

TECHNOLOGY MANAGEMENT, CORPORATE REPUTATION AND CEO COMPENSATION

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ABSTRACT

Many factors contribute to the determination of top executive compensation. This paper explores and examines the systematic difference of high-tech and low-tech CEO pays. In addition the paper tests how corporate reputation impacts CEO pays. The results show that corporate reputation is positively related to CEO pays in both high-tech and low-tech companies. As compared to low-tech firms, high-tech CEO compensation is relied more on variable pays and is directly tied to market-based performance measure. The results also support that CEO compensation is positively related to CEO stock ownership. In general, high-tech firms tend to use more comprehensive performance measures than those of low-tech firms.

INTRODUCTION

High-tech firms must continuously improve in order to survive and to sustain growth in increasingly competitive and global markets. They tend to have a high degree of decentralization, flexibility and autonomy. The success of high-tech firms depend more on innovativeness, creativity, and risk-taking strategies (Hopkins et. al., 2002). High-tech firms are often driven by independent thinkers, creative and innovative thinkers and risk-taking individuals. High-tech managers should be able to accept rapid changes and ambiguity and be able to tolerate failures. High-tech CEOs typically manage intangibles and should possess a distinctive set of knowledge and skills, including agility, flexibility, ability to integrate technology, ability to manage research and development (R & D) and ability to change in volatile environment. And therefore they are faced with a different set of performance expectations and compensation package. Balkin et al. (2000) have shown that “in high-tech industries, CEO compensations are related to innovation as measured by number of patents and R&D spending.” Balkin et al. study documents an important change and a new trend in the study of managerial compensation by pointing its emphasis on process (innovation) rather than financial results such as accounting and market performance measures. In today’s competitive market, managers should focus more on managing processes which will yield financial results such as accounting and stock performance. Henderson and Fredrickson (1996) have shown that CEOs are “paid for the level of information processing that their jobs requires.” Their findings showed that “CEO compensation was higher in firms whose diversification strategy, approaches to technology, and top management team structure placed particularly high information-processing demands on their CEOs.” This study explores the systematic difference between high-tech and low-tech CEO pays. It examines how corporate reputation relates to CEO compensation. This paper also examines how high-tech and low-tech CEO pays are related to accounting and market-based performance measures. It examines what are the major determinants of high-tech and low-tech CEO’s compensations.

This paper makes three important contributions. First, it examines how technology management relates to CEO compensation. High-tech CEO tends to face with higher risk and may demand different compensation

package. Most of previous studies did not separate high-tech from low-tech firms and therefore the findings can be mixed. Second, this paper adds a new explanatory variable in CEO compensation literature. It explicitly incorporates corporate reputation as a possible explanatory variable in addition to accounting and market-based performance measures. Finally, unlike previous literature, This paper classifies the high-tech classification not only based on industry-average R&D expenditures but based on a firm's proportional R&D expenditure over sales.

HYPOTHESES

Barkema and Gomez-Mejia (1998) argues that the relationship between CEO pays and firm performance is limited because of many other variables influence the CEO pays. Jensen and Murphy (1990) suggest that the explanatory power of the pay-for-performance sensitivity is relatively low. This paper attempts to enhance understanding of the determinants of CEO pays in high-tech and low-tech industry by incorporating corporate reputation as an explanatory variable. Managing reputable companies would require significant effort on the part of CEO and they will demand higher level of compensation. The first hypothesis tests the relationship between corporate reputation and CEO compensation. Most previous studies are missing important determinant of the CEO compensation, corporate reputation. This paper fills the gap and extends the Balkin et al. (2000) and previous studies by empirically investigating a comprehensive relationship between a set of CEO compensation variables and a set of performance variables. (Corporate Reputation Hypothesis) H₁: Corporate reputation is positively related to both high-tech and low-tech firms CEO compensation. The high-tech CEO tends to be a risk-taker. In order to motivate this type of managers, firms tend to set their compensations directly tied to stock price or market-based performance measures. As compared to low-tech firms, high-tech CEO will prefer variable compensation and more likely to accept compensation tied to market-based performance measures. (Risk-Taking and Compensation Component Hypothesis) H₂: As compared to low-tech firms, high-tech CEO's compensation relies more on variable compensation. H₃: As compared to low-tech firms, high-tech CEO's compensation is more directly tied to market-based performance measures. As compared to low-tech firms, high-tech CEO tends to own a relatively high portion of outstanding shares of a company. They therefore tend to enjoy higher level of influence on firms decision-making and governance structure, including compensation package. And therefore we predict a positive relationship between CEO ownership and CEO compensation. (CEO Power Hypothesis) H₄: As compared to low-tech firms, high-tech CEO's compensation is more dependent upon CEO stock ownership.

SAMPLE AND RESEARCH METHODOLOGY

In order to test hypothesis, sample firms were initially selected from the "Fortune's 500 America's Most Admired Companies. The sample, "Fortune's 500 America Most Admired Companies," is then matched with the Forbes "1999-2001 Top 800 CEO Paychecks." This matching resulted in 313 firms that both corporate reputation and compensation data are available. The corresponding financial data were gathered from Compustat for the same period. Finally 276 firms were chosen and utilized for this study, dividing them into 111 high-tech firms and 165 low-tech firms. (Insert Table 1-A and 1-B about Here) In order to analyze data, descriptive statistics for each variable were computed first. Then, correlation matrix was utilized to identify the inter-correlation among the variables. Finally, lagged regression analysis was employed to determine the significance and magnitude of the relationships between CEO compensation and various organizational and financial performance measures.

The lagged regression models are as follows;

$$\text{Ln (SAL}_t) = a + b_1 \text{TBQ}_{t-1} + b_2 \text{ROE}_{t-1} + b_3 \text{CORU}_{t-1} + b_4 \text{FSIZ}_{t-1} + b_5 \text{OCEO}_{t-1} + e$$

$$\text{Ln (LCOM}_t) = a + b_1 \text{TBQ}_{t-1} + b_2 \text{ROE}_{t-1} + b_3 \text{CORU}_{t-1} + b_4 \text{FSIZ}_{t-1} + b_5 \text{OCEO}_{t-1} + e$$

$$\text{Ln (TCOM}_t) = a + b_1 \text{TBQ}_{t-1} + b_2 \text{ROE}_{t-1} + b_3 \text{CORU}_{t-1} + b_4 \text{FSIZ}_{t-1} + b_5 \text{OCEO}_{t-1} + e$$

RESULTS AND ANALYSIS

The descriptive statistics of the variables for high-tech firms are presented in the Table 2-A and that of low-tech firms are in the Table 2-B. Mean total compensation for the high-tech CEO in 2000 and in 2001 was about \$16.4 million and \$13.3 million respectively, while the low-tech firms' mean total compensation is \$7.5 million and \$8.4 million respectively. This indicates that high-tech firms' executives are receiving substantially higher total compensation than that of the low-tech counterparts. Even though salary and bonus are similar amount for both high-tech and low-tech firms, the high-tech firms' CEO receive a substantially higher long-term compensation as compared to that of low-tech CEOs. The high-tech CEOs' long-term compensation is accounted as 86% of its total compensation in 2000 and 83% of its total compensation in 2001. On the contrary, only 70% of low-tech executives' total compensation was in the form of long-term compensation in 2000 and 68% in 2001. This analysis supports the second hypothesis that, as compared to low-tech firms, high-tech CEO's compensation relies more on variable compensation (Compensation Component Hypothesis). High-tech executives' cash compensation, Salary and Bonus, accounts for only about 15% of total compensation in 2000 and 2001. This means that almost all of the high-tech CEOs' compensation is in the form of stock. (Insert Table 2-A and 2-B about Here) As Table 3-A, 3-B, 4-A and 4-B indicate, CEO Compensation is highly correlated with Firm size in both high-tech and low-tech companies. On the contrary high-tech companies' CEO compensation exhibits a high correlation with CEO share ownership, while low-tech companies' CEO compensation is highly correlated with Company reputation. (Insert Table 3-A, 3-B, 4-A and 4-B about Here) The results of OLS lagged regression analysis are presented in the Table 5-A, 5-B and 5-C. Both high-tech and low-tech firms show a significantly positive relationship with corporate reputation which supports the first hypothesis (Corporate reputation hypothesis). It is a new finding that, among others, CEO compensation is directly tied to corporate reputation. The findings support the third hypothesis (Risk-taking hypothesis). The relationship between CEO compensation and market-based performance is stronger than that of low-tech firms. The result does not support the fourth hypothesis (CEO Power Hypothesis). As the Table 5-A and 5-B indicates, the CEO share ownership is significantly related to long-term compensation. This evidence supports that high-tech CEO compensation is positively tied to CEO stock ownership (CEO Power Hypothesis). The results provide a strong support for the proposed hypotheses and confirm the predictions. The results indicate that high-tech firms tend to use a more sophisticated compensation package and rely more on stock based compensation, while low-tech firms adopt a compensation package that relies more on a single variable, reputation. For the high tech firms, ROE, Tobin's Q, and reputation show a significant relationship with CEO salary, while only reputation shows a significant positive relationship in low-tech firms. (Insert Table 5-A, 5-B and 5-C about Here)

Literature Review, References and Tables are available upon request