**РАЗДЕЛ 2
ЗАРАБОТНАЯ
ПЛАТА ДИРЕКТОРОВ
КОРПОРАЦИЙ**

**SECTION 2
EXECUTIVE
PAY PRACTICES**

CORPORATE GOVERNANCE AND THEORIES OF EXECUTIVE PAY

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Abstract

This study performs an in-depth look at the corporate governance, voting and ownership structure of the companies selected using a relatively homogenous data of the U.S. financial sector. Variables that proxy for managerial strategic discretion and task complexity are found to best explain CEO compensation. Corporate governance, including board characteristics and ownership structure, is the second leading determinant of pay variation, while firm performance and CEO specific characteristics seem to play the least role. In accord with studies on managerial stock ownership and Tobin's Q, the pay-for-performance relation appears to be curvilinear in CEO stock ownership.

Keywords: executive compensation, voting structure, ownership structure, financial sector

1. Introduction

A large body of research from multiple disciplines has examined executive compensation, providing numerous theories to explain its determinants.[1] This study extends the current literature by utilizing a unified test to encompass these separate theories. We focus on the financial services sector and provide an in-depth look at the corporate governance and ownership structure of the companies selected. We select financial companies because they are relatively homogenous in many of their operational characteristics, thereby allowing for a reasonable control of unspecified factors.

Executive compensation in banks has been examined in several previous studies. These studies, however, are mostly concerned with the pay-performance relation in depository institutions.[2] Talmor and Wallace (2001) expand the analysis by considering bank governance structure (e.g.,

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[1] For a review of the literature see Murphy (1999).

[2] See Barro and Barro (1990), Crawford, Ezzell and Miles (1995), Hubbard and Palia (1995) and Houston and James (1995).

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board characteristics). In this study we broaden the scope in two important ways. First, it has been advocated in the corporate finance literature (e.g., Morck, Shleifer and Vishny, 1988) that agency problems and hence market valuation are non monotonic in CEO share ownership. We show that this leads to a non-linearity in the pay-for-performance relation, which we test while controlling for board and other governance characteristics. Second, we recognize that there are several different theories of executive remuneration. Whereas agency theory emphasizes the relation of pay to performance, the literature in strategic management is more concerned with managerial discretion and hence with firm structural characteristics. Yet a third body of literature is concerned with corporate governance and the discipline it purports to impose on management. We argue that while examining the role of the many separate variables is informative, it is even more insightful to consider them in groups, where each group of variables proxies for a different theory. This enables us to evaluate, for instance, the effect of firm performance in explaining variability in compensation practices, relative to the impact of corporate governance structure.

The remainder of the paper is organized as follows. Section 2 reviews the main economic and strategic theories of executive compensation. Section 3 presents the main results of the paper on the determinants of top executive remuneration for our sample. Section 4 summarizes the main results.

2. Theories of Executive Remuneration

2.1. Principal-Agent Theory

Economic theory of executive pay, based on agency theory, focuses on the design of optimal compensation schemes to align the interests of hired managers and shareholders. The design of optimal compensation contracts essentially trades-off between different incentive problems and risk-sharing considerations. Much of the research has attempted to determine the proper performance measures for use in the compensation contract. Two studies by Lambert and Larcker (1987) and Banker and Datar (1989) show that, given risk aversion, it is best to base performance evaluation on measures that minimize the noise relative to the information of the signal (i.e., signal-to-noise ratio). Both accounting and market return measures have been considered in the literature for top executive compensation, however no conclusion has been reached regarding which type is more appropriate. The use of market-based measures such as stock returns makes intuitive sense since they provide natural goal congruence. Stock prices, however are a very noisy signal and therefore measuring managerial performance based on shareholder return subjects the manager to additional risk. Earnings-based incentives do not suffer from many of these problems, and so shield managers from much of the noise associated with stock market fluctuations that are beyond the control of the individual manager. Indeed, the empirical literature has identified a strong linkage between accounting measures of return and top executive compensation. A significant relation has also been found between CEO compensation and the stock market rate of return (e.g., Coughlan and Schmidt, 1985, and Murphy, 1985). Accordingly, our study will consider both the accounting measure of return on equity (ROE) and total shareholder return (RET) as determinants of compensation.

2.2. Managerial Discretion and Task Complexity

In a parallel strand, recent studies in strategic management argue that managerial strategic discretion and the complexity of their job may be important determinants of CEO compensation. Managerial discretion is defined as task complexity and the latitude of options top managers have in making strategic choices. Central to this concept is the idea that the greater the level of discretion, the greater the potential impact of actions taken by the CEO on the firm and, hence, on the ability to directly influence its performance. Thus, executive compensation is expected to be higher in high discretion contexts, which is in accord with agency theory insights on the use of subjective measures, given the difficulties outlined above to measure performance.

In this study management discretion will be measured by company size, growth, outcome variability and the sector sub-groups. Company size provides an indication of managerial responsibility and job complexity. Ceteris paribus, the larger the size of the company, the greater is the manager's discretion to influence the absolute value of shareholders wealth. An important measurement of managerial discretion is growth of operation. Realized growth rate in sales indicates the strategic di-

rection of the company and its span of opportunities. The higher the pursued growth rate the more aggressive the company and thus more prone to either a greater success or a bigger failure.[3]

High discretion also suggests a greater variability of outcomes. Hence uncertainty and job complexity go together. We use two measures of outcome variability: the standard deviation of ROE, and the standard deviation of shareholders return. Each standard deviation is measured over the preceding five years.

Finally, we expect compensation to be a function of regulatory oversight. CEOs in more regulated industries have typically less discretion in their strategic choices such as entering new businesses and types of products. Indeed, the empirical findings support the fact that CEOs of regulated firms are paid less than in unregulated ones (Joskow, Rose and Shepard, 1993). We introduce dummy variables by sector within the overall financial services industry. We expect the compensation in the lesser regulated brokerage and non-depositories firms to be highest, lowest in more regulated depository banks, with insurance companies in the middle. We should also point out that the concept of managerial discretion in strategy is closely related to the finance and accounting research on the link between investment opportunities and managerial marginal products. CEOs in firms with larger investment opportunities are expected to have more skills and be entitled to a higher level of pay. Moreover, firms with substantial investment opportunities are more difficult to monitor and therefore are more likely to use incentive plans that link compensation to indicators of firm performance (Smith and Watts, 1992).

2.3. CEO Variables

There are several CEO specific factors we account for. First, managerial tenure may be a determinant of compensation. This may be ambiguous though, as there are counteracting arguments on the relation between tenure and compensation. In terms of information asymmetry, the passage of time on the job allows managers the opportunity to accumulate a track record thereby improving their bargaining power. On the other hand, Hambrick and Finkelstein (1995) argue that long tenured CEOs may have a lower mobility, thereby lowering their bargaining power. From a corporate governance standpoint, the longer the CEOs serve in their positions, the more influence they may accumulate over the nomination of board members, thereby weakening the board independence.

The disciplinary role of managerial share ownership is a cornerstone in the principal-agent literature. However, depending on the share ownership magnitude, the effect may go either way. Control and congruence of objectives are two opposite forces, and each may have a more dominant impact on the value of the firm, depending on the level of managerial equity ownership (Stulz, 1988) and whether the manager is a member of the controlling shareholding block (Bar Yosef and Talmor, 1997). Morck, Shleifer and Vishny (1988) find a non-monotonic relation between performance, measured by Tobin's Q, and the fraction of common shares held by corporate insiders. At first, managerial share ownership provides a better congruence of interest with outside shareholders. As their share ownership increases, they gain a tighter control and may engage in non-value maximizing activities. However, above a certain ownership level, such activities become too costly for them and a closer realignment of objectives with outside shareholders is once again achieved. In a subsequent study, McConnell and Servaes (1990) also find a curvilinear relation between Q and insider equity, but for a different range of ownership values. Stoughton and Talmor (1999) argue that managerial initial ownership position fundamentally influences the optimal mechanism-design compensation schedule. Depending on the relative bargaining power, they show that incentives provided by share ownership and option awards may act in opposite directions.

To explore for a possible nonlinearity effect, we allow the pay-for-performance functional form to be quadratic in the CEO share ownership. This leads to a regression specification that includes the product terms of performance with ownership and with ownership squared, as replacement

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[3] In addition to actual growth, potential growth, proxied by the firm ratio of market to book values, is a measure of managerial discretion. Actual and potential growth is highly correlated, and so it is inappropriate to include both in the same regression. Throughout the paper we report the results for the case where realized growth is used. We replicate the analysis for the case where the book-to-market ratio substitutes the realized growth and obtain very similar results.

to the original ownership variable.[4] Since performance enters in an interactive fashion with ownership, each regression is run using only one measure of performance at a time.

An additional managerial consideration is the level of firm risk. Although this factor, measured by the standard deviations of ROE or share return, has already been considered as part of the assessment of managerial discretion, it bears further consequences on the design of compensation. Executives' wealth is typically concentrated in their human capital, and they cannot easily reduce their personal portfolio risk via diversification. Thus they may tend to make less risky choices than what would be optimal for diversified shareholders. To mitigate, a risk sharing arrangement is called for; however the higher the risk of the firm performance, the higher is the expected compensation a risk averse manager will require.

2.4. Corporate Governance and Ownership

Corporate governance mechanisms, including an effective board of directors, the presence of large outside share blockholders, and institutional share ownership augment the compensation contract in mitigating agency problems. The implementation of board governance is far from straight-forward. Insiders, board members that work for the company in some capacity, may likely be a less than objective overseers of the CEO's compensation. Outside directors, while still potentially feeling obligated to the CEO for the initial appointment and at his discretion for future renewals, may be concerned with the company compensation structure in the interest of shareholders to solidify a reputation capital as competent board members. Critics of corporate governance suggest that placing a large number of insiders on the board is a mechanism to minimize board control. We take the ratio of executive directors to the total number of directors and denote it INBD.

A third group includes board members, in addition to insiders and pure outsiders with no affiliation to the firm, who are not full time employees but affiliated with the company in another way. We distinguish between two types of affiliations. The first includes former officers of the company (typically a retired CEO) and is denoted RETBD. The second form of affiliation includes 'gray' directors, such as consultants, lawyers and investment bankers or others who have a business relationship with the firm, as well as directors with family ties to a company employee (usually the CEO). For the gray directors, denoted GRAYBD, the business or family ties may cloud their independent judgment, particularly on such a sensitive subject as CEO compensation. We choose to keep the other group of affiliates, the retired officers, separate as it is quite plausible that retired CEOs play an effective disciplinary role, whether because of vested company shares (or stock options), or for other reasons (for example, they may recall old times and view current high pay practices exacerbated).

It is suggested that board effectiveness may depend upon the age of outside directors as well as how busy they are. With regard to the latter, Fama and Jensen (1983) argued that outside board members who hold multiple directorships have a greater incentive to monitor corporate decisions because of their reputation capital as decision experts. An opposite argument could be made, by which multiple directorships indicate a lesser ability to spend time on board matters, thereby leading to a lower level of effectiveness and ability to challenge the CEO. Moreover, as is mentioned in the previous section, management primarily nominates directors. Thus it is conceivable that in the 'old boys club' of bank executives, for directors who wish to serve on multiple boards, it is more effective to be friendly than to be independent. Since serving on more than three boards in not common, we have selected a threshold number of two additional boards to define a busy director (denoted BUSBD). Similarly, reform advocates argue that outside board members become less effective as they grow older. Indeed many company boards set a mandatory retirement age. To test the effect of aging on board effectiveness we denote OLDBD as the number of outside directors over 65. Board effectiveness may also be related to its size. Baysinger and Butler (1985) argue that corporate boards have a variety of responsibilities other than monitoring the management, and that a larger board may offer a more diverse set of talents to cope with them, thereby increasing the board's overall effective-

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[4] More concretely, if we assume that $\partial(pay)/\partial(performance) = \alpha_1 + \alpha_2 OWNCEO + \alpha_3 OWNCEO^2$, then the regression specification for the dependent variable is:

$pay = \alpha_0 + \alpha_1(performance) + \alpha_2(performance)(OWNCEO) + \alpha_3(performance)(OWNCEO^2) + \underline{\lambda}\underline{Y} + \varepsilon$,

where $\underline{Y}$ is the vector of independent variables other than performance and ownership.

ness. Jensen (1993) expresses an opposite view as he refers to overcrowding of the board. The position that large boards can more easily be controlled by CEOs is often echoed in the popular press. Total number of board members is denoted by TOTBD. CEO duality exists when a firm's chief executive officer also serves as chairman of the board of directors. It is extensively argued that holding the position of board chair provides the CEO with a wider power base. This led Jensen (1993) and others to recommend that the function of board chair be separated from the top executive post, so to facilitate a more objective judgment of top management performance. We define DUAL as a binary variable that indicate if a CEO duality exists.

It has been argued that high levels of director compensation may influence the independence of outside directors. Boyd (1994) provides many references from the business press and citations from chief executives that paying handsomely compromises a director with the net results of having "destroyed his effectiveness" (CEO and Chair of Morton International, 1991), and "If I am there for them they'll be there for me" (former CEO of RJR Nabisco). To examine the validity of the argument, the variable DIRCOMP will denote director compensation, computed as the sum of an annual retainer and per meeting fees divided by the number of meetings that take place during the year.

In addition to board characteristics, ownership structure plays an important role in corporate governance. As discussed above, managerial ownership position serves a conflicting role. It determines the degree by which management and shareholders interests are naturally coincided via the executive stock ownership. On the other hand, a high management share ownership weakens board independence.

Board power may be related not only to executive share ownership but also to whether outside ownership is concentrated. We hypothesize that the effect of outside ownership will chiefly depend on its concentration. Ownership is disclosed for all blocks of shares above five percent.

However, in terms of attention and disciplinary incentives by major shareholding groups, it seems to be related more to the number of outside blocks than to the exact size of each. We thus measure the span of potential monitoring of outside share ownership by counting the number of outside blocks (denoted BLKS). In addition, it is possible that the degree of influence by outside blocks depends on the share of active participation in the corporate governance. We therefore include a dummy variable to indicate a case where there is a board representation to outside blocks of shares (denoted DIRBLK). The final ownership variable is the percentage of shares voted by managers acting on behalf of company-related parties. This applies to the prevailing phenomena of controlling the vote of shares through ESOP holdings and of shares held by subsidiaries. Management voting of shares held in ESOP, affiliated trust accounts and subsidiaries vary from case to case depending on the by-laws and type of the holding organization. In computing the ESOP and subsidiaries voting rights empowered to management, we adjust for management's own share in the ESOP, and account for differential voting rights.

2.5. Summary

Four strands of considerations have been discussed for influencing the design of executive compensation: firm performance, managerial discretion, CEO characteristics, and ownership and corporate governance.

Table 1. Variable definitions and predicted effect on compensation.

Variable	Acronym	Definition	Predicted effect on compensation
Return on equity	ROE	Net income divided by average total equity	+
Shareholder return	RET	Dividends plus stock appreciation divided by beginning of the year share price (adjusted for dividends)	+
Natural log of assets	LNASSETS	The natural log of total assets	+
Standard deviation of ROE	σ(ROE)	Standard deviation of return on equity over trailing five years	+
Standard deviation of RET	σ(RET)	Standard deviation of shareholder return over trailing five years	+

Table 1 continued

3 year growth in sales	SALES3YR	Three year least square annual growth rate of sales	+
CEO tenure	TENURE	Number of years as CEO	+/-
Joint CEO and Chairman-ship	DUAL	Percentage of CEOs that are also the Chairman of the Board	+
CEO stock ownership	OWNCEO	Percentage of CEO's common stock ownership	+/-
Total Board size	TOTBD	Total number of Board members	+/-
Insiders on the Board	INBD	Percentage of the Board's Directors that are executives of the Company	+
Gray Board members	GRAYBD	Percentage of the Board's Directors that are either family members of the CEO or have contracts with the Company	+
Retired Board members	RETBD	Percentage of the Board's Directors that are retired members of the Company	+/-
Busy Board members	BUSBD	Percentage of the Board's Directors that are outside directors and sit on at least two other Boards	+/-
Old Board members	OLDBD	Percentage of the Board's Directors that are outside directors and are over 65	+
5% shareholder blocks	BLKS	Number of 5% or greater blocks of stock owned by outsiders	-
Employee stock ownership plan ownership	ESOP	Percentage of stock owned by subsidiaries, trusts, and Employee Stock Option Plans voted by management	+
Outside block representation on the board	DIRBLK	Presence of 1% or greater blocks of stock owned by outside Directors	-
Director compensation	DIRCOMP	Effective Director compensation per board meeting	+
Brokerages and Other Non-depositories	NONDEPBR	Indicator variable set equal to 1 if the firm is a brokerage or non-depository, zero otherwise	+
Commercial Banks	BANK	Indicator variable set equal to 1 if the firm is a Bank, zero otherwise	-

In this paper we explore the predictions of these theories with respect to determinants of pay. It should be stressed that the predictions of the theories are not independent. As is pointed out, managerial discretion is related to economic-based research on the link between compensation and the investment opportunities set. Agency theory is also weaved into other considerations such as corporate governance. As for the specific variables, a few such as risk and CEO stock ownership may be identified with more than one theory. For some variables, such as CEO tenure and total Board size, the predictions may be counteracting. Table 1 provides a summary list of the explanatory variables we use in subsequent regression analysis, along with their predicted effect on compensation.

3. Compensation and Governance Practices in Financial Institutions

3.1. *Unified regression results*

We collected compensation data for the study for all the 160 financial institutions, for the years 1992-1997, from the Standard and Poor's ExecuComp database. In addition, we gathered data on block ownership and board memberships directly from SEC Schedule 14a. Company financials are obtained from Standard and Poor's Compustat. We identify all cases of CEO succession and remove the company year from our sample data in order to control for partial year anomalies (e.g. incomplete annual compensation or golden parachutes).

Finally, Table 2 provides descriptive statistics of governance and ownership structure in the financial sector. CEO's common stock ownership averages a little over 2 percent of the firm's total outstanding shares. Board size averages between 13 and 14 members, of which about one fifth are insiders. Nearly all (84.69%) of the boards have the CEO as the chairman.

Table 2. Descriptive statistics on governance characteristics for 160 financial institutions.

	Mean	Median
OwnCEO (%)	2.32	0.00
Total Board Members (TOTBD)	13.54	13.00
Insiders (INBD) (% of Total)	20.44	16.67
Gray (GRAYBD) (% of Total)	4.41	0.00
Retired (RETBD) (% of Total)	2.34	0.00
Busy (BUSBD) (% of Total)	44.50	47.06
Old (OLDBD) (% of Total)	22.51	20.00
DUAL (%)	84.97	100.00
Director Comp. (DIRCOMP) (000$)	4.06	3.94
Director Blocks (DIRBLK)	.19	0.00
Outside Blocks (BLKS)	1.50	1.00
ESOP	1.21	0.00

To track the factors affecting the structure of CEO compensation in the financial sector, we conduct pooled time-series cross-section regression analysis.[5] Since some of the compensation components (LTIP and restricted shares) are relatively small, and may provide an incentive function similar to other compensation mechanisms, we lump several pay component together. Therefore, we consider cash remuneration (salary, bonus and LTIP payouts), and total compensation in which stocks-based compensation (options and restricted share awards) is also included. Table 3 presents the regression results.[6] The results for the total compensation and the cash-based compensation columns are largely similar, as are the columns for the two performance measures. Both total and cash compensation are significantly correlated with performance, whether measured by accounting return (ROE) or by shareholder return (RET). The former result is consistent with the literature, which has typically identified a strong linkage between accounting measures of return to top executive pay. However the relation documented in previous studies between CEO pay and the stock return has been mixed.[7] Controlling for corporate governance, discretion and industry specific factors, our result supports the more recent evidence on the significance of the above relation. All the measures of managerial discretion and job complexity are significant. Consistent with the previous literature, company size, measured by the natural log of assets (LNASSET) has a strong positive effect on executive pay (e.g., Ciscel and Carroll, 1980, Schaefer, 1998, and Baker and Hall, 1998). The second measure of discretion, growth in sales, is also highly significant. Milbourn et al (1999) derive competing theories why banks are getting bigger even in the absence of cost efficiencies. The result in Table 3 that growth is compensated independent of profitability is consistent with their hypothesis of the long-term value enhancement of growth. As for the two sub-industry dummy variables BANK and NONDEPR, they are both significant. Other things being equal, brokerage houses pay their top executives the highest, insurance firms are set in the middle and commercial banks pay the least. Finally, we use two risk proxies, the standard deviation of ROE and the standard deviation of the stock return. Based on risk sharing, a higher firm risk should be associated with more overall pay. We document a positive effect of both $\sigma(ROE)$ and $\sigma(RET)$ on CEO compensation, however only $\sigma(ROE)$ is significant.

Next, we consider the corporate governance variables. Unlike in Core et al (1999), total CEO compensation is not increasing with board size. On the other hand, the presence of more insiders on the board is a significant determinant of pay (when considering RET as a performance metric). This

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[5] Because our data is from a pooled time series it is likely that some degree of autocorrelation exists. The Durbin-Watson statistics (not reported) indicate first order autocorrelation is not a problem, however we perform generalized least squares (GLS) to determine the robustness of our results. We first run an OLS model to estimate a set of autoregressive parameters. These coefficients are then used to perform a transformation of the variables in the model. The results from the GLS models are nearly identical to those from the OLS models.

[6] A concern when interpreting output from regressions is the potential impact of influential observations. We first test for influential points by using Cook's D statistic. We remove 7 observations from the sample based on comparing the Cook's D value to an F distribution.

[7] A weak relation is found by, e.g., Coughlan and Schmidt (1985), Murphy (1985), and Jensen and Murphy (1990), whereas a much more significant relation is reported by Boschen and Smith (1995) and Joskow and Rose (1994).

result is hardly surprising, given the direct linkage of senior executive compensation to that of the CEO. BUSY outside directors are associated with more, not less pay. Contrary to the assertion of Fama and Jensen (1983), it appears that reputation capital of these individuals is tied primarily with the executives who nominate them and not with investors. Interestingly, total compensation is negatively related to the presence of retired executives on the board, indicating more their disciplinary role than that of close buddies of current management. We find other board characteristics such as director compensation, CEO-chairmanship duality and the presence of gray and old directors are insignificant determinants of total compensation.

The coefficients of the ownership-performance product terms are significant in all of the four regressions. In all of the four regressions, the sign of the quadratic term is significantly negative, indicating a reverse U shape functional relation between the pay-for-performance sensitivity and CEO ownership. In checking range of values for CEO ownership on a scattered diagram, we find very few observations with over 25%. Therefore, for the majority of the range, increasing CEO share ownership leads to a better pay-performance linkage; a relationship that tapers off only for financial institutions with highly concentrated management ownership. Concerning outside ownership structure, the number of outside blocks does not significantly lower compensation levels (insignificantly negative). Surprising, ESOP blocks act to discipline CEO pay, contrary to our initial prediction based on the fact the vote of these shares is placed with management.[8]

Table 3. Determinants of CEO compensation for financial services firms; pooled regression analysis; t-statistics in parentheses.

Independent Variable	Total Compensation	Cash-based Compensation	Total Compensation	Cash-based Compensation
INTERCEPT	-12,668 (10.146)**	-7,047 (-10.427)**	-11,814 (-9.650)**	-6,670 (-10.083)**
ROE	8,521 (3.832)**	3,481 (2.886)**		
ROE x OWNCEO	558.67 (1.679)*	632.49 (3.516)**		
ROE x OWNCEO^2	-2,928 (-2.502)**	-2,542 (-4.006)**		
RET			1,478 (3.156)**	594.59 (2.351)*
RET x OWNCEO			190.94 (1.827)*	219.71 (3.882)**
RET x OWNCEO^2			-988.67 (-2.715)**	-841.74 (-4.264)**
LNASSETS	1,318 (12.081)**	695.24 (11.762)**	1,250 (11.626)**	655.49 (11.268)**
σ(ROE)	11,115 (3.951)**	4,475 (2.932)**	9,329 (3.348)**	3,701 (2.454)**
σ(RET)	3,086 (1.524)	1,579 (1.437)	2,647 (1.316)	1,464 (1.342)
SALES3YR	3,582 (3.672)**	1,094 (2.071)*	3,481 (3.528)**	1,016 (1.908)*
TENURE	-4.56 (-0.227)	10.23 (0.950)	0.244 (0.012)	14.11 (1.313)

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[8] A possible concern in studies such as this that use a large number of explanatory variables is multicollinearity, where the independent variables are strongly correlated with each other, resulting in inflated standard errors and a higher likelihood of accepting the null hypothesis that the coefficients are not significantly different than zero. We inspected the Pearson pairwise correlation matrix and removed, as previously noted, the book-to-market variable. To test for more complex multicollinearity relations between linear combinations of variables, we compute variance inflation factors (VIFs). Although no definitive cutoff value of a VIF exists to rule out multicollinearity is not a problem, a common cutoff value of 10 is often used. Nearly all of the VIFs are below 2, and only in the other financial services group did they reach 4.9. Overall, it appears that multicollinearity does not present a problem.

Table 3 continued

DUAL	76.07	184.19	344.24	321.88
	(0.177)	(0.793)	(0.800)	(1.383)
TOTBD	15.25	44.95	22.99	46.20
	(0.444)	(2.429)**	(0.678)	(2.528)**
INBD	1,589	1,100	2,174	1,504
	(1.208)	(1.544)	(1.664)*	(2.135)*
GRAYBD	451.51	215.87	1,921	1,054
	(0.266)	(0.235)	(1.098)	(1.120)
RETBD	-5,563	-2,805	-5,983	-2,798
	(-1.993)*	(-1.853)*	(-2.133)*	(-1.843)*
BUSBD	1,686	856.79	1,987	1,020
	(2.293)*	(2.149)*	(2.696)**	(2.559)**
OLDBD	838.33	1,287	473.59	1,113
	(0.848)	(2.398)**	(0.475)	(2.062)*
BLKS	-84.98	-104.03	-129.13	-117.71
	(-0.733)	(-1.658)*	(-1.123)	(-1.894)*
ESOP	-12,791	-4,865	-12,048	-4,624
	(-2.762)**	(-1.975)*	(-2.583)**	(-1.866)*
DIRBLK	617.88	319.76	645.19	346.74
	(1.585)	(1.519)	(1.640)	(1.635)
DIRCOMP	-10.47	-22.99	37.87	2.49
	(-0.140)	(-0.569)	(0.503)	(0.061)
NONDEPBR	1,904	1,376	2,166	1,502
	(3.617)**	(4.932)**	(4.149)**	(5.428)**
BANK	-844.29	-648.42	-785.24	-609.88
	(-2.342)*	(-3.317)**	(-2.165)*	(-3.104)**
N	489	495	489	495
Adjusted R^2	42.09	44.40	41.21	43.77

** Significant at the 1% level, one-tailed
* Significant at the 5% level, one-tailed

It is of interest to note that although the interactive variables specific to each set of regressions are found to be highly significant, the two alternative specifications reported in Table 4 lead to very similar results – both in R squares as well as the significance of the remaining controls. Importantly, it indicates the similar role played by both the market and accounting measures of performance as a base for compensation.

3.2. Relative Role of Different Theories

So far we have discussed the effect of individual variables on CEO compensation. There is, however, the possibility of a great deal of overlap within classes of variables in the determination of executive compensation. Therefore, instead of examining statistical significance of individual variables, we turn our attention to the subject of how the four classes of variables, performance, CEO specific, discretionary, and governance, taken as groups, affect CEO compensation.

Table 4 compares the r-square values of various combinations of the variable classes in regressions on CEO compensation. First, taken one at a time, the discretionary variables provide twice as much explanatory power as the next class of variables, governance. This is not surprising given the results reported in Table 3 where each of the discretionary variables is significant and also given the traditional large explanatory power of firm size in explaining CEO compensation. By looking at combinations of variable classes, it appears that the remaining classes of variables add incremental explanatory power, however the discretionary variables account for the bulk of the explanatory power of the models. For instance, while the governance variables alone, on average explain 16% of the variation in CEO compensation, they add less than 2% incremental explanatory power over the discretionary variables alone. Interestingly the performance variables, which are the primary focus of the compensation literature, only account for about 3% explanatory power whether on their own or when combined with the discretionary variables. The addition of a third and even a fourth class of variables adds very little to the model's overall explanatory power.

We also test the explanatory power of the classes of variables by performing partial F tests on each class of variables in the model appearing in table 3. Each F statistic is significant at the 1% level. In addition to this partial F test, we also perform a principal components test using the four classes of variables. First we derive principal components of each class as linear combinations of the explanatory variables the class includes. By construction, within each class of variables, the principal components are orthogonal to the other principal components, thus removing any multicollinearity problem. Using a conventional cut-off of all principal components with eigenvalues greater than one, we retain five principal components from the eleven governance variables, two principal components from the six discretionary variables, and one principal component each from the two CEO specific and performance variables.

Table 4. The contribution each class of variables contributes to the overall explanatory power of the models; pooled regression analysis for all financial companies; adjusted r-squared values given.

	Total Compensation	Cash-Based Compensation
Using only one class of variables		
Performance	2.86	4.50
CEO	0.93	0.42
Discretionary	37.42	39.01
Governance	16.05	18.01
Using two classes of variables		
CEO and Performance	5.06	6.02
CEO and Governance	16.18	17.94
Performance and Governance	19.19	21.76
Discretionary and CEO	37.90	39.21
Discretionary and Governance	38.91	40.31
Discretionary and Performance	41.04	42.68
Using three classes of variables		
Performance, CEO, and Governance	19.99	22.17
Discretionary, CEO, and Governance	39.34	40.40
Discretionary, Performance, and Governance	42.05	43.52
Discretionary, Performance, and CEO	42.36	43.44
Using all four classes of variables		
Performance, CEO, Discretionary, and Governance	43.31	44.11

Class of variable:	Included variables:
Performance	RET, ROE
CEO	TENURE, OWNCEO
Discretionary	LNASSETS, σ(ROE), σ(RET), SALES3YR, NONDEPBR, BANK
Governance	DUAL, TOTBD, INBD, GRAYBD, RETBD, BUSBD, OLDBD, BLKS, ESOP, DIRBLK, DIRCOMP

We next regress total compensation with the above nine principal components instead of the twenty-one underlying variables (not shown). In addition, we compute partial F statistics on the separate four classes of principal components. Three of the four classes of variables remain significant, however the CEO principal component no longer shows significance at conventional levels. This is consistent with Table 4 results that report the CEO variables with the lowest overall and incremental explanatory power.

4. Summary

Four major strands have evolved within the executive compensation literature. In this paper we perform a comprehensive study of executive compensation determinants by providing a unifying analy-

sis of these strands: firm performance, managerial discretion, ownership and corporate governance, and CEO specific characteristics. We examine U.S. financial sector data that provides a relatively homogeneous setting.

We first examine 21 individual variables, drawn from the four major classes of variables. We consider cash compensation, consisting of salary, annual bonus, other annual compensation, and LTIP payout, as well as total compensation including in addition the value of option grants and restricted stock grants.

Looking at the financial sector as a whole, we find both of our reported performance measures, nearly all of our management discretionary variables, and approximately half of our CEO specific and our ownership and governance variables to be significant determinants of total executive compensation. These variables explain over forty percent of the variation in executive compensation in our sample. The results prove to be robust to a battery of specification checks.

While an analysis of individual variables is interesting and informative, we also wish to see the impact of the four groups of variables, both relatively and incrementally. Even though the study of the relation between executive pay and firm performance seems to dominate the literature, we find that our performance measures account for a relatively small amount of explanatory power. The bulk of the determination of executive compensation appears to be the result of managerial discretionary items such as the size of the firm, the firm's growth, riskiness, and regulatory environment. Governance variables, as a group, explain the second largest amount of compensation variability, although they appear to be related to the discretionary variables. Finally, the CEO specific variables provide the least explanatory power.

Prior literature has noted a non-monotonic relation between firm performance and management ownership. We explore this phenomenon in our sample and find a reverse U shape functional relation between the pay-for-performance relation and CEO ownership. For most of the ownership range, with the exception of a small minority of relatively high ownership observations, increased CEO ownership is associated with a higher pay-for-performance relation. This result is contrary to the thought that higher CEO ownership leads to entrenchment.

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