

Время выполнения задания – 180 мин.

Задание. Прочитайте статью¹ и сделайте ее критический анализ.

1. Introduction

The purpose of this research is to understand in-depth CEO compensation system of NYSE energy companies. In addition, over the past decade, United States public had raised concerns over bonuses declared to CEOs by their board of directors. The failure to understand the determinants of CEO compensation by the public had led to blame CEOs of rent grabbing; misused of its power towards board; and monopolization of compensation system. Thus, these ever growing concerns bring to the foreground conclusion the need to further study in depth at least one important sector of American economy, namely Financial Services sector, in terms of primary relationship and resulting dynamics between CEO compensation, firm size, accounting firm performance, and corporate governance.

The CEOs and other executives would like to eliminate the risk exposure in their compensation packages by decoupling their pay from performance and linking it to a more stable factor, firm size. This strategy indeed deviates from obtaining the optimum results from principal-agent contracting. In general, previous studies had found a strong relationship between CEO compensation and firm size but the correlation results were ranged from nil to strong positive ratios. The variables used in previous studies as a proxy for firm size were either total sales, total number of employees, or total assets. Therefore, firm size needs to be studied with CEO cash compensation in greater detail such as using both total sales and total number of employees.

The most researched topics in the executive compensation are between CEO compensation and firm performance. Although executive compensation and firm performance had been the subject of debate amongst academic, but there was little consensus on the precise nature of the relationship as such, further researched in greater detail need to be conducted to understand in finer terms the true extent of the relationship between them. As such, this research had unprecedentedly used eight variables to attest with CEO compensation, that is, return on assets (ROA), return on Equity (ROE), earnings per share (EPS), cash flow per share (CFPS), net profit margin (NPM), book value per common stock outstanding (BVCSO), and market value per common stock outstanding (MVCSO).

The relationship between CEO compensation and corporate governance (CEO Power) was not attested extensively in the past, especially in Canada. In fact, only few credible researched papers were written. That is, CEO power only had been the subject of recent focus among researchers, primarily due to the effect of researchers had failed to find the strong relationship between CEO compensation, firm size, and firm performance. The variables used in previous studies as a proxy for corporate governance such as, CEO age; CEO tenure; and CEO turnover, were found to have negligible to weak relationship with CEO compensation. In addition, third party data collection, different population samples such as industry and market, and use of different statistical methods, all had led to a divergence in results. Therefore, corporate governance needs to be studied with CEO compensation on an extensive basis such as using, CEO age, CEO stocks

¹ Составлено по: Nulla Y.M. CEO Compensation System of New York Stock Exchange Financial Services Companies: An Analysis with Firm Size, Accounting Performance, and Corporate Governance // International Journal of Scientific and Engineering Research, Volume 4, Issue 9 (October 2013)

outstanding, CEO stock value, CEO tenure, CEO turnover, management 5 percent ownership, and individuals/institutional 5 percent ownership.

2. Literature Review

2.1. CEO Compensation and Firm size

Prasad (1974) believed that executive salaries appear to be far more closely correlated with the scale of operations than its profitability. He also believed that executive compensation is primarily a reward for previous sales performance and is not necessarily an incentive for future sales efforts. McEachern (1975) believed that executives are risk averse. They can reduce or eliminate risk exposure in their compensation package by linking it to a more stable factor, firm size. Gomez-Mejia, Tosi, and Hinkin (1987) believed that firm size is a less risky basis for setting executives' pay than performance, which was subject to many uncontrollable forces outside the managerial sphere of influence. Deckop (1988) believed that a strong sales compensation relationship would suggest that CEOs are given an incentive to maximize size rather than profitability. Tosi and Gomez-Mejia (1994) believed that measurement of firm size is the composite score of standardized values of reported total sales and number of employees. Gomez-Mejia and Barkema (1998) defined the relationship between CEO compensation and firm size as "positive". That is, CEOs in large companies make higher income than CEOs in small companies. This is supported by Finkelstein and Hambrick (1996), who believed that firm size is related to the level of executive compensation. This is further supported by Murphy (1985), who find that holding value of a firm constant, firm whose sales grow by 10% will increase CEO salary or bonus between 2% and 3%. Therefore, it shows that size pay relation is causal, and CEOs can increase their pay by increasing firm size, even when increase in size reduces the firm's market value. Shafer (1998) shown that pay sensitivity, which measured as change in CEO wealth per dollar and change in firm value, falls with the square root of firm size. That is, CEO incentives are 10 times higher for a \$10 billion firm than for a \$100 million firm.

2.2. CEO Compensation and Firm Performance Linkage

According to previous studies conducted in the United States and the United Kingdom, CEO compensation is believed to be weakly related to firm performance. Loomis (1982) argued that pay is unrelated to performance. Henderson and Fredrickson (1996), and Sanders and Carpenter (1998, 2002) argued that CEO total pay may be unrelated to performance but it related to organizational complexity they manage. Likewise, studies conducted by Murphy (1985), Jensen and Murphy (1990), and Joskow and Rose (1994) find similar conclusions.

Jensen and Murphy (1990) argued that incentive alignment as an explanatory agency construct for CEO pay is weakly supported at best. That is, objective provisions of principal agent contract are not comprehensive enough to effectively create a direct link between CEO pay and performance. They find that pay performance sensitivity for executives is approximately \$3.25 per \$1000 change in shareholder wealth, small for an occupation in which incentive pay is expected to play an important role. This is supported by Tosi, Werner, Katz, and Gomez-Mejia (2000), who find that overall ratio of change in CEO pay and change in

financial performance is 0.203, an accounting for about 4% of the variance. This weak relationship is explained by Borman & Motowidlo (1993) and Rosen (1990), who stated that archival performance data focuses only on a small portion of a CEO's job performance requirements as such, it is difficult to achieve a robust conclusion.

According to Jensen and Murphy (1990) who believed that CEO bonuses are strongly tied to an unobservable performance measure. They believed that if bonuses depend on performance measures observable only to the board of directors, they could have provided a significant incentive. They believed that one way to detect the existence of such phantom performance measures are to examine the magnitude of year to year fluctuations in CEO compensation. They believed that such fluctuations signifies CEO pay is unrelated to accounting performance. In addition, they argued that

although bonuses represent 50% of CEO salary, such bonuses are awarded in ways that are not highly sensitive to performance. And the variation in CEO pay can be explained by changes in accounting profits than stock market value. Overall, they believed that pay performance sensitivity remains insignificant.

Jensen and Murphy (1990) find in their study that CEO received an average pay increase of \$31,700 in years when shareholders earned a zero return, and received an average additional 1.35¢ per \$1,000 increase in shareholder wealth. These findings are comparable to those of Murphy (1985 and 1986), Coughlan and Schmidt (1985), and Gibbons and Murphy (1990), who find that pay performance elasticity of approximately 0.1, indicating, salaries and bonuses increased by about 1% for every 10% rise in the value of the firm. In addition, they find an average pay increase of CEOs whose stockholders gains \$400 million is \$37,300, compared to an average pay increase of CEO whose stockholders lose \$400 million is \$26,500. These findings are supported by Jensen and Murphy (1990), who believed that CEO cash compensation should be structured to provide big rewards for outstanding performance and meaningful penalties for poor performance. In addition, they believed that the relationship between CEO cash compensation and firm performance would be less troubling if CEO owned a large percentage of corporate equity. Gilson and Vetsuypens (1993) argued that the association between pay and performance is small in economic terms when performance is measured in terms of changes rather than levels. This is supported by Iyengar (2000) who argued that changes in CEOs compensation are unrelated to changes in firms' performance perhaps due to stockholders in poorly performing firms would like to adopt a cautious wait and see attitude, to assess whether a change in performance is permanent before rewarding senior managers. This is further supported by Antle and Smith (1986), who find no relation between CEO cash compensation and firm performance. However, these statements are contradicted by Jensen and Zimmerman (1985), who stated that evidences are inconsistent with a view that executive compensation is unrelated to firm performance and enriches managers at the expense of shareholders. This is supported by Gibbons and Murphy (1990), who find that CEO pay changes by about 1.6% for each 10% of return on common stock. That is, the CEO pay structure is positively and significantly related to firm performance, as measured by the rate of return on common stock. This is supported by Lambert and Larcker (1987) and Sloan (1993), who find that there is a positive relation between CEO compensation and stock returns. According to Blanchard, Lopez-de-Silanes and Shleifer (1994), Iyengar, Raghavan J. (2000), and Bertrand and Mullainathan (2001), who stated that CEO cash compensation increases when firm profits rise for reasons that have nothing to do with managers' efforts. Murphy (1986) believed that top executives are worth every nickel they get.

2.3 CEO Compensation and Corporate Governance (CEO Power)

According to Jensen and Murphy (1990), voting power of CEO includes CEO and his immediate family stock ownership and the percentage of stocks over which CEO has a sale or shared power to direct the voting. It is believed that CEO's in large firms tend to own less stock and have less compensation based incentives than CEOs in small firms. This is supported by Jensen and Murphy (1990), who find that as a percentage of total corporate value, CEO stock ownership has never been high in large companies. That is, there exists a small and insignificant positive coefficient of ownership interaction variable, which implied that the relation between compensation and performance is independent of an executive's stock holdings. In addition, according to their earlier (1989) study, they find that median CEO of one of nation's 250 largest public companies own shares just over \$2.4 million, less than 0.07% of the company's market value. In addition, they find that 9 out of 10 CEOs own less than 1% of their company's stock, and 1 in 20 CEOs own more than 5% of the company's outstanding stocks. Overall, they find that CEOs receive about 50% of their base pay in the form of bonuses. Their study is based on sampling of 73 manufacturing firms during a 15 year period. This is supported by Cyert, Kang, and Kumar (2002), who find a negative correlation between large stockholders and CEO compensation. That is, doubling percentage ownership of external stakeholders reduces non salary compensation by 12% to 14%. This is

contradicted by an earlier study conducted by Mehran (1995), who find a positive relationship between the percentage of total cash (salary and bonus) compensation and the percentage of stocks held by managers. His study is based on one year collection of data. Ungson and Steers (1984) believed that firms where CEOs have large stock ownership and long tenure, they can largely shape their pay. Similarly, Finkelstein and Hambrick (1988) believed that the relative power of a CEO may affect the height of the hurdles that are set to qualify for contingent pay. In addition, they believed that strong family's position in the firm will increase executive's power. Moreover, they find that CEO compensation and CEO stock ownership are related in an inverted U-shaped manner, compensation highest in situations where CEO stock ownership is characterized as moderate. That is, the point of inflection happened when CEO stock ownership reached about 9 percent in the first 18 years, beyond that, salaries started to decline due to tax preference of incurring capital gains over current income. Bertrand and Mullainathan (2000) find that CEOs at firms lacking five percent (or larger) stock ownership tend to receive more luck based pay, that is, pay associated with profit increases that are entirely generated by external factors rather than by CEOs' efforts. In addition, they also find that firms that have fewer external stakeholders, CEO cash compensation is marginally reduced when option based compensation is increased.

Murphy (1986) stated that CEO performance is influenced by CEO tenure. That is, he believed that increased CEO tenure may promote principal trust of an agent and in turn agent will take actions in the principal's interest. Similarly, Sigler (2011) finds that CEO tenure appears to be an important variable in determining the level of CEO compensation. His examination is based on two hundred and eighty firms listed on the New York Stock Exchange from 2006 to 2009. In addition, Finkelstein and Hambrick (1989) believed that CEO tenure is thought to have a positive link with compensation. That is, pay steadily increase as CEO gains and solidify power over-time. However, they find in their study that such a relationship is not observed between CEO tenure and CEO pay. As such, they then decided to conduct additional testing, cross sectional associations of CEO compensation and CEO tenure, and have found that there is an existence of a curvilinear relationship, a U-shaped pattern. That is, CEO tenure increases pay up to 18 years and then it started to decline gradually. They have provided two possible explanations for this curvilinear relationship. Firstly, they believed that power accrues for a while and then diminishes due to CEO's reduced mobility in the managerial labor market, or due to his evolution into a figurehead with one or two younger high priced executives carry the actual weight of a CEO's job. Secondly, they believed that executives reached a point where they prefer stock over cash compensation. This could occur because of changes in family and financial circumstances. This supposition is supported when they have examined two sub samples and have found that stock compensation carries a higher proportion of total compensation. As such, they believed that CEO tenure increases a shift in pay mix from cash to stock earnings, support the notion that personal circumstances influence pay. In addition, they believed that long CEO tenure will create opportunity to recruit sympathetic board members for CEOs. In addition, they find that the average tenure of a CEO is significantly lower in externally controlled firms (2.96 years) than management-controlled firms (5.92 years). Thus, they believed that the boards of externally controlled firms may not need to pay from profitability because CEO tenure is dependent on the owner's satisfaction with CEO performance. Their study is based on a sample size of sixty companies. Pfeffer (1981) believed that the creation of a personal mystique which may induce unquestioned deference or loyalty, can be expected to occur when CEO power becomes institutionalized in the organization.

Deckop (1988) argued that CEO age has little effect on CEO compensation. However, Finkelstein and Hambrick (1989) find an inverted U-shaped relationship between CEO age and CEO cash compensation, indicating, CEO cash compensation increases until CEO reached the age of 59 years and then it starts to decline. This is consistent with the view that earnings over time is in line with CEO's need for cash, which tends to drop off as he or she gets older due to no major expenditures to incur such as, house and child rearing expenses. This is supported by McKnight et al. (2000), who find that CEO compensation is positively related to a certain age, but it starts to

decline afterward. This is further supported by Weir (2000), who finds that the relationship between CEO salaries and CEO age are significantly related but have weakened over time, and the relationship between CEO age and CEO bonus appears nonlinear in nature. That is, at about age 53, the proportion of bonus as a percentage of salary begins to decrease at an increase rate. On the other hand, according to Gibbons and Murphy (1992), who finds that CEO age is a well recognized determinant of compensation and have shown to be significantly related to CEO pay.

Jensen and Murphy (1990) find that CEO turnover probabilities are negatively and significantly related to changes in stockholder wealth. In addition, they concluded that the dismissals were simply not an important source of CEO incentives. Gilson and Vetsuypens (1990) examined the nature of compensation packages for financially distressed firms. They found that within a small sample of financially distressed firms, when a turnover occurs, insider replacement CEOs were paid substantially less than their predecessors, but outsider replacement CEOs were paid substantially more. Similarly, Murphy and Oyer (2002) find that outside CEO replacements receive higher compensation than inside CEO replacements. That is, outside replacement CEOs, at median, typically make \$335,360 more than their predecessors while inside CEOs are typically paid only \$126,156 more than their predecessors. Brickley (2003) concluded that firm performance continues to explain very little variation of CEO turnover. Overall, despite literature consisted of excellent theoretical discussions on this topic, yet it lacked consistent empirical studies on the relationship between CEO compensation and CEO turnover.

3. Research Methodology

This research had adopted quantitative research method as it is the method to be used for historical data collection and descriptive studies. The longitudinal study approach had been selected under quantitative research methodology to study corporate financial records from 2005 to 2010. The random sampling method had been selected for this research to obtain total sample population of twenty five companies from NYSE index. For statistical tests, CEO compensation was assigned as dependent variable; firm size was assigned as control variable and independent variable; and CEO performance and corporate governance had been assigned as independent variables. Each subvariables of CEO compensation had been used separately to test with all sub-independent variables of firm size, firm performance, and corporate governance. The total of nine models were created to address this research question. The survey method had been adopted as it is the most appropriate approach to collect historical data. The historical data of sampled companies had been obtained from TMX Group Inc. and CDS Inc. The inferential statistics-based methodology, which is very instrumental to this quantitative research, had been used to obtain statistical results. The 95 percent confidence level will be assumed for all statistical tests.

4. Data Findings and Conclusions

4.1 CEO Compensation and Firm Size

Table 1 (ANOVA)

	Salary	Bonus	Total Compensation
Firm Size	F _(12,143) =18.111 p=.000 R ² =0.202	F _(2,128) =3.096 p=.000 R ² =0.046	F _(2,124) =43.735 p=.000 R ² =0.430
Accounting Performance	F _(8,137) =7.078 p=.000 R ² =0.292	F _(8,120) =195.156 p=.000 R ² =0.929	F _(8,112) =146.061 p=.000 R ² =0.0113
Corporate Governance	F _(7,137) =8.52 p=.000 R ² =0.303	F _(7,122) =.705 p=.000 R ² =0.039	F _(7,111) =5.174 p=.000 R ² =0.244

The above ANOVA table 1 results were based on linear regression tests. It had shown that there was a relationship between CEO salary, CEO bonus, CEO total compensation, firm size, firm performance, and corporate governance, except for relationship between CEO bonus and corporate governance. The first, second, and third models between CEO salary, CEO bonus, CEO total compensation, and firm size were, .202, .046 and .430 respectively, as such characterized as weak to moderate models. Thus, it had illustrated that firm size had a weak impact on short-term CEO compensation and as such, was more favorable towards long-term CEO compensation structure. The fourth, fifth, and sixth models between CEO salary, CEO bonus, CEO total compensation, and accounting performance were .292, .929, and .913 respectively, as such characterized as moderate to strong models. That is, accounting performance had a moderate effect on CEO salary and strong effect on CEO bonus and total compensation, indicated that rewards were designed and weighted heavily with accounting performance. The seventh, eight, and nine models between CEO salary, CEO bonus, CEO total compensation, and corporate governance were .303, .039, and .244 respectively, as such characterized as weak to moderate models. That is, corporate governance had a moderate effect on CEO salary, however, it had a weak effect on CEO bonus and total compensation.

Table 2 - Correlations (CEO Compensation vs. Firm Size)

	Salary	Bonus	Total Compensation
Total Sales	0.37	-0.212	0.543
Total Employees	0.207	-0.192	0.268

The above table 2 illustrated that the correlation results between CEO salary, bonus, total compensation, and firm size. It had shown that there was a weak to moderate positive correlations existed between CEO salary, total sales, and total employees. That is, the correlation were .370 and .207, respectively. On the other hand, the correlations between CEO bonus, total sales, and total

employees were weak negative ratios. That is, they were -.212 and -.192, respectively, indicated that firm size was totally ignored and in fact had a negative effect towards determining CEO bonus. The correlations between CEO total compensation, total sales, and total employees were ranged from weak to good positive ratios. That is, they were .543 and .268, respectively, indicated that CEO total compensation structure had some degree of influence by firm size.

4.2. CEO Compensation and Firm Performance

Table 3 - Correlations (CEO Compensation vs. Firm Performance)

	Salary	Bonus	Total Compensation
Return on Assets	-.078	0.078	0.027
Return on Equity	0.19	0.144	0.213
Earnings Per Share	-0.012	0.039	0.06
Cash Flow Per Share	0.18	-0.044	0.118
Net Profit Margin	0.003	0.29	0.386
Common Stock Outstanding	0.066	0.146	0.226
Book Value of Common Stock	0.217	0.344	0.383
Market Value of Common Stock	0.407	0.818	0.77

The above table 3 illustrated the correlation results between CEO salary, bonus, total compensation, and firm performance. It had shown that there was a weak to moderate mixed correlations between CEO salary, return on assets (ROA), return on equity (ROE), earnings per share (EPS), cash flow per share (CFPS), net profit margin (NPM), common stock outstanding (CSO), book value of common Stock (BVCS), and market value of common stock (MVCS). That is, it illustrated that the correlations between them were -.078, .190, -.012, .180, .003, .066, .217, and .407. Thus, it signified that among balance sheets involved items such as return on assets, return on equity, and cash flow per share, influence to CEO salary was characterized as weak negative to weak positive ratios, perhaps due to CEO salary contract gives less importance to assets and related returns. Similarly, in the net earnings related items such as earnings per share, net profit margin, common stock outstanding, book value per common share, and market value per common share, influence to CEO salary was characterized as weak to moderate positive ratios.

It was found that there was a weak negative to strong positive correlations between CEO bonus, return on assets (ROA), return on equity (ROE), earnings per share (EPS), cash flow per share (CFPS), net profit margin (NPM), common stock outstanding (CSO), book value of common stock (BVCS), and market value of common stock (MVCS). That is, it illustrated that the

correlations between them were, -.078, .144, .039, -.044, .290, .146, .344, and .818. Thus, it indicated that among the balance sheets involved items such as return on assets, return on equity, and cash flow per share, the influence to CEO bonus was characterized as weak negative to weak positive ratios. Similarly, in the net earnings related items such as earnings per share, net profit margin, common stock outstanding, book and market values per common share, the influence to CEO bonus was characterized as weak to strong positive ratios. That is, accounting ratios were insignificant except to market price of share, indicated that CEO bonus had been influenced by market activities.

The correlations between CEO total compensation, return on assets (ROA), return on equity (ROE), earnings per share (EPS), cash flow per share (CFPS), net profit margin (NPM), common stock outstanding (CSO), book value of common stock (BVCS), and market value of common stock (MVCS), were characterized as weak to strong positive ratios. That is, it illustrated that the correlations between them were, .027, .213, .060, .118, .386, .226, .383, and .770. Thus, it indicated that among balance sheets involved items such as return on assets, return on equity, and cash flow per share, the influence to CEO total compensation was also characterized as weak positive ratios. Similarly, net earnings related items such as earnings per share, net profit margin, common stocks outstanding, book and market values per common share, had a weak to strong positive ratios. Thus, overall, equity related earnings had a material influence towards CEO compensation.

4.3. CEO Compensation and Corporate Governance

Table 4 - Correlations (CEO Compensation vs. Corporate Governance)

	Salary	Bonus	Total Compensation
CEO Age	0.151	-0.017	0.14
CEO Shares Outstanding	-0.10	-0.054	-0.181
CEO Share Value	0.272	0.056	0.249
CEO Tenure	0.026	0.013	0.217
CEO Turnover	0.165	-0.047	0.017
MGMT. 5% ownership	0.287	0.031	-0.198
INDV./INST. 5% ownership	-0.178	0.15	0.177

The above table 4 illustrated the correlation results between CEO salary, bonus, total compensation, and CEO corporate governance. It had shown that there was a weak negative to weak positive correlations existed between CEO salary, CEO Age, CEO shares outstanding, CEO shares value, CEO tenure, CEO turnover, 5 percent management ownership, and 5 percent individual/institutional ownership. That is, correlations between CEO salary and corporate governance were .151, -.100, .272, .026, .165, .287, and -.178, respectively. The positive correlations were related to CEO age, CEO share value, CEO tenure, CEO turnover, and management 5 percent ownership, indicated that CEO experience, market share price, duration of

CEO service, and management controlled of the firm, all had some level of influence to board of directors in determining CEO salary. The negative correlations between CEO salary, CEO shares ownership, and individual/institutional 5 percent ownership indicated that level of CEO equity and non-management ownership control were not considered by the board.

The correlations between CEO bonus and corporate governance were -.017, -.054, -.056, -.013, -.047, .031, and -.150, respectively. That is, the correlations were ranged from weak negative to weak positive ratios, except to CEO shares outstanding, indicated that non-accounting performance factors or CEO contract completely ignored corporate governance factors. That is, the board again ignored experience level of CEO, duration of CEO's service, CEO stocks ownership and value, and ownership structure, towards determining CEO bonus. The correlations between CEO total compensation and corporate governance were .140, -.181, .249, .217, .017, -.198, and .177, respectively. That is, the correlations between CEO total compensation, CEO age, CEO share value, CEO tenure, CEO turnover, and 5 percent individual/institutional ownership were found to be weakly positive. On the other hand, the correlations between CEO total compensation, CEO shares outstanding, and 5 percent management ownership had weak negative ratios. Overall, corporate governance had a weak influence on CEO compensation mainly due to strong influence of firm size and accounting firm performance.

5. Conclusion

Overall, there was a relationship existed between CEO salary, CEO bonus, CEO total compensation, firm size, accounting firm performance, and corporate governance. The correlations between CEO salary, CEO bonus, CEO total compensation, and firm size were ranged from weak negative to strong ratios. The correlations between CEO salary, CEO bonus, CEO total compensation, and accounting performance were ranged from weak negative to strong positive ratios. The correlations between CEO salary, CEO bonus, CEO total compensation, and corporate governance, were ranged from weak negative to weak positive ratios.

Вопросы для размышления:

1. Изучению каких основных проблем посвящена статья и какова роль настоящего исследования?
2. Насколько корректна приведенная методология исследования, каковы границы ее применимости в изучении данной проблемы?
3. Согласны ли вы с выводами и объяснением полученных результатов?
4. Как эта проблема выглядит в российской действительности?
5. Как бы вы построили исследование этой проблемы в России? Какие гипотезы можно сформулировать в этой области?