

# **The Impact of Corporate Governance on Executive Compensation \***

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## **Abstract:**

This paper investigates the relationship between different aspects of corporate governance and the compensation of top executives. Using data from over 400 Canadian firms which either have traded or currently trade on the Toronto Stock Exchange, we analyze how the level and composition of the compensation for their top 5 executives is related to various commonly considered governance related factors. The media is full of stories suggesting a relationship between large executive compensation packages and failures in governance at various levels of organizations, but there exists little formal analysis on these relationships. We find evidence that differences in internal governance features at the level of the CEO, compensation committee and board of directors influence both the level and composition of executive compensation, especially the CEO and, to a lesser extent, the other top executives. Considering external measures of corporate governance, we find an impact of different types of shareholders and competitive environments on executive compensation. We do not find that either the internal or external governance characteristics dominate.

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## **1. Introduction:**

Executive compensation has been the subject of scrutiny by investors and the media because the structure of these packages determines the executives' incentives and thus determines how the firm will be operated. Consequently executive compensation is a key part of the corporate governance process. Unfortunately the governance role of executive compensation has only started to receive attention because of perceived problems in its application. For example, the size of executive compensation packages became an issue in the late 1980s and early 1990s as the increases in the level of compensation for executives started to dramatically outpace the increases for other employees (e.g., Murphy (1999)). Moving beyond the levels of compensation, executive compensation has recently returned to the headlines because of the apparent relationships between failures in governance at firms and executive compensation (i.e., Fannie Mae, Freddie Mac, Parmalat and OneWorld). The goal of this study is to formally investigate the relationship between governance-related factors internal and external to the firm and the compensation of the CEO and the other senior executives. Better understanding the relationship between the internal and external structural governance factors and the important governance function of executive compensation will help to improve the overall governance of firms.

We recognize that there are several competing views regarding governance and executive compensation in the literature. Key to the discussion of executive compensation is the realization that executive compensation packages are designed to align the incentives of executives and a firm's stakeholders. As a result, executive compensation is a crucial stage in the corporate governance process. Under the optimal contracting view of executive compensation, the executive compensation package can be designed through arm's length negotiations to align the executives' actions with the firm's business strategy and objectives (i.e., Murphy (1999)). An alternate view is the managerial power model which highlights the potential role for inter-personal relationship in the executive compensation determination process (i.e., Bebchuk and Fried (2004)). Although these two models present different approaches to how executive compensation is determined and the concerns one faces in designing these packages, interviews with key stakeholders involved in the compensation determination process indicate that the truth may be a

mixture of the two models rather than one or the other (Bryant, Cotte and Sapp (2006)). As a result it is important to understand the role played by different governance structures in executive compensation.

In this study we examine the relationships between measures of different internal and external aspects of corporate governance<sup>1</sup> and the levels and composition of compensation for the top five executives in a set of Canadian firms. Our sample includes the constituent firms in the TSX/S&P Composite index as of May 2006 supplemented by a sample of firms that had previously been included in the index or changed their financial structure over the period from 2000 to 2005. We do not require that our firms have been in existence over the entire sample period or that they were still active at the end of 2005. In fact, many of the firms in our sample have undergone significant changes in structure over the past six years. Consequently, our sample is less sensitive to concerns of a survivorship bias than many existing studies. The sample of firms includes both common equity firms and income trusts<sup>2</sup>.

The governance-related factors we consider are more diverse than those considered in previous studies and we consider their impact on the compensation of all of the top five named executive officers and not just the CEO. We consider the features of the three main levels of governance dealing with compensation-related issues within firms: the CEO, members of the compensation committee and members of the board of directors. Since the incentives of these individuals should be aligned with those of the suppliers of capital, we also consider the role of external members such as the different types of shareholders. The board and its sub-committees such as the compensation committee have a responsibility to the shareholders and it is ultimately responsible for decisions such as the hiring, compensating and firing of senior management (e.g., Dey (1994)), so it is important to understand how different characteristics of these important stakeholders influence the executive compensation decision. A major concern is the widely held believe that CEOs either directly or indirectly set their compensation because of their relationships with board members. To address such concerns regulators have been

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<sup>1</sup> Corporate governance relates to guidelines designed to ensure a firm's employees, management and board all act in the best interests of the organization.

<sup>2</sup> The total market capitalization of income trusts in Canada is estimated to be approximately \$150 billion in July 2006 and thus they represent almost 10% of the overall market capitalization.

improving governance guidelines to increase the separation between the CEO and the individuals involved in the compensation setting process. Large shareholders, especially large pension funds such as CalPers in the US and Teachers in Canada, have been increasingly making their concerns known, so it is important understand the ability and incentives of different shareholder groups to monitor and influence the executive compensation determination process.

Although there is significant anecdotal evidence suggesting that these factors influence executive compensation, there is little empirical evidence supporting these and other common assertions. The existing research has focused on specific issues and has generally been focused on the United States. The problem is, however, not a uniquely American problem. The issue of the increasing magnitude of executive compensation and its apparently weak relationship to firm performance has been receiving increased attention in Australia, Canada, Continental Europe, the U.K. and many other countries around the world (for surveys see Murphy (1999) and Sapp (2006a)). Despite the relatively small size of its financial markets, Canada is an interesting market within which to investigate these issues for several reasons. For example, the Canadian system contains many aspects of the US system (in fact Canadian regulations are similar enough that Canadian firms can list on US exchanges as “domestic” firms, so many firms list on both Canadian and US exchanges). Nevertheless there are enough differences in how Canadian firms are governed to allow one to investigate how these differences can impact executive compensation. This allows our analysis of Canada to provide a useful complement to the standard US-based studies. The most similar US-based study is Cyert et al (1997) who investigate the role of board composition, CEO characteristics and ownership in CEO compensation.

The results of our analysis demonstrate that the overall level of executive compensation in Canada has been increasing rapidly over the past 5 years. Though the importance of options for most firms is less in Canada than in the US, they still form a large part of many executives’ compensation packages. This is especially so for larger firms and firms in the financial services industry. We also find that the level of compensation for the CEO has been increasing at a faster rate than that of the next four

best compensated executives in the firm<sup>3</sup>. In fact the gap has almost doubled in the past five years. We also find differences in the composition of the compensation for these different executives – the CEO receives relatively more options than the other named executives. Overall, there has been a gradual shift from the use of options to restricted share units in the past five years though options are still being used to a larger extent than restricted shares for the CEO. Consistent with the smaller role played by options in Canada, it is not surprising that we find a relatively low level of pay for performance for Canadian firms. In fact, our results suggest that there is an inverse relationship and thus we may want to reassess our definitions of performance as they may not capture the true situation (i.e., rapidly growing firms, firms in a turnaround situation or firms in a particularly difficult industry).

We do find a significant role for many of our governance-related factors. Many of these relationships are similar to previous studies. For example, we find that external pressures from shareholders to play a significant role in executive compensation. We find that family-owned firms and firms with a controlling shareholder pay their CEOs less and the gap between CEO and NEOs is less. We also find that these firms use fewer options. It is also important to note that firms which more actively participate in the US capital market (i.e., cross-listed firms) pay their CEOs more and use more option-based compensation. To ensure that our comparisons with the US are not being driven by differences in the size and industry of US based firms, we match the Canadian firms to similar firms in the US in a manner similar to Southam and Sapp (2004). In our matched samples we find that the US-based firms do earn significantly more than their Canadian-based counterparts and the composition of the compensation is also more focused on options than for the firms in Canada. These findings suggest that the degree of monitoring of the executives and the competitive environment appear to influence the level of compensation.

Internal measures of corporate governance based on the characteristics of the members of the board of directors and compensation committee also appear to be related to differences in executive compensation. We find that having more directors on the board of directors, more directors on multiple

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<sup>3</sup> Note: we refer to the other four senior executives as the named executive officers (NEOs) below.

boards and more directors who have sat on the board longer are related to an increase in the level of CEO compensation. The presence of a representative of the controlling shareholder and the board having a larger equity position in the firm are both related to lower executive compensation. These results suggest that the potential relationship between the board and the CEO (or the other board members) may influence the executive compensation packages.

The characteristics of the CEO also demonstrate some interesting relationships to compensation. For example, we find that the use of an outside CEO leads to a lower compensation package. This is a striking difference from the results in the US. A potential explanation is the use of individuals from senior management positions from large firms as the CEOs of Canadian firms, so the compensation can be lower. Not surprisingly, we find that the use of comparables and whether the CEO is also chairman of the board increase executive compensation and the shareholdings of the CEO decrease the compensation.

Consequently our results indicate that the compensation of Canadian and US CEOs differ significantly with respect to their level of fixed and variable compensation. We also find evidence consistent with several governance related factors from US-based studies as well as several differences which are likely related to the differences in the Canadian corporate structure and guidelines under which Canadian firms operate.

The rest of the paper develops as follows. The second section discusses the data sources used in the analysis. The subsequent section develops and motivates the hypotheses investigated in the analysis. Because of the importance of options and other forms of equity-based compensation, the fourth section discusses some of the issues in the valuation of options and restricted shares and how we manage these issues in our analysis. The next sections present the analysis of the data. We start with descriptive statistics characterizing many of the key aspects of CEO and other senior executive compensation in Canada and compare this to the US. These are followed by a discussion of the results from formal tests of many of our hypotheses. The final section concludes.

## 2. Data:

The disclosure of executive compensation has been mandatory in Canada since 1993. The information is available from the proxy circulars provided to regulators at the end of each fiscal year and can be found on the System of Electronic Document Analysis and Retrieval (SEDAR)<sup>4</sup>. From these proxy circulars we collect information on the level and composition of the compensation packages for the five highest paid executives at our set of over 400 firms as well as information on the governance structure at these firms. This includes standard measures of compensation for the executives (i.e., salary, bonus, etc.) as well as less frequently considered factors such as the composition of the members of its board of directors and committees such as the compensation and audit committees.

To investigate the influence of diverse factors on executive compensation, we supplement this data with a group of firm-level and economy-level factors. For our firm-level data we use Compustat's Canadian data base. The data includes many of the most common financial factors such as net income, total sales, total assets, and total liabilities. This allows us to investigate the relationship between executive compensation and different accounting based measures (i.e., firm size and firm performance measures such as the return on assets).

We obtain the historical price and dividend information for all of our firms from Datastream. This data was used to estimate the price volatility for the firms. Specifically, we collected the weekly stock price (adjusted for stock splits) to estimate the volatility for use in the valuation of executive stock options. In valuing executive stock options, we would ideally like to have an estimate of the forward looking volatility. Since we do not have this, we estimate it using the available historical data. Specifically, we use the standard deviation of the continuously compounded historical returns obtained as the annualized standard deviation of the weekly continuously compounded returns<sup>5</sup> calculated as  $r_t =$

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<sup>4</sup> SEDAR is a comprehensive, on-line archive of securities documents filed by publicly traded companies in Canada (found at <http://www.sedar.com>).

<sup>5</sup> We use weekly prices rather than daily prices to avoid day of the week seasonalities and timing problems due to weekends and holidays. Though daily data may provide us with a better estimate of the realized volatility for a given firm and thus a better estimate of the future volatility, the daily data is complicated by weekends, holidays and

$\ln(P_t/P_{t-1})$ . To obtain the annualized standard deviation we multiply the standard deviation of the weekly returns by  $\sqrt{52}$ . If we assume the continuously compounded returns are independent and identically distributed, this is a reasonable estimate for the volatility. This would be the case if markets are efficient and stock prices therefore follow a random walk<sup>6</sup>.

We also consider different features of the ownership of firms. We start with the recognition that in Canada many firms are family-owned. Since families usually exercise their control through multi-class shares, we collect information on the existence of different classes of shares for each firm. The breadth of ownership and the regulations they must follow may also matter, so we also consider whether the firm's shares are cross-listed in the US. We also obtain shareholder information from Bloomberg to capture whether a firm is widely-held, who the largest shareholder is (i.e., another corporation, a mutual fund, a pension fund or a family) and the relative size of their shareholdings. Since many Canadian firms have been re-organizing into income trusts and it is believed that the governance at these firms is different from those of standard equity firms, we classify firms as being equity-financed versus income trusts to capture potential differences related to these structures. This allows us to examine the impact on executive compensation of external governance factors such as multiple listings or trading/reporting in multiple jurisdictions and the ownership structure (or identity of the owner).

The final data set that we consider contains economy-wide information on the bond and equity markets as well as various measures of macroeconomic conditions in Canada and the US over this period obtained from Datastream. In particular we consider the yields on several Canadian government bonds ranging from 1 year to 10 years in maturity. We consider the returns on the overall equity market index as well as a series of industry specific indices. Finally, we consider the level of inflation and different commodity price indices over this period. Commodities are especially important in the Canadian market

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potential day of the week effects. For example, we know that volatility is different over the 3 days from Friday to Monday than from Monday to Tuesday. Using weekly data avoids these complications.

<sup>6</sup> Because of sample consists of both small and large firms, firms from both highly regulated and less regulated industries and firms that are equity-based and income trusts, we would expect to see differences in the volatilities of the prices of these firms and the ability of their prices to follow a random walk or random walk with drift. Nevertheless, we proceed under the assumption of market efficiency and thus that the prices follow some form of the random walk model.

because approximately 29% of the current total Canadian market capitalization (not just on the Toronto Stock Exchange) is in oil and gas, and 11% in the mining sector. This is, at least partially, the result of the recent increases in the prices of commodities. The rapid increase in the importance of these sectors is evidenced by the fact that, two years ago, in 2004, the numbers were 20% and 10% respectively (Alberta Securities Commission Report (2006)).

### **3. Hypothesis motivation**

Both the academic and practitioner literatures have suggested a number of relationships between diverse firm and economy-level factors and executive compensation (for a thorough survey of both literatures see Sapp (2006a)). Below we motivate a series of hypotheses regarding how we expect executive compensation to depend on firm characteristics (i.e., size, industry and firm performance), governance-related factors (i.e., CEO, compensation committee, board and ownership characteristics) or economy-wide factors (i.e., overall equity market or commodity market performance).

#### **3.1 Size and Industry:**

Probably the best documented relationship in the compensation literature is the relationship between size and executive compensation. Large firms pay their CEOs more. One frequently proposed argument for the increasing compensation of CEOs as firm size increases is the complexity of the job they perform (e.g., Murphy (1999)). It has further been argued that firm size and complexity have both been increasing more rapidly recently thus driving the recent increases in CEO compensation. More detailed arguments are that CEOs of larger firms require more compensation because larger firms require more talented managers (e.g., Smith and Watts (1992), Rosen (1981) and Kostiuk (1990)) and their managers have more and larger decisions to make (e.g., Talmor and Wallace (2000) and Cahan et al (2005)). Compounding the effect of this assertion is the likelihood that executives at larger firms are more mobile so their compensation needs to be more competitive. Consequently size is a proxy for executive talent and mobility which would require higher, more competitive compensation.

Similarly it is argued that industry influences the level of executive compensation, though less so than size (e.g., Murphy (1999)). Studies in the US find that overall pay levels and changes in pay levels vary by industry as follows: between 1992 and 1996 the median pay levels have increased significantly for manufacturing CEOs (increasing 55% from \$2.0 million in 1992 to almost \$3.2 million in 1996) and in financial services (increasing 53% to \$4.6 million), whereas in utilities the increase has been much less (increasing 34% to \$1.5 million) (Murphy (1999)). The argument for why compensation contracts in regulated industries in the US are lower is that direct monitoring and oversight by regulatory authorities reduce the necessity and flexibility for managers to make as significant operating decisions as in non-regulated industries (e.g. Yermack (1995)). In general many of the differences in pay levels can be attributed to increases in the quantity of stock options being granted (i.e., firms in regulated industries such as utility companies issue far fewer options than those in financial services).

The level and composition of compensation is also believed to change significantly across different levels of executives. Most researchers make the implicit assumption that CEO compensation is a proxy for incentive alignment throughout the firm, but there is ample evidence and theory to suggest that senior executive pay schemes are rarely identical (i.e., Finkelstein and Hambrick (1996) Henderson and Fredrickson (2001)). Some account for the differences in pay by pointing out that responsibilities of CEOs and other executives may overlap, but their roles within the organization and expertise differ. An alternate explanation is called tournament theory (i.e., Lazear and Rosen (1981)). This theory suggests that large differences in compensation can be used to motivate senior executives because it will provide them with the incentive to strive for the CEO position. This is complicated by the fact that top managers are generally tasked with functioning as part of an interdependent "team" (i.e., Hambrick (1995)). Potential consequences of executive compensation alignment are important since behaviorally-integrated top teams allow firms to adapt more rapidly to changing competitive environments (i.e., O'Reilly, Snyder and Boothe (1993)), and ultimately return superior firm performance (i.e., Hambrick (1995)).

The composition of compensation also changes as one moves below the CEO. Below the CEO equity-based incentives start to take on a relatively less important role. For example, Core and Larcker

(2001) find that non-CEO executives typically hold much less equity as a multiple of their base salary than does the CEO. Furthermore, the stock price is less informative about actions taken by lower level managers than for the CEO. Rather division or department level measures of performance are more relevant and useful for providing incentives to these managers (i.e., Bushman, Indjejikian and Smith (1995), and Ittner, Larcker and Rajan (1997)). Firms therefore vary substantially in their use of equity-based incentives for lower level employees

Consistent with the literature from the U.S. and other countries, we expect to see the level of executive compensation increasing over time as firm size has been seen to be increasing. We expect to see differences across industries with higher levels of compensation and more equity-based incentives for CEOs in unregulated industries. For the executives below the CEO, we expect to find similar but less extreme changes in compensation over time and across industries. Below we will focus on the CEO's compensation because we assume that though the CEO's compensation will be larger than that for the other named executives, the compensation for the other named executives will follow similar patterns to that of the CEO. Because these are such well-documented relationships, the firm size, year and industry factors form the control variables used in our analyses.

### **3.2 Pay-for-Performance:**

One of the stated goals of the SEC guidelines introduced in 1992 and 2006 has been to strengthen the relationship between executive compensation and firm performance. In Canada the guidelines have also adopted the same over-arching perspective. Enhancing this relationship should better align the incentives of executives with those of the firm's suppliers of capital and thereby improve the governance of the firm as described in agency theory (i.e., Jensen and Meckling (1976)). The most obvious means of aligning executives' incentives with those of the shareholders is to increase the use of equity incentives in executive compensation contracts. This directly links changes in executive wealth to changes in stock price, thereby providing executives with incentives to maximize shareholder wealth. Consistent with this, existing studies suggest that pay-performance sensitivities are driven primarily by the use of stock options

and restricted shares (e.g., Jensen and Murphy, (1990b) Murphy (1993) Hall and Liebman (1998)). For example, 95% of the estimated pay-performance sensitivity for CEOs in manufacturing companies reflects stock options (64%) and restricted stock (31%). Pay-performance sensitivities vary across industries and size with the highest degree of pay-performance sensitivity being with large S&P 500 companies.

Most firms in the US use some form of equity-based compensation involving options, but most international studies find a significantly lower use of options (for a survey see Murphy (1999)). Of most relevance to our study is the evidence that the use of options in Canada is growing, though still less than in the US (i.e., Zhou (2000) and Southam and Sapp (2004)), and depends on firm level characteristics, especially cross-listing in the US (i.e., Southam and Sapp (2004)). Canadian and other international firms use more restricted shares than US firms. Interestingly as the rules regarding the expensing of executive stock options have been changing in the US, the use of restricted shares has been increasing. Because of the potential convexity in the payoffs associated with options and therefore the frequently large realized gains obtained by executives, options have claimed the lion's share of the attention in the academic and applied literatures.

Overall we expect to see changing degrees of pay-for-performance as firm size and industries change. We expect larger firms and firms in certain industries to use more performance-related remuneration in their executive compensation packages. We start by measuring the degree of pay-for-performance sensitivity in executives' compensation contracts using the relative use of options and restricted shares (i.e., restricted stock units, RSU, and deferred share units, DSU) in the executives' compensation packages. If a firm is using pay-for-performance, we should find a higher proportion of equity based compensation in their executive compensation contracts after correcting for firm size and industry. To measure the success of pay-for-performance and its overall role in the executives' compensation contracts we use different measures of firm performance (e.g., return on assets and total shareholder return) and compare how changes in performance can be related to changes in executive compensation. To ensure that we are accurately capturing the performance of the firm and not market-

wide factors, we also correct for industry level performance. This will allow our analysis to correct for potential industry wide upward or downward effects on firm performance and allow us to more accurately determine the executives' actual performance.

### **3.3 Impact of Governance:**

As emphasized by Bebchuk and Fried (2004), CEO pay contracts are not negotiated at arm's length by the CEO and the board as theory would suggest. The CEO and the board frequently have relationships with one another allowing the potential for an impact of inter-personal relationships and other factors on the executive compensation determination process. This may create problems because shareholders would ideally like the executives to have a contract in which compensation is based purely on performance, but executives would like one in which there is more certainty in pay levels, for example. Consequently, contracts are a compromise between their respective interests. The unresolved question is how the different characteristics of the key players in the executive compensation decision influence the final compensation agreements. Though we consider this by looking at the characteristics of the CEO, compensation committee and board of directors, the literature has generally considered the influence of changes in the characteristics of different subsets of the features we consider as well as different subsets of these key players.

Starting with the CEO's compensation, the empirical evidence on the impact of different governance factors is somewhat mixed. In a sample of 105 firms from 1984, O'Reilly, Main and Crystal (1988) analyze compensation committee members who are themselves executives in other firms, and find that CEO pay is positively related to executive pay at the committee members' firms. Main, O'Reilly, and Wade (1995) investigate how CEOs "manage" their compensation committees and find evidence that the relationship between the CEO and the committee frequently results in higher pay. In a sample of 161 firms in 1993, Newman and Mozes (1997) find that the level of CEO pay is significantly higher, and the pay-performance relation significantly lower when the compensation committee contains at least one "insider." Anderson (1997) focuses on 50 CEOs who sit on their own compensation committees (and are

subsequently removed), and compares pay of these firms to a control sample. Based on 1985-94 proxy data, Anderson finds that CEOs who sit on their own committees receive lower levels of pay and tend to have very high stock ownership, acting much more like manager/owners than self-serving agents. These findings suggest that differences in the characteristics of the CEO and how they interact with the board can influence the firms' corporate governance structure and therefore play a significant role in determining the level and composition of executive compensation.

Focusing on the characteristics of the board, executive compensation has been found to be higher when the board is relatively "weak". Core, Holthausen and Larcker (1999), for example, find that CEO compensation is higher when the board is large (making it more difficult for directors to organize in opposition to the CEO), and when the CEO is the chairman of the board and thus is more powerful (i.e., Yermack (1997), Cyert, Kang and Kumar (2002) and Core, Holthausen and Larcker (1999)). Delacroix and Saudagaran (1991) find that having CEOs serve on each other's compensation committees and determine each other's pay raises the level of CEO compensation. Shivdasani (1993) and Talmor and Wallace (2000) provide empirical support for a relationship between the number of directorships each director has and CEO compensation. Studies have also looked at the relationship between outside directors and CEO compensation – Finkelstein and Hambrick (1988) found no relationship whereas Lambert et al (1993) and Boyd (1994) found a positive relationship. Hallock (1997) showed that CEO compensation is higher in firms with interlocked outside directors. Andjelkovic, Boyle and McNoe (2002)) and Talmor and Wallace (2000) found that CEO compensation is related to the percentage of insiders, percentage of multiple directorships and the presence of outside blockholder representation on the board, but not with board size.

In one of the most comprehensive studies of the relationship between different governance-related characteristics and CEO compensation, Cyert et al (1997) studied the level of CEO compensation at 1,671 large and small publicly traded U.S. firms. They found that board composition plays a significant role in the determination of CEO compensation. In particular, they found that CEO compensation is decreasing with the board of director's ownership, ownership of the largest shareholder,

probability of bankruptcy, while it increases with CEO ownership, the tenure of the CEO and the percentage of outside directors on the board. However, they found little evidence that a larger board size contributes to an overcompensation of the CEO, while the CEO compensation is higher if the CEO also holds the board chairmanship. Their results also hold after controlling for other important determinants of CEO compensation, such as firm size and both market-based and accounting based performance measures. In a more limited study, Cyert, Kang and Kumar (2002) find that CEO pay is negatively related to the share ownership of the board's compensation committee – doubling their ownership reduces non-salary compensation by 4–5 percent.

Based on previous research, we expect higher executive compensation as the power of the CEO increases (i.e., as the CEO's tenure increases, or if they were an inside hire). We also expect to see an influence on the level and composition of executive compensation of the structure of the compensation committee (i.e., the number of CEOs on the compensation committee, the number of financial experts on the compensation committee and the number of independent directors on the committee). Finally, we expect to see changes in the CEO and other top executives' compensation package as the power of the board decreases (i.e., as board size increases, tenure of the board increases, and the number of independent board members decreases).

### **3.4 Ownership Structure:**

Because shareholders are interested in optimizing the value of the firm, the ownership structure should influence the way in which a firm is governed. Unfortunately, only a few studies have considered the relationship between executive compensation and ownership structure. According to Cyert et al (1997) and Core et al (1999), for example, the ownership structure is an important determinant of executive compensation because it affects the incentives of the owners to monitor the manager's performance and set their compensation. For example, the presence of a large shareholder is likely to result in closer monitoring (e.g., Shleifer and Vishny (1986)), and therefore reduce top managers' influence over their compensation. Consistent with this observation, Cyert, Kang and Kumar (2002) find

a negative correlation between the equity ownership of the largest shareholder and the amount of CEO compensation: doubling the percentage ownership of the outside shareholder reduces non-salary compensation by 12–14 percent. Relatedly, in an examination of Standard and Poor's 500 firms during the period 1992–1997, Benz, Kucher and Stutzer (2001) find that a higher concentration of shareholders results in a significantly smaller amount of option grants to top executives.

The type of shareholder also plays a significant role in their incentives to monitor and influence executive compensation. For example, Hartzell and Starks (2002) examine CEO pay in almost 2,000 firms during the period 1991–1997. They find that more concentrated institutional ownership is related to lower executive compensation and more performance-sensitive compensation. Examining CEO compensation in the 200 largest companies during 1990–1994, David, Kocher and Levitas (1998) find that the effect of institutional shareholders on CEO pay depends on the types of relationships they have with the firm.

Because of the large role played by families as the largest shareholder or controlling shareholder of many firms in Canada, we need to consider the impact of families as well as institutions as major shareholders. We believe that the presence of a family owner or the presence of a shareholder who is willing to more carefully evaluate the executives' compensation packages should decrease the overall level of compensation in a manner similar to that of a large institutional shareholder. Beyond family-ownership, it is also believed that the structure of the ownership may matter. For example, the rules governing the boards for income trusts are different from those of equity-financed firms and the type of shareholder for these firms may also differ and these differences may influence compensation.

Consequently it is important to understand the impact of differences in the levels of all types of ownership on executive compensation. We expect to see that the control exerted by different owners based on their percentage ownership as well as the different ownership structures (i.e., family-control exercised through multi-class shares) will impact the way that executives are paid. We also extend this to consider the role of direct ownership and different corporate structures with different governance rules and potentially different performance criteria (i.e., income trusts).

#### 4. Discussion of the descriptive results

We start by characterizing the Canadian financial markets over the past 12 years (both before and including our sample period). In Figure 1a, we see that the Canadian equity market has performed exceptionally well over this period. The market was generally increasing from 1993 until the slight correction in 1998. The market quickly rebounded only to be hit by another very large correction in 2000-2001. Even though this correction significantly reduced the value of the equity market for the next two years, the Canadian equity market stabilized by 2002 and has been performing very well since that time. By 2005 the Canadian equity market attained a level even higher than at its peak in 2000. Also in Figure 1a, we see the long-term risk free rate (the average yield on a standardized 5 to 10 year government of Canada bond). This long-term interest rate has been decreasing steadily between the early 1990s and 2005. Despite the apparent inverse relationship between equity markets and the risk-free rate, the actual correlation between the two is very low.

In Figure 1b, we see the levels for the major US equity indices and the long-term US risk-free rate over the same period. As with the Canadian equity markets, we see that the levels are increasing steadily from 1993 to 2000. The principle difference is that the US markets, especially the Nasdaq, peaked in 2000–2001 and they have not bounced back in the same way as the Canadian markets – the overall level of the US markets in 2005 remain below their pre-2000 highs. The long-term risk-free rates in both Canada and the US, however, do demonstrate the same trends but we find a slightly stronger relationship between the debt and equity markets in the US than in Canada.

In Figure 2a we consider the equity levels for different industries in Canada. Although the average performance of all of the Canadian firms may have been positive over the 1993 to 2005 period, there have been some exceptions. Some industries did not perform as well over this period. The fact that the industry-specific indices follow different patterns over our sample period highlights the variability in the performance of firms in different industries and the need to consider the influence of industry.

Because of the importance of commodities in the Canadian market place, Figure 2b illustrates how the value of commodities has changed between 1993 and 2005. The total commodity index can be

seen to be increasing since 2002. Consequently, it is not surprising that the Canadian stock market, which is heavily weighted toward resource-based firms, would be increasing in value over the same period. Related to the increase in the value of commodities and the corresponding performance of Canadian equity markets in the latter part of the sample, the value of the Canadian dollar has also been increasing. Figure 2c illustrates how the Canadian dollar was falling relative to the US dollar from 1993 to 2002, but has been rapidly increasing since that time. By early 2006, the value of the Canadian dollar was at levels relative to the US dollar that had not been seen since the 1970s.

The basic characteristics of the firms that we are considering in our analysis are summarized in Table 1. In this Table we can see that the firms in our sample vary dramatically in their size. The firms range from annual sales of only a few hundred thousand dollars to over \$27 billion in 1998 and growing to a maximum of over \$32 billion in 2005. Consequently our sample covers a wide range of firm sizes. We also include firms which have been very profitable as measured by either the Return on Assets, earnings per share or gross profit margins. Another important feature of our firms is the volatility of their share prices. In Figure 3 we see an increase in volatility in the few years before the start of our sample (i.e., 1998 and 1999). Following the systematic increase in stock price volatility before 2000, we observe a gradual decline in volatility from 2000 to 2005. The uncertainty in the share prices in our sample is similar to what we saw in the value of the equity indices in Figure 1.

### **Levels and Composition of Compensation:**

In Figure 4, we present the medial total compensation for the CEO as well as for the other top 5 executives over the past 6 years. These results highlight how significantly the level of compensation for these executives have changed over the past 6 years. Looking at the median total compensation for CEOs over the period from 2000 to 2005 we see that it varies significantly over time and market conditions. In 2000 the median total CEO compensation was almost \$850,000. It declined slightly to \$840,000 in 2001 but gradually increased from that time until it reached almost \$1.25 million in 2005. For the other top

executives, the median compensation went from about \$400,000 in 2000 to about \$490,000 by 2005 with much less variation between years and market conditions.

Looking at the compensation for the different levels of executives, we see that the difference between the total compensation obtained by the CEO and the other top 5 executives has been increasing over time. The executives in the positions from 2 to 5 (what we refer to as the NEOs below<sup>7</sup>) received an overall level of compensation that went from 70% of the CEO's compensation in 2000 to only 50% by 2005. This suggests significant changes in the size of executive compensation for executives at different levels in the firms over time with the difference in the compensation of the top executive and the other senior executives increasing over the past 5 years. Though not presented, it is interesting to note that the major difference in the level of CEO compensation is based on the increased number of options paid to the CEO – the NEOs salary was 66% that of the CEO in 2000 and this decreases to 60% by 2005 with much of the difference in the value of options.

Based on the median levels of compensation, the relative importance of salary as a means of compensation has been decreasing but it is still about 60%. The median CEO salary increased from just over \$330,000 in 2000 to almost \$450,000 in 2005. It is, however, interesting to note that there was a decrease in the salary portion of their compensation in 2002 which would correspond to the period following the market correction. This suggests that CEO salary is, at least somewhat, sensitive to changing market conditions. Moving to the performance-based measures, we see that the median bonus increases from \$100,000 in 2000 to \$250,000 in 2005. Since the bonuses generally increased, except for a single decline in 2001 (once again, likely related to the market downturn around that time), it appears that bonuses may also be at least somewhat sensitive to changing market conditions.

From 2000 to 2005, the median value of the options granted to CEOs goes from a little over \$47,000 to \$38,000. This is rather surprising given the large amount of press that options have received. The explanation is based on the use of the median value. The mean value of the options granted to CEOs

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<sup>7</sup> The OSC guidelines require that firms disclose the compensation of the five highest paid executives, this includes the CEO and four other named executive officers. Below we refer to the compensation for the second to fifth highest paid executives as the NEO compensation.

is much larger – ranging from over \$404,000 in 2002 when the market was in a downturn to over \$2,150,000 in 2004 when the market was in an upswing. Similar to options, the median value of restricted shares is very low over the entire period. The mean value highlights the increasing significance of restricted shares – it ranges from \$65,000 in 2000 to over \$200,000 in 2005. It is interesting to note that the general patterns in the performance-based portion of the executives compensation does appear to follow the general trends in the financial markets. However, the relatively rare use of options and RSUs in smaller firms explains the overall weak pay for performance relationship.

Moving to the NEOs, the next 4 highest paid executives, we find similar patterns in their compensation. We see that their median salary goes from \$224,000 in 2000 to over \$283,000 in 2005. The increases in their compensation is at a slower rate than for the CEOs but it is also less sensitive to changing market conditions as their decrease in salary in 2002 was less than for the CEO. The bonuses paid to these top executives range from a little over \$82,000 in 2000 to roughly \$146,000 in 2005 with their values, once again, being slightly less sensitive to changing market conditions than the bonuses for the CEOs. For the long-term performance-based components such as options and restricted shares, we find that the median value of the options they received was between \$27,000 and \$55,000. This was only slightly less than the median value of options granted to the CEOs. The difference between levels of executives is more apparent in the average value of the options granted which ranges from \$215,000 to \$415,000 and is much lower than for the CEO. Similarly the median value of the restricted shares was zero, but the average ranged from \$16,000 to \$126,000 over the sample period<sup>8</sup>.

Because of the potential role of firm size in these results and the fact that our sample contains such a broad cross-section of firms from the Canadian market place, we also examine the changes in the levels and composition of executive compensation for firms that are constituents in the TSX Large Cap, and Small-Cap indices as well as the firms that are income trusts. Starting with the large cap firms, we

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<sup>8</sup> In a companion paper, we have considered the differences in the calculated values for the options using the Black-Scholes model and compare them to the realized values for these options. We find that the Black-Scholes model actually provides a somewhat lower value for the options than the executives realize. This is despite the fact that the Black-Scholes model should, theoretically, provide an upper value for the potential value of the executive stock options.

see that the median total compensation is over \$2.5 million in 2000 and increases to almost \$4.5 million in 2005. The components of this compensation start with a median salary of \$673,000 in 2000 and increases to just under \$1 million in 2005. The remainder of the compensation comes from more direct performance based compensation. The median bonus received by the CEOs of the large cap firms ranges from about \$625,000 in 2000 to over \$1 million in 2005 and it can be seen to vary significantly over this period with the lowest value being just over \$350,000 in 2002. For the options, the value of the options given to the CEO average to be a median of around \$1 million from 2000 to 2005. The actual value of the options varies dramatically with the level of stock markets over this period with the lowest median value of the options being just below \$460,000 in 2004. Looking at the mean value of the options, we see that they are much higher being almost \$2.5 million in 2000 and \$1.5 million in 2005. Even for the largest capitalization firms, the median value of restricted shares is zero across all years. The mean value of the restricted shares ranges from \$363,000 in 2000 up to almost \$840,000 in 2005.

For the small cap firms, we see that the median total compensation for the CEOs at these firms range from \$582,000 in 2000 to \$965,000 by 2005. Once again, the total compensation levels for these CEOs can be seen to have increased very significantly over this five year period (generally almost doubling in value). The components of the compensation for these CEOs can be seen to be slightly different from those of the larger firms. We find that the median salary for these CEOs goes from almost \$317,000 in 2000 to a little over \$400,000 in 2005 and the bonuses go from a low of \$50,000 in 2000 to a little over \$250,000 in 2005. The median value of the options and restricted shares used by these firms are much smaller than for the other firms, being very close to zero. Consequently, we focus on the mean value of the options granted to these CEOs ranges from about \$334,000 in 2000 to \$187,000 in 2005 and for the restricted shares from \$11,000 in 2000 to \$29,000 in 2005.

As a consequence our results very clearly indicate a size effect on the levels of compensation and a slightly less evident but still present size effect on the composition of the compensation paid to the CEOs at these Canadian firms. In most cases the median total compensation packaged received by these executives can be seen to have almost doubled in the past 5 years. Since this has dramatically outpaced the

changes in the compensation of employees at other levels, including those of the other top 5 executives, it provides some insight into the current debate regarding the level of executive compensation and how well it relates to the CEO's performance.

Moving to income trusts we see that the median CEO salary is \$300,000 in 2000 and it increases to \$312,000 in 2005 with slight decreases at times during the intervening years. However, we find that their bonuses increase from about \$85,000 in 2000 to \$175,000 in 2005. Consequently, we find that the median total level of compensation for the CEOs of income trusts increase gradually from roughly \$450,000 in 2000 to over \$700,000 in 2005. As a result, it appears that the CEOs of income trusts are relatively well compensated with their income being relatively disconnected from the performance of markets in general. Though the compensation levels of the CEOs at income trusts appear to be lower than those of other CEOs, it is possible that much of this is related to the lack of discretion for the CEOs of these firms and their relatively small size compared to some of the significantly larger all equity firms.

These results clearly demonstrate several characteristics of executive compensation. First, we see that there has been a clear increase in the median level of CEO and, to a lesser extent, NEO compensation in Canada over the past six years. The increase in CEO compensation has resulted in a further increase in the gap in CEO and NEO compensation over this period. There is a very consistent relationship between firm size and compensation. Finally, it also appears that differences in ownership and financial structure may influence compensation levels.

Although not presented here, we also perform a similar comparison for a matched sample of US firms and our sample of Canadian firms. The US firms are firms contained in CompuStat's ExecuComp data base that are matched to our Canadian firms based on size and industry. In our matched sample, we find that the CEOs at Canadian firms earn significantly less than their US counterparts and the composition is different. Even though the Canadian and US firms in the samples are different<sup>9</sup>, the findings are similar to the findings of Southam and Sapp (2004) and thus are not discussed in detail here.

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<sup>9</sup> In Southam and Sapp (2004) they use a more thoroughly matched sample using US firms smaller than those contained in the ExecuComp database.

Specifically, we find that Canadian CEOs and NEOs earn, on average, roughly half what their US counterparts earn. Further, we also find that the compensation gap is much smaller for Canadian firms that cross-list on US exchanges. Consequently Canadian firms cross-listing on US exchanges pay their CEOs in a manner which is only weakly or, in many cases, statistically indistinguishable from what their US counterparts pay.

## 5. Empirical Analysis of Executive Compensation

In this section we extend the previous discussion which suggests the presence of relationships between factors such as firm size, industry and executive compensation. We explicitly test these relationships while correcting for the well-documented relationships between size, industry and time.

### Empirical Model

To test our relationships, we employ a cross-sectional time series regression model. Specifically, we estimate a linear model relating our control factors ( $c_{i,t}$ ) and our independent variables of interest ( $f_{i,t}$ ) to the executive compensation ( $y_{i,t}$ ) for firm  $i$  at time  $t$ :

$$y_{i,t} = \alpha + \gamma c_{i,t} + \beta f_{i,t} + \varepsilon_{i,t} \quad (1)$$

Because we have multiple observations of the same firm over a multi-year period, we estimate this as a mixed model containing both fixed and random effects. The residuals are modeled to account for heteroskedasticity and first-order serial correlation related to the persistent effects from using observations for the same firm over our sample. To control for the systematic variation for each firm that may not be captured by our explanatory factors, we model firm-specific effects as random effects. Modeling firm effects as random effects is more appropriate than modeling them as fixed effects because our data is a sub-sample of all Canadian firms and our set of control and other factors contain measures which are relatively time invariant. Our model also allows for the influence of changes in economic

conditions on all firms by modeling time as a fixed effect. In all cases the use of fixed or random effects was confirmed using a likelihood ratio test.<sup>10</sup>

The complete model that we estimate including our controls and both performance and governance-related factors is as follows:

$$y_{i,t} = \alpha + \gamma c_{i,t} + \beta_1 \text{Performance}_{i,t} + \beta_2 \text{Governance}_{i,t} + \lambda_t D_{\text{years}} + \varepsilon_{i,t}$$

where the residual is decomposed as:

$$\varepsilon_{i,t} = \mu_i + v_{i,t} \quad (2)$$

In this model,  $y_{i,t}$  represents the total level of executive compensation for firm  $i$  at time  $t$ ,  $c_{i,t}$  is the set of control factors,  $\text{Performance}_{i,t}$  and  $\text{Governance}_{i,t}$  factors, and  $\varepsilon_{i,t}$  is the residual. Since the model is estimated with year treated as a fixed effect, we include dummy variables for each year,  $D_{\text{years}}$ , in the model. To model the firm-specific effects as a random effect, the residual is decomposed into a firm-level effect ( $\mu_i$ ) and a white noise component ( $v_{i,t}$ ).

Because of the potential impact of the significant outliers that are well-documented to exist in compensation data, we winsorize our data to minimize their impact. Specifically, we replace the top and bottom 2.5% of observations with the values of the 2.5<sup>th</sup> and 97.5<sup>th</sup> percentiles. This allows the potential biasing effect of the very large and very small compensation packages to be minimized.

### **Control Factors: Pay-Size-Industry Relationships**

We start by investigating the relationship between executive compensation and our set of control variables – firm size, industry and year. The consistency of the relationship between size and compensation has been referred to by Conyon and Murphy (2000) as, “the best-documented empirical finding in the executive compensation literature”. The basic model is:

$$\ln(\text{Compensation}_{i,t}) = \alpha_i + \mu_i \ln(\text{Sales}_{i,t}) + \lambda D_{\text{years}} + \varepsilon_{i,t} \quad (3a)$$

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<sup>10</sup> For a detailed discussion of the methodology using the Hausman specification test, see Judge et al. (1985).

with  $\ln(\text{Compensation})$  being the natural logarithm of either total compensation (i.e., salary + bonus + other compensation + other annual compensation + equity-based compensation), total cash compensation (salary + bonus + other annual compensation + other compensation) or total variable compensation (equity-based compensation) and  $\ln(\text{Sales})$  is the natural logarithm of the firm's annual sales revenue.

We expand this model to consider the well-documented impact of industry on compensation to get the model:

$$\ln(\text{Compensation}_{i,t}) = \alpha_i + \mu_i \ln(\text{Sales}_{i,t}) + \lambda_t D_{\text{years}} + \gamma_i D_{\text{industry}, i} + \varepsilon_{i,t} \quad (3b)$$

where  $D_{\text{industry}}$  is a dummy variable capturing the industry groupings used in Murphy (1999) resources: (SIC 01-14), manufacturing (SIC 15-29), utilities (SIC 49), financial services (SIC 60-69), and other which mainly includes wholesale, retail, health care and IT firms. Because of the significant role played by regulated industries in Canada, we also add a dummy for firms in these types of industries (i.e., airlines, telecoms, banks etc.).

The estimated pay-size elasticity for the total compensation (total cash compensation) of our set of Canadian CEOs presented in Table 2a for the years 2000 to 2005 is 0.36 (0.32) which is similar to the value for US firms obtained for 1997 by Conyon and Murphy (2000). Therefore, doubling firm size (proxied by sales) increases CEO total compensation and CEO cash compensation by a little over 30%. While Conyon and Murphy (2000) report that the UK pay size sensitivities are significantly smaller than those for the U.S., we do not find a significant difference between the U.S. and Canada. This suggests that the Canadian elasticities have converged to the U.S. values since the value of 0.247 was obtained in Zhou (1999). This provides additional support for Murphy's (1999) assertion that the structure and level of compensation are converging due to the, "increasingly global market for managerial talent".

The year dummies also highlight how the level and composition of CEO compensation have been changing over time. Even after correcting for the fact that firm size has been increasing, the year dummies demonstrate that the total level of CEO compensation has been increasing gradually over the past 5 years, especially in the last year. Considering the components of compensation, the majority of this increase in compensation has been in the cash portion of the compensation. This has been increasing

rapidly over the past 5 years, especially the last 3. The variable compensation has actually been decreasing. The decreasing use of equity-based compensation may be related to the changing value of options as volatility has fallen, the increased use of RSUs which are generally granted with lower values than options because they have less downside risk, or to the deteriorating market perception of equity based compensation in general.

In Table 2b we see the results for the other named executives (NEOs). We find a lower pay-size elasticity. Specifically, we find that the elasticity relative to total compensation is about 0.27 and for their total cash compensation it is about 0.23. The temporal changes in the level and composition of NEO compensation have been very similar to those of the CEO compensation discussed above. The lower degree of sensitivity of NEO compensation to firm size is consistent with studies suggesting that CEOs need to be paid more in larger, more complex firms because these CEOs are more skilled and more mobile. It is also consistent with the view of Tournament Theory which suggests that the CEO should have a much higher salary to provide all employees with the incentive to strive for the CEO position.

Industries also play a significant role in explaining both the levels and composition of executive compensation. We find that the CEOs of financial services firms are paid more than the CEOs of firms in other industries after correcting for size and time effects. In comparison to the base case, the CEOs of firms in both manufacturing and utilities are paid the least and financial services firms the most. As a result, we find evidence of industry-specific relationships in CEO compensation which are similar to the relationships documented in previous studies. The magnitude of the differences between financial services CEOs and those of other industries are, however, smaller than in studies based in the US.

An interesting result is found with respect to the dummy variable to capture the potential influence of regulated industries in Canada. Unlike studies in the US, we find that such barriers to entry into these industries are actually related to an increase in compensation for the executives in these industries. Combining both the dummy variable for regulated industries and the industry specific dummies, we find that it is not just financial services that pay more, it is the regulated portions of the Canadian market of which the banks are one.

Moving to the NEOs we find many of the same relationships as for the CEOs. The NEOs of financial services firms do earn significantly more than the NEOs at firms in other industries. This suggests that the difference in the compensation levels across management may be lower in financial services firms or this could simply be the result of the NEOs in financial services firms being paid more than their counterparts in other industries, especially in manufacturing and resource-based industries.

Because we find differences in the levels and composition of compensation across the different levels of executives (the CEOs and NEOs), we run the same regressions as above using the nominal and relative difference between the CEO and NEO compensation as the dependent variables (Tables 2c and 2d respectively). In these regressions we find that much of the difference in the levels of compensation does appear to be related to the size of the organization – the  $\ln(\text{Size})$  variable is the most significant variable. This suggests that the difference between the CEO and NEO compensation increases with size. Although much of the media attention on the differences between the salaries within firms has focused on the levels, this increase in the size of the difference could simply be the result of increasing total compensation levels leading to larger nominal differences. The percentage or relative differences in Table 2d address this issue. Looking at the percentage differences between the levels of compensation, we found that although size did continue to play a role in the difference between CEO and NEO compensation levels, the most significant differences were over time. The percentage differences between CEO and NEO compensation have been increasing over the past 5 years in terms of the salary or cash compensation whereas the differences have been decreasing with respect to the options or variable compensation.

To investigate the spill-over effect from the CEO's compensation to the NEO's, we evaluate the sensitivity of the NEOs compensation to changes in CEO compensation. The previous results suggest similar patterns in the compensation of all of these executives, so we directly examine this relationship. After correcting for the effect of size, time and industry, we find that the most significant relationship over time is between the CEO and NEO total compensation, however, the sensitivity is only around 50% suggesting that the relationship may be weaker than many have been hypothesizing. The sensitivity is,

however, almost 70% with respect to equity-based compensation. As a result there is a clear spill-over effect in the composition of compensation between the CEO and NEOs – firms that want to align their executive compensation with shareholder interests by using more equity-based compensation do this across all levels of executives and not just the CEO. However, the differences in the salary and other cash components of compensation highlight that the NEOs are compensated differently from the CEO.

The goal of the subsequent analyses is to identify which factors can help to explain the level and composition of compensation for executives at both the CEO and other senior positions.

### **Pay-for-Performance:**

Extending our models to include measures of performance, we estimate the following model:

$$\ln(\text{Compensation}_{i,t}) = \alpha_i + \mu_i \ln(\text{Sales}_{i,t}) + \lambda_t D_{\text{years}} + \gamma_i D_{\text{industry},i} + \beta_i \text{Performance}_{i,t} + \varepsilon_{i,t} \quad (4)$$

where Compensation, Sales,  $D_{\text{years}}$  and  $D_{\text{industry}}$  are as defined earlier. Performance includes the return on assets (ROA), an excess total shareholder return relative to the shareholder return in that industry, and the average industry return.

We do not find a significant relationship between compensation and most measures of performance in Table 4. Interestingly, the one statistically significant relationship we find is a negative relationship between ROA and compensation. This suggests that firms with the highest return on assets pay their CEOs and other executives less than those with low returns on their assets. Although this relationship is counter-intuitive, it may suggest some interesting directions for future research. Specifically, it suggests that we may not be capturing what we wish to capture in our analysis of pay-for-performance. The context may influence the apparent level of performance for the executives and this could be an issue when trying to use a single, common performance measure across all types of firms. For example, the result could be explained by a lagged relationship between performance measures and executive compensation. Another interesting alternative is that firms in difficult situations (i.e., cases of rapid growth or cases of financial distress as two extreme situations) need to recruit and retain the most skilled CEOs and thus these CEOs need to be paid accordingly. This suggests that pay-for-performance

may need to be modified to deal with firm specific situations when trying to capture the true degree of performance for the CEO. For example the CEO during a turn around may have a very low ROA but this is a short-term issue required for the long-term health of the firm.

### **Pay-Governance Relationships**

To investigate the role of our governance-related factors, we add factors related to the quality of governance of a firm to our model:

$$\ln(\text{Compensation}_{i,t}) = \alpha_i + \mu_i \ln(\text{Sales}_{i,t}) + \lambda_i D_{\text{years}} + \gamma_i D_{\text{industry},i} + \beta_i \text{Governance}_{i,t} + \varepsilon_{i,t} \quad (5)$$

Specifically we investigate the impact of firm ownership structures, and characteristics of the members of the board of directors, or compensation committee and finally of the CEO. As discussed above, our choice of factors is based on the existing research which has considered various subsets of the factors we consider in our models. Consequently our study has a much broader scope than much of the existing literature and allows us to study some of the factors which have been hypothesized to play a significant role in the compensation determination process but not necessarily empirically tested in either the applied literature (i.e., the media) or the academic literature<sup>11</sup>. The results include our control variables to correct for the well-documented impact of size, time and industry on executive compensation. This allows us to focus on the apparent relationships between these factors and executive compensation. The hypotheses for the relationships between these factors and executive compensation were discussed earlier.

### **Governance Related to the Ownership Structure:**

To determine the impact of different ownership structures on the governance of firms and therefore on the executives' compensation packages, we consider whether the firm has multi-class shares, if the firm is an income trust, whether the firm is cross-listed on the NYSE or NASDAQ/AMEX, and

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<sup>11</sup> For a detailed discussion of many of the hypotheses discussed in the applied and academic literatures see Sapp (2006).

whether the firm has a controlling shareholder (this is defined as the largest shareholder having at least twice the voting rights of the next largest shareholder). The results from this analysis are in Table 5a.

For all of the executives, especially the CEO, we find that a high degree of control exercised by a single shareholder is related to significantly lower levels of compensation. When only the dummy for multiple classes of shares being traded on the TSX is included to capture the role of family ownership and control, the estimated coefficient is also significantly negative but it loses significance when the measure for the high level of control is added. This suggests that it is the presence of concentrated ownership and not just the type of owner that leads to this lower level of executive compensation<sup>12</sup>. Because the relationship is slightly weaker for the NEOs, this suggests that the gap between the CEO and NEO compensation is lower for these types of firms. This is confirmed in Table 6a where the gap is significantly smaller for firms with a controlling shareholder.

Income trusts are a relatively unique structure in Canada because of their design being to minimize corporate tax payments while maximizing distribution payments to investors. We find that the CEOs at income trusts are paid significantly less than the CEOs at other types of firms. Since income trusts are constrained in how they use their funds (they have to maintain their distributions at a specific level or risk relatively significant declines in the value of their units), this finding is consistent with other studies which suggest that firms with relatively few alternatives in how they operate pay their CEOs less. For example, in the US utilities pay their executives less. An alternative explanation is that many of the top executives of income trusts also have significant unit holdings from which they obtain monthly distributions on top of their direct remuneration<sup>13</sup>. Consequently, their income is highly dependent on changes in the level of distributions and would increase their pay for performance sensitivity without the need for a large compensation package. This would also help to explain the lower use of variable compensation at income trusts. The gap in the compensation between CEOs and NEOs is, not

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<sup>12</sup> Note: we also considered dummy variables for significant ownership of corporations, pension funds, and mutual funds, but the results are similar to those for family ownership so they are not presented.

<sup>13</sup> In results not presented, we have found that the conversion of equity funds to income trusts is associated with a significant payment of units to the existing executives.

surprisingly, smaller at income trusts. This is consistent with the lower CEO compensation and the lower discretion but need for broad firm-level compensation to make the monthly distributions.

Finally, we also consider the impact of Canadian firms interlisting on US exchanges. We assume there are differences in the competitive landscape for cross-listed firms with these firms requiring executive talent similar to that of their US peers. We find, as in Southam and Sapp (2004), that there is a significant relationship between the cross-listing status of firms and the level of compensation for their executives, especially for the CEO. Similar to their results, we find that cross-listed firms pay more than non-cross-listed firms and the difference is larger for firms that cross-list on the NYSE. Comparing compensation of our Canadian executives directly to their matched US counterparts are not significant. This suggests that for these matched Canadian firms their US counterparts are not paid differently. For Canadian firms listed on the NYSE, their executives are paid somewhat less than their US counterparts but still at compatible levels, especially as the Canadian dollar has been rising in value. The largest differences are between Canadian non-interlisted firms and their US counterparts.

The gap between CEO and NEO compensation for cross-listed firms is larger for cross-listed firms (Table 6a). This can be seen, however, to be a function of the higher levels of compensation at these firms. Table 6b considers the percentage size of the gap and does not find that it increases for these cross-listed firms. This suggests caution in interpreting the values presented for the size of this gap.

The percentage of variable compensation also changes across ownership structures. Perhaps not surprisingly, we find that the level of variable compensation decreases for firms that are family owned, and firms that have a large controlling shareholder. This is likely related to the degree of monitoring that the owners at these firms will be exercising thus ensuring the alignment of executive and shareholder incentives. We also find a lower percentage of equity based compensation for income trusts – likely due to the large percentage of the wealth of these executives already associated with units they obtained upon conversion into an income trust. Finally, we find, not surprisingly, that cross-listed firms use a significantly larger percentage of equity-based compensation than their non-cross-listed counterparts.

Given that these firms are competing for US talent and US firms use the highest proportion of equity-based compensation in the world (Tower and Perrins (2004)), this was expected.

### **Governance Related to Characteristics of the Board of Directors:**

Because of the key role played by the board of directors in the CEO compensation determination process, the independence of the board of directors from the CEO has become an important issue in corporate governance. To measure the potential strength of the board and their independence from the CEO we use factors such as the average tenure of directors on the board, the percentage of independent directors, the percentage of directors who are also CEOs, the percentage of directors who are on multiple boards, the percentage of directors who are related to the family owner, and the number of shares owned by the board members.

As in previous studies we find that factors related to a decreasing level of independence of the board of directors from the CEO and measures of the “weakness” of the board are related to the level of executive compensation. For example, we find that the longer the tenure directors have had with the firm and more directors on multiple boards, the higher the level of CEO compensation. Interestingly we do not find as strong a relationship with the NEO compensation and therefore an increase in the CEO-NEO compensation gap at these firms. This suggests that the relationship with the CEO or other CEOs may result in the board agreeing to increase the CEO compensation but there may not be the same spillover with the compensation for the NEOs. We do not find that the percentage of independent directors has a significant relationship with the CEO’s compensation (it is positive but not statistically significant), but it is related to a decrease in the NEO compensation. This suggests that the independent members of the board may either put more emphasis on the CEO than the management team (i.e, they are more concerned about the retention of the CEO than the other executives ) or these directors may have a stronger relationship to the CEO. This suggests we may need to revisit the definition of “independent” board members. Interestingly, we do not find that the presence of CEOs on the board has a significant impact on the level of the compensation of either the CEO or the NEOs.

The final factors which play a significant role are the percentage of family-related directors and the percentage ownership of directors. We find that an increasing number of family-related directors or more director ownership are related to a decrease in the CEO compensation level and, correspondingly, to a decrease in the gap between the CEO and NEO compensation. This is related to the previous findings suggesting that the presence of a large, controlling shareholder is related to lower levels of compensation. Though not statistically significant, the shareholdings of the board do not have a strong relationship to the CEO's compensation though it is in the hypothesized direction (it decreases CEO compensation).

The percentage of variable compensation is not as sensitive to board characteristics. We find that having more directors on multiple boards is related to more variable compensation. This could be because they are more familiar with it from other boards or as a spillover from the other firms. As before, we find that more family influence, in this case through directors, leads to a lower use of equity-based compensation.

#### **Governance Related to Characteristics of the Compensation Committee:**

Since the compensation committee is the most important sub-group of the board of directors with respect to the setting of CEO compensation and thus, by implication, for the compensation of the other NEOs. This group is difficult to characterize, but we consider the impact of having a larger percentage of independent members, CEOs and financial experts on the compensation committee. We find, somewhat surprisingly, that an increase in the number of independent members of the compensation committee is actually related to an increase in the level of CEO compensation and, to a lesser extent, an increase in the NEO compensation. Consequently the difference between CEO and NEO compensation is positively related to an increase in the number of independent members of the board. This is consistent with the previous results for the board. A potential explanation is the discussion in the media suggesting that many of the "independent" members of the board and compensation committee are not, in fact, independent. In both nominal and relative terms, more independent compensation committee members is also related to an increase in the CEO and NEO pay gap.

Though we did not find a significant relationship between the percentage of CEOs on the board and CEO compensation, we do when they are on the compensation committee. We find that an increase in the percentage of CEOs and a decrease in the percentage of financial experts on the compensation committee are both related to an increase in CEO compensation. The changes in these factors are related to an increase in the closeness of the compensation committee to the CEO (more CEOs on the compensation committee means the board is more likely to relate to the concerns of the CEO and thus may be willing to pay the CEO more. These CEOs may also see this as a means to influence their own compensation through the use of comparables, so increasing this CEOs compensation may mean a potential increase in their salaries as well). A decrease in the number of financial experts on the compensation committee is related to the committee having less ability to accurately assess the compensation packages. Consequently, the compensation committee would be more willing to accept the packages suggested to them by the CEO and other advisors. This would allow for an increase in the CEO compensation package. Similarly the difference between the CEO and NEO compensation packages increases more as the number of CEOs on the compensation committee increases. Finally the percentage of variable compensation also increases as the number of independent members and CEOs on the compensation committee increases.

#### **Governance Related to Characteristics of the CEO:**

The final consideration we have is for the CEOs themselves. It is frequently believed that many characteristics of the CEO may influence their compensation package. We focus on the CEO's age, the time the CEO has been with the firm, if the CEO had been an outside hire, a dummy for whether the CEO is also Chairman of the board of directors, whether the CEO's pay was determined using comparables and the percentage of firm ownership of the CEO.

We find several interesting relationships. The use of an outside CEO appears to lead to a lower CEO compensation package. This is a somewhat surprising result, but it is consistent with anecdotal evidence that when Canadian firms hire an outside individual they may go to management below the CEO

at a large firm. This firm is therefore able to pay this new CEO less than the standard CEO compensation packages. This is consistent with Canadian firms looking for senior managers at US firms to replace CEOs in Canada.

When the CEO is also the chairman of the board, the compensation package for the CEO is higher and the compensation package is also larger when the firm uses comparables. The presence of the CEO on the board of directors means that the CEO has greater power over the decision making process and therefore may be able to increase their compensation packages. As when directors' shareholdings increase, we also find that CEO compensation decreases as the CEOs shareholdings increase. This increase in ownership and thus sensitivity to firm performance appears to change how the CEO is willing to be compensated. Finally, the use of comparables is an important indicator and our result is consistent with the arguments suggesting it has led to the ratcheting effects discussed in many media and academic studies.

We do not find a large difference in the compensation between the CEO and NEO based on the CEO characteristics other than using comparables which increases the difference in CEO and NEO compensation. For the percentage of variable compensation the only factor that is related to the level of variable compensation is the percentage of CEO shares for which we find that an increase in the percentage shareholdings of the CEO leads to a lower use of equity-based compensation in the CEO's compensation package. This is not surprising given that the increased shareholdings of the CEO indicates a significant existing exposure.

#### **Combined Governance Related Model:**

In Table 4e we see the results from the estimation of a model using many of the governance-related factors investigated earlier. We find that the level of CEO compensation increases with cross-listing status, average tenure of the directors, the percentage of independent directors on the board and compensation committee, the use of comparables in compensation determination and the percent of experts on the compensation committee. For the NEOs we find the same relationships except that

independent directors are related to lower compensation. Consequently, we find that many of the factors which were significant in the more restricted regressions are no longer significant in our more complete model and thus there are several factors which capture similar characteristics.

As a result, we do find that many of our governance related factors do play a significant role in explaining levels of compensation.

## **6. Conclusions**

In this study, we have considered a wide variety of different hypotheses relating a variety of firm specific characteristics to the level and composition of compensation for the executives at our sample of Canadian firms. Though we need to be careful to recognize that our conclusions are based on a sample of 400 firms listed on the TSX at various times over the period from 2000 to 2005, this sample represents over 95% of Canadian market cap so the results provide significant insights into some of the larger firms in Canada. Our sample includes firms that have undergone changes in control, restructuring as well as having gone bankrupt over this period, so our sample does not suffer from the same concerns regarding survivorship bias as many of the existing studies. Consequently, we feel that our results provide one of the most comprehensive overviews of the relationship between corporate governance and executive compensation in Canada and these findings can be extended to other markets with similar governance structures.

Although many of the relationships between our governance-related factors confirm the results from previous studies, several are interesting differences. Further, we correct for the influence of many other factors to ensure that the results are robust to changes in the environment which were not considered in previous studies.

We find that external pressures from shareholders to play a significant role in executive compensation. We find that family-owned firms and firms with a controlling shareholder pay their CEOs less and the gap between CEO and NEOs is less. We also find that these firms use fewer options. It is also important to note that firms which more actively participate in the US capital market (i.e., cross-

listed firms) pay their CEOs more and use more option-based compensation. These findings suggest that the degree of monitoring of the executives and the competitive environment appear to influence the level of compensation.

Internal measures of corporate governance based on the characteristics of the members of the board of directors and compensation committee also appear to be related to differences in executive compensation. We find that having more directors on the board of directors, more directors on multiple boards and more directors who have sat on the board longer are related to an increase in the level of CEO compensation. The presence of a representative of the controlling shareholder and the board having a larger equity position in the firm are both related to lower executive compensation. These results suggest that the potential relationship between the board and the CEO (or the other board members) may influence the executive compensation packages.

The characteristics of the CEO also demonstrate some interesting relationships to compensation. For example, we find that the use of an outside CEO leads to a lower compensation package. This is a striking difference from the results in the US. A potential explanation is the use of individuals from senior management positions from large firms as the CEOs of Canadian firms, so the compensation can be lower. Not surprisingly, we find that the use of comparables and whether the CEO is also chairman of the board increase executive compensation and the shareholdings of the CEO decrease the compensation.

Consequently our results indicate that the compensation of Canadian and US CEOs differ significantly with respect to their level of fixed and variable compensation. We also find evidence consistent with several governance related factors from US-based studies as well as several differences which are likely related to the differences in the Canadian corporate structure and guidelines under which Canadian firms operate.

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## **Appendix: Valuation of Illiquid Securities:**

As executive compensation is increasingly including equity-based components, it is becoming more important to accurately value these assets. This is one of the most contentious aspects of executive compensation. Since executive stock options and restricted shares are illiquid and have different features than their exchange-traded counter-parts, they can not be valued using the standard methods. In the proxy statements provided by most firms in the US and Canada firms provide an estimated value for these assets. It is not always clear how they are arriving at these values, because many of the assumptions used in the estimations of the value of these assets are not stated.

To value the options granted to executives we use most commonly used method – the Black-Scholes (1973) formula. Although it has many well-known short-comings for valuing executive stock options, it remains the most commonly used method. Some of the issues are, for example, firm and CEO specific characteristics which are neglected using the Black-Scholes formula. Our goal is to determine the value of these pay packages to “an average” CEO since determining the impact of various firm-specific factors and each CEO’s risk-aversion and total financial portfolio are beyond the scope of this analysis. Consequently using a standard form of the Black-Scholes methodology allows us to obtain a common valuation for the options across all of the firms in our sample.

The principal features which make employee stock options difficult to value are pointed out by authors such as Rubinstein (1995). Specifically, employee stock options differ from exchange traded options because there is usually a vesting period during which the options cannot be exercised, and when employees leave they typically lose unexercised options. There have been attempts to develop option pricing models that allow for the possibility that employees may leave a firm before vesting and forfeit the value of their options. Carpenter (1998), for example, developed a simple extension of the standard option pricing model to allow for early exercise and forfeiture. While some have argued that early exercise is irrational, there are clearly good reasons for early exercise by executives. Huddart (1994), for example, shows that early exercise is in fact optimal for a risk-averse investor. Lambert, Larcker and

Verrecchia (1991) and Hemmer, Matsunaga and Shevlin (1994), show that restrictions on short selling and hedging option positions can lead to early exercise.

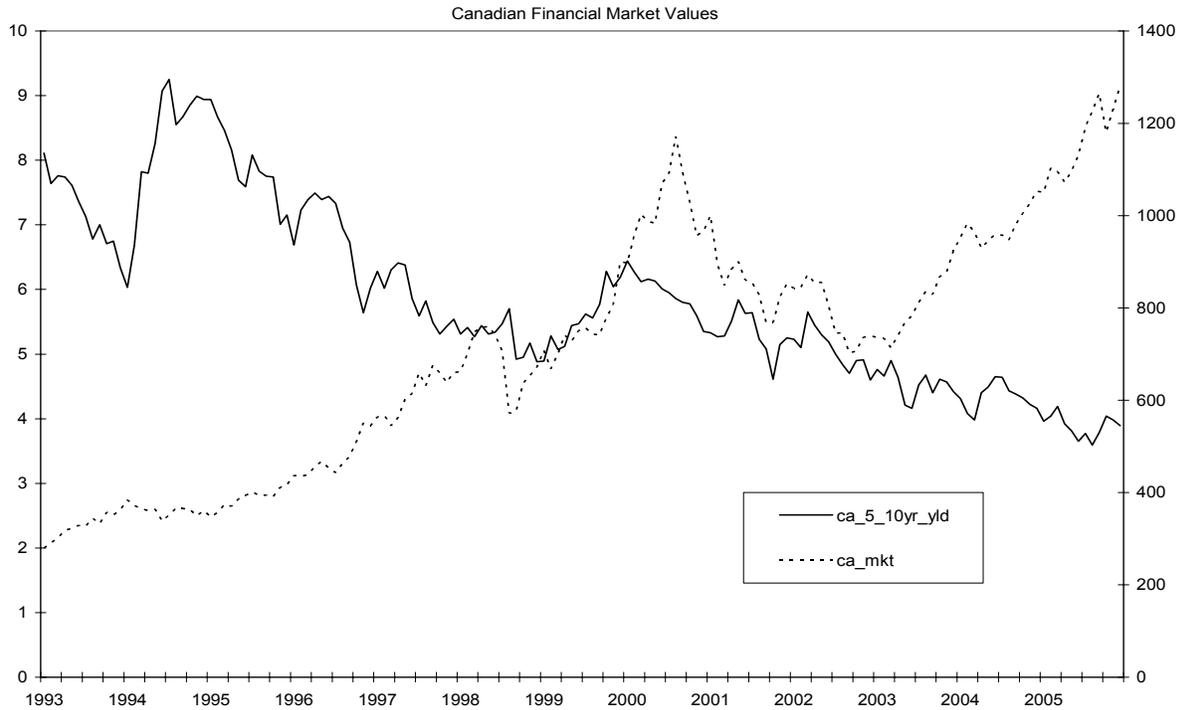
Though there are different models which try to address these differences in how one should value options within the Black-Scholes model (e.g., Hull and White (2004)), there are also other models such as the binomial model. Studies have suggested that the valuation from the Black-Scholes and binomial methods is consistent with the values from other methods (i.e., Damadoran (2005) and Sapp (2006b)). The estimated value using the Black-Scholes model with are, in fact, reasonable estimates (Sapp (2006b)). Consequently we use the Black-Scholes models with the full stated life of employee options to value our options.

To value restricted share units we run into similar problems as with options. Theoretically, determining the value of restricted shares should be simple – it is just the value of the exchange-traded shares. Unfortunately, restricted stock is less liquid than the other stock, so it would be valued at a discount to the observed market price. How much of a discount depends on several factors such as the length of the non-trading or restricted period, the ability of employees to hedge against price movements (thus enabling them to lock in high stock prices on the restricted stock), stock volatility and the depth of the trading of the underlying asset. Since this is a common problem in determining the value of private equity, we use a fixed illiquidity discount.

The difficulty is in determining the size of these fixed discounts. The majority of studies have found that restricted stock (and therefore illiquid shares) trade at discounts of 25-35%, relative to their unrestricted counterparts. The factors which have been found to influence the size of the discount are revenues, the liquidity of shares and the earnings. The discounts tend to be smaller for larger firms (as measured by revenues) and for healthy firms (positive earnings). Rather than trying to estimate the illiquidity premium for each firm based on its characteristics, we use a constant discount rate of 20% for all firms.

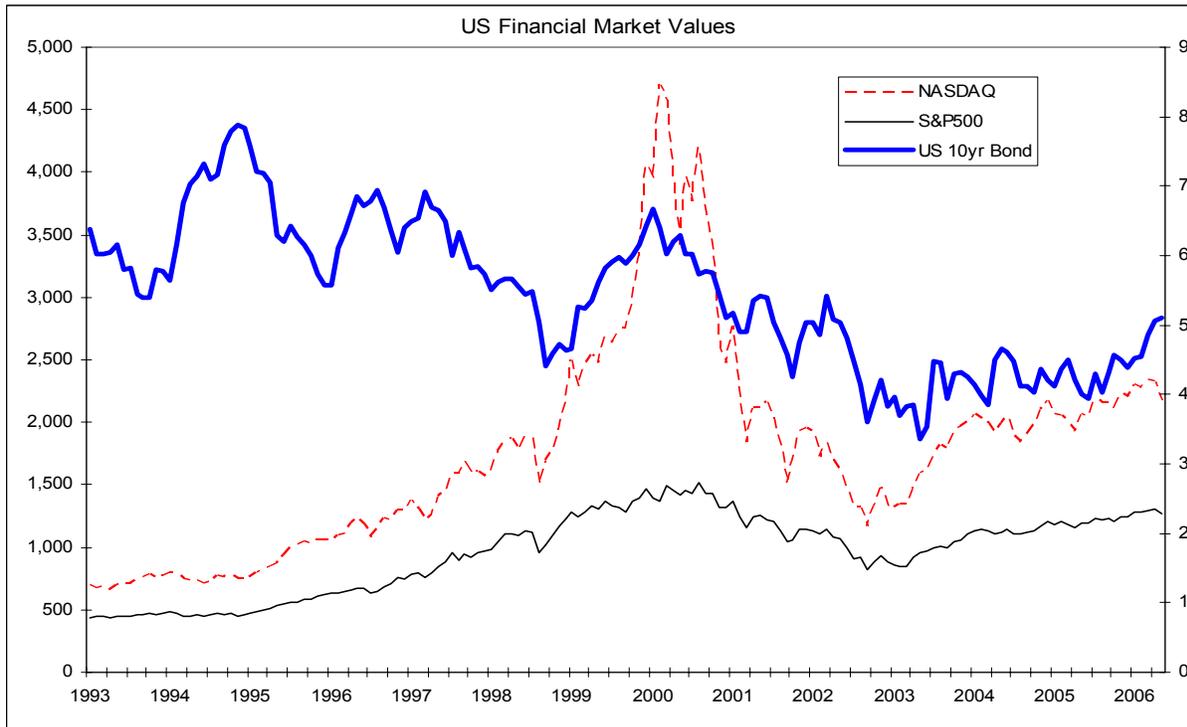
**Figure 1a: Canadian Equity Market and Canadian Risk-Free Rate**

Monthly values for the level of the TSX Composite Index and the annualized yield on the composite Canadian 5 to 10 year government bonds from January 1, 1993 to December 31, 2005.



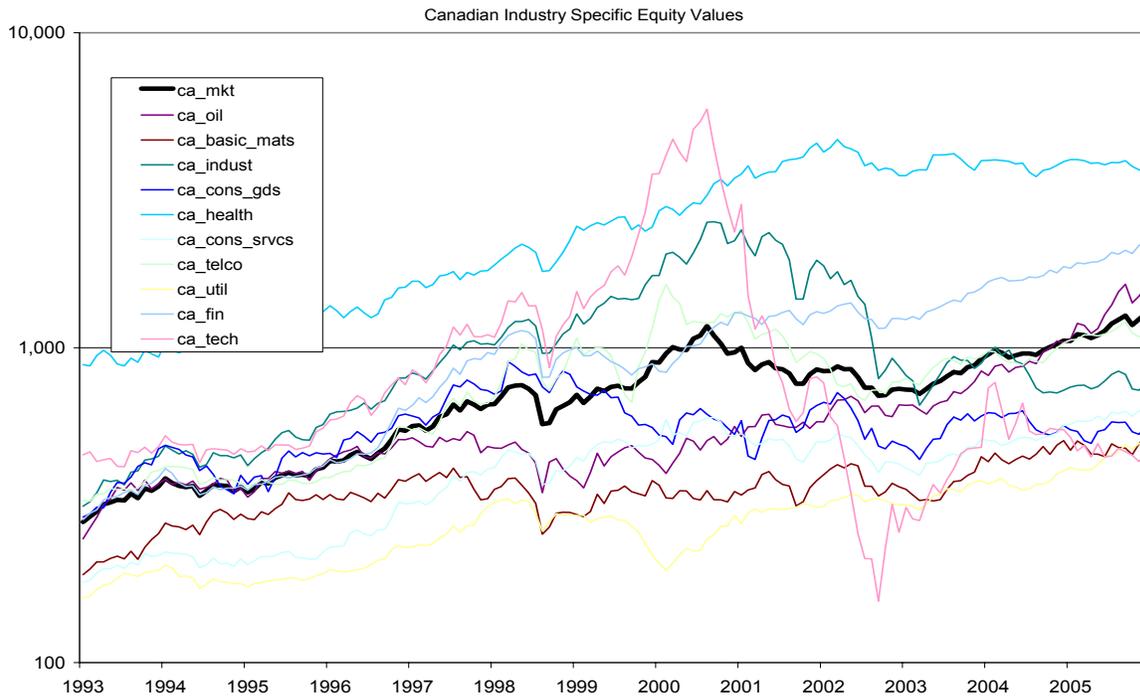
**Figure 1b: US Equity market indices and US Risk-Free Rate**

Monthly values for the S&P500 and Nasdaq indices in US dollars and the annualized yield on a 10 year US government bond.



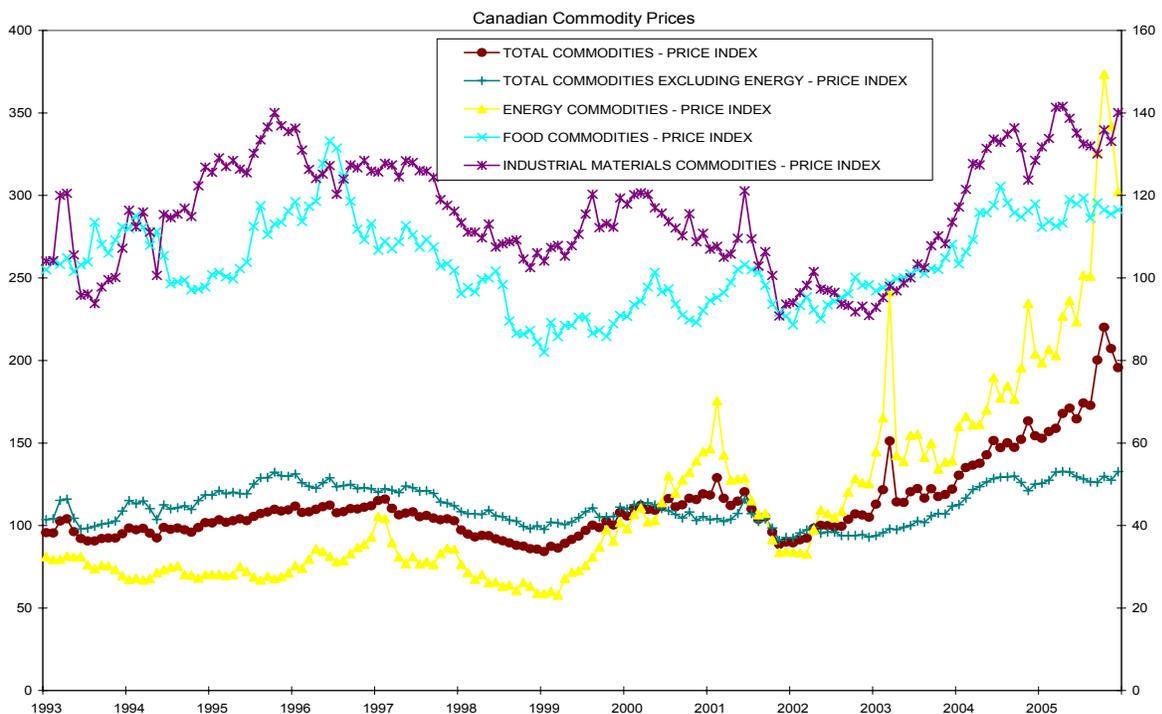
**Figure 2a: Canadian Equity Industry Indices**

Monthly values for the industry-specific indices from January 1, 1993 to December 31, 2005.



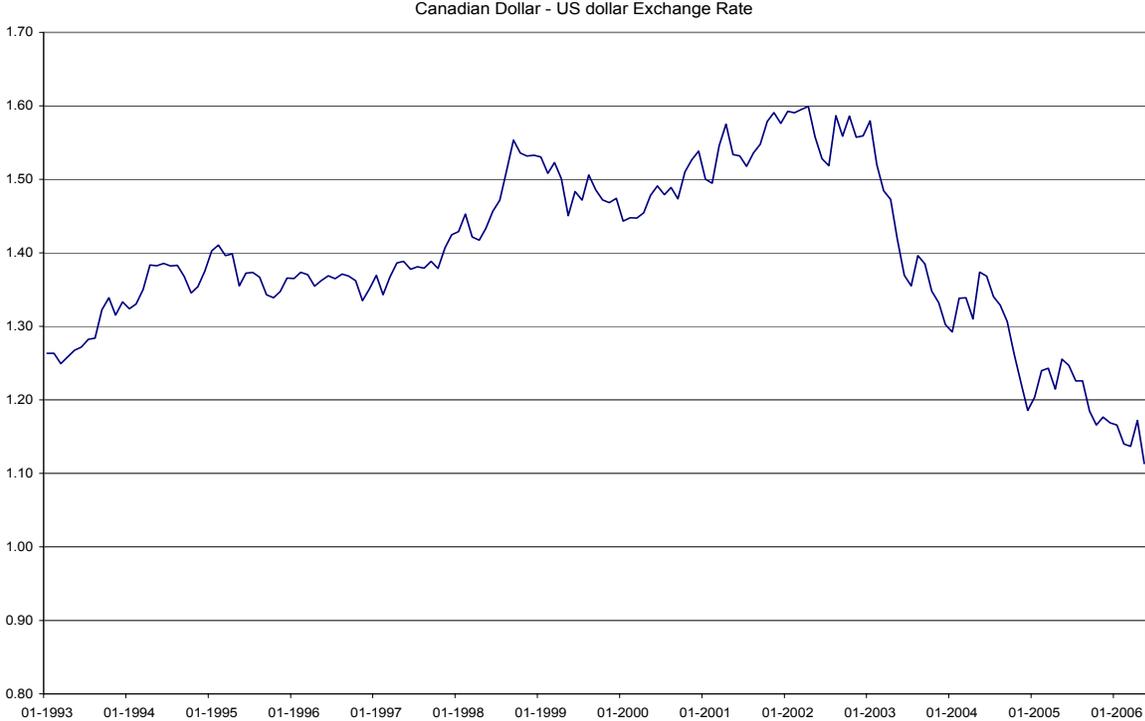
**Figure 2b: Canadian Commodity Indices**

Monthly values for commodity-indices for the major commodities in the Canadian economy. The values of these indices are in Canadian dollars.



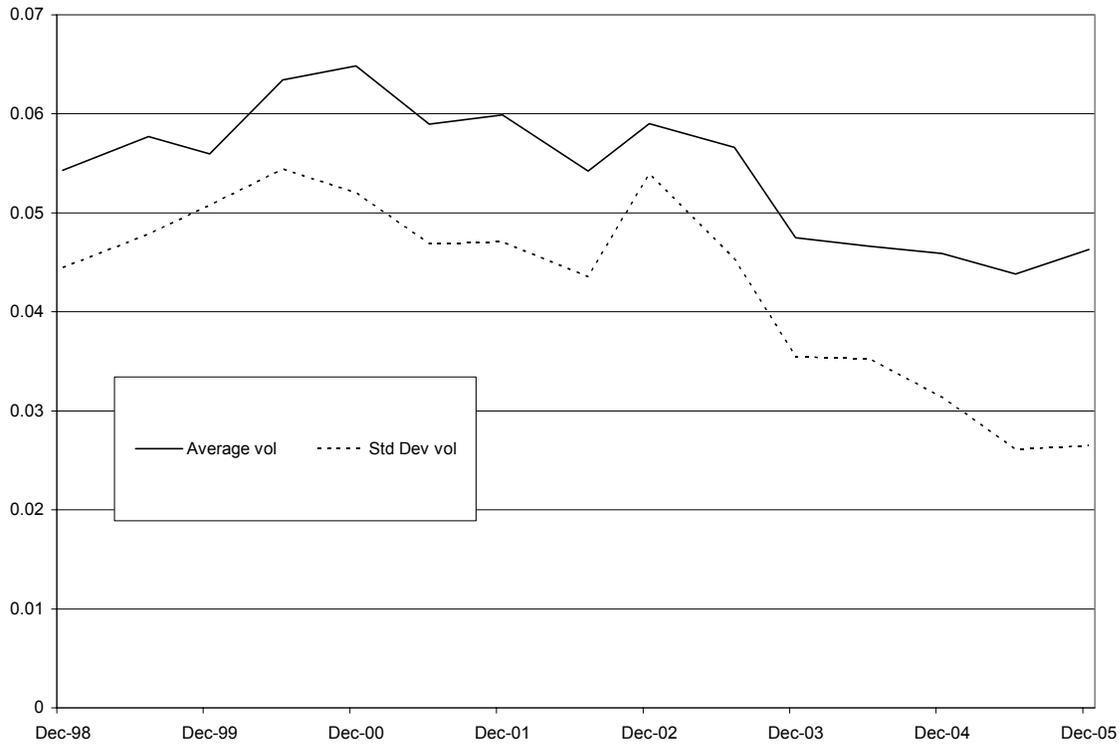
**Figure 2c: Canadian dollar – US dollar Exchange Rate**

The mid-point of the quoted Canadian dollar – US dollar exchange rate at measured at noon by the Bank of Canada.



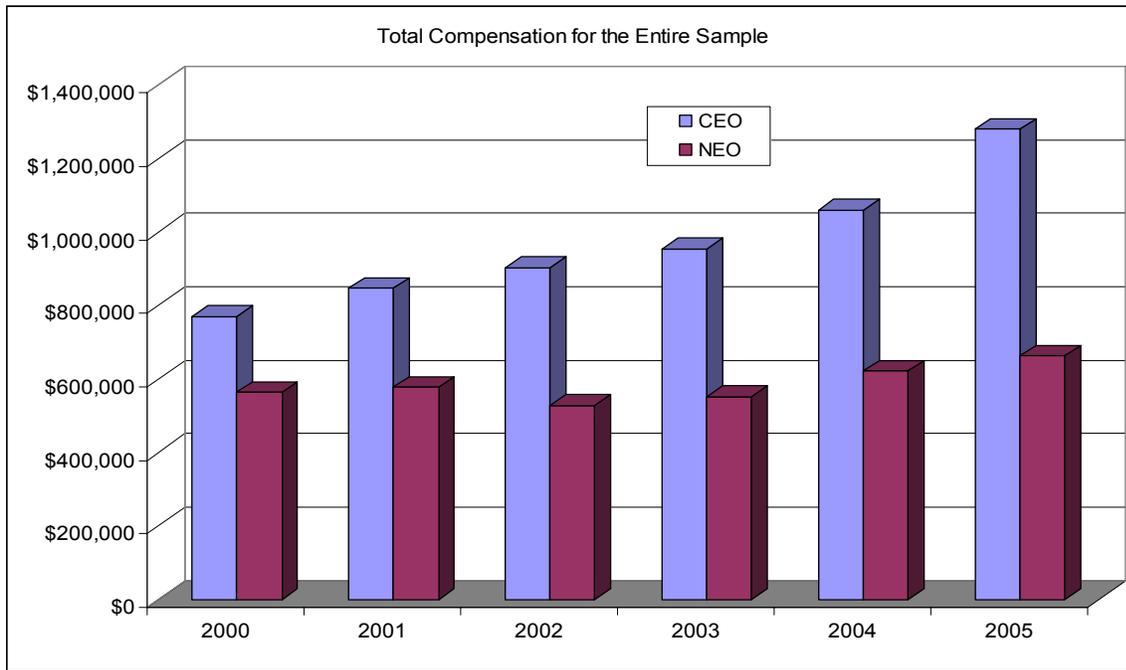
**Figure 3:**

Average estimate of the weekly volatility and the standard deviation of the weekly volatility estimates for the firms in our sample. The volatility is estimated as the standard deviation of the continuously compounded total returns for each firm. The data on total returns was obtained from DataStream over the period from 1993 to 2005.

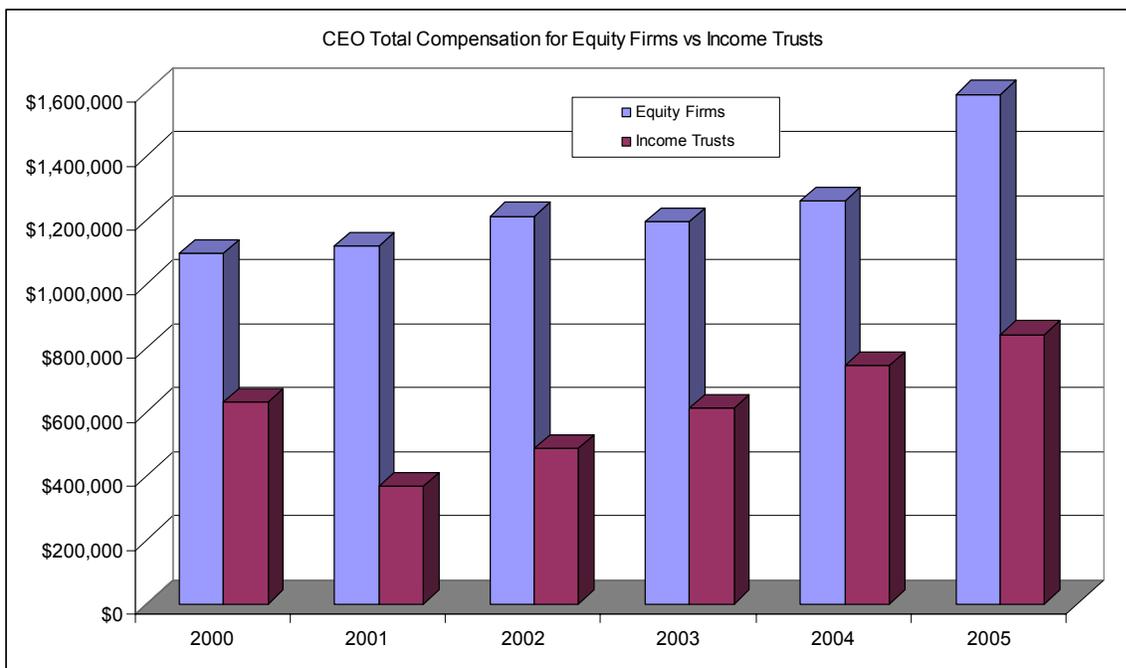


**Figure 4: Mean Levels of Executive Compensation by Variable and Cash Components**

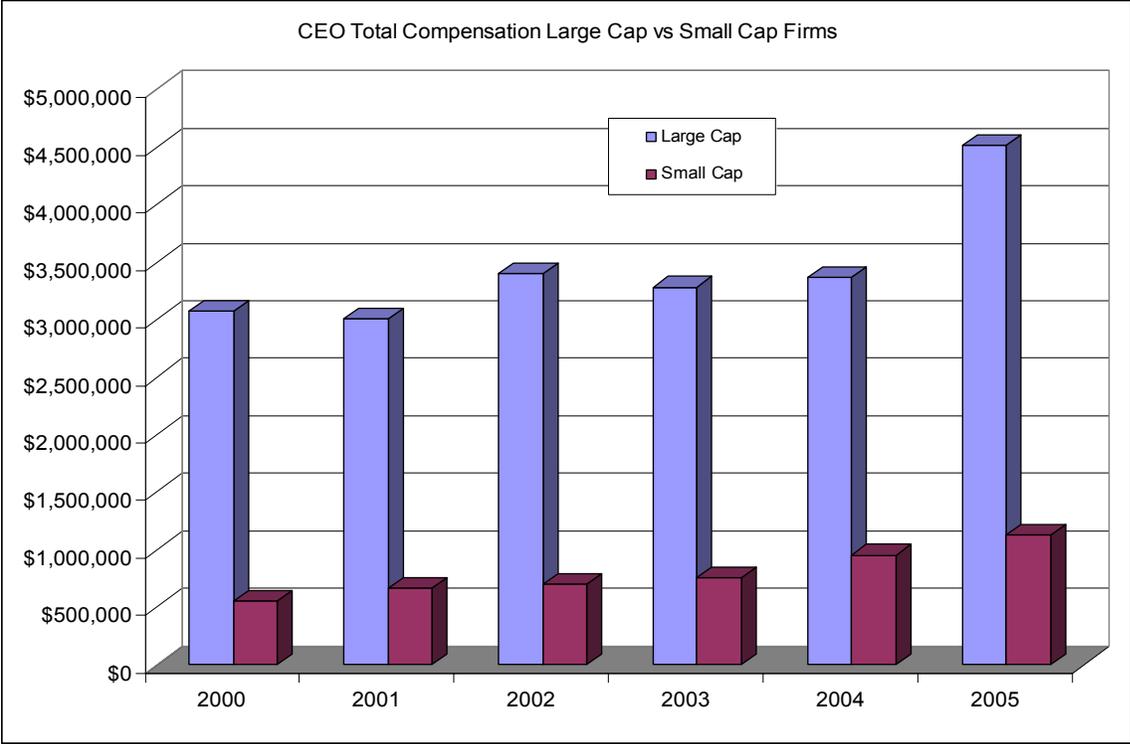
**a: Median Total Compensation in the Complete Sample**



**b) Median Total CEO Compensation in Equity versus Income Trusts**



**c) Median Total CEO Compensation in Large versus Small Market Capitalization Firms**



**Table 1: Summary Statistics of the Sample of firms from 1998 to 2005**

Year	Variable	Mean	Median	Std Dev	Minimum	Maximum
1998	Sales	1,904.63	234.61	4,144.99	0.03	27,454.00
	Return_on_Assets	-0.02	0.02	0.20	-1.45	0.61
	EPS	0.74	0.32	2.45	-3.77	32.63
	Div_per_Share	0.75	0.40	2.01	0.02	23.00
	Margins	-1.79	0.28	23.71	-362.80	0.98
1999	Sales	2,084.49	256.23	4,565.59	0.01	32,168.95
	Return_on_Assets	-0.03	0.03	0.29	-3.47	0.40
	EPS	0.67	0.53	1.74	-10.97	9.20
	Div_per_Share	0.61	0.48	0.49	0.02	2.36
	Margins	-1.04	0.28	19.28	-338.09	0.99
2000	Sales	2,601.10	314.08	6,549.76	0.09	71,571.14
	Return_on_Assets	-0.01	0.03	0.20	-1.36	0.57
	EPS	0.99	0.58	2.09	-7.38	17.64
	Div_per_Share	0.67	0.49	0.66	0.03	4.28
	Margins	-0.02	0.29	3.03	-39.67	0.99
2001	Sales	2,680.50	344.44	7,132.05	0.07	92,021.02
	Return_on_Assets	-0.05	0.02	0.34	-4.08	0.41
	EPS	33.27	0.40	611.19	-28.04	11,336.00
	Div_per_Share	0.88	0.50	1.30	0.03	12.30
	Margins	0.09	0.30	1.94	-24.40	0.97
2002	Sales	2,387.94	302.51	4,996.19	0.03	27,446.00
	Return_on_Assets	-0.04	0.02	0.24	-1.73	0.24
	EPS	0.48	0.33	2.14	-17.51	9.21
	Div_per_Share	0.76	0.56	0.80	0.01	6.50
	Margins	0.17	0.33	1.66	-19.25	1.00
2003	Sales	2,323.36	333.29	4,698.91	0.09	29,198.00
	Return_on_Assets	0.00	0.03	0.17	-1.50	0.28
	EPS	0.92	0.52	2.24	-15.53	23.97
	Div_per_Share	0.93	0.68	0.98	0.02	6.33
	Margins	0.31	0.35	0.76	-9.96	1.00
2004	Sales	2,617.20	449.67	5,337.81	0.01	29,946.61
	Return_on_Assets	0.01	0.04	0.15	-1.22	0.29
	EPS	1.14	0.75	1.90	-9.89	10.73
	Div_per_Share	0.93	0.78	0.80	0.04	4.40
	Margins	-2.15	0.36	31.27	-423.25	0.96
2005	Sales	2,774.03	557.68	5,619.38	0.01	32,047.00
	Return_on_Assets	0.00	0.04	0.25	-3.50	0.71
	EPS	1.06	0.76	1.99	-9.89	14.07
	Div_per_Share	1.21	0.81	2.30	0.04	24.98
	Margins	-0.86	0.36	16.22	-284.14	0.99

**Table 2: Executive Compensation Regressions Using Control Variables:****a) CEO Compensation**

	Total Compensation		Total Cash		Total Options	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
Intercept	11.6287	141.04	11.3861	165.58	11.2906	73.81
ln_sales	0.3626	35.63	0.3167	37.3	0.352	19.33
d_2001	-0.06334	-0.84	-0.00027	0	-0.2192	-1.67
d_2002	-0.00803	-0.11	0.02172	0.35	-0.1043	-0.8
d_2003	-0.04394	-0.59	0.1252	2.02	-0.4728	-3.68
d_2004	0.03248	0.43	0.2193	3.52	-0.425	-3.26
d_2005	0.127	1.68	0.26	4.12	-0.1328	-1.01
d_resource	0.08096	1.52	-0.03408	-0.77	0.04164	0.46
d_man	-0.4066	-3.61	-0.1541	-1.64	-0.6906	-2.74
d_util	-0.2977	-2.4	-0.1538	-1.49	-0.6501	-3.26
d_fin	0.02831	0.39	0.01584	0.26	0.1566	1.22
d_subset_regulated	0.2492	2.43	0.0473	0.55	0.2214	1.4

**b) The second to fifth highest paid named executive officers (NEOs)**

	Total Compensation		Total Cash		Total Options	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
Intercept	11.568	160.08	11.4176	202.61	10.3265	60.14
ln_sales	0.2657	30.19	0.2279	33.21	0.3189	15.97
d_2001	0.04033	0.66	0.0255	0.54	-0.02803	-0.2
d_2002	0.03336	0.55	0.0545	1.16	-0.192	-1.42
d_2003	0.0183	0.31	0.1386	2.97	-0.5101	-3.82
d_2004	0.05034	0.84	0.1865	4	-0.3104	-2.29
d_2005	0.1523	2.54	0.2571	5.5	-0.1922	-1.42
d_resource	-0.00882	-0.2	-0.1004	-2.91	0.2289	2.36
d_man	-0.4528	-5.09	-0.271	-3.91	-0.7038	-2.88
d_util	-0.142	-1.38	0.009308	0.12	-0.7282	-3.29
d_fin	0.1927	3.47	0.2101	4.85	0.2437	1.93
d_subset_regulated	0.2776	3.7	0.1479	2.53	0.3083	2

**c) The difference between the CEO compensation and the next NEOs**

	Total Compensation		Total Cash		Total Options	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
Intercept	11.1395	79.71	10.6805	84.37	11.0304	51.01
ln_sales	0.3488	20.59	0.3056	19.81	0.3438	13.69
d_2001	0.003339	0.03	0.05234	0.49	-0.2801	-1.65
d_2002	-0.04828	-0.42	0.1088	1.02	-0.1032	-0.61
d_2003	-0.1374	-1.21	0.1973	1.89	-0.5782	-3.48
d_2004	0.03571	0.31	0.3867	3.73	-0.5184	-3.05
d_2005	0.1524	1.34	0.3878	3.71	-0.1303	-0.78
d_resource	0.02425	0.29	-0.1186	-1.54	-0.07374	-0.61
d_man	-0.6979	-4.15	-0.3502	-2.32	-1.4274	-3.97
d_util	-0.1107	-0.58	-0.00721	-0.04	-0.6413	-2.55
d_fin	0.2374	2.17	0.02466	0.24	0.1554	1
d_subset_regulated	-0.0628	-0.44	-0.2978	-2.21	-0.03707	-0.2

**d The percentage difference between the CEO compensation and the next NEOs**

	Total Compensation		Total Cash	
	Estimate	T-stat	Estimate	T-stat
Intercept	-0.1543	-0.69	-999008	-4.78
ln_sales	0.04616	1.71	340471	13.39
d_2001	0.2134	1.13	-62297	-0.35
d_2002	0.2119	1.14	-178176	-1.02
d_2003	0.2908	1.58	41705	0.24
d_2004	0.311	1.69	246130	1.42
d_2005	0.3289	1.78	267630	1.54
d_resource	-0.2032	-1.49	85763	0.67
d_man	0.01715	0.06	-348558	-1.36
d_util	0.06654	0.21	-219761	-0.74
d_fin	-0.06448	-0.37	133498	0.82
d_subset_regulated	0.01642	0.07	-1787.33	-0.01

**Table 3: Relationship between the CEO compensation and the next NEOs:**

	Total Compensation		Total Cash		Total Options	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
Intercept	5.3059	29.5	6.5072	35.95	2.4535	8.71
ln_sales	0.09725	12.36	0.1096	15.81	0.07541	4.72
d_2001	0.04499	1.01	0.01914	0.49	0.01725	0.18
d_2002	0.03268	0.74	0.04958	1.3	-0.1208	-1.25
d_2003	0.02562	0.59	0.0727	1.91	-0.18	-1.87
d_2004	0.02111	0.48	0.0769	2.02	-0.02321	-0.24
d_2005	0.05212	1.19	0.1185	3.09	-0.1157	-1.2
d_resource	-0.00142	-0.04	-0.05636	-2.01	0.1891	2.76
d_man	-0.1421	-2.18	-0.1544	-2.75	0.1054	0.5
d_util	-0.06207	-0.83	0.02238	0.34	-0.3296	-2.15
d_fin	0.1561	3.8	0.1943	5.46	0.1317	1.47
d_subset_regulated	0.1682	3.07	0.1357	2.85	0.1571	1.46
ln_CEO_Total	0.5242	36.55				
Ln_CEO_Options					0.7018	31.7
Ln_CEO_Cash			0.4213	28.14		

**Table 4: Pay for performance Regressions****a) CEO Compensation**

	Total		Cash		Variable	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
Intercept	11.5295	132.35	11.3268	156.46	11.1806	71.17
ln_sales	0.3792	34.66	0.3249	35.73	0.3716	19.49
d_2001	-0.1161	-1.41	-0.01065	-0.16	-0.3501	-2.45
d_2002	-0.04203	-0.55	0.0083	0.13	-0.1512	-1.15
d_2003	-0.04456	-0.58	0.1261	1.97	-0.4515	-3.4
d_2004	0.0553	0.71	0.2373	3.69	-0.3954	-2.94
d_2005	0.1525	1.82	0.2752	3.95	-0.05407	-0.37
d_resource	0.1123	2.04	-0.02655	-0.58	0.06622	0.71
d_man	-0.3193	-2.45	-0.1329	-1.23	-0.5003	-1.85
d_util	-0.398	-3.03	-0.2553	-2.34	-0.7318	-3.49
d_fin	0.01681	0.21	0.01576	0.23	0.05417	0.37
d_subset_regulated	0.2184	2.14	0.0367	0.43	0.2117	1.34
Rel_Perf_ind	0.001601	0.27	-0.0008	-0.16	0.02239	0.80
Industry Index	0.2828	0.95	0.06341	0.26	0.8186	1.50
Return_on_Assets	-0.5529	-4.89	-0.167	-1.78	-0.6296	-3.21

**b) Next level NEOs**

	Total		Cash		Variable	
	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
Intercept	11.4728	149.78	11.3759	192.35	10.2093	56.96
ln_sales	0.2797	29.59	0.2326	31.87	0.3379	15.94
d_2001	0.02417	0.37	0.03077	0.61	-0.05325	-0.36
d_2002	0.01331	0.22	0.05092	1.07	-0.2351	-1.71
d_2003	0.01075	0.17	0.136	2.82	-0.5379	-3.84
d_2004	0.05797	0.93	0.1933	4.03	-0.3325	-2.34
d_2005	0.1568	2.32	0.2614	5.02	-0.2309	-1.48
d_resource	0.01801	0.4	-0.09762	-2.8	0.2733	2.75
d_man	-0.3957	-3.83	-0.243	-3.04	-0.712	-2.76
d_util	-0.2106	-1.92	-0.07322	-0.86	-0.6859	-2.96
d_fin	0.2088	3.33	0.2292	4.73	0.267	1.85
d_subset_regulated	0.2563	3.43	0.1378	2.39	0.3003	1.94
Rel_Perf_ind	0.004221	0.96	0.003438	1.01	0.00948	0.35
Industry Index	0.04639	0.2	-0.0077	-0.04	-0.1833	-0.32
Return_on_Assets	-0.4406	-4.81	-0.1041	-1.47	-0.5238	-2.59

**Table 5: Compensation versus Governance-related Factors****a) Ownership Structure – CEO versus other NEOs**

	CEO		NEO	
	Estimate	T-stat	Estimate	T-stat
Intercept	11.6894	117.45	11.5878	132.99
ln_sales	0.3342	26.38	0.2408	21.97
d_2001	-0.07824	-0.98	0.05513	0.87
d_2002	-0.03375	-0.43	0.02507	0.4
d_2003	-0.06708	-0.85	-0.00262	-0.04
d_2004	0.03913	0.5	0.05594	0.9
d_2005	0.117	1.47	0.1499	2.4
d_resource	0.1079	1.89	-0.01082	-0.23
d_man	-0.2071	-1.57	-0.1036	-0.98
d_util	-0.3245	-2.49	-0.1758	-1.59
d_fin	0.09976	1.24	0.209	3.5
d_subset_regulated	0.1642	1.57	0.2784	3.67
TSX_Multi	-0.0492	-0.8	0.01729	0.37
Income_Trust	-0.2227	-3.03	-0.05786	-0.93
d_cross_listed	0.3555	5.42	0.286	5.38
NYSE_Listed	0.2202	2.59	0.2101	3.18
Controlling Shareholder	-0.00453	-6.67	11.5878	-2.72

**b) Director Characteristics:**

	CEO		NEO	
	Estimate	T-stat	Estimate	T-stat
Intercept	11.9512	45.99	12.5258	60.98
ln_sales	0.2562	10.85	0.1885	9.24
d_2001	-0.2462	-1.68	-0.09303	-0.8
d_2002	-0.05857	-0.41	0.01905	0.17
d_2003	-0.1793	-1.27	-0.1219	-1.1
d_2004	-0.1785	-1.25	-0.02152	-0.19
d_2005	-0.04072	-0.29	0.1255	1.13
d_resource	-0.2127	-2.08	-0.1749	-2.03
d_man	-0.5116	-2.35	-0.5494	-3.33
d_util	-0.8229	-3.55	-0.3517	-1.83
d_fin	-0.03776	-0.27	-0.00785	-0.07
d_subset_regulated	0.2552	1.26	0.4101	2.74
Director_Avg_Tenure	0.02936	2.57	0.006101	0.63
Percent_Ind_Director	0.4138	1.5	-0.4789	-2.19
Percent_CEO_Director	0.03718	0.15	-0.2674	-1.45
Percent_Multiple_Dir	0.2789	1.68	0.1485	1.12
Percent_Fam_Director	-0.72	-1.83	-0.00734	-0.02
Num_Board_Shares	-0.00031	-1.59	-0.00034	-2.26

**c) Compensation Committee Characteristics**

	CEO		NEO	
	Estimate	T-stat	Estimate	T-stat
Intercept	10.8964	54.03	11.2497	61.74
ln_sales	0.3157	27.87	0.2602	26.46
d_2001	-0.1033	-1.25	0.01786	0.26
d_2002	-0.02866	-0.35	0.02364	0.35
d_2003	-0.04065	-0.5	-0.00629	-0.09
d_2004	0.001677	0.02	0.014	0.21
d_2005	0.08904	1.09	0.1012	1.52
d_resource	0.04073	0.72	-0.01068	-0.22
d_man	-0.1935	-1.37	-0.2644	-2.23
d_util	0.02897	0.18	-0.09638	-0.73
d_fin	0.05542	0.75	0.1867	3.16
d_subset_regulated	0.1814	1.76	0.254	3.22
Percent_CC_Ind	1.1286	5.48	0.4485	2.42
Percent_CC_CEO	0.3686	3.98	0.09865	1.32
Percent_CC_Exp	-0.1203	-1.38	-0.1545	-2.12

**d) CEO Characteristics**

	CEO		NEO	
	Estimate	T-stat	Estimate	T-stat
Intercept	11.8169	33.21	11.2755	38.72
ln_sales	0.278	12.07	0.2875	14.68
d_2001	0.07687	0.51	0.1006	0.85
d_2002	-0.06654	-0.46	0.08086	0.7
d_2003	0.01724	0.12	0.03032	0.26
d_2004	0.06935	0.47	0.05183	0.45
d_2005	0.1502	1	0.1882	1.6
d_resource	-0.2452	-2.03	-0.04495	-0.46
d_man	-0.1344	-0.57	0.04715	0.26
d_util	-0.3468	-1.55	-0.2229	-1.3
d_fin	0.1016	0.81	0.2308	2.25
d_subset_regulated	0.02302	0.16	0.167	1.49
CEO_Age	0.005049	0.83	0.002326	0.48
CEO_Tenure	-0.00513	-0.71	-0.01142	-1.99
D_outside_CEO	-0.2715	-3.3	-0.2376	-3.65
D_CEO_Chairman_of_Bo	0.2536	2.51	0.1461	1.86
Percent_CEO_Shares	-0.00051	-1.79	-0.00006	-0.26
D_Compensation_by_Co	0.4951	5.52	0.2357	3.3

**e) Full Model**

	CEO		NEO	
	Estimate	T-stat	Estimate	T-stat
Intercept	10.5785	17.24	11.4743	24.08
ln_sales	0.1355	4.66	0.1051	4.64
d_2001	-0.3773	-2.01	-0.05693	-0.4
d_2002	-0.2972	-1.62	-0.09606	-0.68
d_2003	-0.191	-1.05	-0.1513	-1.09
d_2004	-0.1352	-0.74	-0.0928	-0.66
d_2005	-0.2218	-1.18	-0.09633	-0.67
d_resource	-0.07627	-0.54	-0.1182	-1
d_man	0.2	0.7	0.2736	1.3
d_util	-0.2164	-0.47	-0.5306	-1.57
d_fin	0.0628	0.33	-0.1097	-0.83
d_subset_regulated	0.3347	1.57	0.4528	2.89
Income_Trust	-0.07711	-0.46	-0.01377	-0.1
d_cross_listed	0.3074	2.71	0.1682	1.89
Controlling Shareholder	-0.00584	-0.91	0.003179	0.67
Director_Avg_Tenure	0.05709	3.13	0.0299	2.15
Percent_Ind_Director	0.6595	1.7	-0.9685	-2.97
Percent_Multiple_Dir	0.2064	0.94	0.3161	1.89
Percent_Fam_Director	0.1098	0.21	0.2732	0.65
CEO_Tenure	0.005112	0.58	-0.00485	-0.7
D_outside_CEO	-0.05974	-0.54	0.06161	0.72
D_CEO_Chairman_of_Bo	0.07861	0.57	-0.1071	-1.01
D_Compensation_by_Co	0.4716	1.82	0.8131	3.2
Percent_CC_Ind	1.0005	1.75	0.7077	1.64
Percent_CC_CEO	0.0181	0.1	-0.1469	-1.05
Percent_CC_Exp	0.5365	2.63	0.3278	2.05
Intercept				

**Table 6: Relationship between the Difference between CEO and the other NEO compensation and Governance Factors:**

**a) Nominal Gap in the Level of Total Compensation for the CEO and NEOs:**

	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
Intercept	11.2135	65.17	10.9526	25.76	11.0067	21.34	10.5147	29.2
Ln_sales	0.326	15.13	0.2412	5.8	0.2971	8.78	0.3404	18.45
D_2001	-0.00045	0	-0.1359	-0.58	-0.2473	-1.21	-0.04886	-0.38
D_2002	-0.05632	-0.46	-0.00848	-0.04	-0.3988	-2	-0.101	-0.81
D_2003	-0.1575	-1.28	-0.2443	-1.12	-0.2479	-1.24	-0.1494	-1.21
D_2004	0.008049	0.07	-0.01237	-0.06	-0.1077	-0.55	-0.05467	-0.45
d_2005	0.1469	1.2	0.02164	0.1	-0.0986	-0.49	0.07661	0.62
d_resource	0.01954	0.21	-0.2353	-1.38	-0.1581	-0.93	0.08456	0.96
d_man	-0.564	-2.64	-0.789	-2.52	-0.3986	-1.34	-0.5213	-2.34
d_util	-0.2315	-1.09	-0.1942	-0.53	-0.5212	-1.84	0.1444	0.62
d_fin	0.1983	1.63	0.15	0.66	0.02675	0.16	0.234	2.07
d_subset_regulated	-0.09887	-0.66	0.09107	0.32	-0.2501	-1.32	-0.1389	-0.96
TSX_Multi	-0.07106	-0.76						
Income_Trust	-0.2563	-2.08						
d_cross_listed	0.2328	2.22						
NYSE_Listed	0.3005	2.33						
Controlling Shareholder	-0.00542	-2.26						
Director_Avg_Tenure			0.07164	3.69				
Percent_Ind_Director			0.5199	1.12				
Percent_CEO_Director			0.488	1.35				
Percent_Multiple_Dir			0.1319	0.51				
Percent_Fam_Director			-2.995	-4.44				
Num_Board_Shares			0.000169	0.53				
CEO_Age					0.008517	0.99		
CEO_Tenure					-0.00098	-0.1		
D_outside_CEO					-0.1113	-1		
D_CEO_Chairman_of_Bo					0.2121	1.59		
Percent_CEO_Shares					-0.00027	-0.51		
D_Compensation_by_Co					0.6246	5.17		
Percent_CC_Ind							0.6287	1.71
Percent_CC_CEO							0.3849	2.78
Percent_CC_Exp							0.2229	1.62

**b) Percentage of Total Compensation for the CEO compared to the NEOs:**

	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat	Estimate	T-stat
Intercept	-0.3323	-1.1	-0.3555	-1.11	0.7864	1.58	-1.5845	-2.61
ln_sales	0.0619	1.64	0.006158	0.19	-0.0161	-0.48	0.03714	1.14
d_2001	0.247	1.12	-0.02318	-0.13	-0.00645	-0.03	0.2353	1.04
d_2002	0.236	1.09	-0.3041	-1.68	-0.3165	-1.61	0.2131	0.96
d_2003	0.319	1.48	-0.05692	-0.33	-0.03802	-0.19	0.299	1.35
d_2004	0.3627	1.69	-0.07439	-0.43	-0.07907	-0.4	0.2943	1.34
d_2005	0.3382	1.57	-0.1609	-0.92	-0.04198	-0.21	0.3042	1.38
d_resource	-0.2268	-1.39	0.05915	0.44	-0.00358	-0.02	-0.167	-1.06
d_man	-0.08922	-0.25	-0.01617	-0.06	0.04277	0.14	0.08595	0.22
d_util	0.06552	0.17	0.06341	0.21	0.1943	0.66	0.2011	0.46
d_fin	-0.06101	-0.29	0.1357	0.78	0.08258	0.47	-0.06166	-0.31
d_subset_regulated	0.002984	0.01	0.0624	0.27	0.01047	0.05	0.003831	0.01
TSX_Multi	-0.09399	-0.59						
Income_Trust	0.1268	0.59						
d_cross_listed	0.2006	1.1						
NYSE_Listed	-0.09385	-0.41						
Controlling Shareholder	-0.00152	-0.39						
Director_Avg_Tenure			0.06369	4.17				
Percent_Ind_Director			0.5445	1.59				
Percent_CEO_Director			0.4406	1.51				
Percent_Multiple_Dir			-0.2226	-1.07				
Percent_Fam_Director			-2.071	-4.02				
Num_Board_Shares			0.000323	1.37				
CEO_Age					-0.00664	-0.8		
CEO_Tenure					0.01626	1.66		
D_outside_CEO					-0.07652	-0.69		
D_CEO_Chairman_of_Bo					0.08345	0.62		
Percent_CEO_Shares					-0.00076	-1.91		
D_Compensation_by_Co					0.08531	0.7		
Percent_CC_Ind							1.4118	2.28
Percent_CC_CEO							0.3549	1.43
Percent_CC_Exp							0.06336	0.26

**Table 7: Relationship of the Percentage of Variable Compensation to Governance-Related Factors**

**a) CEO Compensation**

**b)**

	Estimate	T-Stat	Estimate	T-Stat	Estimate	T-Stat	Estimate	T-Stat
Intercept	0.2107	7.02	0.1768	2.06	0.2418	2.11	0.01628	0.26
ln_sales	0.01264	3.31	0.01479	1.89	0.02013	2.72	0.02312	6.48
d_2001	-0.01558	-0.64	-0.07682	-1.58	0.05624	1.15	-0.02158	-0.83
d_2002	-0.00555	-0.23	-0.01056	-0.22	0.0317	0.68	-0.01181	-0.46
d_2003	-0.06841	-2.89	-0.1309	-2.8	-0.07094	-1.52	-0.07545	-2.96
d_2004	-0.07591	-3.18	-0.1289	-2.73	-0.09539	-2.02	-0.1097	-4.31
d_2005	-0.04152	-1.73	-0.1219	-2.6	-0.04228	-0.88	-0.07189	-2.8
d_resource	0.05672	3.29	0.01762	0.52	0.01622	0.42	0.06064	3.39
d_man	-0.08854	-2.23	-0.1246	-1.73	-0.00203	-0.03	-0.1319	-2.95
d_util	-0.01145	-0.29	-0.1241	-1.62	-0.02991	-0.42	-0.05435	-1.09
d_fin	-0.02894	-1.2	-0.06566	-1.41	0.07032	1.73	-0.01996	-0.85
d_subset_regulated	0.1636	5.18	0.1316	1.96	0.08687	1.88	0.1385	4.27
TSX_Multi	-0.06752	-3.63						
Income_Trust	-0.09212	-4.16						
d_cross_listed	0.05312	2.69						
NYSE_Listed	0.1125	4.38						
Controlling Shareholder	-0.00045	-2.2						
Director_Avg_Tenure			-0.00202	-0.53				
Percent_Ind_Director			0.06596	0.72				
Percent_CEO_Director			0.05271	0.66				
Percent_Multiple_Dir			0.1121	2.04				
Percent_Fam_Director			-0.2494	-1.91				
Num_Board_Shares			-0.00005	-0.72				
CEO_Age					-0.00081	-0.41		
CEO_Tenure					0.000824	0.35		
D_outside_CEO					0.00939	0.35		
D_CEO_Chairman_of_Bo					-0.00622	-0.19		
Percent_CEO_Shares					-0.00044	-4.81		
D_Compensation_by_Co					0.02658	0.92		
Percent_CC_Ind							0.1667	2.57
Percent_CC_CEO							0.07157	2.45
Percent_CC_Exp							-0.01574	-0.57

**b) NEO Compensation**

	Estimate	T-Stat	Estimate	T-Stat	Estimate	T-Stat	Estimate	T-Stat
Intercept	0.1817	5.95	0.09656	1.34	-0.02649	-0.25	-0.02509	-0.4
ln_sales	0.01015	2.64	0.01764	2.46	0.02277	3.21	0.02378	7.02
d_2001	0.01991	0.89	-0.01031	-0.25	0.04773	1.11	0.008649	0.37
d_2002	-0.01081	-0.49	0.01713	0.42	-0.02725	-0.65	-0.01392	-0.6
d_2003	-0.06239	-2.85	-0.09722	-2.5	-0.09442	-2.25	-0.06757	-2.94
d_2004	-0.06811	-3.13	-0.07496	-1.92	-0.1156	-2.78	-0.08594	-3.78
d_2005	-0.0531	-2.43	-0.08923	-2.29	-0.08397	-1.98	-0.06982	-3.05
d_resource	0.0506	3.06	0.01993	0.66	0.06009	1.7	0.07217	4.39
d_man	-0.05699	-1.54	-0.0716	-1.23	0.04036	0.62	-0.0937	-2.29
d_util	-0.05259	-1.36	-0.1791	-2.65	-0.02446	-0.39	-0.08572	-1.88
d_fin	-0.04099	-1.96	-0.07277	-1.95	0.09574	2.58	-0.01771	-0.87
d_subset_regulated	0.1033	3.89	0.1006	1.91	-0.00312	-0.08	0.07662	2.81
TSX_Multi	-0.04907	-3.03						
Income_Trust	-0.04922	-2.26						
d_cross_listed	0.02751	1.48						
NYSE_Listed	0.132	5.69						
Controlling Shareholder	-0.0008	-2.01						
Percent_Ind_Director			-0.00487	-1.43				
Percent_CEO_Director			0.1288	1.68				
Percent_Multiple_Dir			-0.00773	-0.12				
Percent_Fam_Director			0.02031	0.44				
Num_Board_Shares			-0.08235	-0.71				
			-0.00006	-1.13				
CEO_Tenure					0.002812	1.59		
D_outside_CEO					0.000891	0.43		
D_CEO_Chairman_of_Bo					0.01937	0.82		
Percent_CEO_Shares					0.0331	1.16		
D_Compensation_by_Co					-0.0004	-4.72		
					0.01996	0.77		
Percent_CC_Ind							0.1504	2.35
Percent_CC_CEO							0.07437	2.88
Percent_CC_Exp							-0.0475	-1.89