

# CEO and BOB Over- Pay and Firm Performance

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The background is a deep space scene. On the left, there is a bright, glowing spiral galaxy with a dense core. The rest of the background is filled with a blue nebula, showing wispy, cloud-like structures in various shades of blue and cyan. Numerous small, white stars are scattered throughout the dark space.

Background



# Background

**We wanted to understand the relationship between:**

- CEO and BOD over/under compensation
- Firm performance relative to CEO/BOD compensation

**This lead us to these papers:**

- The determinants of CEO compensation: new insights from United States
- Is board compensation excessive?
- CEO compensation, director compensation, and firm performance: Evidence of cronyism?

# Why CEO Overpay?

## Past 40 years:

- 1,167% relative to growth in CEO pay, S&P 500 at 741%
- Reduced CEO turnover & pay-for-performance sensitivity

# Why BOD Overpay?

## Past 40 years:

- Strong positive correlation between CEO and BOD overpay
- Poor governance
- Potential back scratching?





# Impact of CEO/BOD Compensation on Firm Performance

# Data

Provider: Wharton Research Data Services

Databases:

- Execucomp
- CRSP
- Compustat



# EDA

- Manually cleaned data and winsorized variables
- When creating variables, we imputed values with 0(null) or the next max(infinity) of the data set
- We imputed missing values in our regressions using the mean value of that variable

# EDA

- For firm data, some firms were not public at the beginning of our time period (2010)
  - As a result, we dropped missing values from the analysis datasets
- Exempted columns with large amounts of missing data from our analysis



# Binning

Companies where binned based on market size

- **Small**
  - [\$0, \$10BB]
- **Medium**
  - [\$10BB, \$200BB]
- **Large**
  - [\$200BB, Max]



# Variables

## CEO

- Compensations
- Self created variables

## BOD

- Compensations
- Accounting Ratios

# Regressions **CEΘ**

## CEΘ Small

- $R^2 = 0.731653$
- $k=96, \alpha=0.001$

## CEΘ Medium

- $R^2 = 0.285019$
- $k=86, \alpha=0.001$

## CEΘ Large

- $R^2 = 0.887327$
- $k=87, \alpha=663$

# Regressions **BOD**

## **BOD Small**

- $R^2 = 0.472074$
- $k=64, \alpha=118$

## **BOD Medium**

- $R^2 = 0.618721$
- $k=95, \alpha=100$

## **BOD Large**

- $R^2 = 0.227747$
- $k=79, \alpha=0.001$



# Firm Performance

## Methodology

- Calculated these metrics for companies in our dataset
- Fit a regression model to determine relevant weights
  - Y variable: Tobin's Q
- Standardized weights and firm metrics
- Multiplied metrics by weights, then summed rows, to determine performance score

# Results

## Firm Performance/Compensation Correlation

Correlation between CEO payment and firm performance:

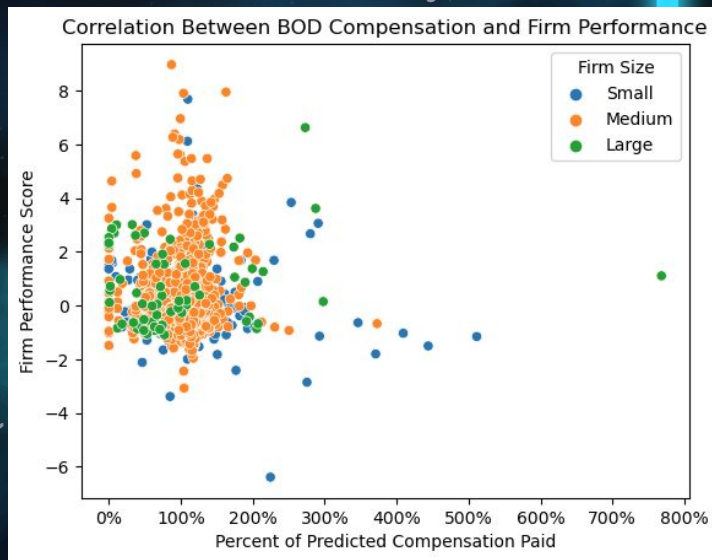
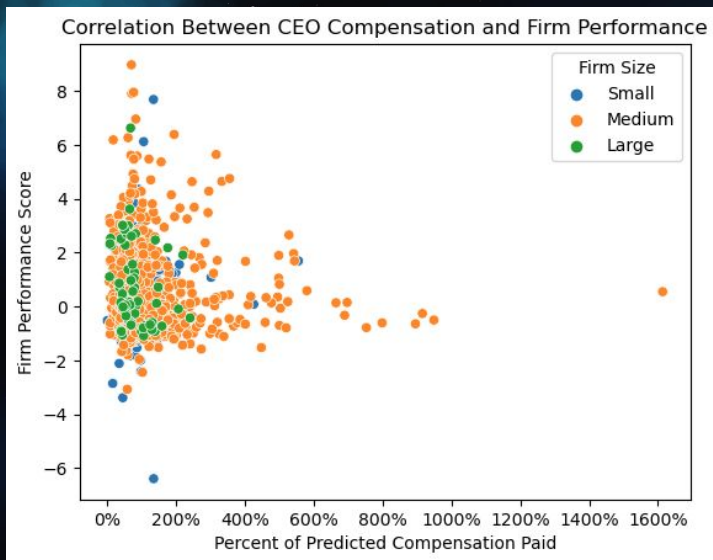
	Firm Size	Correlation
0	Small	0.225228
1	Medium	0.005446
2	Large	-0.226134

Correlation between BOD payment and firm performance:

	Firm Size	Correlation
0	Small	-0.116239
1	Medium	-0.026329
2	Large	0.131093

# Results

## Firm Performance/Compensation Correlation





# Results

## Case Analysis

Case	Description
Case 1	CEO and BOD both overpaid
Case 2	CEO overpaid and BOD underpaid
Case 3	CEO underpaid and BOD overpaid
Case 4	CEO and BOD both underpaid

		avg_perf_score	count
Firm Size	Case		
Large	Case 1	-0.072387	5
	Case 2	-0.107360	13
	Case 3	1.467393	16
	Case 4	0.725534	28
Medium	Case 1	0.041125	298
	Case 2	0.386103	111
	Case 3	0.113649	511
	Case 4	0.568956	169
Small	Case 1	0.352583	43
	Case 2	0.010755	35
	Case 3	-0.296914	94
	Case 4	-0.356027	41

# Conclusion

## Firm Performance

- Small and Medium Firms had positive correlations between CEO performance and CEO compensation
- Large firms had positive correlations between BOD performance and BOD compensation

# Conclusion

## Payment Analysis

- Large firms tend to underpay CEO's and overpay BOD
- Medium firms tend to under pay both CEO and BOD
- Small firms tend to overpay both CEO's and the BOD