An Empirical Examination of Compensation of REIT Managers

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Abstract. Principal-agent literature finds that manager and owner incentives can be aligned with performance contingent contracts. We investigate the compensation of Real Estate Investment Trust (REIT) industry executives. The competitive nature of mortgage and equity markets, in conjunction with the corporate tax exemption available when REITs distribute most of their earnings as dividends, is likely to influence the compensation of REIT managers. Executive compensation is modelled as a function of revenues and unexpected profit. After transforming the model to reduce collinearity and hetero-skedasticity, we find compensation to be generally positively related to revenue. We also find unexpected profit to be generally insignificantly related to compensation, but positively related in those cases where it is significant.

Introduction

Chief executive officer compensation is a subject about which much has been written. Recently, researchers proposed that the factors that influence executive compensation differ across industries. For example, Fershtman and Judd (1987) and Sklivas (1987) find that managers of companies which compete in imperfectly competitive markets may be rewarded or penalized for higher sales. Reitman (1993) reports that stock options often prevent managers from becoming overly aggressive sellers when they compete by selecting output levels. The agency relationship between owners and managers implies that agreements are necessary to insure that the best interests of stockholders are maintained. The provisions of compensation arrangements can do much to minimize the agency or monitoring costs that would otherwise be borne by owners.

The principal-agent literature finds that performance-contingent contracts are useful for aligning the incentives of managers and owners. When principals (owners) are unable to effectively monitor agents (managers), tying compensation to observable signals of the manager's effort will help solve the principal-agent problem.[1] Baumol (1959) notes the separation of ownership from management and the positive correlation between the scale of operations and executive compensation. Identification of this relationship led Baumol to suggest that managers seek to maximize sales and, thereby, increase their personal income and perks. Jensen and Meckling (1976) argue that the separation of atomistic owners (stockholders) and control (managers) creates an environment in which executives are largely free to indulge their own preferences. The contractual relationship between owners and managers is an example of the principal-agent problem. Owners cannot accurately monitor the effort and effectiveness of managers, whose decisions affect shareholder wealth.[2]

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While research in this area has shown that an owner's best response is contingent payment contracting based on some performance measure (Harris and Raviv, 1979; Holmstrom, 1979), no research clearly states which is the most appropriate indicator of management performance. This void has left empirical analysts searching for relevant indicators. In this study, we focus on a particular industry, Real Estate Investment Trusts (REITs), and analyze the relationship between executive compensation and certain performance measures. Baumol suggests sales and profits.

REITs have characteristics that differentiate them from industrial and financial service industries. One distinguishing feature is their exemption from corporate income tax. To qualify for this tax break, at least 95% of earnings must be distributed as dividends. Maris and Elayan (1990) show that REITs exhibit a strong leverage clientele effect.[3]

Examination of REIT executive compensation is particularly interesting because of the differences in earnings performance within this industry (Howe and Shilling, 1990) and tax structure mentioned above, which effectively requires REIT managers to distribute most corporate earnings. Under these conditions, owners seeking to maximize (distributed) profits for any given level of sales should reward managers for their efforts directed toward cost reduction. Similarly, if costs per dollar of sales are relatively invariant to the efforts of managers, (distributed) profits will increase as the level of sales increases. It is not clear which of these actions, cost-cutting efforts or sales growth, will have the largest impact on profits. While there is no direct evidence of the effects of different managerial styles on financial performance among REITs, the qualifications of their consultants are shown to affect financial performance (Howe and Shilling, 1990). For these reasons, we choose to analyze the influence of sales and the deviation of profits from the level predicted by firm sales on executive compensation.

The remainder of the paper is organized as follows. Section two reviews previous literature on this topic. The empirical model and regression models are discussed in the third section. The data are described in section four. The results are found in section five with conclusions presented in section six.

Summary of Previous Research

The analytical results of Chief Executive Officer (CEO) compensation have varied widely. In an early study, McGuire, Chiu and Elbing (1962) test the sales maximization hypothesis proposed by Baumol (1959). They find evidence in a group of industrial firms that supports Baumol's hypothesis that sales results are often reflected in the level of executive compensation. In contrast, Lewellen and Huntsman (1970) find that CEO compensation has a significant relationship with firm profits, but no such relationship with sales. Others have analyzed the relationship between executive compensation and sales, profits, growth rates of sales and profits, firm stock price performance and stock performance relative to industry and market-wide measures of stock performance, return on assets, return on equity, and other measures of firm performance.

Generally, studies of the relationship between corporate financial performance and executive compensation have focused on industrial firms or companies from many industries. Industry-specific analyses of these relationships are less common. Ely (1991) finds little evidence of industry differences in explicit compensation plans. However, she does find significant empirical evidence of inter-industry differences in the pay-

performance relationship and contends that "cross-sectional variation in the association between compensation and performance measures is explained by differences in production environments and the way these environments are reflected in accounting variables." Agrawal, Makhija and Mandelker (1991) examine the pay-performance relationship for managers of electric and gas utilities. Their results are unique in that changes in firm performance have significant effects on executive compensation for managers of regulated utilities. These researchers highlight inter-industry differences in the incentives created by compensation contracts.

Ciscel and Carroll (1980) find that resources and productive efficiency directly influence executive compensation. Bentson (1985), Coughlan and Schmidt (1985) and Murphy (1985) report that a manager's total compensation is positively related to both stock prices and sales. Jensen and Murphy (1990) examine more than 1,000 companies and find that over the last fifty years the dependence of pay on firm performance has decreased to the point that compensation no longer solves the agency problem.[4] Gibbons and Murphy (1990) find that managers are rewarded when stock returns exceed those of both competing firms and the overall market. Golz (1993) studies executive compensation in the REIT industry. Golz suggests that investment analysts are particularly interested in the compensation packages offered to REIT managers. Our examination of REIT proxy statements did not reveal explicit incentive structures or common goals for REIT managers. This absence leads us to analyze compensation empirically.

An Empirical Model of Compensation

Following the precedent set by Ely (1991) and Agrawal et al. (1991), we focus on a single industry, Real Estate Investment Trusts (REITs), and describe the relationship between executive compensation and firm performance, measured as profits and sales. This data set includes sales, net income and compensation data for as many as five management positions. We obtain this information from a survey, thus yielding a cross-sectional data set.

Cross-sectional analysis has both advantages and disadvantages. We are most interested in the enduring characteristics of compensation contracts and not in the influence of short-lived responses. Therefore, we include a representative cross-section of the industry. Kuh (1963) notes that "cross-sections typically will reflect long run adjustments whereas annual time series will tend to reflect shorter run reactions" (p. 182). This argument rests on the assumption that firms typically operate in equilibrium. Based on this assumption, our cross-sectional study should describe the equilibrium relationship between executive compensation, sales and profits in the REIT industry.

While cross-sectional data should reveal the equilibrium condition of compensation contracts, it is not without some difficulty that this information may be extracted from the data. The first problem encountered concerns the high degree of collinearity between sales and profits. If we regress executive compensation against a constant, sales and profits, multicollinearity between these measures will not bias our estimates of the slope coefficients; however, these estimates will be inefficient.[5] Given this inefficiency, we expect the standard errors of our coefficient estimates to be inflated, which reduces the measured significance of the estimates.

Baumol (1959) suggests that executives are rewarded for sales only after some minimum profit level has been achieved. Gibbons and Murphy (1990) find evidence that managers are rewarded for firm stock price performance relative to that of other firms. The use of cross-sectional data and the method employed by Ciscel and Carroll (1980) allows separation of the collinearity between profits and sales and enables us to determine the influence of profits above or below an amount suggested by the firm's sales volume.

The use of accounting performance measures establishes the dependency between observed profits and the level of sales. Measured profit is the difference between sales revenue and costs and is, therefore, determined after sales are made. Thus, we first estimate profits as a function of an intercept and firm sales. This regression confirms our conjecture that sales and profits are collinear.[6]

As noted by Ciscel and Carroll (1980), the multicollinearity between sales and profits reduces the efficiency of the OLS estimator. To control for multicollinearity, we first estimate the following model for both the entire sample and then separately for each subgroup:[7]

$$Net\ Income = \alpha + \beta_1(TR) + \varepsilon\ , \tag{1}$$

where *Net income* and *TR* are the net income and total revenue of each firm, respectively.[8,9] The coefficient estimates from (1) are then used to calculate the expected profits of each firm in the sample, given the level of sales. We then use the following equation to calculate the unexpected profit for each firm:

$$UNEXPROFIT = Net\ Income - (\alpha + \beta_1(TR))\ . \tag{2}$$

where α and β_1 are the estimated coefficients from (1). Then, we estimate the following general model:

$$(MGRPAY) = \alpha + \beta_1(UNEXPROFIT) + \beta_2(TR) + \varepsilon\ , \tag{3}$$

where

MGRPAY	is the total dollar compensation for a manager (estimated separately for CEO, President, and so forth as classified above),
UNEXPROFIT	is the unexpected profit level (as defined in (2) above) of the manager's firm,
TR	is the total revenue of the manager's firm,
α	is the intercept term,
β's	are the estimated coefficient terms, and
ε	is the error term.[10]

As we discuss below, compensation and revenues appear to be positively correlated in several cases (as noted in Note 8). Following the precedent set by Lewellen and Huntsman (1970), we transform (3) by dividing all variables, including the intercept, by Book Value of Total Assets to obtain:

$$\frac{(MGRPAY)}{TA} = \beta_1 \frac{(UNEXPROFIT)}{TA} + \beta_2 \frac{(TR)}{TA} + \beta_3 \frac{(1)}{TA} + \varepsilon. \qquad (4)$$

In effect, with this specification we estimate the compensation per dollar of assets managed as a function of unexpected profits and revenues per dollar of assets. The results of the models are discussed in section five.

Sample Selection

This study addresses the compensation of executives in the Real Estate Investment Trust (REIT) industry. These firms are identified using several databases that contain Standard Industrial Classification (SIC) code information. We include in our sample those firms with the SIC code 6798. The databases that were searched for this information include Standard and Poor's Compustat, including the Annual, Over the Counter, and Research files (eighty-eight REITs); The Center for Research in Security Prices (CRSP) database (twenty-six REITs); and the Compact Disclosure database (five REITs). The Media General Financial database classification code for REITs is 432, and there are 110 firms in this category.

In addition to these computerized databases, additional REITs were identified through use of the 1992 edition of the *Million Dollar Directory.* This reference contains the names and addresses of large American firms in all industries. Among the Real Estate Investment Trust companies, sixty-four listed in the directory are publicly traded and, therefore, qualify for inclusion in this study group.

Several recent articles that examine REITs report the names of the sample firms in an appendix. These studies include Myers and Webb (1993), who examine eighty-one companies, and Chan, Hendershott and Sanders (1990), who list the thirty equity REITs of their study.

We identified and contacted a total of 144 separate firms in the REIT industry. We then requested that they furnish the 1992 fiscal year information about firm performance and executive compensation. This information is usually contained in Annual Financial Reports and proxy statements. Requests for this information were sent to the Shareholders Relations Department of the firms for which addresses were available in the 1992 edition of the *Million Dollar Directory.* Ten requests were returned because of lack of sufficient address.

We received 108 responses to our requests for information. Annual reports were inspected to determine whether the respondent firms were indeed Real Estate Investment Trusts. Those that we identified as being mostly involved in another line of business were removed from the sample. Proxy statements were not sent by twenty-nine firms and twenty-two proxies did not include sufficient compensation information to justify inclusion in the study group. The fifty-four firms in the sample are listed in the Appendix.

Following the work of Wang, Chan and Gao (1992), we begin by dividing the REITs into one of three groups, depending on whether they are engaged in equity, mortgage or both lines of business. This separation reflects inherent differences in the operating environments between mortgage writing and property ownership REITs. During the process of data collection, it became apparent that there were two distinct categories of the primary areas of operation of the Real Estate Investment Trusts. These are firms that

we classify as "commercial" or "medical" depending upon whether the firm is primarily involved in the operation of commercial or industrial properties, or hospitals and other related medical facilities. We believe that additional insight about the compensation structures of REIT managers can be obtained by including these dimensions in our analyses.

Exhibit 1
REIT Company and Compensation Descriptive Statistics*

	N	Mean	Standard Deviation	Minimum Value	Maximum Value
Panel A—Total Assets by Company Types					
All Firms	54	485.26	1,072.79	2.41	7,229.61
Equity	36	222.83	168.63	17.57	603.81
Mortgage	10	1,552.28	2,240.03	2.41	7,229.61
Both E/M	8	332.42	335.92	41.55	1,094.94
Panel B—Total Revenue by Company Types					
All Firms	54	52.27	82.34	.11	504.05
Equity	36	34.39	30.37	.40	100.20
Mortgage	10	127.27	165.22	.11	504.45
Both E/M	8	39.01	41.70	.74	132.39

		N	Mean	Standard Deviation
Panel C—Executive Compensation by Office and Company Type				
CEO	All Firms	13	461.7	536.3
	Equity	9	393.3	191.9
	Mortgage	3	114.2	40.0
	Both E/M	1	2,120.0	—
President	All Firms	33	294.2	200.6
	Equity	20	274.0	136.1
	Mortgage	7	328.7	365.2
	Both E/M	6	321.3	151.8
VP/Finance	All Firms	26	172.2	65.0
	Equity	18	175.8	73.5
	Mortgage	3	182.1	19.6
	Both E/M	5	153.4	51.5
VP/Legal	All Firms	17	140.7	44.6
	Equity	14	143.8	48.7
	Mortgage	1	128.8	—
	Both E/M	2	124.3	8.1
VP/Other	All Firms	20	133.7	44.5
	Equity	15	133.5	48.4
	Mortgage	3	143.8	43.9
	Both E/M	2	120.1	14.0
Exec	All Firms	39	356.0	354.2
	Equity	25	303.6	162.8
	Mortgage	8	304.7	345.3
	Both E/M	6	643.0	736.5

*Total Revenue and Total Assets are in millions of dollars. Executive Compensation, Panel C, is in thousands of dollars.

The REITs responding to the survey are distributed as follows: equity (thirty-six observations), mortgage (ten), and both (eight). Descriptive statistics for the sample and subgroups are found in Exhibits 1 and 4. The mean Total Assets and Revenues of the sample are $485M and $52M, respectively. Mean Total Assets of the equity, mortgage, and both subgroups are $223M, $1,552M, and $332M, respectively. Mean Total Revenues are $34M for equity, $127M for mortgage, and $39M for both. Mean Total Assets and Total Revenues are $505M and $53M for commercial REITs, $454M and $62M for medical REITs, and $460M and $47M for mixed REITs. It is interesting to note that the mean Total Assets of medical REITs are approximately 10% smaller than commercial REITs, while medical REITs have mean Total Revenues that are almost 20% higher than their commercial REIT counterparts.

As can be seen in Exhibit 1, Panel C, managers of REITs are divided into five categories: CEO, President, Vice President–Finance, Vice President–Legal, and Vice President–Other. Another category, Exec, is the CEO's salary or, if this is not available, the President's salary. These categories are used to identify possible differences in incentives for each of these managerial positions. The mean compensation for the entire sample decreases monotonically from $462,000 for CEOs to $134,000 for VP–Other.[11]

Results

Exhibit 2 presents the results from the model presented in (3) above.[12] Among all firms, unexpected profit is positively and significantly correlated with Exec compensation for all firms and for the equity group. The total revenue coefficient estimates are positive and significant for the President, one Vice-President, and Exec when all firms are grouped together. The estimates of the total revenue coefficient for President and Exec of the equity and mortgage REITs and the CEO of equity REITs are also positive and significant.

It is interesting to note that in only three of seventeen regressions are estimates of the unexpected profit coefficient statistically significant (95% level of confidence). To review, our unexpected profit term measures the deviation from a "normal" or expected level of profit for a given level of sales. While we do not attempt to formally test this hypothesis, our results are consistent with the theory that managers are free to pursue their own goals once a certain level of profit has been achieved, as suggested by Baumol (1959).

A comparison of the results reported in Exhibit 2 and Exhibit 3 highlights the influence of the econometric specification on the results. Note that in Exhibit 2, the reported coefficient estimates and their (in)significance indicate no consistent relationship between either of the measures of firm performance included in the model. As discussed above, heteroskedasticity results in a decrease in the efficiency of coefficient estimates, in turn reducing their measured significance. We suspect that heteroskedasticity is related to differences in the size of firms included in the data set; therefore, we deflate each variable included in the regression equation by a proxy for firm size, total asset value.[13]

In general, we find that managers are rewarded for increases in firm sales, while profits (costs) that are above or below expected profits (costs) for a given level of sales have little impact on executive pay. It is not clear whether managers are unable to significantly influence costs, or whether the greatest impact of managerial actions on distributed profits is through his/her influence on sales. If the REIT industry is competitive and all firms have access to the same production technology, the profit earned by each firm will

Exhibit 2
REIT Executive Compensation Regression Results

$$(MGRPAY) = \alpha + \beta_1(UNEXPROFIT) + \beta_2(TR) + \varepsilon$$

		α	β_1	β_2	R^2
Panel A—All Firms					
Managerial	CEO[†] (N=13)	115.8K	.0169	.0061	.769
Position	President[†] (N=33)	202.0K*	−.0004	.0017*	.553
	VP-Finance (N=26)	164.6K*	.0004	.0001	.022
	VP-Legal (N=17)	126.8K*	−.0012	.0004	.148
	VP-Other (N=20)	124.4K*	−.0011	.0002*	.279
	Exec[†] (N=39)	239.7K*	.0114*	.0019*	.478
Panel B—Equity REITs					
Managerial	CEO[†] (N=9)	231.9K*	.0038	.0036*	.747
Position	President[†] (N=20)	180.7K*	.0053	.0023*	.346
	VP-Finance (N=18)	127.1K*	.0022	.0073	.158
	VP-Legal (N=14)	119.5K*	−.0009	.0006	.182
	VP-Other (N=15)	100.7K*	.0012	.0007	.328
	Exec[†] (N=25)	175.0K*	.0050*	.0030*	.539
Panel C—Mortgage REITs					
Managerial	CEO (N=3)	Insufficient Data			
Position	President[†] (N=7)	83.9K	−.0052	.0021*	.947
	VP-Finance (N=3)	Insufficient Data			
	VP-Legal (N=1)	Insufficient Data			
	VP-Other (N=3)	Insufficient Data			
	Exec[†] (N=8)	92.4K	−.0051	.0021*	.943
Panel D—Both Equity and Mortgage REITs					
Managerial	CEO (N=1)	Insufficient Data			
Position	President (N=6)	355.9K	.0006	=.0009	.061
	VP-Finance (N=5)	192.5K*	.0019	−.0012	.601
	VP-Legal (N=2)	Insufficient Data			
	VP-Other (N=2)	Insufficient Data			
	Exec[†] (N=6)	96.9K	.0043	.0126	.874

[†]signifies that the regression is significant at the $\alpha = .05$ level or better
*signifies that the coefficient is significant at the $\alpha = .05$ level or better

represent a normal return to capital and the risk characteristics of the firm and industry. Baumol (1959) suggests that as the size of operations is increased, a firm is able to benefit from improved access to credit markets and customer/lender perceptions. If true, increases in the size of the firm will indirectly lower the cost of production. Under either of these conditions, profit distributions to REIT owners should increase as the size of the REIT's asset portfolio increases.[14]

While we do not attempt to develop a theory of REIT manager compensation, our results are consistent with those predicted by Baumol, or the characterization of a

Exhibit 3
REIT Executive Compensation Regression Results

$$\frac{(MGRPAY)}{TA} = \beta_1 \frac{(UNEXPROFIT)}{TA} + \beta_2 \frac{(TR)}{TA} + \beta_3 \frac{(1)}{TA} + \varepsilon$$

		β_1	β_2	β_3	R^2
Panel A—All Firms					
Managerial	CEO[†] (N=13)	−.0138	.0103*	129.6K*	.991
Position	President[†] (N=33)	.0113*	.0035*	149.5K*	.929
	VP-Finance[†] (N=26)	−.0001	−.0013*	212.8K*	.970
	VP-Legal[†] (N=17)	−.0008	.0011*	91.1K*	.939
	VP-Other[†] (N=20)	−.0014	.0004*	92.1K*	.959
	Exec[†] (N=39)	.0129*	.0055*	164.4K*	.976
Panel B—Equity REITs					
Managerial	CEO[†] (N=9)	.0044	.0015	359.7K*	.972
Position	President[†] (N=20)	.0068	.0034	145.2K*	.841
	VP-Finance[†] (N=18)	−.0011	−.0001	175.4K*	.961
	VP-Legal[†] (N=14)	−.0007	.0011	89.5K*	.935
	VP-Other[†] (N=15)	−.0011	.0008	86.7K*	.951
	Exec[†] (N=25)	−.0033	.0046	183.7K*	.750
Panel C—Mortgage REITs					
Managerial	CEO (N=3)	Insufficient Data			
Position	President[†] (N=7)	−.0125	.0064	−37.9K	.996
	VP-Finance (N=3)	Insufficient Data			
	VP-Legal (N=1)	Insufficient Data			
	VP-Other (N1=3)	Insufficient Data			
	Exec[†] (N=8)	.0138*	.0037	168.3K*	.999
Panel D—Both Equity and Mortgage REITs					
Managerial	CEO (N=1)	Insufficient Data			
Position	President[†] (N=6)	−.0076	.0023	233.0K*	.915
	VP-Finance[†] (N=5)	−.0023	.0026	233.0K*	.998
	VP-Legal (N=2)	Insufficient Data			
	VP-Other (N=2)	Insufficient Data			
	Exec (N=6)	−.0025	.0058	219.6K*	.883

[†]signifies that the regression is significant at the $\alpha = .05$ level or better
*signifies that the coefficient is significant at the $\alpha = .05$ level or better

competitive market, given above. In either case, the profits distributed to REIT owners will increase as the size of the firm increases, which may explain the observed positive correlation between firm sales and manager compensation.

We also separate the data into commercial, medical, or "mixed" REITs and repeat the empirical analysis. The "mixed" category contains those firms that are substantially involved in both medical and commercial operations. Exhibits 4 through 6 report the

Exhibit 4
REIT Company and Compensation Descriptive Statistics*

	N	Mean	Standard Deviation	Minimum Value	Maximum Value
Panel A—Total Assets by Company Types					
All Firms	54	485.26	1,072.79	2.41	7,229.61
Commercial	31	505.46	1,314.02	2.41	7,229.61
Medical	7	453.69	324.21	117.26	1,094.94
Mixed	16	459.95	754.38	26.67	2,409.97
Panel B—Total Revenue by Company Types					
All Firms	54	52.27	82.34	.11	504.45
Commercial	31	52.80	97.32	.11	504.45
Medical	7	62.40	39.52	19.04	132.39
Mixed	16	46.82	65.60	.40	246.11

		N	Mean	Standard Deviation
Panel C—Executive Compensation by Office and Company Type				
CEO	All Firms	13	461.7	536.3
	Commercial	6	308.7	244.5
	Medical	2	1,388.0	1,035.2
	Mixed	5	274.9	112.3
President	All Firms	33	294.2	200.6
	Commercial	20	285.8	240.8
	Medical	4	351.3	126.9
	Mixed	9	287.4	124.4
VP/Finance	All Firms	26	172.2	65.0
	Commercial	12	179.4	79.4
	Medical	5	164.7	73.1
	Mixed	9	166.8	41.2
VP/Legal	All Firms	17	140.7	44.6
	Commercial	10	141.8	51.6
	Medical	3	136.7	20.6
	Mixed	4	140.8	47.8
VP/Other	All Firms	20	133.7	44.5
	Commercial	10	146.4	56.4
	Medical	3	124.3	18.9
	Mixed	7	110.6	28.6
Exec	All Firms	39	356.0	354.2
	Commercial	22	303.2	250.9
	Medical	5	798.2	749.1
	Mixed	12	268.5	79.6

*Total Revenue and Total Assets are in millions of dollars. Executive Compensation, Panel C, is in thousands of dollars.

Exhibit 5
REIT Executive Compensation Regression Results

$$(MGRPAY) = \alpha + \beta_1 (UNEXPROFIT) + \beta_2(TR) + \varepsilon$$

		α	β_1	β_2	R^2
Panel A—Commercial REITs					
Managerial	CEO[†] (N=6)	96.3K	.0190*	.0044*	.964
Position	President[†] (N=20)	184.0K*	.0024	.0019*	.774
	VP-Finance (N=12)	166.4K*	.0016	.0001	.042
	VP-Legal (N=10)	102.6K*	−.0042	.0010*	.519
	VP-Other (N=10)	130.3K*	−.0017	.0002	.262
	Exec[†] (N=22)	203.6K*	.0057	.0019*	.731
Panel B—Medical REITs					
Managerial	CEO (N=2)	Insufficient Data			
Position	President (N=4)	577.8K	.0016	−.0031	.743
	VP-Finance (N=5)	153.2K	.0009	.00001	.104
	VP-Legal (N=3)	Insufficient Data			
	VP-Other (N=3)	Insufficient Data			
	Exec (N=5)	−447.7K	.0080	.0148	.816
Panel C—Mixed REITs					
Managerial	CEO (N=5)	247.2K	.0008	.0023	.090
Position	President (N=9)	307.5K*	.0019	−.0005	.066
	VP-Finance (N=9)	182.0K*	−.0002	−.0003	.125
	VP-Legal (N=4)	45.3K	.0112	−.0012	.747
	VP-Other (N=7)	120.0K*	−.0011	.0001	.139
	Exec (N=12)	272.1K*	−.0002	−.0001	.006

[†]signifies that the regression is significant at the α =.05 level or better
*signifies that the coefficient is significant at the α =.05 level or better

results for these categories. The results are very similar to those for Exhibit 1 through Exhibit 3, the obvious reason being that the vast majority of the firms are both commercial and equity REITs as shown in the Appendix.

Summary and Conclusions

Many researchers have examined the incentives created by compensation contracts; however, there has been relatively little research directed toward incentives in any particular industry. Microeconomic theory implies that owners will be concerned with maximizing firm profits, while managers will be interested in maximizing their utility. Results of some recent theoretical research suggests that incentives will vary across industries, depending on market conditions. In this paper, we analyze the incentives facing REIT managers. By focusing on a particular industry, we expect to be able to avoid potential misspecification problems resulting from the inappropriate pooling of firms competing in diverse industries.

Earlier work in the area of compensation contracting has suggested that compensation is directly related to firm size and profitability. A firm's sales revenue is an important

Exhibit 6
REIT Executive Compensation Regression Results

$$\frac{(MGRPAY)}{TA} = \beta_1 \frac{(UNEXPROFIT)}{TA} + \beta_2 \frac{(TR)}{TA} + \beta_3 \frac{(1)}{TA} + \varepsilon$$

		β^1	β^2	β^3	R^2
Panel a—Commercial REITs					
Managerial	CEO[†] (N=6)	.0192	.0028	175.4K*	.999
Position	President[†] (N=20)	.0086	.0037	127.8K*	.934
	VP-Finance[†] (N=12)	−.0027	.0001	173.3K*	.972
	VP-Legal[†] (N=10)	−.0040	.0015*	86.2K*	.978
	VP-Other[†] (N=10)	−.0009	.0006	100.7K*	.978
	Exec[†] (N=22)	.0138*	.0033	168.7K*	.994
Panel B—Medical REITs					
Managerial	CEO (N=2)	Insufficient Data			
Position	President (N=4)	.0030	−.0022	512.7K	.988
	VP-Finance (N=5)	.0010	.0014	64.1K	.929
	VP-Legal (N=3)	Insufficient Data			
	VP-Other (N=3)	Insufficient Data			
	Exec (N=5)	.0040	.0083	13.9K	.889
Panel C—Both Commercial and Medical REITs					
Managerial	CEO[†] (2N2=5)	.0058	−.0006	378.5K	.973
Position	President[†] (N=9)	.0098	.0014	191.5K*	.955
	VP-Finance[†] (N=9)	−.0030	−.0023*	238.8K*	.994
	VP-Legal (N=4)	.0138	−.0033	66.8K	.995
	VP-Other[†] (N=7)	−.0013	.0006	89.1K*	.948
	Exec[†] (N=12)	−.0045	.0028	287.7K*	.948

[†]signifies that the regression is significant at the $\alpha=.05$ level or better
*signifies that the coefficient is significant at the $\alpha=.05$ level or better

measure of the size of the firm, while net income is clearly a leading contender as a measure of profitability. Regardless of which potential accounting measure of profits is selected, we expect to find a high degree of collinearity between sales and profits. This collinearity will reduce the efficiency of OLS estimates. To reduce the collinearity between sales and profits, we estimate the difference between observed profits and the expected profit, given a firm's sales revenue. Essentially, this unanticipated profit term reflects a manager's effort and effectiveness in reducing costs.

In general, we find that managers are rewarded for increases in firm sales, while profits (costs) that are above or below expected profits (costs) for a given level of sales have little impact on executive pay. It is not clear whether managers are unable to significantly influence costs, or whether the greatest impact of a manager's actions on distributed profits is through his/her influence on sales.

Appendix

"Equity" Real Estate Investment Trusts	"Mortgage" Real Estate Investment Trusts	Both "Equity" and "Mortgage" Real Estate Investment Trusts
American Health[2]	ASR Investment	Banyan Mortgage
Banyan Short Te	Banyan Hotel Inc.	CV REIT
Bradley Real Estate	BRT Realty Trust[1]	Healthvest[2]
BRE Properties[1]	Capstead	HRE Properties
Burnham Pacific	Countrywide Cre[1]	Meditrust[2]
Clevetrust Real Estate	Dial REIT	Mortgage & Realty
Cousins Property[1]	Homeplex Mortgage[1]	NHP Nationwide[2]
East Group Property[1]	Real America	Presidential Realty[1]
Eastover Corporation	Resource Mortgage[1]	
Equivest Inc.	RYMAC Mortgage	
Federal Realty		
First Union Realty		
Hallwood Realty		
Health Care Property[2]		
Health Care REIT[2]		
Health Equity Property[2]		
IRT Property		
Kroger Equity		
Lomas & Nettlet		
MGI Properties[1]		
MIP Properties[1]		
Mission West Properties		
MSA Realty		
National Capital[1]		
New Plan Realty		
Pennsylvania Realty [1]		
Property Capital		
REIT of California[1]		
RPS Realty Trust		
Santa Anita Realty		
Sizeler Property[1]		
United Dominion[1]		
Washington REIT[1]		
Weingarten Realty		
Western Investment		
Wetterau Property		

Note: All firms are commercial unless identified as commercial and residential (1) or medical (2).

Notes

[1]See for example work of Holmstrom (1979) and Harris and Raviv (1979).

[2]Owners do not monitor managers because monitoring is either not possible, or because any given owner's cost of monitoring exceeds the benefit of doing so.

[3]The leverage clientele effect holds that there will be a bimodal distribution of capital structures, completely unlevered or highly levered, within an industry. Investors in high (low) tax brackets will prefer to hold shares of unlevered (levered) firms (see Kim, Lewellen and McConnell, 1979).

[4]Here, effort refers to the influence of all of a manager's actions on the performance of the firm and is more broadly defined than a strict interpretation of "effort".

[5]A discussion of multicollinearity's effect on regression estimates is beyond the scope of this article. Interested readers should see Kmenta (1986), pp. 430–42.

[6]When we estimate profits as a function of an intercept and firm sales for all firms in the sample, we obtain the following results: F-value$=7.444$ (significant at the .01 level), Adjusted $R^2=.1084$, $\alpha=\$476,478$ ($t=.143$), and $\beta(sales)=.094$ ($t=2.728$ and significant at the $\alpha=.01$ level).

[7]The method used here follows Ciscel and Carroll (1980). It is suggested as a way to reduce heteroskedasticity and simultaneous equation biases.

[8]Total revenue and net income are positively related, as expected, in all four regressions estimated. The total revenue coefficient and, thus, the model itself are significant at the $\alpha=.05$ level or better for the entire sample and for the equity REITs subsample. The mortgage and both equity and mortgage subgroups' models are not significant at the $\alpha=.05$ level.

[9]The assumption of homoskedasticity for this regression cannot be rejected given a *chi*-square test value of 3.9151 (*alpha* level$=.1412$) for the entire sample. Each subsample has insignificant *chi*-square test values as well.

[10]The assumption of homoskedasticity across firms is not rejected for any executive position classification for the entire sample. The assumption is also not rejected for all positions in the three subgroups (for which there are sufficient data) except for President in the equity subgroup. The confidence level for hypothesis rejection is at the $\alpha=.05$ level or better.

[11]The relatively high compensation of the CEOs of medical REITs (in Table 4) is noteworthy, although the small sample size should be noted.

[12]We measure Total Revenue and *UNEXPROFIT* and compensation in actual dollars; therefore, an *UNEXPROFIT* coefficient estate of .0114 indicates compensation will change by 11.4 cents in response to a $1,000 dollar change in *UNEXPROFIT*.

[13]Additional statistics may be obtained from the authors upon request.

[14]Under either of these conditions, the dollar profits distributed to shareholders will increase. The rate of return to stockholders may or may not be affected, depending on the influence of these variables on costs.

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