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# How Relevant is the Disclosure of a CEO Pay Ratio?

Addison Stanfill, University of Arkansas

## ABSTRACT

An aftershock of the so called “Great Recession” in 2008, the Dodd-Frank Wall Street Reform and Consumer Protection Act effective July 21, 2010 aimed to increase the transparency of public companies. Section 953(b) of this act is targeting the transparency of executive and employee compensation by requiring the disclosure of a CEO to median employee pay ratio. This disclosure requirement, set to affect all filings with a fiscal year beginning after January 1, 2017, was a response to the public outcry against excessive CEO compensation. Although it does promote the transparency initiative of the Dodd-Frank Act, this disclosure may be wholly unnecessary. Because total CEO compensation is already a required disclosure, this study is examining the benefits and necessity of Section 953(b) by taking into account the driving force behind the ratio and its effect on the business environment.

## INTRODUCTION

An economy naturally undergoes periods of expansion and recession. This normal business cycle is a consistent component of economies globally. During expansionary times, output, employment, and inflation rise. Conversely, recessionary periods face falling output and increasing unemployment (Romer). Although business cycles are ordinary trends, sometimes the trends peak or pit to a greater magnitude than expected. Particularly during an excessive pit, public dissent grows in strength pressuring politicians and businesses to reevaluate their position and seek mediating solutions to the issues at hand. In December of 2007, the economy underwent a downturn outside of normal conditions. Economic indicators fell beneath levels expected during ordinary recessionary periods. This kicked off a period which ran until mid-2009 known as the “Great Recession” (U.S Bureau of Labor Statistics). Consistent with previous economic downturns of large magnitude, public outcry and dissent grew large. Government and politicians were put under pressure to easing the swelling tide and provide constituents with some relief from growing financial pain. The response came on July 21, 2010 when the Dodd-Frank Wall Street Reform and Consumer Protection Act was passed.

The Dodd-Frank Act was the response to the “Great Recession” with the goal of reducing the likelihood of a future recessionary period reaching such magnitude. This is widely considered the most far reaching Wall Street reform in history specifically targeting abusive financial practices and opaque business reporting (The White House). In conjunction with the public disapproval of the recession, a growing number of companies began to come under fire for their executive compensation packages. As a growing number of Americans became jobless,

or received reduced pay, CEO pay was growing from its already high levels. The combination of opaque reporting and public discord with CEO pay led to the inclusion of Section 953(b) in the Dodd-Frank Act. This section's particular aim was to quell the popular demand that something be done to regulate CEO pay.

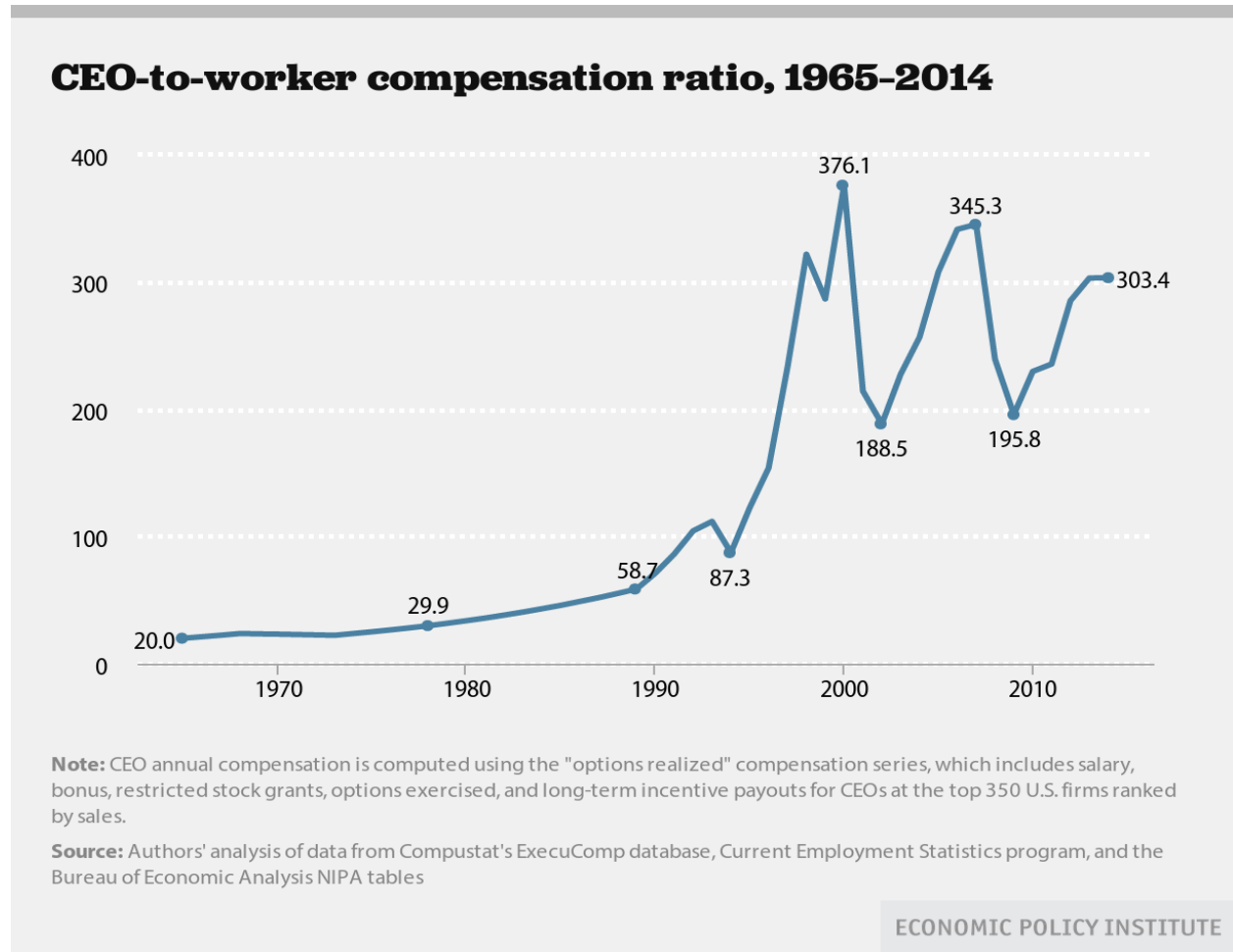
## CEO Pay Trends

CEO pay has been one of the hottest business topics in the recent past. Public outcry has grown substantially over time requiring politicians to act and include the aforementioned Section 953(b) in the Dodd-Frank Act. But why is this such a trending topic, and why do so many people actually care?

People care about CEO pay trends, because they care about money. Every dollar going to a CEO is a dollar not going to them or to someone else who goes to work every day just like that CEO. And when that CEO is earning substantially more money than the average employee, people tend to take exception. The argument is not that CEOs do not deserve to be the highest paid employee at any given company, but rather that the CEO's compensation is so far in excess of average employees who are also vital contributors to the company.

Total CEO compensation has risen 937% since the late 70s to 2013 (Davis & Mishel). Although that clearly is a large percentage, it gives you no context for how CEO pay has progressed relative to compensation across the board. This is why the CEO to average employee pay ratio has become an extremely popular piece of data and a vital piece of evidence for those who speak out against excessive CEO pay. It provides a ratio describing the amount of money made by a CEO for every dollar made by the "average" worker. As you can

see in the following figure, CEO's were earning only \$20 for every dollar earned by their employees in the 1960s, and that jumped to \$345 at the start of the recession (Davis & Mishel).



Furthermore, CEOs at the top 350 companies based on sales brought in on average \$16,316,000 in compensation in 2014 (Davis & Mishel). Compare that to the America's average salary in 2014 of \$46,481 (Social Security Administration). Many have a hard time seeing the equity in this type of pay disparity. This data helps to really put into context just how much CEOs bring in every year, and why these trends have become a major hot button topic in the general public. Politicians have identified the opinions of the public to take action as is their

duty, but maybe they should have recognized these trends or taken swifter action before it created such a stir among the public.

## CEO Pay Ratio Disclosure

Section 953(b) seeks to increase transparency in reporting and reign in CEO pay practices to more reasonable levels by requiring the disclosure of a CEO to median employee pay ratio in annual Securities and Exchange Commission (SEC) filings. This is similar to the ratio used in the above discussion, except that instead of calculating an average compensation amount, which is going to be greatly affected by several highly compensated employees, it will use the median employee compensation which will generally be less than the “average” employee. This particular section of the Dodd-Frank Act took over 5 years to actually be put into effect. The SEC finally adopted this rule requiring the disclosure on August 5, 2015 after months of deliberation and time for public comment. The disclosure will be required beginning with companies whose fiscal year begins on or after January 1, 2017. As outlined by the SEC, the new rule will require the following specific disclosures in annual filings:

- The median of the annual total compensation of all its employees, except the CEO;
- The annual total compensation of its CEO; and
- The ratio of those two amounts (SEC)

The disclosure itself is highly controversial yielding strong opinions from politicians and businesses. New Jersey Senator, Robert Menendez, the author of the disclosure, explains its original goal of “injecting transparency, promoting fairness in Corporate America and restoring sanity to runaway executive pay.” Senator Menendez further promotes the new rule by backing

its ability to be a powerful tool for investors who have the right to know the way a company treats its “average workers” and its executives. Menendez was among many of the supporters of this rule who were frustrated by the lack of urgency in its implementation. He states that the “commonsense proposal never should have fallen victim to controversy (Menendez).”

Based on Senator Menendez’s remarks on the CEO pay ratio disclosure, the intent goes beyond the transparency goal of the Dodd-Frank Act as a whole. This rule is aiming to reign in “runaway executive pay.” Popular opinion agrees that CEO pay is extreme if not excessive, and this leads into the broader, but related, issue of wealth distribution in America which goes beyond the scope of this research. Up until this disclosure requirement there has been no actual attempt at bringing CEO pay down. The hope is that the disclosure of the ratio will publicly shame companies into either lowering executive compensation or raising regular employee compensation (Eavis). Either of these alternatives will drop the CEO pay ratio, and thus the intracompany wealth gaps. Companies will aim to adjust their compensation strategies in order to avoid becoming the center of criticism and the face of wage inequality.

But contrary to Senator Menendez’s beliefs that this rule is commonsense, this rule has controversy written all over it. Although public companies are required to file reports with the SEC annually, they generally will not go above and beyond to provide information to users outside of the requirements. As a point in case, during this research it was discovered that corporations are not required to report total wages and salaries expense for the entire company, and thus none of the companies in this research reported this data. Therefore, this new disclosure was met with opposition by most corporations and politicians with a tendency

towards big business. An opposing SEC Commissioner, Daniel M. Gallagher, even called the rule “the most useless of our Dodd-Frank mandates (Eavis).”

As of the time of writing, there is legislation in both the House and Senate aiming to repeal Section 953(b) of the Dodd-Frank Act. Senator Mike Rounds of South Dakota is responsible for the legislation in the Senate. Senator Rounds states that “the pay ratio rule is a waste of time, effort and money, and the SEC is misguided in voting to adopt this duplicative, unnecessary rule.” Rounds goes on by explaining that by repealing the disclosure rule, corporations can be more productive without the wasted time and money (Rounds). On its face, the rule does not seem to be so complicated and time-consuming, but the ratio is a much more difficult calculation than it appears. The ratio which will have to be accurate, due to its inclusion in financial statements, must take into consideration seasonal workers and wages for workers around the world (Eavis).

Nonetheless, the disclosure requirement is happening, barring the success of the legislation in works in both the House and Senate. Therefore businesses and investors need to be prepared when it is time to start reporting and using the CEO pay ratio. What information will this CEO pay ratio provide to business and to investors? As mentioned earlier, investors will use the information as a measure in which to judge the treatment of the common employee. Theoretically employees with higher pay are either more skilled or more motivated to perform at a higher level. Investors will use this information to place pressure on organizations to increase pay levels for the common employees in the hope of greater firm performance and greater returns on their investment. Businesses on the other hand will use this disclosure to compare compensation practices with their competitors. They will now be able to see how



much their competitors value their CEO relative to the common employee. The market for CEOs is fiercely competitive, and this disclosure could actually lead to companies increasing CEO pay to show they value their executives similarly to competitors. Whether or not the disclosure will succeed in its intended purpose is up for debate and only time will tell if it can reach the goals set out for it by its authors and supporters.

## PROPOSITIONS

The CEO Pay Ratio is a fairly simple calculation. What is not so simple is the aforementioned politics which engulf this controversial regulation. Something that has gone unnoticed or unmentioned in all the debate surrounding this regulation is that total CEO compensation is already a required disclosure. The argument that the disclosure requirement is duplicative and unnecessary is clearly stated, but there is no backing as to why it is duplicative. It could very likely be duplicative because the additional requirements calculating median pay will provide very little additional information. When comparing the data on CEO compensation and estimated median salary, it is clear that there is much greater variance in CEO compensation. This means that CEO compensation should be the primary driver in determining the CEO Pay Ratio. CEO compensation may be so strongly correlated with the CEO Pay Ratio that the additional requirements requiring the disclosure of a median salary be unnecessary.

If this thought holds true, then that would mean that in addition median pay has little influence in terms of driving CEO Pay Ratios. This disclosure which has been debated over so vigorously may well be duplicative and unnecessary. If median pay has very little correlation with the CEO Pay Ratio, there would be no true need behind including this disclosure assuming

that CEO compensation does correlate strongly with the ratio. If this were to hold true and the disclosure requirement was actually repealed as is being currently attempted, companies can be happy knowing that they will not have to provide the additional information in their annual filings that they argue will come at such great expense of time and money. Additionally the public can be happy because they can have all the information that they need already disclosed annually. Those interested in the topic of CEO Pay Ratios should be able to simply evaluate total CEO compensation to get the same information.

So what drives CEO compensation, and in turn, the CEO pay ratio? Could it possibly be the size of the company based on measures such as total market capitalization? Or might it be more financially based metrics such as price to earnings (P/E) ratio? Market capitalization has been proven to be linked with CEO pay over time, and this can be easily noticed in the compensation strategies of companies both currently and over time as firm size has increased (Gabaix & Landier). This makes theoretical sense that the CEO over a higher valued firm should be paid more than the CEO over a lower valued firm. Therefore it is predicted that firm size on the basis of market capitalization will be strongly correlated with calculated CEO Pay Ratio.

Alternatively CEO compensation may be related to measures of firm performance. If firm performance drives CEO pay, and CEO pay drives the CEO Pay Ratio, then firm performance must drive the ratio as well. A measure of firm performance is the price to earnings ratio which measures the market value of a share of stock relative to its per-share earnings. CEOs are almost always compensated in some way by equity in the firm. Companies in the S&P 500 are reported to have made equity compensation over 60% of the total compensation given to executives annually (Equilar). This equity is generally additional compensation on top of a base

salary for meeting performance metrics. CEOs aim for high performance metrics, such as improving the price to earnings (P/E) ratio, because by doing so they will receive this additional compensation in the form of equity. So as P/E ratio increases so will CEO pay, and as mentioned above this rise in CEO compensation will drive the calculated CEO Pay Ratio.

A company's industry may play into both the CEO's compensation and subsequently the ratio as well. Company pay practices tend to be heavily linked with an industry standard. CEOs in a certain industry are likely to be compensated on a similar level to one another holding firm size and performance equal. The reason for this is that companies compensate similarly in order to hold on to their CEO, instead of losing them to a competitor who pays more. CEOs are considered the top talent within a company, and by that thought they will be paid like the top talent in order to protect against motivation for leaving the company. Within the data and the CEO Pay Ratio there will likely not be much variation within each industry due to the fact that the companies are constantly observing one another's pay practices in order to maintain a level of CEO pay that will mitigate the chances of losing this top talent. However there may still be large variances between different industries as the threat of a CEO leaving a company to go to a different industry is far less than that of the CEO moving within the industry. In terms of the data set as a whole it is predicted that the range and variance will be much larger than those found within any single industry, and much of the variance will be due to the different industries in which the companies observed operate.

In summation of the above arguments, the following propositions were developed:

1. The CEO Pay Ratio is primarily driven by CEO pay. Because CEO pay is already a required disclosure, the additional requirements for public filings is unnecessary.
2. Median pay has little influence on CEO Pay Ratios, and thus is an unnecessarily placed burden upon companies.
3. The CEO Pay Ratio will be strongly correlated with the size of the firm measured by the total market capitalization.
4. The CEO Pay Ratio will be strongly correlated with financial performance measures such as the price to earnings ratio.
5. Classifying companies into broad industries will show that most of the variance in the CEO Pay Ratio is between industries and not within each industry. It is predicted that the variances within each industry will fall well beneath those of the data set as a whole.

## METHODOLOGY

For this research, preliminary CEO Pay Ratios were calculated in accordance with SEC requirements for companies in the Fortune 100 in 2014, the latest year of complete financial data. These preliminary ratios are 2014 estimates of the ratio that will be required of public companies beginning in 2017. To calculate the CEO Pay Ratio in accordance with the SEC's requirements, it is required to have an accurate calculation of total CEO compensation and the median of the annual total compensation of all its employees. It is important that the CEO compensation figure be representative of total compensation. Executives are awarded much more in compensation than just a salary, which is often one of the lesser components of compensation. Total compensation includes the sum of salary, stock options, bonuses, etc. that change the financial position of the CEO.

Step one is gathering total CEO compensation for the companies of interest. Total CEO compensation is readily available as it is a required annual disclosure in both the annual proxy statement and the 10-K filing. Gathering this data involved using MergentOnline's financial statement accumulator database, identifying the company of interest and the executive of that company considered to be the CEO, and recording his or her pay. Google's CEO, Larry Page, was excluded from the data as his total compensation for 2014 was only \$1. This anomaly was disregarded in the calculations and Google was removed from the data. All other CEO's were provided reasonable compensation that could be considered normal and acceptable for the preliminary calculations.

Median employee compensation is not a required disclosure unlike CEO compensation. This data can only be reasonably estimated based on the company and industry standards. First, the company's industry must be identified to estimate the type of jobs performed by the company. Then there must be an estimate of the specific job that receives the median salary in that company. This can be estimated through an examination of the size of the company and the jobs that will make up a majority of their employees. Most companies will have a large percentage of their employees performing a small percentage of the jobs. Job and industry salary average information is available through O-net OnLine and the U.S. Bureau of Labor Statistics respectively. If the job salary is within a reasonable range (around 20%) of the industry average, then the estimated salary is considered acceptable. If not, then the above steps need to be redone with the industry averages taken into consideration when identifying a new median job. See Appendix Figure A which displays the positions and the median salaries used

for each company in this study. Below is a demonstration of how median salary was estimated for a few companies:

Company- HP

<i>Industry</i>	<i>Computer and Electronic Product Manufacturing</i>
<i>Estimated Median Job</i>	Computer Engineer
<i>Estimated Job Salary</i>	\$108,430
<i>Estimated Industry Salary</i>	\$94,850 (difference of 12.5%)
<i>Final Median Salary Estimate</i>	\$108,430

Company- Allstate

<i>Industry</i>	<i>Insurance Carriers and Related Activities</i>
<i>Estimated Median Job</i>	Insurance Examiner
<i>Estimated Job Salary</i>	\$62,220
<i>Estimated Industry Salary</i>	\$66,320 (difference of -6.5%)
<i>Final Median Salary Estimate</i>	\$62,220

Glassdoor.com has also done similar research following the passing the new disclosure requirement. Their calculated ratio reflects a differing method of estimating median employee wages. Instead of estimating the median wage by company and industry, they developed surveys which were sent out to employees in their population. They collected the responses and for those companies with more than thirty responses, they found the median pay and used

that to calculate their CEO Pay Ratio. Their CEO compensation data reflects the last reported year, which in most cases is the companies' fiscal 2014, that is the same data as has been gathered for this study. With their estimated CEO Pay Ratio and the CEO compensation used, the median wages can be backed into. The Glassdoor data is presented in the appendix in figure E. This data will also be utilized in the analysis to provide some comparison between the results of this research and the Glassdoor data.

With both data in hand, calculating the CEO Pay Ratio involves dividing total CEO compensation by the estimated median compensation. All skewed or kurtotic variables were logged to facilitate more accurate analysis. What this in turn explains is how many dollars a CEO earns in compensation compared to how many the average employee earns. So for example, the calculated CEO Pay Ratio of Conoco Phillips is 323. For every \$1 earned at the median job in the company, the CEO is earning \$323. This is a great measure of pay distribution and compensation strategy, but not of equity. This ratio has no way of measuring the value of the inputs provided by the CEO and the median employee. If the CEO is actually worth 323 times the median employee to the company then this would be considered equitable, but determining worth is not a component of this ratio. Below is the complete data and the preliminary estimates of CEO Pay Ratio for the population of companies for which data was collected.

## DATA

\*CEO Pay Ratio calculation in descending order by CEO Pay Ratio

<b>Company Name</b>	<b>CEO Compensation</b>	<b>Median Wages</b>	<b>CEO Pay Ratio</b>
CVS Health	\$ 32,350,733	\$ 19,060	1697
Target	\$ 28,869,024	\$ 19,060	1515
TJX	\$ 28,692,391	\$ 21,390	1341
Coca-Cola	\$ 25,224,422	\$ 23,610	1068
Walmart	\$ 19,392,608	\$ 19,060	1017
Disney	\$ 46,497,018	\$ 47,890	971
PepsiCo	\$ 22,485,574	\$ 23,610	952
Twenty-First Century Fox	\$ 29,247,871	\$ 36,560	800
Microsoft	\$ 84,589,838	\$ 108,430	780
Mondelez International	\$ 21,039,946	\$ 27,590	763
Macy's	\$ 16,197,220	\$ 21,390	757
Johnson & Johnson	\$ 61,989,306	\$ 85,400	726
Walgreens	\$ 13,654,636	\$ 19,060	716
Nike	\$ 16,819,730	\$ 23,610	712
Lockheed Martin	\$ 33,687,442	\$ 48,430	696
Kroger	\$ 12,987,582	\$ 19,060	681
Lowe's	\$ 14,279,945	\$ 21,390	668
American Express	\$ 22,796,083	\$ 34,550	660
Ford Motor	\$ 18,596,497	\$ 28,370	655
Exxon Mobil	\$ 33,096,312	\$ 53,160	623
Oracle	\$ 67,261,251	\$ 108,430	620
General Electric	\$ 37,250,774	\$ 61,580	605
Best Buy	\$ 12,937,294	\$ 21,390	605
Caterpillar	\$ 17,131,448	\$ 28,370	604
UPS	\$ 16,994,449	\$ 28,370	599
Philip Morris International	\$ 14,124,869	\$ 23,610	598
Comcast	\$ 32,961,056	\$ 55,190	597
Boeing	\$ 28,861,920	\$ 48,340	597
Time Warner	\$ 32,903,139	\$ 55,190	596
GM	\$ 16,162,828	\$ 28,370	570
Tyson Foods	\$ 12,173,164	\$ 23,610	516
Chevron	\$ 25,970,417	\$ 53,160	489
FedEx	\$ 13,807,175	\$ 28,370	487
Prudential Financial	\$ 37,483,092	\$ 78,620	477
Home Depot	\$ 10,171,865	\$ 21,390	476
Phillips 66	\$ 24,507,433	\$ 53,160	461
AT&T	\$ 23,984,315	\$ 55,190	435
Delta Air Lines	\$ 17,589,867	\$ 42,290	416
Halliburton	\$ 20,560,157	\$ 53,160	387
JP Morgan Chase	\$ 27,701,709	\$ 78,620	352
Honeywell International	\$ 29,142,121	\$ 83,060	351
Wells Fargo	\$ 21,426,391	\$ 62,620	342
Dow Chemical	\$ 26,698,372	\$ 79,930	334
Archer Daniels Midlands	\$ 9,181,378	\$ 27,590	333
ConocoPhillips	\$ 27,575,900	\$ 85,400	323
McKesson	\$ 24,844,555	\$ 77,550	320



Verizon	\$	17,541,509	\$	55,190	318
Merck	\$	25,029,370	\$	79,930	313
Marathon Petroleum	\$	16,401,255	\$	53,160	309
Morgan Stanley	\$	23,270,044	\$	78,620	296
Costco	\$	5,622,927	\$	19,060	295
Pfizer	\$	23,283,048	\$	79,930	291
American Airlines Group	\$	12,301,976	\$	42,290	291
Goldman Sachs Group	\$	22,162,912	\$	78,620	282
Sears Holdings	\$	5,702,364	\$	21,390	267
Safeway	\$	4,993,657	\$	19,060	262
Allstate	\$	15,641,385	\$	62,220	251
Bank of America Corp.	\$	15,342,399	\$	62,620	245
Deere	\$	20,273,296	\$	83,060	244
MetLife	\$	15,163,803	\$	62,220	244
Aetna	\$	15,067,322	\$	62,220	242
UnitedHealth Group	\$	14,856,321	\$	62,220	239
3M	\$	20,115,589	\$	85,400	236
Johnson Controls	\$	19,540,681	\$	83,060	235
General Dynamics	\$	19,388,084	\$	83,060	233
Cigna	\$	14,461,445	\$	62,220	232
Citigroup	\$	14,457,199	\$	62,620	231
HCA Holdings	\$	14,625,534	\$	66,640	219
Anthem	\$	13,532,549	\$	62,220	217
AIG	\$	12,064,428	\$	62,220	194
HP	\$	19,641,164	\$	108,430	181
DuPont	\$	14,159,638	\$	83,060	170
Humana	\$	10,255,401	\$	62,220	165
Express Scripts Holding	\$	12,921,006	\$	79,930	162
Cardinal Health	\$	12,448,618	\$	85,400	146
Intel	\$	11,197,400	\$	77,550	144
Plains GP Holdings	\$	7,454,118	\$	53,160	140
Apple	\$	9,222,638	\$	77,550	119
AmerisourceBergen	\$	9,902,985	\$	85,400	116
United Technologies	\$	8,986,174	\$	83,060	108
Ingram Micro	\$	8,382,223	\$	77,550	108
CHS	\$	6,764,456	\$	66,640	102
Tech Data	\$	7,616,942	\$	77,550	98
Cisco Systems	\$	10,295,279	\$	108,430	95
Sysco	\$	7,815,394	\$	85,400	92
World Fuel Services	\$	7,706,999	\$	85,400	90
Enterprise Products Partners	\$	6,654,846	\$	85,400	78
Tesoro	\$	1,600,000	\$	23,160	69
Amazon.com	\$	1,681,840	\$	24,430	69
IBM	\$	1,600,000	\$	29,910	53
Procter & Gamble	\$	1,250,000	\$	23,610	53
DirecTV	\$	1,700,000	\$	55,190	31
Valero Energy	\$	1,250,000	\$	53,160	24
Energy Transfer Equity	\$	1,275,154	\$	85,400	15
INTL FCStone	\$	1,157,607	\$	78,260	15
Fannie Mae	\$	750,000	\$	62,620	12

<i>Freddie Mac</i>	\$	750,000	\$	62,620	12
<i>United Continental Holdings</i>	\$	269,782	\$	42,290	6
<i>Berkshire Hathaway</i>	\$	464,011	\$	78,620	6

\*CEO Pay Ratio Data by Industry (SIC Divisions)

<b>Industry</b>	<b>Avg CEO Pay</b>	<b>Avg Median Wages</b>	<b>Avg CEO Pay Ratio</b>
<b>B</b>	\$ 17,222,934	\$ 65,250	292
<b>D</b>	\$ 21,385,202	\$ 63,418	394
<b>E</b>	\$ 15,346,853	\$ 49,843	333
<b>F</b>	\$ 8,349,888	\$ 76,530	109
<b>G</b>	\$ 14,823,863	\$ 20,442	740
<b>H</b>	\$ 14,944,620	\$ 66,029	236
<b>I</b>	\$ 19,179,463	\$ 68,669	334

B- Mining and Extraction , D- Manufacturing , E- Transportation/Communication , F- Wholesale Trade , G- Retail Trade , H- Finance/Insurance , I- Services

Additional data relating to propositions can be found in the Appendix Figures.

## ANALYSIS

This data set is difficult to interpret without some context behind the Calculated CEO Pay Ratio. The table below outlines some of the most important summarizing figures for all of the CEO Pay Ratios calculated.

Mean	393
Standard Deviation	326
1st Quartile	146
Median	296
3rd Quartile	599
Max	1,697
Min	6
Range	1,691

To expand upon the data in the above table, it is clear to see that even among the top hundred companies there is extreme variation among the calculated CEO Pay Ratio. The range of the data alone paints a picture of this polarity. The top ratio belonging to CVS Health is 283 times larger than the smallest ratio held jointly by Berkshire Hathaway and United Continental Holdings. Further the evidence that the ratios calculated vary significantly is highlighted by the standard deviation of the ratios. With the average ratio landing at 393, the standard deviation of 326 exhibits the polarity of this data. The largest five ratios exceed 1,000 and seventeen companies have ratios which do not even break 100. Below each of the aforementioned propositions are analyzed using the data gathered and estimates made.

The calculated data points to that clear fact that companies, even those expected to be so similar due to their size, differ greatly based on compensation strategies. Those companies with large ratios value their CEO and other leaders exponentially more than their median employee. Investors and proponents of this disclosure requirement will take this as a sign of unproductive and unsatisfied workers. That may be a sign of future employment issues such as strike or increased employee turnover which could have financial implications. On the other hand, people opposed to the disclosure rule will contend that the high ratio is indicative of the industry and the type of work in which the company operates. Industry's effect on the ratio will be examined in the following section where each of the aforementioned propositions is analyzed.

Proposition 1:

<b>Predicting CEO Pay Ratio</b>				
	Model 1	Model 2	Model 3	Model 4
<b>Industry Controls</b>	-	-	-	-
<b>Market Capitalization</b>		.274*	.275*	.004
<b>P/E Ratio</b>			.167	.012
<b>CEO Compensation</b>				.876**
<b>R<sup>2</sup></b>	.136**	.203**	.227**	.875**
<b>Change in R<sup>2</sup></b>		.067**	.025	.648**

Note: Standardized regression coefficients appear in table. Industry controls were used for 6 industries because there are 7 industries total.

\*\* -  $p < .05$

\* -  $p < .10$

**Correlation to CEO Pay Ratio**

<b>Market Capitalization</b>	0.32
<b>P/E Ratio</b>	0.21
<b>CEO Compensation</b>	0.89

Above is the regression analysis from four separate regressions. Each regression is identified as a model and each one adds new variables to the existing ones trying to predict the CEO Pay Ratio. The rows with variables are displaying standardized regression coefficients. The R<sup>2</sup> in the table, otherwise known as the correlation coefficient, explains the proportion of the dependent variable explained by the model. The correlation coefficient ranges from -1 to 1, where a measure of 1 indicates a perfect positive correlation. Each model and its variables are listed below, and these models will be the same throughout the analysis of all of the propositions made:

- Model 1- Industry (6 industries with SIC Division D as the base variable)

- Model 2- Industry and Market Capitalization
- Model 3- Industry, Market Capitalization, and P/E Ratio
- Model 4- Industry, Market Capitalization, P/E Ratio, and CEO Compensation

Each model builds upon its predecessor by adding an additional variable which might help to improve the prediction of the dependent variable, in this analysis CEO Pay Ratio. It was predicted that CEO compensation would be the overriding driver of the CEO Pay Ratio. Based on the data and estimates this appears to hold true. The first three models have correlation coefficients which do not break .50 whereas the fourth model, and the only one with CEO compensation as a variable has a  $R^2$  of .875. Further when looking at model 4, you can see that CEO compensation is statistically significant at less than .05. CEO compensation proves again to be a viable predictor in that as a stand-alone variable it has a correlation metric of .89. That means that 89% of the CEO Pay Ratio can be explained solely by the CEO's compensation.

The disclosure of additional information may very likely be unnecessary in terms of evaluating the CEO Pay Ratio. If the already required disclosure, CEO compensation, is so highly correlated the CEO Pay Ratio then it appears that the additional requirement to disclose median pay may actually be providing only marginally more information. However, the estimated CEO Pay Ratio used for this analysis was generated through estimates of the median wages. As mentioned before, Glassdoor's study went about a different method of coming to an estimated median compensation. Below the same analysis will be performed using Glassdoor's CEO Pay Ratio as the dependent variable.

**Predicting Glassdoor's CEO Pay Ratio**

	Model 1	Model 2	Model 3	Model 4
<b>Industry Controls</b>	-	-	-	-
<b>Market Capitalization</b>		.050	.181*	.068
<b>P/E Ratio</b>			-.589**	-.466**
<b>CEO Compensation</b>				.460**
<b>R<sup>2</sup></b>	.106	.109	.350**	.538**
<b>Change in R<sup>2</sup></b>		.002	.242**	.187**

Note: Standardized regression coefficients appear in table. Industry controls were used for 6 industries because there are 7 industries total.

\*\* -  $p < .05$

\* -  $p < .10$

**Correlation to Glassdoor's CEO Pay Ratio**

<b>Market Capitalization</b>	0.07
<b>P/E Ratio</b>	-0.31
<b>CEO Compensation</b>	0.5

As you can see from the data, the models are not as proficient at predicting the dependent variable. The best model again is the fourth model which has the P/E ratio and CEO compensation as significant variables. This model however only has a  $R^2$  .538, well below the same model used to predict the CEO Pay Ratio calculated for this study. Additionally, CEO compensation only correlates with Glassdoor's ratio at .5. This again falls well beneath its correlation with the ratio calculated by the median wage estimates in this study. It is interesting to see that the P/E ratio comes into play as a predictor of Glassdoor's ratio. A significant variable in the fourth model, P/E ratio plays a part in the model whereas it was never close to significant in the original analysis.

Proposition 2:

<b>Correlation to CEO Pay Ratio</b>	
<b>CEO Compensation</b>	0.89
<b>Median Wages</b>	-0.38

Proposition 2 stemmed from its predecessor in that little additional information will be made available by requiring companies to disclose supplementary financial figures. The supplemental disclosure is median compensation. As noted in the analysis of the previous proposition, CEO compensation correlates with the calculated CEO Pay Ratio by .89. This is very nearly as good as it can get, so it would seem that requiring the disclosure of median compensation is unnecessary. This is evident in the median wages only correlate -.38 to the ratio. Only 38% of the ratio can reasonably be explained by median wages. This is not minimal, and it can definitely be useful to know, but alone does not add much value. Therefore if CEO compensation is known, an estimate of median compensation should suffice for understanding the likely CEO Pay Ratio. For this to be done effectively, it must be determined what drives median wages. Below is are three regression models attempting to predict median compensation.

<b>Predicting Median Pay</b>			
	Model 1	Model 2	Model 3
<b>Industry Controls</b>	-	-	-
<b>Market Capitalization</b>		.026	.026
<b>P/E Ratio</b>			-.006
<b>R<sup>2</sup></b>	.453**	.454**	.454**
<b>Change in R<sup>2</sup></b>		.001	.000

Note: Standardized regression coefficients appear in table. Industry controls were used for 6 industries because there are 7 industries total.

\*\* -  $p < .05$

\* -  $p < .10$

**Correlation to Median Pay**

<b>Market Capitalization</b>	-0.07
<b>P/E Ratio</b>	-0.16

Contrary to earlier investigation, the later models with more variables are not the best predictors of median pay. Neither the addition of market capitalization or P/E ratio improve the correlation coefficient from the first model. Further, Model 1 has a statistically significant  $R^2$ . Model 1 is the only model that should be used to predict median wages. Therefore, the industries as a whole are a significant variable because they are the only variable in model 1. Through association, industry drives median wages and median wages drive the CEO Pay Ratio. Instead of adding median wages to the list of required disclosures, users of financial information should only have to evaluate the industry to develop a sense for the median compensation. The industry in which a company operates in combination with CEO compensation should provide a sufficient estimate of the CEO Pay Ratio.

**Predicting Glassdoor's Median Wage**

	Model 1	Model 2	Model 3
<b>Industry Controls</b>	-	-	-
<b>Market Capitalization</b>		.164	.121
<b>P/E Ratio</b>			.193
<b>R<sup>2</sup></b>	.159**	.184**	.210**
<b>Change in R<sup>2</sup></b>		.025	.026

Note: Standardized regression coefficients appear in table. Industry controls were used for 6 industries because there are 7 industries total.



\*\* -  $p < .05$

\* -  $p < .10$

**Correlation to Glassdoor's Median Wage**

<b>Market Capitalization</b>	0.15
<b>P/E Ratio</b>	0.06

Again, with the estimate of median wages, there is the possibility of error and this is an inherent shortcoming of this analysis. To provide further evidence that industry is the best predictor of median compensation Glassdoor's research is applied to the regression models. Again model 1 is the primary model of interest. The following models do not change  $R^2$  significantly. Although it is not highly correlated with Glassdoor's median compensation, industry division is a significant variable in predicting the median compensation just like it was in the previous analysis. Therefore the assumption that industry is sufficient to understanding median compensation is strengthened.

Proposition 3:

<b>Predicting CEO Compensation</b>			
	Model 1	Model 2	Model 3
<b>Industry Controls</b>	-	-	-
<b>Market Capitalization</b>		.308**	.309**
<b>P/E Ratio</b>			.176
<b><math>R^2</math></b>	.045	.129*	.157*
<b>Change in <math>R^2</math></b>		.084**	.027

Note: Standardized regression coefficients appear in table. Industry controls were used for 6 industries because there are 7 industries total.

\*\* -  $p < .05$

\* -  $p < .10$

<b>Correlation to CEO Compensation</b>	
<b>Market Capitalization</b>	0.31
<b>P/E Ratio</b>	0.15

Company size and CEO compensation should theoretically be correlated. The greater the size, measured by market capitalization, the more the CEO should be compensated due to the control of more value. So as market capitalization rises, CEO compensation should rise and that in turn drives the CEO Pay Ratio upwards. Refer to the regression analysis from the proposition 1 analysis to see how market capitalization directly effects the CEO Pay Ratio. Model 2 which adds market capitalization to industry division is considered statistically significant and has a coefficient of .308. Also, individually market capitalization correlates with the CEO Pay Ratio by .31. Market capitalization is a significant variable in both model 2 and model 3 after adding P/E ratio.

Model 2 which includes market capitalization is the only statistically significant model. Thus, as previously suggested market capitalization is a substantial predictor of CEO compensation. As firm size increases as measured by the value of the firm via market capitalization, the CEO compensation will rise. As CEO compensation rises the CEO Pay Ratio will rise holding all else constant. Even though CEO compensation is already a required disclosure, it is good to get a sense for how it moves and what drives it. Effectively it should be expected that the companies within the population of this study (2014 Fortune 100 Companies) are the leaders in terms of CEO Pay Ratio. Being among the “top” 100 companies, should indicate a high market capitalization even though Fortune ranks by revenues. Taking this into consideration it is fair to assume that of all public companies, and thus those required to

disclose this information, the companies within this study will likely include a large percentage of the largest 100 CEO Pay Ratios.

Proposition 4:

Similar to the above proposition, the CEO Pay Ratio should be directly correlated to the financial performance of the firm measured by the P/E ratio. As a company improves performance relative to prior periods and to competitors, the CEO is likely to be the beneficiary of bonus payments through cash and stock awards. As a result the CEO Pay Ratio will rise because it is unlikely that performance metrics have any bearing over median employee compensation. Firstly refer to the regression analysis at the beginning of proposition 1 for evidence of this relationship. The addition of P/E ratio as a variable comes in model 3, which you can see has a correlation coefficient .48 which exceeds the same figure for the previous two models. However, the model is not statistically significant and can therefore not be used to forecast the CEO Pay Ratio. Additionally P/E ratio is not a significant variable in either model 3 or model 4, and individually only correlates with CEO Pay Ratio .21. This is a weak relationship which does not provide much support for the proposition that P/E ratio is a significant driver in the CEO Pay Ratio.

However, P/E ratio may be a significant variable in terms of predicting CEO pay and would by association be a predictor for the CEO Pay Ratio. Refer to the regression analysis in table 3 which displays models attempting to predict CEO compensation. Again P/E ratio cannot be considered a viable element when attempting to predict CEO compensation. Model 3 has a significance above the limit required by the confidence level. Further, P/E ratio has a .15

correlation with CEO compensation as an independent variable. P/E ratio is neither an acceptable variable for use in forecasting the CEO Pay Ratio or CEO compensation. The thought that financial performance in the way of the P/E ratio would drive CEO compensation seems to be incorrect. CEO Pay Ratio therefore seems to be wholly unrelated to the P/E ratio.

Proposition 5:

Breaking the data apart by industry provides thought-provoking information as well. The striking component of this breakdown is that the CEO Pay Ratio differs much less but still displays evidence of polarity. The largest industry average CEO Pay Ratio is 740 from Industry Division G which is retail trade. This points us towards a very interesting fact that companies in retail trade account for much of the largest ratios. In fact, retail trade companies employ four of the five largest CEO Pay Ratios. If that is not enough, the industry which only includes fourteen of the companies examined, inhabits nine ratios out of the top twenty-five. Why might retail trade hold down so many of the top spots? The average estimated wage for the retail trade industry is only \$20,442 which is by far the lowest of all industries. This is largely due to the fact that median job for these companies is generally part time employees or employees earning near or at minimum wage (See Figure A in the Appendix).

Further examination by industry reveals that the intra-industry CEO Pay Ratio standard deviation is generally below the standard deviation for the data as a whole (Appendix- Figure D). The only instance where this does not hold true is the retail trade industry which was discussed above. Companies in the same industry are likely to compensate both their CEOs and their median employees approximately the same amount because they have approximately the

same skillset. Therefore, the fact that the variance within each industry is less than when looking at the data set as a whole is expected.

The retail trade industry again seems to be the outlier with a standard deviation of 475. CEO compensation within the industry varies widely which could explain the variation in the CEO Pay Ratio within the industry. The total range in CEO compensation within the retail trade industry is over \$30 million but the median wages hold fairly steady with a range of only \$5,000. This leads to the large swings in CEO Pay Ratio and thus the larger than average standard deviation. No other industry sees such movement in either CEO compensation or median wages while the other variable holds so constant. This again goes back to the fact that the retail trade industry employs a large number of lower income employees typically doing the same or materially the same jobs regardless of employer. Each of the other industries includes companies with much more diversity in terms of median job. For example, there are only three median jobs in the retail trade industry which accounts for fourteen of the companies in the population. That means on average that each job accounts for about five companies. However, if you examine the transportation and communication industry you witness much more job diversity. There are six unique jobs shared between twelve employers, and thus each job accounts for only two companies. This same fact holds true when comparing the job diversity of the retail trade industry to any of the industries observed. This helps explain why the retail trade industry's standard deviation is far different than those calculated within the other industries. Removing it as an outlier however, it is clear to see that when looking within an industry there is much less variation in terms of the CEO Pay Ratio than when looking at the whole population.

## CONCLUSION

CEO compensation is a hot topic issue across a country in which the wealth gap is similarly so popularly discussed. The Dodd-Frank Act, passed in 2010, is finally having regulations put into effect which will aim to change the way companies and investors think about CEO compensation. The goal of this regulation is to motivate companies into either decreasing CEO pay or increasing other employee pay by requiring the disclosure of a CEO to median employee pay ratio. Corporations have countered this legislation with arguments that the requirement is costly, duplicative, and unnecessary, and have been supported by legislators in both houses of the US Congress. Through data and estimates gathered and analyzed for this study, it appears as though the corporations and the supporting congress members may have a valid argument. As described in the evaluation of proposition 1, the CEO Pay Ratio is so highly correlated with CEO compensation that the requirement for companies to disclose additional information will not create a material benefit for the users of financial information. If these said users would like a more accurate approach when predicting the ratio, they may simply examine CEO compensation and the industry in which the company operates as it was proven that median wages were significantly predicted by the company's industry. These two factors, that are publicly available without the additional disclosure requirement, will provide an accurate estimate of the CEO Pay Ratio.

Firm size was an influential variable in terms of predicting CEO compensation as expected. Through association firm size plays into the CEO Pay Ratio. As firms naturally grow over time, CEO Pay Ratio will likely follow as it has in the past. There is no sign of this relationship yielding unless the public acts upon the information available to them to put a stop

to the exponentially growing compensation plans awarded to executives. Companies must be guided towards lowering their CEO Pay Ratio by their consumers and their reaction to this information.

As explained above, CEO compensation and industry are the essential drivers of the CEO pay ratio. Therefore, placing the requirement on companies to take the time and expense to discover and publicize their median employee expense is unnecessary. Both the supporters of the disclosure requirement and corporations can be happy with this evaluation. Supporters of Section 953(b) of the Dodd-Frank Act will still be able to evaluate a company’s CEO Pay Ratio through the use of CEO compensation and industry. Corporations should be exempt from the extra time and cost of the additional reporting of median compensation. The disclosure requirement’s intention is essential in that CEO compensation has become excessive relative to the regular employee, but the disclosure itself is redundant. As the aforementioned legislation comes to the congressional floor for debate it is imperative that the regulation be evaluated objectively and the duplicative nature of the rule is uncovered.

## APPENDIX

\*Figure A- Median Job and Wages ranked by CEO Pay Ratio

<b><i>Company Name</i></b>	<b><i>Median Job</i></b>	<b><i>Median Wages</i></b>	
<i>CVS Health</i>	Cashier	\$	19,060
<i>Target</i>	Cashier	\$	19,060
<i>TJX</i>	Retail Salesperson	\$	21,390
<i>Coca-Cola</i>	Production Worker	\$	23,610
<i>Walmart</i>	Cashier	\$	19,060
<i>Disney</i>	Advertising Sales	\$	47,890
<i>PepsiCo</i>	Production Worker	\$	23,610
<i>Twenty-First Century Fox</i>	Broadcast Technician	\$	36,560
<i>Microsoft</i>	Computer Engineer	\$	108,430
<i>Mondelez International</i>	Food Manufacturing Worker	\$	27,590

<i>Macy's</i>	Retail Salesperson	\$	21,390
<i>Johnson &amp; Johnson</i>	Warehouse Manager	\$	85,400
<i>Walgreens</i>	Cashier	\$	19,060
<i>Nike</i>	Production Worker	\$	23,610
<i>Lockheed Martin</i>	Aircraft Assemblers	\$	48,430
<i>Kroger</i>	Cashier	\$	19,060
<i>Lowe's</i>	Retail Salesperson	\$	21,390
<i>American Express</i>	Credit Checkers	\$	34,550
<i>Ford Motor</i>	Parts Assembly	\$	28,370
<i>Exxon Mobil</i>	Drill Operator	\$	53,160
<i>Oracle</i>	Computer Engineer	\$	108,430
<i>General Electric</i>	Electrical Engineering	\$	61,580
<i>Best Buy</i>	Retail Salesperson	\$	21,390
<i>Caterpillar</i>	Parts Assembly	\$	28,370
<i>UPS</i>	Delivery Driver	\$	28,370
<i>Philip Morris International</i>	Production Worker	\$	23,610
<i>Comcast</i>	Telecom. Installer	\$	55,190
<i>Boeing</i>	Aircraft Assemblers	\$	48,340
<i>Time Warner</i>	Telecom. Installer	\$	55,190
<i>GM</i>	Parts Assembly	\$	28,370
<i>Tyson Foods</i>	Production Worker	\$	23,610
<i>Chevron</i>	Drill Operator	\$	53,160
<i>FedEx</i>	Delivery Driver	\$	28,370
<i>Prudential Financial</i>	Financial Analyst	\$	78,620
<i>Home Depot</i>	Retail Salesperson	\$	21,390
<i>Phillips 66</i>	Drill Operator	\$	53,160
<i>AT&amp;T</i>	Telecom. Installer	\$	55,190
<i>Delta Air Lines</i>	Flight Attendant	\$	42,290
<i>Halliburton</i>	Drill Operator	\$	53,160
<i>JP Morgan Chase</i>	Financial Analyst	\$	78,620
<i>Honeywell International</i>	Mechanical Engineers	\$	83,060
<i>Wells Fargo</i>	Loan Officer	\$	62,620
<i>Dow Chemical</i>	Medical Scientist	\$	79,930
<i>Archer Daniels Midlands</i>	Food Manufacturing Worker	\$	27,590
<i>ConocoPhillips</i>	Storage/Distribution Managers	\$	85,400
<i>McKesson</i>	Computer Programmer	\$	77,550
<i>Verizon</i>	Telecom. Installer	\$	55,190
<i>Merck</i>	Medical Scientist	\$	79,930
<i>Marathon Petroleum</i>	Drill Operator	\$	53,160
<i>Morgan Stanley</i>	Financial Analyst	\$	78,620
<i>Costco</i>	Cashier	\$	19,060
<i>Pfizer</i>	Medical Scientist	\$	79,930
<i>American Airlines Group</i>	Flight Attendant	\$	42,290
<i>Goldman Sachs Group</i>	Financial Analyst	\$	78,620
<i>Sears Holdings</i>	Retail Salesperson	\$	21,390
<i>Safeway</i>	Cashier	\$	19,060
<i>Allstate</i>	Insurance Examiner	\$	62,220
<i>Bank of America Corp.</i>	Loan Officer	\$	62,620
<i>Deere</i>	Mechanical Engineers	\$	83,060
<i>MetLife</i>	Insurance Examiner	\$	62,220



<i>Aetna</i>	Insurance Examiner	\$	62,220
<i>UnitedHealth Group</i>	Insurance Examiner	\$	62,220
<i>3M</i>	Warehouse Manager	\$	85,400
<i>Johnson Controls</i>	Mechanical Engineers	\$	83,060
<i>General Dynamics</i>	Mechanical Engineers	\$	83,060
<i>Cigna</i>	Insurance Examiner	\$	62,220
<i>Citigroup</i>	Loan Officer	\$	62,620
<i>HCA Holdings</i>	Registered Nurse	\$	66,640
<i>Anthem</i>	Insurance Examiner	\$	62,220
<i>AIG</i>	Insurance Examiner	\$	62,220
<i>HP</i>	Computer Engineer	\$	108,430
<i>DuPont</i>	Mechanical Engineers	\$	83,060
<i>Humana</i>	Insurance Examiner	\$	62,220
<i>Express Scripts Holding</i>	Medical Scientist	\$	79,930
<i>Cardinal Health</i>	Warehouse Manager	\$	85,400
<i>Intel</i>	Computer Programmer	\$	77,550
<i>Plains GP Holdings</i>	Drill Operator	\$	53,160
<i>Apple</i>	Computer Programmer	\$	77,550
<i>AmerisourceBergen</i>	Warehouse Manager	\$	85,400
<i>United Technologies</i>	Mechanical Engineers	\$	83,060
<i>Ingram Micro</i>	Computer Programmer	\$	77,550
<i>CHS</i>	Registered Nurse	\$	66,640
<i>Tech Data</i>	Computer Programmer	\$	77,550
<i>Cisco Systems</i>	Computer Engineer	\$	108,430
<i>Sysco</i>	Warehouse Manager	\$	85,400
<i>World Fuel Services</i>	Storage/Distribution Managers	\$	85,400
<i>Enterprise Products Partners</i>	Storage/Distribution Managers	\$	85,400
<i>Tesoro</i>	Production Worker	\$	23,160
<i>Amazon.com</i>	Freight Handlers	\$	24,430
<i>IBM</i>	Electrical Assembly	\$	29,910
<i>Procter &amp; Gamble</i>	Production Worker	\$	23,610
<i>DirecTV</i>	Telecom. Installer	\$	55,190
<i>Valero Energy</i>	Drill Operator	\$	53,160
<i>Energy Transfer Equity</i>	Storage/Distribution Managers	\$	85,400
<i>INTL FCStone</i>	Financial Analyst	\$	78,260
<i>Fannie Mae</i>	Loan Officer	\$	62,620
<i>Freddie Mac</i>	Loan Officer	\$	62,620
<i>United Continental Holdings</i>	Flight Attendant	\$	42,290
<i>Berkshire Hathaway</i>	Financial Analyst	\$	78,620

\*Figure B- Size measures in descending order by CEO Pay Ratio

<b>Company Name</b>	<b>Market Cap (mil)</b>	<b>CEO Pay Ratio</b>
CVS Health	\$ 110,089	1697
Target	\$ 48,502	1515
TJX	\$ 49,357	1341
Coca-Cola	\$ 182,527	1068
Walmart	\$ 183,508	1017
Disney	\$ 191,150	971
PepsiCo	\$ 146,558	952
Twenty-First Century Fox	\$ 36,201	800
Microsoft	\$ 434,542	780
Mondelez International	\$ 72,911	763
Macy's	\$ 16,874	757
Johnson & Johnson	\$ 282,062	726
Walgreens	\$ 92,199	716
Nike	\$ 87,959	712
Lockheed Martin	\$ 67,245	696
Kroger	\$ 36,796	681
Lowe's	\$ 68,310	668
American Express	\$ 72,106	660
Ford Motor	\$ 57,102	655
Exxon Mobil	\$ 344,980	623
Oracle	\$ 165,798	620
General Electric	\$ 291,989	605
Best Buy	\$ 12,070	605
Caterpillar	\$ 42,497	604
UPS	\$ 92,325	599
Philip Morris International	\$ 136,958	598
Comcast	\$ 132,428	597
Boeing	\$ 99,205	597
Time Warner	\$ 61,446	596
GM	\$ 54,326	570
Tyson Foods	\$ 13,501	516
Chevron	\$ 171,012	489
FedEx	\$ 44,065	487
Prudential Financial	\$ 37,210	477
Home Depot	\$ 158,766	476
Phillips 66	\$ 47,503	461
AT&T	\$ 206,120	435
Delta Air Lines	\$ 39,984	416
Halliburton	\$ 32,846	387
JP Morgan Chase	\$ 237,601	352
Honeywell International	\$ 79,597	351
Wells Fargo	\$ 277,920	342
Dow Chemical	\$ 59,866	334
Archer Daniels Midlands	\$ 27,804	333
ConocoPhillips	\$ 65,805	323
McKesson	\$ 41,143	320
Verizon	\$ 190,749	318
Merck	\$ 153,957	313

<i>Marathon Petroleum</i>	\$	12,447	309
<i>Morgan Stanley</i>	\$	64,403	296
<i>Costco</i>	\$	69,163	295
<i>Pfizer</i>	\$	208,580	291
<i>American Airlines Group</i>	\$	31,052	291
<i>Goldman Sachs Group</i>	\$	81,163	282
<i>Sears Holdings</i>	\$	2,492	267
<i>Safeway</i>			262
<i>Allstate</i>	\$	24,776	251
<i>Bank of America Corp.</i>	\$	175,662	245
<i>Deere</i>	\$	25,597	244
<i>MetLife</i>	\$	56,268	244
<i>Aetna</i>	\$	40,024	242
<i>UnitedHealth Group</i>	\$	112,311	239
<i>3M</i>	\$	96,796	236
<i>Johnson Controls</i>	\$	29,551	235
<i>General Dynamics</i>	\$	46,970	233
<i>Cigna</i>	\$	34,515	232
<i>Citigroup</i>	\$	160,033	231
<i>HCA Holdings</i>	\$	28,043	219
<i>Anthem</i>	\$	36,328	217
<i>AIG</i>	\$	81,593	194
<i>HP</i>	\$	48,480	181
<i>DuPont</i>	\$	2,098	170
<i>Humana</i>	\$	26,463	165
<i>Express Scripts Holding</i>	\$	58,417	162
<i>Cardinal Health</i>	\$	26,909	146
<i>Intel</i>	\$	159,785	144
<i>Plains GP Holdings</i>	\$	3,488	140
<i>Apple</i>	\$	666,252	119
<i>AmerisourceBergen</i>	\$	20,866	116
<i>United Technologies</i>	\$	87,292	108
<i>Ingram Micro</i>	\$	4,458	108
<i>CHS</i>			102
<i>Tech Data</i>	\$	2,571	98
<i>Cisco Systems</i>	\$	146,018	95
<i>Sysco</i>	\$	24,493	92
<i>World Fuel Services</i>	\$	3,147	90
<i>Enterprise Products</i>	\$	55,347	78
<i>Partners</i>			
<i>Tesoro</i>	\$	12,873	69
<i>Amazon.com</i>	\$	293,398	69
<i>IBM</i>	\$	135,893	53
<i>Procter &amp; Gamble</i>	\$	207,797	53
<i>DirecTV</i>	\$	47,180	31
<i>Valero Energy</i>	\$	32,770	24
<i>Energy Transfer Equity</i>	\$	22,728	15
<i>INTL FCStone</i>	\$	608	15
<i>Fannie Mae</i>	\$	2,606	12
<i>Freddie Mac</i>	\$	1,437	12
<i>United Continental Holdings</i>	\$	22,783	6

\*Figure C- Financial measures in descending order by CEO Pay Ratio

<b>Company Name</b>	<b>P/E Ratio</b>	<b>CEO Pay Ratio</b>
CVS Health	24	1697
Target		1515
TJX	21	1341
Coca-Cola	26	1068
Walmart	17	1017
Disney	21	971
PepsiCo	22	952
Twenty-First Century Fox	8	800
Microsoft	30	780
Mondelez International	28	763
Macy's	15	757
Johnson & Johnson	18	726
Walgreens	21	716
Nike	27	712
Lockheed Martin	17	696
Kroger	39	681
Lowe's	25	668
American Express	17	660
Ford Motor	19	655
Exxon Mobil	12	623
Oracle	19	620
General Electric	17	605
Best Buy	10	605
Caterpillar	15	604
UPS	34	599
Philip Morris International	17	598
Comcast	18	597
Boeing	17	597
Time Warner	19	596
GM	20	570
Tyson Foods	15	516
Chevron	11	489
FedEx	47	487
Prudential Financial	15	477
Home Depot	22	476
Phillips 66	9	461
AT&T	28	435
Delta Air Lines	62	416
Halliburton	10	387
JP Morgan Chase	12	352
Honeywell International	19	351
Wells Fargo	13	342

<i>Dow Chemical</i>	16	334
<i>Archer Daniels Midlands</i>	15	333
<i>ConocoPhillips</i>	15	323
<i>McKesson</i>	36	320
<i>Verizon</i>	19	318
<i>Merck</i>	14	313
<i>Marathon Petroleum</i>	6	309
<i>Morgan Stanley</i>	24	296
<i>Costco</i>	26	295
<i>Pfizer</i>	22	291
<i>American Airlines Group</i>	13	291
<i>Goldman Sachs Group</i>	11	282
<i>Sears Holdings</i>		267
<i>Safeway</i>		262
<i>Allstate</i>	11	251
<i>Bank of America Corp.</i>	47	245
<i>Deere</i>	10	244
<i>MetLife</i>	10	244
<i>Aetna</i>	15	242
<i>UnitedHealth Group</i>	17	239
<i>3M</i>	22	236
<i>Johnson Controls</i>	24	235
<i>General Dynamics</i>	18	233
<i>Cigna</i>	13	232
<i>Citigroup</i>	24	231
<i>HCA Holdings</i>	17	219
<i>Anthem</i>	14	217
<i>AIG</i>	11	194
<i>HP</i>	13	181
<i>DuPont</i>	28	170
<i>Humana</i>	19	165
<i>Express Scripts Holding</i>	32	162
<i>Cardinal Health</i>	23	146
<i>Intel</i>	16	144
<i>Plains GP Holdings</i>	54	140
<i>Apple</i>	12	119
<i>AmerisourceBergen</i>	63	116
<i>United Technologies</i>	17	108
<i>Ingram Micro</i>	16	108
<i>CHS</i>		102
<i>Tech Data</i>	12	98
<i>Cisco Systems</i>	16	95
<i>Sysco</i>	33	92
<i>World Fuel Services</i>	15	90
<i>Enterprise Products Partners</i>	24	78
<i>Tesoro</i>	11	69
<i>Amazon.com</i>	897	69
<i>IBM</i>	13	53
<i>Procter &amp; Gamble</i>	31	53
<i>DirecTV</i>	16	31

<i>Valero Energy</i>	7	24
<i>Energy Transfer Equity</i>	99	15
<i>INTL FCStone</i>	17	15
<i>Fannie Mae</i>	NR	12
<i>Freddie Mac</i>	NR	12
<i>United Continental Holdings</i>	22	6
<i>Berkshire Hathaway</i>	0	6

\*Figure D- Average ratio by industry and variation within each industry

<b>Industry</b>	<b>Avg CEO Pay Ratio</b>	<b>Standard Deviation</b>
<b>B</b>	292	214
<b>D</b>	394	279
<b>E</b>	333	215
<b>F</b>	109	6
<b>G</b>	740	475
<b>H</b>	236	159
<b>I</b>	334	276

\*Figure E- Glassdoor Study Data

<b>Company Name</b>	<b>Glassdoor CEO Pay Ratio</b>	<b>Glassdoor Median Wage</b>
<i>CVS Health</i>	1192	27,140
<i>Target</i>	939	30,744
<i>TJX</i>	501	57,270
<i>Coca-Cola</i>	460	54,836
<i>Walmart</i>	1133	17,116
<i>Disney</i>	587	79,211
<i>PepsiCo</i>	363	61,944
<i>Microsoft</i>	615	137,544
<i>Mondelez International</i>	427	49,274
<i>Macy's</i>	724	22,372
<i>Johnson &amp; Johnson</i>	234	264,912
<i>Walgreens</i>	540	25,286
<i>Nike</i>	382	44,031
<i>Lockheed Martin</i>	394	85,501
<i>Kroger</i>	636	20,421
<i>Lowe's</i>	480	29,750
<i>American Express</i>	210	108,553
<i>Ford Motor</i>	207	89,838
<i>Exxon Mobil</i>	306	108,158
<i>Oracle</i>	573	117,384
<i>General Electric</i>	418	89,117
<i>Best Buy</i>	552	23,437
<i>Caterpillar</i>	197	86,962
<i>UPS</i>	533	31,885
<i>Comcast</i>	552	59,712
<i>Boeing</i>	340	84,888

<i>Time Warner</i>	374	87,976
<i>GM</i>	173	93,427
<i>Tyson Foods</i>	243	50,095
<i>Chevron</i>	236	110,044
<i>FedEx</i>	240	57,530
<i>Prudential Financial</i>	515	72,783
<i>Home Depot</i>	387	26,284
<i>Phillips 66</i>	266	92,133
<i>AT&amp;T</i>	356	67,372
<i>Delta Air Lines</i>	321	54,797
<i>Halliburton</i>	260	79,078
<i>Honeywell International</i>	336	86,733
<i>Wells Fargo</i>	484	44,269
<i>Dow Chemical</i>	202	132,170
<i>ConocoPhillips</i>	267	103,281
<i>McKesson</i>	310	80,144
<i>Verizon</i>	208	84,334
<i>Merck</i>	227	110,262
<i>Marathon Petroleum</i>	205	80,006
<i>Morgan Stanley</i>	237	98,186
<i>Costco</i>	184	30,559
<i>Pfizer</i>	203	114,695
<i>American Airlines Group</i>	224	54,920
<i>Goldman Sachs Group</i>	207	107,067
<i>Allstate</i>	279	56,062
<i>Bank of America Corp.</i>	290	52,905
<i>Deere</i>	272	74,534
<i>MetLife</i>	192	78,978
<i>Aetna</i>	222	67,871
<i>UnitedHealth Group</i>	222	66,920
<i>3M</i>	239	84,166
<i>Johnson Controls</i>	251	77,851
<i>General Dynamics</i>	224	86,554
<i>Cigna</i>	218	66,337
<i>Citigroup</i>	145	99,705
<i>Anthem</i>	183	73,948
<i>AIG</i>	134	90,033
<i>HP</i>	189	103,922
<i>DuPont</i>	165	85,816
<i>Humana</i>	167	61,410
<i>Express Scripts Holding</i>	195	66,262
<i>Cardinal Health</i>	185	67,290
<i>Intel</i>	99	113,105
<i>Apple</i>	251	36,744
<i>AmerisourceBergen</i>	167	59,299
<i>United Technologies</i>	316	28,437
<i>Cisco Systems</i>	119	86,515
<i>Sysco</i>	130	60,118
<i>Tesoro</i>	264	6,061
<i>Amazon.com</i>	15	112,123

<i>IBM</i>	182	8,791
<i>Procter &amp; Gamble</i>	190	6,579
<i>Valero Energy</i>	208	6,010



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