Examining if There is a Relationship Between CEO Compensation and the Stock Price and Net Income of Publically Traded Corporations in the State of Wisconsin, USA

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Abstract **- Calculating the economic value that a CEO contributes to the worth of a corporation is seemingly a moot point. The standard method of calculation is the use of financial ratios, the firm's stock price and to what degree were the overall objectives of the enterprise accomplished. The purpose of this quantitative research project was to investigate if any significant relationship existed between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the price of their corporations' stock price and net revenue. The author of this study selected the State of Wisconsin as the basis for the study due to the number of Fortune 1000 firms (25 the 16th highest in the United States) and Fortune 500 companies (10). Some prominent firms include Fiserv, Harley-Davidson, Johnson Controls, Kohl's, Manpower, Oshkosh Corporation and Rockwell Automation. The outcomes of this research revealed that there was no statistically significant relationship between increases/decreases in the price of Wisconsin's publically traded corporations' stock price and net revenue in 2008. However, in 2010 while there was no statistically significant correlation between the compensation of corporate executives of 48 publically traded firms in Wisconsin and increases/decreases in the price of their corporations' stock price there was a statistically significant correlation between the compensation of these executives and the net incomes of their firms. Finally, three Wisconsin CEOs were ranked among the top 250 highest CEO/Pay ratios in America.**

Index Terms – Executive Compensation, Firm Economic Performance, Valuation of Corporations, Management Theory.

1. Introduction

CEO salaries have increased significantly over the past several decades in the United States. The average CEO pay of companies in the S&P 500 Index rose to $12.94 million in 2011 and CEO pay in the S&P 500 Index increased 13.9 percent in 2011, following a 22.8 percent increase in 2010. The ratio of CEO-to-worker pay between CEOs of the S&P 500 Index companies and U.S. workers widened to 380 times in 2011 from 343 times in 2010. Back in 1980, the average large company CEO only received 42 times the average worker's pay (AFLCIO, 2012, para. 1).

During the course of the Great Recession (2007 – 2009) and sluggish economic recovery, widespread attention is being paid to executive compensation and the performance of their corporation. Despite the innumerable compensation schemes available to assess the outcomes of an enterprise, the question remains: do the actions of a single CEO have a direct association to corporate results? Four themes are explored in the Literature Review; management's impact on corporate performance, CEO compensation trends, CEO and employee pay disparities and an assessment of CEO compensation developments in Wisconsin.

II. Literature Review

A. Management's Impact on Corporate Performance

An influential study by Bloom and Van Reenen (2006) of more than 700 manufacturing companies in Great Britain, France, Germany and the United States found that the approach taken by corporate leaders was the foremost management influence on enterprise performance. Those firms with superior management were associated with higher productivity, return on equity and market capitalization. Bloom and Van Reenen (2007) followed their study of 700 European firms with expanded research that encompassed more than 4,000 American, European and Asian businesses. Bloom and Van Reenen (2007) research further reinforced their 2006 findings. They found that there was no single management practice that provided the key to improved corporate performance. Rather, it was the average score of 18 management practices grouped into "four areas: *operations* (three practices), *monitoring* (five practices), *targets* (five practices), and *incentives* (five practices)" (p. 1361) when compared to an enterprise's economic success that provided the most accurate indicator of success. One micro study (Keller, 2009) was conducted to apply Bloom and Van Reenen's methodology in southeast Wisconsin in late 2008. The results from this study showed that management practices did not have a statistically significant impact on the economic performance of for-profit firms with the exception of one (family owned) ownership type.

A further issue that has clouded the topic of evaluating the impact that management has on firm or organizational performance is the lack of a precise definition of performance. Folan, Browne and Jagdev (2007) argued that there is no precise definition of the meaning of performance in the context of management science and as a result financial measurements continue to be the default indicators of managerial quality. Moorcroft (2005) posed an incendiary query relative to the influence, let alone the rewards, of executive leaders.

> Can you honestly subscribe to the view that the Chair of a major corporation *really* influences the operational decisions of an employee in another country? Employees react to line management and the systems that they interact with daily, not to distant executives – even to the extent of staying in, or leaving, the organization. (p. 4)

DOI: 10.5176/2010-4804_2.4.243

Moorcroft's inquiry about the effect that senior leaders have on a corporation is provocative. Frequently, the CEO (like a military general) is hailed and remunerated generously for the outcomes of their company. However, dazzling the corporate level plan may be, inevitably an enterprise's employees must deliver the firm's outputs to customers. Compensation for employees are generally predetermined by salary schedules and limited performance bonuses generally designed using Taylor/Fayol/Six Sigma-like production measurements. Executive level rewards on the other hand are negotiable and seemingly limitless in their latitude. Unlike those who they lead; measuring the direct connection between the CEO's singular impact on overall corporate consequences is opaque. The challenge to quantity the effectiveness of any company's performance is complex and subjective. Nonetheless, the foremost benchmarks of CEO performance are financial and accounting calculations. Examining the utility and voracity of the association between compensating CEOs based on commonly accepted financial benchmarks was part of focus of this micro study.

B. CEO Compensation Trends

The search for a meaningful compensation plan to both motivate CEO performance and corporate outcomes has been an ongoing topic for compensation committees and scholars. What incentives are optimal to motivate a CEO to simultaneously increase their personal wealth and shareholder prosperity? It follows that if CEO salaries are tied to increases in the company's stock price, the former should drive the latter. The literature is unclear in this matter. For example Boyd (1994) found that CEO compensation was not significantly related to firm size or profitability. Many remuneration systems are in use to secure the connection between CEO pay and the value of the firm's stock ranging from generous salaries, PERKS, stock options and others. Larker and Tayan (2012) analyzed data from 2006 to 2012 and found that of the largest public companies, a 50% gain in share price led to a median wealth gain of six times a CEO's annual compensation due to leverage in the form of stock options. One of the questions raised by Larker and Tayan's research was the degree to which risk and risk aversion may influence a CEO's (based on years of service) decisions. How corporate compensation committees choose to reward and incentivize corporate leaders is a matter of much study and dispute.

> A study conducted by *The Wall Street Journal* and the Hay Group found a stronger link between CEO pay and their companies' financial results. Meanwhile, the *2012 S&P 500 CEO PayStudy* from Equilar found that executive pay rose 6.8 percent between 2010 and 2011, along with more emphasis on equity and performance, and an analysis of 500 large U.S. public companies by *Forbes* magazine found that CEO pay increased 16 percent. (Bloomberg BNA, 2012, p.1)

Using history as a predictor of future success has been questioned by some researchers. Banker, Darrough, Rong and Plehn-Dujowich (2013) evaluated the effect of past performance on CEO compensation and found that:

> past performance measures play different roles in determining salary and bonus. Specifically, the past ROE and the past RET are both positively and significantly associated with salary. In contrast, we find that bonus is negatively associated with the past ROE. When the salary and bonus components are combined, total cash compensation is unrelated to past performance, apparently because the positive effect in the salary equation and the negative effect in the bonus equation offset each other. (p. 25)

A variety of trends to realign executive compensation given the post-2008 Great Recession economy are being contemplated. One study (Henderson, Masli, Richardson & Sanchez, 2010) provided confirmation that a "significant substitution in CEO compensation—away from bonus and toward equity compensation in response to increasing magnitude of layoffs" (p. 741). Correlating stock performance to CEO compensation continues to be the standard used most frequently by corporate compensation committees to drive shareholder wealth and is the basis of this study.

C. *CEO/Employee Compensation Disparities*

As the American economy slowly recovers from one of the worst recessions in its modern history, unemployment rates continue to slowly decline. In April, 2013 the unemployment rate in the United States was 7.5% (the lowest since 2009) (United States Department of Labor (2013). The State of Wisconsin reported an unemployment rate of 7.6% in March, 2013 (State of Wisconsin, 2013). While the prospects of employment and structural economic growth are welcome as signs of pay gains for citizens; a compensation disparity between those who occupy executive level positions and their subordinates continues to ominously grow. It was reported that between 2010 and 2011 American CEOs averaged double-digit increases. In part the upturn was attributed to rising stock prices resulting in 15% pay enlargements for the average American CEO in 2011 and a typical compensation package hitting $5.8 million which followed an average pay upsurge of 28% in 2010. For employees, ordinary wage gains were unremarkable. The typical increase in base pay for non-executive employees was 3% in 2012. Inflation averaged about 2.7% (Guardian, 2012).

The gap between executive pay and typical worker household income has been an issue attracting significant interest over the past several decades. According to the Economic Policy Institute:

> In 1978, compensation of CEOs was 35 times greater than compensation of average workers. Since then, this ratio has skyrocketed, peaking at 299-to-1 in 2000. During the Great Recession, CEO pay fell relative to pay of typical workers because much of CEO compensation is directly linked to the stock market, which fell sharply in 2008 and 2009. However, the ratio bounced back during the recovery and stood at 243-to-1 in 2010. (Economic Policy Institute, 2011, para. 2)

Bloomberg (2013) noted that across the S&P 500 Index of firms, "the average multiple of CEO compensation to that of rank-and-file workers is 204, up 20 percent since 2009" (para.

3). The Bloomberg research ranked the former CEO of JC Penny, who was dismissed due to several years of a failed revitalization campaign, at the top of the pay/ratio with a compensation package valued at 1,795 times that of an hourly wage earner at JC Penny.

The inclusion of ethics and agency problem regarding how executive compensation is calculated and negotiated adds depth to the discussion. Moriarty (2009) asserted that CEOs have an economic and moral fiduciary responsibility to not overpay themselves; just as they would not overpay for labor or resources. Moriarty's moral imperative posits that if CEOs demand and accept excessive pay packages they act in self-interest rather than in the best interest of their their firm's shareholders. However; Kolb (2012) maintained that the executive who recuses themself from involvement in the compensation decision making process is "morally free to negotiate for the highest wage available" (p. 679). Bebchuk and Fried (2003) identified the agency problem regarding executive compensation succinctly. They argue that the boards of directors of publically traded enterprises, whose members are geographically scattered and many are simultaneously involved in running their own companies, cannot avoid negotiating in consultation with CEOs. Consequently executives assert considerable guidance over their compensation packages and therefore "have an interest in reducing the saliency of the amount of their pay and the extent to which that pay is de-coupled from managers' performance" (abstract).

D. An Assessment of CEO Compensation Developments in Wisconsin

In 2010 the typical pay for Wisconsin corporate CEOs increased by 27%. That year Wisconsin's publically traded firms paid their chief executives more than $237 million. The CEO of the state's largest public company was given a 53% pay increase raising his pay to $17.6 million. The average pay for a CEO of a publically traded Wisconsin company was $3.8 million. In contrast the average worker in Wisconsin made $39,104 down from $39,156 the previous year, according to the state Department of Workforce Development (Jsonline, 2011). The pay disparity between Wisconsin CEOs to the average employee was 99: 1, a significantly lower pay differential than national averages. It should be noted that according to Bloomberg (2013) three Wisconsin CEOs ranked in the top 250 highest CEO Pay Raito list; Stephen Roell (#42 @ 409:1) Johnson Controls; Kevin Mansell (#83 @ 317:1) and Keith Nosbusch (#213 @ 196:1) Rockwell Automation. Of the 57 firms, 37 (79%) recorded a profit however, only four (2.28%) CEOs experienced a pay reduction averaging 19%.

The debate about CEO pay and the justifications made for large remuneration packages was played out in the local media. "CEOs live in their own bubble universe said Stephen Rose, research professor and senior economist at the Georgetown University Center on Education and the Workforce. They are really outside the law of supply and demand." An opposing view was offered by a University of Wisconsin academician who opined: "If you want to pay 20% below the average for your CEO, who exactly are you going to get?" asked Barry Gerhart, a professor of management at the University of Wisconsin-Madison. "Sure, they're not going to be chopped liver, but is that the strategy you want to follow? That's the position the boards are in" (Jsonline, 2011, paras 8-11).

To accomplish the goal of this quantitative research project to determine if a relationship existed between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the value of their corporations' stock price and net revenue a critical review of the relevant peer-reviewed and scholarly literature was conducted. The type of data collected for this study was from publically available sources that listed the salaries of the CEOs of publically traded firms located in the state of Wisconsin. The population was limited to 48 publically traded corporations as detailed information about these firms is readily available. The author of this study selected Wisconsin as the focus of this micro-study because he resides in the state and the number of Fortune 1000 firms ($25 - 16^{th}$ highest in the United States) and Fortune 500 companies (10) provide a reasonable sample of American industries.

III. Methodology

The problem addressed in this part of the quantitative micro-study was to determine if a relationship existed between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin and increases/decreases in the value of their corporations' stock price and net revenue.

H1o. There is no statistically significant relationship between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the price of their corporations' stock prices in 2008.

H2o. There is no statistically significant relationship between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the net revenues of their corporations' in 2008.

H3o. There is no statistically significant relationship between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the price of their corporations' stock prices in 2010.

H4o. There is no statistically significant relationship between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the net revenues of their corporations in 2010.

The type of data collected for this study was accumulated from publically available sources. The population was limited to 48 publically traded corporations. The total population of publically traded firms in Wisconsin is 57; however for the purpose of this research nine firms that were not publically traded in 2008 or enterprises that experienced a change in corporate leadership during the period of study were excluded. The Null Hypotheses were analyzed using a t-Test-Paired Two Sample for Means. A .05 level of significance was used to determine the significance for each of the Null Hypotheses.

A. Findings: Hypothesis 1

The researcher used a t-Test-Paired Two Sample for Means to analyze the data. A .05 level of significance was used to determine whether to accept or reject Hypothesis 1: There is no statistically significant relationship between the annual

salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the price of their corporations' stock prices in 2008. It was determined that there is no correlation between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the price of their corporations' stock prices in 2008. With a P (T<=t) two-tail value of 9.51 at the .05 level, the Null Hypothesis cannot be rejected (Table 1).

Table 1. Correlation of CEO Compensation to Stock Price 2008

t-Test: Paired Two Sample for Means **N= 48**	Results
P(T<=t) two-tail	*9.51*

B. Findings: Hypothesis 2

The researcher used a t-Test-Paired Two Sample for Means to analyze the data. A .05 level of significance was used to determine whether to accept or reject Hypothesis 2: It was determined that there is no statistically significant relationship between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the net revenues of their corporations in 2008. With a P (T<=t) two-tail value of .48 at the .05 level, the Null Hypothesis cannot be rejected (Table 2).

Table 2. Correlation of CEO Compensation to Net Revenue 2008

*t-Test: Paired Two Sample for Means **N= 48***	*Results*
P(T<=t) two-tail	*.48*

C. Findings: Hypothesis 3

The researcher used a t-Test-Paired Two Sample for Means to analyze the data. A .05 level of significance was used to determine whether to accept or reject Hypothesis 3: It was determined that there is no correlation between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the price of their corporations' stock prices in 2010. With a P (T<=t) two-tail value of 1.91 at the .05 level, the Null hypothesis cannot be rejected (Table 3).

Table 3. Correlation of CEO Compensation to Stock Price 2010

*t-Test: Paired Two Sample for Means **N= 48***	*Results*
P(T<=t) two-tail	*1.91*

D. Findings: Hypothesis 4

The researcher used a t-Test-Paired Two Sample for Means to analyze the data. A .05 level of significance was used to determine whether to accept or reject Hypothesis 3: It was determined that there is a statistically significant relationship between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the net revenues of their corporations in 2010. With a P(T<=t) two-tail value of.04 at the .05 level, the P value is sufficient to not accept the Null Hypothesis and accept the Alternative Hypothesis (Table 4).

Table 4. Correlation of CEO Compensation to Net Revenue 2010

*t-Test: Paired Two Sample for Means **N= 48***	*Results*
P(T<=t) two-tail	*.04*

E. Analysis of 2008 Results

The purpose of this quantitative research project was to investigate to what extent if any a relationship existed between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the price of their corporations' stock prices and net revenues. The results indicated that there was no statistically significant relationship between CEO salary and increases or decreases in either the stock price or net revenues of their firms. Upon closer analysis of annual net corporate earnings in 2008, Wisconsin's publically traded corporations averaged a decline in net revenue of $5,661,042. Clearly the devastating blows of the Great Recession severely bashed the income streams of nearly every industry sector. While every Wisconsin firm did not record losses in 2008, on average one would expect to see a concomitant CEO salary adjustment given the dire economic prospects of the national economy. However between 2007 – '08 approximately 55% of Wisconsin CEOs received pay increases. The argument could be made that CEOs must work even harder during difficult economic times to mitigate the negative effects of declining business and therefore CEOs deserve pay increases. Apparently some compensation committees applied this logic to their remuneration decisions in 2007 - 2008. However, despite the onset of one of the most serious economic downturns in modern American history and future financial forecasts predicting continuous decline, more than half of the CEOs received pay increases. The statistical evidence indicates that regardless of corporate outcome, the connection between CEO pay and firm performance was unremarkable.

F. Analysis of 2010 Results

Economic conditions changed from late 2007 to 2010. The Great Recession officially ended in 2009. The statistical analysis of CEO compensation and firm net revenue and stock prices yielded mixed results. Even though no statistically significant relationship was noted between the annual salaries of CEOs and increases/decreases in their firms' stock prices in 2010 there was a strong correlation between salaries and net revenues. This phenomenon does have grounding in the *real economy*. While the price of a company's stock price varies from minute to minute based on innumerable analytical and qualitative reasons, the production of products and services

and management of a corporation's resources are controllable economic choices made by the CEO. These sorts of *bottom line* selections can be assessed and traced to the enterprise's CEO and in 2010 the average compensation for Wisconsin corporate CEOs increased by 27%.

IV. Conclusion

This research study sought to investigate to what extent if any a relationship existed between the annual salaries of the CEOs of 48 publically traded firms in the State of Wisconsin, USA and increases/decreases in the value of their corporations' stock prices and net revenues. The outcomes of this research showed that there was no statistically significant correlation between the compensation of corporate executives of 48 publically traded companies in the state of Wisconsin and the net incomes and stock prices of their entities in 2008. However, in 2010 while there was no statistically significant correlation between the compensation of corporate executives of 48 publically traded firms in the state of Wisconsin and the price of their firms' stock prices in 2010, there was a statistically significant correlation between the compensation of these executives and the net incomes of their corporations.

This study was conducted comparing the beginning of one of the worst recessions in modern American history from late 2007 to a post-recession period in 2010. While many Wisconsin firms were buffeted by the economic maelstrom of the Great Recession, all 48 of the CEOs that were the subjects of this micro-study survived this period and as noted, on average received generous pay increases in 2010.

In the final analysis, this study needs to be repeated on an annual basis to continue to monitor trends. Additional analysis should be directed at discerning if the size of the workforce is increased in direct proportion to the success of a company. Furthermore in-depth research should be focused on determining if there is rough equivalence in pay between Wisconsin's male and female executives. Finally the assertion that the actions of a lone CEO can be directly linked to their firm's stock price and net earnings continues to require continuous and rigorous investigation.

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