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Perverse Motivations: Chief Financial Officer Compensation in the United States in the 2010s

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Abstract

Using U.S. data from 2010 to 2019, I investigate incentive alignment in chief financial officer (CFO) compensation. Controlling for industry and year fixed effects, I use ordinary least squares regressions and find no significant relationship between CFO compensation and company performance or job complexity. Furthermore, I find significant evidence of CFOs extracting rents through serving as a director in the board of directors. CFO compensation declines in share ownership. The study presents evidence against the realisation of CFO and shareholder incentive alignment in the U.S. in the 2010s.

Keywords: CFO compensation; Job complexity; Performance; Ownership structure; Board-of-directors

Contents

1 Introduction

The level of executive compensation often spikes outrage in the public as was evident in the recent case of ING chief executive officer's (CEO) 50% pay hike in 2018 (Meijer, 2018). While media often focuses on CEO pay, chief financial officers (CFO) are also extracting large salaries from companies, and thus, their shareholders.

CFO compensation is not as well studied in academia as CEO compensation is. Whereas CEO compensation is quite well understood, there is a lack of awareness as it comes to CFO pay. To address whether CFOs are compensated in the best interests of the shareholders, I will investigate CFO pay in relation to the incentive alignment theory in the United States (U.S.) during the 2010s. From this arises my central research question: Do CFO compensation incentives align with the interests of shareholders?

The findings of this study may aid in designing more optimal CFO compensation schemes in the future, as well as to highlight problems with current compensation structures. Academically, this article adds to the growing body of, so far quite neglected, literature on CFO compensation. Furthermore, the empirical results of this study may be used a reference point for designing more complex models of incentive alignment in the future.

This article begins by an overview of the relevant literature and briefly discusses the findings of previous studies in executive compensation and presents the hypotheses. I then present the data, discuss the data properties, as well as introduce the research methodology along with the mathematical model and definitions. In section 4 I present the results of the study and discuss their significance and implications in section 5. I conclude by discussing the limitations of this study, answering the central research question, and making suggestion for future research.

2 Theoretical Framework

In 1776 Adam Smith stated that directors of joint-stock companies cannot be expected to manage others' money with the same vigilance as they would manage their own (Smith, 1776).

Already in the 18th century, Smith was thus aware of the moral hazard that managers face. Much of the literature concerned with moral hazard is also concerned with agency related problems.

Theory on agency problems was formalised by, among others, Ross (1973), who indicated that while a rather optimal, utility maximising, outcome is likely to arise in practice, monitoring the agent will be unviably expensive to the principal. In other words, while the principal and agent could agree on a utility maximising contract, the principal cannot in practice monitor whether the agent is shirking or not.

A solution to the monitoring problem is to set the agent's payoff dependent on the principal's payoff in a way that does not encourage shirking. Ultimately, when the incentives of the principal and the agent are aligned, there will be no need for monitoring the agent. Jensen and Meckling (1976) develop this argumentation more formally by incorporating property rights and financial aspects of argumentation.

Incentive alignment is the backbone of many studies on executive compensation. Using evidence from the 1930s through the 1980s, Jensen and Murphy (1990) find that CEO compensation is tied to firm performance; change in shareholder wealth increases CEO cash compensation and stock option value. Furthermore, they note that the strongest performance incentives come from stock ownership. However, those incentives are declining as a consequence of declining ownership.

Core et al. (1999) study how ownership and board membership impact CEO compensation. They find a positive relationship between board membership and compensation, accordant with the rent extraction approach. Furthermore, consistent with previous research (e.g. Allen, 1981) they find a negative relationship between share ownership and compensation. Allen (1981) suggests the negative relationship might stem from the high dividend income payable to CEOs with large stakes, further consolidating the view that stock ownership gives a strong performance incentive.

Much of the research on executive compensation has focused on CEOs. Bedard et al. (2014) bring a welcomed change as they investigate the role of CFOs' board membership. Similar to CEOs, they find an increased compensation cost when a CFO is granted a seat on

the board. However, they also note that due to increased quality of financial reporting the total costs of CFO board membership to the firm remain uncertain.

Duong and Evans (2015) take the previous research and ambitiously investigate the validity of the incentive alignment and managerial power theories in Australia. Concentrating on CFOs only, they find evidence in support of the managerial power theory, rather than incentive alignment.

2.1 Hypotheses

In this paper I investigate whether CFO compensation conformed to the incentive alignment theory in the post-financial crisis United States. I investigate alignment from three perspectives: job complexity, company performance, and CFO power.

Job complexity. Rose and Shepard (1997) find the payment of a "diversification premium" (granted to CEOs of businesses operating in multiple business segments) is associated with increased job demands. Extrapolating the findings to CFOs, it should be in the shareholders' interest to hire a higher quality (and hence a more expensive) CFO to oversee the operations of a more complex organisation. Thus, the first hypothesis:

H1: Job complexity is positively correlated with CFO compensation.

Company performance. It is in the shareholders' interest to compensate executives for being able to procure higher returns. Thus, if incentive alignment holds, higher company performance should be reflected in the CFO compensation. Hence the second hypothesis:

H2: Company performance is positively correlated with CFO compensation.

CFO power. The amount of power the CFO has within the organisation should have no impact on their compensation. If this were the case, incentive alignment theory would not

hold as the shareholders do not gain from the CFO extracting rents from the organisation. Accordingly, the third hypothesis is:

H3: CFO power has no impact on the CFO pay.

3 Data & Methodology

3.1 Data

The population for the study is all U.S. companies post-financial crisis. The best approximation of this population with the data sources at hand is to use the Wharton Research Data Services' CompuStat databases in conjugation with data from The Center for Research in Security Prices (CRSP). Using an intersection of four distinct databases (CompuStat, CompuStat Executive Compensation, CompuStat Segments, and CRSP), I am able to procure a panel dataset consisting of 1,298 observations spanning 10 years. The data, which is for the time period 2010-2019, includes a total of 585 different U.S. companies, all belonging to the S&P 1500. Table 1 lists all variables used, along with the name of the database they have been obtained/derived from.

The median company in the sample has total assets of 840.72 million USD. The companies have one to ten business segments, with the median firm operating in one business segment only. The median business is levered at 0.33 debt over equity and has a return on assets of 1.76% with market returns, net dividends, being slightly lower at 0.69%.

CFOs served as a director (board member) in 11.48% of the observations. On average, the CFOs own approximately 0.17% of the company shares, with the largest ownership percentage at 16.00%. The average CFO compensation, including bonuses, share options, restricted options, *et cetera*, is 2.71 million USD with a low of 67 thousand USD and a high of 60.73 million USD. Descriptive statistics for the variables, post-transformations, are in Table 2.

Table 1

List of Variables

Variable	Description	Database
CFOcompensation	Total CFO compensation for the fiscal year. *(Thousands of USD)*	CompuStat ExecuComp
FirmSize	Total assets of the company on the fiscal year end date. *(Millions of USD)*	CompuStat
BusSeg	Number of business segments the company operated in during the fiscal year, as identified in the database. *(Number)*	CompuStat Segments
MarketReturn	Constantly compounded return for the past year, including annualised regular cash dividends. See Equation 1. *(Percentage)*	CRSP
ROA	Return on assets, calculated based on figures reported in financial statements. See Equation 2. *(Percentage)*	CompuStat
Director	Dummy variable equalling one if the CFO served as a director during the fiscal year. *(Binary)*	CompuStat ExecuComp
SharesOwned	Percentage of total shares owned by the CFO, as reported. Winsorised at the 1% level. *(Percentage)*	CompuStat ExecuComp
Leverage	Total debt over equity, as reported in financial statements. Winsorised at the 1% level. *(Ratio)*	CompuStat
Year[x]	Dummy variable for the fiscal year, where x is equal to the fiscal year in question, e.g. if *x=2015* then *Year2015=1*. N.B. If fiscal year ends in January through May, the fiscal year is equal to the ending year – 1 (e.g. if fiscal year ends on 15.03.2014, then *Year2013=1*). *(Binary)*	CompuStat
Industry[x]	Dummy variable for the industry, where x is equal to a letter in the range [A,J]. The letter is assigned based on the two first digits of the SIC classification, as per NAICS SIC Industry Code Division (see NAICS Association (2018)). *(Binary)*	CompuStat

$$MarketReturn = \ln \frac{Close\ Price\ on\ Fiscal\ Year\ End\ Date + Annualised\ Regular\ Cash\ Dividend}{Close\ Price\ on\ Previous\ Fiscal\ Year\ End\ Date} \quad (1)$$

$$ROA = \frac{Net\ Income}{Total\ Assets} \quad (2)$$

Table 2

Descriptive Statistics for the Core Variables of Interest

	Mean	Std. Dev.	Min.	Max.
Firm Size *(bUSD)*[1]	20.93	117.36	0.00	1,880.38
Business Segments	1.92	1.64	1	10
Leverage *(ratio)*[2]	0.72	2.59	-11.49	16.63
Return on Assets *(%)*	33.16	896.96	-658.63	22,631.04
Market Return *(%)*	-3.48	61.44	-589.99	312.88
CFO Compensation *(mUSD)*	2.72	3.67	0.	60.73
Shares Owned by CFO *(%)*[2]	0.14	0.28	0.00	1.95
CFO Served as a Director *(binary)*	0.11	0.32	0	1

Note: $n = 1{,}298\ for\ all\ variables$, [1]final regression utilised a natural logarithm of the variable, [2]after winsorising

As indicated in Table 1, two sets of dummy variables were created to control for time and industry fixed facts. Dummy variables for the fiscal year span from 2010 to 2019 and are equal to one if the corresponding fiscal year ended on that year. Fiscal years ending January through May were assigned to the previous years' group as most of their financial activity happened during the previous year. Furthermore, some of the data was only available in format consistent with this, thus easing the requirements for data transformations.

The companies operate in 10 different industries, as classified by the NAICS Association (2018). The industry specific dummy variables were created based on the SIC code of the main branch of the business. The two first digits of the SIC code were extracted and this number was used to assign the business into one of the ten different industry groups, as defined by the NAICS Association (2018). The industry variables were mostly concentrated in "Industry D", which is Manufacturing. Second was Services, and third was Finance, Insurance, and Real Estate. Only seven firms were classified to "Industry A" (Agriculture, Forestry, and Fishing) and nine to Construction. Summary statistics and transcriptions for the dummy variables are available in Appendix A.

3.2 Methodology

In line with previous literature I use an OLS regression to test if the sample conforms to the incentive alignment theory. The four model specifications are presented in Equations 3-6. I use heteroscedasticity consistent standard errors in estimating the function as the data are not perfectly normal (see Appendix B).

A natural logarithm of the variable denoting company size was used to minimise the impact of right skewed data. Furthermore, the variables denoting company leverage and shares owned by the CFO were winsorised at the 1% level to reduce impact of extreme outliers. Appendix B visually demonstrates the impact of the transformation on reducing the skewness and outliers of the data as well as the distributions for all of the core variables of interest.

$$CFOcompensation_{i,t} = \alpha_0 + \alpha_1 \ln FirmSize_{i,t} + \alpha_2 Leverage_{i,t} + \alpha_3 BusSeg_{i,t} + \alpha_4 ROA_{i,t} + \alpha_5 MarketReturn_{i,t} + \alpha_6 SharesOwned_{i,t} + \alpha_7 Director_{i,t} + \beta_{0\ldots9}[YearDummies]_i + \gamma_{A\ldots J}[IndustryDummies]_t + \varepsilon_{i,t} \quad (3)$$

$$\ln CFOcompensation_{i,t} = \alpha_0 + \alpha_1 \ln FirmSize_{i,t} + \alpha_2 Leverage_{i,t} + \alpha_3 BusSeg_{i,t} + \alpha_4 ROA_{i,t} + \alpha_5 MarketReturn_{i,t} + \alpha_6 SharesOwned_{i,t} + \alpha_7 Director_{i,t} + \beta_{0\ldots9}[YearDummies]_i + \gamma_{A\ldots J}[IndustryDummies]_t + \varepsilon_{i,t} \quad (4)$$

$$CFOcompensation_{i,t} = \alpha_0 + \alpha_1 \ln FirmSize_{i,t} + \alpha_2 Leverage_{i,t} + \alpha_3 BusSeg_{i,t} + \alpha_4 ROA_{i,t} + \alpha_5 MarketReturn_{i,t} + \alpha_6 SharesOwned_{i,t} + \alpha_7 Director_{i,t} + \beta_{0\ldots9}[YearDummies]_i + \varepsilon_{i,t} \quad (5)$$

$$\ln CFOcompensation_{i,t} = \alpha_0 + \alpha_1 \ln FirmSize_{i,t} + \alpha_2 Leverage_{i,t} + \alpha_3 BusSeg_{i,t} + \alpha_4 ROA_{i,t} + \alpha_5 MarketReturn_{i,t} + \alpha_6 SharesOwned_{i,t} + \alpha_7 Director_{i,t} + \beta_{0\ldots9}[YearDummies]_i + \varepsilon_{i,t} \quad (6)$$

Where

$CFOcompensation_{i,t}$	The dependent variable indicating the level of total compensation for company i's CFO during the fiscal year t
$\ln CFOcompensation_{i,t}$	Natural logarithm of $CFOcompensation_{i,t}$
α_0	The constant term
$\alpha_1 ... \alpha_7$	Regression coefficients of the explanatory and non-binary control variables
$\ln FirmSize_{i,t}$	Natural logarithm of the ith company's size at the end of fiscal year t
$Leverage_{i,t}$	Ratio of total debt to equity of the ith company as reported for the fiscal year t, winsorised at the 1% level
$BusSeg_{i,t}$	Count of business segments the ith company operated during fiscal year t
$ROA_{i,t}$	The return on assets of the ith company as reported for fiscal year t
$MarketReturn_{i,t}$	Market return of the ith company for fiscal year t as defined in Equation 1
$SharesOwned_{i,t}$	The percentage of all shares owned by the CFO of company i as reported at the end of the fiscal year t, winsorised at the 1% level
$Director_{i,t}$	Binary variable indicating whether the CFO of company i served as a member of the board of directors of that firm during the fiscal year t
$\beta_{0...9}$	Regression coefficients for the set of year-fixed effects control variables
$[YearDummies]_i$	Set of year dummy variables for company i for the years 2010 through 2019
$\gamma_{A...J}$	Regression coefficients for the set of industry-fixed effects control variables
$[IndustryDummies]_t$	Set of industry dummy variables for fiscal year t for industries A through J
$\varepsilon_{i,t}$	Error term of the ith firm for the fiscal year t

The regression variables can be roughly classified to 4 classes: control variables and variables proxying job complexity, company performance, and CFO power.

To proxy the complexity of the CFO's job, two variables are included: $\ln FirmSize_{i,t}$ and $BusSeg_{i,t}$. The complexity of the job may be assumed to increase in company size as a larger organisation requires more effort to manage. Especially, the CFO has to communicate with more people as the organisation grows. Similarly, more business segments require more management.

Company performance is proxied by two variables on return to shareholders: $MarketReturn_{i,t}$, which measures the one year stock return adjusted for dividend payments, and $ROA_{i,t}$, which measures the one year return on assets.

To proxy the power the CFO has over the board of directors two variables are used: $SharesOwned_{i,t}$ and $Director_{i,t}$. The percent of total shares owned by the CFO, $SharesOwned_{i,t}$, increases CFO power by granting them more voting rights in the business. The binary variable $Director_{i,t}$ equals one if the CFO served as a director in the board of directors during the fiscal year, which would (self-evidently) increase the CFO power over the board of directors.

The first control variable, $Leverage_{i,t}$, is used to control for the company related job risk. The higher the leverage of the company, the higher the risk the company, and therefore the CFO, faces. Additionally, to control for the year fixed effects, the set of dummies $[YearDummies]_i$, is included. Similarly, to control for industry related fixed effects, $[IndustryDummies]_t$ is used.

4 Results

The first hypothesis states job complexity is positively correlated with CFO compensation. Unfortunately, in any of the specifications (Table 3) neither of the proxies, firm size or the number of business segments, is statistically significant.

The second hypothesis states company performance to be positively correlated with CFO compensation. The coefficients for market returns in all of the specifications are highly insignificant. Similarly, coefficients for return on assets are insignificant at the 10% level.

The third hypothesis states CFO power has no impact on the CFO pay. Across all specifications, having served as a director seems to have a significantly positive impact on CFO pay. Specifications I (full model) and III (restricted model) indicate a seat in the board of directors to increase total CFO compensation by approximately 1.8 to 1.9 million USD (both $p = 0.00$). 95% of the compensation increases fall in the range of 0.62 to 3.09 million USD. Considering the average CFO compensation is 2.75 million USD, the magnitude of the effect is considerable.

Specifications II (full model with CFO compensation expressed as a natural logarithm) and IV (restricted model with CFO compensation expressed as a natural logarithm) yield similar results; the coefficients suggests a seat on the board of directors to yield compensation increases of 30% ($p = 0.03$) and 26% ($p = 0.05$), respectively. 95% of the compensation increases fall in the range of 0 to 49%.

Similarly to a seat in the board of directors, share ownership appears highly significant across specifications. Unlike a seat in the board of directors, however, the coefficients for share ownership are negative; specifications I and III imply a one percentage point increase in shares owned by the CFO to *decrease* compensation by approximately 1.34 to 1.41 million USD (both $p = 0.00$). Expressed in percentages (specifications II and IV), the compensation decreases are approximately 26% ($p = 0.04$) and 22% ($p = 0.06$) for the full and restricted models, respectively.

The control variable for job riskiness, leverage, is insignificant. Industry fixed effects also appear mostly insignificant. Year fixed effects are mostly highly significant. Additionally, the model's representativeness is rather restricted with adjusted R^2 values falling between 2.51% and 3.23%.

Table 3

OLS Regression on CFO compensation

	Specification I *Equation (3)*	Specification II *Equation (4)*	Specification III *Equation (5)*	Specification IV *Equation (6)*
Firm Size *(ln)*	-69.12 [0.16]	-0.02 [0.10]	-57.16 [0.24]	-0.02 [0.20]
Leverage	-22.99 [0.51]	-0.01 [0.29]	-26.97 [0.43]	-0.01 [0.24]
Business Segments	98.56 [0.23]	0.00 [0.79]	94.05 [0.24]	0.00 [0.90]
Return on Assets	257.88 [0.31]	0.15 [0.11]	192.57 [0.46]	0.13 [0.16]
Market Return	35.04 [0.79]	0.05 [0.27]	25.47 [0.85]	0.05 [0.30]
Shares Owned by CFO	-1408.91 *** [0.00]	-0.23 ** [0.04]	-1340.78 *** [0.00]	-0.20 * [0.06]
CFO Served as a Director	1876.77 *** [0.00]	0.26 ** [0.03]	1817.95 *** [0.00]	0.23 ** [0.05]
α_0	1076.76 * [0.07]	7.07 *** [0.00]	1520.67 *** [0.00]	7.15 *** [0.00]
Fixed Effects	Yes	Yes	No	No
Observations	1,298	1,298	1,298	1,298
R^2	4.39%	5.10%	3.86%	4.12%
Adjusted R^2	2.51%	3.23%	2.66%	2.92%

Notes: $*\ p < 0.10$, $**\ p < 0.05$, $***\ p < 0.01$, results significant at the 10% level are in bold

5 Discussion & Conclusions

5.1 Discussion

Firm size and CFO compensation have an insignificant relationship, as do business segments and CFO compensation. Had the relationships been significant, the results would have indicated a decrease in compensation as the company grows, contrary to the hypothesis and the incentive-alignment theory. The results regarding business segments would have supported the view of job complexity having a positive correlation with CFO compensation and supported the incentive-alignment theory. However, the data is not sufficient for making a conclusion on hypothesis 1, as both of the variables taken as a proxy for the job complexity fail to provide significant results at any of the conventional significance levels.

Return on assets has no significant relationship with CFO compensation. Similarly, for the other proxy of company performance, market return, there is no evidence of a significantly positive relationship with CFO compensation. Both of the proxies for company performance would have provided support for the incentive alignment theory, had they been significant. However, being insignificant, the data do not provide a definitive conclusion on hypothesis 2.

The only significant results are realised in relation to the indicators of CFO power. CFO compensation seems to decline in share ownership, perhaps as a result of increased awareness of the effects of excessive pay to share value. The relationship is significant at the 5% level in three of the four specifications tested.

The second proxy for CFO power, seat in the board of directors, has a highly significant and positive relationship with CFO compensation. The increases in compensation are significant at the 5% level in all four specifications. It therefore seems to be the case that boards are unaware or unable to block rent-extracting by the CFO when they are a board member.

Overall, the third hypothesis is rejected: CFO power has an impact on the CFO pay. However, this power manifests itself in a two-fold fashion; 1) increase in share ownership has a negative, instead of a positive, relationship with CFO compensation, implying the CFOs do not or are unable to exploit their increased voting rights for rent-seeking purposes by increasing their compensation, and 2) the positive relationship between CFO compensation and board

membership suggests CFOs to extract large rents through their increased control over the company.

Other than the variables investigated under the hypothesis, there does not seem to be significant changes in compensation in relation to increased company (job) risk, as measured by leverage. Furthermore, the differences in CFO compensation between industries are mostly negligible.

It is important to note that while proxies for CFO power are significant, the explanatory value of the regressions, as expressed in the $\bar{R}^2$, are mostly rather low. This implies that the CFO compensation includes elements that were not included as explanatory variables in this study. Furthermore, the insignificant coefficients in variables that have been found significant in previous studies suggest, in conjugation with the low $\bar{R}^2$ values, that either the data is too noisy or that this study failed to incorporate important control variables.

Therefore, to reach a better understanding of the real determinants of CFO compensation, other variables of interest, such as the gender and years of experience, could be included in future research. Additionally, future studies could isolate the components of compensation to distinct parts, as bonuses have a material impact to the total compensation for CFOs.

Additional limitations to this study were presented by the rather low number of observations, as compared to the population studied. A total of 1,298 company-years were investigated, out of the 15,000 in the population. Therefore, the sample included just 8.65% of all data, thus potentially providing non-representative results. The sample size was mainly restricted by the strict assumption made for the data; all data points had to be available for each panel entry. Relaxing some of these assumptions could increase the size of the sample considerably, albeit introducing missing data. Another method of increasing the sample size is to increase the temporal reach of the study.

5.2 Conclusion

The central question of whether CFO compensation is aligned with the interests of the shareholders, was divided into three hypotheses. The investigation of these hypotheses led to the following conclusions:

1) No definitive proof of a correlation between job complexity and CFO compensation was found;
2) No definitive proof of a correlation between company performance and CFO compensation was found; and
3) CFO power has an impact on CFO compensation.

Hypothesis 1 tests the alignment of CFO compensation with increased organisational responsibilities. The insignificant results fail to provide conclusive information on incentive-alignment in this respect. Similarly, hypothesis 2 fails to provide conclusive information on incentive-alignment with respect to company performance and CFO compensation.

The rejection of hypothesis 3 provides evidence for the existence of rent extraction by CFOs with power. Especially CFO board membership can be seen as a tool for rent extraction. In accordance with previous studies on executive-level officers (e.g. Core et al. (1999) or Bedard et al. (2014)), the results suggest that most of the CFOs who serve as a director enjoy a total compensation which is up to 49% larger than their peers without a seat in the board of directors. Similarly to Allen (1981), the investigation of hypothesis 3 also suggests that CFOs with a higher company share holdings are not extracting as high total compensations as their peers with lower share ownership.

In line with previous literature on CFO compensation (especially Duong and Evans (2015)), the findings do not suggest that CFO incentives align with the interests of shareholders. Therefore, the answer to the central research question is a no; the results provide stronger support for the notion of rent extracting or managerial power theory than for incentive alignment. Indeed, it seems that CFO compensation is not (at least strongly) related to measures of job complexity and company performance. On these measures it appears that CFO incentives are not aligned with those of the company or its stakeholders. Additionally, significant evidence is found in support of rent-extracting by CFOs with more power.

Based on these results CFO compensation packages should be designed to distribute more shares as a form of compensation to increase CFO ownership. Furthermore, the CFOs should not be granted a seat in the board of directors, unless this is seen to improve the performance of the firm considerably.

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Appendices

Appendix A: Summary Statistics for the Dummy Variables

Table A1
Summary Statistics for the Dummy Variables

INDUSTRY DUMMIES	Observations	Percent of total	Transcription (NAICS Association, 2018)
IndustryA	7	0.54%	Agriculture, Forestry, and Fishing
IndustryB	119	9.17%	Mining
IndustryC	9	0.69%	Construction
IndustryD	500	38.52%	Manufacturing
IndustryE	124	9.55%	Transportation, Communications, Electric, Gas, and Sanitary Services
IndustryF	46	3.54%	Wholesale Trade
IndustryG	80	6.16%	Retail Trade
IndustryH	151	11.63%	Finance, Insurance, and Real Estate
IndustryI	236	18.18%	Services
IndustryJ	26	2.00%	Public Administration

YEAR DUMMIES	Observations	Percent of total
FiscalYear2010	24	1.85%
FiscalYear2011	47	3.62%
FiscalYear2012	30	2.31%
FiscalYear2013	298	22.96%
FiscalYear2014	345	26.58%
FiscalYear2015	360	27.73%
FiscalYear2016	50	3.85%
FiscalYear2017	28	2.16%
FiscalYear2018	41	3.16%
FiscalYear2019	75	5.78%

Appendix B: Visual Demonstrations of Variable Distributions

Notes regarding figures B1 through B10:

1) All figures have been overlaid with a normal distribution plot, indicated by a line.
2) Histogram bin-sizes were chosen automatically by software.
3) All units, except those subjected to transformation by the natural logarithm function, are the same as indicated in Table 1.

Distributions subjected to transformations

Company Leverage (Net Debt over Equity)

Figure B1
Distribution of ***Leverage*** Pre-Transformation

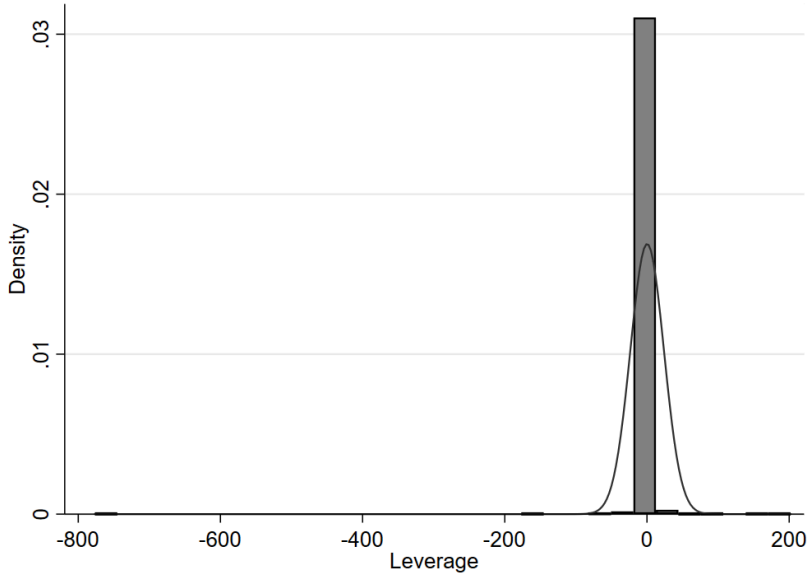
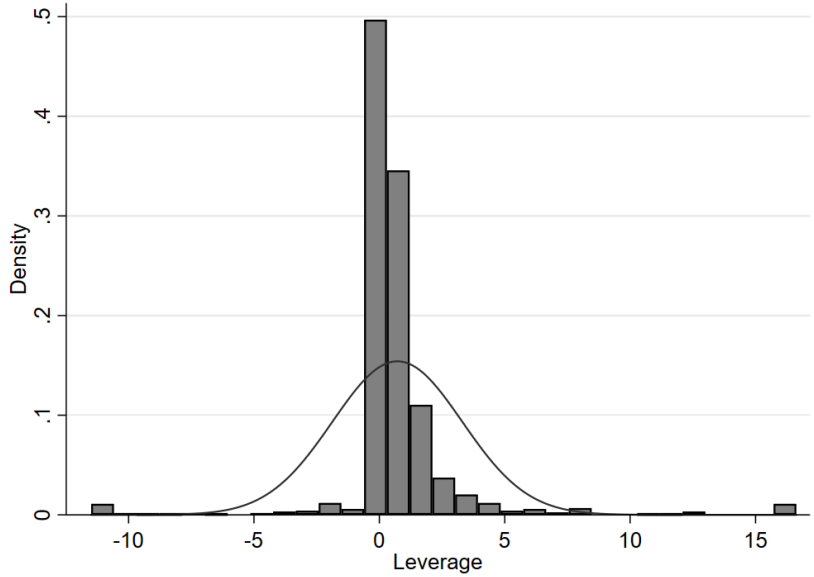


Figure B2
Distribution of ***Leverage*** Post-Transformation



Percentage of Shares Owned by the CFO

Figure B3
Distribution of *SharesOwned* Pre-Transformation

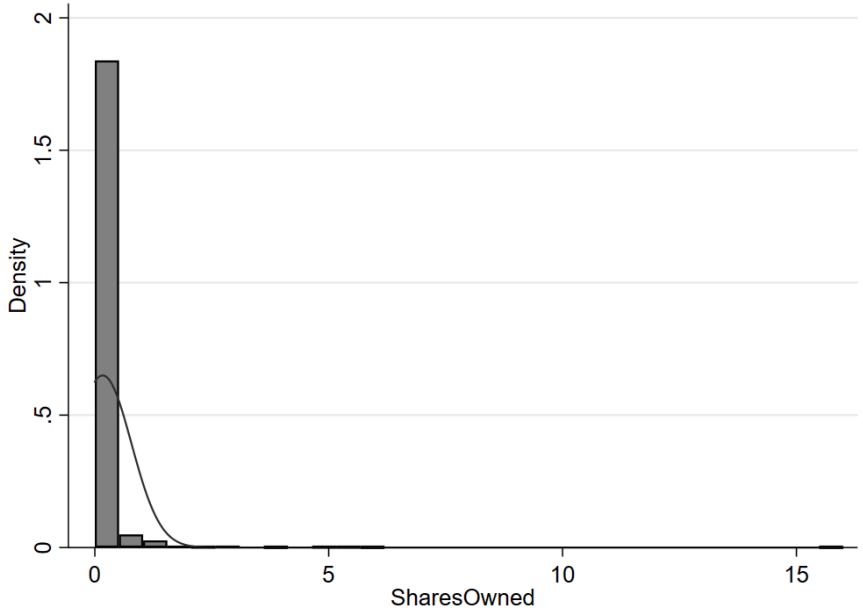
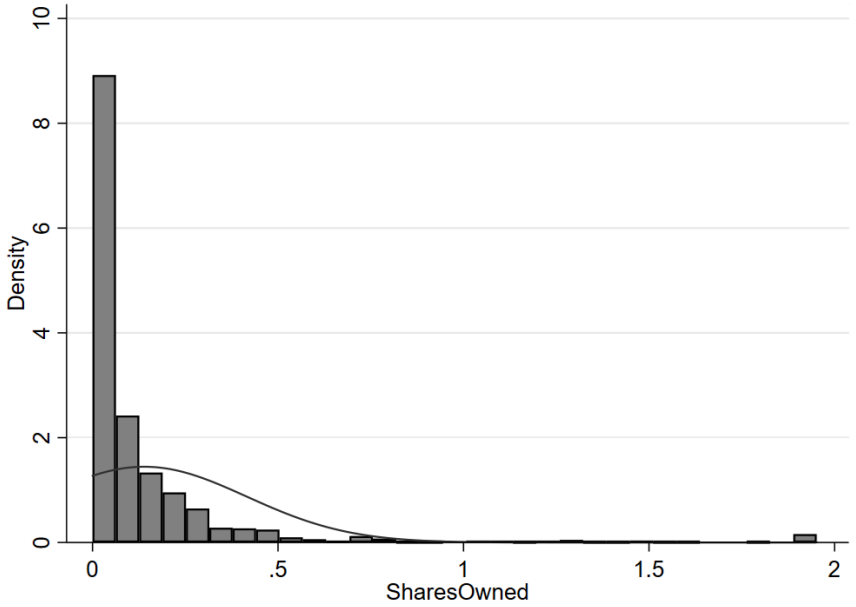


Figure B4
Distribution of *SharesOwned* Post-Transformation



Firm Size (Total Assets)

Figure B5
Distribution of *FirmSize* Pre-Transformation

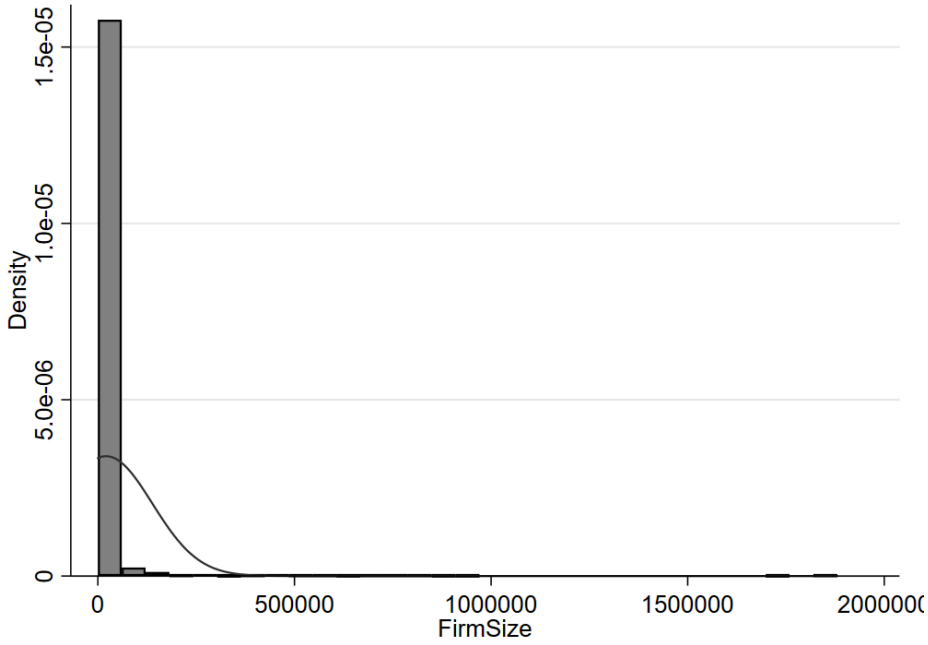
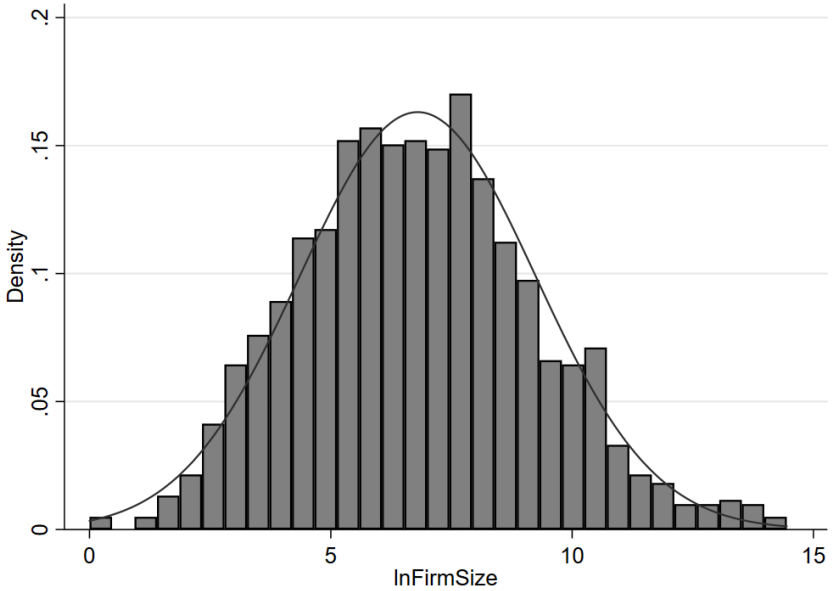


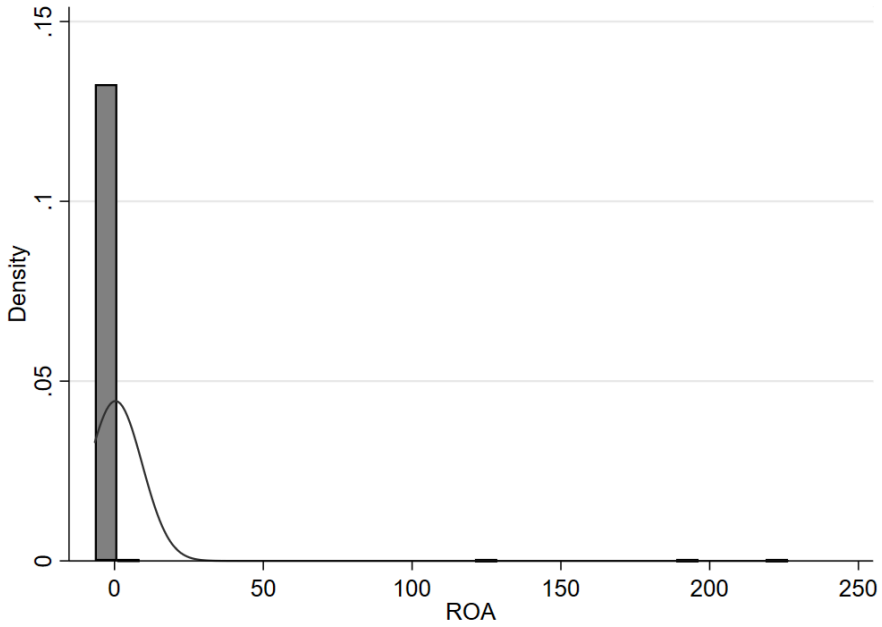
Figure B6
Distribution of *FirmSize* Post-Transformation



Distributions not subjected to transformations

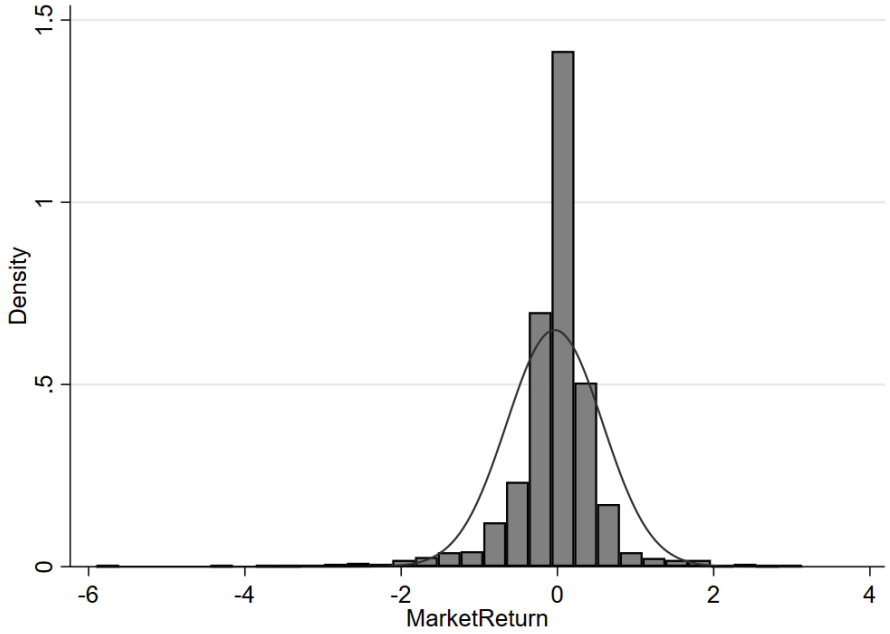
Return on Assets

Figure B7
Distribution of *ROA*



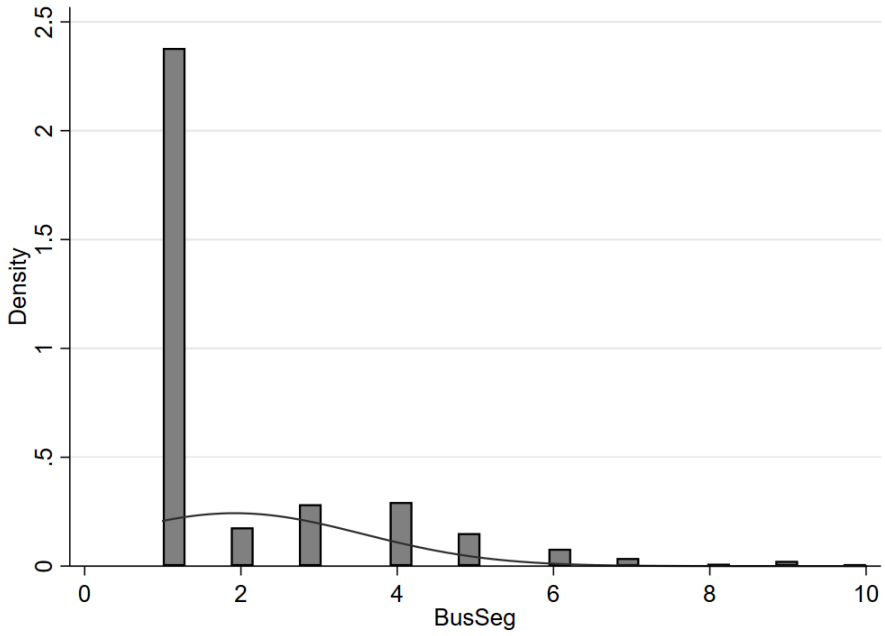
Market Return

Figure B8
Distribution of *MarketReturn*



Number of Business Segments

Figure B9
Distribution of *BusSeg*



CFO Compensation

Figure B10
Distribution of *CFOcompensation*