



Managerial Style and Firm Value

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This study analyzes the effect of managerial style on firm value by partitioning general and administrative (G&A) expenses in the real estate investment trust industry into a nondiscretionary “structural” component associated with the costs of asset and liability management and a discretionary or “style” component. The discretionary component is significantly related to at least one measure of style—specifically, the portfolio focus/diversification of the firm. Gross (project-level) cash flows are invariant to the nondiscretionary or structural component of G&A but are positively related to the style component of G&A. The structural component has a negative impact on share price while the style component has a neutral impact. Therefore, for this industry, creating larger, less-levered firms would result in enhanced value.

A firm can be viewed as a portfolio of projects arising from capital budgeting decisions. Bundling projects into a corporation and then issuing exchange-traded equity can add value by creating liquid equity claims from relatively illiquid ones. However, the benefits of liquidity are realized only with the costs of the required management team. In this study, these costs are examined. Specifically, three empirical questions are addressed: (1) what are the determinants of the costs of management; (2) how are these costs related to the cash flows to equity holders; and (3) what are the effects of these costs on equity market valuation?

The laboratory for this analysis is the real estate investment trust (REIT) industry where “projects,” in this case individual properties, trade in both real estate property markets and in securitized portfolios on securities exchanges. The sample consists of 75 publicly-traded REITs over eight years. Reported general and administrative expenses (G&A) are used as the measure of the cost of management. This measure includes corporate-level asset management expenses (including salaries to the management team, corporate legal expenses, document filing and reporting costs) but excludes all property-level expenses (including property maintenance, marketing and property taxes). Three factors are identified that are significantly related to G&A expenses expressed as either a dollar figure or as a percentage of assets

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under management. Relative G&A is smaller when the firm is larger, less levered or more focused.

Observed G&A is then partitioned into two components: a nondiscretionary or "structural" one arising from the associated corporate assets and liabilities, and a discretionary or residual component. The discretionary component captures a number of dimensions of managerial "style" and is shown to be significantly related to the degree to which the portfolio of properties is diversified or focused. In addition, this component reflects other dimensions of "style" for which statistical measures are not available. Specifically, the residual component includes the costs associated with the degree to which the portfolio is actively versus passively managed, and the costs of restructuring the company. Actively managed REITs are more likely to engage in portfolio turnover and to develop or renovate properties. An active strategy can involve adding value to underproducing properties or timing regional real estate cycles. Restructurings include changes in organizational structure (master limited partnership, REIT or corporation), size, capital structure or management.

Dichotomizing the costs of management into a nondiscretionary or structural component and a discretionary or style component is economically meaningful since the cash flow and equity valuation effects of the two are significantly different. Specifically, one additional dollar of structural G&A results in a one dollar reduction in corporate level net cash flows available to shareholders. In contrast, an additional dollar of the style component of G&A has no impact on concurrent corporate-level cash flows available to equity holders.

The relationship between the components of G&A expenses and firm value is examined while controlling for net-asset-value (NAV). Consistent with the hypothesis that discretionary managerial decisions are zero net-present-value (NPV) ones, it is found that higher levels of the managerial style component of G&A are not associated with significantly higher levels of value. In contrast, higher levels of the structural component are found to be significantly negatively related to firm value.

The implications of the analysis are clear. Corporate organization and exchange listing provide enhanced liquidity, but the added liquidity occurs at a cost. The results indicate that general and administrative costs are related to the structural features of the firm that are usually determined at formation, but can be subsequently altered at a cost. Substantial value can be added by creating (or reorganizing into) larger, less levered firms.

Aside from its direct relevance to the literature on costs and valuations, this study sheds light indirectly on executive compensation. Despite considerable effort, past research has found only an economically trivial relationship between executive compensation and firm performance. For example, Jensen and Murphy (1990a) argue that one of the most documented empirical regularities in finance is a manager who increases shareholder wealth by \$1000 is rewarded with only \$2 in additional compensation.¹

Despite the claim of Golz (1993) that REIT analysts pay particular attention to the level and form of compensation offered managers, evidence linking pay to the performance or value for REITs is limited. While Cannon and Vogt (1995) and Howe and Shilling (1990) demonstrate that performance is related to the organizational form of the REIT, with self-administered REITs outperforming advisor-administered REITs, they find little evidence that compensation is related to performance. Similarly, Golec (1994) finds a link between compensation determination and performance. When the compensation package is determined by a trust's board, the trust, on average, outperforms trusts where compensation packages are determined by a formula. However, Golec provides no evidence that performance or value is related to the level of compensation.

Solt and Miller (1985) find a relationship between advisor compensation and accounting measures of performance, but, again, report no evidence linking compensation to equity performance or value. Finally, Chopin, Dickens and Shelor (1995) find that pay is related to total revenues for their sample, but find no reliable relationship between compensation and profitability.

This study provides two additional insights into compensation. First, studies typically measure the compensation to one or a few senior corporate executives. A more important measure is the total cost of the entire management team. This measure is more relevant since it captures not only compensation to the senior managers, but also compensation to their staff. Thus, if the leaders of a management team are correctly remunerated, but their team is too large (perhaps due to an executive's excess consumption of the perquisite "staff"), then concentrating on the compensation to senior managers will miss an important dimension of compensation.

¹ See also Coughlin and Schmidt (1985), Murphy (1985), Antle and Smith (1986), Abowd (1990), Jensen and Murphy (1990b), Lewellen, Loderer, Martin and Blum (1992) and Sigler and Haley (1995) for evidence of an economically trivial relation between changes in shareholder wealth and changes in executive compensation.

Secondly, and perhaps more importantly, it is difficult to assess managerial performance without measuring the change in the value of underlying assets. Measuring changes in the market value of equity between two points is a noisy measure of manager performance since the value of the underlying assets also changes between the two points. Of course, some of the changes in these assets are due to managerial decisions; however, a significant portion is attributable to factors beyond the manager's control, like shifts in discount rates or movements through the business cycle. In this study, managerial performance is not measured as the change in equity or assets between two points. Instead, stock prices are related to the value of the underlying assets at a single point in time. This technique, which is similar to studies that use Tobin's q , allows for a more powerful analysis of shareholders' assessments of the net present value of the costs of management.²

The next section provides the theoretical underpinnings of the empirical results. The third section describes the dataset and defines the key variables. In the penultimate section, the empirical results are described. Conclusions appear in the final section.

The Model

The model underlying the empirical specification is the fundamental dividend discount relationship. If V_t is the value of a share of stock at time t , D_t is the dividend paid at time t and r is the discount rate, the equation is

$$V_t = \int_t^{\infty} D_t e^{-rt} dt \quad (1)$$

For REITs, the cash flow available to be distributed to shareholders, C_t , is simply the cash flow from properties, Y_t , minus any interest expense, I_t , and corporate overhead expenses, G_t (see Exhibit 1).

$$C_t = Y_t - I_t - G_t \quad (2)$$

If REITs pay out 100% of corporate level cash flows then (from Equation (1))

² See Lang and Stulz (1994) for a similar, yet more thorough, argument. Tobin's q is the ratio of the market value of assets to the replacement value. The measure of replacement value used here is the market value of the properties in the local real estate markets.

Exhibit 1 ■ Real Estate Investment Trust
Pro Forma Income Statement

Revenues from Properties	
<i>Rents, tenant reimbursements</i>	
–	Property-Level Cash Expenses
<i>Maintenance, Advertising, Property Management Fees, Property Taxes</i>	
=	Property Cash Flows (Y_t)
–	Interest Expenses (I_t)
–	General and Administrative Expenses (G_t)
<i>Corporate Level Salaries, Filing Costs</i>	
=	Corporate Cash Flows (C_t)
–	Depreciation (non-cash) Expenses
=	Net Income (NI)

$$V_t = \int_t^{\infty} (Y_t - I_t - G_t)e^{-rt} dt. \quad (3)$$

If property cash flows, Y , are expected to grow at rate g^y , and corporate expenses to grow at rate g^s , and if investors are risk neutral, then

$$V_t = \frac{Y_t}{r - g^y} - \frac{I_t}{r} - \frac{G_t}{r - g^s} \quad (4)$$

Note that the first two terms on the right side of Equation (4) are the value of the assets minus the value of the debt. This is the net asset value of the firm. Therefore, the value of the firm can be decomposed into the net value of the underlying assets minus the value of management expenses.

The basic hypothesis in this article is that corporate expenses can be dichotomized into discretionary, G^d and nondiscretionary expenses, G^n with

$$G = G^n + G^d. \quad (5)$$

Using Equation (5) with Equation (4) and denoting g^n as the expected growth of nondiscretionary expenses and g^d as the growth of discretionary, then

$$V = N - \frac{G^n}{r - g^n} - \frac{G^d}{r - g^d} \quad (6)$$

where N is the net asset value.

Nondiscretionary or “structural” G&A expenses arise from the basic costs associated with asset and liability management so that

$$G^n = G^n(A, L)$$

Where A is the dollar value of assets under management and L is the value of liabilities of the firm. If there are economies of scale in asset and liability management, this function will be concave in both assets and liabilities.

Discretionary or “style” G&A expenses, on the other hand, arise from explicit managerial decisions intended to increase shareholder value. This implies that

$$C = C(G^d) \tag{7}$$

and from Equation (2) is

$$\frac{\partial C}{\partial G^d} = \frac{\partial Y}{\partial G^d} - \frac{\partial I}{\partial G^d} - 1 \tag{8}$$

That is, the effect of discretionary G&A expenditures on corporate cash flow must arise either from the effect on property cash flow or from more favorable financing.

Corporations do not separate G&A expenses into discretionary and nondiscretionary categories; however, since the basic asset and liability management is expected to be a concave function of assets and liabilities, G&A expenses can be regressed on a quadratic of assets and liabilities to estimate the nondiscretionary component. The residuals from this regression then become a measure of the discretionary or style-related expenses. Therefore, the measure of discretionary expenses is

$$G^d \equiv G - G^n(A, L) \tag{9}$$

where

$$G^n(A, L) = a_0 + a_1A + a_2A^2 + a_3L + a_4L^2 \tag{10}$$

and $a_1, a_3 > 0, a_2, a_4 \leq 0$.

Data

The data are drawn from the equity REIT database described in Capozza and Lee (1995). This database is a subset of the 209 REITs listed in the 1992 *NAREIT* (National Association of Real Estate Investment Firms) *Source Book*, which lists all member REITs as of December 31, 1991. This database focuses on equity REITs and excludes all mortgage, hotel, restaurant and hospital REITs; REITs that do not trade on the NYSE, AMEX, or NASDAQ; and REITs for which property information is not available. Applying these exclusions results in a sample of 75 REITs, which are listed in Table 1. Of the 75 equity REITs, 32 appear in all eight sample years from 1985 to 1992, with the remaining appearing for at least one year. This leads to a total of 416 potential observations.

Firm specific information was gathered from 10-K reports, annual reports to shareholders and proxy statements augmented with stock price data from the CRSP daily return file. The database includes balance sheet, income statement, and property variables from the 10-K reports.

Two proxies are used to measure focus in this study. Both are Herfindahl indices, one for property type focus and one for regional focus. For each company, the property type index is calculated as $\sum_{i=1}^4 S_i^2$, where S_i is the proportion of a firm's assets invested in a particular product line (office, warehouse, retail or apartment). Higher levels of concentration by property type lead to higher levels of the index: If the firm is highly focused along one dimension, the index is close to one; while the index approaches .25, if the firm's portfolio of properties is equally diversified across the four property types.

The regional Herfindahl is similarly defined as $\sum_{r=1}^8 S_r^2$ where S_r is the proportion of a firm's assets invested in each of eight economic regions as defined in Hartzell, Shulman and Wurtzbach (1987): New England, Middle Atlantic, Southeast, Midwest, Plains, Southwest, South Pacific and North Pacific. This concentration variable can vary from one for a geographically focused REIT to .13 for a REIT with holdings equally diversified across the eight regions.

The database also provides estimates of the market value of properties held and the NAV on a per share basis. The estimates are described in detail in Capozza and Lee (1995). The NAVs were estimated by subtracting liabilities from estimated property assets plus other assets. Additional adjustments

Table 1 ■ The Equity REIT sample.

B R E Properties Inc. *	New Plan Realty Trust*
Berkshire Realty Co. Inc.	Nooney Realty Trust Inc.*
Bradley Real Estate Trust*	One Liberty Properties Inc.*
Burnham Pacific Properties Inc.	P S Business Parks Inc.
California Real Estate Investment Trust*	Partners Preferred Yield Inc.
Cedar Income Fund Ltd.	Partners Preferred Yield II
Cedar Income Fund 2 Ltd.	Partners Preferred Yield III
Chicago Dock and Canal Trust	Pennsylvania Real Estate Investment Trust*
Clevetrust Realty Investors*	Property Trust America*
Continental Mortgage & Equity Trust*	Prudential Realty Trust*
Copley Property Inc.	Public Storage Properties VI
Cousins Properties Inc.	Public Storage Properties VII
Dial REIT Inc.	Public Storage Properties VIII
Duke Realty Investments Inc.	Public Storage Properties IX Inc.
E Q K Realty Investors 1*	Public Storage Properties X Inc.
Eastgroup Properties*	Public Storage Properties XI Inc.
Federal Realty Investment Trust*	Public Storage Properties XII
First Union Real Estate Equity*	Public Storage Properties XIV
Grubb & Ellis Realty Inc. Trust	Public Storage Properties XV Inc.
H R E Properties*	Public Storage Properties XVI
I C M Property Investors Inc.*	Public Storage Properties XVII
I R T Property Co.*	Public Storage Properties XVIII
Income Opportunity Realty Trust	Public Storage Properties XIX
Koger Equity Inc.	Public Storage Properties XX
Landsing Pacific Fund	Real Estate Investment Trust Ca*
Linpro Specified Properties	Realty South Investors Inc.
M G I Properties Inc.*	Santa Anita Realty Enterprises*
M S A Realty Corp.*	Sizeler Property Investors Inc.
Meridian Point Realty Trust 83*	Trammell Crow Real Estate Investors*
Meridian Point Realty Trust 84*	Transcontinental Realty Investors*
Meridian Point Realty Trust IV	U S P Real Estate Investment Trust*
Meridian Point Realty Trust VI	United Dominion Realty Trust Inc. *
Meridian Point Realty Trust VII	Vanguard Real Estate Fund I
Meridian Point Realty Trust VIII	Vanguard Real Estate Fund II
Merry Land & Investment Inc.*	Vinland Property Trust
Monmouth Real Estate Investment Corp.	Washington Real Estate Investment Trust*
	Weingarten Realty Investors*
	Western Investment Real Estate Trust*
	Wetterau Properties Inc.

The sample of REITs, drawn from the equity REIT database described in Capozza and Lee (1994). This database is constructed from the 1992 *NAREIT* (National Association of Real Estate Investment Trusts) *Source Book*, which lists all publicly traded REITs (209 REITs) as of December 31, 1991. The database excludes all mortgage, hotel, restaurant and hospital REITs, REITs that do not trade on NYSE, AMEX, nor NASDAQ or for which property information is not available. These exclusions lead to a sample of 75 REITs, which are listed here. Given this list, the researchers then attempted to construct one observation per REIT for each of the years between 1985 and 1992. Of the 75 equity REITs, 32 appear in all eight years and are annotated with a star (*), with the remaining appearing for at least one year.

were made for joint ventures, differences between coupon rates and market yields on debt, and property turnover. While these estimates for NAV are the most sophisticated available, they nevertheless contain measurement error.³

Table 2 contains mean, standard deviation and extreme value information on variables used in this analysis that were culled from the database. There is a large dispersion in the size of the firms considered here; book values of the property portfolios vary from \$2.1 million to about \$486 million, while book values of all assets vary up to \$604 million. The weighted-average capitalization rates used to construct estimates of property values vary between 7.4% and 10.6%. Their estimates of portfolio market values

Table 2 ■ Summary statistics.

Variable	Mean	Max	Min	Std. Dev.
Total Assets (\$million)	126.8	603.8	2.1	110.2
Property Assets (\$million)	94.7	485.7	2.1	85.3
Book to Market Ratio of Property (%)	85.2	201.0	14.0	33.0
Book to Market Ratio of Total Assets (%)	87.0	166.0	20.0	26.0
Weighted Capitalization Rate (%)	8.9	10.6	7.4	0.5
Net Income (\$thousand)	3,963	49,446	(58,609)	9,209
G&A Expenses (\$thousand)	1,315	5,038	66	1,137
Cash Flow Per Share	1.03	4.76	0	0.64
G&A / Total Assets (%)	1.1	7.5	0.0	1.1
Cash Flow Yield (%)	8.9	58.0	0.0	5.1
Leverage Ratio (%)	36.8	94.4	0.0	25.0
Herfindahl Index for Region (%)	58.2	100.0	15.0	28.0
Herfindahl Index for Property Type (%)	66.7	100.0	26.0	24.1

This table reports means, standard deviations and extreme values for a number of summary statistics calculated across the sample of 416 observations for 75 firms. Total assets and property assets are book values. Total market assets are measured by estimated market value of properties + other assets. The leverage ratio is defined as total liabilities/(total liabilities + market value of the equity).

³ An alternative to calculating NAVs is to use the appraised values provided by some REITs as in Damodaran and Liu (1993). Appraised values, however, are not without problems. First only a few REITs provided appraisal values during the sample period. Second these values lack consistency since appraisers use diverse approaches and data. Finally, there is great potential for upward bias in some appraised values when the motivation for managers to obtain appraised values arises from management contracts specifying compensation as a percentage of the appraised value. The advantages of the Capozza/Lee NAVs are the broad coverage and the consistent and accurate estimates for portfolios of property despite the limitations of the publicly available data in 10-Ks.

generally lie above reported book values, with a mean book-to-market ratio for properties of about 85%. There is considerable variation in the use of debt in the capital structure, with debt representing anywhere from zero percent to 94.4% of the capital structure. Both property type and regional diversification vary in the cross-section, with both variables virtually spanning their feasible ranges. Of perhaps greatest importance here are the G&A figures, which vary from \$66,000 to \$5.04 million, or, expressed as a fraction of assets, from zero to 7.5% with a mean of 1.1%.

Results

This section investigates the sources and valuation consequence of G&A expenses. First, the basic relationship between G&A expenses and assets and liabilities is estimated. Second, the observed G&A is partitioned into a component that is associated with these “structure” variables and the residual, which is attributed to managerial style. The residual component is shown to be significantly related to at least one measure of “style” by relating this component to the measures of regional and property-type focus. Third, the effects of G&A and its two components are investigated on cash flows at both the property level (before interest and G&A expenses) and the corporate level (net of interest and G&A). Finally, the relationship of G&A expenses to equity valuation is explored.

Structural G&A Expenses

The hypothesis is that for any portfolio of real estate assets, basic asset and liability management is essential but does not enhance value. On the other hand, when managers undertake expenses beyond the basic level, cash flow and value can be enhanced. There are also economies of scale in managing both assets and liabilities. As a result, larger, less-levered firms should be able to reduce these basic structural expenses when measured as a percentage of total assets under management.

While the costs of asset management are widely recognized, the cost of debt management is often overlooked. With debt added to the capital structure, additional financial management, reporting and filing requirements ensue. These debt-related costs are also subject to economies of scale. Thus, a concave relationship between G&A expenditure and the amount of debt in the capital structure is expected.

To capture this feature, both linear and quadratic terms for the market value of assets and liabilities are included in a regression with G&A expenditures as the dependent variable. Since G&A is expected to increase with total

assets and liabilities, but at a decreasing rate, the coefficients on the linear terms are anticipated to be positive and those for the quadratic terms to be negative.

For the sample of 298 usable observations, the annual G&A expenses reported in thousands of dollars are regressed against the total assets and liabilities and their respective squares. To accommodate cross-sectional heteroskedasticity, estimation is done via weighted-least-squares (WLS), with the market value of assets used as the weighting variable. The results appear in the first column of Table 3.

As predicted, there is a positive and concave relationship between G&A expenditures and both assets and liabilities. For very small firms, an increase

Table 3 ■ General and administrative expenses.

	Total G & A (1)	Total G & A (2)	Style G & A (3)
Average Year Dummy	96	533	361
Assets (000)	7.9*** (6.8)	7.5*** (6.4)	
Assets ² (000,000)	-0.004* (1.9)	-0.004 (1.5)	
Liabilities (000)	5.2** (2.2)	4.0* (1.7)	
Liabilities ² (000,000)	-0.02** (2.3)	-0.02* (1.8)	
Property Focus		-476*** (3.6)	-415*** (3.4)
Regional Focus		-100 (0.9)	-109 (1.0)
Adjusted R ²	.14	.18	.01

Estimates from weight-least-squares regressions, with replacement or real-estate market value of assets used as weights. Indicator variables capturing calendar year are used as intercepts, but estimates of their associated coefficients are not reported. The market value of assets are estimates of replacement or real-estate market values, based on Capozza and Lee (1996). Liabilities are book values of total liabilities. Property-type focus is a Herfindahl coefficient generated by summing the squared proportions of a firm's assets invested in each of four real estate types. Regional-focus is similarly, a Herfindahl index computed across nine geographic regions. Asterisks indicate whether these *t*-Statistics exceed the 10%(*), 5%(**) or 1%(***) critical values.

in the size of the asset pool increases expenses by just under 0.8% of the size of the increase. However, consistent with the existence of economies-of-scale, this measure of marginal administrative costs declines with firm size. For example, for a firm with assets equal to the sample average, the estimated average and marginal administrative costs are 0.8% and 0.7% of assets, respectively; for the largest firm in the sample, estimated average and marginal administrative costs are only 0.6% and 0.2% of assets.

The fitted values from this regression are the measure of structural G&A expenses. The residuals from the same equation are the measure of style G&A expenses.

Style G&A Expenses

The second half of the hypothesis is that discretionary spending by managers will be undertaken when it is likely to be value enhancing. Since income statements do not separate the expenses into discretionary and nondiscretionary categories, specific discretionary expenses must be inferred from the data. The types of expenditures that are discretionary include, among other things, expenses associated with diversifying the portfolio. As a manager diversifies, a larger opportunity set becomes available and therefore, if the manager chooses projects with the most promising returns from the wider set, there is potential for higher total returns on assets. At the same time, diversifying either by property type or by region will add to overhead expenses as travel, office locations and/or personnel are added. Thus, the decision to diversify is viewed as discretionary or style related.

To confirm that this style variable is related to G&A expenses, focus variables are added to the first regression. Column two of Table 3 displays the results. As hypothesized, greater diversification is associated with higher G&A expenses. The property focus variable enters the equation significantly, but the regional focus variable is insignificant. This is plausible since more costs would arise if a firm added another property type and hired employees with additional expertise, than if a firm simply added another property, which might cause travel expenses to rise, but not necessitate any hiring. The coefficient on the property focus variable indicates that a fully focused firm will have G&A expenses that are, on average, \$357,000 lower than a firm fully diversified by property type ($1*476 - .25*476$). In column 3 of Table 3, the residuals from the first column are regressed on the two focus variables. The implications for focus are similar to those from column two.

Managerial Expenses and Property Cash Flows

To examine the relationship between G&A expenditures incurred within a given fiscal year and cash flows during that year, property-level cash flows (PCF), which are gross cash flows from operations (rents) less any property level expenses (see Exhibit 1) are first examined. Property level expenses include maintenance, property management and property taxes. This measure of gross income is then regressed on G&A expenditures. Since dollar income should increase with the size of the income generating asset pool, the market value of assets is also included in the specification.⁴

The slope coefficient associated with the market value of assets provides an estimate of the gross yield or return on assets. Of greater importance, however, is the slope coefficient associated with G&A expenses, which estimates the relationship between investment in G&A and subsequent cash flows to that investment. If the coefficient is one, then a one dollar increase in management fees would, on average, lead to a one dollar increase in gross cash yields, and hence, a zero change in net or corporate cash flows (CCF or gross cash flows less interest payments and less G&A expenditures). Using this reasoning, a coefficient reliably greater than one would imply that an increase in G&A, on average, leads to increases in net cash flows available to shareholders. A second key benchmark is whether the slope differs from zero. If the slope coefficient is zero, then G&A expenditure is wasted, since an increase in G&A does not lead to any increase in gross cash flow, and hence, is a deadweight loss in corporate cash flows.

Using the sample of 298 usable observations, and including intercepts that vary by calendar year, the relationship is estimated using WLS with the market value of assets as weights. The first column of Table 4 displays the results.

The coefficient associated with the market value of assets indicates that a firm with zero administrative expenses earns, on average, a gross return on assets of about 8.2% per year. The coefficient associated with G&A expenses is reliably greater than zero, indicating that increases in G&A expenditures are, on average, associated with increases in concomitant gross cash flows

⁴ Since the market value of the assets is derived from a capitalization of NOI using property-type and metro-area specific capitalization rates, the analysis estimates only part of the potential impact of style decisions. To the extent that the market capitalization rates used in the calculation of NAV reflect risk, assessment cannot be done as to whether managers choose riskier metro areas or property types since the effects have been removed in the calculation of NAV. Only portfolio level effects can be estimated from these data. The authors thank an anonymous referee for this insight.

from properties. It is not clear whether this increase in gross cash flows is sufficient to offset the higher expense, however. The t -Statistic associated with the null that the slope equals one is -1.9 with an associated one-sided p -value of 0.06.

As argued earlier, actual G&A expenditures can be partitioned into two components: those expenditures that are associated with basic asset and liability management, and a component associated with management style. These components are estimated as the fitted values and the residuals, respectively, from the regression of G&A on quadratics of both assets and liabilities. To determine whether the cash flow implications of G&A expenditures vary between these two types of G&A, the earlier specification is re-estimated, this time regressing cash flows from properties on the two components of total G&A.

The results appear in column 2 of Table 4 and indicate asymmetric relationships between contemporaneous gross cash flows and the two components of G&A expenditure, with the coefficients associated with the two components of G&A reliably different from each other ($F = 8.35 > F_{(1,\infty,.05)} = 2.71$). The coefficient associated with structure is insignificant, indicating that cross-sectional differences in the structural component of G&A expenditure result in no predictable differences in gross cash flows. Expenditures on the structural component of G&A are essentially dead-weight losses.

In contrast, the coefficient associated with managerial style is reliably positive. The magnitude of this coefficient indicates that a one dollar increase in this expense component leads to an eighty-six cent increase in concomitant gross revenues; however, the null hypothesis that this coefficient equals one cannot be rejected. That is, increases in the style component of G&A expenses lead to little change in cash flows net of G&A expenses.

Corporate Cash Flow

Since the impact of managerial decisions can affect all cash flows, not just property cash flow, we repeat the preceding analysis, but instead we use net, or CCF. From Exhibit 1, CCFs are calculated as the gross cash flows less both G&A and interest expenditures and represent the funds from operation available to shareholders. Since interest expenses are deducted, the book value of liabilities is also included in this specification. The coefficient associated with debt is an estimate of the average yield offered on the debt. Estimation via WLS yields the results in columns 3 and 4 of Table 4.

Table 4 ■ The effect of G&A expenses on property and corporate cash flow.

	Property Cash Flow (1)	Property Cash Flow (2)	Corporate Cash Flow (3)	Corporate Cash Flow (4)
Average Year Dummy	-72	203	-45	201
Assets	0.08*** (59.8)	0.09*** (27.6)	0.08*** (40.7)	0.09*** (24.1)
Liabilities			-0.067*** (18.6)	-0.067*** (18.8)
Total G&A	0.70*** (4.5)		-0.39** (2.5)	
Structural G&A		-0.64 (1.3)		-1.6*** (3.3)
Style G&A		0.86*** (5.3)		-0.25 (1.5)
Adjusted R^2	.90	.90	.81	.81

Estimates from weight-least-squares regressions, with replacement or real-estate market value of assets used as weights. Indicator variables capturing calendar year are used as intercepts, but estimates of their associated coefficients are not reported. The market value of assets are estimates of replacement or real-estate market values, based on Capozza and Lee (1996). Liabilities are book values of total liabilities. Structural G&A is the fitted values from column 1 of Table 3, and style G&A is the residual from the same regression equation. Asterisks indicate whether these t -Statistics exceed the 10%(*), 5%(**) or 1%(***) critical values.

Column 3 of Table 4 reports the results of a specification similar to column 1, with the exception of the addition of liabilities. This coefficient which is estimated to be $-.067$ indicates that, on average, the debt has an effective yield of 6.7%. Of primary importance, however, is the fact that the coefficient associated with total G&A is reliably negative. This result is consistent with the belief that investment in additional G&A lead to lower cash flows available for shareholders.

In the final column, G&A is dichotomized into its components, analogous to column 2. Estimates of the cash flow implications of the two components of G&A expenditures are consistent with those in the previous specification. The coefficient associated with the style component of G&A, though negative, is not statistically different from zero, indicating that increases in this component appear to be offset by higher revenues, leading to a neutral net effect on cash available for shareholders. In contrast, the coefficient

associated with the corporate structure of G&A is significantly negative and not statistically different from -1 .

Managerial Expenses and Firm Value

Much research in the efficient market hypothesis literature suggests that investors look beyond current cash flows, and consider a stream of future flows when valuing equity. Therefore, the final analysis involves investigating the relationship between stock valuation and G&A expenditures.

The value of equity in a REIT derives from the cash flows on the underlying properties but is reduced by the interest expense and G&A expense. Therefore, from Equation (4), the value of shareholder equity equals the net asset value (market value of the assets minus the value of the debt) plus the net present value of G&A expenses. The net asset value per share can be estimated as the per share difference between the market value of the properties and the value of the debt claims (see Capozza and Lee 1995). Although the G&A expenditures can be measured in a given year, the present value of future G&A claims cannot. Instead, the discount factor, $1/r - g^s$, used by the market for valuing these claims is estimated. Specifically, the linear regression in column 1 of Table 5 is estimated via WLS, with total assets as weights. The coefficient associated with G&A is an estimate of the discount factor.

The R^2 indicates that 80% of the cross-sectional variation in prices is explainable by these factors, suggesting that this simple specification is quite successful in modeling the actual valuation process. The coefficient associated with net asset value is positive and highly significant. The fact that this coefficient is significantly above one indicates that, absent the G&A cost associated with the REIT organizational form, the securitization benefits of REITs increase the market value of the underlying assets by about 15% (coefficient of NAV = 1.15). Of primary importance, however, is the coefficient associated with G&A expenditures, which is negative but insignificant.

It may be tempting to conclude that current G&A expenses are not relevant in the valuation process. However, if the two components of G&A have differing implications for valuation, then including the sum of the two (or, equivalently, by forcing the coefficients of the two to be equal), a

Table 5 ■ Valuation and G&A expenses.

Dependent Variable = Market Equity		
Average Year Dummy	-6400	-3407
Net Asset Value	1.15*** (37.9)	1.27*** (26.9)
Total G&A Expense	-3.0 (-1.3)	
Structural G&A		-15.6*** (-3.4)
Style G&A		1.1 (0.4)
Adjusted R^2	.80	.81

Estimates from weight-least-squares regressions, with replacement or real-estate market value of assets used as weights. Indicator variables capturing calendar year are used as intercepts, but estimates of their associated coefficients are not reported. Net asset values are estimates of replacement or real-estate market values of assets minus the market value of the liabilities, based on Capozza and Lee (1996). Structural G&A is the fitted values from column 1 of Table 3 and style G&A is the residuals from the same regression equation. Asterisks indicate whether these t -Statistics exceed the 10%(*), 5%(**) or 1%(***) critical values.

misspecification is created.⁵ To examine this possibility, G&A per share is partitioned into its corporate structure component and its management style component. When both are included, estimation yields the results displayed in column 2 of Table 5.

As in the contemporaneous cash flow specification, the hypothesis can be rejected that the coefficients associated with the two components of G&A are equal ($F = 9.78 > F_{(1,\infty,.01)} = 4.45$). These findings are consistent with the hypothesis that investors can and do distinguish between G&A attributable to corporate structure and the portion attributable to managerial style. The style portion is not significantly related to equity value. In marked contrast, the structure-related component of G&A has a statistically and economically significant impact on market equity. A one dollar reduction in the structure related component of G&A is, on average, associated with an increase in shareholder equity of \$15.60. Again the coefficient associated with NAV is significantly above one. The coefficient suggests that the

⁵ This misspecification may explain why cash flows are significantly negatively related to total G&A while firm value is insignificantly related to total G&A.

liquidity enhancing benefits of the organizational form are about 27% (coefficient of NAV = 1.27).

It is informative to compare the relationship between the components of G&A and contemporaneous cash flows to the relationship between the components and value. Consider first the style G&A results. The evidence suggests that an increase in style-related G&A leads to an increase in concurrent property-level or gross cash flows. However, the increase in current style-related G&A leads to no discernible increase in concurrent corporate-level or net cash flow, and an insignificant increase in shareholder equity. Therefore, investors value those discretionary actions captured in style G&A as if they were zero NPV projects.

In contrast, the evidence indicates that the same one dollar increase in structural G&A has no effect on concurrent project-level cash flow, reduces concurrent corporate-level net cash flow by about one dollar, and reduces shareholder equity by \$15.60. Therefore, investors value increases in the structural component of G&A as if they were negative NPV projects. One scenario that is consistent with these estimates is one where a \$1 increase in the structural component signals a perpetuity of future expenses. The coefficient (15.6) implies a current capitalization rate for structural G&A expenses of 6.4% ($= 1/15.6$), similar to the historical average real rate of return on equities.

Conclusion

Securitization is frequently cited as a way to provide liquidity to an otherwise illiquid class of assets. However, there can be substantial costs associated with realizing such liquidity gains. In this study, the determinants and valuation effects of these costs are examined, which, in the case of REITs, are designated as G&A expenses. These expenses can be dichotomized into two distinct components. One component is nondiscretionary or structural and arises from basic asset and liability costs. This component increases with size and the use of leverage in the capital structure of the firm. Although this component increases with assets and liabilities under management, it does so at a decreasing rate, which suggests economies-of-scale in managing.

The second component captures the costs associated with managerial style. Whether a REIT chooses to focus or diversify, active management such as developing or rehabilitating properties, and organizational restructuring, are costs that would be captured by this component.

The two components of G&A expenditures have very different impacts on both contemporaneous cash flows and on firm valuation. Indeed, the estimates suggest that investors rationally distinguish between the two components of G&A. Specifically, the estimates show that increases in the style-related component lead to increases in contemporaneous project-level gross cash flow, but no change in contemporaneous net corporate cash flows or shareholder equity. These estimates are consistent with the hypothesis that investors view this component as a zero NPV project.

In contrast, cross-sectional differences in the structural component have no discernible effect on contemporaneous property-level cash flows but have a strong negative effect on corporate level cash flows and on valuation. These estimates are consistent with the hypothesis that investors view increases in this component as signaling the equivalent of a long-lived, negative NPV project.

Corporate structure and managerial style choices have significant impacts on the valuation of these firms, since different structures and strategies imply different levels of the two components of G&A expenses. Further, the large valuation effects associated with the structural component suggest that there are substantial wealth enhancing opportunities available by reorganizing existing firms to lower the structural components of G&A. This can be done by merging into larger firms or reducing the use of debt in the capital structure.⁶

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⁶ Some recent anecdotal evidence suggests that at least a few agents in the REIT industry have discovered this prescription for enhanced value. For example, Landsing Pacific, facing large G&A expenses and a low stock price, simply liquidated and distributed proceeds to shareholders by selling its portfolio of properties to a larger REIT (Bedford Properties). Property Trust, on the other hand, chose to increase its size dramatically from under \$100 million to over \$1 billion by issuing equity. Duke Realty and Southwest Property Trust engaged in major capital and management restructurings by internalizing the advisory function, issuing additional equity and using a portion of the proceeds to retire long term debt. In all the earlier cases, the changes were value enhancing. However, the large number of small, levered REITs in existence suggests that numerous opportunities for value creation remain.

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