Executive Equity-based Compensation, Corporate Governance and Investor Confidence in Accounting Information

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Abstract

Financial reporting provides information useful to providers of capital in their decision-making processes. Investors must have confidence in these reports. Following corporate scandals such as Enron, Tyco and WorldCom, questionable accounting practices by executives awarded with equity-based compensation have reduced investor confidence in financial reporting. This study examines the relationship between investor confidence in accounting information, corporate governance, and executive equity-based compensation. Investor confidence in accounting information is measured by the value relevance of earnings. Using data from Canadian firms composing S&P/TSX index for the year 2013 and governance scores based on Board Games, the Globe and Mail’s annual report on corporate governance, the analysis shows that corporate governance significantly enhances the value relevance of earnings. An in-depth analysis shows that awarding executives with equity-based compensation enhances the value relevance of earnings, but only for firms with good governance. This finding highlights the importance to consider corporate governance when assessing the relevance of financial reporting to investors who assess the value of firms which award share-based and option-based compensation to their executives.

Key Words: Executive equity-based compensation, corporate governance, investor confidence, value relevance of accounting numbers

JEL Classification: C19, G12, G14, G34, M41
1. Introduction

In late 2001, Enron Corp. filed for bankruptcy protection. Following this business disaster, a flood of questionable accounting practices of a firm that had a perceived perfect governance structure began to come to light. This undermined investor confidence in both the US and Canada and continued with other suspected scandals such as Tyco and WorldCom. Among the factors identified which played a role in these financial scandals, failed corporate governance and the incentives provided by executive compensation systems were the most important. Legislators in the US reacted by enacting the Sarbanes-Oxley Act of 2002 which introduced sweeping changes to the corporate governance and disclosure obligations of publicly traded firms in U.S. markets. Following this process, the Canadian Securities Administrators (CSA) introduced a series of national instruments and policies which, to a great extent, closely follow Sarbanes-Oxley and the rules and guidelines established by the SEC and U.S. stock exchanges, but strive to accommodate the unique nature of the Canadian financial market.

The main objective of this study is to assess whether current governance mechanisms have managed to restore investor confidence in financial reporting given the increasingly important role played by executive equity-based compensation grants. This study examines the relationship between investor confidence in accounting information, corporate governance, and executive equity-based compensation. Investor confidence in accounting information is measured by the value relevance of earnings as developed by Ohlson (1995). Another objective of this study is to test directly the relation between equity-based compensation and the value relevance of earnings. To our knowledge, no previous study has tested this relation. The study focuses on two innovative measures of variables. Firstly, corporate governance level is measured by the governance score based on Board Games developed by Globe and Mail for Canadian firms. In addition, the level of executive equity-based compensation is measured by the proportion of equity-based compensation in relation to the total compensation. The results of this study contribute to current value relevance research by adding the effect of corporate governance when executives are rewarded with equity-based compensation.

The paper is divided into the following sections:
- Section 2 describes prior studies and hypotheses.
- Section 3 presents research methodology.
- Section 4 discusses results.
- Lastly, section 5 provides a conclusion and limitations.
2. Review of Literature and Hypotheses Development

2.1 Value Relevance of Accounting Information

Beisland (2010) defines value relevance as the ability of financial statement information to capture and summarize information that determines firm value. Empirically, value relevance is measured by the statistical relations between information that financial statements present and stock market values or returns. The model frequently used to test the relevance of accounting information is that developed by Ohlson (1995) and Feltham and Ohlson (1995). In this model, net accounting earnings and the book value of equity explain the firm's market value.

Collins, Maydew & Weiss (1997) conducted a longitudinal study that covers 115,154 US observations (firm years) and found that the value relevance of accounting information has evolved over the 1953-1993 period. Whereas at the start of the period the net earnings and the book value of equity were of equal importance in the relationship between market value and accounting information, the importance of the book value of equity subsequently increased, disproportionately with that of net earnings. Three facts seem to account for this phenomenon. First, over time the number of small firms has increased. These firms are often considered startup firms in their lifecycle. For this type of firm, the market value rests more on future cash flows than on actual earnings. Several studies, including Amir & Lev (1996) argue that the book value of equity is more appropriate in these circumstances than actual earnings to determine market value. Second, the number of firms in financial difficulty has also increased. In this case, investors anticipating a bankruptcy will consider the liquidation value of the firm, which is very close to the book value of equity. Burgstahler & Dichev (1997) find that the book value of equity is more pertinent than net earnings when a firm experiences losses or faces financial distress. Third, a growing number of firms voluntary delay the recognition of their abnormal expenses or earnings. In consequence, the accounting earnings of these firms do not reflect their economic reality. Elliott & Hanna (1996) contend that the capital market ignores both positive and negative exceptional elements: earnings before expenses and abnormal income seem to be more pertinent than net earnings.

Lim & Park (2011) conducted a similar study that covers a recent period (1970-2008). They observe a temporal reduction in the value relevance of earnings. In depth analysis shows that this reduction in the value relevance of earnings is in fact due to the increasing noise in stock returns over time instead of an increasing noise in earnings.

Thus, previous studies using Ohlson (1995) basic model do not allow a clear conclusion as to the relationship between accounting numbers and firm’s market value. To improve the observed relevance of accounting information, some studies have added other independent variables to Ohlson’s (1995) original model. This study follows this path.
2.2 Agency Theory and Equity-Based Compensation

Executive equity-based compensation is used as a governance mechanism to help discourage undesirable behaviors by executives. Such usage is consistent with agency theory. According to this theory (Jensen & Meckling 1976; Ross 1973), executives who are not also owners are shareholders’ agents and will not necessarily act in shareholders’ best interests. Rather, executives are assumed to choose actions to maximize their own expected utility. Moreover, shareholders are unable to directly observe executives’ actions and decisions. Shareholders must, therefore, rely on reported results, and because of information asymmetry, are unable to perfectly infer whether executives’ actions and decisions were optimal from the shareholders’ perspective. Even if executives own shares in the firm, their interests will not necessarily be fully aligned with shareholders’ interests because other shareholders will bear some of the agency cost. The conflicts of interest between executives and shareholders can be mitigated in two different ways. First, a firm’s board of directors or its shareholders themselves can monitor executives’ actions. However, these monitoring mechanisms are usually difficult to implement, owing to their high cost and the unobservability of executives behaviors in some cases. As a result, the second way, that is the use of outcome-based incentives, has become an increasingly important mechanism that many firms use to align the interests of executives and shareholders. Most executive compensation packages consist of four major components: base fixed salary, annual and long-term non-equity incentive plans (i.e. bonus), share-based and option-based awards and pension value. There is also often an “All Other” category of broad compensation such as vehicle allowances, perquisite allowances, and medical benefits. Equity-based compensation (shares and options) place substantial amounts of executive compensation and wealth at risk by tying them closely to future firm performance (Jensen & Murphy 1990). Cash bonuses are viewed as a reward for past performance, whereas equity compensation is viewed as a method to adjust an executive’s incentives (Edmonds, Leece & Maher 2013). Therefore, this study provide further insight into how executives are rewarded from a monitoring perspective.

2.3 Value Relevance of Equity-Based Compensation

Lam & Chng (2006) investigate testable implications concerning diverse motivations for the use of executive stock option grants in executive compensation. These motivations are: value enhancement, risk taking, tax saving, signaling and cash conservation. In their “value enhancement” results, they find evidence of a statistical relation between executive stock-option grants and firm performance measured by Tobin’s Q (based on market value of common stock).

Other studies have examined the value relevance of the way executive stock options are presented in published financial statements (Rees & Stott 1999; Espahbodi et al. 2002). These studies compared value relevance when options are measured and presented in financial...
statements as components of equity, and when options are presented only in notes to financial statements. Most authors have found that presentation in equity is perceived more favorably by capital markets because it allows a more significant association between accounting information and share price.

The studies cited above do not directly test the relation between executive compensation and the value relevance of earnings. The main objective of this study is to fill this gap.

2.4 Value Relevance of Corporate Governance Levels

The Organization for Economic Cooperation and Development (OECD) defines corporate governance as a set of relationships between a firm’s management, its board, its shareholders, and other stakeholders. Corporate governance also provides the structure through which the objectives of the firm are set, and the means of attaining those objectives and monitoring performance are determined (Gillan 2006).

Several studies investigate the relation between corporate governance and firm value or accounting numbers value relevance. First, Vafeas (2000) found that board size is related to firm value for US firms. Then, Gompers, Ishii & Metrick (2003) construct a “Governance Index” for 1,500 large US firms during the 1990s. They find that firms with stronger shareholder rights had higher firm value, higher profits, higher sales growth, and lower capital expenditure. Beiner et al. (2006) find a positive relationship between their broad corporate governance index of Swiss firms in 2002 and firm valuation. Dimitropoulos & Asteriou (2010), in a study of firms in Greece, revealed that the informativeness of annual accounting earnings is positively related to the fraction of outside directors serving on the board. Finally, Fiador (2013) found that for Ghanaian firms, board size and CEO duality are related to the value relevance of book value per share.

Despite the consistency of the results obtained in the studies cited above, the governance variables used vary from one study to another. One of the main contributions of this study is the use of a governance score that integrate all the governance variables identified in the literature.

2.5 Hypotheses

In the context of the foregoing review of literature it is hypothesized that:

H1: Corporate governance enhances the value relevance of earnings.

H2: Equity-based executive compensation grants enhance the value relevance of earnings.

The following section describes how these hypotheses are operationalized and tested.

3. Methodology

First, the sample is described. Then, the empirical model is explained and finally the variables of the empirical model are defined.
3.1 Sample

The initial sample is made up of the 234 Canadian firms composing S&P/TSX index of the Toronto stock exchange for the year 2013. Further selection was based on the availability of data for each firm in the various data sources. Table 1 summarizes the sampling procedure.

<table>
<thead>
<tr>
<th>Table 1: Sample Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013 S&amp;P/TSX firms</td>
</tr>
<tr>
<td>Compensation data</td>
</tr>
<tr>
<td>Governance data</td>
</tr>
<tr>
<td>Final sample</td>
</tr>
</tbody>
</table>

3.2 Empirical Model

In order to compare this study results with those of previous studies testing the value relevance of accounting information, the Ohlson (1995) basic model is developed as follows:

\[ \text{PRICE} = \alpha_0 + \alpha_1\text{EQPS} + \alpha_2\text{EPS} + \varepsilon \]  

(1)

Then, to examine the influence of corporate governance and executive equity-based compensation grant on the value relevance of earnings, the following model is used:

\[ \text{PRICE} = \alpha_0 + \alpha_1\text{EQPS} + \alpha_2\text{EQPS}^*\text{COMP} + \alpha_3\text{EPS} + \alpha_4\text{EPS}^*\text{COMP} + \alpha_5\text{EPS}^*\text{GOV} 
+ \alpha_6\text{EPS}^*\text{COMP}^*\text{GOV} + \alpha_7\text{GOV} + \alpha_8\text{COMP} + \alpha_9\text{SIZE} 
+ \alpha_{11}\text{LEV} + \alpha_{12}\text{LOSS} + \varepsilon \]  

(2)

3.3 Definition of Variables

The variables used in the empirical models are defined as follows:

- **PRICE** is the market value, or price, of the firm’s share, three months after the end of the fiscal year 2013.
- **EQPS** is the book value of equity per share at the end of the fiscal year end 2013.
- **EPS** is the earnings per share of the fiscal year end 2013.
- **COMP** is a dummy variable representing the proportion of CEO equity-based compensation in relation to his total compensation (amount of equity-based compensation divided by total compensation). COMP is set to 1 if the proportion is greater than or equal to the median and 0 otherwise.
- **GOV** is a governance score for the fiscal year 2013.
- **SIZE** is the natural logarithm of total assets at the end of fiscal year end 2013.
- **LEV** is the firm leverage calculated as the ratio of long-term debt to total assets at the end of fiscal year end 2013.
- **LOSS** is a dummy variable included in the regression models to account for negative net earnings for the fiscal year 2013.

The dependent variable PRICE is taken at three months after the end of the fiscal year 2013, in order to accommodate the inefficiency of the market. Using prices some time after
fiscal year end has the advantage of impounding more fully the accounting information at fiscal year-end (Omokhudu & Ibadin 2015). GOV is a governance score taken from Board Games, a governance survey developed by The Globe and Mail, Canada’s leading financial newspaper. The score is based on a total of 100 marks covering four broad categories (Board composition: 31 marks; Shareholding and compensation: 28 marks; Shareholder rights: 28 marks; Disclosure: 13 marks). This governance score has been widely used in prior research as in Klein, Shapiro & Young (2005). SIZE, LEV, and LOSS are control variables among those commonly used in previous studies of the relevance of accounting information.

3.4 Data Sources

Share price data were obtained from CRSP database. Accounting data were collected from COMPUSTAT. Finally, compensation data were extracted from annual shareholder proxy circulars available in the SEDAR (System for Electronic Document Analysis and Retrieval) database, which is the official site that provides access to most public securities documents and information filed by public Canadian firms.

4. Results and Discussion

Descriptive statistics are shown to fully understand the characteristics of the sample. Then, hypotheses are tested by multivariate analyzes.

4.1 Descriptive Statistics

Table 2 shows some descriptive statistics related to the variables collected from the 177 Canadian firms in the final sample. Share price at 3 months after fiscal year end (PRICE) has mean and standard deviation of 31.26 CAD and 40.48 CAD respectively. Book value of equity per share (EQPS) has mean and standard deviation of 16.46 CAD and 28.17 CAD respectively. Therefore, the mean price to book ratio for the sample is about 2. With respect to earnings per share (EPS), the maximum value is 8.87 CAD and the minimum value is -31.15 CAD. In fact, 23% of the sample firms present negative earnings for the fiscal year 2013. For the governance score (GOV), the mean total score is 70.67 with a maximum value of 98 and a minimum value of 5. This wide spread of S&P/TSX firms governance scores is pretty amazing.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRICE</td>
<td>31.26</td>
<td>25.42</td>
<td>477.73</td>
<td>1.09</td>
<td>40.48</td>
</tr>
<tr>
<td>EQPS</td>
<td>16.46</td>
<td>10.97</td>
<td>394.01</td>
<td>-17.07</td>
<td>28.17</td>
</tr>
<tr>
<td>EPS</td>
<td>1.07</td>
<td>0.86</td>
<td>8.87</td>
<td>-31.15</td>
<td>3.19</td>
</tr>
<tr>
<td>GOV</td>
<td>70.67</td>
<td>71.50</td>
<td>98.00</td>
<td>5.00</td>
<td>15.25</td>
</tr>
<tr>
<td>SIZE</td>
<td>8.32</td>
<td>8.03</td>
<td>13.67</td>
<td>1.40</td>
<td>1.78</td>
</tr>
<tr>
<td>LEV</td>
<td>0.22</td>
<td>0.20</td>
<td>1.81</td>
<td>0.00</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Table 3 reports S&P/TSX firms’ CEO compensation during the fiscal year 2013. Two firms did not grant compensation for their CEO who in both cases combine the functions of

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CEO and Chairman of the Board and are also the major shareholders of their firms. 13.8% of the sample firms did not grant equity-based compensation to their CEO. The mean total compensation is 5,073,000 CAD with a maximum of 85,753,000 CAD. The dummy variable COMP was derived from the median of the proportion of the CEO equity-based compensation in relation to his total compensation (Equity-based proportion) which is 44.6%.

### Table 3: S&P/TSX Firms’ CEO Compensation in 2013

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share (000)</td>
<td>1,614</td>
<td>585</td>
<td>84,773</td>
<td>0</td>
<td>5,833</td>
</tr>
<tr>
<td>Option (000)</td>
<td>1,066</td>
<td>396</td>
<td>59,583</td>
<td>0</td>
<td>4,147</td>
</tr>
<tr>
<td>Total comp. (000)</td>
<td>5,073</td>
<td>3,120</td>
<td>85,753</td>
<td>0</td>
<td>8,610</td>
</tr>
<tr>
<td>Equity-based proportion</td>
<td>0.409</td>
<td>0.446</td>
<td>0.989</td>
<td>0.000</td>
<td>0.236</td>
</tr>
</tbody>
</table>

Share: share-based awards; Option: option-based awards; Total comp.: total compensation (share + option + non-equity incentive plan compensation + pension value + all other compensation); Equity-based proportion: (share + option)/Total comp.

#### 4.2 Multivariate Results

Regressions are estimated using OLS. Durbin-Watson tests do not reveal autocorrelation problems (D-W values are well below 2.5). Moreover, multicollinearity is not an issue in any regressions since the highest VIF is 8.0. Finally, we exclude from regressions all observations with standardized residuals exceeding three.

Table 4 reports on different tests of value relevance of earnings. First, the basic Ohlson (1995) model, without and with control variables, is replicated (equation 1 from the Empirical Model section). The regression results show a positive and significant relationship between price and book value of equity per share and a positive but not significant relationship between price and earnings per share. These results confirm those found in prior value relevance of earnings studies (see Collins, Maydew & Weiss 1997).

The last two regressions test the relation between price, accounting information, corporate governance and executive equity-based compensation (equation 2 from the Empirical Model section). Adding control variables does not change the results significantly. Thus, only results of the model with control variables are discussed. The coefficients of both book value of equity per share and earnings per share are positive and significant. The coefficient of the interaction between earnings per share and governance level (EPS*GOV) is positive (1.132) and significant (p < 0.10). It seems that corporate governance enhances the value relevance of earnings. This result is consistent with those found by Vafeas (2000), Gompers, Ishii & Metrick (2003), Beiner et al. (2006), Dimitropoulos & Asteriou (2010) and Fiador (2013). Hypothesis H1 is confirmed.

The coefficient of the interaction between earnings per share and equity-based compensation (EPS*COMP) is negative (-0.709) but not significant. These results are not consistent with those obtained by Lam & Chng (2006). However, when adding governance
level with this latter interaction (variable \( \text{EPS} \times \text{COMP} \times \text{GOV} \)), the corresponding coefficient is positive (1.089) and significant \((p < 0.10)\). This result suggests that executive equity-based compensation enhances the value relevance of earnings, but only for firms with good governance. Hypothesis \( H_2 \) is confirmed.

### Table 4: Multiple Regression Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expect. Sign</th>
<th>Basic Ohlson Model</th>
<th>Equity-based Compensation and Governance Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Without control variables</td>
<td>With control variables</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Coeff.</td>
<td>t-stat. p.value</td>
</tr>
<tr>
<td>Intercept</td>
<td>?</td>
<td>10.854</td>
<td>5.286</td>
</tr>
<tr>
<td>EQPS</td>
<td>+</td>
<td>0.830</td>
<td>0.832</td>
</tr>
<tr>
<td>EQPS*COMP</td>
<td>?</td>
<td></td>
<td>-0.110</td>
</tr>
<tr>
<td>EPS</td>
<td>+</td>
<td>0.051</td>
<td>1.224</td>
</tr>
<tr>
<td>EPS*COMP</td>
<td>+</td>
<td></td>
<td>-0.591</td>
</tr>
<tr>
<td>EPS*GOV</td>
<td>+</td>
<td></td>
<td>1.197</td>
</tr>
<tr>
<td>EPS*COMP *GOV</td>
<td>?</td>
<td>1.097</td>
<td>1.914</td>
</tr>
<tr>
<td>GOV</td>
<td>?</td>
<td>0.079</td>
<td>0.858</td>
</tr>
<tr>
<td>GOV*COMP</td>
<td>?</td>
<td>-0.161</td>
<td>-0.521</td>
</tr>
<tr>
<td>COMP</td>
<td>?</td>
<td>0.171</td>
<td>0.612</td>
</tr>
<tr>
<td>SIZE</td>
<td>?</td>
<td>-0.013</td>
<td>-0.282</td>
</tr>
<tr>
<td>LEV</td>
<td>?</td>
<td>0.029</td>
<td>0.729</td>
</tr>
<tr>
<td>LOSS</td>
<td>-</td>
<td>-0.035</td>
<td>-0.737</td>
</tr>
<tr>
<td>Adj. R(^2)</td>
<td></td>
<td>0.658</td>
<td>0.655</td>
</tr>
<tr>
<td>F-Statistic</td>
<td></td>
<td>219.129</td>
<td>87.296</td>
</tr>
</tbody>
</table>

5. Conclusions and Limitations

This paper investigates how corporate governance and executive equity-based compensation affect the value relevance of earnings. The main contribution of this paper is the investigation of the joint effect of corporate governance and executive equity-based compensation on the value relevance of earnings. First, the results confirm those obtained in studies that test the basic Ohlson (1995) model, in other contexts and in other countries, which shows the representativeness of our sample of Canadian firms. Then, this paper brings some evidence that corporate governance enhances the value relevance of earnings, which confirms the results obtained by Vafeas (2000) and Dimitropoulos & Asteriou (2010).
Executive equity-based compensation as such does not enhance the value relevance of earnings. It appears that investors have not forgotten the Enron, WorldCom and Tyco financial scandals of the 2000s caused partly by greedy executives who have been granted equity-based compensations as incentives. Finally, results suggest that executive equity-based compensation enhances the value relevance of earnings, but only for firms with good governance. It seems that the efforts triggered by the Sarbanes-Oxley Act in the US or the national instruments and policies designed by the Canadian Securities Administrators to improve corporate governance have successfully restored investor confidence in accounting information.

This study contributes to the debate on the effectiveness of the monitoring role of equity-based compensation. It appears that an appropriate level of equity-based compensation contributes to improving the relationship between accounting numbers and stock prices, which contributes to a better allocation of resources to the capital market.

Nonetheless, the study has limitations. First, the sample comprised only public Canadian firms. Perhaps, the unique nature of stock ownership in Canada prevents the generalization of this study’s results to other firms and to other countries. Second, the measurement of the level of executive equity-based compensation in this study is far from perfect. The choice of a dummy variable is justified if the relationship investigated is suspected to be nonlinear. Finally, this study tests the hypotheses developed for only one year.

Potential improvements to the present study could lie in its extension to further countries, as well as in extending the time periods investigated, in employing more sophisticated econometric models, or in employing different and complementary equity-based compensation measure.

References


