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Does Independent Advice to the Board Affect CEO Compensation?

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Abstract

This article investigates the role external advice plays in the board's determination of chief executive officer (CEO) compensation. We show that CEO incentive pay increases with the degree of compensation consultant independence using a quasi-natural experiment provided by the creation of an independent consultant after separation from an affiliated consultant. Specifically, switching to an independent consultant significantly increases the pay–performance sensitivity and relative performance evaluation of CEO contracts. Despite the benefits of independent advice, independent consultants may not be hired due to the influence of powerful CEOs or because boards already possess adequate expertise.

I. 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.

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In this article, we focus on the impact of *independent* advice in the context of executive compensation consultants. Specifically, we 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 chief executive officer (CEO) pay, focusing on 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.

Since at least the early 1980s, meaningful numbers of boards have turned to executive compensation consultants for advice (Bender (2012)). Consultants provide three key services to the board. They select compensation peers that are used to determine the appropriate level of pay.[1] 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 compensation 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. Examples of such services are employee-pay services, benefits administration services, and actuarial services. 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 U.S. 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 but instead offers 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, Peck, and Sadler (2009), Cadman, Carter, and Hillegeist (2010), Murphy and Sandino (2010), (2014), Armstrong, Ittner, and Larcker (2012), and Chu, Faasse, and Rau (2017)).

Therefore, in this article we explore the effect of *independent* advice on the structure of CEO incentive pay while also providing new results on how independent advice affects the level of pay. To understand how access to such independent advice can affect the compensation setting, it is helpful to focus on the case in which the board does not have the required information to select appropriate performance peer groups (e.g., the strategies of peer firms, the impact of a shock across peer firms on the firm's cash flows, etc.) used in RPE contracts. These peer firms play a pivotal role in identifying the compensation payouts and ideally are chosen to identify the impact of management effort on performance. The board

[1]For more on the selection of compensation peer groups and their impact on executives' level of pay, see Faulkender and Yang (2010) and Bizjak, Lemmon, and Nguyen (2011).

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can hire a consultant capable of providing the information needed to select appropriate peer firms; however, the CEO who may also have private information about peer firms is inclined to suggest peer firms that have the potential to underperform because his or her pay would be higher if performance peers are weak. Thus, it is reasonable to assume that an affiliated consultant who is concerned about his or her other business with the CEO would not have the right incentives to always disclose the true information regarding the peer firms to the board. Therefore, the likelihood of a consultant providing the information needed to select appropriate peer firms is contingent upon the extent to which the consultant is affiliated with management. The introduction of an independent consultant thus could directly improve the quality of the information available to the board, allowing the design of more efficient contracts. This implies that the PPS and RPE components of CEO pay should increase with the consultant's degree of independence.

To test the impact of consultants on CEO incentive pay, we use a sample of Canadian firms that were included in the Standard & Poor's (S&P)/Toronto Stock Exchange (TSX) Composite Index during the period from 2005 to 2009 and examine whether the presence of compensation consultants and the independence of their advice influence CEO's PPS and the use of RPE. We use Canadian firms for several reasons. First, the Canadian setting allows us to utilize a quasi-natural experiment in 2006 to identify the effect of independent advice on CEO compensation. Second, disclosure rules that came in effect in 2005 ensure the availability of rich data on compensation consultants. Canadian firms 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 compensation services and other work provided. This enables us 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 advice. Third, there is a great deal of heterogeneity in both the cross section and times series in the degree of consultant independence in Canada, mainly because one consultant that dominated the market switched from being affiliated to providing completely independent advice.

In fixed-effect regressions using our entire panel of firms, we find a statistically and economically important impact of compensation consultants on CEO incentive pay measured by either overall PPS (which includes the effect of both bonuses and equity pay) or Jensen and Murphy's (1990) portfolio equity incentives (PEI). We find that the effects are stronger when consultants are more independent: A 1-standard-deviation decrease in cross-selling incentives increases the overall PPS by 7% (from 22% to 29%), the PEI by $8.4 per $1,000 change in shareholder wealth, and RPE by 4% (from 15% to 19%). Although these tests control for observable firm characteristics and time-invariant, unobservable firm characteristics, it is possible that omitted time-varying factors can bias our coefficient estimates. For instance, seeking independent advice and awarding efficient compensation contracts are both practices of well-governed firms. To better address these endogeneity concerns, we turn to the most important advantage of our Canadian setting.

We take advantage of a quasi-natural experiment where one influential compensation consultant in Canada switched from being affiliated to providing completely independent advice. Specifically, in 2006, Ken Hugessen was a lead advisor at Mercer's Executive Compensation Practice in Canada, a dominant consulting firm for Canadian publicly traded companies, accounting for 57.1% of the market in 2005. Mercer, along with almost all other consulting firms at the time in the Canadian market, provided firms with compensation advice and other services and therefore was considered an affiliated consultant. In June 2006, Mr. Hugessen left Mercer and established Hugessen Consulting as a new and independent business committed to providing advice solely to boards rather than management. Because the consultant (Mr. Hugessen) had a very strong relationship with his clients, all of his clients hired Hugessen Consulting after the switch. Thus, for these firms, the board and the consultant remain the same, whereas the independence of the consultant's advice changes.

Therefore, focusing on changes in CEO pay contracts for firms that switched from Mercer to Hugessen allows us to clearly separate the effect of selection from the effect of independent advice on CEO incentive pay. This is because the variation within this sample is mostly due to the elimination of cross-selling incentives rather than the endogenous choice of firms to hire independent consultants. Importantly, this is not possible for two similar events in the United States in 2010: the separation of Pay Governance LLC from Towers Watson and that of Meridian Consulting from Hewitt Associates (Chu et al. (2017)). In both cases, many firms chose to stay with the affiliated consultant, whereas others chose to hire the newly independent consultants. In contrast, all of Mr. Hugessen's clients switched, indicating that they were less likely to actively choose between affiliated or independent consultants after the separation of Mr. Hugessen from Mercer.[2] Moreover, Mr. Hugessen's clients had pre-separation firm characteristics similar to those of other Mercer clients, suggesting that Mr. Hugessen's separation was not necessarily motivated by preexisting differences between his clients and other Mercer clients. Therefore, unlike the two comparable U.S. events, our setting is likely to provide an opportunity to identify the causal effect of independent advice on CEO pay structure.

First, we compare the CEO compensation contracts of Mr. Hugessen's clients before and after his separation. Because the main change for these firms during the event window was the elimination of cross-selling incentives, this test allows us to isolate the effect of independent advice on CEO compensation. Second, we employ a difference-in-differences (DID) methodology to compare the changes in CEO compensation of treatment firms (Mr. Hugessen's clients) to those of control firms (Mercer clients in 2005 that did not receive advice from Mr. Hugessen). This DID methodology makes it less likely that any common changes that could affect the compensation contracts of treated firms during the event window, other than the separation of Mr. Hugessen from Mercer, bias the results. Bolstering the

[2]It is interesting that all of Mr. Hugessen's clients switched, regardless of the level of management's power over the board. This could be due to our finding that the market viewed Hugessen's separation favorably (see Section IV.C). This suggests that when it became clear that retaining Mercer instead of switching with newly independent Hugessen would be viewed negatively, even those firms with captured boards switched in order to pool with firms with more independent boards.

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internal validity of our tests, a falsification test confirms that our results are unique to Hugessen's separation from Mercer in 2006.

We find statistically and economically significant effects of independent advice on CEO pay. Specifically, the CEO's PPS, PEI, and RPE increase by 3% (from 19% to 22%, i.e., 16% relatively), $5 per $1,000 shareholders' wealth change, and 4% (from 16% to 20%, i.e., 19% relatively), respectively, following the switch. Note that it is comforting that the economic significance of the results in the DID tests is relatively close to the fixed-effects results in the full sample. We also find some 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 is consistent with the notion that boards' access to independent advice results in more efficient CEO contracts.

As it is in many DID tests, the nonrandom assignment of firms to treated and control groups is a potential concern because firms may choose whether to have Mr. Hugessen as their lead advisor at Mercer prior to 2006. Nonetheless, there are several reasons why these types of selection issues are unlikely to jeopardize the internal validity of our experiment. First, to the extent that Mercer assigned clients to Mr. Hugessen years in advance of his separation from Mercer in 2006, it is less likely that clients' assignment to Mr. Hugessen is correlated with the determinants of CEO compensation in 2006. Second, Mercer assigned lead advisors to clients based on the lead advisor's industry expertise and geographical proximity to clients. Because we are unaware of any compensation-related industry- or location-specific event that is likely to be correlated with changes in CEO compensation around the Hugessen experiment, neither of these two determinants is likely to contaminate our results.

Despite the significant advantages of our experimental setting outlined in the preceding paragraphs, we acknowledge that the Hugessen experiment is not a perfect controlled experiment. For instance, all the variation in independent advice comes from one consultant (Mr. Hugessen). However, it is comforting that the results of the Hugessen experiment are similar to the results from the larger panel of firms from 2005 to 2009. Unlike the Hugessen experiment, the larger-panel results cannot be interpreted causally; however, they have the advantage of offering better external validity. This is because they exploit more sources of variation in the independence of advice. Therefore, this suggests our findings are unlikely to be limited to the Hugessen experiment. That being said, the experiment we analyze is arguably the cleanest setting currently available to isolate the impact of independent advice to the board on CEO compensation setting.

Our finding that independent advice increases CEO incentive pay suggests that such stronger incentives may increase shareholder value.[3] Therefore, we investigate the stock market response to the news of the separation of Hugessen from Mercer, which provides an excellent setting to analyze the impact of independent advice to the board on shareholder value. The separation of Hugessen from Mercer was reported in the media for the first time on Apr. 18, 2006. A *Globe and Mail* article indicated that "Mr. Hugessen, who provides executive

[3]Jensen and Murphy (1990), Dai, Jin, and Zhang (2011), and Aggarwal and Samwick (2003), (2006) suggest a positive link between CEO incentives and firm value.

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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."[4] Consistent with the market anticipating a benefit from receiving independent advice, the equity values of Mr. Hugessen's former clients at Mercer increased by on average 1.0% over a 3-day event window following the separation announcement. These economically and statistically significant abnormal returns give an indication of the value impact of independent advice.

To better understand the channel through which consultants affect CEOs' incentive pay, we also investigate whether independent consultants improve the choice of performance peer groups in CEO RPE contracts. Consistent with this notion, we find that firms that hire independent consultants are more likely to select performance peers that operate in similar industries and have historical stock returns that correlate highly with the returns of the RPE-granting firm. Additionally, the correlation between the firm's stock returns and the average performance peers' stock returns increases by 10% following the hiring of an independent consultant. These results suggest that independent consultants help design superior RPE contracts that better filter out exogenous common shocks to firm performance in an effort to identify the true impact of the CEO's actions on performance (i.e., CEOs are less likely to be paid for luck).

In sum, our empirical results suggest that independent advice improves CEO incentives. This raises the question as to why many boards do not hire independent consultants. One possibility is that firms with more powerful CEOs are less likely to hire an independent consultant because powerful CEOs may favor affiliated consultants (Bebchuk, Fried, and Walker (2002)). As a measure of CEO power, we use a dummy variable for firms with dual-class voting shares (a common structure for Canadian companies). We find that the probability of hiring an independent consultant is 4.2% lower when a firm has dual-class voting shares. We further find that firms with more independent boards are more likely to hire independent compensation consultants. We also find evidence that firms with higher ownership by a group of institutional investors who campaigned for better governance practices have a higher probability of hiring an independent consultant. Finally, firms with boards that are more likely to be captured by management, measured by a higher fraction of directors who were appointed after the CEO took office (i.e., co-opted board), are significantly less likely to have an independent consultant. These findings are consistent with the notion that more powerful managers can influence the consultant hiring decision, imposing a cost on shareholders by preventing them from receiving independent compensation advice.

Another possibility is that independent consultants are more expensive. Although our estimates show that hiring an independent consultant is associated with a premium in consulting fees, this is largely driven by the consultant working an increased number of hours. Moreover, our finding of a positive market reaction to the news of the separation of Hugessen from Mercer is consistent with the market anticipating that the benefits from receiving independent advice outweigh the

[4] See "Consulting Ties That Bind Send Adviser Out on Own; Clients Seek Consultants Free of Conflict" (*Globe and Mail*, Apr. 18, 2006, page B7).

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higher cost associated with higher fees. For these reasons, it seems more likely that the managers' influence over the board, rather than higher consulting fees, is the main impediment to hiring an independent consultant.

Finally, we examine the benefits of independent advice for firms that have better-informed compensation committees. If consultants enable the board to have better access to information needed to design optimal compensation contracts (e.g., choosing appropriate performance peers, etc.), the benefits of hiring a consultant should be less for firms that have more experienced compensation committee members. Consistent with this idea, we show that the benefits of independent advice are reduced when the compensation committee has more members who are experienced in the sense that they also serve on other compensation committees, are ex-CEOs, or possess industry expertise.

These results contribute to at least three strands of literature. First, they provide new evidence on the determinants of incentive pay. Prior research has focused on the consequences of agency problems resulting from an information gap between boards and managers. Our analysis shows that hiring a compensation consultant can allow boards to bridge this gap because hiring a consultant (especially an independent one) can lead to compensation contracts with high-powered incentives. This contributes to the mixed and inconclusive evidence in the literature regarding the association between CEO pay and hiring compensation consultants (e.g., Conyon (2011), Conyon et al. (2009), Cadman et al. (2010), and Murphy and Sandino (2010)).[5]

Our contribution is also distinct from the existing research on independent compensation consultants because we provide causal evidence of the effect of independent advice on CEO compensation. Using coarse measures of independence and a sample of firms in the United States in 2006, Cadman et al. (2010) do not find an effect of consultant independence on CEO pay levels. Conversely, Murphy and Sandino (2010) focus on a cross section of Canadian as well as U.S. firms in 2006 and, consistent with our results, find that independent consultants are associated with lower levels of CEO pay. In contrast, Chu et al. (2017) argue that firms that switched to new independent compensation consultants that separated from affiliated consultants in 2009–2010 pay their CEOs more. They conclude that compensation consultants are used to justify higher CEO pay. However, switching is endogenous in their setting because only some firms switched to hiring newly independent consultants. Therefore, unlike in our article, Chu et al. (2017) are unable to separate the impact of independent advice on pay from the selection effect of choosing to switch to independent consultants. We also contribute to this literature because none of these articles focuses on the impact of independent advice on CEO incentive pay.

Second, our article contributes to the larger governance literature that explores whether independent advice matters. Our findings are congruent with research on the independence of other corporate advisors, such as auditors and

[5]Armstrong et al. (2012) suggest that governance differences between firms explain the mixed evidence, showing that CEOs of companies with weaker governance use consultants to extract higher pay. Similarly, Murphy and Sandino (2014) also find that the positive association between the use of compensation consultants and CEO level of pay disappears with the inclusion of firm fixed effects, suggesting that consultants are not the cause for the higher levels of pay.

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analysts, which finds that conflicts of interest influence the quality of advice. Regarding auditors, Frankel, Johnson, and Nelson (2002) show that greater conflict, as measured by fees paid for nonaudit 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 do those of independent analysts.

Third, our results provide a new perspective on the use of RPE. The gap between theory, which predicts extensive use of RPE (Holmstrom's (1982)), and the evidence, which shows its limited use, has long been a challenge for those advocating for an optimal-contracting perspective for how compensation contracts are set.[6] Recent articles using newly disclosed compensation data find evidence for the use of RPE; however, a significant number of firms still do not use RPE (De Angelis and Grinstein (2010), Gong, Li, and Shin (2011)). This article provides one rationale for the limited use of RPE in CEO compensation contracts. If boards understand that conflicted advice (e.g., from management or affiliated consultants) would be too biased in favor of management, this could lead to poorly designed RPE contracts. This in turn could convince boards to avoid RPE. Our empirical results are consistent with this notion. We show that resolving this conflict by accessing independent advice improves the quality of performance peer groups and is associated with a materially greater use of RPE.

II. The Effect of Independent Advice on CEO Compensation

In this section, we lay out how external advice (i.e., hiring a compensation consultant) can affect the structure of CEO pay. If compensation contracts are set optimally, compensation consultants can potentially improve the efficiency of the contracts by helping the board ensure that the manager is paid for his or her contribution to firm performance and not for luck.

One way to achieve this is by including a well-designed RPE component in the compensation contract (Holmstrom (1982), Holmstrom and Milgrom (1987)). A well-designed RPE contract aims to measure CEO performance more precisely by making the CEO's compensation contingent on how the firm performs relative to a group of peer companies (i.e., the performance peer group). However, the effectiveness of RPE contracts hinges on selecting an appropriate performance peer group to filter out exogenous shocks to firm performance that are outside the CEO's control. To that end, RPE-granting firms should choose performance peers that face risk exposures similar to their own.

However, the board usually does not have the sufficient expertise and information required to identify appropriate performance peers. This could be information regarding the strategies of peer firms or how shocks will affect peer firms relative to the RPE-granting firm. One way to access this information is to hire a compensation consultant capable of selecting peers whose performance is exposed to similar shocks and therefore is highly correlated with the firm's performance. The higher correlation between firm and peer performance improves

[6]See Jensen and Murphy (1990), Gibbons and Murphy (1990), Barro and Barro (1990), Aggarwal and Samwick (1999), Bertrand and Mullainathan (2001), Garvey and Milbourn (2003), and Albuquerque (2009).

the precision of the firm's performance measure, which in turn minimizes the risk premium paid to the risk-averse CEO.

In sum, the benefits of the consultant are twofold: First, the board is more likely to acquire the information regarding the optimal choice of performance peers, which in turn reduces the cost of compensation by reducing the risk premium. Second, there is also a benefit due to the higher optimal RPE and PPS. That is, the reduction in uncertainty about peer performance positively affects managerial incentives, resulting in higher managerial effort. Thus, when hiring a consultant is optimal, the consultant's advice would result in higher RPE and PPS.

In some cases the CEO may possess both expertise and information essential to the design of efficient RPE contracts. However, the potentially informed but biased CEO's suggestions for which peer firms to choose are not likely to be helpful to the board.[7] The bias arises because, all else equal, the CEO's pay would be higher if performance peers are weaker (see Bakke, Mahmudi, and Newton (2019) and Gong et al. (2011) for evidence suggesting selection of underperforming peers). A weak peer group makes the unobservable CEO's effort seem relatively more important to the firm's cash flow. Therefore, the CEO could prefer weak peer firms even at the cost of a higher risk premium caused by a lower correlation between the performance peers and the firm's performance measures.

The CEO's bias toward underperforming peers makes the advice of an affiliated consultant, who also provides other services, potentially different from the advice of an independent consultant. The provision of other services could create a conflict of interest because the decision to hire the consultant in these more lucrative consulting areas is made by the same managers who are the subject of the consultant's pay recommendations. It is reasonable to assume that the affiliated consultant, who is concerned about his or her business with the CEO, would not have the right incentives to always disclose the true information regarding the peer firms to the board.[8] In contrast, the independent consultant's incentives are better aligned with the board's interests. Therefore, more independent consultants provide more accurate advice to the board, allowing the board to reduce the risk premium of the contract by improving the choice of performance peers. As a result, the board chooses an optimal contract that better filters out the exogenous component of the firm's performance measure and relies more on firm performance, leading to a higher PPS.[9] This provides testable empirical predictions: The PPS and RPE components of CEO compensation contracts increase with the compensation consultant's degree of independence.

[7]This argument is based on the assumption that the choice of peer firms is not contractible. Although this choice is ex post observable, the statistical relation between the peer firms' performance and the firm's performance is not verifiable.

[8]The CEO, unlike the consultant, does not necessarily need to possess all (or any) of the information essential to designing efficient CEO pay contracts. As long as the CEO is biased toward weak peers, an affiliated consultant who is concerned about his or her business with the CEO would be relatively less likely to disclose the true information regarding the peer firms to the board.

[9]Another interpretation is that the reduction in the uncertainty regarding the choice of performance peers enhances the CEO's ability to bear risk. Given that an optimal contract is characterized by the trade-off between incentives and risk, it follows that CEOs with a high risk-bearing ability should be given a compensation contract with relatively larger incentive pay.

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Overall, the board would choose to hire an independent consultant only if the benefits of enhanced managerial incentives exceed the costs associated with accessing independent advice. Therefore, there are several potential reasons that independent consultants may not be hired. First, independent consultants are likely to charge higher fees compared with affiliated consultants because affiliated consultants receive monetary benefits from their other lines of business. Moreover, due to their other lines of business, affiliated consultants may already possess some of the information and expertise needed for the compensation consulting task. This could further enable them to lower their compensation consulting fees. Second, a powerful CEO can influence the board's decision of who is hired as the consultant. Due to the CEO's biased choice of performance peers, a powerful CEO is likely to attempt to push the board to hire a less independent consultant. Thus, CEO power may impose a cost to the shareholders in the form of a lower likelihood that the board attains valuable expertise and information that is important for setting efficient incentive contracts. Third, if independent advice allows the board to gain access to critical information to design optimal compensation contracts, the benefits of independent advice are likely lower for those boards that already possess this expertise. Therefore, firms with compensation committee members who have more expertise and/or experience are less likely to hire independent consultants.

It is important to note that these predictions are attained under the assumption that contracts are set optimally and independent consultants are used when it is economically optimal to hire them. However, in practice, powerful managers may influence not only the choice of consultant but also the terms of their own compensation contracts in favor of lower PPS and higher total pay (Bebchuk and Fried (2003)). Under this alternative assumption, hiring an independent consultant would also lead to similar predictions as discussed previously because the independent consultant would advocate for an optimal compensation contract.

Another theory on why firms hire compensation consultants is that consultants help disguise and justify excessive pay and enable executives to extract additional rents from the firm (Bebchuk et al. (2002)). Beyond simply recommending higher compensation, consultants, particularly affiliated consultants, may enable rent extraction by designing compensation schemes that provide greater pay without greater performance and/or recommending compensation schemes that are not closely linked with firm performance. According to this view, consultants help executives extract wealth from the firm at the shareholder's expense in the form of excess pay or lower incentives. The predictions of this theory are in sharp contrast to the predictions of optimal-contracting theory because the former suggests that the PPS and RPE components of CEO compensation contracts decrease when compensation consultants are hired.

III. Variable Construction and Sample Selection

A. Why Canada?

To explore how external advice to the board affects CEO compensation, we study publicly traded Canadian firms from 2005–2009. There are several advantages to using a Canadian, rather than a U.S., data set in this context. First and

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most importantly, the institutional features of the Canadian setting allow us to take advantage of a quasi-natural experiment to identify the effect of independent advice on CEO compensation. Specifically, an important and affiliated consultant switched from providing affiliated to independent advice and kept all of his clients. Although there have been several spin-offs in the United States that formed newly independent compensation consulting firms, all these events saw only some clients switch to these independent consulting firms. Thus, these events cannot reliably be used for identification because the decision to remain with the affiliated consulting firm or switch to the newly independent consulting firm is endogenous.

Second, the Canadian reporting requirements in regard to compensation consultants are rich. Canadian firms are required to identify their compensation consultants and disclose the nature of other services provided by the consultant.[10] In Canada, there has also been widespread reporting of fees paid not only for compensation services but also other services provided by the same consultants. 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. Firms in the United States did not have to report similar information until 2013. Third, there is significant 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 independent compensation consultants that solely provide advice to boards and commit not to providing other advice to the same firms.

B. Data Sources and Summary Statistics

The sample period includes any Canadian company that was included in the S&P/TSX Composite Index from 2005 to 2009 (approximately 240 firms each year). We collect compensation data from the Management Information Proxy Circulars filed by Canadian companies.[11] We are able to locate proxy circulars with usable compensation data and information about whether or not a firm hired a consultant for 162 firms and 910 firm-years from 2005 to 2009.[12] Altogether, for 698 firm-year observations, consultants were engaged for advice on executive compensation, and 117 of these employed more than one consultant, whereas 212 firm-years (23%) did not hire a consultant for compensation-related advice.

We use data from DataStream to calculate annual stock returns and to identify firms with dual-class voting shares. Accounting data is from WorldScope. Data on CEOs and boards of directors are from the Clarkson Centre for Business Ethics and Board Effectiveness (CCBE). The CCBE also provided the names of the compensation committee members and their experience and background for

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

[11] These information circulars are roughly the equivalent to proxy statements in the United States. The compensation disclosures are explicitly patterned after the 1992 proxy-disclosure rules of the U.S. Securities and Exchange Commission (SEC).

[12] The main reason the sample size reduces to 910 observations is that the main analysis excludes any firm that does not disclose whether or not it hired compensation consultants. Untabulated results show that the results are unchanged if, alternatively, we include these firm-year observations in our sample and assume they did not hire a consultant. Note that as of June 17, 2005, the name of the consultant is required to be disclosed (National Instrument 58-101).

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the 2008 and 2009 fiscal years. All variables are measured at the end of each fiscal year in 2009-constant Canadian dollars, and all continuous variables are winsorized at the 1st and 99th percentiles.

The market for executive compensation consulting services is dominated by a few firms in Canada (see Table 1); 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.[13] Table 1 also reports the consultant market shares based on the percentage of fees charged.

Table 1 illustrates that the consultant market shares have evolved significantly since 2005. Mercer's market share declined from 30.2% (57.1% based on fees) in 2005 to 21.1% (14.0%) in 2009. This is mostly due to firms that switched to Hugessen Consulting after Mr. Hugessen separated from Mercer in 2006. Hugessen Consulting's market share increased from 10.3% (%15.3) in 2006 to 16.6% (19.3%) in 2009. The use of a compensation consultant has increased in popularity in our sample, as can be seen by the number of firms without a consultant decreasing from 32.1% in 2005 to 18.1% in 2009.

C. Compensation Consultant Independence

One of the key variables in this article is the measure of consultant independence. For the purpose of this article, a consultant's level of independence can

TABLE 1

Market Shares for Compensation Consultants

Table 1 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 parentheses. When using the number of clients, market shares are calculated based on 198 unique Canadian firm-consultants from 2005 to 2009. The sample is based on Canadian companies that were included in the Standard & Poor's (S&P)/Toronto Stock Exchange (TSX) Composite Index between 2005 and 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 unique firm-consultants) with disclosed fees. In the "All others" group, no single consultant has more than 2% market share in our sample. Towers Watson's market share for 2005–2008 is calculated as the sum of Watson Wyatt's and Tower Perrin's market shares. The percentage of fees is given in parentheses.

	Evolution of Market Shares of Consultant as % of Total Clients					
	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)

[13]These other consulting firms that control a very small market share in our 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 our sample.

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be thought of as the extent to which the compensation consultant is likely to provide unbiased advice to the board. In contrast, the lack of independence refers to the tendency of consultants to cater to the CEO's preferences when providing compensation advice.

The consultant hired by a given firm is considered to be independent if the consultant does not provide any other services to the firm. Other services are defined as additional services provided by the consultant to management that are not compensation-related services. Examples of such services are employee-pay services, benefits administration services, and actuarial services. Providing these services has the potential to create a conflict of interest. Thus, we construct two measures of consultant independence.

Independence Dummy. The first proxy, IND_DUMMY, is a dummy variable that equals 1 if at least one of the compensation consultants hired by the firm is independent, and 0 if one or more affiliated consultants were hired.[14]

Independence Ratio. To capture different levels of independence, we follow Murphy and Sandino (2010) and construct IND_RATIO as a measure of consultant independence. IND_RATIO is defined as the fees paid by management for other services divided by fees paid by the board for compensation-related services. We multiply this ratio by −1 so that IND_RATIO captures the level of a consultant's independence rather than the consultant's lack of independence. This measure of consultant independence allows insight into how important other services provided by the consultant are in the cases in which the same consultant is hired for both compensation advice and other services. That is, IND_RATIO measures the magnitude of the conflict of interest that is present due to the cross-selling of different products.[15] If a firm hires an independent consultant, or if it hires different consultants for compensation-related services and other services, the IND_RATIO will equal 0 for that fiscal year.

To construct these two measures, we collect data on the use and level of independence of compensation consultants from the Management Information Proxy Circulars filed by Canadian companies. After 2006, Canadian corporations were strongly encouraged to report fees paid to consultants for compensation-related advice and the fees paid for any other services provided. However, due to limited disclosure, in particular in 2005, we are only able to collect data on fees paid for other services for 401 firm-year observations. Disclosure increases significantly in 2006, and in Appendix B, we provide a detailed example of how we collect and compute consultants' information from annual proxy circulars.

Panel A of Table 2 presents consultant characteristics. In total, 76% of firms hired at least one consultant. Note that because some firms hired more

[14] In our sample, 13% of firms hire more than one consultant in a fiscal year. Changing the definition of the independent dummy to a dummy variable that equals 1 if all the consultants hired in a specific year are independent does not alter the results.

[15] It is important to note that independent compensation consultants (as defined in this article) may have conflicts of interest not related to cross-selling incentives. For instance, all compensation consultants would like to be retained by the compensation committee to provide services in the future. Powerful CEOs may, if they deem their compensation contracts undesirable, use their influence to get the compensation committee to hire a different consultant. Thus, all consultants will be cognizant of this potential threat from the CEO regarding their future retention.

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TABLE 2
Descriptive Statistics

The full sample in Table 2 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. We obtain compensation and consultant data and information about performance peer groups from firm proxy circulars from SEDAR. Stock price data are obtained from DataStream. Accounting data are obtained from WorldScope. All variables are defined in Appendix A. Panel A reports the consultant characteristics. The fees variables are in dollars. Panel B reports the evolution of average consultant characteristics from 2005 to 2009. Panel C reports chief executive officer (CEO) compensation characteristics. All the compensation variables are in thousands of Canadian dollars, with the exception of fees, which are in 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. Dev.	P25	Median	P75	No. of Obs.
CONS_DUMMY	0.76	0.47	0	1	1	910
COMP_FEES	117,628	135,705	34,316	74,252	155,143	401
OTHER_FEES	406,527	946,362	0	50,861	192,592	401
IND_RATIO	−3.44	11.24	−2.93	−1.91	0	401
IND_DUMMY	0.26	0.41	0	0	1	698
NUMBER_OF_CONSULTANTS	0.89	0.71	0	1	1	910

Panel B. Consultant Characteristics across Different Years

	2005	2006	2007	2008	2009
Average COMP_FEES	126,586	100,882	111,797	116,955	131,928
Average OTHER_FEES	551,915	536,692	417,003	219,875	262,537
IND_RATIO	−4.36	−5.32	−3.73	−1.85	−1.96
No. of obs.	33	71	90	94	113
IND_DUMMY	0.15	0.24	0.32	0.29	0.32
No. of obs.	109	129	140	157	163

Panel C. CEO/Pay Characteristics

	Mean	Std. Dev.	P25	Median	P75	No. of Obs.
TOTAL_COMP	4,050.85	5,308.63	1,275.57	2,423.31	5,148.36	910
CASH_COMP	2,078.95	3,080.21	678.45	1,326.44	2,463.60	910
EQUITY_COMP	1,936.91	3,385.93	45.00	853.81	2,449.43	910
PEI	39.21	121.03	1.95	10.72	44.68	910
TENURE	7.71	6.50	3	5	9	910
CEO_AGE	56.33	4.01	51	55	58	910

Panel D. Firm Characteristics

	Mean	Std. Dev.	P25	Median	P75	No. of Obs.
SALES	3,692.56	6,690.59	137.78	808.07	3,570.19	910
STOCK_RETURN	0.21	0.48	−0.13	0.11	0.43	910
PEER_RETURN	0.11	0.32	−0.05	0.10	0.27	910
CORR(PEERS, FIRM)	0.38	0.34	0.18	0.36	0.44	360
ROA	0.07	0.58	0.01	0.03	0.10	910
LEVERAGE	0.24	0.21	0.07	0.21	0.41	910
SALES_GROWTH (%)	26.23	34.43	−3.22	14.84	60.11	910
STOCK_VARIANCE ×100	2.98	3.53	1.27	0.86	3.95	910
CAPEX	0.08	0.16	0.02	0.06	0.12	910
CASH	0.13	0.17	0.01	0.05	0.17	910
INDEPENDENT_BOARD	1.400	0.723	1	2	2	910
CCGG	29%	11%	10%	26%	42%	910
DUAL_CLASS	0.20	0.40	0	0	0	910
CO-OPTED_BOARD	0.44	0.29	0.16	0.47	0.68	910
BOARD_SIZE	10.21	3.14	8	10	12	910
BUSY_BOARD	0.06	0.05	0	0.04	0.09	910
INDUSTRY_EXPERT_COM	0.21	0.11	0.05	0.18	0.44	320
BOARD_AGE	61.41	4.64	56.73	60.46	66.55	910
EXP_RATIO	0.69	0.36	0.50	0.75	1.00	320
EXCEO_ON_COM	0.29	0.38	0	0	1	320

than one consultant for compensation-related advice, the variable NUMBER_OF_CONSULTANTS has a slightly larger mean of 0.89. Conditional on hiring a compensation consultant, 26% of firms hired at least one independent consultant. The average (median) compensation consulting fees (COMP_FEES) are

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$117,628 ($74,252), whereas the average (median) of fees paid for other services (OTHER_FEES) is $406,527 ($50,861). Thus, the average IND_RATIO is −3.44, suggesting that cross-selling incentives are significant for the average firm.

To understand the evolution of fees during our sample period, we report average COMP_FEES, average OTHER_FEES, and average IND_RATIO for each fiscal year in Panel B of Table 2. The average IND_RATIO has nonmonotonically increased since 2005, with the lowest value of −5.32 in 2006 compared with −1.85 in 2008. Moreover, the IND_DUMMY increases from 0.15 in 2005 to 0.32 in 2009. The changes in IND_RATIO and IND_DUMMY indicate that firms have hired more independent consultants in recent years and that cross-selling incentives have declined.[16]

D. Performance Peer Groups

In our sample, approximately 40% of firms explicitly disclose RPE. To identify each RPE-granting firm's performance peer group, we collect the names of the peer firms from the annual management information circulars. To capture peer performance, we construct PEER_RETURN as the equally weighted average stock return of the firms included in the performance peer group.[17] Some firms report that they use industry-specific exchange-traded funds (ETFs) instead of a custom performance peer group for the purpose of RPE. In these cases, PEER_RETURN is the ETF's annual return. If performance peer firms were not explicitly reported in the circulars, the appropriate industry ETF's annual return is used instead to capture implicit RPE (e.g., see Gibbons and Murphy (1990)).[18]

E. CEO Pay

A CEO's total compensation (TOTAL_COMP) in a given year is defined as the sum of his or her salary, bonuses, the grant-date value of restricted stock awards, the Black–Scholes value of granted options, and other pay (e.g., long-term incentive plans, insurance policy premiums, and medical expenses). All the compensation variables are collected from the firms' annual management information circulars. The value of restricted stock awards is as reported in the circulars. With respect to the value of option grants, unlike ExecuComp, the circulars report the Black–Scholes value of the options. Instead of using the reported value of the option grants, we use relevant information about the CEOs' option grants (e.g., the number of options, strike price, grant date, and expiration date) to calculate the dollar value of each option grant using ExecuComp's "modified"

[16] At first glance, our results seem to be inconsistent with Murphy and Sandino (2010), who report a much larger average IND_RATIO of −13 in their Canadian sample. However, this can be explained by differences in samples. Their sample includes only 37 firms from 2006. In contrast, our sample period includes not only more firms in each year but also a longer time series (2005–2009).

[17] We distinguish between compensation peer firms used to set the CEO's total pay from performance peer firms used for RPE.

[18] Gong et al. (2011) highlight the importance of incorporating both explicit and implicit use of RPE when estimating RPE in CEO contracts. Nevertheless, in unreported results, we exclude from the sample firm-year observations in which the performance peers' information is not disclosed. The results remain unchanged.

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Black–Scholes approach.[19] The correlation between the reported values in the circulars and the calculated "modified" Black–Scholes value is 0.87.[20]

Panel C of Table 2 presents descriptive statistics of CEO pay. The mean (median) CEO total pay is \$4.05 million (\$2.42 million), which is smaller than similar figures from an equivalent U.S. sample. This is not surprising; it is well known that CEO pay is higher in the United States compared with other countries (Southam and Sapp (2010), Fernandes, Ferreira, Matos, and Murphy (2012)). However, it is comforting that CEO pay is comparable in terms of other features, such as positive skewness, composition of pay, and CEO tenure. For instance, the mean (median) CEO cash pay and equity pay are \$2.07 million (\$1.33 million) and \$1.93 million (\$0.85 million), respectively.

F. Measures of CEO Incentives

We construct three measures of CEO incentive pay. First, we use the CEO's total PPS and RPE. PPS and RPE are estimated using the following model:

$$(1) \quad \text{CEO_PAY}_{it} = \alpha_0 + \alpha_1 \text{FIRM_PERF}_{it} + \alpha_2 \text{PEER_PERF}_{it} + \epsilon_{it},$$

where CEO_PAY_{it} is total CEO compensation. FIRM_PERF_{it} and PEER_PERF_{it} are performance measures for firm i and its performance peer group, respectively. We measure firm performance as the percentage change in equity value (i.e., stock returns) because we assume CEO incentives increase with CEO dollar ownership in the firm (Hall and Liebman (1998), Baker and Hall (2004)).[21] Firm performance can alternatively be measured by an accounting performance metric. All the main results are robust to measuring performance using ROA instead of stock returns.

The coefficient α_1 measures the sensitivity of CEO pay to the firm's performance. When total compensation is used as the dependent variable, α_1 measures the PPS of the entire CEO pay, including bonuses. In contrast, PEI measures the portion of PPS that is only due to equity pay.

In the previous specification, first proposed by Holmstrom and Milgrom (1987), RPE is defined as α_2/α_1. However, most of the literature that follows this specification focuses on testing whether α_2 is less than 0. Because α_1 is expected to be positive, a negative and statistically significant α_2 constitutes evidence for the presence of RPE in compensation contracts. This test is also called the weak-form test of RPE.[22]

[19] 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 7-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 the average dividend yield over a 3-year period prior to the grant, and the time to maturity is equal to 70% of the stated maturity.

[20] Using the reported option values in the circulars does not materially change any of the results.

[21] Alternatively, we replace the firm's stock return with the change in shareholder wealth (i.e., gross stock return multiplied by beginning-of-year market value), assuming CEO incentives are driven by the CEO's fraction of stock ownership. All results remain unchanged.

[22] There is also a test of strong-form RPE, first proposed by Antle and Smith (1986) and used by, for example, Jenter and Kanaan (2015). Untabulated results using the strong-form RPE model yield similar results to those using the weak-form RPE model.

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As a second measure, we replace total pay with equity pay in the specification in equation (1). Now the coefficients α_1 and α_2 measure the sensitivity of CEO equity pay to the firm's and peer group's performance. This measure is similar to the first measure because it relies on a regression to estimate the sensitivity of CEO pay to performance.

Third, we use Jensen and Murphy's (1990) 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. Alternatively, we use Core and Guay's (1999) method to measure PEI as the CEO's wealth change for 1% shareholder return; our results remain similar. 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 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 option delta. Option deltas are estimated using the method developed by Core and Guay (2002). Our sample firms have a mean (median) value of CEO PEI of $39.21 ($10.72) per $1,000 shareholder return (see Panel C of Table 2). This is also smaller than the CEO PEI in an equivalent U.S. sample (mean of $70.1 and median of $23.8 per $1,000 shareholder return).

IV. Empirical Results

The empirical analysis begins by presenting evidence that hiring an independent consultant is associated with more incentive pay in CEO compensation contracts. Next, we use a natural experiment (i.e., the separation of an independent consultant (Mr. Hugessen) from an affiliated consultant (Mercer)) to provide evidence suggesting that independent advice results in increased incentive pay. Third, using an event-study methodology based on the Hugessen experiment, we find evidence suggesting that independent advice increases firm value. Fourth, we offer a multitude of additional evidence consistent with the notion that hiring an independent compensation consultant improves the executive pay structure. Finally, we shed light on why, if independent advice is valuable, many firms choose not to hire independent compensation consultants.

A. External Advice and CEO Incentive Pay

We follow Murphy (1985) and Aggarwal and Samwick (1999) and estimate panel-data regressions. To account for unobservable firm characteristics that explain pay and are correlated with the choice of hiring a consultant, we include firm fixed effects.[23] To account for time trends in CEO pay, we include year fixed effects. Throughout the empirical tests, p-values for all the regressions are computed based on robust standard errors clustered at the firm level.[24] The results from the following regression specification are reported in Table 3.

[23] Untabulated results show that tests using pooled ordinary least squares (OLS) regressions yield qualitatively similar and statistically significant results.

[24] Because different firms with the same consultant may have correlated compensation arrangements, we try clustering the standard errors by compensation consultant. The untabulated results remain unchanged.

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TABLE 3

Compensation Consultants and CEO Total Pay

The full sample in Table 3 consists of 910 firm-year observations from 2005 to 2009. The sample reduces to 698 and 401 firm-year observations when consultant independence is measured by IND_DUMMY and IND_RATIO, respectively, because firm-year observations that did not hire a consultant are excluded from the sample when using IND_DUMMY and IND_RATIO. All specifications include firm fixed effects (FE). The dependent variable in all specifications is ln(TOTAL_COMP). The variable CONSULTANT is either CONS_DUMMY (column 1), IND_DUMMY (column 2), or IND_RATIO (column 3). CONS_DUMMY equals 1 if at least one consultant was retained in that year, and 0 otherwise. IND_DUMMY equals 1 if at least one independent consultant was retained in that year, and 0 if one or more affiliated consultants were hired. IND_RATIO equals the ratio of OTHER_FEES to COMP_FEES multiplied by −1. All variables are defined in Appendix A. Corresponding *p*-values are reported in parentheses. The *p*-values are based on robust standard errors clustered at the firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	CONS_DUMMY	IND_DUMMY	IND_RATIO
	1	2	3
STOCK_RETURN	0.059**	0.096**	0.202**
	(0.012)	(0.038)	(0.025)
PAST_STOCK_RETURN	0.020*	0.014	0.019
	(0.093)	(0.155)	(0.173)
ROA	0.063	0.142*	0.253*
	(0.105)	(0.096)	(0.092)
PEER_RETURN	−0.023	−0.139*	−0.169**
	(0.117)	(0.058)	(0.043)
CONSULTANT	−0.019*	−0.022*	−0.002*
	(0.094)	(0.088)	(0.071)
CONSULTANT × STOCK_RETURN	0.033*	0.029**	0.005**
	(0.072)	(0.045)	(0.049)
CONSULTANT × PEER_RETURN	−0.072*	−0.051**	−0.004**
	(0.091)	(0.047)	(0.039)
ln(SALES)	0.102***	0.113***	0.159***
	(0.000)	(0.000)	(0.000)
LEVERAGE	−0.083	−0.260	−0.133
	(0.199)	(0.163)	(0.240)
STOCK_VARIANCE	0.009	0.003	0.005
	(0.775)	(0.839)	(0.606)
CASH	0.119*	0.145*	0.146*
	(0.052)	(0.090)	(0.098)
SALES_GROWTH	0.004	0.020*	0.025*
	(0.203)	(0.062)	(0.067)
CAPEX	0.105*	0.140*	0.261*
	(0.057)	(0.051)	(0.053)
TENURE	0.035*	0.017*	0.019**
	(0.063)	(0.082)	(0.011)
INDEPENDENT_BOARD	−0.009	−0.017	−0.006
	(0.536)	(0.775)	(0.459)
CO-OPTED_BOARD	0.092*	0.084*	0.042
	(0.074)	(0.090)	(0.131)
BOARD_SIZE	0.005	0.007	0.004
	(0.397)	(0.614)	(0.509)
CEO_AGE	0.017*	0.015	0.018
	(0.094)	(0.104)	(0.107)
BUSY_BOARD	0.373	0.430	0.285
	(0.179)	(0.122)	(0.205)
BOARD_AGE	0.005	0.005	0.003
	(0.340)	(0.403)	(0.301)
NUMBER_OF_CONSULTANTS	0.046	0.050	0.047
	(0.730)	(0.694)	(0.475)
Firm and year FE	Yes	Yes	Yes
Intercept	10.636***	11.003***	8.779***
	(0.000)	(0.000)	(0.000)
N	910	698	401
Adj. R^2	45.1%	41.3%	38.7%

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$$(2)\quad \ln(\text{TOTAL_COMP}_{it}) = \beta_0 + \beta_1 \text{STOCK_RETURN}_{it} + \beta_2 \text{PEER_RETURN}_{it} + \beta_3 \text{CONSULTANT}_{it} + \beta_4 \text{STOCK_RETURN}_{it} \times \text{CONSULTANT}_{it} + \beta_5 \text{PEER_RETURN}_{it} \times \text{CONSULTANT}_{it} + \Gamma \text{controls}_{it} + \text{firm FE} + \text{year FE} + \epsilon_{it},$$

where i indexes firms, and t indexes year. The dependent variable is the CEO's total compensation. The variable CONSULTANT is either CONS_DUMMY, IND_DUMMY, or IND_RATIO. Firm performance is measured with the annual stock return (STOCK_RETURN).

The inclusion of firm fixed effects in the regression allows us to interpret the coefficient estimates on the firm-performance variables as measures of pay–performance sensitivities (see Aggarwal and Samwick (1999)). The level of PPS is captured by β_1, and the level of RPE is captured by β_2. To examine the importance of consultants (and their independence), we focus on the interaction of CONSULTANT with firm performance and peer returns, respectively, with the optimal-contracting predictions highlighted in Section II predicting a positive coefficient on firm performance (β_4) and a negative coefficient on peer performance (β_5).

In equation (2), we include control variables that are likely to influence CEO compensation structure. We include firm size because both CEO incentive compensation and CEO level of pay change predictably with firm size (see Baker and Hall (2004)). We include the firm's contemporaneous and lagged annual stock return because firms tend to use more equity-based compensation when they perform better (e.g., Core and Guay (1999)). We include leverage because John and John (1993) predict a negative relation between leverage and PPS. Optimal contracting involves a trade-off between providing incentives and risk sharing. Therefore, we include a measure of firm risk because incentive pay changes with firm risk. We include a proxy for growth opportunities (the results are robust to using either sales growth or Tobin's Q) because shareholders have greater difficulty evaluating managers' decisions when growth opportunities are high and therefore should provide managers with more performance-based compensation (Yermack (1995)). We also include a measure of the firm's investment policy (the ratio of capital expenditure to the firm's total assets) to capture to what extent the firm exercises its growth options. We include CEO age and tenure because the accumulation of human capital with the firm may affect compensation policies. We include the level of cash holdings because Hall and Liebman (1998) suggest that the lack of cash may induce the firm to offer more incentive pay. Finally, we include an array of corporate governance measures. We include board independence because boards dominated by insiders are more likely to make decisions that are in the interests of the CEO (Hermalin and Weisbach (1998)), which is likely to affect compensation policies. Following Coles, Daniel, and Naveen (2014), we include co-opted boards, the fraction of the board that is appointed after the CEO assumes office, to identify firms where board capture, and hence managerial power, is likely to be greater. We also include the fraction of the directors serving on three or more outside boards because directors who sit on multiple boards are more likely to be distracted or too busy to dedicate the required time and

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effort to set executive compensation effectively (Fich and Shivdasani (2006)). We also include board size, consistent with evidence that smaller boards of directors tend to design compensation contracts with stronger CEO performance incentives (Yermack (1996)). Lastly, we include the average age of the directors because age may correlate with both director experience and risk appetite, both of which are likely to affect the design of CEO compensation contracts. Descriptive statistics of all control variables are provided in Panel D of Table 2 and are defined in Appendix A.

We find that retaining a consultant is associated with more incentive pay; β_4 is 0.033 and is significant at the 10% level, whereas β_5 is estimated to be −0.072 and is statistically significant at the 10% level (column 1 of Table 3). These results suggest that companies that hire a compensation consultant have higher PPS and RPE. In terms of economic significance, the use of a consultant is associated with an increase in PPS from 6.1% to 9.6% and an increase in the magnitude of its sensitivity to PEER_RETURN from −2.3% to −9.1%. Note that the coefficients for the other control variables are generally consistent with existing empirical research. In particular, TOTAL_COMP tends to be higher for firms of larger size, firms with better performance, and CEOs with longer tenures.

The coefficient on CONS_DUMMY in column 1 of Table 3 is −0.019 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 2.0% decrease in CEOs' total compensation ($\exp(-0.019+0.033\times0.21-0.072\times0.11)-1$). Although not a focus of this article, our finding of a negative association between total pay and hiring a consultant is interesting because previous similar articles find mixed results. Conyon et al. (2009) find a positive association between hiring a consultant and CEO total pay using U.K. data, whereas Armstrong et al. (2012) and Murphy and Sandino (2014) find no such association using U.S. data.

Next, we investigate whether firms that hire independent consultants have more incentive pay than firms that hire an affiliated consultant. In these tests, we only retain firms that hire at least one consultant and proxy for consultant independence using either a dummy for consultant independence (IND_DUMMY) or a fee-based measure of consultant independence (IND_RATIO). That is, the variable CONSULTANT in the specification in equation (1) is set equal to IND_DUMMY or IND_RATIO.

Consistent with the idea that firms that hire more independent consultants (measured by IND_DUMMY) grant more incentive pay to CEOs, we find that β_4 and β_5 are 0.029 and −0.051, respectively, and significant at the 5% level (see column 2 in Table 3). This implies that switching from an affiliated to an independent consultant is associated with an increase of approximately 3% (10.1% to 13.3%) in the PPS and a change from −13.0% to −17.3% in the RPE of CEOs' compensation. In further support of the conjecture that firms with independent consultants offer more incentive pay, the coefficients on β_4 and β_5 are 0.005 and −0.004, respectively, and significant at the 5% level when using IND_RATIO. They are also economically significant; a 1-standard-deviation increase in the IND_RATIO is associated with an increase in PPS from 22.4% to 29.5% and a change in RPE of approximately 4%. Overall, these results suggest that hiring an independent consultant is associated with higher PPS and RPE.

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There are two important sources of sample selection bias that could threaten the validity of these results. First, the lack of disclosure of consulting fees by some firms reduces the sample size to 401 firm-year observations in column 3 of Table 3. Given that during our sample period, disclosure of consulting fees is done voluntarily, any measure based on these fees would potentially suffer from a sample-selection bias. To alleviate this concern, we compare the means (medians) of observable firm and CEO characteristics in the two samples (i.e., with and without disclosed fees). We find that the differences in the means (medians) between the two groups are not statistically significant. Second, about 40% of firms explicitly choose to disclose the use of RPE. Given that disclosure of performance peers is not required, the positive association between independent consultants and RPE in CEO contracts reported in Table 3 could be driven by the fact that firms are more likely to disclose their peers in the years they have hired an independent consultant. In other words, the stronger relation between peer performance and CEO compensation in years where an independent consultant is hired could be driven by the fact that peer performance is measured with less noise in these years. To alleviate this concern, in untabulated tests, we exclude from the sample firm-year observations in which the performance peers' information is not disclosed, and we find similar results as those reported in Table 3. This is comforting because it suggests that the positive association between RPE in CEO compensation and retaining an independent consultant is less likely to be driven by this sample-selection concern.

We also find a negative association between hiring an independent consultant and CEO total pay. This is consistent with Murphy and Sandino (2010), who study Canadian firms as well as a sample of firms in the United States in 2006 and also find that independent consultants are associated with lower CEO total pay. However, Chu et al. (2017), studying a panel of firms in the United States that previously hired affiliated consultants and chose to hire independent consultants, find an opposite result.

Incentives from Equity Compensation

In addition, we examine the impact of independent advice on the PPS of equity compensation. To do this, we follow two different approaches. First, we estimate the following regressions using the Jensen–Murphy PEI as the dependent variable:

$$(3)\quad \text{PEI}_{it} = \alpha_0 + \alpha_1 \text{CONSULTANT}_{it} + \Gamma \text{controls}_{it} + \text{firm FE} + \text{year FE} + \epsilon_{it}.$$

The regressions include the same control variables as those used in Table 3 as well as firm and year fixed effects.[25] Note that in contrast to the specification in Table 3, PEI is estimated for every CEO-firm observation. Thus, when using PEI, there is no need to use interaction terms to estimate the impact of consultant characteristics on CEO incentive pay.

Panel A of Table 4 reports the regression results of estimating equation (3). The results in column 1 indicate that retaining a consultant is associated with an

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

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TABLE 4
Compensation Consultants and CEO Equity Incentive Pay

The full sample in Table 4 consists of 910 firm-year observations from 2005 to 2009. The sample reduces to 698 and 401 firm-year observations when consultant independence is measured by IND_DUMMY and IND_RATIO, respectively, because firm-year observations that did not hire a consultant are excluded from the sample when using IND_DUMMY and IND_RATIO. All specifications include firm fixed effects (FE). The variable CONSULTANT is either CONS_DUMMY, IND_DUMMY, or IND_RATIO. CONS_DUMMY equals 1 if at least one consultant was retained in that year, and 0 otherwise. IND_DUMMY equals 1 if at least one independent consultant was retained in that year, and 0 if one or more affiliated consultants were hired. IND_RATIO equals the ratio of OTHER_FEES to COMP_FEES multiplied by −1. Panel A reports the relationship between consultant characteristics and the portfolio equity incentives (PEI) of chief executive officer (CEO) contracts. The dependent variable in all specifications in Panel A is PEI. Panel B reports the relation between consultant characteristics, pay–performance sensitivity (PPS) from equity compensation, and relative performance evaluation (RPE) of CEO contracts. The dependent variable in all specifications in Panel B is ln(EQUITY_COMP). The control variables included in all specifications in Panel B are the same as those specified in Table 3. All variables are defined in Appendix A. Corresponding *p*-values are reported in parentheses. The *p*-values are based on robust standard errors clustered at the firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Panel A. Portfolio Equity Incentive

	CONS_DUMMY	IND_DUMMY	IND_RATIO
	1	2	3
CONSULTANT	1.763*	5.264**	0.752**
	(0.089)	(0.045)	(0.031)
ln(SALES)	−6.364***	−6.450***	−7.298***
	(0.000)	(0.000)	(0.000)
LEVERAGE	−11.380*	−11.061**	−13.776**
	(0.093)	(0.042)	(0.044)
STOCK_VARIANCE	7.092	7.364	8.030*
	(0.726)	(0.117)	(0.093)
CASH	10.368	13.155	20.672
	(0.712)	(0.861)	(0.299)
SALES_GROWTH	0.203	0.270	1.688
	(0.842)	(0.966)	(0.520)
TENURE	1.249*	1.001*	0.963*
	(0.051)	(0.069)	(0.057)
CAPEX	3.560	2.922	7.482
	(0.839)	(0.667)	(0.594)
STOCK_RETURN	0.904*	1.066**	1.105*
	(0.094)	(0.050)	(0.069)
PAST_STOCK_RETURN	0.748*	0.633*	0.593*
	(0.081)	(0.093)	(0.097)
ROA	8.957**	9.057**	9.361**
	(0.045)	(0.040)	(0.013)
INDEPENDENT_BOARD	1.037	1.602	1.028*
	(0.305)	(0.201)	(0.092)
CO-OPTED_BOARD	−1.952*	−1.031	−1.185
	(0.086)	(0.109)	(0.175)
BOARD_SIZE	−0.220	−0.194	−0.174
	(0.253)	(0.327)	(0.339)
CEO_AGE	0.856*	0.894	0.630
	(0.093)	(0.155)	(0.179)
BUSY_BOARD	−0.031	−0.020	−0.017
	(0.561)	(0.733)	(0.511)
BOARD_AGE	0.252	0.146	0.093
	(0.711)	(0.869)	(0.904)
NUMBER_OF_CONSULTANTS	0.126	0.639	0.766
	(0.844)	(0.891)	(0.700)
Firm and year FE	Yes	Yes	Yes
Intercept	20.250***	22.006***	28.729***
	(0.000)	(0.000)	(0.000)
N	910	698	401
Adj. R^2	19.1%	19.5%	18.0%

(continued on next page)

TABLE 4 (continued)
Compensation Consultants and CEO Equity Incentive Pay

Panel B. Pay–Performance Sensitivity from Equity Compensation and Relative Performance Evaluation

	CONS_DUMMY	IND_DUMMY	IND_RATIO
	1	2	3
STOCK_RETURN	0.115**	0.107**	0.226**
	(0.035)	(0.048)	(0.042)
PEER_RETURN	−0.027	−0.173**	−0.180**
	(0.139)	(0.048)	(0.039)
CONSULTANT	0.035	0.011	0.002
	(0.156)	(0.184)	(0.190)
CONSULTANT × STOCK_RETURN	0.047*	0.049**	0.007**
	(0.070)	(0.039)	(0.046)
CONSULTANT × PEER_RETURN	−0.101	−0.084**	−0.006**
	(0.115)	(0.045)	(0.036)
Controls	Yes	Yes	Yes
Firm and year FE	Yes	Yes	Yes
N	910	698	401
Adj. R^2	41.1%	40.6%	39.7%

increase in PEI of $1.8 per $1,000 shareholder wealth change, compared with the median PEI of $10.7. Moreover, the results in column 2 suggest that switching from an affiliated consultant to an independent consultant is associated with an increase of approximately $5.3 per $1,000 in shareholder wealth.

Consistent with hiring an independent consultant being positively associated with CEO incentive pay, in column 3 of Table 4, we find that CEO incentives as measured by PEI increase with the degree of independence of the consultant (IND_RATIO). The coefficient estimate on α_1 is 0.752 and is significant at the 5% level. This coefficient is also economically meaningful: When IND_RATIO increases by 1 standard deviation, the CEO is awarded an increased PPS of $8.4 per $1,000 shareholder return. Therefore, these results are consistent with the prediction that a higher level of consultant independence (lower level of cross-selling incentives) leads to higher CEO equity pay sensitivities.[26]

As a second approach to estimating the impact of consultants and their level of independence on equity-pay-performance sensitivity and RPE, we use a regression specification similar to equation (2) with EQUITY_COMP as the dependent variable. The interaction terms (β_4 and β_5) capture the impact of consultants on the sensitivity of equity compensation to firm performance and peer performance. As shown in Panel B of Table 4, the coefficients on the interaction terms are both economically and statistically significant in all three regressions. These results are also consistent with those in Panel A.

In sum, the evidence from Tables 3 and 4 indicates that i) hiring a consultant is associated with higher PPS and RPE, and ii) hiring an independent consultant as opposed to an affiliated consultant is associated with higher PPS and RPE in CEO compensation contracts.[27] However, one must be cautious about

[26] In untabulated tests, we also exclude from the sample firm-year observations in which the performance peers' information is not disclosed, and we find results similar to those in Table 4.

[27] There are cases of CEO turnover during our sample period. Because the compensation packages of new CEOs are often shaped by other unique forces and because there are reporting concerns when

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interpreting these cross-sectional results causally. Even though the regressions include firm fixed effects, a time-variant omitted variable, such as changes in governance, might drive both the endogenous change in consultant usage and the changes in CEO compensation. In other words, improvements in corporate governance may make it more likely that firms hire independent advisors and may also lead to improvements in executive pay structure. Thus, better governance could explain why independent consultants are associated with more CEO incentive pay. Although we include governance proxies such as board independence in the regression specifications in equations (2) and (3), these proxies are imperfect because some important features of governance are unobservable. To summarize, because the reasons underlying changes of consultants are unknown to the econometrician, the documented correlations between these changes and changes in compensation cannot be interpreted causally. To attempt to identify a causal relationship between independent advice and incentive pay, we next present a quasi-natural experiment.

B. Identification: Separation of Hugessen from Mercer

The goal of the quasi-natural experiment is to assess the impact of independent advice on incentive pay. Specifically, the experiment focuses on the separation of Ken Hugessen from Mercer in 2006. Prior to 2006, Mr. Hugessen was a lead partner at Mercer's Executive Compensation Practice. Mercer provided firms with compensation advice in addition to other services (and thus is deemed an affiliated consultant for firms that hired Mercer for compensation advice as well as for other advice in the same year). However, Mr. Hugessen was of the opinion that Mercer's position of providing potentially conflicted advice was not suitable, especially given the increasing need of compensation committees for independent advice. He argued that the large other consulting relationships that Mercer had with his clients had caused these clients concerns that could make it difficult for Mercer to continue providing executive compensation advice to these firms in the future. For instance, he stated in an interview with the *Globe and Mail* that "I've been told by a major company in Calgary, and one in Montreal, and a couple here in Toronto, that they'd like to have considered us as a candidate to do their work, but because of a very large retirement relationship, they didn't feel that would be appropriate."[28]

For these reasons, in 2006 Mr. Hugessen separated from Mercer, which led to all of his clients switching from Mercer to Mr. Hugessen's new firm, Hugessen Consulting. Hugessen Consulting was established to provide only compensation-related advice and is therefore considered independent. Mr. Hugessen's clients who received compensation advice from an affiliated compensation consultant prior to 2006 received independent compensation advice post-2006. This setup enables us to investigate how the increase in compensation consultant independence affects CEO contract specifications such as PPS and RPE.

the new CEO takes office midway through the fiscal year, we drop observations with new CEOs and repeat all the tests. The results remain unchanged.

[28] See "Consulting Ties That Bind Send Adviser Out on Own; Clients Seek Consultants Free of Conflict" *Globe and Mail*, Apr. 18, 2006, page B7.

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We focus on the subsample of firms that hired Mercer as their compensation consultant in 2005 and Hugessen in 2006. These firms, in the year prior to the switch, have an average IND_RATIO of −4.68, which indicates they were receiving conflicted advice in 2005. These firms' IND_RATIO declines to 0 after the switch because Hugessen Consulting provides no other consulting services besides compensation consulting. A major advantage of this experiment is that when Mr. Hugessen left Mercer, all his clients stayed with him after the switch. These firms had the same compensation committees and effectively the same consultant before and after 2006. The only change is the elimination of the cross-selling pressure on the consultant.[29] Therefore, by concentrating on this subsample, we can isolate the effect of independent advice from the inherent selection bias.

Table 5 reports the impact of the change in compensation consultant from Mercer in 2005 to Hugessen Consulting in 2006 on total PPS, RPE, PEI, and equity PPS using the regression specifications in equations (2) and (3).[30] In this first difference test, we require a firm to have Mercer listed as the compensation consultant in 2005 and Hugessen listed in 2006 (i.e., all these firms had Mr. Hugessen as their lead advisor with Mercer in 2005). Because of this requirement, the sample size decreases to 46 firm-year observations (23 firms). 2006_DUMMY is an indicator variable that is 1 for the year 2006, and 0 otherwise (i.e., in 2005). There is some evidence of industry concentration among the consultants. For example, Hugessen Consulting controls larger market shares among compensation consultants in industrial, financial institutions, and telecommunication services. To control for time-invariant industry variation in executive pay schemes, we include 9 industry dummies.[31]

The results in Table 5 highlight that the independence of the compensation consultant is an important determinant of managerial incentive pay. In column 1, we regress ln(TOTAL_COMP) on the 2006_DUMMY, its interaction with firm performance and peer group performance, as well as control variables. The coefficient on 2006_DUMMY is −0.016 and is significant at the 10% level. This indicates that hiring an independent consultant led to a decrease in the level of CEO pay. The coefficients on 2006_DUMMY × STOCK_RETURN and

[29]It is possible that Mr. Hugessen took on more managerial duties after creating his own firm. However, based on interviews with Mr. Hugessen and discussions with others in the compensation consulting industry, Mr. Hugessen has a hands-on approach to consulting. For example, he attends all the meetings with the compensation committee members of the firms that hire Hugessen Consulting. Based on this, it seems likely that Mr. Hugessen continued to play an active role in creating pay packages for his clients after the separation. Thus, given the small team and clear focus of Hugessen Consulting, it is likely that Mr. Hugessen's role remained largely the same in Hugessen Consulting as it had been at Mercer, which implies that the main change around the event window was that Mr. Hugessen was able to provide executive compensation advice without any Mercer-related conflicts of interest.

[30]Due to the small sample size in the Hugessen experiment and the possibility of overfitting the model, from the set of corporate governance measures included as control variables in the regression specifications in equations (2) and (3), we only include those that are statistically significant in the large-panel data analyses of Tables 3 and 4 (i.e., co-opted board and independent board).

[31]The industry classifications include energy, industrial, financial institutions, consumer discretionary, mining and materials, utilities, telecommunication services, information technology, and health care.

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TABLE 5

Independent Advice and CEO Compensation: First-Difference Results for the Separation of Hugessen from Mercer

The sample in Table 5 consists of 23 firms that hired Mercer as their consultant in 2005 and hired Hugessen in 2006 (46 firm-year observations from 2005 and 2006). All specifications are estimated as ordinary least squares (OLS) regressions. The dependent variable is ln(TOTAL_COMP) in specification 1, PEI in specification 2, and ln(EQUITY_COMP) in specification 3. 2006_DUMMY is a dummy variable that equals 1 for the year 2006, and 0 otherwise. All variables are defined in Appendix A. Corresponding *p*-values are reported in parentheses. The *p*-values are based on robust standard errors clustered at the firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	1	2	3
STOCK_RETURN	0.175*	5.616*	0.104*
	(0.094)	(0.093)	(0.071)
PAST_STOCK_RETURN	0.027	0.431	0.039*
	(0.125)	(0.117)	(0.097)
PEER_RETURN	−0.179*		−0.172*
	(0.079)		(0.090)
ROA	0.156	14.038	0.078
	(0.173)	(0.101)	(0.329)
2006_DUMMY	−0.016*	6.573**	0.009
	(0.087)	(0.041)	(0.133)
2006_DUMMY × STOCK_RETURN	0.030**		0.042**
	(0.048)		(0.044)
2006_DUMMY × PEER_RETURN	−0.049*		−0.071*
	(0.074)		(0.061)
ln(SALES)	0.392***	−17.001***	0.305***
	(0.000)	(0.000)	(0.000)
LEVERAGE	−0.229*	−19.073*	−0.381
	(0.084)	(0.051)	(0.136)
STOCK_VARIANCE	0.002	18.639	0.001
	(0.344)	(0.382)	(0.466)
CASH	0.202	34.731	0.169
	(0.142)	(0.238)	(0.153)
SALES_GROWTH	0.034	0.847	0.011
	(0.480)	(0.655)	(0.106)
TENURE	0.035**	1.170*	0.037**
	(0.038)	(0.075)	(0.049)
CAPEX	0.362**	20.164	0.090*
	(0.040)	(0.736)	(0.091)
INDEPENDENT_BOARD	−0.015	2.075	0.006
	(0.251)	(0.195)	(0.393)
CO-OPTED_BOARD	0.041	−1.955	0.028
	(0.197)	(0.225)	(0.189)
CEO_AGE	0.012	0.638	0.016
	(0.463)	(0.110)	(0.290)
Industry dummy	Yes	Yes	Yes
Intercept	8.447***	16.975**	16.001***
	(0.000)	(0.039)	(0.000)
N	46	46	46
Adj. R^2	35.9%	15.6%	37.1%

2006_DUMMY × PEER_RETURN are 0.030 and −0.049, respectively. They are also statistically significant at the 5% and 10% levels, respectively. Thus, the change of consultant from Mercer to Hugessen results in an increase in PPS and RPE of 3.6% and 4%, respectively. Next, we reestimate the specification in equation (3), replacing IND_DUMMY with 2006_DUMMY (see column 2). Again, the economic impact of switching to an independent consultant is sizeable; CEO PEI increases by approximately $5.6 per $1,000 shareholder wealth change, compared with the mean PEI of $43.1 in this subsample. Last, we reestimate the weak-form test of RPE with ln(EQUITY_COMP) as the dependent variable. The results in

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column 3 indicate that firms that switched to Hugessen Consulting after the separation from Mercer increased their CEOs' equity PPS and RPE.[32]

There is a possibility that the separation of Hugessen from Mercer may have coincided with other factors that affect CEO compensation contracts. Thus, it may not be sufficient to only compare CEOs' PPS and RPE before and after the switch as in Table 5. For instance, CEO compensation may be affected by unobservable shocks between 2005 and 2006. Therefore, it is important to carefully disentangle the effects of such shocks on CEO pay from the effect of the changes in consultant independence. We accomplish this through a DID empirical design.

Intuitively, DID compares the effect of an event (separation of Mr. Hugessen from Mercer) on a group that is affected by the event (the treated group) to a group that is unaffected (the control group). The treated group is all firms that were advised by Mr. Hugessen in 2005 and switched to Hugessen Consulting in 2006. The control group is made up of all Mercer clients in 2005 that were advised by lead advisors other than Mr. Hugessen. Although unbiased estimation of the DID coefficient is not affected by common trends in both the treated and control groups, trends that differentially affect the treatment and control groups can induce bias in the DID coefficient. For instance, the estimation of the DID coefficient will be biased if treated firms experience an unobserved shock that coincides with the event and also increases the PPS in CEOs' contracts.

We check that the treated and control firms have similar characteristics before the event to make it less likely that differential trends could bias our results. Table 6 compares firm characteristics of the treated and control firms prior to the separation of Hugessen and shows that the two groups are relatively similar. We do a paired *t*-test (Wilcoxon signed-rank test) to check for differences in means (medians) between the two groups and find only a few differences (and only at the 10% level). The most striking differences in firm characteristics between the two groups are the differences in leverage, sales growth, and cash holdings.[33] This could be due to a specific clustering among Mercer clients that received advice from Mr. Hugessen in 2005. Nonrandom assignment to treatment and control groups can be a concern if the reason for hiring Mr. Hugessen as the lead consultant in 2005 is correlated with CEO compensation in 2006. For instance, firms with better corporate governance may be more likely to be part of our treated group, and governance affects compensation. However, it is comforting that the control group and treated group have similar corporate governance in 2005, measured by board independence, board size, average director age, dual-class voting shares, the fraction of the directors serving on three or more outside boards, and the fraction of co-opted directors on the board. Overall, the fact that the two groups are similar in many different dimensions makes it more likely that the treated and control groups experience similar trends around the event other than receiving advice from an independent consultant as opposed to an affiliated consultant.

[32]Due to the small sample size and the possibility of overfitting the model, we also run the same regression specifications in Table 5 but without industry dummies. The results remain unchanged.

[33]Due to the small sample size, we are unable to use matching techniques to further reduce observable differences between the treated and control groups.

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TABLE 6

Summary Statistics for the Treatment and Control Groups for the Separation of Hugessen from Mercer

The sample in Table 6 consists of 48 firm-year observations from fiscal year 2005 (i.e., prior to the separation of Hugessen). All firms hired Mercer as their compensation consultant in 2005. The treated group includes firms that hired Mercer as their consultant in 2005, received advice from Mr. Hugessen in 2005, and hired Hugessen in 2006 (23 firms). The control group includes firms that hired Mercer in 2005 but received advice from other lead advisors in that year (25 firms). All variables are defined in Appendix A. * indicates that the mean or median of the variable in the control group and the treated group is significantly different at 10% using a *t*-test for means and Wilcoxon signed-rank sum test for medians.

	Treated Group		Control Group	
	Mean	Median	Mean	Median
TOTAL_COMP	4,940.43	3,703.12	4,759.55	3,495.40
CASH_COMP	2,400.15	1,566.60	2,531.94	1,548.65
EQUITY_COMP	2,503.03	1,381.22	2,173.03	1,100.71
PEI	49.77	21.58	43.56	22.44
TENURE	7.52	5	7.31	5
SALES	4,724.03	4,562.54	4,434.51	4,290.43
STOCK_RETURN	0.19	0.13	0.17	0.12
PEER_RETURN	0.14	0.12	0.11	0.10
ROA	0.06	0.04	0.05	0.03
LEVERAGE	0.26	0.23	0.18*	0.16*
SALES_GROWTH (%)	19.02	10.54	26.43*	15.90*
STOCK_VARIANCE × 100	2.02	1.27	2.13	1.35
CAPEX	0.09	0.07	0.12	0.07
CASH	0.12	0.08	0.09	0.04*
INDEPENDENT_BOARD	1.515	2	1.454	2
CCGG	36%	31%	33%	29%
DUAL_CLASS	0.13	0	0.12	0
CO-OPTED_BOARD	0.29	0.33	0.31	0.35
BOARD_SIZE	9.54	8	9.73	8
CEO_AGE	55.45	54	57.16	56
BUSY_BOARD	0.04	0.06	0.05	0.07
BOARD_AGE	55.76	53.35	59.43*	54.77

In Table 7, we reestimate the previous regressions using a DID specification with industry dummies. In column 1, we regress ln(TOTAL_COMP) on the event dummy (2006_DUMMY), a dummy variable that indicates treated firms (TREATED), interactions with firm performance and peer-group performance, and additional control variables. The coefficient on the interaction term of 2006_DUMMY × TREATED is −0.014 and is significant at the 10% level. This indicates that the increase in consultant independence resulted in a decrease in the level of CEO pay. This finding is consistent with our results in Tables 3–5. However, this is in contrast to Chu et al. (2017), who, using a sample of U.S. firms, find that firms that voluntarily choose to switch from hiring an affiliated consultant to hiring an independent consultant experience higher CEO pay compared with those that choose to retain affiliated consultants.

The coefficients on 2006_DUMMY × TREATED × STOCK_RETURN and 2006_DUMMY × TREATED × PEER_RETURN are 0.018 and −0.029, respectively. They are also statistically significant at the 5% and 10% levels, respectively. This means that CEO PPS and RPE increase in treated firms relative to control firms.[34] More specifically, the change of consultant from Mercer to Hugessen leads to a differential increase in PPS and RPE by 2.1% and 2.4%, respectively.

In column 2 of Table 7, we reestimate equation (3) using a DID specification. The DID coefficient is 4.75 and significant at the 5% level. This implies that due

[34] In untabulated results, we change the postevent window to include both 2006 and 2007. The results are similar in both magnitude and statistical significance.

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to the increased independence of the compensation consultant, CEO PEI increases differentially by approximately $4.8 per $1,000 shareholder wealth change, compared with the mean PEI of $47.9 in this subsample. We also reestimate the

TABLE 7

Independent Advice and CEO Compensation: Difference-in-Differences Results for the Separation of Hugessen from Mercer

The sample in Table 7 consists of 96 firm-year observations from 2005 and 2006. All firms hired Mercer as their compensation consultant in 2005. TREATED is an indicator variable that equals 1 if the observation is part of the treated group (i.e., firms that hired Mercer as their consultant in 2005 and hired Hugessen in 2006 (23 firms)). TREATED is equal to 0 if the firm is in the control group (i.e., firms that hired Mercer but received advice from other lead advisors in 2005 (25 firms). All specifications are estimated as difference-in-differences (DID) regressions. The dependent variable is ln(TOTAL_COMP) in model 1, PEI in model 2, and ln(EQUITY_COMP) in model 3. 2006_DUMMY is a dummy variable indicating fiscal year 2006. All other variables are explained in Appendix A. Corresponding *p*-values are reported in parentheses. The *p*-values are based on robust standard errors clustered at the firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively, 5% and 10% level, respectively.

	1	2	3
STOCK_RETURN	0.126*	4.595*	0.101*
	(0.084)	(0.090)	(0.065)
PAST_STOCK_RETURN	0.039	0.566	0.049*
	(0.104)	(0.131)	(0.093)
PEER_RETURN	−0.145*		−0.128*
	(0.076)		(0.067)
ROA	0.194	14.844**	0.153
	(0.206)	(0.047)	(0.298)
2006_DUMMY	−0.013	1.271*	0.015
	(0.152)	(0.085)	(0.133)
TREATED	0.007	0.372	0.009
	(0.369)	(0.596)	(0.413)
TREATED × STOCK_RETURN	0.020		0.029
	(0.401)		(0.295)
TREATED × PEER_RETURN	−0.024		−0.031
	(0.611)		(0.480)
2006_DUMMY × STOCK_RETURN	0.025*		0.028*
	(0.063)		(0.065)
2006_DUMMY × PEER_RETURN	−0.007*		−0.014*
	(0.087)		(0.095)
2006_DUMMY × TREATED	−0.014*	4.752**	0.003
	(0.080)	(0.048)	(0.295)
2006_DUMMY × TREATED × STOCK_RETURN	0.018**		0.026**
	(0.044)		(0.040)
2006_DUMMY × TREATED × PEER_RETURN	−0.029*		−0.030*
	(0.071)		(0.090)
ln(SALES)	0.370***	−16.931***	0.181***
	(0.000)	(0.000)	(0.000)
LEVERAGE	−0.202*	−11.596*	−0.304
	(0.085)	(0.057)	(0.193)
STOCK_VARIANCE	0.001	20.390	0.001
	(0.310)	(0.294)	(0.335)
CASH	0.260	34.826	0.119
	(0.201)	(0.291)	(0.445)
SALES_GROWTH	0.037	1.245	0.009
	(0.390)	(0.775)	(0.126)
TENURE	0.027*	1.037*	0.039*
	(0.081)	(0.089)	(0.059)
CAPEX	0.276*	25.904	0.096*
	(0.060)	(0.593)	(0.097)
INDEPENDENT_BOARD	−0.017	1.904	0.006
	(0.582)	(0.111)	(0.473)
CO-OPTED_BOARD	0.032	−1.740	0.023
	(0.258)	(0.195)	(0.217)

(continued on next page)

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TABLE 7 (continued)
Independent Advice and CEO Compensation: Difference-in-Differences Results for the Separation of Hugessen from Mercer

	1	2	3
CEO_AGE	0.010 (0.163)	0.570 (0.210)	0.012 (0.186)
Industry dummy	Yes	Yes	Yes
Intercept	9.051*** (0.000)	16.228** (0.030)	13.376*** (0.000)
N	96	96	96
Adj. R^2	38.6%	15.3%	37.8%

weak-form test of RPE with ln(EQUITY_COMP) as the dependent variable. The results are similar to the results in Table 5; both DID interaction terms have statistically significant coefficients (see column 3). Taken together, these results suggest that receiving independent advice leads to not only higher CEO PPS but also a higher level of RPE in the CEO's compensation contract.[35]

To confirm that our results are unique to Mr. Hugessen's separation from Mercer in 2006, we perform a placebo (falsification) test in which we falsely assume that a treatment occurs.[36] More specifically, we repeat the DID test using 2008 and 2009 as our pre-event and postevent periods, respectively (i.e., 3 years after Mr. Hugessen's separation from Mercer). This falsification test is conducted using the same treated and control firms as in our real tests. We find no significant differences in changes in CEO PPS or in the level of RPE in the CEOs' contracts around the 2008 placebo event. Overall, this placebo test indicates that the treated and control firms exhibit similar trends in CEO incentive pay except for around Mr. Hugessen's separation from Mercer. It also offers further support that the increases in CEO incentive pay stem from the increased independence of advice induced by Mr. Hugessen's separation from Mercer rather than other confounding factors.

However, there are two types of selection bias that could threaten the internal validity of the experiment. First, firms that switched from Mercer to Hugessen Consulting choose to work with Mr. Hugessen prior to 2006. Second, all of Mr. Hugessen's clients chose to retain Hugessen Consulting after Mr. Hugessen left Mercer in 2006. If either of these decisions is correlated with unobserved determinants of CEO compensation, then this can bias our results. In regard to the former, the fact that the decision to work with Mr. Hugessen was made years in advance of the separation of Mr. Hugessen from Mercer makes this concern less problematic. This is bolstered by evidence (see Figure 1 and Section IV.C) that the separation event was, to some extent, unanticipated.

Moreover, our communication with Mr. Hugessen indicates that Mercer assigned lead advisors to clients mainly based on the advisor's geographical proximity to the client and industry expertise. For example, because Mr. Hugessen was

[35]The DID estimation has the advantage of controlling for parallel trends around the event. However, it is worth noting that unlike the single-difference specification (Table 5), the control firms were not receiving advice directly from Mr. Hugessen prior to his separation from Mercer.

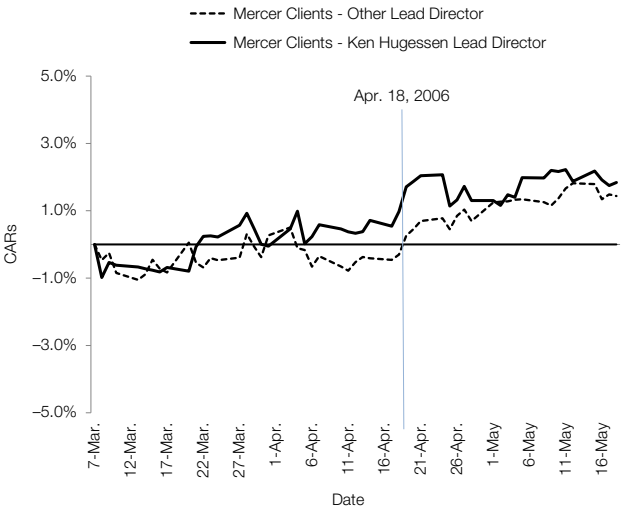
[36]The untabulated results of the placebo test are available from the authors.

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FIGURE 1

Abnormal Returns around the Announcement of the Separation of Hugessen from Mercer

Figure 1 shows cumulative abnormal returns from Mar. 7, 2006, to May 16, 2006 (days −30 to +20), on portfolios of firms that hired Mercer as their compensation consultant in 2005. Day 0 is Apr. 18, 2006, which is the first time the separation of Mr. Hugessen from Mercer was reported in the media. To compute abnormal returns, the regression $R_{pt} = \alpha + \beta R_{bt} + \eta \text{EVENT} + \epsilon_t$ is estimated from May 18, 2005, to June 18, 2006. R_{pt} is either the daily return on a value-weighted portfolio that includes 23 firms that hired Mercer and received advice directly from Mr. Hugessen (treated group) or the daily return on a value-weighted portfolio of 25 firms that hired Mercer but received advice from other lead advisors in 2005 (control group). R_{bt} is the return on the value-weighted benchmark portfolio that includes 250 stocks that account for 80% of Canadian market capitalization. EVENT is a dummy variable that equals 1 on event days included in the event, and 0 otherwise.



located in Toronto, he was more likely to be assigned as the lead director to clients who were also headquartered in Toronto. As a result, Mr. Hugessen's clients were largely Toronto-based financial and manufacturing firms. Mr. Hugessen had no energy clients, which, due to the geographical industry clustering evident among Canadian firms, are concentrated in Calgary. Moreover, we are unaware of any industry- or province-specific regulation in Canada in 2005 that could result in differential changes in the CEO compensation contracts of financial and manufacturing firms in Toronto relative to energy firms in Calgary. Therefore, it is unlikely that the assignment of lead advisors to clients at Mercer in 2005 is correlated with how CEO compensation contracts change from 2005 to 2006.

With respect to the second type of selection bias, it is comforting that all Hugessen's clients switched. Thus, there was no selection among the treated firms with regard to the choice of affiliated or independent consultant around the separation of Hugessen from Mercer. Notably, all of Mr. Hugessen's former clients switched, regardless of the level of management's power over the board. As we discuss in the next section (Section IV.C), Mr. Hugessen's intent to separate from Mercer and form an independent consulting firm was first revealed on Apr. 18, 2006, whereas Hugessen Consulting was first established in June 2006. Thus, our finding that the market viewed the news of Mr. Hugessen's separation favorably on Apr. 18, 2006, suggests that when it became clear that retaining Mercer

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instead of hiring the newly independent Hugessen Consulting would be viewed negatively, even those former clients with captured boards switched in order to pool with former clients with more independent boards. This may explain why all of Mr. Hugessen's clients switched with him to join Hugessen Consulting in June 2006. Finally, the fact that Mr. Hugessen's clients had similar firm characteristics to other Mercer clients in the pretreatment period suggests that Mr. Hugessen's decision to separate from Mercer was less likely to be motivated by preexisting differences between his clients and other Mercer clients. In light of this discussion, our results from the Hugessen experiment are less likely to be contaminated by these types of selection issues. That is, the Hugessen experiment helps distinguish the impact of independent advice on incentive pay from the selection biases, such as those produced by better-governed firms choosing to hire more independent consultants.

However, it is also important to acknowledge the following caveat. The exogenous variation in independent advice comes from only one consultant (Mr. Hugessen). Thus, it is not possible to distinguish whether the increases in incentive pay observed post-2006 are due to i) the elimination of the cross-selling incentives of Mr. Hugessen after separating from Mercer or ii) from some other reason that affected Mr. Hugessen's behavior, leading to the observed changes in compensation. For instance, Mr. Hugessen may have become convinced of the value of offering more incentive pay in 2006, coinciding with his decision to separate from Mercer. Nevertheless, despite this limitation, this experiment provides arguably the cleanest setting currently available to study how independent advice affects CEO pay contracts.

In addition, the results of the Hugessen experiment are similar to our earlier findings (see Tables 3 and 4) that are based on the larger panel of firms from 2005 to 2009. Although these results provide evidence only of a positive association between independent advice and CEO incentive pay, they have the advantage of providing better external validity. This is mainly because the variation in consultant independence in the larger sample comes from not only Mr. Hugessen's emergence as an independent consultant in 2006 but also from the existence of another independent consultant, Fredrick W. Cook, which has a meaningful market share in every year of our sample (increasing from 1.7% in 2005 to 4.2% in 2009). In addition, approximately 8% of firms hire different consultants in the same year for compensation-related services and other services and therefore receive independent compensation advice. Given that the results from the larger sample rely on important variations in the independence of advice in addition to Mr. Hugessen's separation from Mercer, it suggests that our findings are unlikely to be limited to the Hugessen experiment.

C. The Market's Reaction to Hugessen's Separation News

The news that Mr. Hugessen separated from Mercer to start an independent consulting firm was first publicized in an article published in the *Globe and Mail* on Apr. 18, 2006. The stock market response to this announcement provides a setting to analyze the impact of independent advice to the board on firm value. If the market anticipates which firms will switch from Mercer to Mr. Hugessen's new independent firm and expects that independent advice to be value enhancing,

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share prices should rise for these firms following Mr. Hugessen's separation from Mercer.

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

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

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 1 on the event days around the announcement, and 0 otherwise. The benchmark portfolio is the return of the DataStream's Canadian index, which 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 (Binder (1985)). The estimated $\hat{\eta}_i$ measures each firm's average abnormal return over the event period. 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 Mr. Hugessen's separation being unexpected for the market.

Table 8 reports the average CAR for different event periods as well as associated p-values for firms that hired Mercer in 2005 and either i) were advised directly by Mr. Hugessen or ii) had other lead advisors (not Mr. Hugessen). We investigate whether abnormal returns exist around the Apr. 18 announcement for each group of firms. 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 1.0% in their stock returns over the (−1,+1) window. 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. The market response for the control firms is not statistically significant. The positive price reaction for the treated firms is consistent with independent advice to the board being value enhancing. These results are also consistent with the notion that the market only expected Mr. Hugessen's clients, not other Mercer clients, to immediately switch with him to his new independent consulting firm.

D. Additional Results

In this section, we provide additional results in support of the conjecture that independent advice improves the structure of CEO pay packages. Although these additional results indicate associations, they help reinforce the evidence provided so far in this article: that independent advice to boards improves compensation contracts. First, we provide evidence that firms that hire independent consultants grant RPE contracts to their CEOs that are more in line with those predicted by optimal contracting. Second, we show that firms that hire independent consultants are more likely to include RPE as part of the CEO's pay package.

1. Independent Advice and Performance Peer Groups

Do independent consultants help design better RPE contracts? First, to study the effect of independent advice on the design of CEO RPE contracts, we investigate how the correlation between the firm's and performance peers' stock

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TABLE 8

Market Reactions around the Announcement of the Separation of Hugessen from Mercer

In Table 8, the regression $R_{it} = \alpha_i + \beta_i R_{bt} + \eta_i \text{EVENT} + \epsilon_{it}$ is estimated for each firm that hired Mercer as its 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 includes 250 stocks that account for 80% of Canadian market capitalization. Returns are obtained from DataStream. EVENT is a dummy variable that equals 1 on event days included in the event window, and 0 otherwise. Day 0 is Apr. 18, 2006, which is the first time the separation of Mr. Hugessen from Mercer was reported in the media. η_i is the average abnormal return over the event window for each firm. The cumulative abnormal return (CAR) reported in the table equals the average value of the η_i values over 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 Mr. Hugessen in 2005 and 25 firms that hired Mercer but received advice from other lead advisors in 2005. The models are each estimated as a 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 parentheses. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Mercer Clients Ken Hugessen Lead Advisor	Mercer Clients Other Lead Advisor
(−1, +1) window	0.0101**	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)

returns changes after hiring an independent consultant. Theory suggests that the effectiveness of performance peer groups in filtering out exogenous shocks to stock returns that are outside the CEO's control can be measured by the correlation between the firm's and peers' stock returns (Holmstrom and Milgrom (1987)). If independent consultants are able to provide superior advice on the choice of performance peers, we expect higher correlations between the firm's and performance peers' stock returns in the year following the hiring of an independent consultant.

We run a set of regressions where the dependent variable is the 1-year lead correlation between the firm's and average peers' stock returns (CORR(PEERS, FIRM)).[37] In these tests, we use lead correlations to best capture the timing of how performance peers are chosen. Consultants attempt to choose peers to assess the firm's performance relative to the peers in the year(s) subsequent to the year in which the compensation contract is set. Thus, lead correlations should capture the extent to which these peers are chosen optimally or not. In this analysis, we restrict the sample to only firms that explicitly report the use of RPE in setting

[37] Many firms in the sample do not disclose whether they use the mean or median of peers' stock returns when setting RPE contracts. De Angelis and Grinstein (2020) find that rank- and percentile-based contracts are more common than other types of RPE contracts. Thus, alternatively, in untabulated tests, we use the correlation between the firm's and median peers' stock returns and find statistically and economically significant and similar results.

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their CEO compensation.[38] We also include firm and year fixed effects as well as additional control variables.

In columns 1 and 2 of Table 9, we regress CORR(PEERS, FIRM) on CONS_DUMMY with and without control variables. When including the controls, CONS_DUMMY is not statistically significant. This indicates that having a consultant is not associated with having superior performance peer groups. In columns 3 and 4, we replace CONS_DUMMY with IND_DUMMY. The coefficient on IND_DUMMY, when including the controls, is 0.039 and is significant at the 10% level. This is also economically significant; a 0-to-1 change of IND_DUMMY is associated with a 3.9% (10% relative to the mean) increase in the correlation between the firm's and average peers' stock returns. The results are similar when replacing IND_DUMMY with IND_RATIO.

Next, we study the composition of performance peer groups. The process for selecting performance peers requires a multidimensional comparison of the granting firm's characteristics with those of potential peers. Therefore, in Table 10, we estimate a multivariate logit model that relates the choice of performance peers to the RPE-granting firm's and candidate peers' characteristics that are suggested by optimal contracting theory, such as historical comovement in stock returns (for similar methodology, see Faulkender and Yang (2010) and Bakke et al. (2019)). The dependent variable is set to 1 if a candidate peer is a member of the performance peer group of an RPE-granting firm in year t, and 0 otherwise. This variable captures whether a candidate peer is included in the corresponding firm's performance peer group, where candidate peers are defined as the largest 400 firms by market value each year of all Canadian publicly traded firms.[39]

PEER_CORRELATION is the historical correlation of the peer and RPE-granting firms' stock returns over the 12 months preceding the RPE grant date. Historical correlations in returns should capture similar exposure to risk factors that are relatively time invariant. For example, exposure to common risk factors due to similar plant location, supply chains, or product clientele tends to change rather infrequently over time. MATCH variables are indicator variables set to 1 when the RPE-granting and candidate peer firms match on a given dimension (size, industry, or leverage), and 0 otherwise. For instance, MATCH_ON_ASSETS is set to 1 if the RPE-granting firm's assets are within 50%–200% of the candidate performance peers' total assets in year t, and 0 otherwise. NUMBER_OF_PEERS is the number of disclosed performance peers of the RPE-granting firm in year t. This is included as a control variable because the likelihood that any potential peer is selected as a peer is higher when the firm's performance peer group is larger. The sample used for this test includes only firm-year observations that disclose their choice of performance peers and also hire a compensation consultant (319 firm-year observations). Standard errors are clustered by firm and peer to account for potential dependencies in the error terms at the firm and peer levels (Petersen (2009)). See Appendix A for detailed variable definitions.

[38] Because of the small sample size in the Hugessen experiment and due to the further loss of observations as a result of imperfect disclosure of performance peers, it is not possible to perform the same tests in Tables 9 and 10 for the Hugessen experiment.

[39] Restricting the pool of candidate peers to the top-400 firms ranked by market value each year allows us to capture 94% of all disclosed peers.

TABLE 9

Compensation Consultants and the Choice of Performance Peers: Lead Correlations of Returns

Table 9 reports the effect of compensation consultants on the 1-year lead correlation of performance peers and relative performance evaluation (RPE)-granting firms' returns. In all regressions, the dependent variable is CORR(PEERS, FIRM), which is defined as the lead correlations between average peers' and firms' monthly stock returns computed over the 12 months subsequent to the RPE grant date. The variable CONSULTANT is either CONS_DUMMY (columns 1 and 2), IND_DUMMY (columns 3 and 4), or IND_RATIO (columns 5 and 6). CONS_DUMMY equals 1 if at least one consultant was retained in that year, and 0 otherwise. IND_DUMMY equals 1 if at least one independent consultant was retained in that year, and 0 if one or more affiliated consultants were hired. IND_RATIO equals −1 multiplied by the ratio of OTHER_FEES to COMP_FEES. All variables are defined in Appendix A. All specifications include year and firm fixed effects (FE). Corresponding *p*-values are reported in parentheses. The *p*-values are based on robust standard errors clustered at the firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	1	2	3	4	5	6
CONSULTANT	0.010*	0.016	0.051**	0.039*	0.004*	0.002*
	(0.091)	(0.172)	(0.055)	(0.038)	(0.057)	(0.069)
ln(SALES)		−0.001***		−0.001***		−0.001*
		(0.003)		(0.002)		(0.008)
LEVERAGE		−0.007		−0.010		−0.003
		(0.393)		(0.386)		(0.466)
CASH		0.004		0.002		0.001
		(0.587)		(0.570)		(0.519)
SALES_GROWTH		−0.000		−0.000		−0.000
		(0.331)		(0.306)		(0.274)
TENURE		−0.000		−0.000		−0.000
		(0.920)		(0.905)		(0.864)
STOCK_RETURN		−0.010		−0.007		−0.005
		(0.175)		(0.180)		(0.145)
ROA		−0.001		−0.003		−0.004
		(0.644)		(0.613)		(0.538)
INDEPENDENT_BOARD		0.012*		0.019*		0.026
		(0.094)		(0.096)		(0.146)
CO-OPTED_BOARD		−0.010*		−0.014		−0.009
		(0.093)		(0.191)		(0.180)
BOARD_SIZE		−0.001		−0.001		−0.000
		(0.271)		(0.303)		(0.224)
CEO_AGE		−0.000		−0.000		−0.000
		(0.840)		(0.913)		(0.861)
BUSY_BOARD		−0.433		−0.395*		−0.262
		(0.175)		(0.094)		(0.140)
BOARD_AGE		0.001		0.001		0.000
		(0.904)		(0.835)		(0.816)
NUMBER_OF_CONSULTANTS		0.002		0.001		0.001
		(0.372)		(0.459)		(0.406)
Firm and year FE	Yes	Yes	Yes	Yes	Yes	Yes
Intercept	0.016	0.014	0.017	0.016	0.018	0.017
	(0.850)	(0.884)	(0.943)	(0.907)	(0.960)	(0.953)
N	360	360	319	319	252	252
Adj. R^2	16.1%	18.9%	15.5%	18.0%	13.2%	18.4%

In column 1 of Table 10, consistent with optimal contracting theories stemming from Holmstrom (1982) and Holmstrom and Milgrom (1987), we find that firms tend to select performance peers that operate in similar industries and have historical stock returns that are highly correlated with the returns of the RPE-granting firm. Further, performance peers are similar in size and leverage. Overall, consistent with optimal contracting theory, these findings suggest that companies tend to choose performance peers to better filter out exogenous common shocks in an effort to identify the true impact of the CEOs' actions on performance.

To explore whether the independence of advice to the board affects the construction of performance peer groups, in columns 2 and 3 of Table 10, we examine

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TABLE 10

Compensation Consultants and Choice of Performance Peers: The Likelihood of Peer Selection

Table 10 presents the results of estimating a multivariate logit model that relates the choice of performance peers to the relative performance evaluation (RPE)-granting firms' and potential peers' characteristics. PEER_CORRELATION is the historical correlation of peer and RPE-granting firms' returns computed over the 12 months preceding the RPE grant date. Variable names prefaced with "MATCH" are indicator variables set to 1 if the RPE-granting and candidate peer firms match on a given dimension, and 0 otherwise. IND_DUMMY equals 1 if at least one independent consultant was retained in that year, and 0 if one or more affiliated consultants were hired. In column 1, the sample consists of 319 firm-year observations in which the firm hired at least one consultant. Columns 2 and 3 report results for subsamples of firms that hired an independent consultant (111 firm-years) and those that did not hire an independent consultant (208 firm-years), respectively. Column 4 is based on one pooled regression that includes interaction variables of all variables with IND_DUMMY and *p*-values indicating whether the coefficient of a variable for IND_DUMMY=0 is significantly different from the coefficient for IND_DUMMY=1. All variables are defined in Appendix A. All specifications include year and firm fixed effects (FE). Corresponding *p*-values are reported in parentheses. The *p*-values are based on robust standard errors clustered at the firm and the peer level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

Dependent Variable: Whether a Candidate Peer Is Chosen as a Performance Peer by an RPE-Granting Firm				
		IND_DUMMY=1	IND_DUMMY=0	*p*-Value: 2–3
	1	2	3	4
PEER_CORRELATION	2.184***	2.475***	1.647***	(0.040)
	(0.000)	(0.000)	(0.000)	
MATCH_ON_INDUSTRY	4.627***	4.993***	3.986***	(0.095)
	(0.000)	(0.000)	(0.000)	
MATCH_ON_ASSETS	1.216***	1.292***	1.163***	(0.355)
	(0.000)	(0.000)	(0.000)	
MATCH_ON_LEVERAGE	0.697***	0.747***	0.663***	(0.149)
	(0.000)	(0.000)	(0.000)	
NUMBER_OF_PEERS	0.023***	0.031***	0.020***	(0.177)
	(0.000)	(0.000)	(0.000)	
Firm and year FE	Yes	Yes	Yes	
N	127,600	44,400	83,200	
Pseudo-R^2	32.9%	34.0%	31.3%	

how our findings vary for the subsamples of firms that receive independent and affiliated advice, respectively. Comparing the results in columns 2 and 3 reveals that the differences in the sensitivity of peer membership to PEER_CORRELATION and MATCH_ON_INDUSTRY are statistically significant between firms with independent and affiliated advisors.[40] This suggests that firms that hire an independent consultant tend to have a higher propensity to select peers from the same industry and peers that have higher historical correlations in returns.

In sum, these findings suggest that boards that receive independent advice improve the quality of the performance peer groups used in their CEO RPE contracts. They choose peers with higher correlations between the firm's and the peers' stock returns, which results in better risk sharing and more efficient contracts. Moreover, hiring an independent consultant is associated with a higher propensity to choose peers that would be suggested by the predictions of optimal contracting theories. These findings are consistent with our previous results on the increase in PPS and RPE following the hiring of an independent consultant because they confirm a channel through which independent advice to the board leads to higher CEO PPS.

[40]Tests of differences are based on regressions with interactions of all variables with IND_DUMMY. Specifically, the statistical test indicates whether the coefficient of a variable where IND_DUMMY is equal to 1 is significantly different from the coefficient where IND_DUMMY is 0. For a similar research design, see Table 6 of Fernandes et al. (2012).

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The findings in Tables 9 and 10 also suggest that the larger negative coefficient on peer performance in the weak-form tests (Tables 3, 5, and 7) associated with hiring an independent consultant is not merely due to the independent consultant designing packages that place more relative weight on peer performance. Although we do not exclude the possibility of independent consultants increasing the relative weight of RPE in CEO compensation, our findings in Tables 9 and 10 suggest that independent consultants also improve the choice of performance peers in screening common shocks to RPE-granting firms' performance.

2. Independent Advice and the Use of RPE

In this section, we examine whether firms that hire independent compensation consultants are more likely to use and explicitly disclose RPE in their CEO pay packages. To this end, we estimate a logit regression where the dependent variable, EXPLICIT_RPE, takes a value of 1 if the firm states explicitly that a component of the CEO's compensation is based on how the firm performs relative to either a peer group or an industry or market index, and 0 otherwise. The regression results are reported in Table 11, where the coefficients are estimates of the marginal effect on the probability of having RPE, holding all of the other independent variables at their means.

In column 1 of Table 11, we include CONS_DUMMY and control variables as well as industry and year dummies as the independent variables. The coefficient on CONS_DUMMY is positive; however, it is not statistically significant. Thus, using a consultant has no impact on the use of explicit RPE in CEO pay. However, when replacing CONS_DUMMY with IND_DUMMY in column 2, the coefficient on IND_DUMMY is 0.203 and is significant at the 10% level. This result is robust to using IND_RATIO as the proxy for consultant independence. These results imply that the probability of using RPE increases with the level of independence of the consultant.

E. Why Don't All Firms Use Independent Consultants?

The results presented so far suggest that independent consultants may provide valuable advice to boards. However, as of 2009, 18% of the firms in our sample do not use consultants at all, and among those who hire a consultant, 61% do not use an independent consultant. Therefore, a natural question is why all firms don't use independent consultants. To address this question, we explore if the decision to not hire an independent consultant may be influenced by i) agency issues and corporate governance, ii) supply-side issues such as consultant fees, and iii) the extent to which independent consultants provide additional information to design executive pay.

1. Powerful CEOs and Corporate Governance

The decision to hire a consultant in Canada is made by the compensation committee. Thus, the decision to hire an independent rather than an affiliated consultant depends on the board of directors as well as the business environment. Does corporate governance influence the decision to hire an independent consultant? On the one hand, well-governed firms may be more likely to prefer independent consultants. On the other hand, a powerful CEO could indirectly control the consultant hiring choice "given the considerable influence of the CEO and the

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TABLE 11

Compensation Consultants and the Use of RPE in CEO Compensation Contracts

Table 11 reports the results from logit regressions that examine the effect of compensation consultants on the likelihood of using relative performance evaluation (RPE). The full sample consists of 910 firm-year observations from 2005 to 2009. The sample reduces to 698 and 401 firm-year observations when consultant independence is measured by IND_DUMMY and IND_RATIO, respectively. The dependent variable equals 1 if the firm discloses using either a performance peer group or market/industry exchange-traded fund (ETF) in setting the chief executive officer (CEO) pay in that fiscal year, and 0 otherwise. The coefficients are estimates of the marginal effect on the probability of using explicit RPE 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 parentheses. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	1	2	3
CONS_DUMMY	0.113 (0.195)		
IND_DUMMY		0.203* (0.069)	
IND_RATIO			0.019* (0.090)
STOCK_RETURN	0.059 (0.358)	0.053 (0.334)	0.066 (0.402)
PAST_STOCK_RETURN	0.067 (0.175)	0.042 (0.190)	0.033 (0.221)
ROA	0.071 (0.250)	0.080 (0.263)	0.082 (0.244)
ln(SALES)	0.012*** (0.000)	0.011*** (0.000)	0.007*** (0.001)
LEVERAGE	−0.069 (0.485)	−0.059 (0.507)	−0.073 (0.401)
STOCK_VARIANCE	0.008 (0.502)	0.006 (0.472)	0.010 (0.466)
CASH	−0.014 (0.489)	−0.010 (0.460)	−0.012 (0.511)
SALES_GROWTH	0.005 (0.753)	0.007 (0.747)	0.005 (0.705)
CAPEX	0.001 (0.373)	0.001 (0.315)	0.001 (0.297)
TENURE	0.017 (0.395)	0.019 (0.405)	0.020 (0.436)
INDEPENDENT_BOARD	0.018* (0.090)	0.019* (0.084)	0.022* (0.091)
CO-OPTED_BOARD	−0.002 (0.174)	−0.004* (0.094)	−0.002 (0.133)
BOARD_SIZE	0.003 (0.674)	0.004 (0.652)	0.003 (0.539)
CEO_AGE	−0.012 (0.304)	−0.009 (0.282)	−0.006 (0.323)
BUSY_BOARD	0.011 (0.159)	0.012 (0.137)	0.009 (0.145)
BOARD_AGE	−0.008 (0.460)	−0.005 (0.638)	−0.005 (0.779)
DUAL_CLASS	−0.002* (0.097)	−0.001 (0.155)	−0.001 (0.190)
Year and industry dummy	Yes	Yes	Yes
N	910	698	401
Pseudo-R^2	11.1%	12.4%	11.9%

CEO's management team over the board" (Bebchuk et al. (2002)). Thus, in firms with worse governance, there may be a higher likelihood of hiring an affiliated consultant.

As the first governance proxy, we include the ownership in the firm by the CCGG members. The CCGG is a coalition of pension funds, mutual funds, and

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third-party money managers that promotes good-governance practices (e.g., the board of directors "developing an independent point of view") in the companies owned by its members. To improve corporate governance, the CCGG leans on companies by, for example, engaging in private communications with firms owned by its members. Doidge, Dyck, Mahmudi, and Virani (2019) shed light on how the CCGG engages in collective action to bring about changes in governance. They show that the CCGG spends more resources when it has more money at stake, and its efforts are more effective if its members hold a large stake in the firm. Thus, a large ownership stake by CCGG members in a firm suggests that the firm may have a higher probability of hiring an independent consultant. To measure the ownership stakes of CCGG members, we first obtain data on institutional investors from Capital IQ. Then, using the list of the members of CCGG in each year, we construct the total ownership stake of CCGG members each year.[41]

To further proxy for the tendency of powerful managers to influence the choice of consultant, we consider several governance proxies designed to measure the extent to which the board is captured by the CEO. First, we include a dummy for the existence of dual-class shares (DUAL_CLASS) because the CEO usually has more power in influencing the board's decisions in these firms. Second, we include board independence as another governance proxy (INDEPENDENT_BOARD). Lastly, following Coles et al. (2014), we also include the fraction of the directors on the board appointed after the current CEO took office (CO-OPTED_BOARD). According to Coles et al., boards with a higher proportion of co-opted directors are more likely to be captured by management and are associated with weaker board monitoring. We also include other board characteristics that could affect the board's decision to hire an independent consultant, such as board size, the average age of the directors on the board (BOARD_AGE), and the fraction of the directors serving on three or more outside boards (BUSY_BOARD).

To study the link between governance and the decision to hire an independent consultant, we estimate logit regressions of the choice to hire at least one independent consultant (Table 12). Overall, governance variables are important in explaining consultant choice and are both economically and statically significant. First, firms in which CCGG members own a larger stake are much more likely to have an independent consultant than those with smaller CCGG ownership. Second, firms with dual-class shares (independent boards) are significantly less (more) likely to hire an independent consultant. Finally, firms with higher fractions of co-opted directors are significantly less likely to have an independent consultant. Thus, firms with better (worse) governance are more (less) likely to hire an independent consultant.

In terms of economic significance, these results imply that an increase of CCGG ownership by 1 standard deviation increases the probability of hiring an independent consultant by 3.4%.[42] Moreover, firms with dual-class voting shares have a 4.2% lower probability of hiring an independent consultant. Finally, a 1-standard-deviation increase in the fraction of co-opted directors decreases the

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

[42] Whenever estimating the economic significance, all other variables are held at their means.

TABLE 12

Corporate Governance and the Likelihood of Hiring an Independent Compensation Consultant

Table 12 reports the results from logit regressions that examine the effect of corporate governance on the choice to hire at least one independent consultant. The sample consists of 698 firm-year observations from 2005 to 2009. DUAL_CLASS is a dummy variable that equals 1 if the firm has dual-class voting shares, and 0 otherwise. CCGG is the proportion of the firm's common shares owned by the members of the Canadian Coalition for Good Governance (CCGG). CO-OPTED_BOARD is the fraction of the directors on the board appointed after the current chief executive officer (CEO) took office. BUSY_BOARD is the fraction of the directors serving on three or more outside boards. All variables are defined in Appendix A. Corresponding *p*-values are reported in parentheses. The *p*-values are based on robust standard errors clustered at the firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	1	2
CCGG	1.536**	1.344**
	(0.037)	(0.045)
DUAL_CLASS	−0.262**	−0.198**
	(0.015)	(0.038)
INDEPENDENT_BOARD	0.102*	0.092*
	(0.089)	(0.096)
CO-OPTED_BOARD	−0.295*	−0.281*
	(0.074)	(0.094)
BOARD_SIZE	0.002	0.003
	(0.111)	(0.242)
CEO_AGE	−0.007	−0.009
	(0.460)	(0.421)
BUSY_BOARD	0.012	0.017
	(0.803)	(0.793)
BOARD_AGE	−0.005	−0.009
	(0.340)	(0.295)
STOCK_RETURN		0.035
		(0.366)
PAST_STOCK_RETURN		0.018
		(0.441)
ROA		0.043
		(0.394)
ln(SALES)		0.070*
		(0.073)
LEVERAGE		−0.045
		(0.462)
STOCK_VARIANCE		0.052
		(0.794)
CASH		0.137
		(0.193)
SALES_GROWTH		−0.125
		(0.688)
TENURE		−0.083
		(0.352)
CAPEX		−0.155
		(0.204)
Year and industry dummies	Yes	Yes
N	698	698
Pseudo-R^2	9.5%	10.1%

likelihood of hiring an independent consultant by 1.8%. These results are consistent with Bebchuk et al. (2002), who report that there is anecdotal evidence that CEOs play an important role in the choice of compensation consultants. Overall, these results help better explain why not all firms hire an independent consultant.

2. The Cost of Independent Advice

Another potential reason for the lack of popularity of independent consultants is that hiring them may be more costly. To examine if hiring independent

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consultants is more costly to the firm, we run pooled OLS regressions using the following model:

$$
\begin{aligned}
(4)\quad \ln(\text{COMP_FEES}_{it}) \quad = \quad & \\
& \beta_0 + \beta_1 \text{IND_DUMMY}_{it} + \beta_2 \ln(\text{SALES})_{it} + \beta_3 \text{STOCK_VARIANCE}_{it} \\
& + \beta_4 \text{SEGMENTS}_{it} + \beta_5 \text{PAY_COMPLEXITY}_{it} + \beta_6 \text{LEVERAGE}_{it} \\
& + \beta_7 \text{CASH}_{it} + \beta_8 \text{SALES_GROWTH}_{it} + \beta_9 \text{CAPEX}_{it} + \beta_{10} \text{TENURE}_{it} \\
& + \beta_{11} \text{INDEPENDENT_BOARD}_{it} \\
& + \beta_{12} \text{NUMBER_OF_CONSULTANTS}_{it} + \text{Industry FE} + \text{Year FE} + \epsilon_{it},
\end{aligned}
$$

where the dependent variable is the natural logarithm of COMP_FEES. We include year and industry dummies to account for the time and industry trends in compensation consultant fees. Inspired by the audit-fee literature (Hay, Knechel, and Wong (2006)), we include measures of client size, client risk, and client complexity to proxy for the extent to which the consultant performs more (or less) work during the consulting assignment. We measure client size by the natural logarithm of the firm's annual sales. We use stock return volatility as a measure of client risk. To proxy for complexity, we focus on the complexity of both the organization and the executive pay. The former is measured by the number of business segments that the firm operates in (SEGMENTS). In order to measure the latter, we use PAY_COMPLEXITY, which is a dummy variable that equals 1 if the board uses options in the CEO's compensation package in that year, and 0 otherwise.

The results of estimating equation (4) are provided in Table 13. The main takeaway is that the coefficient on β_1 is positive and statistically significant. These results are therefore consistent with the prediction that firms that hire an independent consultant pay higher compensation consulting fees. Note that similar to the audit-fee literature, size, business complexity, and pay complexity are statistically and economically significant.

This finding is interesting because independent consultants such as Hugessen Consulting charge similar hourly rates for their services as affiliated consultants such as Towers Watson and Mercer. Therefore, the results in Table 13 suggest that independent consultants spend more time providing consulting services. This is consistent with the results reported previously in that independent consultants may spend more time on designing pay packages with more incentive pay and may more carefully choose RPE performance peer groups.

It is important to point out that the 20% fee premium charged by independent consultants is on average equivalent to an additional $23,000 in consulting fees. This incremental fee does not seem to be large enough to deter a firm from hiring an independent consultant. More importantly, our finding that Mr. Hugessen's clients experienced a positive market reaction to Mr. Hugessen switching to providing independent advice (see Section IV.C) suggests that the market views the net effect of hiring an independent consultant to be positive, which indicates that the benefits outweigh any increase in cost in the form of higher fees. Thus, the evidence seems inconsistent with the notion that higher consultant fees would be an impediment to hiring an independent consultant.

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TABLE 13

Independent Advice and Compensation Consulting Fees

The sample in Table 13 consists of 698 firm-year observations from 2005 to 2009. The dependent variable in all models is ln(COMP_FEES). SEGMENTS is the number of business segments the firm operates in. PAY_COMPLEXITY is a dummy variable that equals 1 if the board used options in the compensation package of the chief executive officer (CEO) in that year, and 0 otherwise. All the specifications are estimated as ordinary least squares (OLS) regressions. All variables are defined in Appendix A. Corresponding *p*-values are reported in parentheses. The *p*-values are based on robust standard errors clustered at the firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	1	2
IND_DUMMY		0.183**
		(0.047)
ln(SALES)	0.279***	0.255***
	(0.000)	(0.000)
STOCK_VARIANCE × 100	0.026	0.028
	(0.196)	(0.213)
SEGMENTS	0.021*	0.017*
	(0.066)	(0.074)
PAY_COMPLEXITY	0.022*	0.023*
	(0.070)	(0.079)
LEVERAGE	0.001	0.000
	(0.644)	(0.603)
CASH	0.635*	0.797*
	(0.064)	(0.057)
SALES_GROWTH	0.206	0.236
	(0.285)	(0.269)
STOCK_RETURN	0.028	0.031*
	(0.105)	(0.094)
ROA	0.007	0.006*
	(0.107)	(0.084)
INDEPENDENT_BOARD	−0.021	−0.025
	(0.207)	(0.195)
CO-OPTED_BOARD	0.011*	0.008
	(0.094)	(0.130)
BOARD_SIZE	0.001	0.001
	(0.185)	(0.266)
CEO_AGE	−0.001	−0.001
	(0.333)	(0.394)
BUSY_BOARD	0.013	−0.005
	(0.174)	(0.585)
BOARD_AGE	0.002	0.001
	(0.191)	(0.245)
DUAL_CLASS	−0.037	−0.012
	(0.228)	(0.560)
TENURE	−0.017*	−0.012
	(0.095)	(0.114)
NUMBER_OF_CONSULTANTS	0.207**	0.143**
	(0.033)	(0.042)
Year and industry dummy	Yes	Yes
Intercept	5.370***	4.911***
	(0.000)	(0.001)
N	698	698
Adj. R^2	28.7%	30.1%

3. The Impact of Compensation Committee Experience

A consulting firm's advice only matters to the extent that it provides useful information beyond what the compensation committee already knows. That is, firms with uninformed compensation committees would likely benefit more from hiring an independent consultant. In contrast, firms with experienced and informed compensation committees would not benefit materially from the advice of an independent consultant because their CEO compensation schemes would already include a properly designed incentive plan.

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To test if firms with less informed compensation committees benefit more from hiring an independent consultant, we estimate regressions similar to those in Panel A of Table 4 with CEOs' PEI as the dependent variable (see Table 13).[43] We use three different proxies to measure how informed the compensation committee is when it comes to designing incentive contracts.[44] First, we use the compensation committee's level of experience, measured by the ratio of the number of compensation committee members who previously served on other compensation committees to the total number of compensation committee members (EXP_RATIO). The rationale for this proxy is that compensation committee members with prior experience are more likely to have previous exposure to the information necessary to set up proper CEO incentive contracts.

Second, we construct the dummy variable EXCEO_ON_COM, which equals 1 if an ex-CEO is present among the members of the compensation committee in that year, and 0 otherwise. It is likely that having an ex-CEO on the compensation committee makes the committee more knowledgeable and informed about compensation-setting practices. This is consistent with Fich (2005) and Fahlenbrach, Minton, and Pan (2011), who show that directors who are former CEOs have significant firm-specific knowledge, but unlike other inside directors, who also have firm-specific knowledge, former CEOs do not depend on the current CEO. Moreover, CEOs tend to be more aware of peer firms' strategies, which can be useful for designing proper RPE performance peer groups.

Finally, we construct INDUSTRY_EXPERT_COM, which is the percentage of independent directors on a board's compensation committee with industry expertise. An independent director has industry expertise if he or she has previously held a director or top-executive position (CEO or chief financial officer (CFO)) at another public firm in the same industry classification as the firm on whose board he or she sits. Given the within-industry similarities in CEO compensation contracts, as well as industry-specific risk factors that are the key to choosing appropriate peer groups, boards with more directors with industry expertise on the compensation committee are more likely to possess the necessary information to design appropriate CEO incentive contracts. Moreover, Wang, Xie, and Zhu (2015) find that firms with compensation committees with more industry expertise are associated with improvements in directors' ability to perform their monitoring function (e.g., reducing CEO excess compensation, increasing CEO turnover–performance sensitivity, etc.).

In column 1 of Table 14, we interact IND_DUMMY with EXP_RATIO and find that this interaction term has a negative and statistically significant coefficient. This result indicates that firms with a higher level of compensation committee experience have a weaker relation between consultant independence and CEO PEI. This finding is consistent with more experienced boards benefiting less from retaining an independent consultant. In column 3, we replace EXP_RATIO with EXCEO_ON_COM. As with EXP_RATIO, the coefficient on the interaction

[43] If we instead employ a specification similar to those in Table 3, we find qualitatively similar results.

[44] Because we are able to construct these three proxies for fiscal years 2008 and 2009 only, the sample is reduced to 320 firm-year observations. When we use IND_RATIO as the measure of consultant independence, the sample further reduces to 207 firm-year observations.

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TABLE 14

Independent Advice and CEO Equity Incentive Pay: Compensation Committee's Experience

The sample in Table 14 consists of 320 firm-year observations from 2008 and 2009. All the specifications are estimated as ordinary least squares (OLS) regressions. The dependent variable in all specifications is PEI. EXP_RATIO is the ratio of the number of experienced compensation committee members who have previously served on other compensation committees to the total number of compensation committee members. EXCEO_ON_COM is a dummy variable that equals 1 if at least one former chief executive officer (ex-CEO) is present among the members of the compensation committee in that year, and 0 otherwise. INDUSTRY_EXPERT_COM is the percentage of independent directors on a board's compensation committee with industry expertise. An independent director has industry expertise if he or she has previously held a director or top-executive position (CEO or chief financial officer (CFO)) at another public firm in the same industry classification as the firm on whose board he or she sits. All variables are defined in Appendix A. Corresponding *p*-values are reported in parentheses. The *p*-values are based on robust standard errors clustered at the firm level. *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	1	2	3
IND_DUMMY	5.015*	5.985*	5.260*
	(0.083)	(0.069)	(0.077)
EXP_RATIO	2.944*		
	(0.096)		
EXCEO_ON_COM		5.006*	
		(0.083)	
INDUSTRY_EXPERT_COM			9.361*
			(0.072)
IND_DUMMY × EXP_RATIO	−3.627*		
	(0.094)		
IND_DUMMY × EXCEO_ON_COM		−3.952*	
		(0.051)	
IND_DUMMY × INDUSTRY_EXPERT_COM			−10.004**
			(0.046)
STOCK_RETURN	3.210*	3.087*	3.353*
	(0.067)	(0.051)	(0.060)
PAST_STOCK_RETURN	0.911*	0.794	0.868
	(0.097)	(0.134)	(0.121)
ROA	10.207	11.971	10.753
	(0.173)	(0.120)	(0.149)
ln(SALES)	−14.994***	−15.983***	−15.622***
	(0.000)	(0.000)	(0.000)
LEVERAGE	−17.858*	−18.155	−17.624
	(0.090)	(0.115)	(0.112)
STOCK_VARIANCE	17.376	17.930	17.002
	(0.295)	(0.285)	(0.271)
CASH	35.098	34.339	35.283
	(0.113)	(0.130)	(0.126)
SALES_GROWTH	1.246	1.241	1.304
	(0.548)	(0.535)	(0.521)
TENURE	1.129*	1.107*	1.009*
	(0.095)	(0.091)	(0.097)
CAPEX	19.565	19.979	19.628
	(0.682)	(0.694)	(0.707)
INDEPENDENT_BOARD	1.033	1.100	1.116
	(0.277)	(0.306)	(0.293)
CO-OPTED_BOARD	−1.506*	−1.482*	−1.379*
	(0.078)	(0.089)	(0.092)
BOARD_SIZE	−0.236	−0.217	−0.225
	(0.303)	(0.361)	(0.283)
CEO_AGE	1.004	0.995	1.010
	(0.126)	(0.135)	(0.128)
BUSY_BOARD	−0.017	−0.016	−0.017
	(0.514)	(0.538)	(0.542)
BOARD_AGE	0.249	0.239	0.221
	(0.385)	(0.400)	(0.419)
NUMBER_OF_CONSULTANTS	0.752	0.776	0.765
	(0.499)	(0.484)	(0.482)

(continued on next page)

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TABLE 14 (continued)
Independent Advice and CEO Equity Incentive Pay: Compensation Committee's Experience

	1	2	3
Year and industry dummy	Yes	Yes	Yes
Intercept	29.344*** (0.000)	30.542*** (0.000)	29.273*** (0.000)
N	320	320	320
Adj. R^2	15.3%	14.8%	15.5%

term (IND_DUMMY × EXCEO_ON_COM) is negative and statistically significant. Thus, the positive impact of IND_DUMMY on PEI is significantly reduced when an ex-CEO sits on the compensation committee. These results remain substantially unchanged when we replace EXP_RATIO with INDUSTRY_EXPERT_COM in column 3. This suggests that boards whose directors have greater industry expertise, and thus are more likely to possess the expertise required to design effective executive compensation contracts, benefit less from hiring an independent consultant.

To summarize, the results in Table 14 support the prediction that the positive relation between independent advice and managerial incentives is decreasing in the level of experience and expertise of the compensation committee. This 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 and need for other means of corporate governance (Duchin, Matsusaka, and Ozbas (2010), Harris and Raviv (2008)).

V. Conclusion

This article establishes four key results on executive compensation consultants. First, hiring a consultant leads to higher PPS and RPE in CEOs' compensation contracts. These effects are stronger when the consultant is independent. Second, using a quasi-natural experiment that isolates the impact of independent advice on managerial incentives, we show that hiring an independent consultant leads to boards granting more incentive pay to their CEOs. This implies that independent advice has an impact on managerial incentives that cannot be explained by self-selection alone. Third, independent advice leads to lower CEO pay. Fourth, we find that despite the benefits of independent advice, independent consultants may not be hired due to the influence of powerful CEOs or because boards already possess adequate expertise.

These results are consistent with a simple incentive-contracting framework in which the board lacks some key information required to design efficient compensation contracts, and a consultant's provision of this information helps the board to better tie the CEO's pay to performance. The CEO, who may have access to this valuable information, could act opportunistically and may not reveal his or her information to the board. Moreover, an affiliated consultant, due to cross-selling incentives, may act in the interest of the CEO. Consistent with this, we find that the quality of advice increases with the consultant's level of independence, which manifests itself in a positive relation between the level of consultant independence and CEO incentive pay.

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The salient feature of this article is that it provides a setting that helps to identify the causal effect of independent advice on CEO compensation. Using the quasi-natural experiment of Mr. Hugessen's separation from Mercer in Canada, we show that independent advice increases CEOs' PPS and RPE. Overall, although the identification strategy is not a "pure" controlled experiment, we believe it takes an important step toward disentangling the endogenous relationship between independent advice and CEO compensation.

Although this article uses Canadian data, there is no reason to believe that this effect is unique to Canada. However, unfortunately, no equivalent experiments are available in the United States, despite the changes in the rules governing the disclosure of consulting fees and the emergence of independent consultants, such as Pay Governance LLC and Meridian Consulting as spin-offs of Tower Watson and Hewitt Associates. Both these events are tainted by significant endogeneity concerns because only some firms switched to hiring the newly independent consultants. Thus, unlike in our article, it is not possible to separate the impact of independent advice on CEO pay from the selection effect of choosing to switch to independent consultants.

The finding that independent consultants can affect CEOs' pay and better align CEOs' incentives with those of the shareholders may not come as a surprise. But, to the best of our knowledge, previous articles do not provide evidence that suggests a causal relation between independent advice to the board and CEO compensation, instead only documenting an association between hiring consultants and CEOs' level of pay. Moreover, prior research does not study the effect of independent consultants on incentive compensation. This article fills these voids in the literature.

In summary, our analysis suggests that independent advice significantly enhances the board's ability to align CEOs' incentives with those of shareholders. These 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 article 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 CEOs may still remain influential in the consultant hiring process, and even independent consultants may begin to succumb to the CEOs' interests. Therefore, it would be interesting to examine whether the benefits of having an independent consultant persist in the future.

Appendix A. Variable Definitions

BOARD_AGE: The average age of the directors serving on the company's board.

BOARD_SIZE: The number of directors serving on the company's board.

BUSY_BOARD: The fraction of directors serving on three or more outside boards.

CAPEX: Capital expenditures over total assets.

CASH: The ratio of cash plus short-term investment over total assets.

CASH_COMP: The sum of salary and bonus.

CCGG: The proportion of the firm's common shares owned by the members of the CCGG.

COMP_FEES: The sum of fees charged by consultant(s) to provide compensation-related advice to the board.

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CONS_DUMMY: A dummy variable that equals 1 if at least one consultant was retained in that year, and 0 otherwise.

CO-OPTED_BOARD: The fraction of directors on the board appointed after the current CEO took office.

CORR(PEERS, FIRM): The 1-year lead correlations between average peers' and firms' monthly stock returns computed over the 12 months subsequent to the RPE grant date.

DUAL_CLASS: A dummy variable that equals 1 if the firm has dual-class shares, and 0 otherwise.

EQUITY_COMP: The sum of grant-date value of restricted stock awards and the Black–Scholes value of options.

EXCEO_ON_COM: A dummy variable that equals 1 if at least one ex-CEO is present among the members of the compensation committee in that year, and 0 otherwise.

EXP_RATIO: The ratio of the number of experienced compensation committee members who have previously served on other compensation committees to the total number of compensation committee members.

IND_DUMMY: A dummy variable that equals 1 if at least one independent consultant was retained in that year, and 0 if only affiliated consultants were retained.

IND_RATIO: The ratio of OTHER_FEES to COMP_FEES multiplied by -1.

INDEPENDENT_BOARD: A variable that equals 2 when at least two-thirds of the board members are independent of management, equals 1 when less than two-thirds but more than half of the board members are independent, and equals 0 when less than half of the board members are independent. Employees of the company, executives of any affiliated company, and members with kinship to the CEO are considered insider board members and, thus, not independent.

INDUSTRY_EXPERT_COM: The percentage of independent directors on a firm's compensation committee with industry expertise. An independent director has industry expertise if he or she has previously held a director or top-executive position (CEO or CFO) at another public firm in the same industry classification as the firm on whose board he or she sits.

LEVERAGE: The ratio of long-term debt (book value) over total assets.

ln(SALES): The natural logarithm of the firm's annual sales (in millions of Canadian dollars).

MATCH_ON_ASSETS: A dummy variable set to 1 if the RPE-granting firm's total assets are within 50%–200% of the candidate peer's total assets, and 0 otherwise.

MATCH_ON_INDUSTRY: A dummy variable set to 1 if the RPE-granting and candidate peer match in terms of their industry affiliation, and 0 otherwise. The industry classifications are energy, industrial, financial institutions, consumer discretionary, mining & materials, utilities, telecommunication services, information technology, and health care.

MATCH_ON_LEVERAGE: A dummy variable set to 1 if the RPE-granting firm's leverage ratio is within 50–200% of the candidate peer's leverage ratio, and 0 otherwise.

M/B_RATIO: The ratio of the 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 the market value of equity.

NUMBER_OF_CONSULTANTS: The number of compensation consultants retained in that year.

OTHER_FEES: The sum of fees paid by the management to the consultant(s) for services not related to executive compensation.

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PAY_COMPLEXITY: A dummy variable that equals 1 if the board used options in the CEO's compensation package in that year, and 0 otherwise.

PEER_CORRELATION: Historical monthly correlation of potential peer and RPE-granting firm stock returns computed over the 12 months preceding the RPE grant date.

PEER_RETURN: The average stock return of firms included in the performance peer group. When the choice of peer firms is not disclosed, the S&P/TSX ETF of the same industry is used.

PEI: The dollar-value change of the stock and options held by a CEO per $1,000 shareholder return.

ROA: The ratio of earnings before interest and taxes to the book value of common equity.

SALES_GROWTH: The annual growth in sales volume.

SEGMENTS: The number of business segments the firm operates in.

STOCK_RETURN: The firm's annual stock return.

STOCK_VARIANCE: The stock return variance based on the monthly return of the past 5 years.

TENURE: The number of years the CEO has been in office.

TOTAL_COMP: The sum of salary, bonuses, the grant-date value of restricted stock awards, the Black–Scholes value of granted options, and other pay (e.g., long-term incentive plans, insurance policy premiums, and medical expenses).

Appendix B. 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 an IND_RATIO of −10.1 for 2009 and an IND_RATIO of −16.3 for and 2008. CONS_DUMMY and IND_DUMMY are equal to 1 and 0 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 options 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.

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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 firm's management. The IND_RATIO is equal to 0. The CONS_DUMMY and the IND_DUMMY are both equal to 1.

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. In this example, the benchmarking peer group is different from the performance peer group. The performance peer group, in this example, is identified by the return on capital (ROC) peer group. In order to measure PEER_RETURN, we 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

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