

EXECUTIVE COMPENSATION, FIRM PERFORMANCE AND RISK IN THE FINANCIAL CRISIS PERIOD 2006-2009: AN ANALYSIS OF NASDAQ COMPANIES

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Abstract

We explore the Agency and Managerial Power theories to explain the relationship among the various components of executive compensation, firm performance and unsystematic risk in the US financial sector. Institutions in the financial sector listed on the NASDAQ that have been in existence from the pre-financial crisis period January 03, 2006 to the post-financial crisis period December 27 2009 are examined. We find that the Agency theory does not fully explain the behavior of executives and their risk appetite. Managerial power theory fares better in this regard, as managers are focused mostly on their base salary. The data analysis shows that stock options are not significantly influenced by unsystematic risk; instead the base salary of executives has been significantly influenced by market risk and firm performance.

Keywords: Executive compensation, firm performance, market risk, unsystematic risk, Agency Theory, Managerial Theory

1. INTRODUCTION

Emerging from the economic debacle of the 2007-2008 financial crisis, the focus placed on executive compensation disclosed that the US CEO/worker pay gap stood at 301-1 in 2003, as compared to only 42-1 in 1982 (Matsumura & Shin, 2005). With executive compensation becoming synonymous with the ‘agency problem’ (Quinn, 1999), many scholars have concluded that equity based incentives like stock options and restricted stock can reduce agency costs by aligning CEO risk preferences and shareholders’ interests (Core et al. 2003). Furthermore, the application of performance-linked remuneration has been viewed as a tool for aligning the interests of directors and shareholders, actively encouraged by institutional investors and the Securities and Exchange Commission (SEC) in the USA (Dalton et al, 2007). The uncertainty surrounding the Agency Theory, executive compensation, unsystematic risk and firm’s accounting performance motivates this paper and attempts to explore the underlying relationship between them, if any.

Section 2 briefly presents the findings of contemporary research in the area. Section 3 defines the research method including the data, variables, hypotheses and analytical tools. Empirical findings on how the issues discussed above may be interconnected among the financial sector institutions listed on the NASDAQ are discussed in Section 4. The paper ends with some concluding observations in Section 5.

2. EXECUTIVE COMPENSATION, FIRM PERFORMANCE AND RISK: EXCERPTS FROM EXISTING LITERATURE

Majority of empirical studies concerning executive compensation, hinge on the Agency Theory. In this model, incentive alignment as a control mechanism is achieved by making some portion of agent compensation contingent upon satisfying performance targets specified in the contract (Welbourne, Balkin, & Gomez- Mejia, 1995). In the context of the “optimal contracting approach,” (Gillan, Hartzell, and Parrino, 2005), the Agency Theory explains the staggering increase in the use of stock options in ‘pay for performance’ schemes (Dalton et al, 2007) as supervisors have made use of outcome based contracts, serving them as incentives whose value is contingent on performance, such as bonuses, stock options, restricted stock, and long-term contracts (Conyon, 2006). One of the essential features of Agency Theory is its prediction when relating firm’s performance to the use of incentive pay (Jensen & Murphy 1990). This is evidenced by Bloom & Milkovich (1998) as they confirmed a positive relationship between incentive pay and firm performance.

There is also a significant amount of evidence indicating that firm performance positively affects executive compensation (Canarella & Nourayi, 2008). The Managerial Power Theory presents an alternative approach to optimal contracting. It postulates that the CEO has a good deal of control over the board, and this control includes the power to determine a major portion of his own compensation. In effect, this allows managers to focus a larger percentage of their compensation package away from performance-based pay and toward more stable forms of pay, such as base pay (Bebchuk and Fried, 2004; Grabke-Rundell and Gomez-Mejia, 2002). Finkelstein (1992) attributes this level of managerial power to a manager's prestige power. He maintains that prestige power is related to a manager's ability to absorb uncertainty from the institutional environment, and emphasizes the role of outside directorships and education as key components of prestige. These components of prestige, allow managers the appearance of achieving the company's long term goals, and high performance in the financial markets, thus adding to their power.

Murphy, 1999 stated that most executive pay packages contain four basic components, namely, base salary, annual bonus, stock options, and long-term incentive plans (including restricted stock plans and multi-year accounting-based performance plans).

According to Demsetz & Saldenberg (1999) CEOs tend to receive a smaller fraction of their compensation as base pay and a larger fraction of same as annual bonus, long-term compensation, and options. However, Romer (2006) revealed that from 2001-2005 base pay and bonus increased their share in total compensation.

A firm's performance measures are usually either market-based or accounting-based (Barro & Barro, 1990). Typical accounting measures include return on assets, return on equity, and net income. Murphy (1999) also highlighted that performance measures are often expressed as growth rates (e.g., EPS growth). Bloom & Milkovich (1998) suggested that organizations facing higher risk did not place greater emphasis on short-term incentive pay. In addition, higher risk firms that relied more heavily on incentive pay tend to exhibit poorer performance than higher risk firms that de-emphasized incentive pay, with relationships stronger for measures of unsystematic risk. Gray and Cannella Jr. (2007) suggested that the compensation level (total compensation) and compensation risk is positively associated, also a negative and very significant relationship existed between unsystematic risk and CEO stock ownership. Moving away from the risk analysis of the Agency Theory, the behavior of managers is augmented by the Prospect Theory, which predicts that individuals tend to be risk averse in a domain of gains, and relatively risk seeking in a domain of losses as when a leader is in the midst of a crisis (Tversky & Kahneman, 1991).

3. RESEARCH METHOD

3.1 Data and Time frame

A cross sectional study which relies on several data sources for secondary data collection has been employed to examine the effect of firm's performance and total risk on executive compensation. These include Google Finance (BA Stock), NASDAQ Index and the Securities and Exchange Commission website (SEC). The various stock price data were collected and analyzed to derive the variance of stock and its beta (unsystematic risk). Financial Institution's executive compensation data from the Securities and Exchange Commission website, specifically, the various companies' 10K filings, were broken into component parts of base salary, annual bonus, long term compensation and the value of options granted. Other firm specific and accounting data (used in deriving financial ratios) were obtained from the SEC website, specifically, the various companies' Def 14A filings. The periods under review were the pre-financial crisis period January 03, 2006 to December 29, 2006, the financial crisis period January 08, 2007 to December 28, 2007, January 08, 2008 to December 29, 2008 and the post-financial crisis period January 05, 2009 to December 27, 2009. A systematic random sample is taken to gain a total of 120 Financial Institutions.

3.2 Hypotheses and Analytical Tools

Multiple regression analysis (Simultaneous Method) was used to analyze the relationship between the dependent variable (executive compensation) and independent variables (firm's accounting performance, market and unsystematic risk). The data were transformed through first differencing to achieve normality. To examine the relationship among the firm's performance, total risk, total executive compensation and its constituent components, and the potency of the relationship among these variables in financial institutions, the model specified was to observe whether a firm's performance has a bearing on its executive compensation package. Thus, the first hypothesis was proposed:

Hypothesis One:

The null Hypothesis: the regression coefficients of ROA, ROE, EPS and PE are equal to zero.

$$H_0 = \beta_{ROA}, \beta_{ROE}, \beta_{EPS} \text{ and } \beta_{PE} = 0$$

The alternate Hypothesis: the regression coefficients of ROA, ROE, EPS and PE are not equal to zero.

$$H_1 = \beta_{ROA}, \beta_{ROE}, \beta_{EPS} \text{ and } \beta_{PE} \neq 0$$

To examine whether market risk and unsystematic risk inherent in a firm affect the compensation package of its executives, the second hypothesis was framed as follows:

Hypothesis Two:

The null Hypothesis: the regression coefficients of market risk and unsystematic risk are equal to zero.

$$H_0: \beta_{MKTR} \text{ and } \beta_{UNSYSR} = 0$$

The alternate Hypothesis: the regression coefficients of market risk and unsystematic risk are not equal to zero.

$$H_1: \beta_{MKTR} \text{ and } \beta_{UNSYSR} \neq 0$$

Both hypotheses were tested separately for each time period mentioned earlier.

Regression Models

In order to test the hypotheses the parsimonious regression model was:

$$\text{Compensation} = a + \beta_1(\text{MKTR}) + \beta_2(\text{UNSYSR}) + \beta_3(\text{ROA}) + \beta_4(\text{ROE}) + \beta_5(\text{EPS}) + \beta_6(\text{PE}) + \varepsilon_i \quad (1)$$

In this model, the independent variables *MKTR*, *UNSYSR*, *ROA*, *ROE*, *EPS* and *PE* represent market risk, unsystematic risk, return on assets, return on equity, earnings per share and price to earnings, respectively. The dependent variable was total compensation.

In addition the components of executive compensation (base pay, annual bonus, long-term compensation and equity based incentives/stock options) were also analyzed as the dependent variables, listed in the models below.

$$\text{Base Pay} = a + \beta_1(\text{MKTR}) + \beta_2(\text{UNSYSR}) + \beta_3(\text{ROA}) + \beta_4(\text{ROE}) + \beta_5(\text{EPS}) + \beta_6(\text{PE}) + \varepsilon_i \quad (1.a)$$

$$\text{Annual Bonus} = a + \beta_1(\text{MKTR}) + \beta_2(\text{UNSYSR}) + \beta_3(\text{ROA}) + \beta_4(\text{ROE}) + \beta_5(\text{EPS}) + \beta_6(\text{PE}) + \varepsilon_i \quad (1.b)$$

$$\text{Long term Compensation} = a + \beta_1(\text{MKTR}) + \beta_2(\text{UNSYSR}) + \beta_3(\text{ROA}) + \beta_4(\text{ROE}) + \beta_5(\text{EPS}) + \beta_6(\text{PE}) + \varepsilon_i \quad (1.c)$$

$$\text{Stock Options} = a + \beta_1(\text{MKTR}) + \beta_2(\text{UNSYSR}) + \beta_3(\text{ROA}) + \beta_4(\text{ROE}) + \beta_5(\text{EPS}) + \beta_6(\text{PE}) + \varepsilon_i \quad (1.d)$$

3.3 Variables

The definition of executive compensation was used as outlined by Murphy (1999). Thus the dependent variable total executive compensation and its components (base pay, annual bonus, long-term compensation and equity based incentives/stock options) were analyzed.

The first independent variable was firm performance. Taking account of Murphy (1985), that the wealth of managers is implicitly tied to firm performance and that accounting based profit measures are significantly related to compensation measures such as return on assets (ROA), return on equity (ROE), earning per share (EPS) and price to earnings (PE) were used.

The second independent variable was firm risk. The Market Model was used to bifurcate total risk into market related (MKTR) and firm specific (UNSYSR).

4. EMPIRICAL RESULTS

Descriptive statistics such as the mean, Kurtosis, maximum and minimum values of data were explored to gain an understanding of the different variables. It was noted that the base pay component of executive compensation consistently accounted for more than 50% of total compensation across the period of study, i.e. 61%, 61.63%, 66.31% and 72%, respectively for 2006 - 2009.

These findings supported the theory that managers now focus a larger percentage of their compensation package away from performance based pay and toward more stable forms of pay, such as base pay, thus moving from the agency based optimal contracting and to the Managerial Power Theory (Bebchuk and Fried, 2004).

Year wise findings are presented below:

4.1 2006

Table 1 presents the regression results for data from January 3, 2006 through December 29, 2006. It can be seen that the accounting measures used were significant determinants of executive compensation. The relationship between base pay and firm performance (EPS) was highly significant as indicated earlier by Bloom & Milkovich (1998). This is also in agreement with Murphy (1985) who stated that the wealth of managers is implicitly tied to firm performance and that accounting based profit measures were significantly related to compensation.

In 2006 market risk was very significant, when bonus pay was used as the dependent variable. These findings support Bloom & Milkovich (1998) as organizations facing higher risk did not place greater emphasis on short-term incentive pay and thus move away from the conventions of Agency Theory and its perceived risk attitudes of managers. Unsystematic risk was very significant with base pay as the dependent variable as was shown earlier by Bebchuk and Fried, 2004. However, it was noted that its beta value was negative. When managers were expected to perform based on their prestige and expert power in exchange for less pay at risk (greater base pay) they were also expected to sufficiently protect the interest of the shareholders.

4.2 2007

While base pay continued its trend from the prior year, Table 2 shows that bonus salary, stock options and base pay appeared to be influenced by firm performance (ROA & EPS, EPS and ROE & EPS respectively) in 2007. This confirms Hypothesis One in 2007 and is in accordance with Bloom & Milkovich (1998) as they confirmed a positive relationship between incentive pay and firm performance. In 2007 market risk was very significant when base pay was the dependent variable. The results suggested that executives who accept more risk in their compensation arrangements tend to be more highly compensated than those executives with less risky arrangements. This was pointed out earlier by Gray and Cannella Jr., (2007). The overflow of the 2006 bullish market can be attributed to these findings, as pay for performance was heavily in use at the time.

4.3 2008

The force of the financial crisis caused a severe downturn in the economy during 2008 which resulted in a collapse of the financial markets. This evident collapse explained the findings in Table 3 that executive compensation was not determined by firm performance for the period. In 2008 market risk is significant for the dependent variables total compensation, base pay, bonus and stock. However, unsystematic risk is not significant for any of the dependent variables. Tversky and Kahneman (1991) have also reported similar results. In light of the downward spiraling economy, managers did not anticipate positive gains, rather they anticipated losses to wealth, and as such they entered greater strategic risk on behalf of the firm.

4.4 2009

With the effects of the financial crisis wearing thin and the path set to economic recovery, both bonus salary and stock options continued to be influenced by firm performance (ROA, ROE). Total compensation also adopted this trend, influenced by firm performance (ROA) (Table 4). These findings were similar to the results of 2007 and were in consonance with Conyon, (2006); Jensen & Murphy, (1990); Bloom & Milkovich, (1998) and Gray and Cannella Jr., (2007).

5. CONCLUDING OBSERVATIONS

In the bullish market for the year 2006, the results suggested that although stock options were influenced by EPS, they were not influenced by market or unsystematic risk in the pre-financial crisis period 2006; instead the base salary of executives was influenced by firm performance (ROE, EPS and PE), market and unsystematic risk. This showed that Agency Theory did not fully explain the behavior of executives and their risk appetite. Managerial Power Theory explained their behavior in 2006 as managers are focused mostly on their base salary. In the initial crisis period 2007, bonus salary was influenced by EPS and ROA. While base pay was influenced by market risk, both base pay and bonus salary were influenced by the performance measures ROA, ROE and EPS. These findings again lend their support to the Managerial Power Theory. In 2008 when the full effect of the crisis was felt, total compensation and its components examined (except long term compensation) were significantly influenced by market risk.

Due to the downturn of the economy and seeming economic failure, none of the tested performance indicators influenced any form of compensation for the year 2008. Finally, in 2009 with the US Government initiating the walk to economic and market recovery, both forms of risk were identified as determinants of executive compensation, while only the performance indicators ROA and ROE influence total compensation, bonus and stock. This was the only time period examined in the study that evidenced the extensive use of performance based remuneration.

Managers are contracted based on the perceived value they can add to a company. This is reflected in their base salary – their worth at the face value. Upon evidence of additional efforts (increased firm accounting performance) they are endowed with bonuses, stock options and other long term benefits. However, for the years 2006 and 2007 this study does not have the evidence to fully support the dictum of the Agency Theory. Managers did nothing to overtly jeopardize that which mattered most – their base salary. With the bullish market of 2007 managers did not appear to be “risk-seeking” and their base salaries increased. In 2008 however, the financial crisis took full effect. This caused the level of executive compensation to decline, and in 2009 managers tried to rebuild by taking more risk.

Agency Theory simply states that the agent will not see eye to eye with the principals so agents will do what they can (much to the disadvantage of the principals) to get their executive compensation, taking on higher levels of unsystematic risk to achieve higher ‘in the money’ stock options and working in the short-term interest of the firm to boost the firm’s accounting performance (EPS) moving past the firm’s benchmarked performance indicators and gaining a profound annual bonus as they exceeded expectations.

Our findings show that unsystematic risk and firm accounting performance have minimal effect on the level of executive compensation in 2007 and 2008. The Managerial Power Theory points the way for the apparent deviation from the Agency Theory in this study. According to the Managerial Power Theory, managers are given a substantial amount of power allowing them to set their executive compensation packages as they are determined by public perceptions, or ‘industry averages’.

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TABLES

TABLE 1: PRE-FINANCIAL CRISIS PERIOD JANUARY 03, 2006 TO DECEMBER				
		Standardized Coefficients		
Model		Beta	t	Sig.
TOTAL COMPENSATION	(Constant)		0.038	0.97
	EPS	0.403	4.003	0.000
BASE PAY	(Constant)		0.158	0.875
	ROE	-0.415	-3.139	0.002
	EPS	0.536	6.098	0.000
	PE	-0.242	-2.824	0.006
	MKTR	0.275	3.329	0.001
	UNSYSR	-0.192	-2.41	0.018
BONUS PAY	(Constant)		0.003	0.997
	EPS	0.254	2.532	0.013
	MKTR	0.216	2.288	0.024
LONG TERM COMPENSATIO	(Constant)		0.065	0.949
STOCK	(Constant)		0.006	0.995
	EPS	0.454	4.477	0.000

TABLE 2: THE FINANCIAL CRISIS PERIOD JANUARY 08, 2007 TO DECEMBER 28, 2007

Model		Standardized Coefficients		Sig.
		Beta	t	
TOTAL COMPENSATION	(Constant)		0.03	0.976
	EPS	0.739	4.926	0.000
BASE PAY	(Constant)		0.107	0.915
	ROE	0.699	2.02	0.046
	EPS	0.546	4.115	0.000
	MKTR	0.263	3.307	0.001
BONUS	(Constant)		-8.98E-04	0.999
	ROA	0.975	2.567	0.012
	EPS	0.847	5.761	8.12E-08
LONG TERM COMPENSATION	(Constant)		0.096	0.923
STOCK	(Constant)		0.005	0.996
	EPS	0.712	4.634	0.000

TABLE 3: THE FINANCIAL CRISIS PERIOD JANUARY 08, 2008 TO DECEMBER 29, 2008

Model		Standardized Coefficients		Sig.
		Beta	t	
TOTAL COMPENSATION	(Constant)		0.04	0.968
	MKTR	0.405	4.648	0.000
BASE PAY	(Constant)		0.078	0.938
	MKTR	0.243	2.667	0.009
BONUS	(Constant)		0.012	0.991
	MKTR	0.336	3.708	0.000
LONG TERM COMPENSATION	(Constant)		0.008	0.994
STOCK	(Constant)		0.026	0.98
	MKTR	0.399	4.567	0.000

TABLE 4: THE POST-FINANCIAL CRISIS PERIOD JANUARY 05, 2009 TO DECEMBER 27, 2009.

Model		Standardized Coef		Sig.
		Beta	t	
TOTAL COMPENSATION	(Constant)		-8.74E-01	0.384
	ROA	0.787	3.059	0.003
	MKTR	0.304	3.262	0.002
BASE PAY	(Constant)		-1.327	0.188
	MKTR	0.418	4.569	0.000
BONUS	(Constant)		-0.109	0.914
	ROA	0.646	2.31	0.023
	ROE	-0.537	-2.238	0.028
	UNSYR	-0.269	-2.148	0.034
LONG TERM COMPENSATION	(Constant)		-0.222	0.825
	MKTR	0.296	2.873	0.005
STOCK	(Constant)		-0.787	0.433
	ROA	1.13	4.489	0.000
	ROE	-0.968	-4.483	0.000
	UNSYR	-0.31	-2.751	0.007