CORPORATE GOVERNANCE AND MANAGERIAL OPPORTUNISM: THE CASE OF US PENSION PLANS

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Abstract

Insuring post-retirement benefits to retirees is a joint responsibility of the employees, employers, and the US government. Managers have been shown to manipulate pension plan reports with the intention of maximizing their own gains to the detriment of current and future retirees. External monitoring by regulators and auditors is effective in curbing this opportunistic behavior. This paper extends these findings to examine if effective internal monitoring in the form of strong corporate governance is instrumental in controlling manipulations of pension reports by managers. Empirical tests support the finding that effective corporate governance is inversely associated with the extent of managerial manipulations in pension plan reporting. This result should be of interest to employees, retirees, and the US Government that are trying to insure the future income of senior citizens.

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1.   Introduction

This paper examines if good corporate governance leads to higher quality corporate pension reporting in the US. Given the changing population profile in this country, research that deals with pension benefits is critical. According to recent projections by the US government, the population of people 65 years or older is expected to more than double by 2050, mainly due to the Baby Boom cohort that retires between 2011 and 2029 and the increase in human longevity. Thus, planning for the welfare of the aged population is one of the major priorities for the government. This concern was also reflected during the recent Presidential election campaign.

The United States currently has one of the most extensively evolved and complex pension systems that incorporates three major elements: (1) Public Social Security system under the Old-Age, Survivors, and Disability Insurance (OASDI) program; (2) Private pension system offered by employers; and (3) Individual retirement savings (Asthana 2009). US Government tries to encourage private pension plans that supplement public Social Security through tax relief and other incentives. Private pension benefits provide a critical component to the post-retirement income of today's Americans, especially with the current problems facing the Social Security system. These problems are expected to multiply with the mass retirement of the Baby Boom cohort, cost-of-living inflation, and medical advances resulting in longer retirement years. The financial problems of the public insurance system would lead to retirees depending more and more on their employer managed pension plans.[1]

Managers are known to behave opportunistically with the intent to maximize their own gains. Given the complexity of pension accounting in the US and the difficulty in detecting any manipulations of the underlying actuarial estimates, managers would be tempted to manipulate pension fund reporting. On the other hand, effective corporate governance should lead to better management, more adherences to rules, and better safeguards for the rights of retirees and employees. Thus, good corporate governance would be a deterrent for managers to behave opportunistically. As a result, better corporate governance is expected to lead to higher quality pension accounting/reporting. This paper uses univariate and multivariate tests to show that corporate governance is inversely related to opportunistic behavior of managers in the area of pension accounting. In other words, managers of firms with strong corporate governance are less likely to use actuarial assumptions to manipulate pension plan reports in the US.

The rest of the paper is organized as follows. The next section discusses the theory and develops the hypotheses. Section 3 describes the research design and section 4 outlines the sample selection procedure. Section 5 discusses the results and the final section presents the conclusions.

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[1] The estimated assets of pension funds offered by US employers are over $4 trillion (Kieso et al. 2005).

2.   Theory and Hypothesis

Research on Managerial Opportunism

Prior research shows that management can fail to act in the best interests of shareholders (Jensen and Meckling 1976). Healy (1985), Gaver et al. (1995), and Holthausen et al. (1995) report evidence that managers make discretionary accounting decisions to manipulate earnings with the intention of maximizing their multi-period bonus. Other empirical studies document the existence of CEOs' opportunistic behavior when setting their own compensation (Yermack 1997; Balsam 1998; Gaver and Gaver 1998; Aboody and Kasznik 2000). Mallette et al.(1995), Sridharan (1996), and Core et al. (1999) find that CEO's compensation is an increasing function of CEO duality. DeFond and Park (1997) argue that reputation concerns and the threat of displacement are likely to be incentives for managers to smooth earnings. Bens et al. (2003) investigate whether firms' share repurchases are due to incentives to manage diluted EPS. Ericson et al. (2003) report that the chances of fraud are higher, the higher the level of bonus and stock-backed grants. Johnson et al. (2003) find that executives at fraud firms have greater potential payoffs via options and stock holdings from share price increase. Efendi et al. (2007) examine misstatements of financial statements and report evidence that the misstatement increases greatly when the CEO has a sizable amount of stock options "in-the-money." In addition, Deangelo (1986), Liberty and Zimmerman (1986), Deangelo (1988), McNichols and Wilson (1988), Bartov (1993), Pourciau (1993), Beatty et al (1995), Liu and Ryan (1995), among many others, also provide evidence of the opportunistic use of accounting discretion by managers.

Research on Pension Fund Management

Extant research has also examined the firm's strategic reporting choices of defined-benefit pension benefits. Firms can influence their reported pension numbers by manipulating their actuarial choices. Bodie et al. (1987), Thomas (1988), Ghicas (1990), Thomas and Tung (1992), Godwin et al. (1995), and Asthana (1999, 2002, and 2009) study the determinants of actuarial choices for defined-benefit pension plans. They show that profitability, tax liability, working capital, debt, rate of undertaking of new investments, reimbursements to defense contractors, funded level, contribution level, participant-mix, excess cash from operations, and income management incentives motivate managers to strategically change their reported defined-benefit pension obligations. The manipulation of actuarial assumptions is not limited to corporate pension plans. Chaney et al. (2002) and Eaton and Nofsinger (2004) show that when government sponsors of public pension plans experience tight fiscal constraints, they tend to make optimistic actuarial assumptions in order to lower their required contributions.

Research on Impact of Corporate Governance

There is mixed evidence on the impact of good governance on managerial performance. Fosberg (1989), Bhagat and Black (2002), and Klein (1998) find no evidence of improved performance. On the other hand, Yermack (1996), Cheng at al. (2008), Core et al. (2006), Gompers et al. (2003), and Cremers and Nair (2005) find evidence of improvement. Corporations with strong corporate governance have been shown to indulge in less earnings management (Klein 2002; Xie et al. 2003; Bedard et al. 2004). Also, companies with strong corporate governance are known to hire better quality auditors (Abbott and Parker 2000), are more likely to support the auditor in a going concern opinion decision (Carcello and Neal 2000), and are less likely to fire an auditor following the going concern opinion (Carcello and Neal 2003). Raghunandan and Rama (2003) provide evidence that shareholders are likely to vote differently when the CEO also acts as the chairperson of the board. Dechow et al. (1996) show that firms with CEO duality tend to have greater earnings management. According to Jensen (1993) and Yermack (1996), large boards are less effective. On the other hand, Coles et al. (2008) provides contrary evidence. Boards that do not meet frequently have been shown to less effective (Yang and Krishnan 2005).

External monitoring has been shown to curtail managerial opportunism (Asthana 2001). Thus, it is an interesting research question to examine if internal monitoring in the form of good corporate governance reduces the opportunistic behavior of managers when accounting for pension plans. Thus, the hypothesis can be framed as:

Hypothesis: Quality of corporate governance is inversely related to opportunistic behavior of managers in the area of pension accounting.

3.   Research Design

The discount rate assumed by the defined-benefit pension plan is regarded by researchers as a barometer of the quality of pension accounting/reporting for several reasons. First, it is the most influential actuarial assumption made be the pension fund (Treynor et al. 1976, McGill and Grubbs 1989, Winklevoss 1993). Second, a mere 1% change in this rate can have upto15-30% impact on pension estimates (Asthana 1999). Finally, managers are known to manipulate this variable opportunistically (Bodie et al. 1987, Thomas 1988, Ghicas 1990, Thomas and Tung 1992). The deviation of the discount rate from the industry-specific mean is commonly regarded as the extent of managerial manipulation (Asthana 1999). This deviation is measured as follows.

$$DEVIATION = \left| \frac{DISCRATE - \mu}{\sigma} \right|,$$

Where

DISCRATE =	The discount rate assumed by defined-benefit pension plans to discount their future cash payments, under SFAS 87 (Financial Accounting Standards Board 1985)
μ =	Mean DISCRATE for the two-digit SIC industry for that year
σ =	Standard deviation of DISCRATE for the two-digit SIC industry for that year

Thus, DEVIATION is a proxy of the extent of managerial opportunism. A zero value implies honest reporting of the "true" pension values, while larger values imply manipulations by managers. The following regression is now estimated to test the above hypothesis.

$$\text{DEVIATION} = \beta_0 + \beta_1 \text{ BOARDBUSY} + \beta_2 \text{ BOARDINDEP} + \beta_3 \text{ BOARDMTGS} + \beta_4 \text{ BOARDSIZE} + \beta_5 \text{ CEODUALITY} + \beta_6 \text{ DIRABSENT} + \beta_7 \text{ DAR} + \beta_8 \text{ FUNDINGRATIO} + \beta_9 \text{ NONAUDITFEE} + \beta_{10} \text{ REGULATED} + \beta_{11} \text{ ROA} + \beta_{12} \text{ SIZE} + \beta_{13} \text{ TAXRATE} + \varepsilon$$

Where:

All the variable used in the analysis are summarized in table 1.

(Insert table 1 about here)

BOARDBUSY =	Proportion of total directors that have 3 or more directorships
BOARDINDEP =	Proxy for board independence, equal to the proportion of outside (independent) directors
BOARDMTGS =	Number of board meetings held during the year
BOARDSIZE =	Total number of directors on the board
CEODUALITY =	Equals 1 if CEO is also the chairman of the board; 0 otherwise
DIRABSENT =	Proportion of directors that have failed to meet the board's minimum attendance standards
DAR =	Debt to assets ratio
FUNDINGRATIO =	Ratio of the pension plan assets deflated by the projected benefit obligations
NONAUDITFEE =	Measure of lack of auditor independence; equal to the ratio of non-audit fees to the total auditor's fees.
REGULATED =	Equals 1 if the firm belongs to a regulated industry; 0 otherwise
ROA =	Return on assets
SIZE	Natural logarithm of total assets of the firm in $ million
TAXRATE =	Effective tax rate; equals federal taxes payable deflated by income before taxes

Fich and Shivdesani (2006) report that firms with busy boards, those in which a majority of outside directors hold three or more directorships, exhibit weak governance. They have lower market-to-book ratios and weaker profitability. BOARDBUSY, thus, represents weaker internal monitoring and would lead to more opportunistic behavior by managers. This variable is predicted to have a positive sign. More independent boards (BOARDINDEP) will monitor managers more stringently and so the variable is expected to have a negative sign. Boards that meet frequently have been shown to be more effective (Yang and Krishnan 2005). Thus, BOARDMTGS is predicted to have a negative sign. Jensen (1993) and Yermack (1996) show that large boards (proxied by BOARDSIZE) are more unwieldy and less effective. BOARDSIZE will therefore have a positive sign. Raghunandan and Rama (2003) and Dechow et al.

(1996) show that firms with CEO duality tend to have poorer management. As a result, CEODUALITY is expected to have a positive sign. Director absenteeism (proxied by DIRABSENT) will also adversely affect the quality of corporate governance and encourage managerial opportunism. DIRABSENT should have a positive sign.

The rest of the variables, DAR, FUNDINGRATIO, NONAUDITFEE, REGULATED, ROA, SIZE, TAXRATE, are control variables based on prior research (Asthana 1999). Firms with higher DAR will be closer to debt-covenant violations (Press and Weintrop 1990) and are likely to indulge in more manipulations of pension plans to reduce visibility (positive coefficient). Similarly firms with low FUNDINGRATIO will have more incentives to manipulate pension liabilities to increase the ratio and avoid visibility costs (Asthana 1999). Thus, FUNDINGRATIO should have an inverse relationship (negative sign) with DEVIATION. Firms in regulated industries and with better quality (more independent) auditors will have more intensive external monitoring (Asthana 2001). As a result, REGULATED will be negatively associated and NONAUDITFEE will be positively associated with DEVIATION. More profitable firms have fewer incentives to manipulate earnings through pension expense minimization. Thus ROA should have a negative coefficient. Larger firms will be more visible and will therefore be at greater risk of being detected and will exhibit less managerial opportunism. SIZE will, therefore, have a negative sign. Finally, firms with higher TAXRATE have greater incentives to maximize their tax benefits by over funding their pension funds (Asthana 1999). They can achieve this by over-reporting their pension liabilities. This leads to a predicted positive coefficient on TAXRATE.

4. Sample

I start with all the firms available on 2008 Compustat-Pension File (24,765 observations). The sample is confined to a five-year period of 2003 to 2007 (14,554 observations). I intentionally exclude the pre-2003 years to focus on the post-SOX and post-Enron-Andersen period. This avoids the turmoil in US economy during the Enron-Andersen scandal and the immediate aftermath of post-September 11, 2001 terrorist attacks. Complete information is only available for 2,403 firms (9,100 firm-year observations). I then randomly select 1,000 firms from this subset and collect data on board governance from proxy statements filed with the Securities and Exchange Commission (SEC). The final sample consists of 3,876 firm-year observations for 1,000 firms. The sample selection procedure is explained in table 2.

(Insert table 2 about here)

5. Results

Table 3 presents the sample distribution across industries defined along Dopuch et al. (1987) and its comparison with the population distribution. Manufacturing and Transportation and Utilities are overrepresented and Financial and Service industries are underrepresented.

(Insert table 3 about here)

Table 4 reports portfolio tests based on a high portfolio (values of DEVIATION above median level) and a low portfolio (values of DEVIATION equal to or below median level). Of the six corporate governance variables, DIRABSENT is insignificantly different between high and low manipulation portfolios; BOARDBUSY, BOARDSIZE, and CEODUALITY are larger for high portfolio than low portfolio; and BOARDINDEP and BOARDMTGS are smaller for high portfolio than low portfolio. Thus, managers of firms with busy and large boards with CEOs serving as Chairman are more likely to indulge in opportunistic behavior, consistent with theory in section 2. On the other hand, managers of firms with boards dominated by more independent outside directors and boards that are more active and meet frequently are less likely to behave opportunistically when making discretionary accounting choices, again consistent with theory.

(Insert table 4 about here)

All the control variables (except FUNDINGRATIO) are significantly different between the two portfolios and in the predicted directions. Managers of firms with higher debts and tax rates and firms that are audited by less independent auditors are likely to manipulate actuarial pension assumptions more. On the other hand, larger and more profitable firms and firms that operate in regulated industries are less likely to exhibit opportunistic behavior.

Finally, table 5 presents the multivariate regression results. The regression has an adjusted r-square of almost 3% that is significant at less than 1%. Overall, the results are similar to those of the portfolio tests. The coefficients of BOARDBUSY, BOARDSIZE and CEODUALITY are significant and positive and the coefficients of BOARDINDEP and BOARDMTGS are significant and negative. Coefficient of DIRABSENT is insignificant. The variables BOARDBUSY, BOARDSIZE and CEODUALITY are synonymous with weak corporate governance and BOARDINDEP and BOARDMTGS are synonymous with strong corporate governance. Thus, consistent with the hypothesis, managers of firms with strong (weak) corporate governance are less (more) likely to make pension related actuarial assumptions in an opportunistic manner.

(Insert table 5 about here)

Regression Diagnostics

Various diagnostic tests are conducted on the regression in table 5. White's (1980) test for heteroskedasticity rejects the null of homoskedastic errors. Heteroskedasticity corrected t statistics are estimated (not reported) but none of the earlier conclusions are changed. Multicollinearity checks are also conducted using Belsley, Kuh, and Welsch's (1980) procedure. Variance inflation factors are reported in table 5 and are all less than 2 and, thus, insignificant for all the variables. Finally, tests for outliers are also conducted using Belsley, Kuh, and Welsch's (1980) procedure. Studentized residuals are computed (without the current observation) and any observation deviating more than two standard deviations from the mean studentized residual is deleted. Results (not reported) do not change qualitatively when outliers are removed. Thus, the results appear to be robust with regards to heteroskedasticity, multicollinearity, and outliers.

6. Conclusion

There is ample evidence in extant research that managers make discretionary accounting choices opportunistically. There is mixed evidence that firms with effective corporate governance are more likely to curb such behavior. This paper applies these findings to the area of pension accounting where managers have been shown to manipulate actuarial assumptions when reporting pension numbers. With the growing population of retirees in the US, along with the pending mass retirement of the Baby Boomers, the management of pension funds is an extremely critical issue that will affect the future income of all current and future retirees. The findings in this paper show that effective internal monitoring in the form of strong corporate governance is able to act as a watchdog and curtail opportunistic behavior of managers in the area of pension plan management. These findings should be of interest to employers, employees, regulatory agencies, and researchers. To the extent that US pension plans are similar to those in other countries, the findings should be applicable to such countries as well.

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Table 1. Variable definitions

Variable	Definition
Dependent Variables	
DISCRATE	The discount rate assumed by defined-benefit pension plans to discount their future cash payments, under SFAS 87 (Financial Accounting Standards Board 1985)
DEVIATION	The absolute value of DISCRATE minus the mean DISCRATE, deflated by the standard deviation of DISCRATE for the 2-digit SIC industry for that year
Governance Variables	
BOARDBUSY	Proportion of total directors that have three or more directorships
BOARDINDEP	Proxy for board independence, equal to the proportion of outside (independent) directors
BOARDMTGS	Number of board meetings held during the year
BOARDSIZE	Total number of directors on the board
CEODUALITY	Equals 1 if CEO is also the chairman of the board; 0 otherwise
DIRABSENT	Proportion of directors that have failed to meet the board's minimum attendance standards
Control Variables	
DAR	Debt to assets ratio
FUNDINGRATIO	Ratio of the pension plan assets deflated by the projected benefit obligations
NONAUDITFEE	Measure of lack of auditor independence; equal to the ratio of non-audit fees to the total auditor's fees.
REGULATED	Equals 1 if the firm belongs to a regulated industry; 0 otherwise
ROA	Return on assets
SIZE	Natural logarithm of total assets of the firm in $ million
TAXRATE	Effective tax rate; equals federal taxes payable deflated by income before taxes

Table 2. Sample selection procedure

Procedure	Number of Observations	Number of Firms
Firms available on 2008 COMPUSTAT Database (Pension File)	24,765	4,559
Data pertaining to the period 2003-2007	14,554	3,695
Complete Pension and Financial Variables Available	9,100	2,403
Data available on Proxy Statements for Random Sample of 1,000 firms	3,876	1,000

Table 3. Sample distribution across industries

Industry	Sample Observations	Sample Percentage	Compustat Population
1. Agriculture, Forestry, and Fishing	13	0.34%	0.32%
2. Mining	145	3.74%	5.21%
3. Construction	20	0.52%	1.05%
4. Manufacturing	1,890	48.76%	32.84%
5. Transportation and Utilities	598	15.43%	9.04%
6. Wholesale	104	2.68%	3.45%
7. Retail	154	3.97%	5.39%
8. Financial Services	722	18.63%	23.66%
9. Services	215	5.55%	17.58%
10. Others	15	0.39%	1.45%
Total	3,876	100.00%	100.00%

The industry classification is based on Dopuch et al. (1987), and includes the following SIC codes:

Agriculture, Forestry, and Fishing	(SIC: 100-999)
Mining	(SIC: 1000-1499)
Construction	(SIC: 1500-1999)
Manufacturing	(SIC: 2000-3999)
Transportation and Utilities	(SIC: 4000-4999)
Wholesale	(SIC: 5000-5199)
Retail	(SIC: 5200-5999)
Financial Services (SIC:	6000-6999)
Services	(SIC: 7000-8999)
Others	(SIC < 100 or > 8999)

Table 4. Portfolio tests

Variable	Mean (High)	Mean (Low)	High – Low	t-Statistics
Dependent Variables				
DISCRATE	6.2458	6.0508	***0.1950	2.61
DEVIATION	0.8342	0.2407	***0.5935	55.98
Governance Variables				
BOARDBUSY	0.0860	0.0748	**0.0112	2.25
BOARDINDEP	0.2932	0.3545	***-0.0613	-5.09
BOARDMTGS	7.6369	8.0032	**-0.3663	-2.35
BOARDSIZE	10.2790	9.2858	***0.9932	4.43
CEODUALITY	0.8312	0.7875	***0.0437	4.29
DIRABSENT	0.0058	0.0046	0.0012	0.22
Control Variables				
DAR	0.3943	0.3464	***0.0479	5.89
FUNDINGRATIO	0.6874	0.7410	-0.0536	-1.53
NONAUDITFEE	0.1944	0.1773	***0.0171	2.79
REGULATED	0.2877	0.3820	***-0.0943	-6.23

ROA	0.0432	0.0462	**-0.0030	-2.22
SIZE	8.3835	8.6902	***-0.3067	-7.58
TAXRATE	0.2952	0.2907	*0.0045	1.70

High (Low) implies portfolio with values of DEVIATION above (less than or equal to) the median value. See table 1 for variable definitions.
*** implies two-sided significance at 1%; ** implies two-sided significance at 5%; and * implies two-sided significance at 10%.

Table 5. Regression tests

	Variable	Predicted Sign	Estimated Coefficient	t-Statistics	Variance Inflation Factor
			Dependent Variable = DEVIATION		
	Intercept		***0.7256	25.84	0
	Governance Variables				
	BOARDBUSY	+	**0.0979	2.53	1.4926
	BOARDINDEP	–	***-0.1335	-8.64	1.8355
	BOARDMTGS	–	***-0.0051	-3.61	1.0537
	BOARDSIZE	+	***0.0085	4.40	1.2111
	CEODUALITY	+	***0.0697	3.86	1.3864
	DIRABSENT	+	-0.0920	-0.42	1.0466
	Control Variables				
	DAR	+	***0.0517	3.46	1.3309
O	FUNDINGRATIO	–	***-0.0996	-5.81	1.0755
	NONAUDITFEE	+	***0.0877	2.69	1.5608
	REGULATED	–	***-0.0309	-2.62	1.3896
	ROA	–	**-0.1642	-1.96	1.1054
	SIZE	–	***-0.0116	-3.50	1.1109
	TAXRATE	+	**0.0925	2.00	1.2661
	Observations		3,876		
Square	Adjusted R-		0.0282		
	F- Value		20.89		
	Probability > F		<0.0001		
	White's χ^2		197.45		
	Probability > χ^2		<0.0001		

See table 1 for variable definitions.
*** implies two-sided significance at 1% and ** implies two-sided significance at 5%.