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**2012 RESEARCH REPORT**

## Does Independent Advice to The Board Affect CEO Compensation?

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# Final Report for
# The Canadian Foundation for Governance Research
# Robert Bertram Doctoral Research Awards

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First, I would like to thank the Canadian Foundation for Governance Research for their generous support. This project has benefited significantly from the Robert Bertram Doctoral Research Award. The output of the project is a research paper titled "*Does Independent Advice to The Board Affect CEO Compensation?*" which also served as a chapter of my doctoral thesis and my job market paper. I completed my PhD at the University of Toronto in June of 2012 and have joined the Price college of Business at the University of Oklahoma as an Assistant Professor of Finance. I have presented this paper at the University of Toronto, ESSEC Business School, the University of Oklahoma, the 2011 Financial Management Association conference, and the 2012 Northern Finance Association conference where this paper was awarded the best paper on Canadian financial system sponsored by Bank of Canada.

Since the early 1980s, a meaningful fraction of boards have turned to executive compensation consultants for advice. Consultants provide three key services to the compensation committees. 1) They determine benchmark firms that are used to determine the appropriate level of pay. 2) They provide information on the structure of pay (e.g., options vs. stocks). And somewhat less researched, but of equal importance, 3) they identify performance peer groups (which are usually different from benchmark peer groups) that are used to trigger bonuses and other rewards, and are a critical component in relative performance evaluation. It remains an open question whether or not the use of compensation consultants is beneficial to shareholders. A fundamental concern is that compensation consultants can be captured by management, biasing the advice that they provide to boards. An important channel for capture is that management hires the same firm to provide advice on other issues, which creates a potential conflict of interest. These "affiliated consultants" may provide advice in favor of the CEO, which could consist of more lucrative pay awards, weak incentives or possibly both.

In this project, I study a recent and important innovation, the shift towards independent compensation consultants that provide advice only to boards. I construct a theoretical model to conceptualize the potential impact of independent consultants and then develop an empirical strategy to quantify the impact. One contribution of the paper is to provide strong identification of the impact of

independent advice, something that has been challenged by the lack of appropriate data. I take advantage of a unique sample of Canadian firms which, unlike U.S. data, allows me to construct the ratio of non-compensation to compensation consulting fees as a proxy for the lack of independence of consultants. I conduct a number of empirical experiments but the main tests exploit a "quasi-natural experiment" provided by the creation of an independent consultant, Hugessen Consulting, after separation of Ken Hugessen from Mercer.

This study establishes four key results on executive compensation consultants. First, hiring a consultant increases the CEO's Pay-Performance Sensitivity (PPS) and Relative Performance Evaluation (RPE) components of the pay. These effects are stronger when the consultant is independent. Second, independent advice leads to lower CEO pay. Third, independent consultants charge higher consulting fees. Fourth, higher CEO power reduces the likelihood of hiring an independent consultant.

In addition to contributing to academic understanding of the value of independent advice, and the factors that influence use of relative performance in organizations, the project has potential practical importance. In summary, my analysis suggests that independent advice significantly enhances the board's ability to align CEOs incentives with those of shareholders. My findings could be of particular interest to directors and shareholders who could benefit from the relatively unbiased advice of independent consultants. A direct implication of this study for policy makers is that the conflict of interest due to cross-selling incentives does indeed bias the advice at the expense of shareholders. That being said, powerful CEO's may still remain influential in the consultant hiring process and even independent consultants may begin to succumb to the CEO's interests. Therefore, it would be interesting to examine whether the benefits of having an independent consultant persists in the future.

I would like to appreciate the support of the Canadian Foundation for Governance Research which made this research possible.

Sincerely,

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# Does Independent Advice to The Board Affect CEO Compensation?*

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**Abstract**

This paper investigates the role external advice plays in the board's determination of CEO compensation. Specifically, I examine whether the Pay-Performance Sensitivity and the Relative Performance Evaluation component of a CEO's contract increase with the degree of compensation consultant independence. I use a unique sample of Canadian firms which allows me to directly measure the impact of non-compensation related consulting fees on compensation advice. For identification, I exploit a "quasi-natural experiment" provided by the creation of an independent consultant as a spin-off from an affiliated consultant. Switching to an independent consultant is associated with relative increases of 22% in Pay-Performance Sensitivity and 28% in Relative Performance Evaluation of CEO contracts. Despite the benefits of independent advice, independent consultants may not be hired due to higher fees, the influence of powerful CEOs, or because boards already possess adequate expertise.

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# 1 Introduction

Boards of directors often lack important information for key decisions. Turning to management for this information may not work well, either because management also lacks that information, or because of a conflict in providing that information. The ability to hire external advisors who can access this key information is potentially an important component of a well-functioning corporate board. In this paper, I focus on the impact of *independent* advice in the context of executive compensation consultants. Specifically, I study whether the board's use of independent compensation consultants, as opposed to using no consultants or using consultants with a potential conflict of interest, affects how they set the structure of CEO pay, focusing on the Pay Performance Sensitivity (PPS) and the use of Relative Performance Evaluation (RPE). The empirical analysis features a "quasi-natural experiment" that isolates the impact of independent advice on managerial incentives.

At least since the early 1980s, a meaningful fraction of boards have turned to executive compensation consultants for advice (see Bender (2011)). Consultants provide three key services to the board. They determine benchmark firms that are used to determine the appropriate level of pay. They provide information on the structure of pay (e.g., options vs. stocks). And somewhat less researched, but of equal importance, they identify performance peer groups (which are usually different from benchmark peer groups) that are used to trigger bonuses and other rewards, and are a critical component in relative performance evaluation.

It remains an open question whether or not the use of compensation consultants is beneficial to shareholders. A fundamental concern is that compensation consultants can be captured by management (e.g., Bebchuk and Fried (2003)), biasing the advice that they provide to boards. An important channel for capture is that management hires the same firm to provide advice on other issues, which creates a potential conflict of interest. These "affiliated consultants" may provide advice in favor of the CEO, which could consist of more lucrative pay awards, weak incentives or possibly both. This is a real concern. A report from the US House of Representatives Committee on Oversight and Government Reform found that at least 45% of Fortune 250 companies used their executive pay advisors to also provide other services (Waxman (2007)). It cited consultants' conflicts of interest as the reason for the alleged increase in executive compensation. Recent research has not resolved this issue. It finds mixed evidence regarding the association between compensation consultants and executive compensation and has focused only on pay levels and not on the composition of pay (e.g., Conyon (2011), Conyon et al. (2009), Cadman et al. (2010) and Murphy and Sandino (2010)).[1]

In this paper I explore the effect of *independent* advice on CEO incentive pay. I focus on the degree of independence, as this is central to agency concerns in the hiring of compensation consultants. Given the theoretical and empirical link between incentives and long-term value

[1] Armstrong et al. (2010) suggest that governance differences between the companies explain the mixed evidence, arguing that CEOs of companies with weaker governance use consultants to extract higher pay.

creation, I focus on the structure of incentive pay, while also providing new information on how independence of advice affects the level of pay. To understand the impact consultants have on incentives, I need examine the role of consultants on not only the choice of benchmark firms for setting overall compensation levels, but also on their role in selecting peer firms for setting performance benchmarks.[2] These peer firms play a pivotal role in identifying the inflexion points in compensation payouts and ideally they are chosen so one can filter out exogenous shocks to identify the impact of management effort on performance.

To understand how access to such independent advice can affect the compensation setting, I introduce a simple optimal contracting framework where CEOs provide information to boards about peer firms, and external advice provides a mechanism to improve the quality of that information. The CEO has private information about peer firms and in the absence of independent advice will suggest peer firms that have the potential to underperform.[3] The board cannot use a standard revelation-mechanism to elicit the CEO's private information, but it can hire a consultant who provides costly state-verification. I model two frictions. First, I assume the consultant as being capable of providing the true peer comparison group, but its likelihood of doing so is contingent upon the conflict of interest from its business model. On the one extreme is the independent consultant that derives revenue solely from consulting for boards. On the other extreme is a consultant who derives almost all his revenue from services paid for by management. Second, I allow for the possibility that CEOs have power over boards and use that power to prevent the board from hiring an independent consultant.

The introduction of an independent consultant thus has a direct impact on improving the board's information. The model delivers three key predictions: 1) the optimal PPS and the RPE components of the CEO's compensation contract increase when the board hires a compensation consultant, 2) the PPS and RPE components of the CEO's compensation contract increase with the consultant's degree of independence, and 3) the probability of hiring an independent consultant decreases with the relative power of the CEO over the board.

To test these predictions, I use a sample of the largest 230 Canadian firms over the period from 2005 to 2009 and examine whether the presence of compensation consultants, and whether the independence of their advice influences CEO's PPS and the use of RPE. I use Canadian firms because since 2005 they are required to identify their compensation consultants and disclose the nature of other services provided by the consultant. Moreover, many large Canadian companies also disclose the fees paid to consultants for both executive compensation services and other work provided. Therefore, I am able to construct a meaningful measure of cross-selling incentives based on the ratio of fees paid for other services provided by the consultant to fees paid for compensation-related services. This data has only recently become available for U.S. firms because prior to 2010 they were not required to disclose the fees charged for compensation-

[2] For more on the selection of benchmarking peer groups and their impact on executives' level of pay see Bizjak et al. (2011) and Faulkender and Yang (2010).

[3] This information could be information regarding the strategies of peer firms, the impact of a shock across peer firms on the current firm's cash flows, or whether the choice of peer firms is the correct one.

related and non-compensation-related services.

A major advantage of the Canadian setting is the ability to address concerns about endogeneity, namely, the possibility that seeking independent advice and awarding efficient compensation packages are both practices of well-governed firms. I draw conclusions from three separate experiments, each of which deals with the potential endogeneity issue in a different way. First, I estimate regressions that attempt to address the endogeneity of consultant independence choice by controlling for firm characteristics that might drive such a choice. Second, I take advantage of the presence of an institutional shareholder group's campaign to get firms to use independent advice, using the group's combined shareholding in the firm as an instrument for choice. Third, and most importantly, I take advantage of a close to ideal situation where one consultant that dominated the compensation setting switched from being affiliated to providing completely independent advice. Because the consultant had a very strong relationship with his clients, all of his clients stayed with him after the switch. Thus, for these firms, the board and the consultant remain the same, and the only thing that changes is the independence of the consultant's advice. In this sense, the firms have not chosen the level of independence of the advice they receive, but rather the consultant chose to become independent. The presence of this consultant in the data also improves the power in my other tests, as this helps to provide significant cross-sectional and time series variation in the level of independence of advice.

In OLS regressions that control for observable firm characteristics as well as unobservable firm characteristics via firm fixed effects, I find a statistically and economically important impact of compensation consultants on CEO contracts. I use both the overall PPS that includes bonuses and equity pay and also Jensen and Murphy's (1990) Portfolio Equity Incentives (PEI) to measure CEO incentive pay. I find that the effects are stronger when consultants are more independent: a one standard deviation decrease in the ratio of other services to compensation related services increases the overall PPS by 9% (from 12% to 21%), the PEI by \$9 per \$1000 change in shareholder wealth and RPE, by 6%, (from 15% to 21%). The advantage of this experiment is that I can use the largest possible sample of firms. A limitation is that the estimates assume that the unobservable firm characteristics are constant over time.

As a second effort to better isolate the impact of independence on CEO pay, I estimate a regression that controls for the endogenous decision to hire an independent consultant. I assume that board decisions on choosing advice are influenced by their owners' preferences and construct an instrumental variable based on ownership by a group of institutional investors that campaigned for the use of independent consultants. Ownership by this group is a valid instrument to the extent that it provides an exogenous change in the probability of hiring an independent consultant while not impacting a CEO's PPS and RPE. These results provide further evidence of a causal relationship between managerial incentives and independent advice, albeit with a lower magnitude. The estimates imply that the CEO's PPS, PEI, and RPE increase by 3%, \$6.7 per \$1,000 shareholders wealth change, and 3.5%, respectively following hiring an independent consultant.

Third, and I argue most convincingly, I provide a test of independence on incentive pay that exploits a quasi-natural experiment. In 2006, Ken Hugessen was a leader at Mercer's Executive Compensation Practice in Canada, a dominant firm for Canadian publicly traded companies, accounting for 57.1% of the market in 2005. Mercer along with all other firms at the time in the Canadian market provided firms with compensation advice as well as other services. In June 2006, Hugessen left Mercer and established Hugessen Consulting as a new and independent business committed to providing advice solely to boards rather than management. All of Mercer's compensation consulting clients, who dealt directly with Ken Hugessen, switched to Hugessen Consulting.

The spin-off of Hugessen provides an opportunity to identify the causal effect of independent advice. Focusing on changes in CEO contract specifications for firms that switched from Mercer to Hugessen allows me to clearly separate the effect of selection from the effect of advice on CEO incentive pay because the variation within this sample is due to the elimination of cross-selling incentives.[4] Although the sample of switching firms is smaller, I find statistically and economically significant effects of independent advice that is between my prior two estimates. The CEO's PPS, PEI, and RPE increase by 4.5% (from 20% to 25%, i.e., 22% relatively), \$7 per \$1,000 shareholders wealth change, and 5% (from 16% to 21%, i.e., 28% relatively), respectively following the switch. I also find some (weaker) evidence of a negative impact on the level of CEO pay when the consultant is more independent. The simultaneous increase in incentive pay and decrease in the level of pay are consistent with the notion that boards access to independent advice results in more efficient CEO contracts.

Consultants can also affect CEO's annual incentive plans (i.e., bonus programs), in particular, by ensuring that the performance targets have not been set lower than expectations at the time when plans are determined. Like Kim and Yang (2010), I find that the EPS target in annual incentive plan is consistently set lower than analyst consensus (\$0.09 difference in means). Hiring an independent consultant decreases the discrepancy between the EPS target and the analyst consensus on annual EPS by \$0.03. Consistent with the previous findings, this evidence is suggestive of another way that independent consultants help the board to set compensation plans that are more sensitive to performance.

Overall, the empirical analysis isolates the impact of independent advice on compensation setting. Hiring a more independent consultant leads to a higher sensitivity of CEO pay to both stock and accounting firm performance, as well as higher CEO PEI and RPE. Over time, such stronger incentives are predicted to increase shareholder value. The positive impact of incentive pay on firm value has been documented in studies such as Dai et al. (2011), Aggarwal and Samwick (2003) and Aggarwal and Samwick (2006).

The stock market response to the news of the separation of Hugessen from Mercer provides an excellent setting to analyze the impact of independent advice to the board on shareholder

[4]During 2010, there were two similar events in the U.S., the separation of Pay Governance LLC from Towers Watson and Meridian Consulting from Hewitt Associates.

value. On April 18th, 2006 for the first time the separation of Hugessen from Mercer and establishing an independent consulting firm was reported in the media. The article indicated that "Mr. Hugessen, who provides executive compensation advice to the boards of many of Canada's largest companies, plans to leave Mercer in October to set up his own, independent firm, because clients are increasingly looking for compensation consultants with no perceived conflicts of interest."[5] The abnormal returns of Ken Hugessen's former clients at Mercer following the separation announcement give an initial indication of the value impact of independent advice. On average, equity value increases by 1.1% over a 3-day event window (days -1 to +1). The economically and statistically significant abnormal return provides further evidence on the impact of independent advice.

These results suggest that independent advice improves CEO incentives and raise the question why many boards do not seek the advice of consultants or use affiliated consultants. The model predicts that firms with more powerful CEOs are less likely to hire an independent consultant and I find evidence consistent with this prediction. As a measure of CEO power, I use a dummy variable for firms with multiple voting shares, a common structure in Canadian capital markets. I find the probability of hiring an independent consultant is 7.5% lower when a firm has dual class voting shares. This finding is consistent with the notion that more powerful managers can influence the consultant hiring decision, imposing an indirect cost on the shareholders by preventing them from receiving independent advice on compensation. I also find evidence that independent consultants are more expensive. My estimates show that hiring an independent consultant is associated with a premium of 22% in consulting fees, largely driven by an increased number of hours.

Finally, I examine the benefits of independent advice for firms that have better informed compensation committees. If consultants reduce the information asymmetry between the board and the management, the benefits of hiring a consultant should be greater for firms that have less experienced compensation committee members. Consistent with this idea, I show that the benefits of independent advice are reduced when the compensation committee has more experienced members who also serve on other compensation committees, or when they benefit from having ex-CEOs on the committee.

These results contribute to at least three literatures. First, they provide new evidence on the determinants of incentive pay. Prior research has focused on the agency problem driven by the information gap between boards and managers and its consequences. My analysis incorporates a new dimension that allows boards to bridge the gap at a cost, and shows that this influences the use and strength of high-powered incentives. This contribution is distinct from the limited existing research on independent compensation consultants. To the best of my knowledge, there are only two papers that have previously tackled this question. These papers focus on the impact of advice on pay levels rather than on incentives. Cadman et al. (2010) do not find an effect

[5]See "Consulting ties that bind send adviser out on own; Clients seek consultants free of conflict" *The Globe and Mail*, April 18th, 2006 page B7.

of consultant independence on CEO pay levels using coarse measures of independence and a sample of firms in the U.S. in 2006. On the other hand, Murphy and Sandino (2010) focus on a cross-section of Canadian firms in 2006 and find that independent consultants are associated with lower levels of CEO pay. However, neither paper can clearly identify a casual effect.

Second, my results provide a new perspective on the use of RPE. The gap between theory, which predicts extensive use of RPE, and the evidence, which shows its limited use, has long been a challenge for those advocating an optimal contracting perspective for compensation setting.[6] My model provides one rationale for the limited use of RPE, driven by the boards' understanding that the conflicted advice would be too biased towards management, leading them to avoid its use. My empirical results are consistent with this notion. By hand collecting data on the performance peer groups from proxy circulars, I show that resolving this conflict by using independent advice changes the peer groups and this is associated with a materially greater use of RPE.

Third, my paper contributes to the larger governance literature that is interested in exploring whether the independence of advice matters for a range of advice boards receive. This paper's findings are congruent with research on the independence of other corporate advisors, such as auditors and analysts, which finds that conflict of interest influences quality of advice. Regarding auditors, Frankel et al. (2002) indeed show that greater conflict, as measured by fees paid for non-audit services is associated with more earnings management. Regarding investment advisors, Michaely and Womack (1999) find that conflicted analysts' recommendations have a much lower impact on stock prices than independent analysts.

The article proceeds as follows. Section 2 provides a theoretical framework and the empirical predictions. Section 3 describes the data. Section 4 reports the empirical results. Finally, Section 5 concludes.

## 2 Theoretical Framework and Empirical Predictions

To understand better the potential impact of compensation consultants on managerial incentives, I introduce a theoretical framework that is developed more fully in the Appendix.[7]

In a firm with a risk-averse CEO and risk-neutral shareholders, I assume that the end of

[6] Despite Holmstrom's (1982) theoretical argument that there are advantages of using RPE, prior empirical research finds that relatively few firms use RPE (De Angelis and Grinstein (2010)) and among those that do, conclusions are mixed (See also Jensen and Murphy (1990), Gibbons and Murphy (1990), Barro and Barro (1990), Aggarwal and Samwick (1999), Bertrand and Mullainathan (2001) and Garvey and Milbourn (2003)). Albuquerque (2009) shows that some studies do not find evidence in favor of RPE because peer groups are misspecified.

[7] The model builds on the insight and approach in Holmstrom (1982) and Holmstrom and Milgrom (1987). Holmstrom (1982) highlights the Informativeness Principle which indicates that optimal compensation should rely on performance measures that are more accurate signals of CEO's effort. The board can increase the accuracy of the firm's performance measures by offering contracts that remove any component of the performance that is not a consequence of CEO's effort. Inclusion of RPE in CEO's compensation package, thus, results in better risk-sharing and more efficient contracts.

period cash flow is a function of both the CEO's unobservable effort and other events not affected by the CEO, captured by a random noise. The board does not observe CEO's effort, but does observe the cash flow. In addition to the firm's realized cash flows, the board also observes other firms' cash flows. The board can include other firms' cash flows as measures which are not affected by the CEO's action but are statistically related to the cash flow. However, the board does not have the expertise to identify firms that share systematic components in their performance with the firm. On the other hand, the CEO, due to her expertise, has private knowledge regarding the appropriate peer group. This could be information regarding the strategies of peer firms, the impact of a shock across peer firms on the current firm, or whether or not the choice of peer firms is the correct one. The board only has a noisy prior belief about possible peer strategies.

The CEO receives a compensation package that includes a base salary and a performance-based component that is positively related to the firms' performance and negatively related to the peer group's performance. The relative weights allocated to the firm's and the peer group's performance, as well as the salary, are initially determined by the board.

I also assume that the choice of peer firms is not contractible. While this choice is observable, the statistical relation between the peer firms' performance and the firm's performance is not verifiable. Although shareholders could potentially monitor managers' peer firm suggestions, doing so is costly. Monitoring is particularly costly in large, publicly traded corporations in which ownership is dispersed. Hence, in this sense, the private information regarding peer firms strategies is soft. However, the board can hire a consultant to learn about the peer firms' strategies probabilistically. When the board does not hire a consultant, it has to rely on the CEO's suggestion regarding peer firms. The consultant can reveal the true information to the board with some probability. In other words, the consultant's advice hardens the information. Therefore, the information used in the selection of compensation peer group is neither soft nor hard; rather, it is *semi-soft*.

When the consultant is hired, upon success, the board is informed about CEO's private information, it minimizes the risk premium and chooses the first-best peer group. When the consultant fails, the board does not receive any recommendation from the consultant and relies on CEO's choice. Unlike the board, the CEO also cares about the mean of the peer firms' performance. A weak peer group makes the unobservable CEO's effort seem relatively more important to the firm's cash flow. If the CEO and the board agree on the choice of peer firms, there would be no need to hire a consultant.

The benefits of the consultant are twofold: first, the consultant directly reduces the cost of compensation by reducing the risk premium. The board relies on the biased recommendation of the CEO in fewer states of the world since the board will receive accurate advice from the consultant with some positive probability. Second, there is also an indirect benefit due to the higher PPS. The reduction in uncertainty about peer performance positively affects managerial incentives, resulting in higher managerial effort.

Next, I focus on the level of consultant independence from the management. The delivery

of other services by the consultant often creates a conflict of interest because the decision to hire the consultant in these more lucrative consulting areas are made by the same managers who are the subject of the consultant's pay recommendations. The CEO's bias in the choice of peers makes the "affiliated" consultant's advice potentially different from the independent consultant's advice. The independent consultant's incentives are thus better aligned with the board's interests. Without defining a separate utility function for the consultant, I assume that the affiliated consultant, who is concerned about his business with the management, would reveal the true information, with a lower probability.

I also incorporate managerial power into the theoretical framework. Thus, I can investigate how the impact of independent advice on contract specifications such as PPS and RPE varies with the power possessed by managers. CEOs can be of two types - a powerful CEO who can influence the decision of who is hired by the board as the consultant, or a less-powerful CEO who cannot rig the consultant hiring decision. Shareholders have access to some public information about a CEO's power such as whether the CEO is related to the directors. For them, the CEO will have the authority to hire her desired consultant with some prior probability. In other states of the world the board has the consultant hiring authority. Due to her desired choice of peer group, a powerful CEO would always make sure that the board has hired a consultant who is fully affiliated.

This model leads to two main results: 1) The optimal PPS and RPE increase with the hiring of a consultant and with its degree of independence. 2) An increase in CEO's power results in a reduction in the positive impact of independent advice on PPS. This leads to a smaller range of model parameters for which hiring an independent consultant is preferred.

Given that not using consultant's advice is associated with relying on CEO's biased suggestion, it is clear that, when hiring a consultant is optimal, its presence is associated with higher PPS and RPE. An increase in the consultant's independence leads to a higher probability of revelation of the true information, which in turn, increases the informativeness of the firm's performance measures. The reduction in the uncertainty regarding the peer group enhances the CEO's ability to bear risk. Given that an optimal contract is characterized by the trade-off between incentives and risk, CEOs with a high risk-bearing ability should be given a high-power contract. Another simple interpretation is that more independent consultants provide more accurate advice to the board, allowing the board to reduce the risk premium of the contract. The informational advantage of the CEO is reduced. Hence, the board is able to choose an optimal contract that reduces the systematic component of the firm's cash flows and relies more on firm's performance, leading to a higher optimal PPS.

Hiring a consultant to access the peers' information is costly. Given that affiliated consultants receive monetary benefits from their other lines of business, they are usually able to provide compensation advice at less cost. Therefore, I assume also that the cost of hiring a consultant is increasing in his level of independence. Hiring an independent consultant or increasing his level of independence is optimal if the benefits of higher managerial incentives outweighs the higher

cost associated with higher level of independence.

When ignoring managerial power, the main result regarding the impact of consultant's level of independence on CEO's contract PPS and RPE remains unchanged. However, this highlights the impact of powerful CEOs on the cost benefit trade-off associated with hiring a more independent consultant. In equilibrium, the reduction in the marginal benefits of independent advice due to the higher level of CEO power, adds to the direct cost of independent advice and reduces the likelihood of optimality of hiring independent consultants.

This theoretical framework provides a set of testable empirical predictions, that are summarized as follows:

- The PPS and the RPE component of CEO compensation contracts increase when a compensation consultant provides advice to the board.
- The PPS and the RPE component of CEO compensation contracts increase with the compensation consultant's degree of independence.
- The probability of hiring an independent advisor decreases with the relative power of the CEO over the board.

# 3 Variable Construction and Sample Selection

## 3.1 Why Canada?

To explore whether compensation consultants, and their level of independence, impacts compensation setting I look at incentives for CEOs in Canadian publicly-traded firms between 2005-2009. In Canada, like in the U.S., there is significant dissatisfaction with executive compensation setting, including the level and the incentives that arise from the process. There are four main advantages for exploring this question in a Canadian, rather than a U.S. context. First, Canadian firms provide superior public information on the level of independence of consultants, as in Canada there has been widespread reporting of not only pay for compensation services, but also other services by the same consultants.[8] Second, there is wide cross-sectional and time series variation in the level of consultants' independence. This is driven in large part by the early creation and success of compensation consultants that solely provide advice to boards and commit not to providing other advice to the same firms. Third, in Canada the presence of an institutional shareholder group's campaign to get firms to use independent advice enables me to construct an instrument for the choice of consultant based on the institutional shareholder combined holding in the firm. Fourth, institutional features of the Canadian setting provide an excellent opportunity to address concerns about endogeneity. I take advantage of the quasi-natural experiment of an important consultant that switched from affiliated to independent advice and kept almost

[8]See Disclosure of Corporate Governance Practices, National Instrument 58-101.

all of his clients. This switch allows me to identify the impact of independent advice within this subgroup where firms did not change, boards did not change and the consultant did not change.

### 3.2 Data Sources and Summary Statistics

To identify the use and level of independence of compensation consultants I turn to public filings of Canadian traded companies, notably the Management Information Proxy Circulars.[9] I identify the largest 230 Canadian companies ranked by market capitalization as of December 31, 2009. The sample period is from 2005 to 2009. From Canada's System for Electronic Document Analysis and Retrieval (SEDAR), I am able to locate proxy circulars covering fiscal-years 2005 to 2009 with usable compensation data and information about whether or not a firm hired a consultant for 910 firm-year observations. 162 out of 230 firms used a consultant at some point during the sample. In total, there are 698 firm-year observations where consultants were engaged for advice on executive compensation, and 117 which employed more than one consultant.

For the set of firms that used a consultant, I determine whether or not the consultant provided other services to the firm's management. However due to limited disclosure, in particular in 2005, I am only able to collect data on fees paid for other services for a smaller subsample of 401 firm-year observations. After 2006 Canadian corporations were strongly encouraged to report the fees paid to consultants for their consulting advice related to compensation and the fees paid to these consultants for any other services provided.[10] This is mainly attributed to the "Best Practice Guidelines" issued by the influential Canadian Coalition on Good Governance (CCGG), an advocacy group composed of the largest institutional investors in Canada. In the Appendix, I provide a detailed example of how I collect and compute consultant's information from annual proxy circulars.

The market for executive compensation consulting services is dominated by a few firms in Canada. However, the market shares among the big players have changed since 2005. As reported in Table 1, 23% (209) of the 910 firms in my sample did not hire a consultant for compensation related advice. This number has decreased from 32.1% in 2005 to 18.1% in 2009. 85.1% (596) of the firms that retained compensation consultants, employed one of the six large consultants: Towers Watson (Towers Perrin or Watson Wyatt prior to their merger in 2009), Mercer Human Resources Consulting, Hewitt Associates, Frederic W. Cook, Hay Group, and Hugessen Consulting which was established in 2006 after separation from Mercer. The remaining firms report using one of 20 other small consulting firms.[11]

[9] These Information Circulars are roughly the equivalent to proxy statements in the US. The compensation disclosures are explicitly patterned off of the SEC's 1992 proxy disclosure rules.

[10] Starting from the fiscal year of 2010, based on the D.F.W.S.Reform (2010), the SEC requires U.S. companies to disclose ties with their compensation consultants by making public business relationships, including how much they pay the advisors.

[11] These other consulting firms which control a very small market share in my sample include PCI-Perrault Consulting Inc., Global Governance Advisors, Gurr & Associates, 3XCD, CEL & Associates, H. Wilkinson Consulting Group Inc., McLagan Partners Inc., Martineau Consulting, Buck Consultants, AON, and Graham Waldon. No single consultant in this group has more than 9 clients (1%) in my sample.

[Insert Table 1 Here]

Table 1 illustrates the evolution of consultant market shares since 2005. Table 1 also reports the consultant market shares based on the percentage of fees charged. Towers Watson has the largest market share in my sample. Mercer's market share declined from 30.2% (57.1% based on fees) in 2005 to 21.1% (14.0% based on fees) in 2009. This is mostly due to firms that switched to Hugessen after Ken Hugessen separated from Mercer in 2006. Since then Hugessen's market share has increased to 16.6% (19.3% based on fees) in 2009.

I collect data on stock prices from DataStream and I use this data to calculate annual stock returns. I also use DataStream to identify firms with dual-class voting shares. I collect accounting data from WorldScope. Information about the CEO and board of directors was obtained from The Clarkson Centre for Business Ethics and Board Effectiveness (CCBE) at the University of Toronto. The Clarkson Centre also provided the names of the compensation committee members and their experience and background for 2008 and 2009 fiscal years. I collect the ownership stakes of institutional investors from Capital IQ. Using the list of the members of CCGG in each year, I construct the total ownership stake of CCGG members each year.[12]

All the variables are measured at the end of each fiscal year. All of the dollar variables are measured in 2009-constant Canadian dollars, using the appropriate exchange rates. To ensure that data outliers do not drive the results, I winsorize all continuous variables at the 1st and 99th percentiles.

### 3.3 Compensation Consultant Independence

One of the key measures used in this study is the measure of consultant independence. I define other services as additional services provided by the consultant to the management, which are beyond compensation related services , e.g., employee-pay services, benefits administration services, and actuarial services. Providing these services has the potential to create a conflict of interest. In order to determine the level of independence of compensation consultants from management I first need to identify the consultant that was hired in a given fiscal year. The consultant for a given firm is considered to be independent if it does not provide any other services to the firm.

For the purpose of this study, a consultant's level of independence can be thought of as the level to which the consultant caters to the CEO's preferences when providing advice to the board about the design of the CEO's compensation package. I construct two measures of consultant independence

***Independence Dummy.*** The first proxy, *IndDummy*, is a dummy variable that equals one if at least one of the compensation consultants hired by the firm is independent and is zero otherwise.[13]

[12]The members of CCGG changes in different fiscal years. Hence, *CCGG* in different years incorporates inclusion of new members to the CCGG.

[13]In my sample, 13% of firms hire more than one consultant in a fiscal year. Changing the definition of

***Independence Ratio.*** To capture different levels of independence, I follow Murphy and Sandino (2010) and construct the *IndRatio* as a measure of consultant independence. The fees paid by management for other services are divided by fees paid by the board for compensation related services. I also multiply this ratio by minus one to capture the level of consultant's independence rather than its lack of independence.[14] This allows an assessment of the importance of these other services provided by the consultant in the case where the same consultant is hired for both compensation related services s well as other services. That is, the *IndRatio* measures the magnitude of the conflict of interest that is present due to the cross-selling of different products. If a firm hires an independent consultant, or if it hires two different consultants for compensation related services and other services, the *IndRatio* will equal zero for that fiscal year.

[Insert Table 2 Here]

Table 2 presents descriptive statistics of the sample firms. Panel A presents descriptive statistics of consultant characteristics. The mean of *ConsDummy* is 0.76, indicating that 76% of the sample firms hired at least one consultant. Some firms hired more than one consultant for compensation related advice, hence, the variable *NumberofCons* has a mean of 0.89. Within the smaller sample of firms that hired a consultant (698 firm-year observations), 26% hired at least one independent consultant. Thus, the mean of variable *IndDummy* is 0.26. The firms in my sample disclosed compensation-consulting fees for 401 of the 698 firms with identified consultants; the average (median) *CompFees* is \$117,628 (\$74,252) . Similarly, the average (median) *OtherFees* is \$406,527 (\$50,861). The average *IndRatio* (ratio of *OtherFees* to *CompFees*) is -3.44.

To further our understanding regarding the time-series changes in the *IndRatio*, in Panel B, I report average *CompFees*, average *OtherFees*, and average *IndRatios* for each fiscal year. The average *IndRatio* has non-monotonically increased since 2005, with the lowest value of -5.32 in 2006 compared to -1.85 in 2008. The variable *IndDummy* has increased from 0.15 in 2005 to 0.32 in 2009. The changes in *IndRatio* and *IndDummy* indicate that firms have hired more independent consultants in recent years.[15]

### 3.4 Performance Peer Groups

To identify each firm's peer group, I collect the name of the firms included in the performance peer groups from the annual Management Information Circulars. I then construct *PeerReturn* as

independent dummy to a dummy variable that equals one if all the consultants hired in a specific year are independent does not alter the results.

[14] As an alternative one can construct a measure based on the ratio of other fees to total fees. However, the total fees are not always disclosed. By using *IndRatio*, I wont need the other fees as long as I can make sure that at least one consultant did not provide other services, e.g., if the consultant is an independent consultant.

[15] At the first glance, my results seem to be inconsistent with Murphy and Sandino (2010) who report a much larger average ratio of *OtherFees* to *CompFees* of 13 in their Canadian sample. However, their sample includes only 37 firms from 2006. My sample includes many more firms in each year and goes from 2005 to 2009.

the equally-weighted average stock return of the firms included in the performance peer group.[16] Some firms report that they use segment specific ETFs for the purpose of relative performance evaluation. In these cases, I measure the *PeerReturn* as the ETF's annual return. In my sample about 40% of firms explicitly use RPE in setting executive compensation. If performance peer firms were not explicitly reported in the proxy, the appropriate segments ETF's annual return is used (e.g., ETF S&P/TSX Capped Energy Index Fund). This ensures that the implicit use of RPE is captured, as reported in studies such as Gibbons and Murphy (1990).[17]

### 3.5 CEO Pay

I define a CEO's total compensation (*TotalComp*) in a given year as the sum of her salary, bonus, the grant-date value of restricted stock awards, and the Black-Scholes value of granted options, and other pay that includes items such as long-term incentive plans, premiums for insurance policies, and medical expenses. All the compensation variables are collected from the firms' annual Management Information Circulars. In the analysis, I take the value of restricted stock granted as reported.

With respect to the value of option grants, unlike ExecuComp, the proxy circulars report the Black-Scholes value of the options. Instead of using the reported value of the option grants, I first retrieve relevant information about the CEOs' option grants (including the number of options, strike price, grant date, and expiration date). I then calculate the dollar value of each option grant, based on ExecuComp's "modified" Black-Scholes approach.[18] The correlation between the reported values in the circular proxies and the values based on my own calculation using the modified Black-Scholes approach is 0.87.[19]

Panel C of Table 2 presents descriptive statistics of CEO pay. The mean (median) CEO total pay is $4.05 million ($2.42 million). The figures from my Canadian sample are smaller than similar figures from the equivalent U.S. sample.[20] However, they are comparable in terms of other features, such as positive skewness. The mean (median) CEO cash pay and equity pay are $2.07 million $1.33 million) and $1.93 million ($0.85 million), respectively. The variable CEO Tenure has a mean of 7.71 years and a median of 5 years.

[16] I distinguish between benchmarking peer firms used to set the CEO's total pay from performance peer firms used for RPE.

[17] Gong et al. (2011) highlights the importance of distinguishing explicit from implicit use of RPE.

[18] To compute the value of an option grant, ExecuComp assumes that the volatility is the annualized standard deviation of stock returns during the 60 months prior to the grant date; the risk-free rate is the seven-year Treasury bond yield prevailing on the grant date; the grant-date stock price is the exercise price (the option is granted at-the-money); the dividend yield is average dividend yields over a three-year period prior to the grant; and the time to maturity is equal to 70% of the stated maturity.

[19] Alternatively when I use the reported option values in the proxy circulars, I find similar results.

[20] In an equivalent U.S. sample the mean (median) CEO total pay is $13.39 ($11.09), measured in U.S. dollars. It is well-known that CEO pay is higher in the U.S. compared to other countries (Southam and Sapp (2010)).

### 3.6 Measures of CEO Incentives

I construct three measures of CEO incentive pay. First, I use Jensen and Murphy's (1990) Portfolio Equity Incentives (PEI) to proxy for the CEO's incentive equity pay. PEI is defined as the dollar value of a CEO's wealth change (value of stock and options) relative to a \$1,000 change in shareholder value. Although CEOs can receive pay-performance incentives from a variety of sources, the vast majority of these are through ownership of stock and stock options.

For common stock, *PEI* is simply the fraction of the firm that the executive owns. *PEI* for options is the fraction of the firm's stock on which the options are written multiplied by the options' delta. I use the method developed by Core and Guay (2002) to estimate option deltas. Their method avoids the cost and difficulty of collecting option data from various proxy circulars because it requires information from only the most recent proxy circulars. More importantly, the authors show that their estimates are effectively unbiased and 99% correlated with the measures obtained if the parameters of a CEO's option portfolio were completely known.[21]

Panel C of Table 2 shows that the mean (median) value of CEO's *PEI* is \$39.21 (\$10.72) per \$1000 shareholder return. Similar to the pay figures, this is also smaller than CEO's *PEI* in an equivalent U.S. sample (mean of \$70.1 and median of \$23.8 per \$1000 shareholder return).

Second, I use the CEO's total pay-performance sensitivity (PPS) and Relative Performance Evaluation (RPE). To estimate the PPS and RPE, I use the following model.

$$CEOPay_{it} = \alpha_0 + \alpha_1 FirmPerf_{it} + \alpha_2 PeerPerf_{it} + \alpha_3 ControlVariables_{it} + \epsilon_{it}$$

$CEOPay_{it}$ is a measure of the compensation of the CEO. $FirmPerf_{it}$ and $PeerPerf_{it}$ are performance measures for firm $i$ and its performance peer group, respectively. Firm performance can be measured as the percentage change in equity value (i.e., stock return) or as the change in shareholder wealth (i.e., gross stock return multiplied by beginning-of-year market value). The choice depends on what drives CEO incentives. Hall and Liebman (1998) and Baker and Hall (2004) argue that if CEO incentives increase with CEO dollar ownership, then compensation should be specified as a function of stock returns. If, instead, CEO incentives are driven by the CEO's fraction of stock ownership, then performance should be measured in dollar terms. Firm's annual ROA or ROE can be used as an accounting measure of firm performance. In this study, I use stock returns as a measure of stock performance and *ROA* as a measure of accounting performance.[22] Control variables, explained in the next section, capture variation in CEO pay that is not related to firm or peer performance.

The coefficient, $\alpha_1$ measures the sensitivity of CEO pay to the firm's performance. When total compensation is used as the dependent variable, $\alpha_1$ measures the PPS of the entire CEO pay including the bonuses as opposed to the PPS that is only due to the equity pay.

[21] I also use Core and Guay's (1999) method to measure PEI as the CEO's wealth change for 1% shareholder return; my results remain similar.

[22] Alternatively, I replaced the firm's stock return with the change in shareholder wealth. The results are unchanged.

In this model, first proposed by Holmstrom and Milgrom (1987), RPE is defined as $\frac{\alpha_2}{\alpha_1}$. Most of the literature that follows this specification focuses on testing whether $\alpha_2$ is less than zero, because $\alpha_1$ is expected to be positive. Finding a negative and statistically significant $\alpha_2$ constitutes evidence that external shocks are filtered out from own-firm performance in compensation contracts. This test is also called a weak-form test of RPE.[23]

To estimate the impact of consultant characteristics on PPS and RPE I include interaction terms of the variable of interest, such as *IndDummy*, with *FirmPerf* and *PeerPerf*. The coefficient on the interaction terms measures the effect of the variable of interest on PPS and RPE.

As a third measure, I use the weak-form test of RPE regression but on the left hand side, I replace total pay with equity pay. Therefore, the coefficients $\alpha_1$ and $\alpha_2$ measure the sensitivity of CEO equity pay to the firm's and peer gorup's performance. This is an alternative approach to using PEI.

### 3.7 Control Variables

I use a set of control variables that influence compensation policies as suggested by the existing literature. The control variables are similar in all regressions. The cross-sectional level of a CEO's incentive compensation changes predictably with firm size (see, e.g., Baker and Hall, 2004). It is known that firm size also has a positive association with the level of pay. To control for this size effect, I measure firm size as the natural logarithm of the firm sales.

I include the firm's annual stock return (*StockReturn*) to control for the firm's stock performance. As an alternative to measure performance, I use a firm's Return on Assets (*ROA*), measured as the ratio of operation income before depreciation over total assets. Firms tend to use more equity-based compensation when they perform better (e.g., Core and Guay (1999)).

If CEOs have strong incentives to maximize shareholder wealth, debt holders will demand higher risk premiums for providing capital due to the problem of risk shifting. Based on this intuition, John and John (1993) predict a negative relation between leverage and PPS. Therefore, *Leverage*, computed as the ratio of long-term debt and current debt over total assets, is included as a control variable.

Optimal contracting involves the trade-off between providing incentives and risk sharing between managers and shareholders, such that incentive levels should decrease with firm risk. To measure the firm risk, I use stock return standard deviation based on the firm's monthly returns over a five-year period.

As suggested by Yermack (1995) and others, when firms have high growth opportunities, shareholders have greater difficulty evaluating managers' decisions, and thus, should provide managers with more performance-based compensation. To control for firms' growth opportuni-

[23] There is also a test of strong-form RPE, first proposed by Antle and Smith (1986) and used in studies such as Jenter and Kanaan (2010). Untabulated results show that tests using the strong-form RPE model yield significant and similar results to those using the weak-form RPE model.

ties, I use annual sales growth.[24] I also include the ratio of capital expenditure to firm's total asset to proxy firm's investments which captures to what extend the firm exercises its growth options.

I also control for CEO *tenure*. The length of tenure in the CEO position, could reflect the accumulation of specific human capital. I measure *Cash* as the ratio of cash and short-term investment over the firm's total assets. Hall and Liebman (1998) suggest that scarcity of cash may lead firms to substitute cash payment with equity pay. Therefore, availability of cash holdings may be an important determinant in setting executive compensation.

To control for differences in corporate governance, I include a measure of board independence as a control variable. Starting with Hermalin and Weisbach (1998), many papers find that boards dominated by insiders, whose incentives are presumably aligned with the CEO, are more likely to make decisions that are in the interests of the CEO. To measure board independence, I construct a variable, *IndependentBoard*, which equals two when at least two-thirds of the board members are independent from management. It equals one when less than two-thirds but more than half of the board members are independent, and it equals zero when less than half of the board members are independent.[25]

When estimating the likelihood of hiring and independent consultant, I include a dummy for existence of dual class voting shares, *DualClass*, because in firms with dual class shares, CEOs usually have more power in influencing the board's decisions. Finally, for fiscal years 2008 and 2009, I am able to construct two measures of the compensation committee's experience level. *ExpRatio* is constructed as the ratio of the number of experienced compensation committee members who have served on other compensation committees before to the total number of compensation committee members. *ExCEOOnCom* is a dummy variable, which equals one if an ex-CEO is present among the members of the compensation committee in that year, and zero otherwise.

Panel D of Table 2 reports the sample firms' characteristics. The median firm is quite large; its annual sales is \$808.07 million. The median firm has an annual sales growth of 12%, an *ROA* of 3%, and annual stock returns of 11%. The sample firms are moderately levered with a median leverage ratio of 21%, and have sizable cash holdings with a median cash ratio of 5%. They spend the equivalent of 6% of their total assets on capital expenditures. The median annual peer return of 10% is similar to the median annual stock return. 20% of the sample firms have dual class voting shares. The members of CCGG own a 26% stake in the median firm. The median firm has more than two-thirds of its board members identified as independent members.

[24] As an alternative measure for firm's growth opportunities, I use M/B ratio calculated as the ratio of market value of total assets over the book value of total assets, where the market value of total assets is obtained as the book value of total assets minus the book value of equity plus market value of equity. The unreported results remain mainly unchanged.

[25] Based on the IRRC's definition of independent board members, independent directors include retired executives of other firms, academics, private investors, and executives of unaffiliated firms. On the other hand, employees of the company or related company, executives of any affiliated company, and members with kinship to the CEO are considered insider board members, and thus, not independent.

In the smaller sample of 320 firm-years from 2008 and 2009, the compensation committees are quite experienced with a median *ExpRatio* ratio of 0.75. However, only 29% of the firms have an ex-CEO sitting on their compensation committees.

# 4 Empirical Results

In this section, I examine how annual pay responds to firm performance and peer group performance. I expect that CEO pay in firms with consultants will be more negatively related the peer group's performance, and will be more positively related to the firm's own performance measures. I also expect a similar result when comparing firms with independent consultants with firms which hired affiliated consultants. I use three separate empirical approaches. First, I use a pooled OLS regression that includes firm fixed effects. To further address enodgeniety concerns, I conduct two additional experiments. In the first test I use a selection model with an instrumental variable and in the second test I take advantage of a quasi-natural experiment.

## 4.1 CEO Contract PPS and RPE

I use an approach similar to that used by Murphy (1985) and Aggarwal and Samwick (1999) and estimate panel data regressions. Although I include the control variables discussed in the previous section, it is possible that the proxy for consultant independence is correlated with some unobserved firm characteristics that affect CEO compensation. To address this issue, I include firm fixed effects.[26] To account for time trends in CEO pay I include year fixed effects.

The results from the following regressions are reported in Table 3.[27] The inclusion of firm fixed effects in the regression allows me to interpret the coefficient estimates on the firm performance variables as measures of pay-performance sensitivities (see Aggarwal and Samwick (1999)). Throughout the empirical tests, p-values for all the regressions are computed based on robust standard errors clustered at the firm level.

$$\begin{aligned} Ln(TotalComp_{it}) \quad = \quad & \beta_0 + \beta_1 Perf_{it} + \beta_2 PeerReturn_{it} + \beta_3 Consultant_{it} + \beta_4 Perf_{it} \times Consultant_{it} \\ & + \beta_5 PeerReturn_{it} \times Consultant_{it} + \beta_6 Ln(Sales)_{it} + \beta_7 Leverage_{it} \\ & + \beta_8 CDF(Variance)_{it} + \beta_9 Cash_{it} + \beta_{10} SalesGrowth_{it} + \beta_{11} Capex_{it} + \beta_{12} Tenure_{it} \\ & + \beta_{13} IndependentBoard_{it} + \beta_{14} NumberofCons_{it} + Firm\ FE + Year\ FE + \epsilon_{it} \qquad (1) \end{aligned}$$

where $i$ indexes firms and $t$ indexes year. The dependent variable is CEO's total compensation. The variable *Consultant* is one of *ConsDummy*, *IndDummy* or *IndRatio*. Firm performance, *Perf*, is measured either with annual stock return or return on assets (ROA).

[26] Untabulated results show that tests using pooled OLS regressions yield qualitatively similar and statistically significant results.

[27] Instead of using sales to measure firm size in different pay regressions, I have also tried the book value of total assets and my main findings remain unchanged.

[Insert Table 3 Here]

In these regressions, I relate compensation to firm performance, peer performance, controls and our variables of interest. The level of PPS is driven by the coefficient on the firm performance variable and the level of RPE by the coefficient on the peer performance. To examine the importance of consultants (and their independence) I include a variable to capture this, and then focus on the interaction of this variable with firm performance and peer returns respectively, with the theoretical model predicting a positive and negative coefficient on stock market and peer returns respectively.

Column (1) includes the *ConsDummy* along with its interaction with *StockReturn* and *PeerReturn*. The theory predicts a positive sign on $\beta_4$ and a negative sign on $\beta_5$ and that is what I find. In Column (1), I find a significant impact of compensation consultants on incentives. The coefficient on $ConsDummy \times StockReturn$ is about 0.04 and is significant at the 5% level while the coefficient on $ConsDummy \times PeerReturn$ is about -0.11 and is statistically significant at the 10% level. These interaction terms measure the incremental differences in PPS and RPE between firms with a consultant and firms without a consultant. These results indicate that the use of a consultant is associated with an increase in the sensitivity of *TotalComp* to *StockReturn* from 7.7% to 12.0%, and an increase in the magnitude of its sensitivity to *PeerReturn* from -2.9% to -13.4%. The coefficients for the other control variables are generally consistent with existing empirical studies. In particular, *TotalComp* tends to be higher for firms of larger size, better performance, and CEOs with longer tenures. Finally, although not a focus of this study, I can identify the impact of consultants on total compensation. The coefficient on ConsDummy in Column (1) is -0.062 and is significant at the 10% level. This implies that, keeping all the other variables at their means, hiring a consultant is associated with a 5.96% decrease in CEO's total compensation ($\exp(0.062 + 0.041 \times 0.21 - 0.115 \times 0.11) - 1$).

In Column (2) I replace *StockReturn* with *ROA* to investigate the impact of hiring a consultant on the sensitivity of *TotalComp* to accounting measures of performance such as *ROA*. The main results are unchanged: *ConsDummy* has a negative relation with CEO's total compensation and enhances the magnitude of the sensitivity of *TotalComp* to firm's performance and to peer group performance.

In Columns (3) and (4), I focus on the observations in which a firm retains at least one consultant. I expect a positive sign on $\beta_4$ and a negative sign on $\beta_5$, when using *IndDummy* and *IndRatio*. In Column (3), the coefficient of *IndDummy* is -0.056 and is significant at the 5% level. The coefficients on the interaction terms $IndDummy \times StockReturn$ and $IndDummy \times PeerReturn$ are 0.035 and -0.081, respectively and are significant at the 5% level. These interaction terms measure the incremental impact of independence on PPS and RPE. These coefficients are also economically significant. A unit increase in *IndDummy* is associated with an approximate 4% (11.1% to 15.1%) increase in the PPS and a change from -15.1% to -21.7% in the RPE of CEO's compensation. The regression results also indicate that the levels of *TotalComp* are

well-explained by the regression model outlined earlier. Taking Column (3) for example, the overall adjusted $R^2$ is 39.3%, implying that the model explains a substantial proportion of the cross-sectional variation in *TotalComp*. In Column 4, I replace the *StockReutrn* with *ROA*. The main results remain unchanged.

In Columns (5) and (6), I replace *IndDummy* with *IndRatio* as a measure of the level of the consultant independence and re-estimate the previous two regressions. The coefficient on *IndRatio* is -0.006 and the corresponding p-value is 0.001. The coefficients on the interaction terms $IndRatio \times StockReturn$ and $IndRatio \times PeerReturn$ are 0.007 and -0.006 , respectively. They are statistically significant at 5% level. They are also economically significant as, for the same firm, one standard deviation increase in the *IndRatio* is associated with an increase in the PPS from 12% to 21% and a change in the RPE of CEO's compensation for around 6%. Replacing *StockReturn* with *ROA* in Column (6) does not alter the main results.

Overall, the results in Table 3 support the model's predictions that the PPS and the magnitude of the RPE of CEO compensation are positively associated with both retaining a compensation consultant and the level of independence of the consultant.

### 4.1.1 CEO Portfolio Equity Incentives and Equity PPS

The previous set of regressions evaluate the impact of consultants and independent consultants on total PPS and RPE using a weak-form RPE test. To examine the impact of independent advice on pay-performance sensitivity of equity compensation, I follow two different approaches. First, I estimate the following regressions using the Jensen-Murphy PEI as the dependent variable:

$$\begin{aligned} PEI_{it} &= \alpha_0 + \alpha_1 Consultant_{it} + \alpha_2 StockReturn_{it} + \alpha_3 ROA_{it} + \alpha_4 Ln(Sales)_{it} + \alpha_5 Leverage_{it} \\ &\quad + \alpha_6 CDF(Variance)_{it} + \alpha_7 Cash_{it} + \alpha_8 SalesGrowth_{it} + \alpha_9 Capex_{it} + \alpha_{10} Tenure_{it} \\ &\quad + \alpha_{11} IndependentBoard_{it} + \alpha_{12} NumberofCons_{it} + Firm\ FE + Year\ FE + \epsilon_{it} \end{aligned} \quad (2)$$

where the dependent variable, (*PEI*), captures the dollar-value change of all outstanding and current stock and option grants held by a CEO per $1,000 shareholder return (Jensen and Murphy (1990) and Core and Guay (1999)). The regressions include the same control variables as those used in Table 2 as well as firm and year fixed effects.[28] The main explanatory variables of interest are the same as before. The model predicts a positive sign on $\alpha_1$.

Unlike the weak-form RPE test, I am able to construct a PEI for every CEO-firm observation. Thus, there is no need to use interaction terms to estimate the effect of consultant characteristic on CEO PEI.

[Insert Table 4 Here]

[28] Due to the evident right skewness of the compensation data, I also incorporate median regressions as an alternative to the fixed effect regressions. The results, which are not reported, are qualitatively similar.

Panel A of Table 4 reports the regression results, using the CEO's *PEI* as the dependent variable. In Column 1, the coefficient of *ConsDummy* is about 2.4 and is significant at the 10% level. This result indicates that, for the same firm, retaining a consultant is associated with an increase in *PEI* by \$2.4 per \$1,000 shareholder wealth change, compared to the median *PEI* of \$10.7. In Column 2, the variable *IndDummy* has a coefficient of 8.0 and is statistically significant at the 5% level. This coefficient is also economically significant since an increase in *IndDummy* from zero to one is associated with an approximate increase of \$8 per \$1,000 shareholder wealth change. The coefficients of other control variables are generally consistent with existing empirical studies. In particular, *PEI* tends to be higher for firms of smaller size, better stock performance, better accounting performance, lower leverage ratio, and longer tenures.

In Column 3, I replace *IndDummy* with *IndRatio* and re-estimate the previous regression. The main result is unchanged: CEO incentives measured by *PEI* increases with the level of independence of the consultant. The coefficient of *IndRatio* is 0.825 and is significant at the 1% level. This coefficient is also economically meaningful: When *IndRatio* increases by one standard deviation, the CEO is awarded an increased PPS of \$9.27 per \$1,000 shareholder return. Therefore, this result is consistent with the prediction that a lower level of cross-selling conflict of interest leads to higher CEO stock-based pay sensitivities.

As a second approach to estimate the impact of consultants and their level of independence on equity-pay-performance sensitivity and RPE, I use the weak-form RPE test. The regression specifications are similar to Eq.(1) with the exception of the dependent variable. I replace *TotalComp* with *EquityComp*. The interaction terms capture the impact of consultants on the sensitivity of *EquityComp* to firm performance and peer performance. As shown in In Panel B of Table 4, the coefficients on the interaction terms are both economically and statistically significant in all six regressions with the exception of the interaction terms with *ROA*. The coefficients on *ROA* are not statistically significant in any of the six regressions either. This is consistent with the fact that accounting performance measures are usually used as metrics to pay bonuses as firms usually do not tie equity pay to accounting performance measures.

## 4.2 Identification

The cross-sectional regressions specified in equations (1)-(2) are the first step in testing the model predictions and document that: (a) hiring a consultant is associated with higher PPS and RPE in the CEO compensation contract, and (b) hiring and independent consultant as opposed to an affiliated consultant is associated with higher PPS and RPE in the CEO compensation contract. It also indicates that the results are robust to controlling for other firm and CEO characteristics. Although the model includes firm fixed effects, one must be cautious about the interpretation of the cross-sectional results on the effect of independent advice.[29] Firms are more likely to hire an independent advisor if they practice better corporate governance. But better

[29]See Whited and Roberts (2011) for the limits of firm fixed-effect regressions when dealing with endogeneity problems.

governed firms also use more performance sensitive compensation and RPE in their top executive compensation packages. This leads to a higher PPS of the CEO wage contract. The errors in my previous regressions are, therefore, likely to be correlated with whether a firm employs an independent advisor or not. Although the regressions include firm fixed effects, they assume that the unobservable firm characteristics are constant over time. If they are not, this creates a potential bias in my estimate of coefficients on *IndDummy* and *IndRatio*. In the next two subsections, I conduct two separate experiments in an attempt to identify a causal relationship.

### 4.2.1 Canadian Coalition for Good Governance (CCGG)

In this section, I specify an empirical model of the choice of consultant to attempt to identify a casual effect. The decision to hire an independent rather than an affiliated consultant depends on the board of directors as well as the business environment. As an instrument in the consultant selection equation, one should use an exogenous variable that affects the selection of the type of consultant but is less likely to affect the CEO's contract characteristics (Greene, 1997, Section 20.4.4). In my study, ownership by CCGG members provides such an instrument.

The CCGG is a coalition of pension funds, mutual funds and third party money managers that promotes good governance practices in the companies owned by their members.[30] They work with companies and policy makers to ensure that Canadian public companies have governance practices and a regulatory framework that meet or exceed global best practices. Since it was founded in 2003, the CCGG has emphasized "developing an independent point of view" in their annual "Best Practice" outlines. They have campaigned on issues such as

- Disclosure of the name of the compensation consultant (Canadian Securities Administrators (CSA) requirement).
- Seeking advice of an independent compensation consultant.
- Including in the committee mandate a provision that the compensation committee must pre-approve other work the compensation consultant performs at the request of management and disclose this requirement.
- Reporting the fees paid to the consultant for work performed on behalf of the compensation committee and on behalf of management.
- Disclosing the breakdown of fees paid for committee and management related work.

To improve corporate governance, the CCGG also runs a set of private communications with firms owned by its members. The CCGG's model is based on collective action. Together the members of CCGG hold a large enough stake to make firms take their word seriously. It is fair to assume that the CCGG spends more resources when it has more money at stake. The presence of

[30] Currently, there are 47 members who manage over $1.7 trillion in assets on behalf of Canadian investors.

CCGG members among the shareholders of a firm should they represent an exogenous shift in the probability that the firm will hire an independent advisor. Given that the CCCG has not directly campaigned for changes in CEO PPS or RPE, the ownership stake of CCGG members meets the conditions to be a valid instrument. With this instrument, I estimate a Heckman selection model to identify the causal mechanism between independent advice and CEO's contract specifications such as PPS and RPE.

Other indicators of good governance could also explain the choice of consultant. Although the decision to hire a consultant in Canada is made by the compensation committee, which consists of some independent directors, a powerful CEO will indirectly control the consultant hiring choice "given the considerable influence of the CEO and the CEO's management team over the board..." (Bebchuk et al. (2002)). Obviously, some board characteristics will necessarily be closely related to CEO's contract specifications. Adding such characteristics could make the selection equation and the second-stage equation alternate ways of estimating the same relation. As a result, I do not include a number of possible board and governance characteristics in the selection equation. I do, however, include a dummy for the existence of dual class shares because the CEO usually has more power in influencing the board's decisions in these firms. I also include other firm characteristics which are also present in the second stage regressions such as the log of sales as a proxy for firm size.

In all the previous regressions, the estimated coefficients on proxies of consultant's independence measure the relation between independent advice and managerial incentives. Since the firms that hire independent consultants are not random and their decision is related to incentive pay, the error terms are correlated with the independence measures. Thus, the coefficients are biased upward. To eliminate this bias, following Greene (1997, Chapter 20), I estimate the consultant hiring decision, using an unobserved latent variable as the dependent variable and a set of variables that affect the decision to hire an independent advisor such as the instrumental variable of initial ownership stake of CCGG members.

I can estimate the consultant selection equation and the incentive pay equations as a simultaneous equations system or using Heckman's (1979) two-step estimator, which is the approach I choose.[31] Assuming that the error terms in the two equations are bivariate normally distributed with means zero, and correlation $\rho$, I compute the "inverse Mills' ratio", $\lambda$. The first step of the Heckman (1979) procedure is to obtain estimates of the coefficients on the exogenous variables in the selection equation using a probit model. These consistent estimates can then be used to compute values for $\lambda$. The second step estimates the incentive pay equations using OLS, but with an additional term, $\lambda$, to correct for self-selection. The coefficient on $\lambda$ is associated with $\rho$ that captures the sign of the correlation between the error terms in the two equations.[32]

[31] The results of the two step model is identical to a simultaneous equations approach of a pair of switching regressions where there are two different regression equations and a criterion function (See Heckman and Urzua (2010), Lee (1978) and Maddala (1986)).

[32] I also include a test using two-stage least squares (2SLS) in which I use the same instrumental variable from the probit model along with the probability of hiring an independent advisor to calculate the estimated value of

[Insert Table 5 Here]

The probit model results presented in Column (1) of Table 5, shows that the association between *CCGG* ownership, *DualClass*, *IndependentBoard* and the decision to hire an independent consultant are all statistically significant. Firms in which CCGG members own a larger stake are much more likely to have an independent consultant than those with smaller CCGG ownerships. The coefficients are estimates of the marginal effect on the probability when all of the other independent variables are at their mean value. This result implies that an increase of *CCGG* from the mean by one standard deviation is expected to increase the probability of selecting an independent consultant by about 3.8 percentage points. Among other independent variables firm size is also statistically significant at the 10% level. Larger firms are more likely to hire independent consultants.

It is also important to note that proxies for managerial power such as *DualClass* and *IndependentBoard* are economically meaningful. For example, firms with dual class voting shares, holding all other variables constant at their respective means, are associated with 7.5 percentage points lower probability of hiring an independent consultant. This result is consistent with the model's predictions.

The results of the Heckman regressions of the managerial incentive equation are presented in Columns (2) and (3) in Table 5. The regressions include $\lambda$, computed from the probit model in Column (1). In Column (2), the dependent variable is $Ln(TotalComp)$. The coefficient on *IndDummy* is -0.043 and is significant at the 10% level. The coefficients on $IndDummy \times StockReturn$ and $IndDummy \times PeerReturn$ are 0.025 and -0.041, respectively. Hiring an independent consultant is associated with an increase in PPS and RPE by 3% and 3.5% , respectively. In Column (3), I replace *StockReturn* with *ROA*. The results remain unaltered.

In Column (4), the dependent variable is CEO's *PEI*. The coefficient on *IndDummy* is positive and significant. One unit increase in *IndDummy* is associated with an increase of about \$6.5 per \$1,000 shareholder wealth change. I also re-estimate the weak-form test of RPE with *Ln(EquityComp)* as the dependent variable. The results are similar to the results in Panel B of Table 4, as both interaction terms have significant coefficients. The results in Column (5) indicate that firms which hired an independent consultant increased their CEOs' equity PPS and RPE.

Although still economically significant, the estimates are somewhat smaller than those in Table 4. This is not entirely unexpected as the effect of the selection bias limits the explanatory power of the *IndDummy* in the regression. After all, firms that hire an independent consultant have both positive prediction errors in the consultant selection equation, and positive residuals in the managerial incentive equation. In Columns (2) to (5), the control variables have similar signs and magnitude as those from Table 3 and 4.

independent advice. I then use the fitted value from the first-stage probit as an instrument for $IndDummy_{it}$ in the second-stage regression. The results are unchanged.

This experiment has the advantage of retaining all the observations in the main regressions. The instrument also meets both the exogeneity and the relevance requirements. However, it is difficult to infer causality from just one experiment. In the next section, I present another method to address the endogeneity concern.

### 4.2.2 Separation of Hugessen from Mercer

In this section, I exploit a "quasi-natural experiment" to assess the impact of independent advice. I investigate how the decision to switch from Mercer to Hugessen Consulting following Ken Hugessen's separation from Mercer in 2006 affects the following year's CEO contract specifications such as PPS and RPE. Mercer offers compensation advice as well as other services, whereas Hugessen offers compensation related advice only, and thus is considered independent. When Ken Hugessen left Mercer all his clients (with one exception) went with him.[33] I thus focus on the subsample of firms where the compensation consultant is Mercer in year $t-1$ and Hugessen in year $t$. These firms, in the year prior to the switch, have an average *IndRatio* of -4.68, which indicates they were receiving conflicted advice in year $t-1$. The advantage of this experiment is that between the year prior to the switch and the year after, the boards of directors and the compensation committees are largely unchanged. Moreover, the consultant is effectively the same. The only change is the elimination of the cross-selling pressure on the consultant. Therefore, by concentrating on this subsample, I can isolate the effect of independent advice without the inherited selection bias.

I compare the means and medians of *PEI* for the the subsample of firms which hired Hugessen in year $t$ and Mercer in year $t-1$. The difference in average *PEI* in the Hugessen subsample is larger than the average *PEI* in the subsample of firms with affiliated consultants ($66.02 vs. $48.98). The difference is also statistically significant at the 5% level. The comparison of *PEI* in medians provides a similar result.

Table 6 reports the impact of changing the consultant from Mercer to Hugessen on Total PPS, RPE, PEI and Equity PPS. I re-estimate the previous regressions as pooled OLS. Nine industry dummies are included to control for industry variation in executive pay schemes. The industry classifications include Energy, Industrial, Financial Institutions, Consumer Discretionary, Mining & Materials, Utilities, Telecommunication Services, Information Technology and Health Care. In general, there is some evidence of industry concentration among the consultants. For example, Hugessen Consulting controls larger market shares in Industrial, Financial Institutions, and Telecommunication Services.

Because I require a firm to have Mercer listed as their compensation consultant in year $t-1$ and Hugessen in year $t$, the sample size decreases to 46 firm-year observations (23 firms).[34]

[33] There is one exception where the head of the compensation committee had family ties with a director at Mercer. Thus, the firm decided to retain Mercer after Hugessen's separation.

[34] Alternatively, for the same firms, I also include time-series observations prior and after the switch in the regressions. The results remain unchanged. As another alternative, I also include 6 more firms that switched from Mercer to Hugessen in years 2007-2009. The results remain unaltered.

Table 6 highlights the independence of the compensation consultant as a strong determinant for managerial incentive pay. In Column 1, I regress *Ln(totalComp)* on the *SwitchingDummy*, its interaction with firm performance and peer group performance, as well as control variables. The coefficient on *SwitchingDummy* is -0.048 and is significant at the 10% level. The coefficients on $SwitchingDummy \times StockReturn$ and $SwitchingDummy \times PeerReturn$ are 0.039 and -0.063, respectively. They are also statistically significant at the 5% and 10% levels, respectively. The change of consultant from Mercer to Hugessen is associated with an increase in PPS and RPE by 4.5% and 5%, respectively. In Column (2), I replace *StockReturn* with *ROA*. The results remain unaltered. Hiring Hugessen after his separation from Mercer also increases the sensitivity of *TotalComp* to *ROA*.

[Insert Table 6 Here]

In Column (3), I re-estimate equation (2) using the CEO *PEI* as the dependent variable. I replace *IndDummy* with *SwitchingDummy* and include only the 46 switching firm-year observations. The coefficient of *SwitchingDummy* is 7.02 and is significant at the 5% level. Again, the economic impact is sizeable; CEO *PEI* increases by about \$7 per \$1,000 shareholder wealth change, compared to the mean *PEI* of \$43.1 in this subsample.

Next, I re-estimate the weak-form test of RPE with *Ln(EquityComp)* as the dependent variable. The results are similar to the results in Panel B of Table 4, as both interaction terms have significant coefficients. The results in Column (4) indicate that firms that hired Hugessen Consulting after the separation from Mercer increased their CEOs' equity PPS and RPE.

The regression analysis in Table 6 supports the model's predictions that receiving independent advice is associated with not only higher CEO PPS but also higher level of a RPE in the CEO's compensation. These results distinguish the impact of independent advice from the selection bias associated with better governed firms choosing to hire more independent consultants. The last three sets of results identify a casual relationship between independent advice to the board and CEO compensation.

### 4.3 The Market's Reaction to The Separation News

The news of separation of Ken Hugessen from Mercer and starting an independent consulting firm was first publicized in an article published in the *Globe and Mail* on April 18th, 2006. The stock market response to this announcement provides a setting to analyze the impact of independent advice to the board on firm value.

I estimate abnormal returns around the publication of the article for each firm that had Mercer as its compensation consultant in the fiscal year of 2005 using the following regression model over the period from May 18, 2005 to June 18, 2006:

$$R_{i,t} = \alpha_i + \beta_i R_{b,t} + \eta_i Event + \epsilon_{it}$$

where $R_i$ is the daily return for firm $i$, $R_b$ is the return on the benchmark portfolio, and Event is a dummy variable that equals one on the event days around the announcement. The benchmark portfolio is the return of the DataStream's Canadian index that is a value-weighted return for 250 stocks that account for 80% of Canadian market capitalization. The regression is estimated for each firm as a system of equations to account for cross-correlations in firms' stock returns. The estimated $\hat{\eta}_i$ measures each firm's average abnormal return over the event period.[35] To compute the cumulative abnormal return (CAR), each $\hat{\eta}_i$ is multiplied by the number of days in the event period. The CAR for each firm measures the change in shareholder value. The price spike for Mercer clients shown in Figure 1 is consistent with Hugessen Separation being unexpected for the market.

[Insert Figure 1 Here]

Table 7 reports the average CAR for firms that hired Mercer as their compensation consultant in 2005 along with the associated p-values for different event periods. These firms are divided into two groups: those that were advised directly by Ken Hugessen and those that had other lead directors. I investigate whether there exists abnormal returns around this announcement for each group. The price reactions for the firms in the first group are significant at the 5% level over all windows. These firms experience an abnormal increase of 1.1% in their stock returns over the (-1,+1) window.[36] The market response for the second group is not statistically significant. This is consistent with the notion that the market only expected Ken Hugessen's clients, not other Mercer clients, to immediately switch with him to his new independent consulting firm. The positive price reaction for the first group of firms suggests a value enhancing effect attributed to the board receiving independent advice.

[Insert Table 7 Here]

### 4.4 CEO Annual Incentive Plan

The compensation committee of the board determines performance metrics such as the performance target of the annual incentive plan with the input of the management.[37] The CEO's suggestions could be useful when the board has less information about the appropriate performance targets for the CEO. However, the CEO's suggestion might be biased in her favor. A CEO naturally favors an incentive plan with higher ex-ante value. Kim and Yang (2010) show that performance targets used in annual incentive plans are consistently set below the market's earning expectations. An independent consultant can provide the required information to the

[35] See Binder (1985)

[36] The day before the event is included in the event window to account for the possibility of the leakage of the information prior to the publication of the article.

[37] An annual incentive plan includes information about the performance measures used and performance goals. The bonus is paid for beating the performance threshold. The target bonus is paid when the target performance is achieved.

board allowing the board to set targets that are not too easy to beat which provide the CEO with more incentives.

I collect the details of annual incentive plans used in annual proxy statements. In Canada, starting in 2010 firms are required to disclose the performance targets used in the past year. Thus, I focus on a sample of firms from the fiscal year of 2009.[38] There are 190 firms in 2009 with available accounting, consultant and performance measures information. These firms use a total of 519 different quantitative performance measures. The average (median) number of performance measures used is 2.73 (2.00). The most popular performance measure is earnings per share (EPS) which is used 92 times.[39] All the 92 firms report the EPS target used in the incentive plan.

To study the effect of independent advice on the design of CEO annual incentive plans, I focus on EPS. I compare the EPS target with the analyst consensus on annual EPS as a benchmark. Analyst forecast data is collected from I/B/E/S database. I then calculate the analyst consensus by taking the average of the forecasts of all analysts covering the firm's securities at the end of the first quarter. The mean (median) of the difference of EPS target and analyst consensus is lower than analyst consensus by \$0.09 (\$0.10). These differences are statistically significant at 1% level when using a t-test for means and Wilcoxon signed rank sum test for medians. This result is consistent with those reported in Kim and Yang (2010) using an equivalent U.S. sample.

To test the impact of independent compensation consultants on the design of annual incentive plans, I run a set of pooled OLS regressions where the dependent variable is the difference between EPS target and analyst consensus. I include control variables as well as industry dummies to account for the industry trends. I also account for the quality of analyst forecasts by including the number of analysts following the firm and the analyst forecast dispersion as control variables.

[Insert Table 8 Here]

Table 8 shows that consultant independence decreases the discrepancy between the EPS target and analyst consensus. First, in Columns (1) and (2), I regress *(EPS Target - Analyst Consensus)* on *ConsDummy* with and without control variables. When including the controls *ConsDummy* is not statistically significant while *IndependentBoard* becomes statistically significant at 5% level. In Columns (3) and (4), I replace *ConsDummy* with *IndDummy*. After including the controls, the coefficient on *IndDummy* is 0.031 and is significant at the 10% level. This is also economically significant as a zero-to-one change of *IndDummy* is associated with a \$0.031 increase in the difference between EPS target and analyst consensus. The results are similar when using *IndRatio*.

[38] When using the entire sample of firms-years from 2005 to 2009, there are 502 firm-years where performance measures are disclosed. 1259 different quantitative measures were used. EPS is the most popular performance measure (150 times). Only 118 firm-years report the EPS target. Using the full sample could lead to a selection bias because prior to 2010 firms voluntarily disclose their performance targets. However, the results are similar when using the sample of firm-years with disclosed performance metrics from 2005 to 2009.

[39] The other popular measures in order of popularity are ROE, revenue, revenue growth, net income, free cashflow, operating income and EPS growth.

This finding indicates boards that receive independent advice set CEO EPS targets that are closer to the analyst consensus although still lower than the earning expectations.[40] This result identifies another channel through which independent advice to the board leads to higher CEO PPS.

## 4.5 Why Do Not All Firms Use Independent Consultants?

Having established that independent consultants matter, a natural question is why do not all firms use consultants. For example, 19% of the firms in my sample do not use consultants at all, and 53% do not use an independent consultant as of 2009. In this section I test ancillary predictions that this decision is influenced by 1) agency issues, 2) supply side issues such as cost and, 3) the extent of additional information provided by consultants.

### 4.5.1 The Cost of Independent Advice

The results presented so far identify a causal relation between independent advice and enhanced managerial incentives and a reduction in the CEO's total pay. However, firms with more powerful managers are less likely to hire an independent consultant. These results help understand why not all firms choose to have independent advisors. If the decision to hire an independent consultant is a result of cost-benefit trade-off, then powerful CEOs impose a cost on the shareholders by decreasing the probability of hiring an independent consultant. This result is also consistent with Bebchuk et al. (2002), who report that there is anecdotal evidence that CEOs play an important role in the choice of a consultant.

Another potential reason for the lack of use of independent consultants are direct costs. In Table 9, I examine whether independent advice is associated with higher consulting fees. Inspired by the audit fees literature, certain drivers are expected to be associated with variation in the level of compensation consulting fees because those drivers cause an advisor to perform more (or less) work during the course of the consulting. I include measures of client size, client risk, and client complexity.[41] In general, these variables may be perceived as "supply" variables, in that they proxy for attributes of the consulting process and the level of effort expended by the consultant. I measure firm size by the natural logarithm of firms annual sales. I use the stock return volatility as a measure of client risk. For complexity, I focus on the complexity of the organization and the complexity of the executive pay. I measure the former by the variable *Segments* which equals the number of business segments that the firm operates in. Typically one would expect that the more complex a client, the harder it is to provide advice and the more time-consuming the consulting is likely to be. In order to measure the latter, I include the

[40] Due to the lack of data availability it is not possible to run the same regression for the Hugessen experiment. Only 9 observations from the quasi-natural experiment use EPS as a performance measure and report EPS targets.

[41] See Hay et al. (2006) for a review of the large body of audit fee research. They conclude that audit fee research has demonstrated convincingly that audit fees are associated with measures of client size, client risk, and client complexity.

variable *PayComplexity* which equals one if the board used options in the CEO's compensation package in that year, and is zero otherwise, as a proxy for a firm's CEO pay complexity. Inclusion of option plans awarded to the CEO as a form of compensation increases the complexity of her contract.

To examine this prediction empirically, I run pooled OLS regressions using the model below:

$$\begin{aligned} Ln(CompFees_{it}) &= \beta_0 + \beta_1 IndDummy_{it} + \beta_2 Ln(Sales)_{it} + \beta_3 StockVariance_{it} + \beta_4 Segments_{it} \\ &+\beta_5 PayComplexity_{it} + \beta_6 Leverage_{it} + \beta_7 Cash_{it} \\ &+\beta_8 SalesGrowth_{it} + \beta_9 Capex_{it} + \beta_{10} Tenure_{it} + \beta_{11} IndependentBoard_{it} \\ &+\beta_{12} NumberofCons_{it} + Industry\ Dummies + Year\ FE\epsilon_{it} + \epsilon_{it} \end{aligned} \quad (3)$$

where the dependent variable is the natural logarithm of *CompFees*. I include control variables as well as year and industry dummies to account for the time and industry trends in compensation consultant fees. A positive coefficient for $\beta_1$ would be consistent with the prediction that hiring an independent consultant is positively associated with compensation consulting fees.

[Insert Table 9 Here]

Table 9 highlights consultant's independence as a strong determinant of compensation consulting fees. First, in Column (1), I regress *Ln(CompFees)* on all the control variables to evaluate the explanatory power of the size, risk and complexity proxies on consulting fees. Size, business complexity and pay complexity are all statistically and economically significant. However, the coefficient on the variance of the stock returns is not statistically significant. In column (2), I also add *IndDummy* to the model. The coefficient on *IndDummy* is 0.202 and is significant at the 5% level. This is also economically significant as a zero-to-one change of *IndDummy* is associated with a 22% increase in compensation consulting fees.

This finding is interesting because independent consultants such as Hugessen consulting charge similar hourly rates for their services as other consultants such as Towers Watson and Mercer. This suggests that independent consultants spend more time providing consulting services or at least report more time to their clients. Nevertheless, this incremental cost, hand in hand with the indirect cost associated with managerial power, alongside the benefits of independent advice, would determine the use of independent consultants in equilibrium.

### 4.5.2 The Impact of The Compensation Committee's Experience

A consultant's advice only matters if it provides useful information that extends what the compensation committee already knows. If independent consultants provide valuable information to the compensation committee, the benefits should go disproportionately to firms with uninformed compensation committees. However, if the compensation committee is informed, the quality of the consultant's advice should not have a material impact on the CEO's compensation scheme because the experienced committee has already incorporated all available information

in designing proper incentive plans.[42] This argument is also consistent with my model as the fundamental assumption of the model is the information asymmetry regarding the peer firms between the board and the CEO.

I use two different proxies to measure the level of the compensation committee's access to information about designing incentive contracts. First, I use the compensation committee's level of experience measured by the ratio of the number of experienced compensation committee members who have served on other compensation committees before to the total number of compensation committee members (*ExpRatio*). It is more likely that these committee members have been exposed to the required information needed to set proper incentive schemes.

Second, motivated by the findings of Fahlenbrach et al. (2010) and Fich (2005), I construct *ExCEOOnCom* as a dummy variable, which equals one if an ex-CEO is present among the members of the compensation committee in that year, and zero otherwise. Fich (2005) finds that investor reactions to director appointments are significantly higher when appointees are CEOs of other firms than when they are not. CEOs are in general, more aware of peer firms's strategies. Thus, when an ex-CEO sits on a committee, she can bring her knowledge and her expertise to the board room. This is also consistent with the notion that a former CEO is arguably the director with the most firm-specific knowledge and unlike most other inside directors, who also have firm-specific knowledge, the former CEO does not depend on the current CEO. Fahlenbrach et al. (2010) study the impact of ex-CEOs serving on their former boards and find that firms with former CEO directors have better performance.

In Table 10, I re-estimate regressions similar to those in Panel A of Table 4 with CEO's *PEI* as the dependent variable.[43] Because I am able to construct the experience proxies for fiscal years of 2008 and 2009 only, the sample is reduced to 320 firm-year observations. When I use *IndRatio* as the measure of consultant's independence, the sample further reduces to 207 firm-year observations.

[Insert Table 10 Here]

In Column (1) of Table 10, I interact *IndDummy* with *ExpRatio*; the interaction term has a significantly negative coefficient and the variables *ExpRatio* and *IndDummy* have positive coefficients. This result indicates that firms with independent consultants award their CEOs with compensation packages that have higher *PEI*; notably however, a higher level of experience of the compensation committee weakens this relation. The economic significance of this effect is striking. When *ExpRatio* is increased by one standard deviation, the impact of *IndDummy* on *PEI* is reduced to about \$2 per \$1,000 shareholder wealth. In Column (2), I replace *IndDummy* with *IndRatio*. The results remain substantially unchanged as the positive impact of *IndRatio* on *PEI* is significantly reduced when *ExpRatio* increases.

[42] This is consistent with Duchin et al. (2010) who show board characteristics such as board's independence matter but their effectiveness depends on the cost of information acquisition.

[43] I find statistically and economically significant and similar results, when I employ compensation committee's experience proxies in the weak-form tests of RPE in regressions similar to those in Table 3.

In Columns (3) and (4), I replace *ExpRatio* with *ExCEOOnCom*. In Column (3), *IndDummy* and *IndDummy* × *ExpRatio* have coefficients of 8.004 and -6.488, respectively. They are also statistically significant at the 5% level. The interpretation of this result is as follows. When *ExCEOOnCom*=0, the partial effect of *IndDummy* on *PEI* is about $8 per $1,000 shareholder wealth change; when *ExCEOOnCom*=1, the partial effect of *IndDummy* is reduced to $1.51 per $1,000 shareholder wealth change. (8-6.49=1.51). Column (4) shows similar results, when replacing *IndDummy* with *IndRatio*.

Table 10 supports the prediction that the compensation committee's experience weakens the positive relation between independent advice and managerial incentives. The result is also consistent with the broader idea that the cost of information acquisition by the board plays an important role in the effectiveness of other means of corporate governance such as compensation consultants.

### 4.6 Independent Advice and the Use of Explicit RPE in CEO Pay

The results in Tables 4 and 5 show that independent advice is positively associated with RPE in CEOs' compensation. The tests in Table 3 and Panel B of Table 4, capture both implicit and explicit use of RPE in CEO contracts. Although these tests have examined RPE indirectly, the data does also allow me to examine the use of RPE in a more direct fashion, thereby reducing potential estimation errors. In this section, I examine whether firms that benefit more from consultant's advice are more likely to use explicit RPE in their CEOs pay.

I use a logit regression to examine the impact of consultants on the likelihood of using explicit RPE. The dependent variable, *ExplicitRPE*, takes a value of one if the firm states explicitly that the CEO's compensation is tied to firm performance relative to a peer group, industry or market performance, and zero otherwise. The independent variables are the same as the previous regressions. Based on Prediction 3, the coefficients on *ConsDummy*, *IndDummy* and *IndRatio* are expected to be positive.

[Insert Table 11 Here]

The regression results are reported in Table 11, where the coefficients are estimates of the marginal effect on the probability when all of the other independent variables are at their mean value. In Column (1), I include *ConsDummy* and control variables as well as industry and year dummies as the independent variables. The coefficient on *ConsDummy* is positive; however, it is not statistically significant. Thus, using a consultant has no impact on the use of explicit RPE in CEO pay. In Column (2), I replace *ConsDummy* with *IndDummy* and re-do the same exercise. The coefficient of *IndDummy* is 0.256 and is significant at the 5% level. In Column (3), I use *IndRatio* as the proxy for consultant's independence. The coefficient of *IndRatio* is 0.024 and is statistically significant at the 10% level. This implies that an increase of *IndRatio* from mean by one standard deviation is expected to increase the probability of using explicit RPE by

about 31 percentage points. Therefore, the probability of using explicit RPE increases with the level of independence of the consultant.

# 5 Conclusion

This study establishes four key results on executive compensation consultants. First, hiring a consultant increases the CEO's PPS, PEI, and RPE components of her pay. These effects are stronger when the consultant is independent. Second, independent advice leads to lower CEO pay. Third, independent consultants charge higher consulting fees. Fourth, higher CEO power reduces the likelihood of hiring an independent consultant.

In my simple theoretical framework, a consultant's provision of information about peer firms helps the board to better tie CEO's pay to performance. I show that independent advice enhances the CEO's effort-exerting incentive and risk-bearing ability. The model predicts a positive association between the level of consultant's independence and the CEO's PPS and RPE. It also predicts that the likelihood of hiring an independent consultant decreases with CEO's relative power over the board.

I focus on a sample of Canadian firms that started disclosing fees paid to the consultants for different services in 2005 (compared to 2010 for U.S. firms). This enables me to construct a measure of consultant's level of independence, based on the ratio of compensation related fees to other fees. The Canadian setting also allows me to separate the impact of advice from the possibility that firms adopting these practices were better governed to begin with. For this purpose, I use three different approaches: 1) I include firm-fixed effects to control for unobservable firm characteristics, 2) I take advantage of the compensation campaigns by CCGG, and 3) I exploit the fact that Hugessen consulting clients followed Ken Hugessen after leaving Mercer.

The salient feature of this study is that I provide a setting where I can clearly identify the causal effect of independent advice on CEO compensation. Using the quasi-natural experiment of Hugessen's separation from Mercer, I show that independent advice increases the CEO's PPS, PEI, and RPE. In a separate experiment, I document that CCGG campaigns recommending that boards seek an independent voice have an impact. The probability of hiring an independent consultant increases with the stake owned by CCGG members. Using CCGG's ownership as an instrument, I find that although the selection bias is important, the main results remain both statistically and economically significant.

That independent consultants can impact CEO's pay and better align CEO's incentives with those of the shareholders, may not come as a surprise. But, to the best of my knowledge, the casual relation between independent advice to the board and CEO compensation has not been documented empirically before. Prior research documents correlation between consultants and the level of pay and finds mixed evidence. I also find that the magnitude of this effect is economically significant. Elimination of the cross-selling incentives results in relative increases of 22% and 28% in CEO contracts' PPS and RPE and a 15% increase in CEO's PEI.

In summary, my analysis suggests that independent advice significantly enhances the board's ability to align CEOs incentives with those of shareholders. My findings could be of particular interest to directors and shareholders who could benefit from the relatively unbiased advice of independent consultants. A direct implication of this study for policy makers is that the conflict of interest due to cross-selling incentives does indeed bias the advice at the expense of shareholders. That being said, powerful CEO's may still remain influential in the consultant hiring process and even independent consultants may begin to succumb to the CEO's interests. Therefore, it would be interesting to examine whether the benefits of having an independent consultant persists in the future.

Finally, there is no reason to believe that this effect is unique to Canada. In fact, given the changes in the rules of disclosure of consulting fees and the emergence of Pay Governance LLC and Meridian Consulting as spin-offs of Tower Watson and Hewitt Associates in the past year, it would be interesting to examine this effect in the U.S. as the data becomes available.

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# Appendix A. The Model

In this appendix I present a simple model to help understand how incentives are determined when CEOs have private information regarding their compensation peer group. In this circumstance, the board can ex-ante commit to costly state-verification conducted by compensation consultants through which they can discover the executives' private information probabilistically. The structure of the model follows Holmstrom and Milgrom (1987) and Milgrom and Roberts (1992).

## Model Setup

The board of directors can increase the accuracy of the firm's performance measures by offering Relative Performance Evaluation (RPE) in the CEO contract that removes any component of the performance that is not a consequence of CEO's effort. Inclusion of RPE, thus, results in better risk-sharing and more efficient CEO contract.

A risk-averse CEO works in a firm owned by risk-neutral shareholders. The firm's cash flow, $V$, is a function of both the CEO's unobservable effort $e$ and other events not affected by the manager, captured by the random variable $\epsilon$:

$$V(e) = e + \epsilon \tag{4}$$

where $\epsilon$ is normally distributed noise with zero mean and variance $\sigma_\epsilon^2$. The board does not observe $e$ or $\epsilon$, but does observe $V$.

In addition to the firm's realized cash flows $V$, ex-post, the board also observes other firms' cash flows. The board can include other firms' cash flows as measures which are not affected by $e$ but are statistically related to $V$. However, the board does not have the expertise to identify firms that share systematic components in their performance with the firm. On the other hand, the CEO, due to her expertise, has private knowledge regarding both the appropriate peer group and the suitable metrics.[44]

The performance of the peer group, $P(y, \theta)$, follows a normal distribution with a mean of $y$, a variance of $\sigma_P^2 + (y-\theta)^2$ and a covariance with the firm's performance of $\sigma_{\epsilon P} > 0$.[45] The variance of the peer group's performance has two components. The first component represents the natural uncertainty that will be realized at the end of the game. The second component represents the uncertainty regarding the choice of appropriate peer firms. This could be information regarding the strategies of peer firms, the impact of a shock across peer firms on the current firm, or whether or not the choice of peer firms is the correct one.[46] The choice of peer group firms $y \in \{0, \theta\}$ is

[44] A suitable metric could be interpreted as appropriate measures of either peer group's stock performance or accounting performance, or the appropriate weights put on each firm within the peer group.

[45] The peer group's performance must be positively correlated with the firm's performance. Otherwise, there would be no advantage to include RPE in the compensation package.

[46] The statistical relation between observable shocks and firms' outcomes is not known in advance. One can propose that firms in the same industry are exposed to similar systematic components in their performance. However, if a firm and its industry peers sell to different geographical regions, and are therefore exposed to

the set of two feasible peer groups and is endogenously determined.[47] The parameter $\theta$ is known only by the CEO, thus representing her informational advantage. The board has a prior belief that $\theta$ is distributed uniformly on the support $\Theta \equiv [0, A]$. To ensure that the informational advantage of the CEO is not immaterial, we further assume that $\theta < \frac{A}{4}$.[48]

The CEO gets a compensation package in the form of:

$$w = t + s_1(V - s_2 P) \tag{5}$$

where $t$ is the base salary, $s_1$ is the performance-based component of the compensation,[49] and $s_2$ measures how much relative weight is allocated to the peer group's performance $P$. Thus, $s_2$ represents a measure of RPE in the compensation contract.

Like the classic paper of Holmstrom and Milgrom (1987), I restrict my attention to a linear contract for algebraic simplicity. The optimality of the linear contract is based on the critical assumption of a constant absolute risk aversion utility function.[50]

I also assume that the choice of peer firms is not contractible. While this choice is observable, the statistical relation between the peer firms' performance and the firm's performance is not verifiable. Although shareholders could potentially monitor managers' peer firm suggestions, doing so is costly. Monitoring is particularly costly in large, publicly traded corporations in which ownership is dispersed. Hence, in this sense, the private information regarding peer firms strategies is soft.[51] However, the board can hire a consultant to learn about the state variable $\theta$ probabilistically. The consultant can reveal the true information to the board with probability $q$, but with probability $1-q$, the consultant will fail to provide a recommendation. In other words, the consultant's advice hardens the information. Therefore, in this paper, the information used in the selection of compensation peer group is neither soft nor hard; rather, it is *semi-soft*. The

different geographical shock, or if some regions experience shocks that other regions do not experience, then the choice of peer firms is no longer an easy task. The strategies of peer firms may also change over time. If these changes are not observable to investors, if they are costly to acquire, or even if it is costly to re-estimate the statistical relation between shocks to the firm and shocks to peer firms, it is fair to assume that the board has relatively less knowledge than the CEO regarding the appropriate compensation peer group.

[47] In the interest of keeping the model simple, $y$ could go beyond just the choice of peer firms included in the peer group as it also represents the choice of metrics and thresholds used in setting RPE contracts.

[48] This assumption assures that in the absence of the consultant's advice, the board would always prefer CEO's suggestion regarding $y$, rather than relying on its own noisy information.

[49] $s_1$ is the intensity of incentives as one unit change in CEO's effort $e$, changes her total compensation by $s_1$ dollars

[50] Although a linear sharing rule might not be optimal with more general preference, it is still a good approximation to the practice of executive compensation. Jin (2002) states, "In practice, however, the sharing rule is often close to linear because the convexity induced by CEO option holdings is negligible to the first order".

[51] Given that the statistical relation between peer group performance and the firm performance is ex-post observable to us, one may question the assumption that $y$ is not contractible. There are several points to keep in mind. First, empirically, actual contracts for CEOs do not appear to include the choice of peer groups and its performance relation with the firm's performance ex-post. Second, understanding common shocks among peer firms and the firm and how the shock has influenced the performance relationships is not an easy task. Third, even though the peer firms' performances at the end of the period are observed, the realized performance measures does not reveal the exact correlations between peer firms' and the firm's performances. Thus, the correlations are not fully observable ex-post.

cost of hiring a consultant to access the state-verification technology is given by $\Phi$.[52] To ensure that hiring a consultant is optimal, I assume that $\Phi$ is bounded (i.e., $\Phi \leq \bar{\Phi}$).[53]

I also incorporate CEO's power into the model. To investigate how the impact of independent advice on contract specifications varies with the power possessed by managers, I assume that CEOs can be of two types - a powerful CEO who can influence the decision of which consultant is hired by the board or a less-powerful CEO who cannot rig the consultant hiring decision. CEOs have power which is captured by the parameter $\pi$. Shareholders have access to some public information about a CEO's power such as whether the CEO is related to the directors. For them, $\pi$ represents the prior probability with which the CEO will have the authority to hire her desired consultant. $(1-\pi)$ represents the prior probability with which the board has the consultant hiring authority.

To focus on the interesting case of disagreement between the manager and the board regarding the peer group choice $y$, I assume that $\sigma_{\epsilon P}(\gamma\theta + 1\sigma_{\epsilon P}) - 2((1-q(1-\pi))\theta^2 + \sigma_P^2)(1+k\gamma\sigma_\epsilon^2) > 0$. In cases where there is agreement, the CEO chooses the first-best peer group, and there would be no need for the consultant's services.

The manager's utility function is given by:

$$U(w,e) = -\exp\left[-\gamma(w(e) - \psi(e))\right] \tag{6}$$

where $w$ is the manager's total wage, $e$ is her effort level, $\gamma$ is the coefficient of risk aversion, and $\psi > 0$ is the cost of exerting effort reflecting the agent's aversion to effort. The cost of effort has the following functional form: $\psi(e) = \frac{ke^2}{2}$.

The sequence of the events is as follows:

*Stage 1.* The board optimally sets the compensation rule $(t, s_1, s_2)$, to maximize the net-of-wage firm value, taking into account the consultant's fee, the subsequent choice of peer firms, and also the effort of the CEO. Given the CEO's power, the board or the CEO decides on the choice of consultant.

*Stage 2.* The CEO provides the board with a suggestion on her choice of peer firms. The consultant provides the board with a report about the CEO's private information probabilistically and the board uses this information to make the decision regarding peer firms $y$.[54]

*Stage 3.* The CEO chooses her effort $e$ to maximize her utility.

[52] One could argue that the board can also exert effort and gather the required information (i.e., the true value of $\theta$). My results remain unchanged so long as the consultant has some informational advantage over the board. This informational advantage could be in the form of higher probability of finding the true state or lower cost of state-verification.

[53] See the end of this section for derivation of the upper bound on cost of state-verification, $\bar{\Phi}$.

[54] The general terms of the compensation contract for top managers such as salary, equity compensation and options are typically set once a year, while the details of the incentive pay such as the relative performance milestones and the chosen peer firms are subject to changes during the fiscal year. Indeed, in my sample, every year board members meet with the consultants and the CEO, an average of four times, to adjust the details of the contracts such as the peer firms, and the peer group performance thresholds (metrics). Therefore, I assume the decision regarding the peer firms happens after the board chooses $(t, s_1, s_2)$ and before the CEO exerts effort.

*Stage 4.* The firm's cash flow is realized and the CEO consumes her wealth.

### Equilibrium Analysis

Using backward induction, I first solve the CEO's effort problem. The CEO's certainty equivalent utility from a contract $w$ is given by:

$$\mathrm{E}[U^{CEO}] = t + s_1(e - s_2 y) - \frac{ke^2}{2} - \frac{\gamma s_1^2}{2}\left(\sigma_\epsilon^2 + s_2^2((y-\theta)^2 + \sigma_P^2) - 2s_2\sigma_{\epsilon P}\right) \tag{7}$$

where $\frac{\gamma s_1^2}{2}\left(\sigma_\epsilon^2 + s_2^2((y-\theta)^2 + \sigma_P^2) - 2s_2\sigma_{\epsilon P}\right)$ represents the cost of CEO's risk aversion. The CEO chooses her action to maximize her certainty equivalent utility:

$$e^* = \underset{e}{\operatorname{argmax}}\, \mathrm{E}[U^{CEO}] = \frac{s_1}{k} \tag{8}$$

The choice of peer firms does not affect the optimal effort directly. However, as shown below, it does affect CEO's effort through its impact on the optimal pay-performance sensitivity. Lemma 1 illustrates the dissent between the CEO and the board regarding the choice of peer firms in the presence of the consultant.

**Lemma 1.** *When the consultant is hired, upon success, the board is informed about the CEO's private information $\theta$ and chooses $y^* = \theta$. When the consultant fails, the board does not receive any recommendation from the consultant and relies on CEO's choice $y' = 0$.*

*Proof.* If the board knows the true $\theta$, it maximizes the net-of-wage firm value, which is:

$$\begin{aligned}
&\max_{y} \quad \mathrm{E}[V - t - s_1(V - s_2 P)] - \Phi \\
&\text{subject to} \\
&e^* = \frac{s_1}{k} \qquad\qquad\qquad\qquad \text{(IC)} \\
&t + s_1(e - s_2 y) - \frac{ke^2}{2} - \frac{\gamma s_1^2}{2}\left(\sigma_\epsilon^2 + s_2^2((y-\theta)^2 + \sigma_P^2) - 2s_2\sigma_{\epsilon P}\right) \geq U_0 \text{ (IR)}
\end{aligned}$$

Given that the principal has all the bargaining power, the CEO's expected utility will be equal to her reservation expected utility $U_0$ (i.e., the IR constraint is binding), from which the base salary $t$ can be calculated.[55] This participation constraint binds at both $t = 1$ and $t = 2$ since the manager can walk away when the details of the RPE component of the contract are being set. Therefore, the board's problem under full information can be rewritten as:

$$\max_{y} \quad \frac{s_1}{k} - \frac{s_1^2}{2k} - \frac{\gamma s_1^2}{2}\left(\sigma_\epsilon^2 + s_2^2((y-\theta)^2 + \sigma_P^2) - 2s_2\sigma_{\epsilon P}\right) - \Phi \tag{9}$$

It is clear that the board chooses $y^* = \theta$. However, when the consultant fails to provide any information to the board, the board has two choices, either to rely on the CEO 's suggestion or, to centralize the decision and disregards CEO's recommendation. If the board relies on its prior belief regarding $\theta$, it chooses $y = \mathrm{E}[\theta] = \frac{A}{2}$.

[55] This is justified by assuming that the managerial labor market is competitive, so that the agent is held to her reservation utility $U_0$ through the choice of $t$.

The CEO's suggestion is based on her maximizing her expected utility:

$$\max_{y} \quad t + s_1(\frac{s_1}{k} - s_2 y) - \frac{s_1^2}{2k} + -\frac{\gamma s_1^2}{2}\left(\sigma_\epsilon^2 + s_2^2((y-\theta)^2 + \sigma_P^2) - 2s_2\sigma_{\epsilon P}\right) \tag{10}$$

It is clear that the manager chooses $y' = 0$ when $\mathrm{E}[U^{CEO}|y=0] > \mathrm{E}[U^{CEO}|y=\theta]$. Therefore, the CEO prefers $y' = 0$ when $\gamma\theta s_1 s_2 < 2$. The CEO does incorporate her information in her decision; however, she also takes the expected performance of the peer firms into consideration. This creates a downward bias in $y$. Although at this stage of the game $s_1$ and $s_2$ are set, it is clear that the manager's inefficient choice of $y' = 0$ also depends on her endogenous contract. I will return to this inequality, that ensures dissent between the board and the CEO, later in the proof of Lemma 3.

When the consultant fails to authenticate the state, the board always chooses to rely on CEO's suggestion rather than choosing $y = \mathrm{E}[\theta] = \frac{A}{2}$. By assumption the CEO's information is always valuable (i.e., $\theta < \frac{A}{4}$). There is enough information asymmetry between the board and the CEO so that the board would rely on CEO's suggestion, although her suggestion is always biased. □

When the board is informed about the strategies of the peer firms, it minimizes the risk premium, which results in the first-best peer group. Unlike the board, the manager also cares about the mean of the peer group firms' performance. Because the contract punishes high performance by the peer firms, the manager has an incentive to suggest a weaker peer group.

## Consultant Independence and the Quality of Advice

Next I focus on the consultant's level of independence from the management. The delivery of other services to the management creates a conflict of interest, because the decision to engage the consulting firm in these consulting areas are made by the same managers who are affected by the consultant's pay recommendations. The CEO's bias in the choice of peers makes the "affiliated" consultant's advice potentially different from the independent consultant's advice. The independent consultant's incentives are thus better aligned with the board's interests.

Without defining a separate utility function for the consultant, I assume that the affiliated consultant who is concerned about his business with the management team, would reveal the true state of the world $\theta$, with a lower probability $q(\delta') < q(\delta)$, where $\delta$ is the level of independence of the consultant. Therefore, assuming the level of conflict of interest due to lack of independence is a continuous variable, we assume $\frac{\partial q(\delta)}{\partial \delta} > 0$.[56]

Before solving for the optimal contract, I investigate the impact of CEO's control over the choice of consultant.

**Lemma 2.** *A powerful CEO would always make sure that the board has hired a consultant who is fully affiliated (i.e., $q(\delta) = 0$).*

[56] Quality of advice could be endogenized without generating further insights. One could assume that the utility of the independent consultant is a linear combination of the utility of the CEO and the board. Then the affiliated consultant would allocate a positive weight to the utility of the CEO relative to the utility of the board since he is concerned about his other businesses with the management. On the other hand, the independent consultant's utility would be identical to board's utility. In equilibrium, the affiliated consultant would deliver lower quality advice than the independent consultant.

*Proof.* Given the CEO's expected utility, Eq.(8), and also $y^* = \theta,\ y' = 0$, when the CEO is powerful, she will influence the hiring decision so that $y^* = \theta$ never happens. CEO's expected utility is maximized when $y' = 0$ is implemented. Choosing a fully affiliated consultant (i.e., $q(\delta) = 0$) results in $y' = 0$. □

Using this result, the next lemma shows the optimal PPS and RPE:

**Lemma 3.** *The board maximizes the net-of-wage firm value, and chooses :*

$$s_1^* = \frac{1}{1 + k\gamma(\sigma_\epsilon^2 - \frac{\sigma_{\epsilon P}^2}{(1-q(1-\pi))\theta^2 + \sigma_P^2})} \tag{11}$$

$$s_2^* = \frac{\sigma_{\epsilon P}}{(1 - q(1-\pi))\theta^2 + \sigma_P^2} \tag{12}$$

*Proof.* At the start of the game, given $y^* = \theta$ and $y' = 0$, the board maximizes the net-of-wage firm value:

$$\begin{aligned}
&\max_{s_1, s_2} \ \mathrm{E}[V - t - s_1(V - s_2 P)] - \Phi \\
&\text{subject to} \\
&e^* = \frac{s_1}{k} \qquad\qquad\qquad\qquad\qquad\qquad \text{(IC)} \\
&t + s_1(e - s_2 y) - \frac{ke^2}{2} - \frac{\gamma s_1^2}{2}\left(\sigma_\epsilon^2 + s_2^2(\theta^2(1 - q(1-\pi)) + \sigma_P^2) - 2s_2\sigma_{\epsilon P}\right) \geq U_0 \quad \text{(IR)}
\end{aligned}$$

After substituting for $e^*$, $y^*$, $y'$, and $t$ from the IR constraint, the board's problem can be rewritten as:

$$\max_{s_1, s_2} \ \frac{s_1}{k} - \frac{s_1^2}{2k} - \frac{\gamma s_1^2}{2}\left(\sigma_\epsilon^2 + s_2^2(\theta^2(1 - q(1-\pi)) + \sigma_P^2) - 2s_2\sigma_{\epsilon P}\right) - \Phi \tag{13}$$

I obtain the following solutions for the optimal compensation policy:

$$s_1^* = \frac{1}{1 + k\gamma(\sigma_\epsilon^2 - \frac{\sigma_{\epsilon P}^2}{(1-q(1-\pi))\theta^2 + \sigma_P^2})} \quad \textit{and} \quad s_2^* = \frac{\sigma_{\epsilon P}}{(1 - q(1-\pi))\theta^2 + \sigma_P^2} \tag{14}$$

Using $s_1^*$ and $s_2^*$ and the earlier assumption, $\sigma_{\epsilon P}(\gamma\theta + 1\sigma_{\epsilon P}) - 2((1 - q(1-\pi))\theta^2 + \sigma_P^2)(1 + k\gamma\sigma_\epsilon^2) > 0$, it is easy to verify that the inequality $\gamma\theta s_1 s_2 < 2$ holds and the CEO always chooses $y' = 0$. In other words, by relying on the CEO's incentive contract alone, the board is unable to ensure the first-best choice of peer group. □

Compared to the results in Holmstrom and Milgrom (1987), $s_1^* > \frac{1}{1+k\gamma\sigma_\epsilon^2}$. This is due to the use of RPE in the contract which increases the informativeness of the firm's cash flow regarding manager's unobservable effort. Notably, when $q \to 1$ and $\pi \to 0$, $s_1^* = \frac{1}{1+k\gamma(\sigma_\epsilon^2 - \frac{\sigma_{\epsilon P}^2}{\sigma_P^2})}$ and $s_2^* = \frac{\sigma_{\epsilon P}}{\sigma_P^2}$. This is the solution from Milgrom and Roberts (1992) without information asymmetry, consultant's state-verification and CEO power.

The benefits of the consultant are twofold: First, the consultant directly reduces the cost of compensation by reducing the risk premium. The board relies on the biased recommendation of the CEO in fewer states of the world since it will receive accurate advice from the consultant with some positive probability $q$. Second, there is also an indirect benefit due to the higher pay-performance sensitivity. The reduction in uncertainty about peer performance positively

affects managerial incentives, resulting in higher managerial effort.[57]

The following Proposition shows how optimal PPS and RPE change with consultant's level of independence.

**Proposition 1.** *The optimal pay-performance sensitivity $s_1^*$ and the relative performance evaluation $s_2^*$ are both increasing in consultant's degree of independence $\delta$.*

*Proof.* It is easy to show from Eq.(11) and Eq.(12), that

$$\begin{aligned}
\frac{\partial s_1^*}{\partial \delta} &= (\frac{\partial s_1^*}{\partial q})(\frac{\partial q}{\partial \delta}) \\
&= \frac{(1-\pi)\theta^2\sigma_{\epsilon P}^2(\frac{\partial q}{\partial \delta})}{(1+k\gamma(\sigma_\epsilon^2 - \frac{\sigma_{\epsilon P}^2}{(1-q(1-\pi))\theta^2+\sigma_P^2})^2((1-q(1-\pi))\theta^2+\sigma_P^2)^2} > 0 \qquad (15) \\
\frac{\partial s_2^*}{\partial \delta} &= \frac{(1-\pi)\theta^2\sigma_{\epsilon P}(\frac{\partial q(1-\pi)}{\partial \delta})}{((1-q)\theta^2+\sigma_P^2)^2} > 0 \qquad (16)
\end{aligned}$$

□

An increase in consultant's independence leads to a higher probability of state-verification, which in turn, increases the informativeness of the firm's performance measures. The reduction in the uncertainty regarding the peer group enhances the manager's ability to bear risk by reducing her disutility of bearing risk. Given that an optimal contract is characterized by the trade-off between incentives and risk, managers with a high risk-bearing ability should be given a high-power contract. Another simple interpretation is that more independent consultants provide more accurate advice to the board, allowing the board to reduce the risk premium of the contract. The informational advantage of the CEO is reduced. Hence, the board is able to choose an optimal contract that reduces the systematic component of the firm's cash flows and relies more on firm performance, leading to a higher optimal pay-performance sensitivity.

Given that affiliated consultants receive monetary benefits from their other lines of business, they are usually able to provide compensation advice for a less cost. This could also be true because of the economy of scope that is embedded in collecting the required information. Larger integrated consultants that also provide other services usually face a lower cost of collecting information. Therefore, I assume that $\frac{\partial \Phi(\delta)}{\partial \delta} > 0$. Hiring an independent consultant or increasing his level of independence is optimal if the benefits of higher managerial incentives outweigh the higher cost associated with higher level of independence.

It is important to note that the main results of Proposition 1 are independent of CEO 's power and they still hold if $\pi \to 0$. However, CEO's power adds insight on the range of model parameters that support hiring an independent consultant. Since the CEO is powerful with probability $\pi$, the probability that the board receives the useful information regarding peer

[57] In the absence of the consultant, $s_1 = \frac{1}{1+k\gamma(\sigma_\epsilon^2 - \frac{\sigma_{\epsilon P}^2}{\theta^2+\sigma_P^2})}$, which is always smaller than $s_1^*$.

firms is reduced from $q$ to $q(1-\pi)$. This illustrates the importance of managerial power in the consultant's selection process.

The next proposition highlights the impact of powerful managers in the cost benefit trade-off associated with hiring a more independent consultant.

**Proposition 2.** *An increase in CEO's power results in a reduction in the positive impact of independent advice on firm value. This leads to a smaller range of model parameters for which hiring an independent consultant is preferred.*

*Proof.* It is clear that $\frac{\partial V}{\partial \delta} = (\frac{\partial s_1^*}{k \partial q})(\frac{\partial q}{\partial \delta})$. It is also easy to verify that $\frac{\partial^2 s_1^*}{\partial q \partial \pi} < 0$. Thus, the marginal benefit of a more independent consultant decreases as CEO's power increases. Given that the marginal cost $\frac{\partial \Phi(\delta)}{\partial \delta}$ is unaffected by $\pi$, the range of model parameters that supports hiring a consultant who is not fully affiliated becomes smaller as $\pi$ increases. □

In equilibrium, the reduction in the marginal benefits of independent advice due to the higher level of CEO power, adds to the direct cost of independent advice and reduces the likelihood of optimality of hiring independent consultants.

***Derivation of the Upper-Bound on Cost of State-Verification, $\bar{\Phi}$:***

The upper bound on cost of state-verification, $\bar{\Phi}$, that ensures hiring a consultant, is the solution to the following equation:

$$\begin{aligned} &\frac{s_1^*}{k} - \frac{s_1^{*2}}{2k} - \frac{\gamma s_1^{*2}}{2}\left(\sigma_\epsilon^2 + s_2^{*2}(\theta^2(1-q(1-\pi)) + \sigma_P^2) - 2s_2^*\sigma_{\epsilon P}\right) - \bar{\Phi} \\ = \;& \frac{s_1^\dagger}{k} - \frac{s_1^{\dagger 2}}{2k} - \frac{\gamma s_1^{\dagger 2}}{2}\left(\sigma_\epsilon^2 + s_2^{\dagger 2}(\theta^2 + \sigma_P^2) - 2s_2^\dagger\sigma_{\epsilon P}\right) \end{aligned}$$

where $s_1^*$, $s_2^*$, $s_1^\dagger$, and $s_2^\dagger$ are as follows:

$$s_1^* = \frac{1}{1 + k\gamma(\sigma_\epsilon^2 - \frac{\sigma_{\epsilon P}^2}{(1-q(1-\pi))\theta^2 + \sigma_P^2})} \qquad s_2^* = \frac{\sigma_{\epsilon P}}{(1-q(1-\pi))\theta^2 + \sigma_P^2}$$

$$s_1^\dagger = \frac{1}{1 + k\gamma(\sigma_\epsilon^2 - \frac{\sigma_{\epsilon P}^2}{\theta^2 + \sigma_P^2})} \qquad s_2^\dagger = \frac{\sigma_{\epsilon P}}{\theta^2 + \sigma_P^2}$$

The left hand side of the equality is the net-of-wage expected firm value when shareholders retain a consultant. The right hand side of the equality is the net-of-wage expected firm value when shareholders do not hire any consultant. Due to the assumption that $\theta < \frac{A}{4}$, in the absence of a consultant, the board always counts on the CEO's suggestion regarding peer groups, rather than relying on its own noisy information. In equilibrium, firms trade-off the benefits of receiving the consultant's advice, against the cost of hiring a consultant.

# Appendix B. Variable Definitions

| *Variable* | *Definition* |
|---|---|
| CashComp | the sum of salary and bonus. |
| EquityComp | the sum of grant-date value of restricted stock awards and the Black-Scholes value of granted options. |
| PEI | the dollar-value change of the stock and options held by a CEO per $1,000 shareholder return. |
| Tenure | the number of years the CEO has been in office. |
| ConsDummy | a dummy variable, which equals one if at least one consultant was retained in, that year and zero otherwise. |
| CompFees | the sum of fees charged by consultant(s) to provide compensation related advice to the board (in dollars). |
| OtherFees | the sum of fees paid by the management to the consultant(s) for services non-related to executive compensation (in dollars). |
| IndRatio | minus one multiplied by the ratio of OtherFees to CompFees. |
| IndDummy | a dummy variable, which equals one if at least one "independent" consultant was retained in that year, and zero otherwise. |
| NumberofCons | the number of compensation consultants retained in that year. |
| Sales | the annual sales volume ($ millions). |
| ROA | the accounting return of assets, obtained as the ratio of earnings before interest and taxes to the book value of common equity. |
| Leverage | the ratio of long-term debt (book value) over total assets. |
| StockVariance | the stock return variance based on the monthly return of the past 5 years. |
| Cash | the ratio of cash plus short-term investment over total assets. |
| StockReturn | the firm's annual stock return. |
| Capex | capital expenditures normalized by total assets. |
| DualClass | a dummy variable, which equals one if the firm has dual class shares, and zero otherwise. |
| CCGG | the proportion of the firm's common shares owned by the members of CCGG. |
| PeerReturn | the average stock return of firms included in the performance peer group. When the choice of peer firms is not disclosed, S&P/TSX ETF of the same industry is used. |
| ExpRatio | the ratio of the number of experienced compensation committee members who have served on other compensation committees before to the total number of compensation committee members. |
| ExCEOOnCom | a dummy variable, which equals one if at least one ex-CEO is present among the members of the compensation committee in that year, and zero otherwise. |
| IndependentBoard | a variable that equals to two when at least two-thirds of the board members are independent from management, it equals to one when less than two-thirds but more than half of the board members are independent, and it equals to zero when less than a half of the board members are independent. |
| Segments | the number of business segments the firm operates in. |
| PayComplexity | a dummy variable, which equals one if the board used options in the CEO's compensation package in that year, and zero otherwise. |

# Appendix C. Collecting Consultant and Peer Group Information

Bombardier Inc. retained Towers Perrin as its consultant in both 2008 and 2009. The proxy circular indicates that, in 2009 the board paid $335,400 for executive compensation related services and $3,406,900 for other services. For 2008, Towers Perrin was paid $224,000 and $3,652,500 for executive compensation and other services, respectively. These figures result in a *IndRatio* of -10.1 for 2009 and a *IndRatio* of -16.3 for and 2008. *ConsDummy* and *IndDummy* are equal to one and zero for both years, respectively.

**B. Mandate of the Human Resources and Compensation Committee**

Pursuant to its charter, the HRCC has the mandate to:

- oversee the succession planning for the President and Chief Executive Officer and also for senior executive positions;
- ensure that succession planning systems and policies for senior executives, including processes to identify, develop and retain the qualified personnel required to meet the business objectives of Bombardier, are in place and followed;
- assess the performance of the President and Chief Executive Officer and the senior executives reporting to him and determine their compensation;
- review and approve a total compensation policy that takes into account, among other things,
  - base salary,
  - short-term incentives,
  - mid-term and long-term incentives and
  - pensions, benefits and perquisites;
- review the design of equity-based compensation plans with respect to the granting of performance share units, deferred share units and stock option and make appropriate recommendations to the Board of Directors for its approval;

In accordance with the policy adopted at its meeting of April 1, 2008, the HRCC has to pre-approve additional work of a material nature assigned to Towers Perrin. The HRCC will not approve any such work that, in its view, could compromise the independence of Towers Perrin as advisor to the HRCC. The HRCC received from Towers Perrin formal confirmation that they remained independent irrespective of the other mandates performed by Towers Perrin.

Towers Perrin earned the following fees during each of the financial years ended January 31, 2010 and 2009:

| Towers Perrin's Mandates and Fees [1] | Financial year ended January 31, 2010 ($) | Financial year ended January 31, 2009 ($) |
|---|---|---|
| HRCC Mandates (executive compensation) | 335,400 | 224,000 |
| Bombardier Mandates (mainly actuarial valuation for funding and accounting purposes related to pension and benefit plans) | 3,406,900 | 3,652,500 |
| **Total Fees** | **3,742,300** | **3,876,500** |

(1) Fees were converted from Canadian dollars to US dollars based on exchange rates of $0.9474 as of January 31, 2010 and $0.8088 as of January 31, 2009.

In the next example, Iamgold Corporation retains Hugessen Consulting in 2009. Hugessen was paid $65,709 for the compensation related services. Hugessen is an independent consulting firm, thus, it did not provide any other services to the management. The *IndRatio* is equal to zero. The *ConsDummy* and the *IndDummy* are both equal to one.

Hugessen was engaged by the HRCC in 2009 to provide independent advice to assist with salary reviews for certain NEO positions and with the development of a long term equity compensation policy. No work was performed by Hugessen other than at the request of and for the HRCC. The HRCC reviewed and ensured the independence of Hugessen in connection with the support provided. The fees paid to Hugessen in 2009 totalled $65,709.

Decisions and recommendations to the Board made by the HRCC are its responsibility and may reflect factors and considerations other than the information and recommendations provided by compensation consultants.

The Proxy Circular also indicates the performance peer firms. The benchmarking peer group is different from the performance peer group. The performance peer group is identified by the

Return On Capital (ROC) peer group. In order to measure *PeerReturn*, I calculate the average stock returns of firms included in the ROC peer group.

> The Corporation uses the peer group as a reference point only and does not target median or any other percentile of the group when setting NEO compensation levels. Particularly, the HRCC reviewed data from:
>
> - a general comparator group consisting of international mining companies for purposes of overall compensation strategy, namely:
>
>  - Agnico Eagle Mines Ltd.
>  - Centerra Gold Inc.
>  - Eldorado Gold Corp.
>  - First Quantum Minerals Ltd.
>  - Franco Nevada Corporation
>  - HudBay Minerals
>  - Inmet Mining Corp.
>  - Kinross Gold Corp.
>  - Lundin Mining Corporation
>  - Redback Mining Inc.
>  - Yamana Gold Inc. (these companies, collectively, being the Corporation's "Peer Group");
>
> - a custom mining comparator group consisting of Canadian mining companies, with a market capitalization ranging between approximately 1/3 and 3 times that of the Corporation, for purposes of calculating ROC for short-term incentive compensation, namely:
>
>  - Agnico Eagle Mines Ltd.
>  - Centerra Gold Inc.
>  - Eldorado Gold Corp.
>  - First Quantum Minerals Ltd.
>  - Goldcorp Inc.
>  - HudBay Minerals
>  - Inmet Mining Corporation
>  - Kinross Gold Corporation
>  - Lundin Mining Corporation
>  - Redback Mining Inc. (these companies, collectively, being the Corporation's "ROC Peer Group"); and

Table 1: Market Shares for Compensation Consultants

This table shows market shares for different compensation consultants in Canada. The compensation consultants' market shares are calculated based on the number of clients and the fees charged for executive compensation related services across different years. The market shares based on fees are reported in brackets. When using the number of clients, market shares are calculated based on 198 Canadian firm-consultants from years 2005 to 2009. The sample is based on the largest 230 Canadian companies ranked by market capitalization as of December 31 2009, which have compensation consultant data available from their proxy circulars. Each column sums up to a number larger than 100%. This is because some firms hire more than one consultant in a fiscal year. When using the fees charged by the consultant, the sample is based on 510 firm-consultant-years (102 firm-consultants) with disclosed fees. In the All Other group, No single consultant has more than 2% market share in my sample. Towers Watson's market share for years 2005-2008 is calculated as the sum of Watson Wyatt's and Tower Perrin's market shares.

| Evolution of Market Shares of Consultant as % of Total Clients (% of Fees, in brackets) | | | | | | |
|---|---|---|---|---|---|---|
| | Full Sample | 2005 | 2006 | 2007 | 2008 | 2009 |
| No Consultant | 23.0 | 32.1 | 25.0 | 22.0 | 19.7 | 18.1 |
| Towers Watson | 26.7 (40.0) | 23.3 (28.8) | 26.2 (32.9) | 26.4 (39.6) | 28.8 (40.8) | 28.1 (44.8) |
| Mercer | 25.7 (21.9) | 30.2 (57.1) | 23.1 (34.0) | 28.6 (20.7) | 25.3 (21.6) | 21.1 (14.0) |
| Hay Group | 8.0 (4.4) | 6.9 (7.6) | 7.6 (3.3) | 9.9 (4.8) | 10.1 (4.8) | 5.5 (3.7) |
| Hewitt Associates | 7.5 (6.2) | 6.9 (0.0) | 6.4 (9.1) | 8.2 (8.8) | 8.6 (5.3) | 7.0 (4.8) |
| Hugessen Consulting | 9.8 (13.6) | 0.0 (0.0) | 10.3 (15.3) | 10.7 (15.8) | 11.6 (17.6) | 16.6 (19.3) |
| Frederic W. Cook | 2.3 (2.6) | 1.3 (1.7) | 2.3 (0.6) | 2.2 (2.3) | 2.5 (2.1) | 3.0 (4.2) |
| All Others | 11.5 (8.4) | 8.8 (4.6) | 11.6 (9.8) | 11.0 (8.0) | 11.6 (7.7) | 14.1 (9.2) |

## Table 2: Descriptive Statistics

The sample consists of 910 firm-year observations from 2005 to 2009. In the sample, 698 firm-years hire a consultant, and 401 firm-years report consultant fees. I obtain compensation and consultant data, and information about performance peer groups, in firm proxy circulars from SEDAR. Stock price data is obtained from DataStream. Accounting data is obtained from WorldScope. All variables are defined in Appendix B. Panel A reports the consultant characteristics in the sample. The fees variables are in dollars. Panel B reports the evolution of average consultant characteristics from 2005 to 2009. Panel C, reports the CEO Pay characteristics. All the compensation variables are in 1000 Canadian dollars. Panel D reports the firm characteristics. All the dollar-value variables are measured in 2009 dollars. All continuous variables are winsorized at the 1st and 99th percentiles.

| Panel A: Consultant Characteristics | | | | | | |
|---|---|---|---|---|---|---|
| | Mean | Std | $25^{th}$ Pct | Median | $75^{th}$ Pct | # of Obs |
| ConsDummy | 0.76 | 0.47 | 0 | 1 | 1 | 910 |
| CompFees | 117628 | 135705 | 34316 | 74252 | 155143 | 401 |
| OtherFees | 406527 | 946362 | 0 | 50861 | 192592 | 401 |
| IndRatio | -3.44 | 11.24 | -2.93 | -1.91 | 0 | 401 |
| IndDummy | 0.26 | 0.41 | 0 | 0 | 1 | 698 |
| NumberofCons | 0.89 | 0.71 | 0 | 1 | 1 | 910 |

| Panel B: Consultant Characteristics Across Different Years | | | | | |
|---|---|---|---|---|---|
| | 2005 | 2006 | 2007 | 2008 | 2009 |
| Average CompFees | 126586 | 100882 | 111797 | 116955 | 131928 |
| Average OtherFees | 551915 | 536692 | 417003 | 219875 | 262537 |
| IndRatio | -4.36 | -5.32 | -3.73 | -1.85 | -1.96 |
| # of Obs | 33 | 71 | 90 | 94 | 113 |
| IndDummy | 0.15 | 0.24 | 0.32 | 0.29 | 0.32 |
| # of Obs | 109 | 129 | 140 | 157 | 163 |

| Panel C: CEO/Pay Characteristics | | | | | | |
|---|---|---|---|---|---|---|
| | Mean | Std | $25^{th}$ Pct | Median | $75^{th}$ Pct | # of Obs |
| TotalComp | 4050.85 | 5308.63 | 1275.57 | 2423.31 | 5148.36 | 910 |
| CashComp | 2078.95 | 3080.21 | 678.45 | 1326.44 | 2463.60 | 910 |
| EquityComp | 1936.91 | 3385.93 | 45.00 | 853.81 | 2449.43 | 910 |
| PEI | 39.21 | 121.03 | 1.95 | 10.72 | 44.68 | 910 |
| Tenure | 7.71 | 6.50 | 3 | 5 | 9 | 910 |

| Panel D: Firm Characteristics | | | | | | |
|---|---|---|---|---|---|---|
| | Mean | Std | $25^{th}$ Pct | Median | $75^{th}$ Pct | # of Obs |
| Sales | 3692.56 | 6690.59 | 137.78 | 808.07 | 3570.19 | 910 |
| StockReturn | 0.21 | 0.48 | -0.13 | 0.11 | 0.43 | 910 |
| PeerReturn | 0.11 | 0.32 | -0.05 | 0.10 | 0.27 | 910 |
| ROA | 0.07 | 0.58 | 0.01 | 0.03 | 0.10 | 910 |
| Leverage | 0.24 | 0.21 | 0.07 | 0.21 | 0.41 | 910 |
| SalesGrowth(%) | 26.23 | 34.43 | -3.22 | 14.84 | 60.11 | 910 |
| StockVariance $\times 100$ | 2.98 | 3.53 | 1.27 | 0.86 | 3.95 | 910 |
| Capex | 0.08 | 0.163 | 0.02 | 0.06 | 0.12 | 910 |
| Cash | 0.13 | 0.17 | 0.01 | 0.05 | 0.17 | 910 |
| IndependentBoard | 1.400 | 0.723 | 1 | 2 | 2 | 910 |
| CCGG | 29% | 11% | 10% | 26% | 42% | 910 |
| DualClass | 0.20 | 0.40 | 0 | 0 | 0 | 910 |
| ExpRatio | 0.688 | 0.357 | 0.500 | 0.750 | 1.00 | 320 |
| ExCEoonCom | 0.29 | 0.38 | 0 | 0 | 1 | 320 |

## Table 3: Compensation Consultants and CEO PPS and RPE

The sample consists of 910 firm-year observations from 2005 to 2009. The sample consists of 698 and 401 firm-year observations, when investigating consultant's independence using the *IndDummy* and *IndRatio*, respectively. All models are estimated as fixed effects regressions. The dependent variable in all models is *Ln(TotalComp)*. The variable *Consultant* is one of *ConsDummy* (Columns 1 and 2), *IndDummy* (Columns 3 and 4) or *IndRatio* (Columns 5 and 6). *ConsDummy* equals one if at least one consultant was retained in that year, and zero otherwise. *IndDummy* equals one if at least one "independent" consultant was retained in that year, and zero otherwise. *IndRatio* equals minus one multiplied by the ratio of *OtherFees* to *CompFees*. All variables are defined in Appendix B. Corresponding p-values are reported in brackets. The p-values are based on robust standard errors clustered at the firm level. The notation ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

| | (1) ConsDummy | (2) ConsDummy | (3) IndDummy | (4) IndDummy | (5) IndRatio | (6) IndRatio |
|---|---|---|---|---|---|---|
| StockReturn | 0.074** | 0.051** | 0.106** | 0.107** | 0.197** | 0.208** |
| | [0.014] | [0.044] | [0.033] | [0.041] | [0.015] | [0.011] |
| ROA | 0.071* | 0.074* | 0.130* | 0.139* | 0.290* | 0.237* |
| | [0.066] | [0.061] | [0.073] | [0.080] | [0.051] | [0.079] |
| PeerReturn | -0.030 | -0.041* | -0.164** | -0.163* | -0.167** | -0.149** |
| | [0.104] | [0.093] | [0.039] | [0.060] | [0.020] | [0.019] |
| **Consultant** | -0.062* | -0.051* | -0.056** | -0.063* | -0.006*** | -0.004*** |
| | [0.091] | [0.058] | [0.036] | [0.051] | [0.001] | [0.001] |
| **Consultant × StockReturn** | 0.041** | | 0.035** | | 0.007** | |
| | [0.039] | | [0.043] | | [0.045] | |
| **Consultant × ROA** | | 0.102* | | 0.109** | | 0.047** |
| | | [0.091] | | [0.042] | | [0.046] |
| **Consultant × PeerReturn** | -0.115* | -0.173** | -0.081** | -0.108** | -0.006** | -0.005** |
| | [0.095] | [0.025] | [0.027] | [0.016] | [0.022] | [0.030] |
| Ln(Sales) | 0.098*** | 0.099*** | 0.101*** | 0.106*** | 0.190*** | 0.201*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| Leverage | -0.064 | -0.047 | -0.202* | -0.208* | -0.119 | -0.130 |
| | [0.157] | [0.281] | [0.096] | [0.096] | [0.172] | [0.192] |
| CDF of Variance | 0.009 | 0.006 | 0.004 | 0.004 | 0.002 | 0.000 |
| | [0.593] | [0.639] | [0.489] | [0.443] | [0.893] | [0.776] |
| Cash | 0.154** | 0.152** | 0.164* | 0.160* | 0.152* | 0.158 |
| | [0.016] | [0.024] | [0.053] | [0.077] | [0.088] | [0.107] |
| SalesGrowth | 0.009 | 0.003 | 0.019* | 0.017* | 0.032** | 0.035** |
| | [0.151] | [0.144] | [0.076] | [0.097] | [0.032] | [0.012] |
| Capex | 0.193** | 0.207** | 0.181** | 0.177* | 0.279* | 0.245* |
| | [0.028] | [0.047] | [0.041] | [0.053] | [0.054] | [0.060] |
| Tenure | 0.101** | 0.097** | 0.029* | 0.031* | 0.035*** | 0.034*** |
| | [0.022] | [0.031] | [0.089] | [0.095] | [0.003] | [0.003] |
| IndependentBoard | -0.013 | -0.016 | -0.021 | -0.023 | -0.016 | -0.014 |
| | [0.183] | [0.169] | [0.212] | [0.306] | [0.129] | [0.142] |
| NumberofCons | 0.052 | 0.056 | 0.046 | 0.041 | 0.061 | 0.063 |
| | [0.438] | [0.501] | [0.553] | [0.590] | [0.409] | [0.440] |
| Firm and Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Intercept | 13.845*** | 13.802*** | 12.042*** | 12.138*** | 9.530*** | 9.479*** |
| | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| N | 910 | 910 | 698 | 698 | 401 | 401 |
| Adjusted-$R^2$ | 40.8% | 40.6 % | 39.3% | 39.5% | 36.5% | 34.8% |

## Table 4: Compensation Consultants and CEO Equity Incentive Pay

The sample consists of 910 firm-year observations from 2005 to 2009. The sample consists of 698 and 401 firm-year observations, when using the *IndDummy* and *IndRatio*, respectively. All models are estimated as fixed effects regressions. The variable *Consultant* is one of *ConsDummy*, *IndDummy* or *IndRatio*. Panel A reports the relationship between consultant characteristics and Portfolio Equity Incentive (PEI) of CEO Contracts. The dependent variable in all models in Panel A is *PEI*. Panel B reports the relation between consultant characteristics and Equity-Pay-Performance Sensitivity, and Relative Performance Evaluation (RPE) of CEO Contracts. The dependent variable in all models in Panel B is *Ln(EquityComp)*. The control variables included in all models in Panel B are the same as those specified in Table 3. All variables are explained in Appendix B. Corresponding p-values are reported in brackets. The p-values are based on robust standard errors clustered at the firm level. The notation ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

Panel A: Portfolio Equity Incentive

| | (1) ConsDummy | (2) IndDummy | (3) IndRatio |
|---|---|---|---|
| **Consultant** | 2.434* | 8.031** | 0.825*** |
| | [0.088] | [0.025] | [0.002] |
| Ln(Sales) | -6.078*** | -6.926*** | -7.266*** |
| | [0.000] | [0.000] | [0.000] |
| Leverage | -10.767* | -11.833* | -13.530** |
| | [0.066] | [0.056] | [0.042] |
| CDF of Variance | 6.930 | 9.014* | 9.417* |
| | [0.644] | [0.090] ] | [0.086] |
| Cash | 12.958 | 16.092 | 25.516 |
| | [0.822] | [0.785] | [0.308] |
| SalesGrowth | 0.284 | 0.235 | 1.529 |
| | [0.901] | [0.956] | [0.466] |
| Tenure | 1.545** | 1.048* | 1.036** |
| | [0.021] | [0.509] | [0.044] |
| Capex | 4.459 | 2.549 | 8.907 |
| | [0.947] | [0.645] | [0.513] |
| Stockreturn | 1.013* | 1.030** | 1.242** |
| | [0.081] | [0.046] | [0.034] |
| ROA | 9.039** | 9.01** | 10.71*** |
| | [0.011] | [0.019] | [0.004] |
| IndependentBoard | 1.770 | 1.911 | 1.982* |
| | [0.166] | [0.138] ] | [0.079] |
| NumberofCons | 0.156 | 0.726 | 0.952 |
| | [0.866] | [0.977] | [0.696] |
| Firm and Year FE | Yes | Yes | Yes |
| Intercept | 24.333*** | 21.049*** | 31.068*** |
| | [0.000] | [0.000] | [0.000] |
| N | 910 | 698 | 401 |
| Adjusted-$R^2$ | 14.9% | 15.5% | 16.1% |

Panel B: Equity-Pay-Performance Sensitivity, and Relative Performance Evaluation

| | (1) ConsDummy | (2) ConsDummy | (3) IndDummy | (4) IndDummy | (5) IndRatio | (6) IndRatio |
|---|---|---|---|---|---|---|
| StockReturn | 0.122** | 0.113** | 0.119** | 0.122** | 0.251** | 0.289** |
| | [0.011] | [0.028] | [0.030] | [0.027] | [0.012] | [0.010] |
| PeerReturn | -0.034 | -0.039 | -0.185** | -0.179** | -0.182** | -0.180** |
| | [0.126] | [0.105] | [0.043] | [0.048] | [0.018] | [0.013] |
| ROA | 0.040 | 0.051 | 0.094 | 0.139 | 0.290 | 0.237 |
| | [0.144] | [0.203] | [0.158] | [0.182] | [0.117] | [0.113] |
| **Consultant** | 0.031 | 0.018 | 0.014 | 0.009 | 0.002 | 0.001 |
| | [0.148] | [0.177] | [0.202] | [0.169] | [0.233] | [0.258] |
| **Consultant × StockReturn** | 0.052** | | 0.047** | | 0.009** | |
| | [0.021] | | [0.025] | | [0.022] | |
| **Consultant × ROA** | | 0.036 | | 0.007 | | 0.007 |
| | | [0.159] | | [0.381] | | [0.137] |
| **Consultant × PeerReturn** | -0.105* | -0.160* | -0.085** | -0.091** | -0.007** | -0.004** |
| | [0.089] | [0.056] | [0.019] | [0.015] | [0.020] | [0.024] |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Firm and Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 910 | 910 | 698 | 698 | 401 | 401 |
| Adjusted-$R^2$ | 38.9% | 39.2 % | 39.1% | 39.4% | 38.8% | 37.9% |

Table 5: The Impact of Independent Advice on CEO PPS, PEI, and RPE: Controlling for Selection Bias

The sample consists of 698 firm-year observations from 2005 to 2009. The probit regressions estimate the probability that a firm hires at least one independent consultant. The regressions estimate the impact of independent advice on Portfolio Equity Incentive (PEI) of CEO contracts in Canada using the Heckman two-stage estimator. The dependent variable in models (2) and (3) is *Ln(TotalComp)*, *PEI* in model (4), and *Ln(EquityComp)* in model (5). *DualClass* is a dummy variable, which equals one if the firm has dual-class voting shares, and zero otherwise. *CCGG* is the proportion of the firm's common shares owned by the members of CCGG. Lambda is the inverse Mills ratio in the Heckman model. log L is the value of the log likelihood function and Pseudo-R2 is a goodness-of-fit measure for Probit models based on the difference between unrestricted and restricted likelihood functions (McFadden, 1974). Corresponding p-values are reported in brackets. The p-values are based on robust standard errors clustered at the firm level. The notation ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively. Ln() denotes the natural logarithm transform.

| | (1) Probit Model | (2) Heckman | (3) Heckman | (4) Heckman | (5) Heckman |
|---|---|---|---|---|---|
| **IndDummy** | | 0.043* | 0.045* | 6.726** | |
| | | [0.088] | [0.091] | [0.041] | |
| **Lambda** | | 5.733** | 5.832** | 9.518** | 5.026* |
| | | [0.043] | [0.047] | [0.024] | [0.051] |
| **CCGG** | 0.478** | | | | |
| | [0.033] | | | | |
| **DualClass** | -0.225** | 0.008 | 0.007 | -1.041 | -0.005 |
| | [0.011] | [0.127] | [0.130] | [0.177] | [0.118] |
| **IndDummy × StockReturn** | | 0.025** | | | 0.032** |
| | | [0.048] | | | [0.039] |
| **IndDummy × ROA** | | | 0.062* | | |
| | | | [0.068] | | |
| **IndDummy × PeerReturn** | | -0.041** | -0.050** | | -0.083* |
| | | [0.045] | [0.039] | | [0.040] |
| IndependentBoard | 0.121* | -0.019 | -0.020 | 2.081 | 0.004 |
| | [0.082] | [0.202] | [0.214] | [0.199] | [0.359] |
| StockReturn | 0.0682 | 0.098** | 0.094* | 5.352* | 0.138** |
| | [0.469] | [0.047] | [0.052] | [0.080] | [0.038] |
| PeerReturn | | -0.160* | -0.162* | | -0.173** |
| | | [0.058] | [0.061] | | [0.047] |
| ROA | 0.109 | 0.118* | 0.121* | 9.75 | 0.098 |
| | [0.367] | [0.093] | [0.092] | [0.126] | [0.221] |
| Ln(Sales) | 0.013* | 0.105*** | 0.110*** | -14.786*** | 0.125*** |
| | [0.087] | [0.000] | [0.000] | [0.001] | [0.000] |
| Leverage | -0.195 | -0.182 | -0.179 | -22.027* | -0.187 |
| | [0.464] | [0.205] | [0.211] | [0.059] | [0.238] |
| CDF of Variance | 0.043 | 0.002 | 0.003 | 17.121 | -0.001 |
| | [0.923] | [0.528] | [0.525] | [0.211] | [0.494] |
| Cash | 0.246 | 0.157* | 0.158* | 29.110 | 0.118 |
| | [0.121] | [0.094] | [0.097] | [0.172] | [0.089] |
| SalesGrowth | -0.170 | 0.017 | 0.018 | 1.082 | 0.013 |
| | [0.518] | [0.195] | [0.206] | [0.848] | [0.210] |
| Tenure | -0.074 | 0.021* | 0.019* | 2.060** | 0.011* |
| | [0.340] | [0.094] | [0.098] | [0.016] | [0.080] |
| Capex | -0.128 | 0.165* | 0.172* | 16.986 | 0.147 |
| | [0.174] | [0.082] | [0.079] | [0.188] | [0.190] |
| Year and Industry Dummies | Yes | Yes | Yes | Yes | Yes |
| Intercept | -0.587*** | 14.744*** | 14.583*** | 19.787*** | 15.661*** |
| | [0.005] | [0.000] | [0.000] | [0.000] | [0.000] |
| N | 698 | 698 | 698 | 698 | 698 |
| Log L | -598 | | | | |
| Pseudo-$R^2$ | 9.2% | | | | |
| Adjusted-$R^2$ | | 34.5% | 34.7% | 14.3% | 34.1% |

Table 6: The Impact of Independent Advice on CEO PPS and RPE: The Separation of Hugessen from Mercer

The sample consists of 46 firm-year observations from 2005 and 2006. The sample consists of 23 firms which had Mercer as their consultants in year t-1 and hired Hugessen in year t. All models are estimated as OLS regressions. The dependent variable in models (1) and (2) is *Ln(TotalComp)*, in model (3) is *PEI*, and in model (4) is *Ln(EquityComp)*. *SwitchingDummy* is a dummy variable, which equals one if Hugessen was hired as the compensation consultant in that year, and zero otherwise. All variables are explained in Table 2. Corresponding p-values are reported in brackets. The p-values are based on robust standard errors clustered at the firm level. The notation ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively. Ln() denotes the natural logarithm transform.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| StockReturn | 0.187* | 0.195* | 6.919* | 0.115** |
| | [0.084] | [0.092] | [0.095] | [0.041] |
| PeerReturn | -0.180* | -0.196** | | -0.168* |
| | [0.079] | [0.018] | | [0.059] |
| ROA | 0.112 | 0.117 | 13.491* | 0.085 |
| | [0.197] | [0.153] | [0.081] | [0.204] |
| **SwitchingDummy** | -0.048* | -0.039* | 7.029** | 0.008 |
| | [0.085] | [0.087] | [0.048] | [0.181] |
| **SwitchingDummy × StockReturn** | 0.039** | | | 0.041** |
| | [0.048] | | | [0.044] |
| **SwitchingDummy × ROA** | | 0.175* | | |
| | | [0.091] | | |
| **SwitchingDummy × PeerReturn** | -0.063* | -0.078* | | -0.083* |
| | [0.056] | [0.051] | | [0.068] |
| Ln(Sales) | 0.400*** | 0.383*** | -17.061*** | 0.201*** |
| | [0.000] | [0.000] | [0.000] | [0.000] |
| Leverage | -0.267* | -0.249 | -20.428** | -0.247 |
| | [0.072] | [0.120] | [0.025] | [0.116] |
| CDF of Variance | 0.001 | 0.001 | 19.944 | 0.001 |
| | [0.293] | [0.301] | [0.209] | [0.353] |
| Cash | 0.246 | 0.199 | 33.619 | 0.146 |
| | [0.121] | [0.172] | [0.203] | [0.140] |
| SalesGrowth | 0.030 | 0.041 | 0.949 | 0.019* |
| | [0.385] | [0.039] | [0.840] | [0.095] |
| Tenure | 0.031** | 0.030** | 1.188** | 0.366** |
| | [0.039] | [0.035] | [0.060] | [0.033] |
| Capex | 0.396** | 0.392* | 22.178 | 0.098* |
| | [0.047] | [0.054] | [0.696] | [0.071] |
| IndependentBoard | -0.012 | -0.015 | 2.453 | 0.007 |
| | [0.338] | [0.439] | [0.181] | [0.375] |
| Industry Dummy | Yes | Yes | Yes | Yes |
| Intercept | 8.859*** | 9.840*** | 17.449** | 15.406*** |
| | [0.000] | [0.000] | [0.041] | [0.000] |
| N | 46 | 46 | 46 | 46 |
| Adjusted-$R^2$ | 35.2% | 33.9% | 14.5% | 36.4% |

Table 7: Market Reactions Around The Announcement of Hugessen Separation

The regression $R_{it} = \alpha_i + \beta_i R_{bt} + \eta_i Event + \epsilon_{it}$ is estimated for each firm that hired Mercer as their compensation consultant in 2005. $R_i$ is the daily return for firm $i$ and $R_b$ is the daily return on the value-weighted benchmark portfolio that included 250 stocks that account for 80% of Canadian market capitalization obtained from DataStream. Event is a dummy variable that equals 1 on event days included in the event. Day 0 is April 18th 2006. $\eta_i$ is the average abnormal return over the event window for each firm. The cumulative abnormal return (CAR) reported in the table equals he average value of the $\eta_i$'sover each event window , multiplied by the number of days in the event window. The sample consists of 23 firms that hired Mercer and received advice directly from Ken Hugessen and 25 firms that hired Mercer but received advice from other lead directors in 2005. The models are each estimated as system of equations from May 18, 2005 to June 18, 2006 and are estimated separately for each group of firms. Corresponding p-values are reported in brackets. The notation ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

| Cumulative Abnormal Returns(CAR) | | |
|---|---|---|
| | Mercer Clients<br>Ken Hugessen Lead Director | Mercer Clients<br>Other Lead Director |
| (-1,+1) window | 0.0111** | 0.0051 |
| | [0.043] | [0.135] |
| (-1,+2) window | 0.0131** | 0.0021 |
| | [0.040] | [0.122] |
| (-1,+3) window | 0.0126* | 0.0023 |
| | [0.058] | [0.204] |
| (-1,+4) window | 0.0094* | 0.0008 |
| | [0.089] | [0.362] |
| (-1,+5) window | 0.0102* | -0.0032 |
| | [0.059] | [0.488] |
| (-1,+6) window | 0.0132* | 0.0039 |
| | [0.063] | [0.370] |
| (-1,+7) window | 0.0100* | 0.0018 |
| | [0.082] | [0.392] |
| (-1,+8) window | 0.0100* | -0.0033 |
| | [0.081] | [0.477] |
| (-1,+9) window | 0.0085* | 0.0055 |
| | [0.098] | [0.375] |

Table 8: Consultant Independence and Design of Annual Incentive Plans

This table presents test results on the effect of consultant on the design of the annual incentive plan. In all regressions, the dependent variable is *(EPS Target - Analyst Consensus)*. The variable *Consultant* is one of *ConsDummy* (Columns 1 and 2), *IndDummy* (Columns 3 and 4) or *IndRatio* (Columns 5 and 6). *ConsDummy* equals one if at least one consultant was retained in that year, and zero otherwise. *IndDummy* equals one if at least one "independent" consultant was retained in that year, and zero otherwise. *IndRatio* equals minus one multiplied by the ratio of *OtherFees* to *CompFees*. *Number of Analysts* is the number of analysts who followed the company over the previous year. *Forecast Dispersion* is the standard deviation of analyst forecasts issued within the first quarter. All variables are defined in Appendix B. All models include year fixed effects and industry fixed effects. Corresponding p-values are reported in brackets. The p-values are based on robust standard errors clustered at the firm level. The notation ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

| | (1) ConsDummy | (2) ConsDummy | (3) IndDummy | (4) IndDummy | (5) IndRatio | (6) IndRatio |
|---|---|---|---|---|---|---|
| **Consultant** | 0.026* | 0.009 | 0.041** | 0.031* | 0.004* | 0.003* |
| | [0.094] | [0.127] | [0.038] | [0.080] | [0.057] | [0.054] |
| Number of Analysts | | -0.002 | | -0.003 | | -0.003 |
| | | [0.280] | | [0.224] | | [0.251] |
| Forecast Dispersion | | -0.103 | | -0.093 | | -0.099 |
| | | [0.507] | | [0.489] | | [0.470] |
| Ln(Sales) | | -0.024 | | -0.027 | | -0.026 |
| | | [0.211] | | [0.202] | | [0.187] |
| Leverage | | 0.019 | | 0.021 | | 0.027 |
| | | [0.339] | | [0.408] | | [0.433] |
| Cash | | 0.014 | | 0.015 | | 0.012 |
| | | [0.731] | | [0.691] | | [0.646] |
| SalesGrowth | | 0.046 | | 0.058 | | 0.054 |
| | | [0.556] | | [0.322] | | [0.356] |
| Tenure | | 0.007 | | 0.004 | | 0.004 |
| | | [0.164] | | [0.258] | | [0.261] |
| StockReturn | | 0.028 | | 0.023 | | 0.031 |
| | | [0.392] | | [0.263] | | [0.301] |
| ROA | | 0.117 | | 0.108 | | 0.114 |
| | | [0.320] | | [0.375] | | [0.364] |
| IndependentBoard | | 0.014** | | 0.036* | | 0.031* |
| | | [0.031] | | [0.051] | | [0.066] |
| NumberofCons | | 0.018 | | 0.014 | | 0.019 |
| | | [0.190] | | [0.239] | | [0.221] |
| Year and Industry Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Intercept | -0.017* | -0.019 | -0.011* | -0.022 | -0.010* | -0.024 |
| | [0.085] | [0.163] | [0.092] | [0.145] | [0.090] | [0.150] |
| N | 92 | 92 | 83 | 83 | 80 | 80 |
| Adjusted-R$\hat{2}$ | 13.9% | 15.1% | 16.8% | 17.2% | 15.2% | 15.6% |

Table 9: The Determinants of Executive Compensation Consultants Fees

The sample consists of 698 firm-year observations from 2005 to 2009. The dependent variable in all models is *Ln(CompFees)*. *Segments* is the number of business segments the firm operates in. *PayComplexity* is a dummy variable, which equals one if the board used options in the CEO's compensation packaged in that year, and zero otherwise. All the models are estimated as OLS regressions. All the variables are explained in Table 2. Corresponding p-values are reported in brackets. The p-values are based on robust standard errors clustered at the firm level. The notation ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively. Ln() denotes the natural logarithm transform.

| | (1) | (2) |
|---|---|---|
| **IndDummy** | | 0.202** |
| | | [0.023] |
| Ln(Sales) | 0.253*** | 0.246*** |
| | [0.000] | [0.000] |
| StockVariance ×100 | 0.038 | 0.032 |
| | [0.150] | [0.172] |
| Segments | 0.019* | 0.013* |
| | [0.056] | [0.062] |
| PayComplexity | 0.033* | 0.029* |
| | [0.084] | [0.091] |
| Leverage | 0.001 | 0.000 |
| | [0.463] | [0.497] |
| Cash | 0.743* | 0.823** |
| | [0.055] | [0.029] |
| SalesGrowth | 0.194 | 0.175 |
| | [0.248] | [0.294] |
| Stockreturn | 0.027* | 0.035* |
| | [0.089] | [0.073] |
| ROA | 0.009* | 0.009* |
| | [0.091] | [0.095] |
| IndependentBoard | -0.035 | -0.023 |
| | [0.249] | [0.273] |
| NumberofCons | 0.231** | 0.192** |
| | [0.013] | [0.042] |
| Year and Industry Dummy | Yes | Yes |
| Intercept | 7.363*** | 8.574*** |
| | [0.000] | [0.001] |
| N | 698 | 698 |
| Adjusted-$R^2$ | 24.5% | 27.2% |

Table 10: Compensation Committee's Experience and the Impact of Independent Advice on CEO's PEI

The sample consists of 320 firm-year observations from 2008 and 2009. The sample is reduced to 207 firm-year observations, when investigating consultant's independence using *IndRatio*. All the models are estimated as OLS regressions. The dependent variable in all models is *PEI*. *ExpRatio* is the ratio of the number of experienced compensation committee members who have served on other compensation committees before to the total number of compensation committee members. *ExCEOOnCom* is a dummy variable, which equals one if at least one ex-CEO is present among the members of the compensation committee in that year, and zero otherwise. All the variables are explained in Appendix B. Corresponding p-values are reported in brackets. The p-values for are based on robust standard errors clustered at the firm level. The notation ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| IndDummy | 7.949** | | 8.004** | |
| | [0.068]] | | [0.061] | |
| IndRatio | | 0.698** | | 0.704** |
| | | [0.013] | | [0.018] |
| ExpRatio | 5.735* | 2.280* | | |
| | [0.091] | [0.086] | | |
| ExCEOOnCom | | | 6.982* | 2.037* |
| | | | [0.080] | [0.075] |
| **IndDummy × ExpRatio** | -5.934* | | | |
| | [0.086] | | | |
| **IndRatio × ExpRatio** | | -0.380* | | |
| | | [0.091] | | |
| **IndDummy × ExCEOOnCom** | | | -6.488** | |
| | | | [0.048] | |
| **IndRatio × ExCEOOnCom** | | | | -0.472* |
| | | | | [0.061] |
| StockReturn | 4.163** | 4.391* | 4.127* | 4.335* |
| | [0.042] | [0.053] | [0.058] | [0.054] |
| ROA | 12.691 | 12.755* | 12.104 | 12.842* |
| | [0.111] | [0.077] | [0.104] | [0.079] |
| Ln(Sales) | -17.692*** | -17.521*** | 17.592*** | -17.608*** |
| | [0.000] | [0.000] | [0.000] | [0.000] |
| Leverage | -19.024* | -18.877 | -18.928 | -18.793 |
| | [0.095] | [0.108] | [0.110] | [0.107] |
| CDF of Variance | 16.925 | 17.122 | 17.013 | 17.249 |
| | [0.226] | [0.230] | [0.234] | [0.219] |
| Cash | 36.240* | 35.667* | 35.871 | 35.903* |
| | [0.094] | [0.065] | [0.115] | [0.069] |
| SalesGrowth | 1.178 | 1.036 | 1.155 | 1.103 |
| | [0.501] | [0.484] | [0.497] | [0.512] |
| Tenure | 1.138* | 1.131* | 1.200* | 1.188* |
| | [0.078] | [0.076] | [0.073] | [0.075] |
| Capex | 19.149 | 19.918 | 19.450 | 19.932 |
| | [0.603] | [0.594] | [0.608] | [0.612] |
| IndependentBoard | 1.689 | 1.648 | 1.631 | 1.652 |
| | [0.205] | [0.215] | [0.212] | [0.220] |
| NumberofCons | 0.876 | 0.852 | 0.826 | 0.835 |
| | [0.488] | [0.475] | [0.453] | [0.471] |
| Year and Industry Dummy | Yes | Yes | Yes | Yes |
| Intercept | 31.864*** | 32.249*** | 32.903*** | 32.056*** |
| | [0.000] | [0.000] | [0.000] | [0.000] |
| N | 320 | 207 | 320 | 207 |
| Adjusted-$R^2$ | 13.1% | 12.8% | 12.9% | 12.8% |

Table 11: Compensation Consultants, Their Level of Independence and The Likelihood of Explicit RPE

This table reports logit regression results examining the effect of hiring a consultant and also the level of consultant's independence on the likelihood of explicit use of RPE. The sample consists of 910 firm-year observations from 2005 to 2009. The sample consists of 698 and 401 firm-year observations, when investigating consultant's independence using the *IndDummy* and *IndRatio*, respectively. The dependent variable equals to one if the firm uses explicit RPE in that fiscal year and zero otherwise. Explicit use of RPE includes disclosure of using either a performance peer group or segment specific ETF in setting the CEO pay. The coefficients are estimates of the marginal effect on the probability when all of the independent variables are at their mean value. Corresponding p-values from robust standard errors clustered at the firm level are reported in brackets. The notation ***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

| | (1) | (2) | (3) |
|---|---|---|---|
| **ConsDummy** | 0.122 | | |
| | [0.152] | | |
| **IndDummy** | | 0.256** | |
| | | [0.046] | |
| **IndRatio** | | | 0.024* |
| | | | [0.081] |
| StockReturn | 0.062 | 0.058 | 0.0630 |
| | [0.301] | [0.286] | [0.292] |
| ROA | 0.084 | 0.077 | 0.087 |
| | [0.244] | [0.227] | [0.239] |
| Ln(Sales) | 0.011*** | 0.009*** | 0.008*** |
| | [0.000] | [0.000] | [0.001] |
| Leverage | -0.074 | -0.070 | -0.078 |
| | [0.374] | [0.368] | [0.356] |
| CDF of Variance | 0.007 | 0.008 | 0.007 |
| | [0.388] | [0.392] | [0.402] |
| Cash | -0.020 | -0.013 | -0.011 |
| | [0.538] | [0.545] | [0.541] |
| SalesGrowth | 0.012 | 0.010 | 0.009 |
| | [0.822] | [0.808] | [0.804] |
| Capex | 0.002 | 0.001 | 0.002 |
| | [0.274] | [0.288] | [0.290] |
| Tenure | 0.024 | 0.026 | 0.028 |
| | [0.382] | [0.394] | [0.401] |
| IndependentBoard | 0.020* | 0.027* | 0.026* |
| | [0.092] | [0.079] | [0.080] |
| Year and Industry Dummy | Yes | Yes | Yes |
| N | 910 | 698 | 401 |
| Pseudo-$R^2$ | 9.8% | 11.6% | 11.5% |

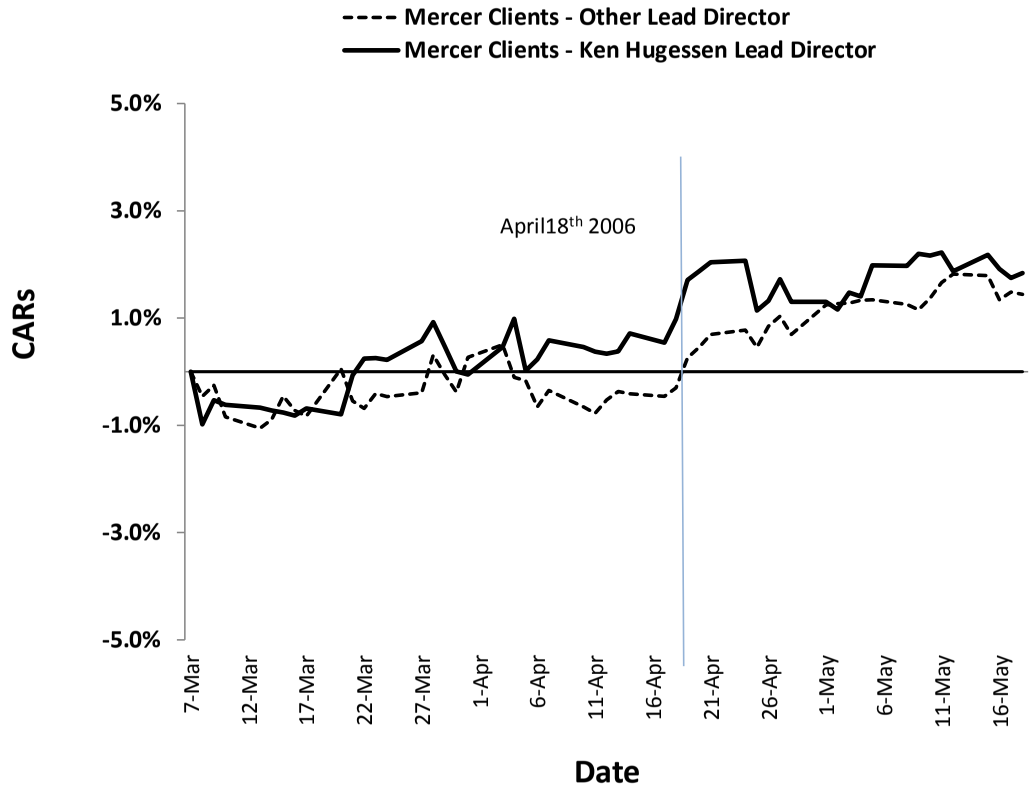


Figure 1: Returns Around the News of Hugessen Separation from Mercer

This figure shows cumulative abnormal returns on portfolios of firms that firm that hired Mercer as their compensation consultant in 2005 from March 7, 2006 to May 16, 2006 (days -30 to +20 around the April 18 news). To compute abnormal returns, regression $R_{pt} = \alpha + \beta R_{bt} + \eta Event + \epsilon_t$ is estimated from May 18, 2005 to June 18, 2006. $R_p$ is the daily return on a value-weighted portfolio that includes 23 firms that hired Mercer and received advice directly from Ken Hugessen or on a value-weighted portfolio of 25 firms that hired Mercer but received advice from other lead directors in 2005. $R_b$ is the return on the value-weighted benchmark portfolio that includes 250 stocks that account for 80% of Canadian market capitalization obtained from DataStream. Event is a dummy variable that equals 1 on event days included in the event. Day 0 is April 18th 2006.