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Do heavily-unionized companies compensate their CEOs less in periods of financial distress? Evidence from Canadian companies during the financial crisis.

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ABSTRACT

This paper studies the strategic interaction between employee stakeholders, in particular labor unions, and top management, and evaluates the effect of the two parties' inherent competitive rent-seeking behavior on CEO pay. Using a panel of firms listed on the S&P/TSX composite index, this paper finds that CEO compensation withstood the financial crisis despite lower and even negative corporate performance. Further, heavily-unionized companies were associated with higher CEO pay in terms of non-equity elements such as salary and pension allocations. The presence of unions had no observed effect in reducing bonuses, stock options, and restricted stock units. These findings have implications for the debate on income inequality, and the power of unions to bring about change.

Keywords: Executive labor market, Economic inequality, Executive pay, Labor union, Great Recession.

In publicly-listed companies where ownership is dispersed, there is an agency conflict where managerial prerogatives may not be perfectly aligned with shareholder interests. To monitor and manage this conflict, the task of hiring and incentivizing managers and other executives is delegated to an elected Board of Directors, acting on behalf of the shareholders. Such delegation and its impacts on firm performance and executive compensation packages have been studied by scholars from various fields of research and practice. While some research (e.g., Rosen (1990); Hubbard (2005); Gabaix and Landier (2008)) draw closer to labor market efficiency that rewards executives for their differential human capital, others (e.g., Jensen (1993); Hall and Murphy (2003); Bebchuk and Fried (2006)) argue that such delegation to the Board leads to excessive executive compensation.

If labor markets are inefficient in terms of allocating and rewarding managers, in particular CEOs who are typically the highest paid and most visible executives, this then begs the following questions: How crucial is board effectiveness in terms of setting up 'fair' compensation packages? How do other stakeholders such as the media, the public, and employees react to and influence board decisions? Can labor unions, which generally compress pay (Freeman and Medoff (1984)), exert significant political pressure on the compensation committee of the board of Directors to curb 'excessive' CEO pay?

While the relationship between corporate governance and CEO pay has been studied in various economic and financial contexts (e.g. Useem (1984); Zajac and Westphal (1994); Davis (2003); Hermalin (2005); Finkelstein et al. (2009)), there is an interesting literature re-emerging on the influence of labor unions on corporate decisions and corporate performance. Jensen and Murphy (1990) posit that unions can implicitly affect CEO compensation because public disclosure of such compensation practices would reduce the information asymmetry that unions and workers have with regards to company health and future projections. Higher CEO pay would give unions greater power in bargaining and collective agreement negotiations. There is evidence that unions care about 'excessive' CEO compensation. The largest American-based union federation, the AFL-CIO for example, frequently writes to its members and to the press about high CEO pay and rising income inequality. The issue could not be more timely given the effects

of the financial meltdown since 2007. There is some prior research that has looked at the effect of unions on executive pay. Gomez and Tzioumis (2006); Ertimur et al. (2011) find that unions do succeed in curbing CEO pay but the studies, while theoretically sound, are again largely US-focused and cannot precisely identify how the strength and not just the presence of unions affects CEO pay.

I attempt to fill in the aforementioned gaps by analyzing governance mechanisms, union pressure and their relationship to the compensation of CEOs of firms listed on the S&P/TSX composite index from 2008 to 2011. This paper belongs to the stream of studies that have looked into the non-economic determinants of CEO compensation (e.g. Yermack (1996); Core et al. (1999); Bertrand and Mullainaithan (2001); DiNardo et al. (2000); Singh and Agarwal (2002). By and large, most studies have focused on board structures and very few papers have looked into the impact of indirect political constraints exercised by the media as well as employees, who are major company stakeholders. One can surmise that the primary reason for this paucity of studies is that measuring employee interest in CEO compensation is empirically difficult. Also, big corporations in the United States have very few strong unions which can exert pressure on compensation committees. This paper, turning to Canada (a country with a relatively high union density vis-a-vis the US) during the years of the financial crisis, considers the governance structures of corporations listed on the S&P/TSX composite index and also includes this employee dimension by considering the extent of unionization across companies.

Governance and CEO Compensation

Analysis of the compensation committee, the board of directors and general governance structures have given rise to a number of papers, mostly in Finance journals, establishing the link between several governance attributes and CEO compensation. Governance attributes include, but are not limited to, independence of board members, relation of such members with company affiliates, committee independence, CEO/Chair split and Board/Director Evaluation. The relationship between such attributes and CEO compensation is mixed in the literature. Jensen (1993) argues that compensation decisions should be delegated to outside directors because they are better able to make rational and unbiased judgments about these situations. However, the

same paper also notes that outside and so-called independent directors tend to be nominated by the CEO and as such may have a duty of obligation towards the latter. In such cases, the unbiasedness may be called into question. Indeed, Main et al. (1995) suggests that CEOs "manage" their compensation committees to extract higher pay for a given level of performance. This can be done through board interlocks, and other formal professional networks. In the same light, Hermalin (2005) argues that the surge in CEO pay is due to tighter corporate governance: to compensate for the extra scrutiny from the board members, CEOs get compensated with higher pay. Newman and Mozes (1999) do not find evidence that levels of CEO compensation is greater in companies that have "insiders" on the compensation committee. The authors, however, do find evidence that the relationship between CEO pay and performance is more favorable toward the CEO, at the expense of shareholders, when there are "insiders" on the compensation committee.

Most papers, however, report a negative correlation between the strength and independence of governance structures and CEO compensation. Core et al. (1999), for example, use governance and compensation data for publicly-traded US companies and find that CEOs earn greater compensation when governance structures are weak, which exacerbates the agency problem. CEOs tend to be compensated at a higher level if they also chair the board of directors, if the board size is bigger and if the board is composed of a number of outside directors who have been appointed by the CEO. Given such governance problems and corporate scandals, the United States Securities and Exchange Commission embarked upon a series of requirement alterations much in line with the provisions of the Sarbanes-Oxley Act. Using these regulatory changes as a quasi-experiment, Chhaochharia and Grinstein (2009) use a difference-in-difference approach and report that firms that were most affected by Board provisions emanating from the Sarbanes-Oxley Act drastically reduced their levels of CEO Compensation, i.e. those companies, which had to improve their governance structures to comply with the new rules, significantly reduced the level of pay of their CEOs. Even though some scholars argue that CEOs may be compensated at a higher rate because of stricter governance mechanisms, most papers in this area of the literature have reported that stronger governance is associated with lower "excessive" pay.

Employees/Unions acting as implicit regulators of CEO pay

Employees represent a powerful stakeholder group who may heavily influence the HR department as well as the compensation committee on the board of directors. In the labor relations literature (e.g. Freeman and Medoff (1984)), it is accepted that if employees are represented by unions, they tend to act as a politically powerful counterbalance to managerial power. In their seminal paper, Jensen and Murphy (1990) set out how unions may impact workplace-level policies and, by extension, apply considerable pressure on the corporate headquarters' executives and directors. Unions position themselves as fairness activists and if they perceive that executives are being overpaid potentially at the expense of employee benefits, they can demonstrate their show of strength mainly through threats to disrupt the activities at the workplace. Such union pressure can be formally exercised during collective bargaining negotiations through public awareness campaigns via blogs, social networking websites, political maneuvering and public policy research. For example, Ertimur et al. (2011) find that union pension funds can use shareholder proposals and vote-no campaigns to constrain executive pay.

At the negotiating table, unions may also be able to anchor higher (make fewer concessions and bargain more strongly) if they have clear evidence that the earnings of executives and the CEO, in particular, have been going up during the period covering the previous collective bargaining agreement (Jensen and Murphy (1990)).[1] DiNardo et al. (2000) use a sample of publicly-traded US companies between 1971 and 1982 and initially report that union strength, measured in terms of union density at the firm level, is negatively correlated with CEO compensation, i.e. the stronger the union, the lower is the level of CEO compensation. However, after controlling for industry and firm fixed effects, their results become insignificant and even suggest a positive relationship between union strength and CEO compensation. The latter is more akin to the hypothesis in Hermalin (2005) where one would think that CEOs have to be

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[1] The AFL-CIO website, for example, has a database dedicated to CEO compensation. Workers and unions can verify the compensation of their CEOs. See http://www.aflcio.org/Corporate-Watch/CEO-Pay-and-the-99

compensated for the extra pressure of having to deal with stronger unions. Singh and Agarwal (2002), in a contextually different paper, looks at 86 Canadian mining and manufacturing firms listed on the TSX in 1996. After controlling for firm size and performance, the authors find that union presence is positively correlated with CEO base salary, but uncorrelated with the other components of CEO pay. These findings give impetus to the "ratchet" effect whereby unionized firms, which are generally associated with higher wages than non-unionized ones, drive up the labor costs starting from the workers and going all the way through to the executives.

One of the papers that is closest to this study is Gomez and Tzioumis (2006), which extends the previous literature on unionization and CEO compensation by using a panel of publicly-listed US companies between 1992 and 2001. The authors match the compensation data with the data on workplace unionization from the Bureau of National Affairs (BNA) and conclude that union presence is significantly negatively correlated with stock option values and hence total CEO compensation. Although there is a positive relationship between CEO base salary and union presence, this effect is small and is, in fact, wiped out, after accounting for stock options.

Unions and other corporate policies

Unions, and management in particular, often restrain disseminating information about the (financial) state of the company in order to advance their own interests, sometimes at the expense of the firm. For example, Dasgupta and Sengupta (1993); Perotti and Spier (1993) theoretically show that firms reduce cash flows available to unions by issuing more debt. Bronars and Deere (1991); Hanka (1998); Matsa (2010); Myers and Saretto (2011) find evidence to support this theory. On the other hand, unions are known to assert their collective power to reduce the cash flow of their employers. For example, Hirsch (1992) finds that unionized firms invest less in R&D while Bradley et al. (2015) find that unionized companies innovate less. As a result, it is sometimes posited in the literature that unionized companies have relatively lower profitability and shareholder value (Ruback and Zimmerman (1984); Abowd (1989); Hirsch (1991); Lee and Mas (2012)).

Hypothesis Development

This paper attempts to combine governance and unionization in order to capture the effects of both mechanisms on CEO compensation. While not establishing a causal relationship, this paper looks at firms in the post-financial scandal period and their CEO compensation practices during a recessionary period to track down how differences in governance practices and unionization were associated with differences in CEO compensation across firms. Given that Board of Directors are elected to be representatives of shareholders, one would hypothesize that they will monitor CEO performance and CEO pay and align managerial actions with shareholder interests. These interests are essentially geared towards increasing firm value. As such, a generic first set of hypotheses (more prominent with Accounting and Finance scholars) which are in line with Jensen and Murphy (1990) and Core et al. (1999) but contrary to Hermalin (2005) will be:

> **Hypothesis 1.** *Companies with stronger governance structures in terms of CEO/Chair split, and independence of the audit and compensation committees reward their CEOs less than companies with poorer governance*

As for unions, there are two basic channels, one direct and the other indirect, by which unions are linked to executive compensation. The direct channel is based on the pressure that unions can bring to bear within the firm and its various establishments. This pressure, as noted by Jensen and Murphy (1990) is traditionally exercised through the voicing of fairness and equity concerns and the threat of industrial disruption at the workplace, either of which would be expected to occur if union members perceive executive compensation as excessive. In this context, union pressure is observed during formal collective bargaining negotiations, but it can also be channeled informally through local stewards, public awareness campaigns and even through the sponsorship of journalism and public policy research critical of alleged managerial excesses (Katz et al. (2003)). This direct channel would imply that unions would tend to reduce CEO compensation. However, the relationship between unions and CEO pay can be more complex within this direct channel of influence. A breakdown of the different elements of CEO compensation is needed to comprehend how this direct channel may operate.

Research that has emanated from the seminal work of Freeman and Medoff (1984) would identify a couple of ways in which unions may directly affect CEO pay. On the one hand, as Singh (2002) identified, there could be a ratchet effect in terms of the fixed components of CEO pay (salary and pension). The union wage premium that exists in heavily-unionized firms as opposed to weakly-unionized firms would raise salaries and pensions of all employee ranks up to and including the CEO. This ratchet effect, or something akin to a compensation differential where the CEO is paid a higher fixed income because he/she is expected to deal with several unions and several bargaining rounds, would be in line with theories about *what unions do* to CEO pay. As such, the first hypothesis linking unionization to CEO pay would be:

Hypothesis 2a. *Companies which have higher levels of union density pay their CEOs higher fixed incomes in terms of salaries and pension benefits*

On the other hand, however, a further direct effect put forward by Jensen and Murphy (1990) posits that unions perceive high executive pay as a signal for the firm's financial health. They employ this as a justification for increased wage demands during negotiations. As such, to counter such possibilities, compensation committees and senior Board members would be more cautious when negotiating CEO pay. Unions, much like the public oversight faced by executives of firms operating within regulated industries, are predicted by Jensen and Murphy to truncate executive remuneration and make it less sensitive to firm performance. This would imply that bonuses, which are tied to company performance, and stock options and restricted stock units, which are tied to market valuation and long-term growth potential, would be lower for CEOs who work in heavily-unionized companies.

Hypothesis 2b. *Companies which have higher levels of union density pay their CEOs lower variable incomes in terms of bonuses, options, and restricted stock units*

Overall the relationship between unionization and CEO pay is, therefore, indeterminate. It depends on which of the fixed or variable components of pay dominate the other. In the current period that is studied, a recession would tend to keep the fixed components stable while the

variable components would suffer. With the theoretical underpinning that unionized employees' preference for fixed over variable pay (Freeman and Medoff (1984)) can ratchet up to the upper echelons of management, the recessionary phase which affected companies during the years 2008 till 2010 would itself affect the variations in CEO pay across heavily-unionized and lesser-unionized companies.

Hypothesis 2c. *CEOs of heavily-unionized firms would earn higher total compensation during the financial crisis when variable components of pay decline substantially relative to the fixed components of pay*

The second channel by which unions and executive compensation could be linked is indirect and relates to the adverse consequences that union presence can have on profitability and share price fluctuations, which in turn, determines bonuses and the stock-related value of executive compensation. By and large, it appears that financial market antipathy toward unions stems not so much from adverse productivity effects (Kuhn (1985, 1988)) or lower R&D spending, but rather from the expectation that union influence over a firm's governance leads to inflexibility and greater redistribution of rents toward workers. Heavily-unionized firms (or even firms that have been the targets of organizing drives) are perceived as having to devote considerable resources to dealing with unions, or in trying to counteract their spread within the organization. Through this higher rent-seeking behavior of unions at the expense of shareholders, unions will act as a wedge between profitability and CEO pay, whereby unions seeking a more equal redistribution of profits will reduce the residual profits available to shareholders. As such, components of CEO pay such as bonuses, options and restricted stock units will be negatively affected. This is akin to conceptualizing unions as a moderating variable in the relationship between profitability and CEO pay.

Hypothesis 3. *The positive relationship between profitability and the bonus and equity components of CEO pay is smaller when union density is higher, and vice-versa*

Data, Variables, and Methodology

Data

While boards and compensation committees can reward their CEOs in various forms, most compensation packages consist of a base salary, an annual bonus, stock options, restricted stock units, long-term incentive plans, other cash payments (severance etc.), and defined pension benefits or contributions. Data on governance and compensation were generously provided to me by the Clarkson Centre for Business Ethics and Board Effectiveness (CCBE). They collected data on CEO compensation for the firms listed on the S&P/TSX Composite in 2011 and have been tracking the compensation of those CEOs as far back as 2005. The advantage of tracking compensation this way is that my model and estimates will not be biased by firms entering and leaving the sample after a short period of time. In other words, the data consists of a subsample of firms on the S&P/TSX Composite which have been on the Index since 2005. The CCBE compensation data consists of salary, bonuses, pension allocations, options, restricted stock units, long-term incentive plans, and total compensation. Each component is evaluated at the beginning of the year when compensation contracts are set out and published in a mandatory corporate proxy circular. Typically, for a given company/CEO, the salary is fixed, the bonus is tied to accounting results and the CCBE follows most academic researchers and values stock options and restricted stock units using the Black-Scholes model.

The CCBE has also been collecting and using their governance data to rate companies across Canada. Their estimates are very meticulously constructed and are in fact subject to further scrutiny from Corporate Directors and the national newspaper *The Globe and Mail*, which publishes the overall governance scores for each company in its yearly publication called *Board Games*. Their scoring is based on a proprietary weighting index of governance attributes such as number of independent Directors, independence of committees, and percentage of women on the Board. Essentially, for each attribute, each company in a given year is allotted a score of 100 and for each governance "miss" or bad performance from this benchmark, marks are deducted off this top score of 100. For example, if the audit committee has a member who is not independent, the company will score less than 100.

The union data was much more difficult to assemble, and these difficulties have been pointed out in previous research (e.g. DiNardo (2000) and Gomez (2006)).   In Canada (and the U.S.), unionization takes place at the plant or workplace level, whereas CEO pay is determined at the corporate level. Linking these two is a methodological challenge. Plants, workplaces and subsidiaries are not usually identified to the firm from databases that collect union agreements. It belongs to the researcher to manually link each plant to a firm (in the relevant case). Gomez (2006) did this, but it restricted the union variable to a dichotomous measure of union absence versus union presence. Other research (e.g. Singh (2002)) restricted their study to one particular industry. Given the breadth of this study and its use of union density rather than union presence, I did the following to fill in my unionization measure. First, I used company-level unionization data from Thomson Reuters' ASSET4 database. The dataset starts from the year 2007 and data has been collected since then for Canadian companies. Earlier data is sparse and cannot be relied upon. Nonetheless, even in the year 2007 and onwards, there are a number of companies which have missing information. To combat the missing data problem, I hand-collected data and filled in only those companies which have zero union agreements, therefore zero density, between the years 2007-2010. Collective bargaining is a provincial jurisdiction and this hand-collected part of the unionization data was put together from the Ontario Ministry of Labour. Ontario is Canada's biggest province and this is perhaps why Canada is best suited for studies that match provincial-level workplace data to higher level corporate data. Most companies that are listed on the S&P/TSX Composite have their headquarters in Ontario and as such they would have a significant number of subsidiaries in Ontario. While restricting unionization to Ontario only is not the most appropriate methodology, it is a defensible position in that corporations would be most heavily scrutinized by their nearest monitors. Further, I only use this measure for non-unionized companies when I ascertain that these companies have zero unions. I ascertain that some company-year observations have zero union density by checking the websites and proxy circulars of those relevant companies. Other than the value of zero, all union density measures at the company-year level are coming from Thomson Reuters ASSET4[2].

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[2] ASSET4 does have some accurate zero union-density information, but I further verify this with the aforementioned

The financial data (economic determinants of CEO pay) were put together by matching company ticker and names with records from DataStream. The S&P/TSX Composite had 204 firms listed in 2011 and I initially follow all of them in their compensation packages back to 2005. However, with certain income funds and companies not being evaluated by the CCBE in terms of governance, and with missing values with regards to unionization and other financial records emanating from DataStream, my final sample consists of an unbalanced panel of 125 firms over 4 years with a total of 430 observations. All nominal pay data are adjusted for inflation using CPI indices. The sample of firms is representative of the S&P/TSX Composite in that most firms are large ones from various industries. However, there is a slight dominance of firms in the financial services, and agricultural and mining industries. This is typical of the S&P/TSX Composite, which is why industry controls are important and are used in the analyses.

Variables

The compensation variables that will be used in this study have been covered in the previous section and consist of salary, bonus, pensions, options, restricted stock units, long-term incentive plans, and total compensation. The economic determinants of CEO compensation used in the literature (e.g. Core et al. (2008)) are size and some performance measures. I follow the previous literature and look to proxy firm size with different measures including sales, total assets and market capitalization. Such data is obtained from DataStream at the firm-year unit of analysis. Performance measures include return on assets (such returns are before interest and taxes) and return on equity. These measures are also obtained from DataStream.

The governance attributes that will be used in this paper are: CEO/Chair split, audit and compensation committee independence.[3] CEO/Chair split is an attempt to measure whether the Board can operate independently of the main actors/management of the company. A large deduction (-10) is made from the overall score of 100 if the CEO and Chair of the company are

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data collection procedure.

[3] I avoid using the Independence of Directors as a measure because of the fact that many of those independent directors may be handpicked by the CEO. However, results when independence is used as a governance attribute yield no different economic results to the ones reported in this paper. I also avoid using the CCBE overall score because it is not very intuitive to interpret given that I have no theoretical basis to justify the use of their proprietary weights in constructing these scores.

the same person. The CCBE deducts 7 points if there is a split between the CEO and the Chair but they are still related (usually because of some Board interlocks). A smaller deduction (-5) is made if the company has appointed an independent lead director to chair Board meetings. The best scenario in terms of governance structure is where a company has a fully independent lead director and a chair and a CEO who are not the same individual. In such a case, no point is deducted from the overall score of 100.

The audit and compensation committee independence work in the same way. If a Board member sitting on either of these committees is related (through interlocks or through kinship) to a senior executive of the company, then the CCBE deducts 10 points off the overall score for this variable. These two committees are important because full-independence of a company's audit and compensation committees is necessary to ensure that executive compensation and company accounting are handled without conflict of interest between management and shareholders.

In terms of unionization at the firm-year level, I use a combination of ASSET4 and the Ontario Ministry of Labour data. The basic union density index is calculated by dividing the number of unionized employees by the total number of employees that are under contract from a particular company in a particular year.

Table 1 shows the means of the CEO compensation components by year.[4] Average (mean) total compensation fell by approximately 3.97% from 2008 to 2011 as the recession hit but from 2010 to 2011 there was a slight increase as firms recovered and CEO pay followed suit. Most of the fall was explained by a fall in options granted (-18.3% from 2008 to 2011). Other than options falling and bonuses staying almost the same, there were increases in other components of CEO pay during the period in this study. For example, salary went up by 7.62%, and restricted stock units increased by 12.3%. Generally though, a fall of under 4% mostly agrees with Mackenzie (2011) that CEO pay withstood the recession: my data seems to suggest that salaries went up to counter the falling values of options, which are usually the biggest component of CEO pay.

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[4] There is an additional component of CEO compensation termed "other". It is relatively insignificant (contains mostly zeros) and has been left out of this analysis.

Insert TABLE 1 about here.
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This observation and the fact that returns to assets and equity (Table 2) fell post 2007 further

leads support to the hypothesis put forth by Bebchuk and Fried (2006) in that pay does not

necessarily vary with performance.[5] However, as will be described in the next section on

methodology, rather than use the absolute value of returns on assets as the measure of

profitability that affects CEO compensation, I will use the difference between return on assets of

firm i at time t minus the industry average return on assets at time t. Indeed, research such as

Core et al. (2008) suggests that CEOs are paid according to their relative industry performance

rather than absolute performance. In periods of financial distress such as in the period being

studied, it is possible that a firm outperforms its competitors even though its profitability may

have fallen. In such a case, it would not be uncommon to find a CEO be rewarded for above

average performance (Core et al. (2008)).

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Insert TABLE 2 about here.
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Methodology

This paper attempts to explain variations in levels and rates of change in CEO pay emanating

differences in governance structures and unionization. The following random-effects

specification is run over an unbalanced panel of 125 firms in the years 2008 to 2011[6]

$$lnC_{it} = \alpha + \beta lnFirmSize_{i,t-1} + \gamma(ROA_{i,t-1} - IndustryAverageROA_{i,t-1}) + \sum_{j=1}^{3} \delta CEO{-}ChairSplit_{ij,t-1}$$
$$+ \zeta AuditCommIndependence_{i,t-1} + \eta CompCommIndependence_{i,t-1}$$
$$+ \mu UnionDensity_{i,t-1} + \nu IndustryControls + \varepsilon_{it} \quad (1)$$

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[5] I am measuring the economic and non-economic determinants of pay from 2007 to 2010 given that compensation contracts are usually set out at the beginning of every year. So it seems plausible that the compensation contract set out for 2008 would be based on the firm performance in 2007 and in earlier years. Summary statistics for measures of corporate governance are available upon request.

[6] I am running a panel random-effects regression because of time-varying heterogeneity across firms and because the research question seeks to compare across firms rather than within firms. Further, the changes within firm across 4 years is small, especially along measures of union density. From a methodological point of view, a Hausman test revealed that random effects is more efficient than fixed effects ($p > 0.05$).

where C_{it} can represent either one of base salary, annual bonus, pension contribution, stock options, restricted stock units, long-term incentive plans or total compensation of the CEO of firm i at time t. All dependent variables have been transformed using the inverse hyperbolic sine function. The standard in the literature is to use the log transform. This serves at least two purposes: 1) it smoothes the compensation measures given that, from Table 1, it was apparent that the dispersion between observations was rather high, and 2) it makes the interpretation easier in terms of elasticities. However, I cannot do the log transform for some of my variables such as bonus, options, RSU, and pension. Some firms in some years awarded their CEOs zero in some of these compensation elements. As such, I use the inverse hyperbolic sine transform which is defined at zero, and which serves the same interpretation as a log transform. j denotes the categories of CEO-Chair Split that will be used as explanatory variables.

Note that the explanatory variables have been lagged by 1 period given that the compensation variables is set at the beginning of time t. It is more likely that compensation contracts set at time t would look to the performance at time $t-1$ as an indicator of how much leverage the compensation committee has versus the CEO.[7]

With regards to profitability [8] and CEO performance, one of the protocols in setting CEO compensation is that CEO performance is rated by comparing firm performance to average industry performance. In other words, a benchmarking view is used such that if a certain firm X performs better than its peers in the industry, then the CEO gets rewarded for this above-average performance, even if returns of firm X are negative. This is particularly important because during the financial crisis, many firms experienced negative profitability, but some firms outperformed their competitors. As such, one would expect that due to the benchmarking principle, their CEOs would earn a higher bonus or other form of payment such as options or RSU.[9]

The size variable is a rather open-ended one in the literature. Different proxies have been used to measure firm size but I will pick market capitalization over sales and total assets since my

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[7] Using 2-period and 3-period lags yield qualitatively similar results.

[8] I avoid using stock return as a measure because it is highly correlated with asset return and most papers in this literature (see Core et al. (2008)) prefer asset return as a measure of profitability.

[9] Using absolute instead of benchmarked profitability yields similar results in terms of statistical significance.

[9] I ran regressions where size is proxied through sales and total assets and the results are qualitatively similar.

sample (and the S&P/TSX Composite in general) is made up of firms that fall into different 2-digit NAICS categories but a sizeable majority of such firms lie in mining, manufacturing and finance and insurance. Sales for mining firms are not the best proxy for size. An accounting measure such as total assets and/or market capitalization is more robust and captures size more effectively given the sample of firms in question.[9]

Based on the previous literature reviewed by Murphy (1999) and based on my hypotheses developed in Section III, I expect that the sign of the β coefficient for firm size will be positive and around 0.35. I do not expect the γ coefficient (asset return minus industry average) to be significantly correlated with the salary component, but I do expect it to be positively related to the bonus, stock options and restricted stock units components and, hence, also to total compensation. In terms of the governance parameters, I expect the signs of each δ to be progressively negative, implying that the more split the CEO and the Chair, the less will be total compensation and its components. Similarly, if the audit and compensation committees are independent, then I expect CEO compensation to be lower. The union density measure is intriguing. Gomez and Tzioumis (2006) find that union presence leads to lower total compensation, in particular to lower bonuses and stock options for CEOs even though union presence is weakly associated with higher salaries for CEOs. Singh and Agarwal (2002), on the other hand, find that union density is positively correlated with CEO salary but uncorrelated with the other components of CEO pay. If unions are active and are politicizing fairness slogans, one could expect that they would negatively affect the equity components of CEO pay (which are the major share of total CEO compensation as depicted in Figure 1).

Results and Discussion

I first consider total compensation of CEOs as dependent variables. Then, non-equity components are lumped together, and separately equity components are lumped together. This is because unions, and studies about unions and their influence on CEO pay have tended to focus very largely on equity compensation of CEOs (e.g. Gomez and Tzioumis (2006)). Therefore, this paper follows suit by considering these measures. As indicated in the first row of Table 3,

my measure of profitability: return on assets minus the industry average, yields no significant result when the dependent variable is total compensation or total non-equity compensation (salary+ bonus+pension). Interestingly, the observed effect of profitability on total equity compensation (options+restricted stock) is negative.

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Insert TABLE 3 about here.

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Overall, CEO pay seems to be unrelated to firm profitability. It is important to note here that the period 2008 to 2011 was a period where many of the firms on the S&P/TSX Composite Index suffered negative net incomes. Despite that, CEO pay stayed the same or even increased as shown in Table 1. As such, this could explain why the results are insignificant for return on assets. Irrespective of the level of profitability relative to competitors in the industry, CEO pay was mostly unaffected.

The elasticity of total CEO compensation with respect to firm size is 0.39, slightly higher than the typical estimate of 0.35 documented in the review of Murphy (1999). This is driven mainly by the large effect of size on equity compensation (elasticity of 0.499) and on non-equity compensation (elasticity of 0.320).

The governance results indicate that CEOs who also chair the Board are compensated at a lower rate than CEOs who have to answer to an independent Chair. However, this aspect is insignificant or mildly significant for equity components of CEO pay. This result falls in line with the predictions and results from Hermalin (2005) who argued that CEOs are extracting higher compensation because of the high scrutiny they now face. Another way of phrasing the same phenomenon is to posit that some CEOs are tough negotiators and have extracted a higher pay for higher risks to their jobs. This would be akin to one of the predictions emanating from prospect theory, which suggests that firms with a small but above-average performance are willing to pay their CEOs a little more, but a lot less when performance is below average. Such firms would most likely have independent Directors. Independent compensation committees do not have that big of an effect in terms of CEO compensation. One would surmise that the more

independent the audit and compensation committees, the less will be the level of CEO

compensation However, this is not the case. This is perhaps because Boards are wary of

compensation contracts and whether independent or not, compensation committees set

compensation structures that closely follow the market trend. The governance attributes being

largely insignificant open up a number of possible interpretations. First, it could be that the

predictions of Hermalin (2005) apply to the US only and are not verified in the Canadian context

given the sample of firms considered. Variations may be too small (relative to the US) in the

S&P/TSX context, which is why there is almost no observed effect of governance on CEO pay.

Second, if we reconcile the predictions by Jensen and Murphy (1990) and Hermalin (2005),

where the former predicts that better governance is related to lower compensation and the latter

predicts otherwise, it is possible that both are at play. In other words, for a subsample of firms,

governance has a negative impact on CEO pay, whereas for another subsample, governance is

positively related to CEO pay. This would be an additional research question that can be

explored in the future. For this paper, Hypothesis 1 is rejected.

Unionization is associated with higher CEO total compensation. This result was verified by

multiple specification tests using different measures for size and profitability. In all cases, the

trend is the same: unions are associated with firms that pay more in terms of non-equity

components such as salary, and pension. For example, a one standard deviation increase in union

density is associated with an 8.8% increase in total CEO pay without pension.[10] The biggest

driver of this is that unions seem to be related to firms that pay their CEOs higher in terms of

non-equity compensation (salary+bonus+pension). This result, while robust, must be interpreted

in light of the period in which this study was conducted. It is plausible that during the financial

crisis, companies, regardless of unionization, may not have been able to pay options and

restricted units as much as was initially anticipated. There was a fall (or statistical stagnation) in

these payments in 2009 and 2010. Further highly-unionized companies are positively associated

with high non-equity components of CEO pay, which usually remain fixed and represent a small

fraction of total CEO pay. During the recession, these proportions became higher given that the

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[10] This is obtained by multiplying the appropriate coefficient with the average standard deviation of union density from Table 2.

equity components fell in value. This is further shown from the results in Table 4 where union density is positively related to salary and pension. A one standard deviation increase in union density is related to higher salaries and higher pensions by factors of 3.4% and 86% respectively. The relationship to pension allocations is economically very high. There may be a sorting of CEOs happening here or indeed a "ratchet" effect where lower-level employees receive higher wages and benefits (e.g. pensions) which drives up the value of salaries and pensions of the top management team. CEOs of heavily-unionized companies may also be more inclined towards secure and fixed sources of incomes. Hypotheses 2a and 2c are, therefore, supported.[11]

Insert TABLE 4 about here.

Table 4 further indicates that unions are associated with firms that pay their CEOs high in terms of restricted stock units. Restricted stock, being stock that is transferable under certain conditions, are higher for heavily-unionized companies. More research is needed to consider what these conditions are and how they may be related to unions and to periods of distress. The estimate from the regression is very high and points to a one standard deviation increase in union density positively affecting restricted stock units by as much as 134%. Hypothesis 2b is, therefore, not supported.

One could go about comparing the characteristics of heavily-unionized companies with those that are less heavily unionized. If heavily unionized companies are less profitable, then this might be the reason behind the lower levels of CEO compensation in those companies. In other words, it is possible that the indirect effect of unions on CEO pay is still manifest. To address this and answer Hypothesis 3, I use an interaction between profitability and union density on top of the measures used thus far. Table 5 shows that the indirect channel is not validated. In other words, during times of financial distress, as posited by lower returns on assets, unions cannot put pressure and extract rent such that this would lower values of CEO pay. Instead, the results seem to suggest that union rigidities (such as high notice period, severance pay, and constraints on

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[11] Comparisons of Random-Effects and pooled OLS results are available upon request.

fluid employment) play no role in curbing CEO pay. CEO pay has not only withheld financial pressures (as shown by Bebchuk and Fried (2006)) but it has also withheld potential socio-political pressures by unions. A further observation from Table 5 is that profitability, as measured by returns on assets, has no impact on the relationship between unionization and total CEO pay. Comparing the second column of results of Table 5 with the results from Table 3 reveals (via a simple t-test) that the union influence on total CEO pay is statistically (and more-or-less economically) the same whether or not return on assets is included in the estimations.

Insert TABLE 5 about here.

While this study started with the premise that unions can curb high levels of CEO pay, at least in times of financial distress, the results differ in that unions are associated with firms that pay high salaries and pensions to their CEOs. The influence of unions on bonus and option values is statistically zero. These findings are in line with the findings from DiNardo (2000) and Singh (2002). However, they contradict the findings from Gomez and Tzioumis (2006), even though the latter also finds that CEO salary is (weakly) positively linked to union presence. In general, there could be a couple of reasons as to why the main results of union influence on total CEO compensation differs between this paper and Gomez and Tzioumis (2006). One could surmise that the measure for unionization used in the latter paper (dichotomous) is capturing too much noise, and was based in a time period where stock options were soaring.

The results of this paper can be interpreted in several ways. One interpretation in finding that unions are positively related to salaries, pensions and restricted stock units but insignificantly to bonuses and options is that CEOs of heavily-unionized firms may be automatically enrolled into pension schemes that unions value for their own members (and hence for all members of the company). Similarly, the ratchet effect may be at play where higher wages at the bottom lead to higher salaries at the top. Another possibility is that CEOs of heavily-unionized firms have different profiles to CEOs of lower-unionized firms. More research is warranted on voluntary sorting of CEOs into companies. It is plausible that older, more mature, experienced CEOs sort themselves into companies that are heavily unionized, while younger CEOs flock more towards

lower-unionized firms. Older CEOs may also be more risk-averse and may prefer higher fixed incomes and security. They may not care too much about performance-related pay such as bonuses and equity compensation, and may in fact support rather than thwart unions. These are plausible research questions that need further investigation. Perhaps there is an equilibrium in the labor market of CEOs, where the sorting mechanism allocates CEOs to companies that most match their ambitions and levels of risk tolerance.

This paper is not without limitations, however. One of the limitations is that the results are not generalizable to a "normal" period. However, the argument of this paper is that this period by itself offers some interesting insights into patterns of CEO pay. Prior research has found similar results between unionization and CEO pay, and this paper adds to these findings when circumstances are even more difficult. What stems from this paper, amongst other things, is that CEOs of heavily-unionized companies have a different profile of pay, which relies more on fixed components rather than variable components. This theoretical understanding, while not sufficiently explored, had not been empirically tested up to this point in a multi-industry setting where union density rather than union presence is the measure for employee voice.

A further limitation is that this study does not relate a causal model of CEO compensation. Unlike Chhaochharia and Grinstein (2009) who use a difference-in-difference approach to capture the effect of regulatory changes on CEO compensation, this paper's findings are merely correlational in nature. Also, a more complex index of union strength should include, amongst other things, variables such as level of bargaining unit, and international or non-international nature of union. Union density is one of the best proxies but more is perhaps needed to support the theoretical hypotheses that unions can curb CEO pay.

Further, the explanatory power of the various models and dependent variables vary quite a bit. This suggests a number of potential issues. First, some of the models may be misspecified whereby important controls and variables are not considered. This is, however, highly unlikely given that previous studies such as Bebchuk and Fried (2006); Core et al. (2008) use similar variables. Nonetheless, more research is required to look into what determines the levels of salary, bonus, pension and equity compensation. Omitted variables may include the quality of the

labor-management relationship, the corporate culture, and the CEO affiliations. Second, it is also possible that variations in the dependent variables (especially the equity components) are too small which is why these models are performing poorly. The financial crisis may have reduced variability in such data which reduces the explanatory power of the empirical models being considered.

Conclusion

This paper has attempted to look into the relationship between governance, unionization and the various components of CEO compensation in Canada. Controlling for size, performance, industry and firm random effects, this paper finds that CEO compensation is only midly influenced by governance mechanisms. Higher CEO compensation is associated with stronger governance reflecting the hypothesis that CEOs tend to be compensated for the extra scrutiny that they now have to face.

This paper has also looked at the influence of unions on the various components of CEO pay. In a recessionary period, higher union density is associated with higher CEO total compensation. At the same time, the results do not suggest that heavily unionized firms are less profitable than their competitors and that unions are rent-seeking at the expense of the firm.

This research suggests that the ill of income inequality may not be that easy to circumvent. Unions may need to play a different role, or be properly empowered to seek rents that will curb CEO pay and drive more "fairness" and equality in pay distribution. More research is needed to understand how and why unions can affect CEO compensation either directly or indirectly.

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TABLE 1: Summary statistics for components of CEO Compensation

	Means				
	2008	2009	2010	2011	Average
Salary	799,471.80 (350,778.50)	839,586.20 (439,857.30)	928,094.40 (609,651.80)	860,397.00 (455,445.70)	860,770.20 (480,285.70)
Bonus	1,191,980.30 (1,699,442.70)	965,903.70 (1,075,869.60)	1,123,478.50 (1,736,854.10)	1,195,324.70 (1,059,782.70)	1,119,020.30 (1,408,251.50)
Pension	346,936.60 (810,261.30)	406,081.80 (870,054.10)	264,172.30 (603,122.70)	310,212.10 (910,356.10)	329,182.00 (807,005.30)
Options	2,055,978.10 (2,927,686.80)	1,596,135.10 (1,949,011.40)	1,590,562.90 (2,318,599.90)	1,680,172.30 (2,195,283.70)	1,712,021.50 (2,337,807.50)
Restricted Stock Units	1,111,731.40 (1,755,281.00)	1,175,176.30 (3,194,801.90)	1,225,201.10 (2,257,482.50)	1,248,041.90 (1,514,423.30)	1,196,354.80 (2,260,975.80)
Long-term Incentive Plans	38,317.00 (221,645.30)	16,909.60 (150,476.90)	9,092.40 (94,490.50)	5,516.20 (42,716.10)	15,930.50 (135,754.60)
Total Compensation w/out Pension	5,364,601.10 (4,718,669.50)	5,023,510.70 (5,240,743.60)	5,144,323.80 (4,793,214.20)	5,151,394.10 (3,345,104.50)	5,161,214.10 (4,519,579.30)
Total Compensation w/ Pension	5,711,537.70 (5,020,473.50)	5,429,592.50 (5,468,734.60)	5,408,496.10 (5,050,489.90)	5,461,606.20 (3,623,210.20)	5,490,396.00 (4,778,138.30)
Observations	100	104	109	117	430

Mean coefficients; standard deviations in parentheses

TABLE 2: Summary statistics for Corporate Financials and Union Density

	Means				
	2007	2008	2009	2010	Average
Total Assets (in $ billions)	38.907	43.574	42.099	43.534	42.091
	(102.574)	(119.305)	(111.789)	(119.794)	(113.402)
Sales (in $ billions)	7.656	8.132	7.257	7.146	7.534
	(9.618)	(10.652)	(9.503)	(9.513)	(9.797)
Market Cap (in $ billions)	11.388	10.972	9.348	9.820	10.346
	(15.203)	(15.655)	(13.052)	(13.746)	(14.384)
Return on Assets (%)	7.006	4.790	2.889	5.567	5.024
	(6.777)	(8.218)	(9.769)	(6.205)	(7.983)
Return on Equity (%)	14.400	9.598	7.191	10.500	10.340
	(18.160)	(17.100)	(16.100)	(11.980)	(16.060)

Union Density	0.0922	0.138	0.159	0.166	0.141	
	(0.195)	(0.242)	(0.252)	(0.258)	(0.240)	
Observations		100	104	109	117	430

Mean coefficients; standard deviations in parentheses

TABLE 3: Random effects models with separate Dependent Variables: Total Compensation, Equity, and Non-Equity Components

	Total Compensation Without Pension	Total Compensation With Pension	Equity Compensation	Non-Equity Compensation
Return on Assets – Industry Average ROA	0.142	0.229	-6.447[*]	1.102
	(0.393)	(0.394)	(2.809)	(0.523)
Market Capitalization	0.385[***]	0.388[***]	0.499	0.320[***]
	(0.0389)	(0.0384)	(0.263)	(0.0345)
No CEO-Chair Split	-	-	-	-
CEO-Chair Split/Chair is Related	0.496	0.542	5.717[*]	0.148
	(0.349)	(0.350)	(2.404)	(0.296)
CEO-Chair Split/Lead Director Appointed	0.352	0.371	3.170	0.150
	(0.360)	(0.363)	(2.401)	(0.316)
CEO-Chair Split and fully independent	0.598	0.617	5.216[*]	0.210
	(0.357)	(0.359)	(2.399)	(0.302)
Full Audit Committee Independence	-0.132	-0.131	-0.161	-0.136
	(0.0865)	(0.0863)	(0.550)	(0.0878)
Full Compensation Committee Independence	-0.0693	-0.0525	0.362	0.0204
	(0.102)	(0.100)	(0.884)	(0.0899)
Union Density	0.366[*]	0.373[*]	0.370	0.360[*]
	(0.148)	(0.146)	(1.407)	(0.160)
Industry Controls	Yes	Yes	Yes	Yes
Constant	11.92[***]	11.89[***]	4.740	12.80[***]
	(0.511)	(0.512)	(3.188)	(0.454)
Observations	430	430	430	430
R^2 overall	0.514	0.523	0.158	0.503

Robust random-effects standard errors in parentheses

*$p<0.05$, ** $p<0.01$. *** $p<0.001$

TABLE 4: Random effects models with separate Dependent Variables: Salary, Bonus, Pension, Options, and RSUs

	Salary	Bonus	Pension	Options	Restricted Stock Units
Return on Assets – Industry Average ROA	-0.0658	6.804*	6.532	-8.328**	-2.519
	(0.148)	(3.453)	(5.729)	(3.021)	(2.895)
Market Capitalization	0.203***	0.785***	0.697	0.676	1.051*
	(0.0186)	(0.226)	(0.367)	(0.362)	(0.430)
No CEO-Chair Split	-	-	-	-	-
CEO-Chair Split/Chair is Related	-0.0296	3.702	2.701	3.663	4.343
	(0.116)	(1.917)	(1.869)	(2.171)	(2.249)
CEO-Chair Split/Lead Director Appointed	0.0494	1.764	2.283	1.559	3.230
	(0.102)	(1.940)	(1.736)	(1.793)	(2.061)
CEO-Chair Split and fully independent	0.0907	2.000	2.026	4.239*	4.460*
	(0.100)	(1.861)	(1.769)	(1.863)	(2.104)
Full Audit Committee Independence	-0.0842	0.963	0.691	-1.217	0.873
	(0.0528)	(0.697)	(0.887)	(0.770)	(0.579)
Full Compensation Committee Independence	-0.0802	0.00169	0.659	-0.541	1.536
	(0.127)	(0.880)	(0.948)	(0.982)	(0.891)
Union Density	0.140*	-0.731	3.571*	-0.581	5.582**
	(0.0561)	(1.227)	(1.511)	(1.863)	(1.776)
Industry Controls	Yes	Yes	Yes	Yes	Yes
Constant	12.25***	4.858	-1.651	5.014	-7.707
	(0.225)	(2.692)	(3.867)	(3.323)	(4.454)
Observations	430	430	430	430	430
R^2 overall	0.567	0.121	0.215	0.173	0.152

Robust random-effects standard errors in parentheses

*$p<0.05$, ** $p<0.01$. *** $p<0.001$

TABLE 5: Random effects models showing the indirect channel though which union density affects different components of CEO pay

Explanatory Variables →	Benchmarked ROA w/out Union density	Union Density w/out ROA	Benchmarked ROA x Union Density
Effects on:			
Total compensation w/out Pension	0.104	0.364*	−1.441
	(0.393)	(0.148)	(1.419)
Total compensation with Pension	0.192	0.369*	−1.434
	(0.393)	(0.146)	(1.422)
Equity components	−6.503*	0.521	−6.224
	(2.807)	(1.357)	(17.129)
Non-Equity components	0.980	0.336*	−0.912
	(0.517)	(0.154)	(2.611)
Salary	−0.0768	0.142*	−0.530
	(0.147)	(0.0558)	(0.668)
Bonus	6.927*	−0.0933	−3.391
	(3.470)	(1.258)	(12.386)
Pension	6.254	3.476*	29.318
	(5.701)	(1.517)	(18.098)
Options	−8.271**	−0.438	−7.018
	(2.996)	(1.823)	(19.246)
Restricted Stock Units	2.983	5.664**	-8.516
	(2.926)	(1.771)	(13.400)
Observations	430	430	430

The estimates above are calculated after considering all other firm and industry controls, as shown in previous tables.

Standard errors in parentheses

$^*p < 0.05$, $^{**}p < 0.01$, $^{***}p < 0.001$