, large scale evidence to date on the relation between compensation consultants and CEO pay, and on the influence of economic and governance characteristics on this relationship.

Consistent with claims that executive pay levels in clients of compensation consultants are higher than justified by *economic* characteristics, ordinary least squares (OLS) regressions that control for a wide variety of economic determinants of compensation indicate that total pay is higher for clients of most (but not all) of the consulting firms relative to companies without consultants. The OLS results also suggest that pay levels of clients of the larger, most frequently used compensation consultants are higher than those of firms using other consulting firms (most of which are smaller, boutique compensation consultants) in some model specifications. However, when more sophisticated propensity score matched pair analyses are used to relax the stringent functional form assumptions imposed by OLS models and to assess correlated omitted variables problems, most differences between the individual consulting firms disappear,

though the statistically higher levels of total pay at companies using compensation consultants persist.[2]

Our finding that CEO pay levels are higher in consulting clients, even after controlling for economic characteristics, is consistent with related studies by Conyon et al. (2006), Cadman et al. (2008), and Murphy and Sandino (2008). However, these studies provide little or no analysis of claims that companies with weak governance use compensation consultants to facilitate or justify excess pay. When we add *governance* variables to examine these claims, we continue to find higher pay in clients of most consulting firms in OLS regressions. In contrast, we find no significant differences in total pay levels between users and non-users of consultants or among the various consulting firms when propensity score matched pair analyses are used. This evidence indicates that once companies with similar economic and governance characteristics are compared and OLS's strict functional form is relaxed, pay levels are not significantly different, suggesting that governance differences account for much of the unexplained pay differences between consultant users and non-users.

Further analysis indicates that these results are due (at least partially) to pay levels for clients of individual consulting firms varying with governance strength, with weaker governance *within* clients of a given consultant associated with higher total pay. Similar statistical associations between governance characteristics and pay levels are *not* found in

[2] As we discuss more fully in Section 4.2, OLS may not be the preferred econometric approach because it relies on the assumption that a strict linear relation exists between CEO compensation and the selected determinants. Moreover, this relation must be the same for each consultant. In contrast, propensity score matching is robust to misspecification of the functional form linking CEO compensation to selected determinants and allows us to assess the impact of the endogenous choice of compensation consultants on the results. See Rosenbaum (2002) and Rosenbaum and Rubin (1983) for theoretical background and Armstrong et al. (2008) for a detailed explanation of propensity score matching in compensation research and an application examining whether equity incentives motivate managers to engage in accounting manipulations.

companies that do not use compensation consultants. While these results do not provide direct evidence that consulting firms play an *active* role in allowing CEOs of companies with weak governance to extract excess pay, they do suggest that the higher pay found in consulting clients is at least partially explained by the link between weaker governance and higher pay in companies using consultants. This evidence is consistent with the rent extraction view of the association between compensation consultant use and CEO pay, which argues that companies with weak governance use consultants to extract excess pay. Finally, consistent with Conyon et al. (2006), Cadman et al. (2008), and Murphy and Sandino (2008), we find no support for claims that CEO pay is higher for clients of potentially "conflicted" consultants that offer a broad range of advisory services relative to clients of specialized, "non-conflicted" compensation consulting firms.

The remainder of the paper is organized as follows. Section 2 reviews the prior literature on economic and governance arguments for differences in total CEO pay levels in companies using or not using compensation consultants, and between companies using different types of consultants. Section 3 discusses our sample and variables. Results are provided in Section 4. Section 5 offers our conclusions.

2. Literature Review

The majority of large companies engage compensation consultants to provide assistance in the design of executive compensation contracts. This assistance can range from the simple provision of benchmarking data on pay practices in other companies to advice on the structure and level of executive compensation and the tax, legal, and accounting implications of pay packages. Although some consultants focus solely on the

provision of compensation advice, others offer a broad range of services such as pension and benefits administration, actuarial services, and advice on other human resource management practices.

2.1 *Compensation Consultants and Efficient Contracting*

Economic theory (and the pay justifications included in the majority of annual proxy statements) suggests that executive pay packages are designed to efficiently achieve attraction, retention, and incentive objectives. This "efficient contracting" view of compensation plan design maintains that any differences in pay levels across firms are due to differences in economic characteristics that affect these objectives. Consistent with this view, empirical studies have identified a wide variety of economic factors that are associated with pay differentials (see Murphy (1999) and Prendergast (1999) for reviews).

Compensation consultants can use their expertise and proprietary data and procedures to help companies efficiently achieve their compensation objectives and align the interests of executives with those of shareholders. For example, consultants can use their expert knowledge to assist in the design of tailored compensation packages for executives, can provide advice on recent developments in pay practices and methodologies (such as option valuation), and can use their proprietary survey data to provide detailed analyses of peer group compensation packages (Bebchuk and Fried, 2003; Cadman et al., 2008). Conyon et al. (2006) argue that compensation consultants have strong incentives to use this expertise to design economically-justified contracts that align executive and shareholder interests. Failure to do so can lead to a loss of reputation and damage in the marketplace for their expert services.

If consultants provide compensation advice that efficiently aligns executive and shareholder interests, and clients follow this advice, the "efficient contracting" view maintains that there should be no differences in executive pay levels between users and non-users of compensation consultants after controlling for differences in economic characteristics.

2.2 *Compensation Consultants and Rent Extraction*

An alternative view is that compensation consultants' advice is not always in shareholders' best interests. The "rent extraction" view maintains that consultants have strong incentives to help inflate CEO pay to ensure future business (e.g., Bebchuk and Fried, 2003; Morgenson, 2006a; Anderson et al., 2007; U. S. House of Representatives, 2007). According to Orin Kramer, Chairman of the New Jersey Investment Council, "The theoretical role of the compensation consultant is to make an independent assessment of what senior executives are supposed to be paid. The business model of being a compensation consultant is based on satisfying the interests of the people about whom they're supposed to be making that independent judgment" (*Journal of Corporate Law*, 2005).

Proponents of the "rent extraction" view argue that CEOs of companies with weak corporate governance can use consultants to facilitate or justify excessive pay levels that are not in shareholders' best interests. Prior studies provide evidence that various governance attributes, such as CEO power, Board of Director characteristics and rules, and shareholder rights, are related to CEO pay levels, with weaker governance associated with excess pay (e.g., Lambert et al., 1993; Borokhovich et al., 1997; Conyon and Peck, 1998; Daily et al., 1998; Core et al., 1999; Cyert et al., 2002; Faleye, 2007). Although

these studies do not examine the role of compensation consultants, critics charge that consultants can be used to justify the excessive pay packages (either to Board members or shareholders) in poorly governed companies. Consistent with claims that consultants can be used strategically to justify high pay, Wade et al. (1997) find that companies with larger CEO salaries and bonuses are more likely to cite consultants when rationalizing pay levels to shareholders.

One of the primary mechanisms through which consultants can facilitate the extraction of excess pay is through the provision of benchmarking data and the choice of peer groups. Using proprietary surveys, consultants gather comparative compensation data that can be used to "objectively" justify relative pay levels. Critics charge that this has led to a "ratcheting up" of executive pay as companies attempt to set pay at or (frequently) above the median of their peers (Crystal, 1992; Buffet, 2007). This ratchet effect is compounded by the ability to selectively choose the peer group for benchmarking purposes. In a speech on executive compensation, Security and Exchange Commissioner Roel Campos noted, "It is extremely difficult to avoid using high comparables, and consultants can pretty much find high comparable income data to support paying a high amount to the CEO. This is the case even if the consultant reports directly to the board" (Campos, 2007).

Compensation critics contend that the incentives for consultants to facilitate rent extraction are greater when the firm also provides other advisory services. In many cases, these other services are more lucrative than the compensation consulting engagement (Crystal, 1992; U. S. House of Representatives, 2007). Moreover, even if a non-specialized consulting firm that offers a broad range of services does not currently

provide any additional services to the client, it may not want to jeopardize the possibility of obtaining "add-on" work in the future (Bebchuk and Fried, 2004; U. S. House of Representatives, 2007). Claims that broad-based service offerings lead to conflicts of interest between consultants and clients suggest that excess CEO pay should be higher in companies using "conflicted" consultants than in those using specialized, "non-conflicted" compensation consultants.[3]

2.3 *Related Research*

Despite the growing popular, legal, and political backlash against CEO pay levels and the criticism over compensation consultants' role in setting and justifying executive pay packages (e.g., Morgenson, 2006a, 2006b, 2008; Frank, 2007; Piore, 2007; U. S. House of Representatives, 2007), relatively little theoretical and empirical research has been conducted on the influence of compensation consultants on CEO pay decisions. Consistent with "rent extraction" arguments, the U. S. House Committee on Oversight and Government Reform report found that the 25 *Fortune* 250 companies that used consultants with the largest conflicts had CEO salaries that were 67% higher than the median for other *Fortune* 250 companies, and that median CEO salary in companies using consultants with conflicts of interests was $1.2 million higher than the median for Fortune 250 members (U. S. House of Representatives, 2007). However, the House report did not examine total pay and did not investigate whether these differentials were related to economic or governance factors.

[3] Charges of conflicts of interest by professional advisory firms are not limited to compensation consultants. Similar allegations have been leveled against financial services firms that provide both investment banking and equity rating services, and accounting firms that provide both audit and consulting services. Some accounting firms' clients have also been alleged to "audit opinion shop," which entails switching from one auditor to another that is more likely to provide the company with a favorable audit opinion. See Hayward and Boeker (1998), Lennox (2000), Lu (2006), and Moore et al. (2006), among others, for research on these topics.

In contrast, the Corporate Library (2007) study provides only partial support for the "rent extraction" view. Although the authors find higher CEO pay in clients of some consulting firms relative to peer groups based on size and industry, it is *lower* for clients of other consultants. Like the House report, the Corporate Library study does not consider differences in corporate governance environment, excludes some pay elements, and only controls for a small number of economic factors that prior research has shown to be important in explaining the level of executive compensation.

Bizjak et al. (2007) and Faulkender and Yang (2007) examine whether peer groups are selectively chosen by companies with weak governance to extract excess pay, with differing conclusions. While Bizjak et al. (2007) conclude that peer-group benchmarking is related more to economic factors than to weak governance, Faulkender and Yang (2007) conclude that CEOs of companies with weak governance choose peer group compositions that generate higher compensation. Neither study examines the role of compensation consultants in the choice of peer groups.

In the most closely related papers, Conyon et al. (2006), Cadman et al. (2008), and Murphy and Sandino (2008) examine the association between compensation consultants and executive pay in the United Kingdom and U.S. After controlling for economic factors, Conyon et al. (2006) find that total CEO pay in the 250 largest U.K. companies is higher when the company engages one of the two most frequently used consultants in their sample (Towers Perrin and New Bridge Street Consultants, an affiliate of Frederic Cook) and when CEO pay in other clients of the companies' consultant are higher. However, they find no evidence that total pay is higher when the companies'

compensation consultants provide other services, or when managerial power (as proxied by CEO tenure) is greater.

Cadman et al. (2008) examine 880 companies from the S&P 1500 and provide evidence consistent with the "rent extraction" view. In particular, they find that CEOs of consulting clients have higher total pay after controlling for economic factors. However, they do not find evidence that excess pay is associated with Board of Director characteristics (as proxied by average Board member tenure) or with more "conflicted" consultants.

Similarly, Murphy and Sandino's (2008) study of 938 U.S. companies finds higher CEO pay in companies using compensation consultants, even after controlling for differences in economic characteristics. They find no evidence that CEO pay is higher when the consultant provides (or potentially may provide) actuarial or other services to the client. However, higher pay is found when benchmarking data are obtained from multiple consultants, which the authors conclude reflects the use of consultants to justify or legitimize excessive pay levels. Murphy and Sandino (2008) do not examine the influence of corporate governance on the relation between consultant use and CEO compensation.

In sum, existing evidence on the relation between compensation consultants and CEO pay levels is mixed. Academic studies suggest that compensation levels are higher in consulting clients, but that these pay differentials are not related to economic characteristics or conflicts of interest. However, little evidence exists on whether any associations between compensation consultants and CEO pay are related to corporate

governance which is one of the primary arguments underpinning the "rent extraction" view.

3. Sample and variable measurement

Our sample consists of 2,116 publicly-traded companies with fiscal years ending on or after December 31, 2006 (thereby falling under the new disclosure requirements) that filed their annual proxy statements (DEF 14A) as of December 14, 2007, and having available data for the variables used in our analyses. These companies are primarily in the Russell 3000, plus select smaller companies meeting these criteria. Our sample is broadly representative of corporations in the economy and consists of considerably more firms than the samples in related studies.

3.1. *Compensation Consultant Use*.

The use and identity of compensation consultants are collected from the compensation committee report in the companies' most recent proxy statement. In most cases, the primary consultant is clearly identified in the text of the proxy. If no consultant is discussed, we classify the company as not using a consultant (i.e., "None"). To focus on consultants that provide strategic compensation advice, we classify companies that only use consultants for benchmarking data as *not* using consultants for advice. In some instances, multiple consultants are listed.[4] In these cases, we code the consultant used by the company for senior executive compensation advice as the company's consultant.

87.00% of our sample use consultants for compensation advice, with the remaining 13.00% coded "None" for compensation consultant use. A total of 95 different

[4] A common example of multiple consultants being listed is one consulting firm providing compensation advice for senior executives and another providing advice for lower-level management.

consulting firms are employed, with nine consultants engaged by more than 40 companies. The most frequently used consultant is Towers Perrin (12.24% of the sample), followed by Mercer (11.07%), Frederic Cook (8.96%), Hewitt (8.11%), Watson Wyatt (5.42%), Pearl Meyer (4.80%), Radford (2.64%), Compensia (2.47%), and Hay (2.33%). Frederic Cook, Pearl Meyer, and Compensia are specialized compensation consulting firms, while Towers Perrin, Mercer, Hewitt, Watson Wyatt, Radford, and Hay offer a broad range of additional consulting services, potentially leading to conflicts of interest. The remaining companies use a wide variety of different consulting firms, most of which are small, boutique compensation consultants. We code the consultants for these companies as "Other" (31.42% of our sample).

3.2. *Compensation*.

Given the focus on total pay levels in recent debates over compensation consultants, we examine the CEO's total annual compensation in the latest fiscal year. Total annual compensation is defined as the sum of salary, actual bonus, target long-term incentive plan payments, pension contributions and other perquisites, the Black-Scholes value of stock option grants, and the market value of restricted and unrestricted stock grants. As is common in executive compensation studies (e.g., Core and Guay, 1999), we apply a time discount of 0.70 to option maturity when calculating the option's Black-Scholes value to account for the prevalence of early option exercises. Annual compensation in our sample ranges from $0 to $91,375,384, with a mean (median) of $4,974,377 ($2,703,304). Similar to most executive compensation studies, we use the natural logarithm of this number in our analyses due to the highly (right) skewed distribution of pay.

3.3 *Economic Determinants*.

Consistent with prior theoretical and empirical compensation research, we include a number of variables to capture potential economic determinants of CEO pay. Studies suggest that CEO compensation levels should be increasing in firm size, investment opportunities, and operating and stock price performance (e.g., Murphy, 1999; Lambert and Larcker, 1985; Smith and Watts, 1992; Core and Guay, 1999). We measure firm size using the variable *Log(Market Cap)*, which equals the natural logarithm of the firm's market capitalization at the beginning of the fiscal year. Previous studies suggest that two elements of operating performance are important in assessing executive pay levels. First, operating performance in the previous year provides a reasonable estimate for expected performance in the current year, which is likely to influence the *target* pay levels set by companies. Second, changes in operating performance during the period determine actual bonus payouts and other variable pay elements that are based on the period's operating performance improvement. We therefore use two variables to measure operating performance. *Return-on-Assets* is the company's net income in the prior year, scaled by the average of beginning and end of year total assets. *Change in Return-on-Assets* is the change in ROA in the current year. We also include prior stock price performance over the two prior years, denoted *Prior Return (-1)* and *Prior Return (-2).* Two return measures are used to capture the possibility that Boards exhibit lags in their CEO pay decisions. Similar to prior studies, we use the *Book-to-Market* ratio as an inverse measure of the company's investment opportunities. *Book-to-Market* equals the book value of the firm's total assets scaled by market capitalization, both measured at the beginning of the fiscal year. Lower book-to-market ratios are expected to reflect greater

investment opportunities since much of the market's valuation of the company (and future cash flows) reflects factors that are not captured in the company's current assets.

CEO-specific characteristics may also influence compensation levels. Pay, for example, is likely to be higher for more experienced CEOs. We use three variables to capture CEO experience: *CEO Tenure* (number of years the current CEO has held the Chief Executive Officer title), *CEO Age* (age of the current CEO in years), and *New CEO* (an indicator equal to one if the CEO was appointed to this position during the fiscal year). The *New CEO* variable is included because firms often provide relatively large compensation packages in the first year of a CEO's tenure to establish a certain level of equity incentives and to make the CEO whole with respect to any compensation forfeited from his or her prior employer.

CEOs may also have other economic incentives that substitute for annual pay. To control for the CEO's existing equity incentives, we include *Log(1+Portfolio IV)* which equals the natural logarithm of one plus the intrinsic value of the CEO's equity portfolio of stock, restricted stock, and option holdings (both vested and unvested). There are two possible pay outcomes associated with equity incentives. If the CEO's existing equity incentives (and total wealth) are high, there may be little reason to provide additional incentives using annual compensation, and compensation levels may be lower. In contrast, if the equity incentives provide the CEO with considerable power over the Board, we may observe higher annual compensation. Finally, we include *Founder CEO* (an indicator that equals one if the current CEO is one of the company's founders) since company founders may have incentives other than maximizing pay.

3.4. *Governance Measures*.

Prior studies linking corporate governance to compensation practices have examined three broad categories of governance constructs: (1) Board of Director characteristics; (2) Board rules; and (3) state antitakeover laws. We obtain Board of Director data from the Equilar analysis of proxy statements and antitakeover data from *FactSet SharkRepellent*.

Consistent with earlier studies, we use six variables to capture Board characteristics. The number of Board of Director members is measured using *Log(1 + Directors)*, with the natural logarithm used to account for skewness in the number of directors. Yermack (1996) and Coles et al. (2008) find that board size affects managerial and board decision-making. *Fraction Inside Directors* is the percentage of Board members classified as insiders (where insiders are defined as being members of management).[5] *Fraction Board Old* is the percentage of Board members who are at least 69 years old, and *Fraction of Board Busy* is the percentage of Board members who serve on at least two Boards of Directors. Core et al. (1999) find these variables related to (excess) CEO compensation. *Outside Lead Director* is an indicator that equals one if the lead director is classified as an outsider and zero otherwise (where outsiders are not involved in the management of the company and do not have substantial business dealings with the company). *Fraction Outsiders Appointed by CEO* is the percentage of Board members classified as outsiders who were appointed after the current CEO's term began. Following prior studies, we expect stronger Board governance to be positively related to *Outside Lead Director* and negatively related to the other Board characteristic variables.

Studies by Gompers et al. (2003), Daines and Klausner (2001), Bebchuk and Cohen (2005), and Faleye (2007) suggest that charter and bylaw rules also influence the

[5] The definitions of inside and outside Board members are consistent with the NYSE definitions used for listing requirements. These definitions are used in proxy statements and are adopted in our measures. We do not use Board members classified as affiliated (or "gray") in our analyses.

effectiveness of corporate governance, and potentially executive pay levels. We include four variables that these studies suggest are important indicators of governance effectiveness. The first three variables represent indicators for whether the company's Board members are all elected annually or are elected to staggered, multiyear terms. Activist shareholders argue that staggered terms impede shareholders' monitoring of the Board by making it more difficult for them to alter the Board's composition over a short time period. *No Staggered Board* equals one if the company elects all Board members annually, *Staggered Board – Charter* equals one if the company has staggered Board elections by charter provisions, and *Staggered Board – Bylaws* equals one if the company has staggered board elections in its bylaws. Daines and Klausner (2001) argue that the weakest governance occurs when the company has a staggered Board in its bylaws, followed by a staggered Board by charter (which is easier for shareholders to change than bylaws), with the strongest governance when Board elections are not staggered. Our fourth board rule variable, *Dual Class Shares*, equals one if the company has multiple classes of shares with unequal voting rights. Dual class shares are argued to be an indicator of weaker governance (Gompers et al., 2003).

Finally, following Bebchuk et al. (2002), Cheng et al. (2005), and Wahal et al. (1995), we include variables for state antitakeover laws. Their results suggest that the introduction of stronger antitakeover legislation leads to greater management entrenchment and weaker corporate governance. We use four indicators to capture the strength of antitakeover laws in the company's state of incorporation. *No State Antitakeover Laws* equals one if the state of incorporation has no such laws, *Lax Laws & Opt Out* equals one if antitakeover laws are weak and the company can opt out of their

use, *Strict Laws & Opt Out* equals one if the laws are strict but the company can opt out, and *Strict Laws & No Opt Out* equals one if the company must follow strict antitakeover rules. We expect governance strength to decline with the presence and need to follow antitakeover laws, with the strongest governance when there are no antitakeover laws and weakest governance when these laws are strict and required.

3.5. *Industry*.

In addition to the preceding economic and governance factors, compensation consulting firms and prior compensation research emphasize the importance of industry membership for labor market benchmarking purposes. To control for industry membership, we supplement our analyses with two methods. First, we follow prior literature and use industry fixed effects to capture industry-specific differences in compensation levels. These fixed effects indicators are based on two-digit SIC codes unless there are fewer than 25 observations in the industry, in which case we use one-digit SIC codes.

The drawback with industry fixed effects is the number of parameters that must be estimated, which becomes infeasible when we estimate separate compensation regressions for each consultant or consultant category. Consequently, we use *Benchmark Comp* as an alternative industry control. This variable equals the average total compensation of other sample firms in the same industry (based on two-digit SIC unless there are fewer than 25 observations, in which case one-digit SIC is used) and, like industry fixed effects, is included to capture the average level of compensation in the firm's industry. The benefit of *Benchmark Comp* relative to industry fixed effects is that

it requires the estimation of only a single parameter, facilitating the estimation of consultant-specific models.

3.6. *Descriptive Statistics*.

Descriptive statistics for CEO compensation and the economic and governance variables are presented in Table 1. The table reports individual statistics for the nine most frequently used consulting firms, as well as for the "Other" and "None" consultant categories. Both parametric and nonparametric (Kruskal-Wallis) one-way analysis of variance tests indicate that most of the variables are significantly different across compensation consultant categories. The exceptions are *Prior Return (-1)*, *No State Antitakeover Laws*, *Lax Laws & Opt Out*, *No Staggered Board*, and *Staggered – Charter*. There is no discernable pattern in total compensation between companies using consultants and those not using consultants, with mean and median total compensation levels in the "None" category similar to or greater than similar statistics in some of the consultant categories.

4. Results

4.1 *OLS Tests of Compensation Levels and Economic Determinants*

We begin our analysis by examining whether companies using compensation consultants have higher CEO pay levels after accounting for the influence of economic determinants. Similar to prior compensation studies, our initial tests estimate ordinary least squares (OLS) models with total pay levels as the dependent variable and indicators for individual consulting firms (with "None" as the omitted category) and the economic variables as predictors (or covariates). If differences in pay levels between firms that do

and do not use compensation consultants are simply due to differences in economic factors (and the models are well-specified), then the consultant indicators should not be significantly different from zero after controlling for these factors.

The results from these tests are provided in Panel A of Table 2. Model 1 estimates the regression without industry controls, Model 2 includes industry fixed effects, and Model 3 includes the *Benchmark Comp* control variable as an alternative to industry fixed effects. The t-statistics for Models 1 and 3 are based on robust standard errors clustered at the one-digit SIC level and those for Model 2 are based on White's (1980) heteroscedasticity-adjusted standard errors. The models are highly significant, with adjusted R^2s ranging from 63.5% to 66.8%. The majority of the explanatory power is provided by the economic variables, as evidenced by an adjusted R^2 of 61.0% in an (untabulated) model that includes only the eleven economic variables and an adjusted R^2 of 58.0% in a model including only firm size.

Coefficient signs on most of the economic determinants are consistent with expectations. Pay tends to be higher in larger companies, in those with higher stock returns in the prior year, and for CEOs who are older and have larger existing equity holdings. Pay tends to be lower when *Book-to-Market* is lower and the CEO is either new to the position or a company founder. Contrary to predictions, pay is lower when *Return-on-Assets* was higher in the prior year, after controlling for the other economic determinants.

All of the coefficients on the consulting firm indicators are positive and, with the exception of the coefficients on Hay in Models 2 and 3, statistically significant ($p < 0.10$, two-tailed). The significant coefficients (which represent semi-elasticities) in Model 2

indicate that pay levels in clients of the various consultant categories range from 26% ("Other") to 39% (Frederic Cook) higher than those in companies that do not employ consultants. These results are consistent with claims that compensation consultants provide a mechanism for executives to extract excess pay levels that cannot be explained by differences in economic factors.

We test for differences in coefficient magnitudes across the consultant indicators in Panels B, C, and D of Table 2 (corresponding to Models 1, 2, and 3, respectively, in Panel A of Table 2). The coefficients on Hay, a non-specialist human resource consulting firm that the U.S. House of Representatives report classifies as "conflicted," are statistically *smaller* than those for the other consultant categories in nearly all of the comparisons. Coefficients across the other eight most frequently used consultants are statistically similar, particularly after controlling for industry composition. In contrast, there is some evidence that pay levels of companies using "Other" consultants are lower than those in companies using these eight firms, though the significance levels vary depending upon the model specification. In general, the tests of consultant coefficient equality provide limited support for claimed differences between pay levels in companies using specialized versus non-specialized consultants, or using large consulting firms versus small, boutique consultants.

4.2 *Matched Pairs Tests of Compensation Levels and Economic Determinants*

There are two important limitations with the traditional linear regression approach used in the preceding tests and related research. First, this approach relies on a linear functional form linking the outcome variable of interest (level of CEO compensation) with both the independent variable of interest (compensation consultant) and the other

predictor variables or "covariates" (firm size, industry, etc.). To the extent this linearity assumption is violated, the model is misspecified and can produce biased parameter estimates. Second, correlated omitted variables are likely to affect the parameter estimates derived from a linear model. In order to mitigate these econometric problems, we also utilize a propensity score matched pair research design (Rosenbaum and Rubin, 1983).

Given the absence of strong theoretical predictions regarding the choice of compensation consultants or the role of compensation consultants in the pay determination process, a matched pair approach is desirable because it relaxes the strict functional form of the relation between total compensation and the compensation consultant treatment and other covariates that is implicit in a linear regression model. Linear regression (for the pooled sample) will produce unbiased parameter estimates only if there is an identical linear relationship between the outcome variable and the covariates for each compensation consultant category. If, instead, the relationship between the outcome variable and covariates differs across compensation consultant categories or is nonlinear, a linear model will be misspecified and will deliver biased parameter estimates. With a matched pair research design, the matched pairs are formed from observations that differ in the variable of interest (i.e., compensation consultant in this study) but are otherwise similar along other relevant variables (i.e., economic and governance characteristics). Thus, any differences in CEO compensation levels can be attributed to differences in the use of a compensation consultant rather than to differences in the other covariates, regardless of the underlying structural form.

A second advantage of a matched pair design is that the impact of unobserved correlated omitted variables (or hidden bias) in the research design can be assessed.[6] In particular, our matched pair research design explicitly acknowledges that the observed compensation consultant is not a result of random or exogenous assignment and attempts to model the matching of firms with their respective compensation consultants on the basis of observable variables (e.g., economic and governance characteristics). After matched pairs have been formed on the basis of observable characteristics and statistical tests for differences in compensation conducted, we can assess the sensitivity of our significant results to unobservable, correlated omitted variables. Specifically, we can determine the magnitude of the correlated omitted variable bias that is necessary to cause any statistically significant differences between matched pair to become insignificant. This computation enables us to provide some insight into whether the observed results are statistically robust.

Our propensity score matched pair research design requires a model for the conditional probability of choosing a certain compensation consultant (or no consultant) given observable features of the company's contracting environment. We assume that the choice of consultant is based on the economic covariates discussed above, and estimate a series of multivariate logistic models where the dependent variable in each model equals one if a given consultant category (i.e., the nine most frequently used

[6] An alternative way of characterizing the correlated omitted variable problem in our setting is that there is the potential for endogenous matching of companies with compensation consultants. If, for example, companies with relatively weak governance tend to use certain compensation consultants, then matching economic characteristics alone would leave open the possibility that there are certain governance variables that lead to the observed matches. Endogeneity can be addressed in OLS models using two-stage procedures. However, this requires the identification of appropriate instruments that are correlated with the independent variable of interest but uncorrelated with the error term in the model, which can difficult in an exploratory study such as this. In addition, two-stage least squares continues to rely on linearity assumptions. As a result, Larcker and Rusticus (2005) show that only under very restrictive conditions will two-stage least squares reduce endogeneity problems in OLS.

consultants, "Other," and "None") is used, and zero otherwise. The economic variables defined previously serve as covariates.

After estimating the conditional probability that a company uses a given consultant, we then match each company in a given consultant category (e.g., a company using Frederic Cook) with a company having a similar probability of being in that category, but in fact is in a different consultant category (e.g., Hewitt Associates). We employ a nonbipartite matching algorithm suggested by Derigs (1988), which is an "optimal" algorithm in the sense that it considers the potential distances between *other* matched pairs when forming a particular matched pair.[7]

Panel A of Table 3 presents the frequencies with which companies using each of the consultant categories are matched with companies using another consultant. For example, the first row labeled "Cook" has no entry in the first column because we preclude matching a company using a particular consultant with another company using that same consultant. The 26 in the second column indicates that 26 companies using Frederic Cook are matched with companies having similar economic covariates (and thus a similar conditional probability of using Frederic Cook as their consultant) but using Hewitt Associates as their compensation consultant.

We evaluate the efficacy of our matching algorithm by examining the covariate balance (i.e., the similarity of the covariate distributions) between the matched pairs within each consultant category. Covariate balance is achieved if the two matched

[7] Untabulated results from propensity score (logistic) models using the economic covariates indicate modest explanatory power, and relatively few of the covariates are significant in any of the specifications. The propensity score model for the "None" category has substantially more explanatory power than for the remaining categories, but it is still relatively modest with a pseudo adjusted R^2 of 14.4%. Overall, the modest explanatory power and covariate significance levels in the prediction models indicate that the economic covariates have only limited influence on the choice of compensation consultant.

groups appear similar with respect to their observable contracting environments (i.e., the economic covariates in the propensity score equation). Lack of balance across certain covariates highlights an identification problem that makes it difficult to separate the effects of the treatment (i.e., the compensation consultant category) from the effect of the unbalanced covariate (e.g., firm size).[8]

To assess covariate balance between the treatment and control groups, we conduct tests of differences in means using parametric t-tests and for differences in medians using nonparametric Kolmogorov-Smirnov (KS) tests (not reported in the tables). The results indicate that none of the mean comparisons and only three of the 121 median comparisons are significantly different ($p < 0.10$, two-tailed), providing evidence that the economic covariates are balanced across the matched pairs.

Panel B of Table 3 presents the matched pair results comparing the relations between the use of a given consultant category and CEO pay levels. We conduct parametric and nonparametric tests of pay level differentials using t-tests and Wilcoxon signed-rank tests. The results indicate that companies using Frederic Cook as their compensation consultant have statistically higher CEO pay ($p < 0.01$, two-tail) than their matched counterparts that look similar along observable economic dimensions. The mean ($1,205,683) and median ($692,346) differences in total pay at Frederic Cook clients relative to their matched counterparts are also the largest in the comparisons and are

[8] To illustrate this point in the current context, suppose Frederic Cook always consults for relatively large companies. Further, suppose that it is not possible to pair firms that use Frederic Cook as their compensation consultant with firms of a similar size that use a compensation consultant other than Frederic Cook. In that case, there is a lack of balance across the matched pairs with respect to firm size. Consequently, any difference in the total level of compensation across the matched pairs cannot be unambiguously attributed to having Frederic Cook as the compensation consultant, because the difference could also be attributable to differences in firm size. Examining the covariate balance across the matched pairs is thus crucial for highlighting any identification problems that might exist.

economically significant. The higher pay in clients of Frederic Cook, a specialist compensation consulting firm, is inconsistent with claims that "conflicted," non-specialist consultants have the greatest incentive to inflate executive pay. The only other statistically significant comparison ($p < 0.10$) is the lower pay levels in companies that do not use consultants relative to matched pairs that use consultants (mean = -$347,521; median = -$189,634). These lower pay levels are consistent with consulting clients paying more than predicted by economic characteristics, though the difference is only significant in the nonparametric Wilcoxon test.

Overall, the matched pair results suggest that total pay levels are roughly equivalent across most consulting firms after matching on economic characteristics, and again provide little evidence that broad classifications such as specialist versus non-specialist consulting firms or large consultants versus smaller boutique firms are useful distinctions when assessing CEO pay levels. In particular, pay levels in the "Other" consultant category are no longer statistically different after matching on the economic covariates, suggesting that the small, boutique firms that dominate this category are not associated with lower levels of CEO pay. However, the matched pair results again provide some evidence that total pay levels are lower in companies without compensation consultants, even after controlling for economic characteristics.

4.3. Pay Mix and Compensation Levels

One potential omitted variable in the preceding tests is the mix of pay between relatively fixed components such as salary, benefits, and short-term bonuses and riskier long-term variable pay components such as stock options, restricted stock, and performance units. Economic theory indicates that expected pay levels must be higher

when pay is riskier to compensate the executive for the additional risk. Consequently, if firms using consultants provide riskier performance-based pay packages, any increase in pay levels may be due to an increase in compensation risk.

Similar to Core et al. (1999) and Murphy and Sandino (2008), we control for this possibility by including pay mix as an additional economic determinant of compensation levels. The variable *Paymix* equals the ratio of long-term variable pay (stock options, restricted stock, and performance units) to total compensation.[9] If differences in total pay levels are simply due to differences in pay mix and other economic determinants, we should see no consultant effect after controlling for these factors.

The results from these analyses are provided in Table 4. Panel A reports OLS regression estimates using the economic variables, pay mix, and industry fixed effects as predictors (results are similar using *Benchmark Comp*). As expected, total pay increases with the extent of compensation risk, with the coefficient on *Paymix* positive and highly significant. More importantly, with the exception of the now insignificant coefficient on Compensia, the results for the consultant indicators are consistent with those in Table 2. Pay levels in Hay clients remain insignificantly different than pay levels in non-consultant companies, while clients of the remaining consultant categories have significantly higher total pay than non-consultant companies.

Panel B of Table 4 compares total pay levels after including *Paymix* in the propensity score matching model. Untabulated analyses indicate that the propensity score model exhibits adequate explanatory power and covariate balance. The inclusion of pay mix in the matching procedure does relatively little to alter the conclusions from Table 3.

[9] Results are similar if we include bonuses in the numerator to get a more inclusive measure of variable pay.

Frederic Cook clients no longer exhibit significantly higher pay, and Pearl Meyer clients now have significantly lower total pay. More importantly, companies that do not use consultants continue to have lower pay levels than matched users (mean = -$477,260; median = -$56,772). Furthermore, these pay differences are now significant using either t-tests or Wilcoxon tests ($p < 0.10$, two-tailed), whereas they were only significant in the Table 3 Wilcoxon tests when *Paymix* was not used in matching. The statistically lower pay in both tests provides further evidence that economic characteristics alone do not explain the higher pay in consulting clients.

4.4. Correlated Omitted Variable (or Hidden) Bias

One explanation for the statistically significant differences in pay between consultant users and non-users is that there is a "consultant effect" that causes pay in consulting clients to be higher, independent of company differences. For example, the benchmarking services provided by consultants may lead most consultants' clients to pay executives more to avoid being below the median compensation level of peers in the benchmarking surveys (e.g., Crystal, 1991; Conyon et al., 2006). An alternative explanation is that there are correlated omitted variables that are driving the significant consultant results.

Propensity score matching mitigates overt bias by balancing the relevant covariates across the two categories of interest (e.g., firms that use Frederic Cook and matched firms that do not). However, the results are susceptible to "hidden bias" as a result of correlated omitted variables that are not balanced across the two categories. Rosenbaum (2002, 2007) develops a bounding approach for assessing the sensitivity of the matched pair results to hidden bias. In our context, hidden bias exists if two companies (denoted i

and j) have the same observed economic covariates, but different probabilities (denoted π) of being assigned to a consultant category (e.g., Frederic Cook). The odds that each company was assigned to the relevant consultant category are denoted $\pi_i/(1-\pi_i)$ and $\pi_j/(1-\pi_j)$ respectively. If the odds ratio, denoted by Γ, does not equal one, then the two companies have an unequal probability of being assigned to a consultant category and hidden bias exists. Rosenbaum (2002) shows that relaxing the assumption that $\Gamma = 1$ allows computation of the amount of hidden bias needed to alter the significant inferences. Smaller values indicate statistically significant results that are more sensitive to hidden bias.

When we assess the sensitivity of our significant results based on matching economic covariates but not *Paymix*, the significant (negative) difference in median pay between the companies that do not use consultants ("None") and their matched counterparts would become insignificant if $\Gamma = 1.20$. The Γ of 1.20 means that a correlated omitted variable (or variables) would only have to shift the assumed equal (50%/50%) probability of being assigned to the "None" category to a 54.5% probability of being in this group for the significant result to become insignificant at the 10% level. Thus, omitting a relevant variable that is only mildly correlated with being in the "None" group and with pay levels could drive the significant results. When *Paymix* is also included in the matching, the significant mean and median differences for companies that do not use compensation consultants are sensitive to hidden bias starting at $\Gamma = 1.01$ and $\Gamma = 1.45$, respectively. Similarly, values of $\Gamma = 1.12$ and $\Gamma = 1.08$ result in insignificant mean and median pay differences between Frederic Cook clients and their matched counterparts when *Paymix* is excluded, and values of $\Gamma = 1.26$ and $\Gamma = 1.45$ result in mean and median differences

in Pearl clients becoming insignificant in results matching on *Paymix*. The small magnitudes for Γ in these analyses indicate that our results are sensitive to hidden bias due to correlated omitted variables.

4.5. OLS Results Using Economic and Governance Variables

One of the most plausible sources of hidden bias is companies' governance characteristics. A primary criticism of compensation consultants is that they provide a mechanism for executives of companies with weak governance to extract excess pay, and numerous executive compensation studies have found significant relations between governance characteristics and pay levels. Although related compensation consultant studies find that differences in CEO tenure (Conyon et al., 2006) and Board member tenure (Cadman et al., 2008) do not explain the higher observed pay in companies using consultants, these studies consider only a very limited set of corporate governance characteristics.

The OLS regressions in Panel A of Table 5 add the governance variables to earlier models that included consultant indicators, economic variables, and industry controls as predictors. The addition of the governance variables increases the models' adjusted R^2s from 1.3% to 1.8%. F-tests for the changes in R^2s from the addition of the governance variables are highly significant ($p < 0.001$) in all three models, indicating that these variables add statistically significant (though modest economic) explanatory power. The most robust governance results are the significantly positive coefficients on *Fraction Inside Directors*, *Fraction Board Busy*, and *Outside Lead Director* in all three models. The greater CEO pay levels in companies with larger proportions of inside Board members and busy Board members are consistent with claims that these characteristics

are indicative of weaker Board oversight that allows CEOs to extract excess compensation. However, the higher pay in companies with outside lead directors runs counter to expectations. The positive and significant coefficients on *Lax Laws & No Opt Out* in Models 1 and 3 are also inconsistent with our predictions.

More importantly, the results for the compensation consultant indicator variables are consistent with the earlier results in Table 2 (which tested whether CEO pay levels are greater when a consultant is used, without controlling for governance characteristics). In particular, all of the coefficients (with the exception of Hay) are again positive and statistically significant ($p < 0.10$, two-tailed). The significant coefficients on the consultant indicators in Model 2 imply that pay levels in consultant users (other than Hay clients) range from 22% (Watson Wyatt and "Other") to 33% (Radford) higher than in non-users, after controlling for economic and governance differences.

However, in contrast to Table 2, when we test for consultant coefficient equality in Panels B to D of Table 5, many of the significant differences between the most frequently used consultants and "Other" consultants disappear when industry controls are included in the models. For example, whereas all but one of the comparisons with "Other" were previously significant in Model 3 ($p < 0.10$, two-tailed), only three are significant when the governance variables are included in the model. Thus, although the inclusion of governance characteristics in OLS tests does not explain the higher pay levels found when consultants are used, it does appear to explain some of the differences in pay levels *across* consulting firms observed in OLS regressions without the governance variables.

4.6. Matched Pair Results Using Economic and Governance Covariates

To further examine the impact of corporate governance on the relation between compensation consultants and pay levels, we extend our matched pair analysis to include *both* economic and governance covariates. This analysis parallels our previous test that only matched on economic covariates. All of the (untabulated) propensity score models using both sets of variables have greater explanatory power (as measured by adjusted pseudo R^2s) than those using only economic covariates. The mean and median adjusted pseudo R^2 are 89.1% and 58.8% larger, respectively, after the inclusion of the governance variables, indicating that corporate governance has a substantial impact on the choice of compensation consultant.

Panel A of Table 6 presents the frequencies with which companies using each consultant category are matched with a company having similar economic and governance characteristics but using another consultant category. The frequencies suggest that there is general balance across the consultant categories and that no single counterpart dominates when forming the matched pairs for a given consultant. Untabulated tests for covariate balance across these matched pairs suggest that the matching algorithm was effective in identifying firms that are similar along economic and governance dimensions, but are in different compensation consultant categories.

Panel B of Table 6 reports test results for differences in compensation levels after matching on both economic and governance characteristics. In contrast to earlier results, neither the Wilcoxon z-statistics nor the t-statistics are statistically significant for any of the consultant categories. This suggests that once companies using (or not using) a particular consultant are matched with companies that are similar along both economic and governance dimensions, there is no statistical difference in CEO compensation

levels.[10] This result also holds for the "None" group, which was previously found to have significantly lower compensation when only economic characteristics were considered in the matched pair analysis.

The lack of significant differences after matching on governance implies that these governance characteristics are important correlated omitted variables in tests that include economic characteristics alone. When we examine mean and median differences in governance characteristics in companies that were only matched on economic variables, the consulting clients matched with the no consultant companies have significantly more Board members and a larger percentage of inside directors, are more likely to have staggered Board elections and an outside lead director, and are less likely to have dual class shares with different voting rights (not reported in the table). These differences indicate that the matched groups differ significantly across a number of governance practices. However, as shown in Panel C of Table 6, when matched on both economic and governance variables, the "None" group and its matched consulting client counterparts exhibit no significant differences on any of these governance dimensions. Moreover, the non-matched consulting clients are significantly different than both the "None" and matched consulting groups on nearly every governance dimension. Pooling both groups of consulting clients together in the matching process without taking into

[10] Although our tests using the individual consultant categories provide little support for claims that pay is higher in clients of "conflicted" consultants, our "Other" category, though dominated by small, boutique compensation consultants, also includes some larger, "conflicted" firms (such as large accounting firms). We therefore repeat the analyses with all specialist compensation consultants classified as "non-conflicted" and all non-specialist consultants that provide a broad range of services as "conflicted." Companies that do not use a consultant are excluded. Although the coefficients on the conflicted consultant indicator are positive in OLS tests, they are not statistically significant. Similarly, propensity score matched pair analysis identifies no significant differences in pay levels across the two groups. However, adequate covariate balance could not be achieved for several covariates in the matching process, so the propensity score matched pair results should be interpreted with caution. These results provide no support for the claim that pay levels are higher in potentially "conflicted" consulting firms that offer a broad variety of services.

consideration their substantial governance differences leads to erroneous inferences regarding the relation between consultant use and pay levels.

As a robustness check, we repeat the analysis after including *Paymix* as an additional variable in the matching criteria to control for differences in compensation risk.[11] As shown in Table 7, none of the comparisons between the various consultant categories or between these categories and the "None" category is statistically significant when this variable is included along with the economic and governance characteristics, again indicating that governance differences account for much of the higher pay levels in compensation consultant users, and suggesting that differences in compensation risk are not driving our results.

4.7 Consultant-Specific Tests of Governance Effects.

The matched pair results using both economic and governance covariates indicate that any differences in pay levels across consultant categories are due in large part to difference in governance characteristics across our sample. This evidence is consistent with prior studies that find governance factors important in explaining executive compensation levels (e.g., Conyon and Peck, 1998; Daily et al., 1998; Core et al., 1999). The results are also consistent with claims that clients with weak governance use consultants to facilitate or justify excess pay packages, while those with stronger governance use consultants to design economically-appropriate compensation plans.

To provide additional evidence on this conclusion, we examine whether governance factors explain compensation differences in clients *within* each of the consultant categories. We estimate separate regression models for each consultant category, with

[11] We also reestimated the regressions in Table 5 after including *Paymix*. This variable was positive and highly significant, but inferences regarding the other variables remained unchanged.

the economic, governance, and *Benchmark Comp* variables as predictors. The consultant-specific regressions have the additional advantage of allowing the coefficients on the predictor variables to vary across consultant categories, rather than constraining them to be identical across categories as was done in earlier regressions. Given the relatively small sample sizes in some of the consultant categories, we focus on whether the governance variables as a group add significant explanatory power to the models.

The results are provided in Table 8. F-tests for the change in R^2 from the introduction of the governance variables indicate that these variables are jointly significant for all of the consulting firms except Compensia and Pearl Meyer (which may be due to the small sample sizes for these firms) and significant for the "Other" consultant category. The two governance variables that are most consistently significant across consulting firms are *Fraction of Board Busy* and *Dual Class Shares*, both of which are positive and significant in most of the regressions. Prior studies argue that these two variables are indicative of weak governance (Core et al., 1999; Fich and Shivdasani, 2006; Wang et al., 2007; Faleye, 2007). Consequently, the positive associations suggest that clients with weaker governance (as measured by these two variables) consistently have higher CEO pay levels across consultant categories.

We also find that the governance variables are not jointly significant in the model for companies without a compensation consultant (i.e., the "None" category). Moreover, the adjusted R^2 for the "None" model is substantially lower than those for the consulting firm-specific regressions. The lower explanatory power in this model suggests that companies that do not use compensation consultants consider different factors when setting pay levels. While these results provide no evidence that consulting firms play an

active role in allowing CEOs of companies with weak governance to extract excess pay, they do suggest that the relation between weak governance and higher pay is more likely in companies that use consulting firms for executive pay advice than in those that do not use them.

5. Conclusion

This study contributes to the increasing debate over the influence of compensation consultants on CEO pay levels. Our paper extends related studies on the relation between compensation consultants and executive pay along several dimensions. First, our significantly larger sample not only increases the power of our tests, but also allows us to greatly expand the analyses of individual consulting firms. Second, the use of propensity score matched pair analysis enables us to relax the strict linear assumptions of OLS methods and to assess the potential of hidden correlated omitted variables bias driving any significant results. Most importantly, we provide the first extensive analysis of the impact of corporate governance on the consultant-CEO pay relation, thereby allowing a more thorough investigation of charges that consultants are used by companies with weak corporate governance to facilitate the extraction of excess pay.

We find that total CEO pay is higher than predicted by economic characteristics in clients of most consulting firms, but that pay levels *across* clients of different consultants are generally similar after controlling for these economic characteristics in matched pair tests. The similar pay levels across clients of different consultants provide little support for the claimed higher pay in clients of consultants who offer a broad range of services,

which critics charge leads to conflicts of interest between consulting firms and shareholders.

Although both the finding of higher pay in consulting clients and the lack of empirical evidence that the higher pay is driven by conflicts of interest is consistent with related studies, these results and those in the other studies do not account for differences in many corporate governance characteristics. As a result, findings of significantly higher pay in consulting clients are subject to possible correlated omitted variables problems. After using propensity scoring methods to match companies on both economic and governance characteristics, we find no significant difference in pay levels between clients of different consulting firms, or between firms that use and do not use compensation consultants. These results provide the first evidence that the higher pay found in consulting clients is largely due to differences in corporate governance, rather than to the simple use or non-use of consultants.

Our results are subject to two primary limitations. First, we (and other studies using US proxy statement data) do not have information on the magnitude of other, non-compensation services provided by consultants because this information is not required to be disclosed by US companies. This limits our ability to examine claims that consultants with conflicts of interest contribute to rent extraction. Second, we have no way of determining whether consultants play an active role in facilitating rent extraction by CEOs. However, at the very least, our results suggest that consultants can attempt to constrain such practices. As noted by the head of an independent consulting firm, "It's not so much that the consultant facilitates, but that the consultant doesn't apply the

brakes. You have to read clients the riot act from time to time – you have to be willing to walk away to the point of being fired" (cited in Morgensen, 2006c).

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Table 1

Descriptive Statistics for Economic and Governance Covariates by Compensation Consultant Category

	Cook		Hewitt		Mercer		Towers		Watson		Hay	
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
Total Annual Compensation	7,173	5,306	6,937	4,975	6,180	3,967	6,482	4,268	5,050	3,362	3,460	1,883
Comp Mix	0.479	0.464	0.524	0.508	0.533	0.501	0.518	0.500	0.526	0.501	0.609	0.613
Market Capitalization	10,605	2,243	8,946	2,633	6,818	1,931	8,133	1,885	4,034	1,525	6,467	741
ROA	0.03	0.04	0.05	0.04	0.03	0.04	0.03	0.04	0.02	0.03	0.02	0.04
Change in ROA	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.01	0.00
Book-to-Market	0.41	0.38	-0.48	0.36	0.31	0.42	0.48	0.46	0.11	0.41	0.52	0.46
Prior Return (-2)	0.13	0.13	0.14	0.11	0.14	0.11	0.14	0.13	0.14	0.12	0.13	0.10
Prior Return (-1)	0.18	0.16	0.17	0.13	0.15	0.11	0.16	0.15	0.17	0.13	0.25	0.18
CEO Tenure	6.21	5.00	6.00	4.90	6.20	4.60	6.26	4.95	6.94	5.40	5.05	4.15
CEO Age	54.01	54.00	54.40	55.00	54.09	54.00	54.28	54.00	54.21	54.00	53.60	54.00
Portfolio IV	104,800	41,006	93,946	35,786	88,258	33,343	89,998	28,786	84,326	27,364	67,075	17,798
New CEO	0.10	0.00	0.13	0.00	0.13	0.00	0.12	0.00	0.10	0.00	0.22	0.00
Founder CEO	0.10	0.00	0.07	0.00	0.08	0.00	0.07	0.00	0.07	0.00	0.00	0.00
Number of Directors	9.69	9.00	9.87	10.00	9.70	10.00	9.73	9.00	9.05	9.00	9.50	10.00
Fraction Comp. Cmte. Insiders	0.72	0.75	0.74	0.78	0.73	0.75	0.74	0.78	0.71	0.75	0.67	0.71
Fraction Old Board	0.10	0.09	0.10	0.08	0.11	0.10	0.12	0.10	0.12	0.10	0.15	0.09
Fraction Busy Board	0.49	0.50	0.48	0.50	0.43	0.44	0.46	0.45	0.41	0.43	0.34	0.29
Outsider Lead Director	0.48	0.00	0.55	1.00	0.48	0.00	0.44	0.00	0.46	0.00	0.30	0.00
Pctg. Outsiders Aptd. By Insider	0.62	0.67	0.57	0.60	0.65	0.73	0.58	0.60	0.63	0.71	0.57	0.65
No State Antitakeover Laws	0.03	0.00	0.03	0.00	0.03	0.00	0.01	0.00	0.03	0.00	0.02	0.00
Lax Laws & Opt Out	0.07	0.00	0.10	0.00	0.11	0.00	0.10	0.00	0.12	0.00	0.16	0.00
Strict Laws & Opt Out	0.05	0.00	0.07	0.00	0.07	0.00	0.11	0.00	0.07	0.00	0.12	0.00
Lax Laws & No Opt Out	0.81	1.00	0.75	1.00	0.72	1.00	0.62	1.00	0.69	1.00	0.58	1.00
Strict Laws & No Opt Out	0.05	0.00	0.05	0.00	0.08	0.00	0.16	0.00	0.09	0.00	0.12	0.00
No Stagger	0.48	0.00	0.45	0.00	0.42	0.00	0.37	0.00	0.37	0.00	0.46	0.00
Staggered Board - Charter	0.42	0.00	0.44	0.00	0.43	0.00	0.45	0.00	0.46	0.00	0.42	0.00
Staggered Board - Bylaws	0.04	0.00	0.07	0.00	0.08	0.00	0.13	0.00	0.11	0.00	0.08	0.00
Dual Class	0.10	0.00	0.10	0.00	0.06	0.00	0.08	0.00	0.05	0.00	0.08	0.00

Table 1 (cont'd)

	Radford		Compensia		Pearl Meyer		Other		None		p-values	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	ANOVA	KS
Total Annual Compensation	3,100	2,265	3,657	2,057	4,632	3,203	2,455	1,180	5,926	3,837	0.000	0.000
Comp Mix	0.432	0.411	0.394	0.324	0.563	0.545	0.659	0.664	0.515	0.496	0.000	0.000
Market Capitalization	1,606	539	3,844	799	6,581	1,226	3,659	402	7,349	1,634	0.000	0.000
Return on Assets	-0.11	0.00	0.03	0.05	0.03	0.04	0.00	0.03	0.02	0.04	0.000	0.000
Change in Return on Assets	0.07	0.00	-0.04	-0.02	0.01	0.01	-0.02	0.00	0.00	0.00	0.105	0.062
Book-to-Market	0.40	0.31	0.38	0.27	0.45	0.40	0.34	0.38	0.26	0.41	0.378	0.000
Prior Return (-2)	0.00	0.01	0.06	0.06	0.12	0.11	0.12	0.13	0.13	0.11	0.019	0.021
Prior Return (-1)	0.10	0.03	0.21	0.10	0.17	0.12	0.16	0.09	0.17	0.13	0.538	0.249
CEO Tenure	6.39	5.35	7.09	5.55	7.19	5.20	9.47	6.95	6.33	5.00	0.000	0.000
CEO Age	51.94	53.00	50.77	49.00	54.55	55.00	54.87	54.00	53.96	54.00	0.036	0.030
Portfolio IV	43,523	13,569	101,325	22,693	72,850	22,505	88,962	20,246	88,173	28,905	0.066	0.000
New CEO	0.11	0.00	0.15	0.00	0.15	0.00	0.11	0.00	0.13	0.00	0.606	0.606
Founder CEO	0.06	0.00	0.25	0.00	0.13	0.00	0.18	0.00	0.09	0.00	0.000	0.000
Number of Directors	7.96	8.00	7.44	7.00	8.86	8.00	7.71	7.50	9.42	9.00	0.000	0.000
Fraction Insider Directors	0.71	0.71	0.68	0.71	0.72	0.75	0.62	0.63	0.72	0.75	0.000	0.000
Fraction Old Board	0.07	0.00	0.09	0.00	0.12	0.10	0.16	0.13	0.11	0.10	0.000	0.001
Fraction Busy Board	0.39	0.40	0.41	0.40	0.39	0.38	0.26	0.22	0.44	0.44	0.000	0.000
Outsider Lead Director	0.26	0.00	0.27	0.00	0.47	0.00	0.24	0.00	0.45	0.00	0.000	0.000
Pctg. Outsiders Aptd. By Insider	0.73	0.75	0.63	0.75	0.65	0.71	0.73	1.00	0.62	0.67	0.000	0.000
No State Antitakeover Laws	0.00	0.00	0.04	0.00	0.01	0.00	0.02	0.00	0.02	0.00	0.537	0.536
Lax Laws & Opt Out	0.11	0.00	0.06	0.00	0.04	0.00	0.08	0.00	0.10	0.00	0.324	0.324
Strict Laws & Opt Out	0.02	0.00	0.02	0.00	0.09	0.00	0.05	0.00	0.07	0.00	0.041	0.041
Lax Laws & No Opt Out	0.81	1.00	0.88	1.00	0.76	1.00	0.80	1.00	0.72	1.00	0.000	0.000
Strict Laws & No Opt Out	0.06	0.00	0.00	0.00	0.10	0.00	0.06	0.00	0.09	0.00	0.000	0.000
No Staggered Board	0.48	0.00	0.40	0.00	0.41	0.00	0.45	0.00	0.42	0.00	0.370	0.370
Staggered Board - Charter	0.39	0.00	0.54	1.00	0.47	0.00	0.35	0.00	0.44	0.00	0.262	0.262
Staggered Board - Bylaws	0.07	0.00	0.02	0.00	0.05	0.00	0.06	0.00	0.08	0.00	0.019	0.019
Dual Class	0.04	0.00	0.02	0.00	0.06	0.00	0.11	0.00	0.07	0.00	0.412	0.411

This table presents descriptive statistics for sample firms according to compensation consultant category. Also reported are the p-value of a one-way ANOVA and Kruskal-Wallis one-way analysis of variance. The one-way ANOVA tests the joint equality of means of each covariate across consultant categories and assumes the covariates are independent, approximately normally distributed, and have equal variance. The Kruskal-Wallis one-way analysis of variance is a non-parametric test of the joint equality of medians across all consultant categories. The compensation consultant categories consist of the firms that use Frederic Cook, (Cook), Hewitt Associates (Hewitt), Mercer Consulting (Mercer), Towers Perin (Towers), Watson Wyatt (Watson), Hay Group (Hay), Radford Consulting (Radford), Compensia, Pearl Meyer, firms that use a compensation consultant other than the ones previously mentioned, and the firms that do not use a compensation consultant. We also estimate the model for the pooled sample of firms. *Total Annual Compensation* is the total compensation of the CEO in the most recent fiscal year (in thousands of dollars) which is defined as the sum of salary, actual bonus, target long-term incentive plan payments, pension contributions and other perquisites, the Black-Scholes value of stock option grants (using 70% of the option's life) and the market value of restricted and unrestricted stock grants. *Compensation Mix* is the ratio of long-term variable pay (stock options, restricted stock, and performance units) to total compensation. *Market Capitalization*

is the firm's market capitalization at the beginning of the fiscal year in millions of dollars. *Return on Assets* is the firm's net income scaled by the average of the beginning and end of year total assets. *Change in Return on Assets* is the change in the firm's return on assets (as previously defined) from the previous to the current fiscal year. *Book-to-Market* is the book value of the firm's total assets scaled by market capitalization, both measured at the fiscal year end. *Prior Return (-2)* is the stock price return over the year preceding the prior year. *Prior Return (-1)* is the stock price return over the prior year. *CEO Tenure* is the number of years the current CEO has held the Chief Executive Officer title. *CEO Age* is the age of the current CEO in years. P*ortfolio IV* is the intrinsic value of the CEO's equity portfolio of stock, restricted stock, and option holdings (both vested and unvested) in thousands of dollars. *New CEO* is an indicator equal to one if the CEO at the fiscal year end became the CEO during the fiscal year. *Founder Indicator* is an indicator that takes a value of one if the current CEO is one of the founders of the firm and zero otherwise. *Benchmark Comp.* is the average of the natural logarithm of one plus the total compensation of all the other sample firms in the same industry (based on two-digit SIC unless there are fewer than 25 observations, in which case based on one-digit SIC). *Log (1+Directors)* is the natural logarithm of one plus the number of members of the Board of Directors. *Fraction Insider Directors* is the percentage of the members of the Compensation Committee who are classified as insiders. *Fraction Board Old* is the percentage of the members of the Board of Directors who are at least 69 years old. *Fraction of Board Busy* is the percentage of the members of the Board of Directors who serve on at least two Boards of Directors. *Outside Lead Director* is an indicator that equals one if the lead director is classified as an outsider and zero otherwise. *Pctg. Outsider Apptd. By Insider* is the fraction of the members of the Board of Directors who are classified as outsiders who were appointed since the CEO took office. *Lax Laws & Opt Out* is an indicator variable that takes a value of one if the firm's state of incorporation has lax antitakeover laws and the firm has opted out of these provisions and zero otherwise. *Strict Laws & Opt Out* is an indicator variable that takes a value of one if the firm's state of incorporation has strict antitakeover laws and the firm has opted out of these provisions and zero otherwise. *Lax Laws & No Opt Out* is an indicator variable that takes a value of one if the firm's state of incorporation has lax antitakeover laws and the firm has not opted out of these provisions and zero otherwise. *Strict Laws & No Opt Out* is an indicator variable that takes a value of one if the firm's state of incorporation has strict antitakeover laws and the firm has not opted out of these provisions and zero otherwise. *No Staggered Board* is an indicator variable that takes a value of one if the firm's Board of Directors is not staggered and zero otherwise. *Staggered Board - Charter* is an indicator variable that takes a value of one if the firm's Board of Directors is staggered as a result of its corporate charter and zero otherwise. *Staggeed Board – Bylaws* is an indicator variable that takes a value of one if the firm's Board of Directors is staggered as a result of its bylaws and zero otherwise. *Dual Class Shares* is an indicator variable that takes a value of one if the firm has multiple classes of shares with differential voting rights and zero otherwise.

Table 2

Panel A: Pooled Compensation Regressions Including Economic Characteristics

	Model 1		Model 2		Model 3	
	Coef.	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**
Intercept	9.93	30.30	10.05	42.89	4.75	3.52
Cook	0.40	4.49	0.39	5.56	0.39	4.59
Hewitt	0.41	4.61	0.38	5.62	0.38	4.66
Mercer	0.32	3.42	0.32	4.77	0.33	3.85
Towers	0.41	5.01	0.40	6.27	0.37	4.86
Watson	0.27	2.20	0.28	3.81	0.29	2.47
Hay	0.14	1.82	0.14	1.63	0.12	1.43
Radford	0.34	4.34	0.38	4.56	0.39	5.09
Compensia	0.28	4.76	0.31	3.19	0.36	5.59
Pearl	0.39	4.40	0.39	5.43	0.39	4.55
Other	0.22	2.59	0.26	4.64	0.23	3.23
Log(Market Cap)	0.43	29.37	0.44	29.89	0.42	27.26
Return-on-Assets	-0.81	-4.84	-0.89	-7.14	-0.82	-4.72
Change in Return-on-Assets	-0.05	-0.75	-0.06	-1.01	-0.05	-0.77
Book-to-Market	-0.01	-2.58	-0.01	-2.34	-0.01	-2.50
Prior Return (-2)	-0.04	-0.83	-0.06	-1.76	-0.06	-1.28
Prior Return (-1)	0.27	4.15	0.27	5.14	0.23	3.93
CEO Tenure	-0.08	-2.26	-0.04	-1.54	-0.07	-2.44
CEO Age	0.00	1.65	0.00	1.65	0.00	1.70
Log (1+Portfolio IV)	0.09	4.03	0.08	4.34	0.09	4.03
New CEO	-0.28	-6.00	-0.28	-5.16	-0.30	-6.73
Founder Indicator	-0.22	-2.78	-0.24	-3.91	-0.22	-3.08
Benchmark Comp.					0.36	4.26
Industry Effects	NO		YES		NO	
R-squared	63.8%		66.8%		65.2 %	
Adj. R-Squared	63.5%		66.0%		64.8%	
Nobs	2,116		2,116		2,112	

This table presents the estimated coefficients and t-statistics of the pooled total compensation model given by equation (?) in the text estimated via ordinary least squares using the 2006 sample. *Cook* is an indicator equal to one if the firm used Fred Cook as its primary compensation consultant during 2006 and zero otherwise. *Hewitt* is an indicator equal to one if the firm used Hewitt Associates as its primary compensation consultant during 2006 and zero otherwise. *Mercer* is an indicator equal to one if the firm used Mercer Consulting as its primary compensation consultant during 2006 and zero otherwise. *Towers* is an indicator equal to one if the firm used Towers Perrin as its primary compensation consultant during 2006 and zero otherwise. *Watson* is an indicator equal to one if the firm used Watson Wyatt as its primary compensation consultant during 2006 and zero otherwise. *Other* is an indicator equal to one if the firm used a compensation consultant other than Fred Cook, Hewitt Associates, Mercer Consulting, Towers Perrin, or Watson Wyatt as its primary compensation consultant during 2006 and zero otherwise. *Log(Market Cap)* is the natural logarithm of the firm's market capitalization at the fiscal year end. *Return on Assets* is the firm's net income scaled by the average of the beginning and end of year total assets. *Book-to-Market* is the book value of the firm's total assets scaled by market capitalization, both measured at the fiscal year end. *Prior Return (-1)* is the stock price return over the prior year. *CEO Tenure* is the number of years the current CEO has held the Chief Executive Officer title. *CEO Age* is the age of the current CEO in years. Log(1+Portfolio IV) is the natural logarithm of one plus the intrinsic value of the CEO's equity portfolio of stock, restricted stock, and option holdings (both vested and unvested). New CEO is an indicator equal to one if the CEO at the fiscal year end became the CEO during the fiscal year. *Founder CEO* is an indicator that takes a value of one if the current CEO is one of the founders of the firm and zero otherwise. *Benchmark Comp.* is the average total compensation of all the other sample firms in the same industry (based on two-digit SIC unless there are fewer than 25 observations, in which case based on one-digit SIC). Industry fixed effects are included in Model 2 (based on two-digit SIC unless there are fewer than 25 observations, in which case based on one-digit SIC). T-statistics for Models 1 and 3 are based on robust standard errors that are clustered at the one-digit SIC industry level. T-statistics for model 2 are based on White's (1980) heteroscedasticity-adjusted standard errors

Table 2

Panel B: Test of Consultant Coefficient Equality for Model 1

	Hewitt	Mercer	Towers	Watson	Hay	Radford	Compensia	Pearl	Other
Cook	0.955	0.163	0.858	0.171	0.001	0.465	0.099	0.857	0.013
Hewitt		0.057	0.878	0.085	0.000	0.395	0.056	0.827	0.006
Mercer			0.042	0.487	0.006	0.732	0.580	0.135	0.044
Towers				0.132	0.000	0.301	0.050	0.752	0.003
Watson					0.148	0.552	0.990	0.135	0.471
Hay						0.012	0.041	0.000	0.319
Radford							0.307	0.512	0.118
Compensia								0.131	0.488
Pearl									0.004

Panel C: Test of Consultant Coefficient Equality for Model 2

	Hewitt	Mercer	Towers	Watson	Hay	Radford	Compensia	Pearl	Other
Cook	0.913	0.270	0.840	0.126	0.002	0.966	0.451	0.960	0.021
Hewitt		0.287	0.733	0.133	0.002	0.969	0.482	0.878	0.021
Mercer			0.141	0.556	0.019	0.431	0.951	0.275	0.261
Towers				0.061	0.000	0.849	0.363	0.898	0.003
Watson					0.088	0.235	0.742	0.132	0.762
Hay						0.011	0.102	0.003	0.084
Radford							0.517	0.935	0.101
Compensia								0.435	0.571
Pearl									0.027

Panel D: Test of Consultant Coefficient Equality for Model 3

	Hewitt	Mercer	Towers	Watson	Hay	Radford	Compensia	Pearl	Other
Cook	0.928	0.352	0.755	0.276	0.001	0.986	0.693	0.968	0.017
Hewitt		0.188	0.774	0.206	0.000	0.947	0.731	0.962	0.006
Mercer			0.239	0.508	0.000	0.393	0.716	0.278	0.019
Towers				0.319	0.000	0.806	0.848	0.812	0.002
Watson					0.038	0.376	0.491	0.218	0.458
Hay						0.000	0.001	0.000	0.071
Radford							0.701	0.988	0.024
Compensia								0.729	0.085
Pearl									0.005

Panels B, C, and D of this table present the p-values of a Wald test (based on a finite-sample F-statistic) of the linear constraints that the coefficient estimate on each pairwise combination of consultant categories is equal in Models 1, 2, and 3, respectively. For example, the (2,2) element of Panel B (0.057) is the p-value of a test of the equality of the Hewitt and Mercer indicator variables in Model 1 of Panel A which are 0.41 and 0.32, respectively.

Table 3

Panel A: Matched Pair Frequencies from Propensity Score Models Using Economic Characteristics

	Cook	Hewitt	Mercer	Towers	Watson	Hay	Radford	Compensia	Pearl	Other	None	Total
Cook		26 (13.5%)	30 (15.5%)	38 (19.7%)	9 (4.7%)	7 (3.6%)	3 (1.6%)	3 (1.6%)	13 (6.7%)	46 (23.8%)	18 (9.3%)	193
Hewitt	19 (11.0%)		39 (22.7%)	29 (16.9%)	8 (4.7%)	5 (2.9%)	7 (4.1%)	3 (1.7%)	8 (4.7%)	35 (20.3%)	19 (11.0%)	172
Mercer	32 (13.7%)	23 (9.9%)		38 (16.3%)	15 (6.4%)	10 (4.3%)	8 (3.4%)	8 (3.4%)	13 (5.6%)	66 (28.3%)	20 (8.6%)	233
Towers	29 (11.3%)	34 (13.3%)	32 (12.5%)		17 (6.6%)	10 (3.9%)	8 (3.1%)	7 (2.7%)	17 (6.6%)	78 (30.5%)	24 (9.4%)	256
Watson	13 (11.6%)	16 (14.3%)	10 (8.9%)	15 (13.4%)		1 (0.9%)	3 (2.7%)	2 (1.8%)	4 (3.6%)	41 (36.6%)	7 (6.3%)	112
Hay	6 (12.5%)	1 (2.1%)	1 (2.1%)	6 (12.5%)	4 (8.3%)		5 (10.4%)	0 (0.0%)	3 (6.3%)	15 (31.3%)	7 (14.6%)	48
Radford	4 (7.7%)	2 (3.8%)	8 (15.4%)	8 (15.4%)	0 (0.0%)	1 (1.9%)		3 (5.8%)	1 (1.9%)	16 (30.8%)	9 (17.3%)	52
Compensia	4 (8.0%)	1 (2.0%)	6 (12.0%)	13 (26.0%)	3 (6.0%)	0 (0.0%)	3 (6.0%)		3 (6.0%)	9 (18.0%)	8 (16.0%)	50
Pearl	7 (7.2%)	6 (6.2%)	11 (11.3%)	25 (25.8%)	7 (7.2%)	1 (1.0%)	1 (1.0%)	1 (1.0%)		23 (23.7%)	15 (15.5%)	97
Other	78 (12.6%)	54 (8.8%)	92 (14.9%)	95 (15.4%)	39 (6.3%)	18 (2.9%)	33 (5.3%)	23 (3.7%)	36 (5.8%)		149 (24.1%)	617
None	22 (8.3%)	17 (6.4%)	29 (11.0%)	18 (6.8%)	11 (4.2%)	8 (3.0%)	7 (2.7%)	8 (3.0%)	10 (3.8%)	134 (50.8%)		264

This table presents the frequency with which firms in each compensation consultant category are matched with firms that have similar economic characteristics, but that are in a different compensation consultant category. Each row corresponds to the compensation consultant being matched in Panel B of Table 3 (below) and each column corresponds to the compensation consultant category to which these firms are matched. The last column lists the total number of firms in the compensation consultant category being matched. The diagonal elements of this panel are empty because the matching algorithm precludes matching companies from the same compensation consultant category. Each cell indicates both the number of companies and the percentage of the total number that each the firms from the compensation consultant category in the row are paired with firms in the compensation consultant category in the column. For example, the 26 and 13.5% in the Cook row and Hewitt column indicate that 26 of the companies that use Frederic Cook as their compensation consultant are matched with companies that use Hewitt as the primary compensation consultant and this represents 13.5% of the total number of companies that use Frederic Cook.

Table 3 (cont'd)

Panel B: Economic Matched Pair Compensation Differences

	Mean Comp Difference	Median Comp Difference	Wilcoxon statistic	p-value	t-statistic	p-value
Cook	1,205,683	692,346	3.037	0.002	2.692	0.008
Hewitt	(56,291)	30,006	-0.320	0.749	-0.092	0.927
Mercer	395,952	516,317	1.602	0.109	0.910	0.364
Towers	329,752	287,167	1.296	0.195	0.760	0.448
Watson	(357,436)	264,259	-0.070	0.944	-0.535	0.594
Hay	(49,352)	211,602	0.021	0.984	-0.060	0.952
Radford	(168,780)	81,180	-0.127	0.899	-0.275	0.784
Compensia	(749,293)	(299,756)	-0.613	0.540	-0.629	0.532
Pearl	(335,061)	391,079	0.603	0.547	-0.424	0.672
Other	243,825	(145,721)	-1.354	0.176	1.161	0.246
None	(347,521)	(189,634)	-1.979	0.048	-1.247	0.213

This table presents the results of the comparison of the level of compensation between the firms in each compensation consultant category and their counterparts matched on economic characteristics. The first two columns present the mean and median difference in the level of total annual compensation between the firms in each compensation consultant category and their matched counterparts. The third and fourth columns present a Wilcoxon statistic of the rank-sum difference in the median compensation between the firms in each compensation consultant category and their matched pairs and the corresponding p-value (two-sided). The fifth and sixth columns present a t-statistic for a test of the difference in the mean compensation between the firms in each compensation consultant category and their matched pairs and the associated p-value (two-sided).

Table 4

Panel A: Pooled Compensation Regressions Including Economic Characteristics and Pay Mix

	Coef.	t-stat
Intercept	9.887	51.397
Paymix	1.459	17.582
Cook	0.274	4.760
Hewitt	0.288	4.816
Mercer	0.238	4.119
Towers	0.281	4.943
Watson	0.155	2.355
Hay	0.091	1.180
Radford	0.136	1.930
Compensia	0.018	0.206
Pearl	0.307	4.732
Other	0.182	3.647
Log(Market Cap)	0.371	28.082
Return on Assets	-0.475	-4.546
Change in Return-on-Assets	0.054	1.031
Book-to-Market	-0.013	-3.089
Prior Return (-2)	-0.080	-2.624
Prior Return (-1)	0.322	7.196
CEO Tenure	0.001	0.029
CEO Age	0.010	5.180
Log (1+Portfolio IV)	0.050	3.248
New CEO	-0.111	-2.379
Founder Indicator	-0.148	-2.902
Industry Effects	YES	
R-squared	74.2%	
Adj. R-Squared	73.6%	
Nobs	2,116	

This table presents the estimated coefficients and t-statistics of the pooled total compensation model estimated via ordinary least squares. *Paymix* is the ratio of long-term variable pay (stock options, restricted stock, and performance units) to total compensation. The remaining variables are as previously defined in Table 2, Panel A. T-statistics are calculated based on White's (1980) heteroscedasticity-adjusted standard errors.

Table 4 (cont'd)

Panel B: Economic Matched Pair Compensation Differences (Including Economic Characteristics and Pay Mix)

	Mean Comp Difference	Median Comp Difference	Wilcoxon statistic	p-value	t-statistic	p-value
Cook	(116,716)	(73,052)	0.282	0.778	-0.254	0.800
Hewitt	(445,393)	(79,552)	-0.761	0.446	-0.737	0.462
Mercer	(101,739)	(28,577)	0.282	0.778	-0.202	0.840
Towers	279,048	(29,608)	0.234	0.815	0.758	0.449
Watson	(1,006,637)	(329,231)	-1.039	0.299	-1.376	0.172
Hay	(622,317)	(705,854)	-1.580	0.114	-0.755	0.454
Radford	(1,323,845)	298,172	-0.291	0.771	-1.495	0.141
Compensia	(915,120)	(61,074)	-0.835	0.404	-0.973	0.335
Pearl	(2,443,496)	(469,797)	-2.168	0.030	-2.671	0.009
Other	269,277	(55,129)	-1.065	0.287	1.371	0.171
None	(477,260)	(56,772)	-1.700	0.089	-1.785	0.075

This table presents the results of the comparison of the level of compensation between the firms in each compensation consultant category and their counterparts matched on economic characteristics and pay mix. The first two columns present the mean and median difference in the level of total annual compensation between the firms in each compensation consultant category and their matched counterparts. The third and fourth columns present a Wilcoxon statistic of the rank-sum difference in the median compensation between the firms in each compensation consultant category and their matched pairs and the corresponding p-value (two-sided). The fifth and sixth columns present a t-statistic for a test of the difference in the mean compensation between the firms in each compensation consultant category and their matched pairs and the associated p-value (two-sided).

Table 5

Panel A: Pooled Benchmark Compensation Regressions Using Economic and Governance Characteristics

	Model 1		Model 2		Model 3	
	Coef.	t-stat	Coef.	t-stat	Coef.	t-stat
Intercept	9.62	22.85	9.42	31.86	4.49	6.24
Cook	0.32	3.78	0.30	4.29	0.30	3.78
Hewitt	0.32	3.84	0.29	4.32	0.29	3.78
Mercer	0.26	3.25	0.24	3.62	0.26	3.48
Towers	0.34	4.50	0.32	4.98	0.30	4.19
Watson	0.22	2.05	0.22	3.10	0.23	2.19
Hay	0.13	1.65	0.10	1.25	0.09	1.25
Radford	0.27	3.43	0.33	3.99	0.31	4.15
Compensia	0.21	3.56	0.27	2.63	0.29	4.76
Pearl	0.33	4.06	0.32	4.48	0.32	4.03
Other	0.21	3.21	0.22	3.84	0.21	3.45
Log(Market Cap)	0.38	15.94	0.38	22.13	0.36	15.46
Return-on-Assets	-0.68	-3.78	-0.78	-6.38	-0.68	-3.77
Change in Return-on-Assets	-0.06	-0.83	-0.07	-1.23	-0.06	-0.84
Book-to-Market	-0.01	-1.98	-0.01	-1.79	-0.01	-1.84
Prior Return (-2)	-0.04	-0.90	-0.05	-1.44	-0.06	-1.27
Prior Return (-1)	0.25	4.02	0.24	4.75	0.21	3.79
CEO Tenure	-0.05	-1.53	-0.02	-0.59	-0.04	-1.47
CEO Age	0.00	1.36	0.00	1.24	0.00	1.31
Log (1+Portfolio IV)	0.09	4.84	0.08	4.74	0.09	4.79
New CEO	-0.24	-4.67	-0.23	-4.49	-0.25	-5.30
Founder Indicator	-0.20	-2.97	-0.19	-3.18	-0.19	-2.81
Benchmark Comp.					0.35	6.46
Log(1 + Directors)	-0.01	-0.06	0.16	2.03	0.05	0.33
Fraction Inside Directors	0.38	4.63	0.48	4.98	0.43	5.58
Fraction Board Old	0.10	0.86	0.08	0.74	0.09	0.74
Fraction of Board Busy	0.55	5.62	0.41	5.64	0.53	7.72
Outside Lead Director	0.08	2.46	0.07	2.30	0.07	2.33
Pct. Outsider Apptd. By Insider	-0.03	-0.68	-0.07	-1.49	-0.04	-0.85
Lax Laws & Opt Out	0.25	3.53	0.12	1.49	0.19	2.51
Strict Laws & Opt Out	0.11	1.56	0.05	0.57	0.06	0.94
Lax Laws & No Opt Out	0.21	4.65	0.10	1.43	0.16	3.38
Strict Laws & No Opt Out	0.10	1.26	0.01	0.16	0.06	0.72
No Staggered Board	0.04	0.67	0.02	0.39	0.04	0.82
Staggered Board – Charter	0.02	0.39	0.02	0.41	0.04	0.73
Staggered Board – Bylaws	0.02	0.37	0.01	0.20	0.03	0.53
Dual Class Shares	0.11	2.36	0.01	0.11	0.05	1.24
Industry Effects	NO		YES		NO	
R-squared	65.9%		68.2%		67.2%	
Adj. R-Squared	65.3%		67.3%		66.6%	
F-test statistic	9.67		7.44		9.82	
p-value (F-test)	< 0.001		< 0.001		< 0.001	
Nobs	2,116		2,116		2,112	

This table presents the estimated coefficients and t-statistics of the pooled total compensation model estimated via ordinary least squares. *Cook* is an indicator equal to one if the firm used Frederic Cook as its primary compensation consultant during 2006 and zero otherwise. *Hewitt* is an indicator equal to one if the firm used Hewitt Associates as its primary compensation consultant during 2006

and zero otherwise. *Mercer* is an indicator equal to one if the firm used Mercer Consulting as its primary compensation consultant during 2006 and zero otherwise. *Towers* is an indicator equal to one if the firm used Towers Perrin as its primary compensation consultant during 2006 and zero otherwise. *Watson* is an indicator equal to one if the firm used Watson Wyatt as its primary compensation consultant during 2006 and zero otherwise. *Other* is an indicator equal to one if the firm used a compensation consultant other than Frederic Cook, Hewitt Associates, Mercer Consulting, Towers Perrin, or Watson Wyatt as its primary compensation consultant during 2006 and zero otherwise. *Log(Market Cap)* is the natural logarithm of the firm's market capitalization at the fiscal year end. *Return on Assets* is the firm's net income scaled by the average of the beginning and end of year total assets. *Book-to-Market* is the book value of the firm's total assets scaled by market capitalization, both measured at the fiscal year end. *Prior Return (-1)* is the stock price return over the prior year. *CEO Tenure* is the number of years the current CEO has held the Chief Executive Officer title. *CEO Age* is the age of the current CEO in years. *Log(1+Portfolio IV)* is the natural logarithm of one plus the intrinsic value of the CEO's equity portfolio of stock, restricted stock, and option holdings (both vested and unvested). *New CEO* is an indicator equal to one if the CEO at the fiscal year end became the CEO during the fiscal year. *Founder Indicator* is an indicator that takes a value of one if the current CEO is one of the founders of the firm and zero otherwise. *Benchmark Comp.* is the average total compensation of all the other sample firms in the same industry (based on two-digit SIC unless there are fewer than 25 observations, in which case based on one-digit SIC). *Log (1+Directors)* is the natural logarithm of one plus the number of members of the Board of Directors. *Fraction Insider Directors* is the percentage of the members of the Compensation Committee who are classified as insiders. *Fraction Board Old* is the percentage of the members of the Board of Directors who are at least 69 years old. *Fraction of Board Busy* is the percentage of the members of the Board of Directors who serve on at least two Boards of Directors. *Outside Lead Director* is an indicator that equals one if the lead director is classified as an outsider and zero otherwise. *Pctg. Outsider Apptd. By Insider* is the fraction of the members of the Board of Directors who are classified as outsiders who were appointed after the term of the current CEO began. Industry fixed effects are included in Model 2 (based on two-digit SIC unless there are fewer than 25 observations, in which case based on one-digit SIC). T-statistics for Models 1 and 3 are based on robust standard errors that are clustered at the one-digit SIC industry level. T-statistics for model 2 are based on White's (1980) heteroscedasticity-adjusted standard errors.

Table 5 (cont'd)

Panel B: Test of Consultant Coefficient Equality for Model 1

	Hewitt	Mercer	Towers	Watson	Hay	Radford	Compensia	Pearl	Other
Cook	0.989	0.204	0.656	0.228	0.020	0.595	0.149	0.829	0.046
Hewitt		0.132	0.616	0.190	0.007	0.543	0.125	0.865	0.043
Mercer			0.037	0.617	0.059	0.838	0.478	0.123	0.224
Towers				0.178	0.001	0.389	0.087	0.884	0.008
Watson					0.364	0.659	0.866	0.140	0.796
Hay						0.117	0.339	0.011	0.321
Radford							0.288	0.456	0.375
Compensia								0.074	0.951
Pearl									0.015

Panel C: Test of Consultant Coefficient Equality for Model 2

	Hewitt	Mercer	Towers	Watson	Hay	Radford	Compensia	Pearl	Other
Cook	0.887	0.324	0.759	0.262	0.014	0.697	0.744	0.751	0.121
Hewitt		0.363	0.624	0.299	0.013	0.613	0.806	0.643	0.138
Mercer			0.145	0.789	0.065	0.253	0.794	0.210	0.631
Towers				0.129	0.003	0.848	0.609	0.941	0.027
Watson					0.134	0.203	0.675	0.173	0.914
Hay						0.014	0.133	0.008	0.100
Radford							0.558	0.905	0.114
Compensia								0.595	0.599
Pearl									0.068

Panel D: Test of Consultant Coefficient Equality for Model 3

	Hewitt	Mercer	Towers	Watson	Hay	Radford	Compensia	Pearl	Other
Cook	0.880	0.443	0.935	0.397	0.009	0.878	0.804	0.711	0.103
Hewitt		0.431	0.897	0.422	0.002	0.733	0.912	0.660	0.108
Mercer			0.339	0.656	0.006	0.434	0.695	0.216	0.177
Towers				0.441	0.001	0.819	0.851	0.674	0.038
Watson					0.145	0.439	0.530	0.227	0.746
Hay						0.005	0.012	0.001	0.080
Radford							0.648	0.900	0.134
Compensia								0.549	0.160
Pearl									0.027

Panels B, C, and D of this table present the p-values of a Wald test (based on a finite-sample F-statistic) of the linear constraints that the coefficient estimate on each pairwise combination of consultant categories is equal in Models 1, 2, and 3, respectively. For example, the (2,2) element of Panel B (0.057) is the p-value of a test of the equality of the Hewitt and Mercer indicator variables in Model 1 of Panel A which are 0.41 and 0.32, respectively.

Table 6

Panel A: Matched Pair Frequencies From Propensity Score Models Using Economic and Governance Characteristics

	Cook	Hewitt	Mercer	Towers	Watson	Hay	Radford	Compensia	Pearl	Other	None	Total
Cook		18 (9.3%)	30 (15.5%)	33 (17.1%)	15 (7.8%)	3 (1.6%)	2 (1.0%)	7 (3.6%)	9 (4.7%)	57 (29.5%)	19 (9.8%)	193
Hewitt	27 (15.7%)		24 (14.0%)	24 (14.0%)	7 (4.1%)	9 (5.2%	3 (1.7%)	2 (1.2%)	10 (5.8%)	53 (30.8%)	13 (7.6%)	172
Mercer	25 (10.7%)	32 (13.7%)		33 (14.2%)	14 (6.0%)	6 (2.6%)	4 (1.7%)	3 (1.3%)	10 (4.3%)	85 (36.5%)	21 (9.0%)	233
Towers	24 (9.4%)	30 (11.7%)	41 (16.0%)		26 (10.2%)	7 (2.7%)	5 (2.0%)	7 (2.7%)	15 (5.9%)	72 (28.1%)	29 (11.3%)	256
Watson	9 (8.0%)	10 (8.9%)	13 (11.6%)	17 (15.2%)		3 (2.7%)	3 (2.7%)	5 (4.5%)	6 (5.4%)	31 (27.7%)	15 (13.4%)	112
Hay	5 (10.4%)	10 (20.8%)	4 (8.3%)	4 (8.3%)	0 (0.0%)		2 (4.2%)	0 (0.0%)	2 (4.2%)	12 (25.0%)	9 (18.8%)	48
Radford	7 (13.5%)	3 (5.8%)	5 (9.6%)	3 (5.8%)	5 (9.6%)	1 (1.9%)		2 (3.8%)	1 (1.9%)	18 (34.6%)	7 (13.5%)	52
Compensia	3 (6.0%)	2 (4.0%)	4 (8.0%)	7 (14.0%)	2 (4.0%)	1 (2.0%)	3 (6.0%)		5 (10.0%)	14 (28.0%)	9 (18.0%)	50
Pearl	13 (13.4%)	13 (13.4%)	7 (7.2%)	9 (9.3%)	8 (8.2%)	3 (3.1%)	0 (0.0%)	4 (4.1%)		31 (32.0%)	9 (9.3%)	97
Other	70 (11.3%)	51 (8.3%)	72 (11.7%)	111 (18.0%)	49 (7.9%)	23 (3.7%)	28 (4.5%)	20 (3.2%)	43 (7.0%)		150 (24.3%)	617
None	14 (5.3%)	16 (6.1%)	24 (9.1%)	26 (9.8%)	16 (6.1%)	11 (4.2%)	10 (3.8%)	8 (3.0%)	13 (4.9%)	126 (47.7%)		264

This table presents the frequency with which firms in each compensation consultant category are matched with firms that have similar economic and governance characteristics, but that are in a different compensation consultant category. Each row corresponds to the compensation consultant being matched in Panel B of Table 5 (below) and each column corresponds to the compensation consultant category to which these firms are matched. The last column lists the total number of firms in the compensation consultant category being matched. The diagonal elements of this panel are empty because the matching algorithm precludes matching companies from the same compensation consultant category. Each cell indicates both the number of companies and the percentage of the total number that each the firms from the compensation consultant category in the row are paired with firms in the compensation consultant category in the column. For example, the 18 and 9.3% in the Cook row and Hewitt column indicate that 18 of the companies that use Frederic Cook as their compensation consultant are matched with companies that use Hewitt as the primary compensation consultant and this represents 9.3% of the total number of companies that use Frederic Cook.

Table 6 (cont'd)

Panel B: Economic and Governance Matched Pair Compensation Differences

	Mean Comp Difference	Median Comp Difference	Wilcoxon statistic	p-value	t-statistic	p-value
Cook	759,430	382,148	1.603	0.109	1.411	0.160
Hewitt	151,565	620,912	1.631	0.103	0.244	0.808
Mercer	259,207	149,361	0.610	0.542	0.481	0.631
Towers	(156,931)	217,707	0.040	0.968	-0.275	0.784
Watson	(1,044,284)	(45,003)	-0.282	0.778	-1.169	0.245
Hay	(301,463)	38,903	-0.379	0.704	-0.305	0.762
Radford	29,494	153,550	0.546	0.585	0.046	0.963
Compensia	36,921	94,951	-0.111	0.912	0.041	0.968
Pearl	(721,461)	328,655	-0.358	0.720	-0.884	0.379
Other	9,603	(39,164)	-0.861	0.389	0.039	0.969
None	(390,047)	(145,693)	-1.369	0.171	-1.215	0.225

This table presents the results of the comparison of the level of compensation between the firms in each compensation consultant category and their counterparts matched on economic characteristics. The first two columns present the mean and median difference in the level of total annual compensation between the firms in each compensation consultant category and their matched counterparts. The third and fourth columns present a Wilcoxon statistic of the rank-sum difference in the median compensation between the firms in each compensation consultant category and their matched pairs and the corresponding p-value (two-sided). The fifth and sixth columns present a t-statistic for a test of the difference in the mean compensation between the firms in each compensation consultant category and their matched pairs and the associated p-value (two-sided).

Table 6 (cont'd)

Panel C: Economic and Governance Matched Pair Compensation Differences

	No Consultant		Matched with No Consultant		Not Matched with No Consultant	
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**
Log(Market Cap)	6.15***	6.00***	6.12***	5.92***	7.36	7.26
Return on Assets	0.00*	0.03	0.00**	0.03	0.02	0.04
Change in Return on Assets	-0.02	0.00	-0.02**	0.00***	0.00	0.00
Book-to-Market	0.34	0.38	0.38	0.37	0.28	0.42
Prior Return (-2)	0.22***	0.08	0.17*	0.05	0.10	0.04
Prior Return (-1)	0.16	0.09**	0.13	0.12*	0.16	0.13
CEO Tenure	2.01***	2.07***	1.98***	2.05***	1.71	1.79
CEO Age	54.87*	54.00	54.34	53.50	53.88	54.00
Log (1+Portfolio IV)	16.75*	16.82*	16.67***	16.63***	16.99	17.02
New CEO	0.11	0.00	0.11	0.00	0.12	0.00
Founder Indicator	0.18***	0.00***	0.18***	0.00***	0.08	0.00
Log(1 + Directors)	2.14***	2.14***	2.13***	2.08***	2.33	2.30
Fraction Inside Directors	0.62***	0.63***	0.63***	0.63***	0.72	0.75
Fraction Board Old	0.16***	0.13***	0.15***	0.13***	0.11	0.10
Fraction of Board Busy	0.26***	0.22***	0.25***	0.22***	0.42	0.43
Outside Lead Director	0.24***	0.00***	0.20***	0.00***	0.44	0.00
Pct. Outsider Apptd. By Insider	0.73***	1.00***	0.71***	0.83***	0.62	0.67
Lax Laws & Opt Out	0.08	0.00	0.09	0.00	0.09	0.00
Strict Laws & Opt Out	0.05***	0.00**	0.05***	0.00**	0.08	0.00
Lax Laws & No Opt Out	0.80***	1.00***	0.80***	1.00***	0.72	1.00
Strict Laws & No Opt Out	0.06	0.00	0.05	0.00	0.08	0.00
No Staggered Board	0.45	0.00	0.43	0.00	0.41	0.00
Staggered Board – Charter	0.35***	0.00***	0.36***	0.00***	0.46	0.00
Staggered Board – Bylaws	0.06	0.00	0.05**	0.00*	0.08	0.00
Dual Class	0.11	0.00*	0.08	0.00	0.07	0.00

This table presents descriptive statistics (mean and median) for the economic and governance variables for the following three groups of firms. No Consultant is the group of firms that do not use a compensation consultant. Matched with No Consultant is the group of firms that do use a compensation consultant and are matched with firms that do not use a compensation consultant when the match is according to economic and governance characteristics. Not Matched with No Consultant is the group of firms that is not matched with firms that do not use a compensation consultant when the match is according to economic and governance characteristics. Statistically significant differences between the No Consultant group and the Not Matched with No Consultant group and between the No Consultant group and the Not Matched with No Consultant group are denoted by ***, **, and * at the 1%, 5% and 10% levels (two-sided), respectively. For example, 2.01*** for the mean CEO Tenure for the No Consultant group means that the mean value 2.01 for these firms is statistically different from the mean CEO Tenure of 1.71 for the Not Matched with No Consultant group at the 1% level. The 2.05*** for the median CEO Tenure for the Matched with No Consultant group means that the median value 2.05 for these firms is statistically different from the median CEO Tenure of 1.79 for the Not Matched with No Consultant group at the 1% level. All of the variables are as defined in Table 5, Panel A..

Table 7

Economic and Governance Matched Pair Compensation Differences (Including Pay Mix)

	Mean Comp Difference	Median Comp Difference	Wilcoxon statistic	p-value	t-statistic	p-value
Cook	(111,575)	(258,059)	0.086	0.931	-0.179	0.858
Hewitt	(333,120)	(175,633)	-0.425	0.671	-0.494	0.622
Mercer	152,278	191,705	0.335	0.737	0.308	0.759
Towers	234,348	24,033	0.827	0.408	0.410	0.682
Watson	(1,386,625)	(368,584)	-1.579	0.114	-1.644	0.103
Hay	(723,055)	77,285	-0.421	0.674	-0.623	0.536
Radford	(605,816)	(414,155)	-1.302	0.193	-1.026	0.310
Compensia	199,522	473,869	-0.043	0.965	0.226	0.822
Pearl	396,612	556,650	1.243	0.214	0.552	0.582
Other	8,814	(41,914)	-1.174	0.240	0.040	0.968
None	(291,511)	(76,168)	-1.106	0.269	-0.904	0.367

This table presents the results of the comparison of the level of compensation between the firms in each compensation consultant category and their counterparts matched on economic and governance characteristics and pay mix. The first two columns present the mean and median difference in the level of total annual compensation between the firms in each compensation consultant category and their matched counterparts. The third and fourth columns present a Wilcoxon statistic of the rank-sum difference in the median compensation between the firms in each compensation consultant category and their matched pairs and the corresponding p-value (two-sided). The fifth and sixth columns present a t-statistic for a test of the difference in the mean compensation between the firms in each compensation consultant category and their matched pairs and the associated p-value (two-sided).

Table 8
Economic and Governance Regressions by Individual Consultant Category

	Cook		Hewitt		Mercer		Towers		Watson		Hay	
	Coef.	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**
Intercept	5.681	2.960	4.407	2.732	1.714	0.988	5.462	3.654	1.521	0.539	15.045	3.468
Log(Market Cap)	0.448	9.189	0.310	7.259	0.233	5.376	0.339	8.091	0.468	8.094	0.353	3.718
Return on Assets	-0.663	-1.614	-1.393	-3.006	0.281	0.684	-0.826	-1.889	-0.499	-0.999	0.473	0.549
Change in Return on Assets	-0.445	-0.643	-1.041	-1.158	0.606	1.049	-1.154	-1.976	0.620	1.575	-2.029	-1.501
Book-to-Market	0.018	0.094	-0.010	-2.200	-0.034	-1.983	0.064	0.404	0.060	3.147	-0.104	-0.374
Prior Return (-2)	0.120	1.231	0.264	1.954	0.207	1.864	-0.074	-0.643	-0.232	-1.355	-0.341	-1.215
Prior Return (-1)	0.364	2.393	0.377	2.648	0.392	2.849	0.392	3.116	0.165	0.892	-0.052	-0.194
CEO Tenure	-0.149	-1.482	0.072	0.763	0.067	0.832	-0.114	-1.364	0.068	0.561	-0.199	-0.998
CEO Age	0.013	1.726	0.000	-0.029	-0.004	-0.676	0.002	0.317	0.009	1.011	0.003	0.265
Log (1+Portfolio IV)	0.044	0.914	0.115	2.798	0.205	5.058	0.149	3.850	0.030	0.643	0.138	2.060
New CEO	-0.561	-2.815	-0.048	-0.291	-0.121	-0.776	-0.159	-1.102	-0.030	-0.126	-0.080	-0.260
Founder Indicator	0.191	1.033	-0.610	-3.349	-0.374	-2.321	-0.466	-3.054	-0.241	-1.110		
Benchmark Comp.	0.310	2.575	0.215	2.216	0.455	4.155	0.251	2.722	0.557	3.162	-0.288	-1.137
Log(1 + Directors)	-0.172	-0.625	0.881	3.499	0.344	1.604	0.077	0.388	-0.121	-0.449	-0.103	-0.217
Fraction Inside Directors	0.622	1.945	0.862	2.960	0.833	2.701	0.413	1.569	0.370	1.072	-0.024	-0.046
Fraction Board Old	-0.169	-0.398	-0.092	-0.269	0.078	0.202	0.190	0.644	0.000	0.000	2.009	2.973
Fraction of Board Busy	0.158	0.773	0.422	2.094	0.460	2.461	0.561	3.166	0.801	3.014	0.251	0.761
Outside Lead Director	-0.076	-0.781	-0.011	-0.138	0.182	2.175	0.131	1.791	0.090	0.793	0.482	1.697
Pct. Outsider Apptd. By Insider	-0.062	-0.359	0.163	1.221	-0.233	-1.695	0.023	0.178	0.099	0.530	-0.198	-0.835
Lax Laws & Opt Out	0.345	1.031	0.215	0.744	0.102	0.382	0.243	0.593	0.092	0.255	-0.305	-0.599
Strict Laws & Opt Out	0.019	0.051	0.373	1.316	0.117	0.418	0.217	0.530	0.335	0.882	-1.103	-2.038
Lax Laws & No Opt Out	0.263	0.912	0.248	0.983	-0.109	-0.459	0.139	0.347	0.107	0.330	-0.862	-1.560
Strict Laws & No Opt Out	0.076	0.211	0.086	0.277	-0.119	-0.433	0.152	0.373	-0.015	-0.041	-0.774	-1.370
No Staggered Board	0.101	1.039	-0.041	-0.482	-0.123	-1.461	-0.093	-1.188	0.177	1.509	0.079	0.512
Staggered Board – Charter	0.280	1.103	-0.096	-0.595	-0.058	-0.390	-0.104	-0.861	0.486	2.555	-0.387	-1.162
Staggered Board – Bylaws	-0.440	-2.711	0.005	0.038	-0.150	-0.891	0.084	0.597	0.336	1.304	-0.112	-0.356
Dual Class Shares	5.681	2.960	4.407	2.732	1.714	0.988	5.462	3.654	1.521	0.539	15.045	3.468
R-squared	66.8%		76.7%		73.6%		70.7%		80.9%		89.7%	
Adj. R-Squared	61.9%		72.8%		70.5%		67.6%		75.5%		79.8%	
F-test statistic	2.03		2.43		3.22		1.86		2.32		3.16	
p-value (F-test)	0.020		0.005		0.000		0.035		0.010		0.003	
Nobs	195		174		235		258		113		51	

Table 8 (cont'd)
Economic and Governance Regressions by Individual Consultant Category

	Radford		Compensia		Pearl Meyer		Other		None		Pooled	
	Coef.	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**	**Coef.**	**t-stat**
Intercept	13.245	2.301	1.618	0.148	2.086	0.647	3.320	2.819	9.958	4.179	4.531	7.659
Log(Market Cap)	0.353	3.968	0.481	2.831	0.267	3.807	0.373	12.569	0.379	7.761	0.373	25.293
Return on Assets	-0.912	-2.016	0.258	0.284	-0.443	-0.682	-0.592	-3.071	-0.467	-1.388	-0.676	-6.252
Change in Return on Assets	-0.108	-0.350	0.789	0.933	0.542	0.514	-0.007	-0.042	-0.034	-0.286	-0.040	-0.541
Book-to-Market	0.428	2.440	-0.681	-1.558	0.263	1.171	-0.009	-0.627	-0.079	-2.490	-0.008	-2.112
Prior Return (-2)	0.170	1.188	-0.661	-2.130	0.436	2.473	-0.141	-2.595	-0.117	-1.620	-0.071	-2.391
Prior Return (-1)	-0.160	-0.704	0.059	0.187	0.105	0.453	0.155	1.832	0.291	2.306	0.214	5.121
CEO Tenure	-0.494	-2.811	0.051	0.185	-0.080	-0.587	0.010	0.197	-0.110	-1.195	-0.051	-1.793
CEO Age	-0.012	-0.915	0.028	1.502	0.006	0.605	0.008	2.202	-0.007	-1.104	0.003	1.278
Log (1+Portfolio IV)	0.098	1.037	0.017	0.101	0.218	3.789	0.081	3.289	-0.006	-0.139	0.091	6.837
New CEO	-0.490	-1.642	-0.030	-0.068	-0.200	-0.862	-0.203	-1.851	-0.233	-1.111	-0.264	-4.736
Founder Indicator	-0.464	-1.345	-0.022	-0.069	-0.333	-1.636	-0.213	-2.344	0.017	0.117	-0.183	-3.677
Benchmark Comp.	-0.055	-0.160	0.682	0.919	0.402	2.275	0.434	5.978	0.177	1.148	0.353	9.632
Log(1 + Directors)	-0.055	-0.117	-0.727	-0.945	-0.083	-0.286	0.020	0.176	-0.072	-0.286	0.081	1.220
Fraction Inside Directors	-0.374	-0.717	0.293	0.266	0.165	0.434	0.232	1.311	0.347	1.117	0.504	5.463
Fraction Board Old	0.511	0.698	0.746	0.763	0.122	0.230	0.357	1.762	0.259	0.795	0.024	0.226
Fraction of Board Busy	0.911	2.505	-0.441	-0.710	0.549	1.919	0.697	5.147	0.509	2.067	0.574	8.810
Outside Lead Director	0.112	0.636	-0.438	-1.576	-0.151	-1.172	0.129	2.156	-0.027	-0.226	0.077	2.570
Pct. Outsider Apptd. By Insider	-0.242	-0.828	-0.295	-0.689	0.035	0.151	-0.114	-1.283	0.099	0.570	-0.049	-1.022
Lax Laws & Opt Out	-0.222	-0.558	0.634	0.803	0.908	1.434	0.175	1.017	-0.279	-0.626	0.164	1.627
Strict Laws & Opt Out	1.039	1.794	1.069	1.052	0.995	1.538	-0.068	-0.392	-0.686	-1.461	0.045	0.438
Lax Laws & No Opt Out	-0.150	-0.450	0.075	0.125	0.857	1.401	0.179	1.195	-0.320	-0.774	0.136	1.497
Strict Laws & No Opt Out					1.115	1.714	0.020	0.107	-0.707	-1.559	0.039	0.374
No Staggered Board	-0.102	-0.689	-0.032	-0.127	0.051	0.387	0.026	0.461	-0.005	-0.047	0.015	0.505
Staggered Board – Charter	-0.560	-1.678	0.976	1.306	-0.319	-1.109	-0.030	-0.276	0.017	0.082	0.001	0.012
Staggered Board – Bylaws	0.241	0.632	0.743	0.946	0.097	0.333	0.199	2.002	0.085	0.510	0.056	1.075
Dual Class Shares	13.245	2.301	1.618	0.148	2.086	0.647	3.320	2.819	9.958	4.179	4.531	7.659
R-squared	86.6%		71.7%		74.0%		64.1%		44.9%		66.5%	
Adj. R-Squared	75.4%		46.5%		65.1%		62.6%		39.1%		66.1%	
F-test statistic	2.04		0.98		0.99		4.41		1.13		11.94	
p-value (F-test)	0.042		0.485		0.466		0.000		0.330		0.000	
Nobs	54		52		99		618		264		2,212	

This table presents the estimated coefficients and t-statistics of the model of total compensation estimated via ordinary least squares for each compensation consultant category. T-statistics are calculated based on White's (1980) heteroscedasticity-adjusted standard errors. The categories consist of the firms that use Frederic Cook, (Cook), Hewitt Associates (Hewitt), Mercer Consulting (Mercer), Towers Perin (Towers), Watson Wyatt (Watson), Hay Group (Hay), Radford Consulting (Radford), Compensia, Pearl Meyer, firms that use a compensation consultant other than the ones previously mentioned, and the firms that do not use a compensation consultant. We also estimate the model for the pooled sample of firms. The dependent variable in the regressions is the natural log of one plus the total annual compensation of the CEO in the most recent fiscal year which is calculated as the sum of salary, actual bonus, target long-term incentive plan payments, pension contributions and other perquisites, the Black-Scholes value of stock option grants (using 70% of the option's life) and the market value of restricted and unrestricted stock grants. The independent variables are as follows. *Log(Market Cap)* is the natural logarithm of the firm's market capitalization at the beginning of the fiscal year. *Return on Assets* is the firm's net income scaled by the average of the beginning and end of year total assets. *Change in Return on Assets* is the change in the firm's return on assets (as previously defined) from the previous to the current fiscal year. *Book-to-Market* is the book value of the firm's total assets scaled by market capitalization, both measured at the fiscal year end. *Prior Return (-1)* is the stock price return over the prior year. *Prior Return (-2)* is the stock price return over the year preceding the prior year. *CEO Tenure* is the number of years the current CEO has held the Chief Executive Officer title. *CEO Age* is the age of the current CEO in years. *Log(1+Portfolio IV)* is the natural logarithm of one plus the intrinsic value of the CEO's equity portfolio of stock, restricted stock, and option holdings (both vested and unvested). *New CEO* is an indicator equal to one if the CEO at the fiscal year end became the CEO during the fiscal year. *Founder Indicator* is an indicator that takes a value of one if the current CEO is one of the founders of the firm and zero otherwise. *Benchmark Comp.* is the average of the natural logarithm of one plus the total compensation of all the other sample firms in the same industry (based on two-digit SIC unless there are fewer than 25 observations, in which case based on one-digit SIC). *Log (1+Directors)* is the natural logarithm of one plus the number of members of the Board of Directors. *Fraction Insider Directors* is the percentage of the members of the Compensation Committee who are classified as insiders. *Fraction Board Old* is the percentage of the members of the Board of Directors who are at least 69 years old. *Fraction of Board Busy* is the percentage of the members of the Board of Directors who serve on at least two Boards of Directors. *Outside Lead Director* is an indicator that equals one if the lead director is classified as an outsider and zero otherwise. *Pctg. Outsider Apptd. By Insider* is the fraction of the members of the Board of Directors who are classified as outsiders who were appointed since the CEO took office. *Lax Laws & Opt Out* is an indicator variable that takes a value of one if the firm's state of incorporation has lax antitakeover laws and the firm has opted out of these provisions and zero otherwise. *Strict Laws & Opt Out* is an indicator variable that takes a value of one if the firm's state of incorporation has strict antitakeover laws and the firm has opted out of these provisions and zero otherwise. *Lax Laws & No Opt Out* is an indicator variable that takes a value of one if the firm's state of incorporation has lax antitakeover laws and the firm has not opted out of these provisions and zero otherwise. *Strict Laws & No Opt Out* is an indicator variable that takes a value of one if the firm's state of incorporation has strict antitakeover laws and the firm has not opted out of these provisions and zero otherwise. *No Staggered Board* is an indicator variable that takes a value of one if the firm's Board of Directors is not staggered and zero otherwise. *Staggered Board - Charter* is an indicator variable that takes a value of one if the firm's Board of Directors is staggered as a result of its corporate charter and zero otherwise. *Staggeed Board – Bylaws* is an indicator variable that takes a value of one if the firm's Board of Directors is staggered as a result of its bylaws and zero otherwise. *Dual Class Shares* is an indicator variable that takes a value of one if the firm has multiple classes of shares with differential voting rights and zero otherwise. The next two rows present the R-squared and Adjusted R-squared of the regression. F-test statistic is a test statistic for the statistical significance of the incremental R-squared from including the governance variables in a regression of just the economic variables (untabulated). The associated p-value of the F-test statistic is reported next. Nobs is the number of observations in each compensation consultant category or the pooled estimation.