CEO Pay/Firm Performance Sensitivity in the Insurance Industry

Alex H. Wilson*, Eric James Higgins**

Abstract: This study compares CEO compensation practices and sensitivities with a control group of non-insurance service companies. This study extends the current literature in three ways. First, the sensitivity of CEO compensation is measured using three different measures of firm performance: size, accounting earnings, and market return. Second, the components of CEO compensation are examined individually. Third, compensation practices across different categories of insurers are examined. Results show that CEOs of insurance firms have compensation packages that are similar to those of non-insurers. However, CEOs of property/casualty and insurance brokerage firms have significantly lower salaries and option compensation than those of non-insurance firms. Total compensation in the insurance industry is sensitive to both market returns and firm size but compensation in non-insurance companies is sensitive only to market returns. Additionally, significant differences in the sensitivities of the individual components of compensation exist between insurance and non-insurance firms.

INTRODUCTION

The relation between chief executive officer (CEO) compensation and firm performance is extensively studied in the finance literature. Few studies, however, examine compensation at the industry level. Compensation in the manufacturing sector (Lewellen, 1968; and many others) and the banking industry (Baro and Baro, 1990; Hubbard and Palia, 1995) has been studied but there is little research on CEO compensation in the insurance industry. The goal of this study is to provide a comprehensive examination of CEO compensation in the insurance industry and to compare the insur-

* California State University, Long Beach.
**Drexel University.

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ance industry to other service firms. In this paper we examine three facets of CEO compensation in the insurance industry. First, we compare CEO compensation practices and sensitivities in the insurance industry with non-insurance service firms. As a further extension of the existing literature, we examine compensation sensitivity to size, accounting earnings, and market return. Second, we examine the individual components of CEO compensation packages for insurance and non-insurance firms. Third, we compare compensation across different categories of insurance companies.

There are relatively few studies that examine CEO compensation practices in the insurance industry. Mayers and Smith (1992) examine differences in the compensation packages of mutual versus stock insurance companies. They find that the compensation of mutual executives is lower than that of stock executives. Additionally, they find that the compensation of mutual executives is less sensitive to firm performance, as measured by accounting earnings, than that of stock executives. Ke, Petroni, and Safieddine (1992) examine the sensitivity of CEO compensation to accounting performance for a sample of publicly and privately held property and liability insurance companies. They find that compensation in publicly held insurance companies is more sensitive to accounting performance than that in privately held insurance companies.

In previous work, Mayers and Smith (1981, 1986) argue that the type of firm ownership is a major determinant of CEO compensation. They hypothesize that the CEOs of mutual insurance companies will be paid less and receive less in incentive compensation than the CEOs of stock insurance companies. Agarwal (1981) finds that human capital factors and job complexity explain the variety of fixed salary components among life insurance CEOs. Lamm-Tennant and Starks (1993) find that stock companies are riskier than mutual companies, and that affects their choice of compensation package.

Our analysis has a much broader scope than the previous research on CEO compensation in the insurance industry. The previous literature is focused on only one particular category of insurance firm. Also, the previous literature makes comparisons only between different types of insurance companies. Our study examines different categories of publicly traded insurance companies and compares insurance companies to non-insurance companies. Our study also uses more detailed definitions of compensation and performance than does the previous literature. Our study examines each component of CEO compensation separately and uses three definitions of firm performance (size, accounting earnings, and market return) to define compensation sensitivity.

The studies of Mayers and Smith (1992) and Ke, Petroni, and Safieddine (1992) use accounting measures of firm performance to measure

compensation sensitivity. By using publicly traded firms, we are able to expand the definitions of firm performance examined. This expansion of performance definition is important because of the emergence of three primary schools of performance definition within the compensation literature. Ciscel and Carroll (1980) define these three different definitions of pay/performance sensitivity as the "market," "neo-classic," and "managerialist" schools of thought.

The market definition of performance assumes that managerial compensation should be sensitive to the market performance of the firm's shares. This school of thought has its roots in the work of Holmstrom (1979). Holmstrom argues that the most effective way to eliminate the agency problem between managers and shareholders is to pay managers amounts commensurate with market performance, thereby aligning managerial and shareholder interests. Currently, the market definition of performance has the most support in the literature. Studies such as Jensen and Murphy (1990) and Boschen and Smith (1995) find a strong relationship between market performance and CEO compensation.

The other schools of thought, however, have received support in the literature. The neo-classic school of thought assumes that CEO compensation should be aligned with accounting performance. Studies such as Lewellen (1968) and Antle and Smith (1986) find that CEO compensation is more sensitive to accounting performance than market performance. The managerialist school of thought assumes that compensation and firm size should be related. Baumol (1959) and McGuire, Chiu, and Elbing (1962) find that firm size, and not accounting earnings, is the primary determinant of CEO compensation. Thus, there exists some conflict within the literature as to the correct definition of firm performance. Therefore, we believe it is important to examine all three performance definitions to determine which has the greatest impact in the insurance industry.

DATA

The sample for this study consists of compensation data for 62 insurance firms and a control sample of non-insurance service industry firms from the S&P 500 Index for the years 1992 through 1997 inclusive. The 62 insurance firms are spread among the five SIC insurance company codes, with 20 firms being life and health insurers, 28 being property and casualty insurance firms, 9 being surety (multi-line) insurers, and five being insurance brokerage firms.[1] The firms selected represent the universe of the firms from SIC codes 6311 though 6411, drawn from Standard and Poors ExecuComp database. The scope of the database is all publicly traded

companies that appear either on the S&P 500 or on the Mid Cap 400 indices. A list of the firms included in the insurance group appears in Table 1. The control sample constituents are members of the S&P 500 Index that are not SIC coded from 6311 to 6411. Further, the adjusted S&P 500 Index is segmented into manufacturing and service groups. Firms with SICs of 3999 and above are classified as service, those and below 3999 are classified as manufacturing firms. Thus, the final control sample includes all non-insurance companies classified as service firms in the S&P 500 Index.

In each year of the sample period, salary, bonus, option grant valuation, and other compensation are drawn directly from the ExecuComp database. ExecuComp gathers its information from the annual proxy statements of each company. In the database, salary, bonus, and other compensation are reported as they appear in the firms' proxy statements. Option compensation is defined using the ExecuComp Black-Scholes valuation of executive stock option grants made during the year. Finally, changes in wealth are computed for each year by multiplying the one-year shareholder return, as computed by ExecuComp, by the number of shares held by the CEO at the beginning of the year. This definition of wealth change is similar to that used by Jensen and Murphy (1990).

Additional firm data, including diluted earnings per share, one-year change in revenue, and one-year shareholder return, also are extracted from the ExecuComp database. Missing data elements are found from the individual firm proxy statements and individual year 10-K filings. All data are examined on a pooled, cross-sectional basis. Each firm year is treated a separate observation. This treatment of the data is similar to that of Jensen and Murphy (1990) and Ke, Petroni, and Safieddine (1992).

METHODOLOGY

Levels and Composition of CEO Compensation

Compensation levels and the composition of compensation packages are examined for each of the four individual insurance firm categories (insurance brokers, life/health insurance, multi-line, and property/casualty), for the entire insurance industry and for the control sample. Annual changes in compensation are first examined in total then the compensation packages are segmented into their constituent components: salary, bonus, option, other compensation, and change in CEO wealth. In addition to absolute dollar amounts of the compensation, the percentage usage relative to total compensation for each component is examined. This step

Table 1. Company List[a]

Company	Begin	End	Company	Begin	End
Insurance Brokers			**Property/Casualty**		
Alexander & Alexander	1993	1995	Allied Group Inc.	1994	1997
Aon Corp.	1992	1997	Allstate Corp.	1993	1997
Gallagher (Arthur J.) & Co.	1994	1997	American Finl. Group Inc.	1993	1997
Hilb Rogal & Hamilton Co.	1992	1997	American International Group	1992	1997
Marsh & McLennan Cos.	1992	1997	Berkshire Hathaway -Cl. A	1992	1997
Life And Health Insurance			Chubb Corp.	1992	1997
Aetna Inc.	1992	1997	Cincinnati Financial Corp.	1992	1997
AFLAC Inc.	1992	1997	CNA Financial Corp.	1992	1997
Capitol American Finl. Corp.	1993	1995	Continental Corp.	1993	1993
Cigna Corp.	1992	1997	Fremont General Corp.	1993	1997
Conseco Inc.	1996	1997	General Re. Corp.	1992	1997
Hartford Life Inc. -Cl. A	1997	1997	Hartford Finl. Svcs. Grp. Inc.	1996	1997
Jefferson-Pilot Corp.	1992	1997	HSB Group Inc.	1993	1997
Kemper Corp.	1993	1994	Integon Corp./DE	1994	1996
Life Partners Group Inc.	1994	1995	Loews Corp.	1992	1997
Life Re. Corp.	1993	1997	NAC Re. Corp	1997	1997
Lincoln National Corp.	1993	1997	National Re. Corp.	1993	1995
Protective Life Corp.	1994	1997	Orion Capital Corp.	1993	1997
Provident Cos Inc.	1993	1997	Progressive Corp.-Ohio	1992	1997
Reliastar Financial Corp.	1997	1997	Safeco Corp.	1992	1997
Torchmark Corp.	1992	1997	Selective Ins. Group Inc.	1993	1997
Transamerica Corp.	1992	1997	St. Paul Cos.	1992	1997
Travelers Group Inc.	1993	1997	Transatlantic Holdings Inc.	1993	1997
Unum Corp.	1992	1997	Travelers Ppty. Cas. Cp. -Cl. A	1996	1997
Uslife Corp.	1993	1996	Trenwick Group Inc.	1994	1997
Washington Natl. Corp.	1994	1996	Unitrin Inc.	1993	1996
Multi-line			USF&G Corp.	1993	1996
American Bankers Ins. Group	1992	1996	Zenith National Insurance Cp.	1994	1997
Capital Re. Corp.	1994	1997			
Cmac Investment Corp.	1994	1997			
Enhance Financial Svcs. Grp.	1993	1997			
Executive Risk Inc.	1996	1997			
Frontier Ins. Grp. Inc.	1994	1997			
Old Republic Intl. Corp.	1996	1997			
Fidelity National Finl .Inc.	1993	1997			
First Amer. Finl. Cp. CA	1993	1997			

[a]The following table lists, by category, all insurance firms utilized in the study. The years for which the firm is included in the sample are noted. S&P 500 firms excluded from the control sample are listed in italics.

should remove any size effects from the examination of the usage of each of the compensation components.

It is anticipated that there will be significant differences in compensation levels between insurance firms and the control sample. As Smith and Watts (1992) show, regulated firms have very different compensation packages than non-regulated firms. Specifically, they find that regulated firms are more likely to use salary and bonus compensation and less likely to use incentive compensation, such as stock options. Intuitively, there is a parallel between the risk of the firm and the risk of the compensation package for the CEO. Since insurance firms are significantly regulated at both the federal and state levels, on a level higher than that of their non-insurance colleagues, it is anticipated that insurance firms will show a tendency to favor lower-risk forms of compensation.[2] Further, following Smith and Watts, it is anticipated that total compensation packages should be smaller for insurance firms than for comparable firms because of the higher degree of external monitoring. To test these hypotheses, pairwise comparisons of the dollar amounts of the components of compensation are made between the insurance industry categories and the control sample.

Estimation of Pay/Performance Sensitivity

Firm performance is defined from three different perspectives: the market performance definition of Jensen and Murphy (1990), the managerialist definition of Baumol (1959), and the neoclassical perspective of Lewellen (1968). The market definition stresses shareholder return, the managerial definition stresses changes in firm size, and the neoclassical focuses on accounting profit. The sensitivity of the change in insurance company CEO total compensation to the three firm performance measures is examined. Since the relationship of interest is how firm performance affects compensation packages, firm performance is examined on a one-year lagged basis. The following model is estimated utilizing ordinary least squares regression (OLS) to determine the sensitivity of total CEO compensation to the three definitions of firm performance.

$$\Delta COMP_{t,g} = \alpha + \beta_1 SHRRET_{t-1,g} + \beta_2 \Delta REV_{t-1,g} + \beta_3 \Delta EPS_{t-1,g} + \varepsilon_t \quad (1)$$

$\Delta COMP_{t,g}$ is the change from year t–1 to year t in the sum of salary, bonus, options, other compensation, and change in wealth for firm g. $SHRRET_{t,g}$ is the one-year shareholder return for firm g in year t–1, ΔREV_{t-1} is the change in revenue from year t–2 to year t–1for firm g, and $\Delta EPS_{t,g}$ is the change in fully diluted earnings per share from year t–2 to year t–1 for firm g.

Equation (1) is estimated for the insurance industry as a whole, each segment of the insurance industry, and the control sample. There exists the possibility of correlation and autocorrelation in the independent variables of the model. By using first differences and changes, we attempt to minimize the econometric problems associated with the potential autocorrelation within the model. The correlation matrix, not reported here, shows only a slight relation between lagged change in revenue and lagged shareholder return. Tests for autocorrelation show no significant relations.

The same model is estimated for each of the salary components individually. The models are estimated for the insurance industry as a whole and the control sample.[3, 4]

$$\Delta SAL_{t,g} = \alpha + \beta_1 SHRRET_{t-1,g} + \beta_2 \Delta REV_{t-1g} + \beta_3 \Delta EPS_{t-1,g} + \varepsilon_t \quad (2)$$

$$\Delta BON_{t,g} = \alpha + \beta_1 SHRRET_{t-1,g} + \beta_2 \Delta REV_{t-1,g} + \beta_3 \Delta EPS_{t-1,g} + \varepsilon_t \quad (3)$$

$$\Delta OPT_{t,g} = \alpha + \beta_1 SHRRET_{t-1,g} + \beta_2 \Delta REV_{t-1,g} + \beta_3 \Delta EPS_{t-1,g} + \varepsilon_t \quad (4)$$

$$\Delta OTH_{t,g} = \alpha + \beta_1 SHRRET_{t-1,g} + \beta_2 \Delta REV_{t-1,g} + \beta_3 \Delta EPS_{t-1,g} + \varepsilon_t \quad (5)$$

$$\Delta WEALTH_{t,g} = \alpha + \beta_1 SHRRET_{t-1,g} + \beta_2 \Delta REV_{t-1,g} + \beta_3 \Delta EPS_{t-1,g} + \varepsilon_t \quad (6)$$

RESULTS

Compensation Levels

Table 2 shows the average annual compensation by component and in total for each of the individual insurance firm categories, the insurance industry as a whole, and the control sample. As expected, the average total compensation package for insurance firms is less than that of the control sample. Closer examination shows some significant differences. Total compensation varies widely among the insurance categories. Property and casualty and insurance broker CEO total compensation packages are lower than those for the other insurance groups. The opposite holds for multiline insurance firms, where the compensation, most notably option compensation, is larger than that for both the other insurance groups and the control sample.

Table 3 contains pairwise comparisons of the salary components between insurance companies and the control sample.[5] The insurance industry as a whole appears to have significantly lower salary, bonus, and other compensation than the control sample, but they utilize the same level of option compensation. This result seems to contradict the findings of

Table 2. Average CEO Compensation by Components[a]

Component	Insurance Brokers (N = 25)	Life/Health (N = 65)	Multi-line (N = 38)	Property/ Casualty (N = 142)	Total Industry (N = 270)	Control Sample (N = 1,079)
Salary	686,705	775,886	926,763	585,256	688,606	744,392
	(327,220)	(268,343)	(302,178)	(267,694)	(303,806)	(299,431)
Bonus	503,150	1,016,943	1,289,609	504,057	738,005	1,107,640
	(443,431)	(2,418,882)	(1,623,283)	(504,210)	(1,414,602)	(3,993,741)
Option	641,613	1,990,829	8,827,202	801,195	2,202,398	2,098,418
	(938,876)	(5,317,624)	(24,624,674)	(1,613,352)	(9,952,324)	(8,132,241)
Other	142,898	87,387	114,858	105,401	105,865	200,094
	(143,640)	(157,132)	(138,897)	(208,446)	(182,763)	(665,744)
Wealth	503,878	281,716	518,745	192,362	288,653	368,202
	(1,072,533)	(872,298)	(1,110,907)	(1,057,862)	(1,027,949)	(1,216,783)
Total	2,478,244	4,152,760	11,677,177	2,189,012	4,023,919	4,518,746
	(2,359,917)	(7,907,706)	(26,621,680)	(2,508,563)	(11,244,174)	(9,959,270)

[a]The table presents average annual CEO compensation for insurance companies and a control sample of non-insurance service firms listed on the S&P 500 Index. The samples are drawn from the S&P ExecuComp data base from 1992 through 1997. Compensation is examined in total and by component. The components of compensation are salary, bonus, option compensation, dividend compensation, other compensation, and wealth changes. Salary, bonus, and other compensation are as reported on annual proxy statements. Option compensation is measured by using the S&P ExecuComp modified Black/Scholes methodology. Wealth changes are share price increases during a given year.

Table 3. Difference Between Insurance Company CEO Compensation and Control Sample CEO Compensation[a]

Salary Component	Insurance Brokers	Life/Health Insurance	Multi-line Insurance	Property/ Casualty Insurance	Total Insurance Industry
Salary	–57,687	31,494	182,371**	–159,136**	–55,786**
	(–0.8730)	(0.9126)	(3.6577)	(–6.5641)	(–3.2002)
Bonus	–604,489**	–90,697	181,969	–603,583**	–369,635*
	(–4.0168)	(–0.2802)	(0.6274)	(–4.6886)	(–1.6351)
Option	–1,456,805**	–107,589	6,728,785*	–1,297,223**	103,980
	(–4.6884)	(–0.1527)	(1.6812)	(–4.5973)	(0.4998)
Other	–57,196*	–112,707**	–85,236**	–94,693**	–94,229**
	(–1.6268)	(–4.0084)	(–2.8125)	(–3.5423)	(–3.4698)
Wealth	135,676	–86,487	150,542	–175,840*	–79,550)
	(0.6233)	(–0.7563)	(0.8183)	(–1.8280)	(–0.5188)
Total	–2,040,502**	–365,986	7,158,430*	–2,329,734**	–494,828
	(–3.6374)	(–0.3565)	(1.6535)	(–6.3118)	(–0.1355)

[a]This table contains pairwise comparisons of compensation components between insurance companies and a control sample of non-insurance service firms listed on the S&P 500 Index. The components of compensation are salary, bonus, option compensation, other compensation, and wealth changes. Salary, bonus, and other compensation are as reported on annual proxy statements. Option compensation is measured by the S&P ExecuComp modified Black/Scholes methodology. Wealth changes are share price increases during a given year. An asterisk indicates a significant difference at the 10 percent level and a double asterisk indicates significance at the 5 percent level. The t-statistic is given in parentheses.

Smith and Watts (1992), who show lower salary and bonus compensation and less usage of incentive compensation in regulated industries.

Table 3 also shows that there are some differences across the different insurance industry categories. Insurance brokers and property/casualty companies have significantly lower total compensation than the control sample, but multi-line firms have significantly higher total compensation than the control sample. Insurance brokers and property/casualty companies use significantly lower option compensation than the control sample, but multi-line companies use significantly higher option compensation. Thus, while the results for the whole industry do not support the findings of Smith and Watts (1992), the results for the property/casualty firms are consistent with Smith and Watts.

Table 4. Utilization of Compensation Components as a Percentage of Total Compensation[a]

Component	Insurance Brokers (N = 25)	Life/ Health (N = 65)	Multi-line (N = 38)	Property/ Casulaty (N = 142)	Total Industry (N = 270)	Control Sample (N = 1,079)
Salary	27.71	18.68	7.94	26.74	17.11	16.47
Bonus	20.30	24.49	11.04	23.03	18.34	24.51
Option	25.89	47.94	75.59	36.60	54.73	46.44
Other	5.77	2.10	0.98	4.81	2.63	4.43
Wealth	20.33	6.78	4.44	8.79	7.17	8.15

[a]The table contains the percentage utilization of the components of CEO compensation for insurance companies and a control sample of non-insurance service firms. The components of compensation are salary, bonus, option compensation, other compensation, and wealth changes. Salary, bonus, and other compensation are as reported on annual proxy statements. Option compensation is measured by the S&P ExecuComp modified Black/Scholes methodology. Wealth changes are share price increases during a given year.

Table 4 shows the percentage usage of the compensation components for the insurance industry groups, the industry as a whole, and the control sample. Examining percentages should remove any bias occurring as a result of size differences between the two groups. The insurance group as a whole fairly closely mirrors the control sample, but there is an interesting switch between bonus and option compensation. Insurance companies as a whole expend 54.73 percent of their CEO compensation dollars on options, as opposed to 46.44 percent for the control sample. Conversely, bonus compensation represents 24.51 percent of the control sample, but only 18.34 percent for insurance companies as a whole. Contrary to expectations, these findings suggest that the insurance industry is more aggressive in using riskier compensation components.

More significant are the differences among the individual categories within the insurance industry. Property/casualty and insurance brokerage firms utilize a higher percentage of lower-risk compensation compared with multi-line firms and life and health firms. The property/casualty firms and insurance brokers also are less reliant on option compensation than are multi-line and life/health firms. Property/casualty firms have 36.6 percent of their compensation dollars in options, and insurance broker firms have 25.89 percent. These figures compare with 47.94 percent and 75.59 percent for insurance brokers and multi-line firms, respectively.

When individual insurance groups are compared with the control sample, a continuum of compensation practices appears. At the extreme are the multi-line firms, which are heavily option-oriented. The control sample and life/health companies are toward the center of the continuum, showing a balance between low- and high-risk compensation components, followed by the property/casualty and insurance broker groups, which use a very conservative compensation mix. Property and casualty insurers exhibit compensation practices consistent with the theories of Smith and Watts (1992), while the life and health insurers mirror more closely the practices of the non-insurance service firms.

Pay/Performance Relationships

Tables 5 and 6 report the pay/performance sensitivity estimates for the insurance companies and the control sample. Table 5 examines the sensitivity of the change in total compensation to the three definitions of firm performance—market-based, accounting-based, and size-based—used in the study. These results suggest that while insurance firms as a whole are not significantly different from the control sample, there are significant differences within the industry. Both the insurance firms and the control sample show a significant relation to market performance. Unlike the control sample, however, insurance brokers and life/health firms show statistically significant relationships between total compensation and firm size.[5] Property/casualty firms show a negative and significant relationship between changes in sales and compensation. The results suggest that CEOs of insurance brokers and life/health firms are rewarded via compensation both for increasing the return of shareholders and for increasing the size of the firm by increasing sales. Property and casualty CEOs, on the contrary, are negatively rewarded for increases in revenue. Thus, these types of insurance firms behave more in the managerialist tradition of Baumol (1959) than does the control sample.

Table 6 shows the results from estimating the sensitivity of each compensation component to the firm-performance measures. Panel A contains the sensitivity estimates for salary, Panel B for bonus compensation, Panel C for option compensation, Panel D for other compensation, and Panel E for wealth changes.

For bonus compensation, the sensitivity estimates for the insurance group are similar to those of the control sample; there are no statistically significant sensitivities of bonus compensation to firm performance. Significant differences were found between the insurance industry and the control sample for salary, option, other, and wealth compensation. CEOs are rewarded with salary increases for higher shareholder returns for the control sample, but not for insurance companies. In both groups, the

Table 5. Sensitivity of Total CEO Compensation to Firm Performance for Insurance Firms and a Control Sample[a]

	Model: $\Delta COMP_{t,g} = \alpha + \beta_1 SHRRET_{t,g} + \beta_2 \Delta EPS_{t,g} + \beta_3 \Delta REV_{t,g} + \varepsilon_t$ Coefficient (with t-statistic in parentheses)				
Sample	Intercept	Δ REV	Δ EPS	SHRRET	R-squared
Insurance Brokers	156968 (0.7170)	0.5521** (2.863)	–0.2203 (–1.0284)	0.2643 (1.2043)	0.4760
Life/Health	–1309442 (–1.0272)	0.6035** (4.7071)	–0.1463 (–1.1466)	0.2097* (1.6675)	0.3762
Multi-line	–3810248 (–0.9569)	–0.0233 (–0.1343)	–0.1635 (–0.9052)	0.6195** (3.4148)	0.0144
Property/Casualty	371613 (–1.3149)	–0.2162** (–1.9279)	0.1122 (1.0179)	0.1124 (1.0824)	0.2660
Total Insurance Industry	–546031 (–0.7442)	0.0068 (0.0893)	–0.0098 (–0.1304)	0.2809** (3.8534)	0.0631
Control Sample	81568 (0.3019)	0.0296 (1.2172)	–0.0057 (–0.2375)	0.1116** (4.5721)	0.0130

[a]This table estimates the sensitivity of CEO compensation to three firm performance measures—size, accounting earnings, and market return—for insurance companies and a control sample of S&P 500 non-insurance service firms. The dependent variable $\Delta COMP_{t,g}$, measures change in CEO compensation for firm g in year t. The firm-performance measures are $\Delta REV_{t,g}$, which is the change in revenue from year t–2 to year t–1 for firm g; $\Delta EPS_{t,g}$, which is the change in fully diluted earnings per share from year t–2 to year t–1 for firm g, and $SHRRET_{t,g}$, which is the one-year shareholder return for firm g in year t–1. An asterisk indicates that the coefficient is significant at the 10 percent level and a double asterisk indicates the coefficient is significant at the 5 percent level.

intercept is significant, suggesting that other factors, such as human capital components, are contributors to compensation levels. An unexpected result is a statistically significant negative association between changes in accounting profits and salaries for the control sample.

A striking difference occurs in option compensation, as reported on Panel C. Insurance firm CEOs are significantly rewarded with increased option compensation for changes in revenue, while the CEOs of the control sample receive benefit for changes in shareholder return. For other compensation, insurance firms are rewarded by increasing shareholder return, but this result does not occur in the control group.

Table 6 shows that insurance companies are quite diverse in their approaches to compensation. In total, they reward shareholder return at a rate comparable to the control sample. The insurance industry as a

Table 6. Sensitivity of Individual Compensation Components to Lagged Firm Performance for Insurance Firms and a Control Sample[a]

Panel A: Sensitivity of salary to lagged firm-performance measures

Model: $\Delta SAL_{t,g} = \alpha + \beta_1 \Delta REV_{t,g} + \beta_2 \Delta EPS_{t,g} + \beta_3 SHRRET, + \varepsilon_t$

	Coefficient (with t-statistic in parentheses)			
Sample	Intercept	ΔREV	ΔEPS	SHRRET
Insurance Firms	43,615**	–0.06962	–0.2400**	–0.10594
	(2.977)	(–0.9677)	(–3.3475)	(–1.5374)
Control Sample	19,524**	0.0776**	0.006403	0.0769**
	(5.6431)	(3.3079)	(0.2779)	(3.2761)

Panel B: Sensitivity of bonus compensation to firm-performance measures

Model: $\Delta BON_{t,g} = \alpha + \beta_1 \Delta REV_{t,g} + \beta_2 \Delta EPS_{t,g} + \beta_3 SHRRET, + \varepsilon_t$

	Coefficient (with t-statistic in parentheses)			
Sample	Intercept	ΔREV	ΔEPS	SHRRET
Insurance Firms	60,440	0.1174	–0.0573	0.0731
	(–1.6284)	(1.5750)	(–0.7708)	(1.0245)
Control Sample	80,421	0.0024	0.0003	0.0087
	(1.0876)	(0.10357)	(0.01089)	(0.3697)

Panel C: Sensitivity of option compensation to firm-performance measures

Model: $OPT_{t,g} = \alpha + \beta_1 \Delta REV_{t,g} + \beta_2 \Delta EPS_{t,g} + \beta_3 SHRRET, + \varepsilon_t$

	Coefficient (with t-statistic in parentheses)			
Sample	Intercept	ΔREV	ΔEPS	SHRRET
Insurance Firms	–167,911	0.1717**	–0.0644	0.1131
	(–0.2796)	(2.3317)	(–0.8772)	(1.6032)
Control Sample	349,847	–0.0055	0.0060	0.0724**
	(1.6353)	(–0.2350)	(0.2595)	(3.0737)

Panel D: Sensitivity of other compensation to firm-performance measures

Model: $\Delta OTH_{t,g} = \alpha + \beta_1 \Delta REV_{t,g} + \beta_2 \Delta EPS_{t,g} + \beta_3 SHRRET, + \varepsilon_t$

	Coefficient (with t-statistic in parentheses)			
Sample	Intercept	ΔREV	ΔEPS	SHRRET
Insurance Firms	349,847	–0.0055	0.0060	0.0724**
	(1.6353)	(–0.2350)	(0.2595)	(3.0737)
Control Sample	108,878*	–0.00338	–0.00096	–0.0033
	(1.693)	(–0.1432)	(–0.0415)	(–0.1396)

(*table continues*)

Table 6. *Continued*

Panel E: Sensitivity of change in wealth to firm-performance measures

Model: $\Delta WEALTH_{t\,t,g} = \alpha + \beta_1\,\Delta REV_{t,\,g} + \beta_2\,\Delta EPS_{t,g} + \beta_3\,SHRRET, + \varepsilon_t$

	Coefficient (with t-statistic in parentheses)			
Sample	Intercept	ΔREV	ΔEPS	SHRRET
Insurance Firms	151,126	0.0428	–0.0472	0.1903**
	(1.4031)	(0.5802)	(–0.6423)	(2.6936)
Control Sample	344,632**	–0.0096	–0.0187	0.0001
	(11.2553)	(–0.4059)	(–0.8070)	(0.0045)

[a]This table estimates the sensitivity of individual compensation components to three firm performance measures for insurance firms and a control sample of non-insurance service firms appearing in the S&P 500. In the regression models, $\Delta SAL_{t,g}$ is the change in salary from year t–1 to year t for firm g, $\Delta BON_{t,g}$ is bonus compensation from year t–1 to year t for firm g, $\Delta OPT_{t,g}$ is the change modified Black/Scholes value of option compensation from year t–1 to year t for firm g, $\Delta OTH_{t,g}$ is the change in value of other compensation from year t-1 to year t for firm g, and $\Delta WEALTH_{t,g}$ is the change in CEO wealth from shares owned over year t for firm g. The firm performance measures used are $\Delta REV_{t,g}$, which is the change in revenue from year t–2 to year t–1 for firm g; $\Delta EPS_{t,g}$, which is the change in fully diluted earnings per share from year t–2 to year t–1 for firm g; and $SHRRET_{t,g}$, which is the one-year shareholder return for firm g in year t–1. An asterisk indicates that the coefficient is significant at the 5 percent level and a double asterisk indicates the coefficient is significant at the 10 percent level.

whole rewards CEOs for improved market performance through changes in wealth and other compensation, whereas the control sample accomplishes the same with increased salary and option grants.

SUMMARY

This study examines the levels, weights, and sensitivities of CEO compensation for insurance firms in comparison to each other and to a control sample of non-insurance service firms in the Standard and Poors 500 index. Although the insurance industry, taken as a whole, appears to have compensation practices similar to those of non-insurance service firms in the control sample, the study finds that insurance firms are hardly monolithic in their compensation practices. Life and health insurance firms have compensation practices that largely mirror those of the non-insurance service firms. Insurance brokers and property casualty firms are much more conservative in their compensation practices than their fellow insur-

ance firms. Multi-line insurance firms are much more aggressive in their use of option-based compensation than either the insurance group as a whole or the control sample.

An analysis of the pay/performance sensitivity reveals that certain categories of insurance firms have stronger compensation sensitivity to changes in revenue in comparison with the control sample. Thus, they follow the managerialist definition of compensation practices much more closely than does the control sample. However, when individual compensation components are examined, insurance industry firms show a reliance on both market-based compensation incentives and accounting-based compensation incentives.

NOTES

[1] Insurance brokerages are not, in the strictest sense, an insurance industry group, in that they are not subject to the rules and regulations of the states in their products. However, they clearly are a related industry and are included in this study for completeness.

[2] See Petroni and Shackelford (1995) for a discussion of the risk characteristics of the regulation of insurers.

[3] The models were estimated for each subset of the insurance industry. Since the results were essentially the same as those for the industry as whole, they are not included.

[4] Lavene tests for heteroskedasticity were performed. Evidence of heteroskedasticity was found for several of the variables, so equal variances are not assumed.

[5] We also ran the model with change in total assets as a proxy for size. The results were similar to those reported. Thus, to be consistent with earlier literature, we chose to use change in sales as the proxy for firm size.

REFERENCES

Agarwal, N. (1981) "Determinants of Executive Compensation," *Industrial Relations,* 20(1), pp. 36–46.

Antle, R. and A. Smith (1986) "An Empirical Investigation of the Relative Performance Evaluation of Corporate Executives," *Journal of Accounting Research,* 24, pp. 1–39.

Baro, J. and R. Baro (1990) "Pay, Performance and Turnover of Bank CEOs," *Journal of Labor Economics*, 8, pp. 448–481.

Baumol, W.J. (1959) *Business Behavior, Value and Growth.* New York: Macmillan.

Boschen, J. and K. Smith (1995) "You Can Pay Me Now and You Can Pay Me Later: The Dynamic Response of Executive Compensation to Firm Performance," *Journal of Business,* 68, pp. 577–608.

Ciscel, D. and T. Carroll (1980) "The Determinants of Executive Salaries: An Econometric Survey," *Review of Economics and Statistics*, 62, pp. 7–13.

Holmstrom, B. (1979) "Moral Hazard and Observability," *Bell Journal of Economics*, 10, pp. 74–91.

Hubbard, G. and D. Palia (1995) "Executive Pay and Performance: Evidence from the U.S. Banking Industry," *Journal of Financial Economics*, 39, pp. 105–130.

Jensen, M.C. and K.J. Murphy (1990) Performance Pay and Top Management Incentives," *Journal of Political Economy,* 98, pp. 225–264.

Ke, B., K. Petroni and A. Safieddine (1992) "Ownership Structure and Sensitivity of Executive Pay to Accounting Performance Measures: Evidence from Publicly and Privately-Held Insurance Companies, *Journal of Accounting and Economics*, 28, pp. 185–209.

Lamm-Tennant, J. and L. Starks (1993) "Stock Versus Mutual Ownership Structures: The Risk Implications" *Journal of Business,* 66(1), pp. 29–46.

Lewellen, W.G. (1968) *Executive Compensation in Large Industrial Corporations*. New York: National Bureau of Economic Research.

Mayers, D. and C. Smith (1981) "Contractual Provisions, Organizational Structure, and Conflict Control in Insurance Markets," *Journal of Business,* 54, pp. 407–434.

_____ and _____ (1986) "Ownership Structure and Control: The Mutualization of Stock Life Insurance Companies," *Journal of Financial Economics*, 16, pp. 73–98.

_____ and _____ (1992) "Executive Compensation in the Life Insurance Industry," *Journal of Business*, 65, pp. 51–74.

McGuire, J.W., J.S. Chiu, and A. Elbing (1962) "Executive Incomes, Sales and Profits," *American Economic Review*, 52, pp. 753–761.

Petroni, K. and D. Shackelford (1995) "Taxation, Regulation, and the Organizational Structure of Property-Casulalty Insurers," *Journal of Accounting and Economics*, 20, pp. 229–253

Smith, D. and R. Watts (1992) "The Investment Opportunity Set and Corporate Financing, Dividend and Compensation Policies," *Journal of Financial Economics*, 32, pp. 263–292.