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Financial Opacity and Firm Performance: The Readability of REIT Annual Reports

Stephen J. Dempsey · David M. Harrison · Kimberly F. Luchtenberg · Michael J. Seiler

Abstract We examine the capital market pricing implications of firm disclosure opacity as measured by the linguistic readability of REIT annual reports. The SEC has expressed concern that firms selectively manage the transparency of disclosures in order to hide adverse information. After controlling for other non-experimental factors that influence the readability of REIT financial statements, we find (1) financial opacity is negatively related to reported firm performance, and (2) the residual opacity that remains after controlling for other determinants of annual report readability has incremental explanatory power for returns beyond the Fama and French (1992, 1993) risk factors. The opacity risk-return premium persists after controlling for a (heretofore undocumented) stark monotonic decrease in annual report readability following the Sarbanes-Oxley Act of 2002.

Keywords REITs · Opacity · Performance · Readability · Cost of capital

Introduction

Why does financial transparency matter? In an informationally efficient world characterized by perfect capital markets, strategic disclosures by management designed to obfuscate the firm's true financial performance would be readily identifiable, easily dismissed, and thus irrelevant to security prices. Similarly, to the extent corporate disclosures represent significant news events for firms, undetected

S. J. Dempsey
University of Vermont, Burlington, VT 05405, USA

D. M. Harrison (✉)
Texas Tech University, Lubbock, TX 79409, USA
e-mail: david.m.harrison@ttu.edu

K. F. Luchtenberg · M. J. Seiler
Old Dominion University, Norfolk, VA 23529, USA

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management reporting biases would not necessarily impact the ex-ante market valuation of individual securities if information risk is completely diversifiable. By contrast, if disclosure opacity is capable of altering either (1) the expected levels/timing of future cash flows, or (2) the required opportunity rate used to discount expected cash flows, then firm pronouncements may well be associated with managerial incentives to window dress financial disclosures in order to favorably influence the market pricing of the firm's securities.

The purpose of this study is to examine the capital market pricing implications of firm disclosure opacity as measured by the readability of annual reports. In line with previous research (e.g., Li 2008; Subramanian et al. 1993), our hypothesis is that, other things equal, poorly performing firms have an incentive to publish less transparent financial disclosures. Theoretically, however, this comes at a cost since opaque information implies lower prices (higher cost of capital) due to the "lemons" problem (Akerlof 1970). Thus, the potential motivation for managers to massage corporate disclosures should be attenuated by the potential economic costs of financial opacity. Further, due to the relatively higher costs of external financing compared to internal financing (Myers and Majluf 1984), the economic costs of financial opacity should be particularly pronounced for firms accessing capital markets on a frequent basis.

As regulatory restrictions require real estate investment trusts (REITs) to pay out nearly all of their taxable income as dividends in order to retain their advantageous pass-through tax status, these entities are effectively prohibited from funding growth through internally generated profits. As a consequence, REITs with even modest growth ambitions tend to be frequent security issuers in the capital markets. The real estate investment trust industry therefore represents an ideal laboratory for our empirical tests.

The remainder of the paper is organized as follows. In the next section, we formally motivate our study by summarizing the literature on the implications of strategic corporate disclosure practices, along with the repercussions of information risk as a capital cost. We also summarize previous research on the readability of financial reports. In "Empirical Design" we develop our research methodology, and in "Results" we present our results. "Conclusion" concludes with a summary of the study and suggestions for future research.

Background Literature

In October 1998, the SEC advocated "plain English" disclosure rules, arguing (1) firms could use vague language in order to hide adverse information, and (2) average investors may not be able to understand complex financial reports, resulting in capital market inefficiencies. The premise underlying the first argument is that managers have incentives to obfuscate poor performance through complex disclosures in order to either dampen or defer unfavorable capital market impacts. For example, a disappointing return on assets (ROA) performance in 1 year could be downplayed in the annual report through intentionally vague wording or biased elaboration regarding a more enduring cause. If such fog or spin could successfully influence investor sentiment about future firm performance, then opportunistic

pressures to do so might be expected to be more pronounced for firms that frequently access the capital market.

Although both SEC motivations are consistent with the idea that complex information is more costly to process and therefore less likely to be quickly and completely imparted into prices (e.g., Grossman and Stiglitz 1980), the second SEC-stated motivation is predicated on the idea that pricing noise due to uninformed (or mis-informed) investor trading may not be sufficiently outweighed by informed traders at the margin. Relevant in this regard is Bloomfield's (2002) "incomplete revelation hypothesis." This hypothesis predicts that the more costly public data are to extract and meaningfully analyze, the less those data drive a trading interest, and therefore, the less likely prices will reflect the impacted information. As he states, the hypothesis predicts "systematic underreaction to information contained in footnotes and statistics derived through fundamental analysis, with larger under-reactions to footnotes that are more complex or to statistics that require more complex analyses" (p. 237).

Perhaps just as important as the problem of impacted information on the mispricing of securities is the potential for the resulting information risk to increase a firm's cost of capital. Owing to the importance of information risk to our empirical analysis, the next section addresses the relevant literature in this context.

Information Risk and the Cost of Capital

Absent optimal contracts between managers and investors, or effective regulatory "fixes" to the disclosure environment, the lemons problem has long been recognized as a cause of information efficiency breakdowns in capital markets (Akerlof 1970). Under noisy rational expectations, investors who are unable to discern fully revealing disclosures from those that are only partially or selectively revealing will assign values to firms that necessarily reflect an averaging of possible firm outcomes.[1] The lower prices engendered by information risk are thus tantamount to an increase in the cost of capital.

Although there is intuition behind the idea that diminished information (less quality or quantity) results in lower prices and thus a higher cost of capital, the extent to which information risk is non-diversifiable, and therefore priced in a portfolio context, has been the topic of considerable debate. Traditional asset pricing models generally rely on assumptions of efficient markets with homogenous expectations by market participants to model required returns on risky securities. Under the simplest of these models, the required rate of return on an individual security depends exclusively on its covariability with the market and the overall risk-free rate (Sharpe 1964; Lintner 1965). Broader specifications recognize additional risk factors including small stock and value stock premia (Fama and French 1992, 1993) as well as potential momentum effects (Carhart 1997). Beyond this, additional firm-specific characteristics are generally assumed to be idiosyncratic in nature, diversifiable within a portfolio context, and thus generally irrelevant to valuation decisions. It is important to recognize, however, that because these broader factor

[1] See Healy and Palepu (2001) for an extensive review of this literature.

models are empirical rather than theoretical equilibrium specifications of the firm-to-market returns relation, the successful explanatory power of additional factors may well reflect, at least in part, priced differences in information risk.[2]

A large body of literature demonstrates the pricing relevance of information risk. Several theoretical works address the issue from the standpoint of the ability for higher quality/quantity information to ameliorate the asymmetry between informed and uninformed investor trading (e.g., Diamond and Verrecchia 1991; Kim and Verrecchia 1994; Lambert et al. 2008). Generalizing the results of these models, as the precision of information increases in the marketplace, informed trading subsumes noise-trading in terms of pricing impact, resulting in more proper valuations. Easley and O'Hara (2004) further demonstrate that increased availability of public information decreases the likelihood of trading with privately-informed investors. In their model, the selection of better accounting methods and disclosures by firms ultimately provides information to the marketplace that causes a breakdown in the standard separation theorem. Specifically, inasmuch as investors require additional compensation for holding securities of firms with higher levels of private information (due to the higher probability of unknowingly trading with privately informed investors), information risk becomes a non-diversifiable component of total portfolio risk.

Without any appeal to the existence of asymmetric information among traders, a similar conclusion is arrived at by Lambert et al. (2007). They demonstrate that increasing the quality of accounting disclosures decreases a firm's cost of capital through a lowering of the expected covariance of returns between the firm and the market. Summarizing the intuition underlying this result, at the information limit (no information uncertainty exists whatsoever and the cash flow distribution is perfectly revealed), the covariance of returns with the market ceases to be priced as a risk factor because the market provides no additional information concerning the firm's cash flows.

Support for an association between disclosure efficacy and cost of capital is also provided by a large number of empirical studies. For example, Botosan (1997) finds that firms relatively neglected by the analyst community exhibit a significant negative relation between voluntary disclosure levels and the implied cost of capital. Healy et al. (1999) report firms that voluntarily increase their disclosure levels experience significant increases in their stock prices beyond what can be explained by contemporary earnings performance. Gelb and Zarowin (2000) compare firms with high disclosure ratings versus low disclosure ratings and conclude that the former experience a more significant stock price association to current and future earnings reports, consistent with more credibility behind those disclosures. Mikhail et al. (2004) show firms that frequently announce earnings surprises are assessed a higher cost of capital, and Kothari et al. (2008) use content analysis to show that positive disclosures reduce firm risk along multiple dimensions, including the cost of equity capital, volatility of a firm's stock returns, and the dispersion of analyst forecast estimates.

[2] For example, with regard to the small stock premium, it is well known that less publicly available information is generated for smaller firms, and that both smaller firms and firms neglected by the analyst community regardless of size earn positive abnormal CAPM returns (see Arbel and Strebel 1982).

With regard to the information asymmetry consequences of differential disclosure quality, empirical evidence consistent with the above mentioned analytical predictions is provided by Easley et al. (2002). They find a positive relation between the probability of information-based trading within a stock and its rate of return. The more general mediation of information asymmetry between bid-ask spreads and the cost of capital advanced by Amihud and Mendelson (1986, 2000) is provided by several disclosure-related studies. These include Welker (1995); Healy et al. (1999); Bushman and Smith (2003); and Leuz and Verrecchia (2000). All show a significant negative association between bid-ask spreads and disclosure quality (variously defined and in various market contexts). Importantly, the improvements in disclosure quality can stem from voluntary means on the part of the firm (Healy et al. 1999) or by increased regulatory disclosure requirements (Leuz and Verrecchia 2000).

To summarize, the above literature portrays a convincing association between disclosure efficacy (both quality and quantity) and priced information risk. Of interest to our study, therefore, is whether the readability of financial reports is empirically associated with excess returns after controlling for other "non-experimental" sources of readability variation.

Previous Research on Content Analysis and Strategic Disclosure

A number of investigations have begun to explore whether the nature of the presentation design and linguistic structure within a given annual report are informative. As Pennebaker and King (1999) observe, linguistic style may be employed as a reliable indicator of cross-sectional differences among individual respondents. That is, word category usage is typically stable across time for individual respondents, and deviations from traditional linguistic patterns may be related to a respondent's motivations in responding to requests for information. In the context of corporate disclosure practices, Nelson and Pritchard (2007) suggest that firms alter the language and readability of their corporate communications in response to litigation risk. Riedl and Srinivasan (2006) find that managers exercise strategic discretion in their reporting of special items, giving explicit income statement recognition of transitory disruptions in expected profitability, while relegating explanation of more persistent earnings shocks to the financial statement footnotes.

Further evidence that firms strategically manage the information content of their corporate disclosures is found in the literature on earnings release *timing*. Early work in this area suggests firms exhibit a proclivity to announce good news early, and delay the release of bad news as long as possible in an effort to maximize shareholder wealth. For example, Lurie and Pastena (1975) find 59% of "good news" disclosures are made during the first six-months of a fiscal year, while only 22% of "bad news" disclosures are made during this same interval. More strikingly, they also find 38% of all "bad news" filings occur during the final month of a firm's fiscal year. Similarly, Kross and Schroeder (1984) find early releases of quarterly earnings announcements are characterized by better news than late announcements, while Chai and Tung (2003) find late reporters exhibit lower profitability and are characterized by more negative discretionary accruals than their early reporting

counterparts. Finally, both Patell and Wolfson (1982) and Damodaran (1989) report firms time the release of negative information to minimize market impacts.[3] Specifically, Patell and Wolfson (1982) find good news is likely to be released when markets are open, while bad news is disproportionately released after the market closes. Although relatively few earnings announcements are made on Fridays, those that are tend to be made after-the close. Consistent with minimizing negative announcement effects, Damodaran (1989) finds Friday announcements are disproportionately negative, and associated with lower (more negative) abnormal returns.

Instead of waiting, an alternative approach to addressing bad news involves "getting out in front" of it and avoiding negative earnings surprises. For example, Chen and Mohan (1994) find evidence that "early information release is more likely in the event of lower-than-expected earnings." Similarly, both Burgstahler and Dichev (1997) and Degeorge et al. (1999) find firms are significantly more likely to report (small) positive, rather than negative or zero, earnings surprises. These results suggest managers proactively manipulate either earnings or earnings expectations to avoid the negative consequences associated with bad news. Additional evidence on the economic benefits of releasing negative news early is offered by both Skinner (1997), who finds that voluntary early disclosures of negative information reduce settlement amounts in the event of litigation, and Shu (1998), who finds earnings warnings soften the impact of negative earnings surprises.[4]

With regard to the specific association between linguistic readability metrics and profitability, the existing evidence is somewhat limited. Of note, Subramanian et al. (1993) and Li (2008) both conclude that annual report readability of poorly performing firms is lower than that for well performing firms. Li's (2008) large-sample study further documents that the profitability of firms with easier to read annual reports is more persistent. These findings are clearly consistent with the notion that managers opportunistically choose the linguistic characteristics of their corporate disclosures to influence investor sentiment. We extend these studies by directly examining the security market pricing implications of disclosure opacity.

Empirical Design

Sample

We begin by identifying a sample consisting of 1,573 firm-year observations from the 183 REITs in existence at any time over the period 1994–2007 for which electronic versions of annual reports were available from Mergent online. A

[3] Still, Kalay and Loewenstein (1985) find significant stock price declines preceding late announcements as the market anticipates bad news.

[4] Soffer et al. (2000), Tan et al. (2002), and Miller (2005) further examine preannouncements and show that the decision of when to release news is a function of whether that news is good or bad. For example, bad news tends to get preannounced all at once, while firms with good news release only approximately half of it leaving the rest for a positive earnings surprise. Similarly, preannouncements are expected to understate positive and overstate negative news.

PowerShell Script code was written to extract the lexical features from each of these downloaded reports, including measures of the document length and readability. Next, return data for each of these organizations were obtained from the Center for Research in Security Prices (CRSP), while additional REIT operating characteristics were obtained from COMPUSTAT and SNL. Firms for which CRSP, COMPUSTAT, and SNL data were not available were eliminated from the sample. Our final sample for multivariate tests consists of 1,273 firm-year observations.

Dependent Variable

Most readability metrics capture essentially the same linguistic phenomena—number of words per sentence and number of syllables per word—and differ only with respect to the weights assigned to each. Because of their similarity both in construction and results, Li's (2008) large-sample study reports a single measure, the Fog Index.[5] We likewise report results using a single measure, but prefer the Flesch-Kincaid Grade Level metric due to the benefit of its simple interpretation as a school grade proficiency level of writing as well as an interval scale opacity metric.[6] A score of 10, for example, means a document can be understood by the average 10th grader.

Our dependent variable is thus defined as follows:

$$FLKGRADE = 0.39^{*}\frac{total\ number\ of\ words}{total\ number\ of\ sentences} + 11.8^{*}\frac{total\ number\ of\ syllables}{total\ number\ of\ words} - 15.59 \quad (1)$$

Grade levels of the annual reports in this study range from 6.5 to 20.5, with a sample mean grade level of 12.83. The mean is consistent with the previous work of Subramanian et al. (1993) who find that the annual reports of well performing firms have an average grade level of 10.1, while annual reports of firms that did not perform well have an average grade level of 14.1. It is slightly lower than that found by Schroeder and Gibson (1992), as their sample has an average Grade Level Index of 14.7.

Independent Variables

The primary independent variable of interest, firm performance, is captured by return on assets, ROA. Rather than accounting income, however, we define the numerator

[5] The Fog Index is the average number of words per sentence plus the percentage of complex words (i.e., those with three or more syllables) with that sum total multiplied by 0.4. Documents with a resulting index of greater than 18 are considered unreadable, while those with a score less than 10 are considered childish.

[6] The Flesch-Kincaid Grade Level index was created in 1975 as part of a study for the U.S. Navy to develop a readability measure that equates to a school grade level (For a complete technical description of the Flesch-Kincaid Grade Level index see Kincaid et al. 1975). As with Li (2008), we also computed the Flesch (1948) Reading Ease Score. This is an inverse measure of opacity (higher scores correspond to higher reading ease) and is computed as 206.835 - 1.015 * (number of words per sentence) - 84.6 * (number of syllables per word). Our sample had a mean Reading Ease score of 24.36, similar to the average of 26.0 that Jones and Shoemaker (1994) found in their meta-analysis.

as funds from operations (FFO) since this is generally regarded as the key measure of financial performance in the REIT industry.[7]

It is significant to note that although different lexical qualities of annual reports may be associated with firms in different industries, by limiting our study to the REIT industry we reduce the possibility for many extraneous influences on our readability measures. Nonetheless, we identify several plausible "non-experimental" sources of variation within the REIT industry that may be necessary to control for in our empirical tests.

Firstly, Li (2008) finds a negative relation between firm size (market value) and annual report readability. The expectation for our study is that larger REITs will have less readable annual reports because larger firms tend to be more complex, both operationally and geographically. Unlike Li's study, however, we measure firm size as the natural logarithm of the firm's total assets as reported by SNL rather than market value. We do so because market value is directly dependent on assessed growth prospects and other factors unrelated to the complexity of the firm. Furthermore, because firms tend to change in size due to natural growth over time, in order to ensure comparable intertemporal scaling, we define our size variable (SIZE) as the firm's log of total assets in a given year minus the overall sample mean of that measure each year.

Secondly, in a study of large firms, Anderson et al. (2009) report that the debt ratio is positively associated with their measure of opacity (an index reflecting trading volume, bid-ask spread, analyst following, and analyst forecast errors). Firms with more debt in their capital structure may therefore be expected to have more complex disclosures elaborating the covenant details associated with that debt. Therefore, we define DEBT as the ratio of the firm's total debt to total assets.

We also define several dummy variables to capture various aspects of REITs that may be relevant to annual report readability. Firms recently experiencing losses may be more dependent on proving their creditworthiness to potential capital providers in subsequent annual reports. The idea is that there is nothing further to hide, and transparency of disclosure may benefit this capital flow. Consequently, we construct an indicator variable, LOSS2YR, that takes the value of 1 if the REIT had negative net income in either of the previous 2 years, and 0 otherwise. We expect this variable to be negatively related to opacity.

Whether or not the annual report was revised may also provide additional information concerning the complexity of disclosure, as firms with more complex operations may need to materially restate their financial position more frequently than their easier to understand counterparts. If this is the case, then REVISE would be positively related to opacity. On the other hand, SEC mandates for firm restatements due to accounting challenges may suggest more resulting transparency in the revised report (indeed, some revisions may directly relate to making the report less cryptic). In this case, REVISE would be negatively related to opacity. We thus create a dummy variable, REVISE, which takes the value of 1 if the given annual report (10-K) was revised, 0 otherwise, without hypothesizing a sign.

[7] Use of alternative accounting income numbers such as EBIT and EBITDA resulted in qualitatively similar findings to those we report.

Umbrella Partnership REITs (UPREITs) were first created in 1992. Since they allow management more flexibility and have dual class shares, Ling and Ryngaert (1997) argue that the valuation of UPREITs is a more challenging task. Han (2006) also finds that UPREITs have more potential for agency problems. We therefore define UPREIT as an indicator variable that takes the value of 1 if the REIT is an UPREIT, 0 otherwise, which is expected to be positively related to opacity.

As a further distinction of REIT types, mortgage REITs and hybrid REITs tend to have higher leverage and rely more heavily on external funding than equity REITs. Consequently, equity REITs may have comparatively less rigorous annual report disclosures. We thus define EQUITY as an indicator variable equal to 1 if the firm is an equity REIT and 0 otherwise, with a hypothesized negative sign.

Hartzell et al. (2008) find that being incorporated in Maryland is negatively related to return on equity for REIT IPOs. They attribute the finding to the fact that Maryland has management-friendly laws that negatively impact corporate governance (e.g., limits on hostile takeovers). Consequently, REITs incorporated in Maryland may also be more likely to attempt to obscure information in more lexically-complex annual reports. Accordingly, it is expected that the MARYLAND dummy will be positively related to report opacity.[8]

Results

Table 1 presents descriptive statistics for the study variables. Consistent with the findings of previous research (e.g., Schroeder and Gibson 1992; Subramanian et al. 1993), Panel A shows that corporate annual reports are generally written at a very complex, technical level. The typical report in our sample is written at, or near, college level. Although not reported in the table due to the zero-centered scaling of our SIZE variable, sample firms average slightly over $1 billion in total assets. They possess debt ratios of approximately 50%, and are generally profitable with a typical return on assets (ROA) of 5.6%. An examination of the means for the dummy variables indicates approximately 12% of sample firms experienced a loss within the previous 2 years, 24% revised their reports in a given year, 62% are UPREITs, 88% are equity REITs, and 67% are headquartered in Maryland.

The pair-wise correlation results shown in Panel B of Table 1 between our measure for opacity, FLKGRADE, and the independent variables are generally in accord with expectations. Consistent with prior studies and our primary hypothesis, SIZE, DEBT and MARYLAND are positively related to FLKGRADE, while EQUITY and ROA are negatively related. For the remaining control variables, LOSS2YR, REVISE, and MORTGAGE, the correlations are insignificant at the .05 level.

Some of the other statistically significant correlations are also interesting to note. Although the negative association between DEBT and ROA would naturally arise from more interest expense being deducted in the FFO measure, the high negative

[8] While many traditional organizations choose to incorporate in Delaware, Maryland is the state of choice for many investment companies—including the majority of publicly traded REITs. See, for example, Subramanian (2002), Daines (2001), and Romano (2005).

Table 1 Descriptive Statistics of Study Variables. This table presents descriptive statistics for the study's experimental and control variables. The full sample consists of 183 REITs in existence at any point during the period 1994–2007 for which electronic versions of annual reports were available from Mergent online (*N*=1,573). Variables in Panel A showing a reduced sample size are due to the intersection of data availability from CRSP, COMPUSTAT, and SNL, as necessary. Panel A of the table shows distribution statistics, whereas Panel B shows Pearson product moment correlation coefficients. FLKGRADE, the dependent variable of interest, is the Flesch-Kincaid Grade Level of the REIT's Annual Report, calculated as 0.39 * (total number of words/total number of sentences) + 11.8 * (total number of syllables/total number of words)—15.59. ROA is return on assets, defined as funds from operations divided by total assets. ROA is the independent variable of interest, defined as the reported funds from operations divided by total assets. Control variables are defined as follows: SIZE is the natural log of the REIT's total assets (in thousands of dollars), which is corrected for natural intertemporal growth by subtracting the overall sample mean for the variable each sample year. DEBT is the ratio of total debt to total assets. Indicator control variables are defined as follows: LOSS2YR=1 if the REIT had negative income in either of the previous 2 years, 0 otherwise; REVISE=1 if the annual report was revised, 0 otherwise; UPREIT=1 if the REIT is an umbrella partnership REIT, 0 otherwise; MORTGAGE=1 if the REIT is a mortgage REIT, 0 otherwise; EQUITY=1 if the REIT is an Equity REIT, 0 otherwise; and MARYLAND=1 if the REIT is incorporated in Maryland, and 0 if it is incorporated elsewhere

Panel A Distribution statistics for study variables

Variable	N	Mean	Std Dev	Minimum	Maximum
FLKGRADE	1,573	12.890	3.176	6.500	20.500
ROA	1,273	0.057	0.027	–0.120	0.190
SIZE	1,356	0.000	1.389	–5.251	3.374
DEBT	1,356	0.506	0.170	0.000	1.090
LOSS2YR	1,573	0.117	0.322	0.000	1.000
REVISE	1,573	0.240	0.427	0.000	1.000
UPREIT	1,573	0.617	0.486	0.000	1.000
MORTGAGE	1,573	0.097	0.296	0.000	1.000
EQUITY	1,573	0.880	0.325	0.000	1.000
MARYLAND	1,573	0.669	0.471	0.000	1.000

Panel B: Pearson product moment correlation coefficients*

	FLKGRADE	ROA	SIZE	DEBT	LOSS2YR	REVISE	UPREIT	MORTGAGE	EQUITY
ROA	**–.12772**								
	<.001								
SIZE	**.06671**	.02808							
	.014	.317							
DEBT	**.12161**	**–.30247**	**.10960**						
	<.001	<.001	<.001						
LOSS2YR	–.01607	**–.49016**	**–.24439**	**.21680**					
	.524	<.001	<.001	<.001					
REVISE	–.04148	**–.10749**	–.02421	.04300	**.08295**				
	.100	.001	.373	.114	.001				
UPREIT	.02921	**–.14921**	**.27043**	**.18759**	**.05461**	–.01139			
	.247	<.001	<.001	<.001	.030	.652			
MORTGAGE	.03726	–.04904	.00968	**.05009**	**–.11947**	.03684	**–.33743**		
	.139	.080	.722	.065	<.001	.144	<.001		
EQUITY	**–.05311**	**.08227**	**.21001**	.04464	**.11016**	–.02612	**.38083**	**–.88826**	
	.035	.003	<.001	.100	<.001	.301	<.001	<.001	
MARYLAND	**.08081**	–.00722	**.17548**	–.05209	**–.05119**	–.02017	**.06393**	**.09385**	–03524
	.001	.797	<.001	.055	.042	.424	.011	.001	.162

* Correlations significant at the two-tailed .05 level are bold-faced for ease of identification

correlation between the incurrence of a loss in the previous 2 years (LOSS2YR) and subsequent ROA of -0.49 suggests a degree of persistence in short term poor performance (i.e., mean reversion apparently requires a longer recovery period than 1-2 years). Furthermore, the likelihood of revising an annual report is also negatively related to performance (ROA) and positively related to previous losses, possibly suggesting SEC discovery of overstated incomes that require restatement. Finally, larger REITs are likely to have proportionately more debt in their capital structure and are less likely to have recent losses.

Turning to our multivariate control for simultaneous influences, Table 2 presents OLS results for two versions of the following model (signs given are as predicted):

$$\begin{aligned} FLKGRADE = & \beta_0 - \beta_1 ROA + \beta_2 SIZE + \beta_3 DEBT - \beta_4 LOSS2YR \\ & + / - \beta_5 REVISE + \beta_6 UPREIT + \beta_7 MORTGAGE - \beta_8 EQUITY \\ & + \beta_9 MARYLAND \end{aligned} \tag{2}$$

The first column of Table 2 presents the full model (Model 1), while the second column presents a reduced version (Model 2) based on significance selection criteria described below. Looking first at the full model results, ROA is significantly negatively related to annual report opacity, consistent with the Pearson correlation and our primary hypothesis. Note that contrary to the insignificant univariate correlations, LOSS2YR and REVISE are significant in the multivariate model. Furthermore, DEBT and MARYLAND are incrementally significant and positively related to opacity, and LOSS2YR and EQUITY are incrementally significant and negatively related to opacity, again consistent with expectations. Using a .05 alpha cut-off, SIZE is significant at the one-tailed level, but not at the two-tailed level. The REVISE variable, with unpredicted sign, is negatively related to opacity, suggesting that revised reports are generally written to be more transparent than unrevised reports. The adjusted R^2 of four percent for the full model is approximately half of Li's (2008) reported R^2 of eight percent.[9]

Model 2 in the second column presents a conservative specification in which only the variables found to be iteratively significant via forward, backward, and stepwise regression are retained.[10] As in the full model, ROA clearly dominates in its ability to explain annual report opacity, with LOSS2YR and MARYLAND remaining as the two chief secondary determinants of readability for our sample. We therefore conclude that reporting opacity is negatively related to contemporaneous firm performance after controlling for other influences likely to have a bearing on annual report readability.

As discussed earlier, of interest in this study is the resulting impact of annual report readability, if any, on market excess returns. Although it is difficult to empirically specify a direct test of whether opacity *causes* priced information risk, it

[9] Li (2008) included all industries and considerably more control variables in his analysis. The fact that REITs are a homogenous industry group means that there is naturally less ability for firm-specific differences to offer as much cross-sectional explanatory power in our regressions.

[10] Forward, backward, and stepwise regression each resulted in the same reduced model. The SAS default selection criterion was employed whereby the incremental -statistic for variable entry/exit is specified at the 0.15 level.

Table 2 Determinants of REIT Annual Report Opacity: Full and Reduced Regression Models. This table presents results for the Flesch-Kincaid Grade Level index regressed against ROA and non-experimental study control variables (see Table 1 for variable definitions). The modeled equation shows predicted coefficient signs. Values shown in the table are the OLS coefficient estimates, with two-tailed p-values shown in parentheses. Model 1 is the full model, whereas Model 2 is a reduced model based on the optimum selection criterion under the SAS GLMSELECT procedure (default entry and exit selection criterion of p=.15 are used for the incremental F-statistic). Forward and backward stepwise selection methods resulted in the same reduced model. $FLKGRADE = \beta_0 - \beta_1 ROA + \beta_2 SIZE - \beta_3 DEBT - \beta_4 LOSS2YR + / - \beta_5 REVISE + \beta_6 UPREIT + \beta_7 MORTGAGE - \beta_8 EQUITY + \beta_9 MARYLAND$

	Full model 1		Reduced model 2	
	β	(p-value)	β	(p-value)
Intercept	14.599	(<.001)	13.755	(<.001)
ROA	-17.199	(<.001)	-20.824	(<.001)
SIZE	0.131	(.083)		
DEBT	1.507	(.009)		
LOSS2YR	-0.860	(.008)	-1.012	(.001)
REVISE	-0.415	(.046)		
UPREIT	0.020	(.922)		
MORTGAGE	0.830	(.668)		
EQUITY	-1.846	(.016)		
MARYLAND	0.590	(.002)	0.526	(.004)
Adjusted R^2	.04		.03	

seems reasonable to suggest that the existence of opaque annual reports may reflect a more general lack of transparency by the firm and its disclosure practices throughout the year. Indeed, if annual reports, which are audited, possess systematically different levels of transparency with respect to reported firm performance, then this would very likely carry over into other more continuous, yet unaudited, forms of firm disclosure—most notably interim quarterly reports. If so, and if this risk is priced, then this should result in correspondingly higher contemporaneous returns as compensation to security holders.

The return premia benchmarks used in our model are extracted from the French Data Library website.[11] MRP is the market risk premium, measured as the return on the stock market over the average 1-month T-Bill rate; SMB is the return of the small cap portfolio minus the return on the large cap portfolio, and HML is the return on the high growth portfolio less the return on the low growth portfolio. The firm-

[11] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html. We also conducted tests using the Carhart (1997) momentum factor. Interestingly, the sign on momentum was significantly negative rather than positive, suggesting mean-reversion rather than risk compensation for our sample. This finding, which is seemingly at odds with the preponderance of the evidence from the mainstream finance literature, is entirely consistent with the findings of Lin and Yung's (2004) investigation into the performance persistence of real estate mutual funds. Inasmuch as we are solely concerned with risk determinants in the explanation of excess returns, and our focal readability results are robust to the inclusion or exclusion of this model parameter, we choose to exclude it from our reported model specifications. The results are available from the authors upon request.

specific return premium, RET_RF, is defined as the firm's annual return less the average annual 1-month T-Bill rate. Annual return data are for the year covered by the annual report and are obtained from CRSP. Risk-free returns are extracted from the French Data Library website.

We utilize Model 2 as our proxy for the market's "expected" constructs underlying report readability in order to ascertain whether the "unexplained" portion of annual report opacity has explanatory power for returns beyond the Fama-French factors. Recall that this reduced model retains only the jointly significant variables for explaining opacity. The motivation behind this construction is that "predictable" opacity based on publicly available information does not capture the kind of obfuscation or information risk that the SEC's Plain English disclosure rules seek to attenuate, nor would it theoretically be priced as a risk factor by the market. Consequently, we employ the residuals from reduced regression Model 2 as an additional variable to estimate the following equation:

$$RET\_RF = \beta_0 + \beta_1 MRP + \beta_2 SMB + \beta_3 HML + \beta_4 RESID_{FLKGRADE} \qquad (3)$$

where $\text{RESID}_{\text{FLKGRADE}}$ from the first stage regression are therefore cross-sectionally independent of publicly-known factors that empirically influence readability.

Table 3 presents the regression results. The table shows that the coefficient for $\text{RESID}_{\text{FLKGRADE}}$ is statistically significant and positive, with p-values significant at the .005 level (half that if one-tailed). Although the absolute magnitude of the parameter coefficient is considerably lower than those for the Fama-French factors, it is clear that opacity is incrementally significant in explaining contemporaneous excess returns.

As discussed in the literature review section, earnings announcement timing may also be employed by managers as a means of strategically influencing investor sentiment concerning firm performance. Since earnings announcement trading likely precedes investors' full evaluation of the annual report, of interest is whether earnings announcement timing is related to annual report readability. For example, if early (late) earnings announcements are related to more (less) readable financial statements, this would be consistent with the two strategies being compliments; it would also be in accord with the earlier line of research depicting a general tendency by firms to defer bad news. By contrast, if early (late) announcements are associated with less (more) readable annual reports, this would be consistent with the two strategies being substitutes, and also concordant with more recent research indicating that litigation risks mediate disclosure timing decisions. As a robustness test, we therefore create two dummy variables, EARLY, which takes on the value of 1 if earnings are announced more than four calendar days prior to the previous year's announcement (zero otherwise), and LATE, which takes on the value of 1 if earnings are announced more than four calendar days following the previous year's announcement.[12]

In the regressions where FLKGRADE is the dependent variable, EARLY is insignificant, while LATE is significantly *negative* ($p<.001$).[13] Along with ROA, LOSS2YR, and MARYLAND, the LATE variable also shows up as one of the

[12] This approach mirrors that employed by both Sloan (1996) and Chai and Tung (2003).
[13] Detailed results available upon request.

Table 3 REIT Excess Returns as a Function of Fama-French Factors and Report Opacity. This table presents results for REIT excess returns, RET_RF, regressed against Fama-French factors and annual report residual opacity. RET_RF is calculated as the firm's annual return (from CRSP), less the risk-free return, where the latter is the average 1-month T-bill rate reported on the French Data Library website. The variables MRP, SMB, and HML are Fama-French benchmark factors, also obtained from the French Data Library website. MRP is the Market Risk Premium, SMB is Small Minus Big, and HML is High Minus Low. $RESID_{FLKGRADE}$ is the firm-specific residual from reduced regression Model 2 in Table 2. Values shown are the estimated slope coefficients and two-tailed p-values. $RET\_RF = \beta_0 + \beta_1 MRP + \beta_2 SMB + \beta_3 HML + \beta_4 RESID_{FLKGRADE}$

	Model B	
	β	(p-value)
Intercept	-0.003	(.748)
MRP	0.572	(<.001)
SMB	0.690	(<.001)
HML	0.816	(<.001)
$RESID_{FLKGRADE}$	0.006	(.005)
Adjusted R^2	.35	

variables that is retained in the forward, backward and stepwise selection procedures. Consequently, the finding of less opacity in late reports is consistent with the litigation risk explanation suggested by more recent research. Furthermore, with regard to excess returns, the residual from the model including the LATE variable ($RESID_{FLKGRADE}$), continues to be significant with the Fama-French factors (one-tailed p=.006), indicating that disclosure opacity, after controlling for earnings release timing, influences returns as a priced risk factor.

Differences in Readability Across Regulatory Environments

The empirical stability of the above findings depends on the extent to which regulatory requirements, and therefore disclosure features, hold steady over time. In this section, we report a paradoxical, heretofore undocumented systematic *decrease* in the readability of annual reports following the SEC's 1998 Plain English Rules. Fig. 1 depicts the phenomenon.

In the span of just 5 years, the average grade level readability rose monotonically from grade 12 in 2002 to grade 17 in 2007, corresponding to a first year post-baccalaureate program of study. In other words, in order to comprehend the writing level—to say nothing of the technical content—of the average REIT annual report in the final year of our analysis, an "average" investor had to possess the equivalent education of a master's degree. This clearly runs counter to the longstanding SEC objective of more, rather than less, readability in firm disclosures.

What accounts for the stark increase in complexity? We suspect it is likely due to the accounting abuses in the early 2000's and the subsequent implementation of the Sarbanes-Oxley Act of 2002 (SOX). The political atmosphere in the early part of the decade was essentially such that any suspected abuser of the reporting process was susceptible to being maligned in the press. Market sensitive firms might therefore

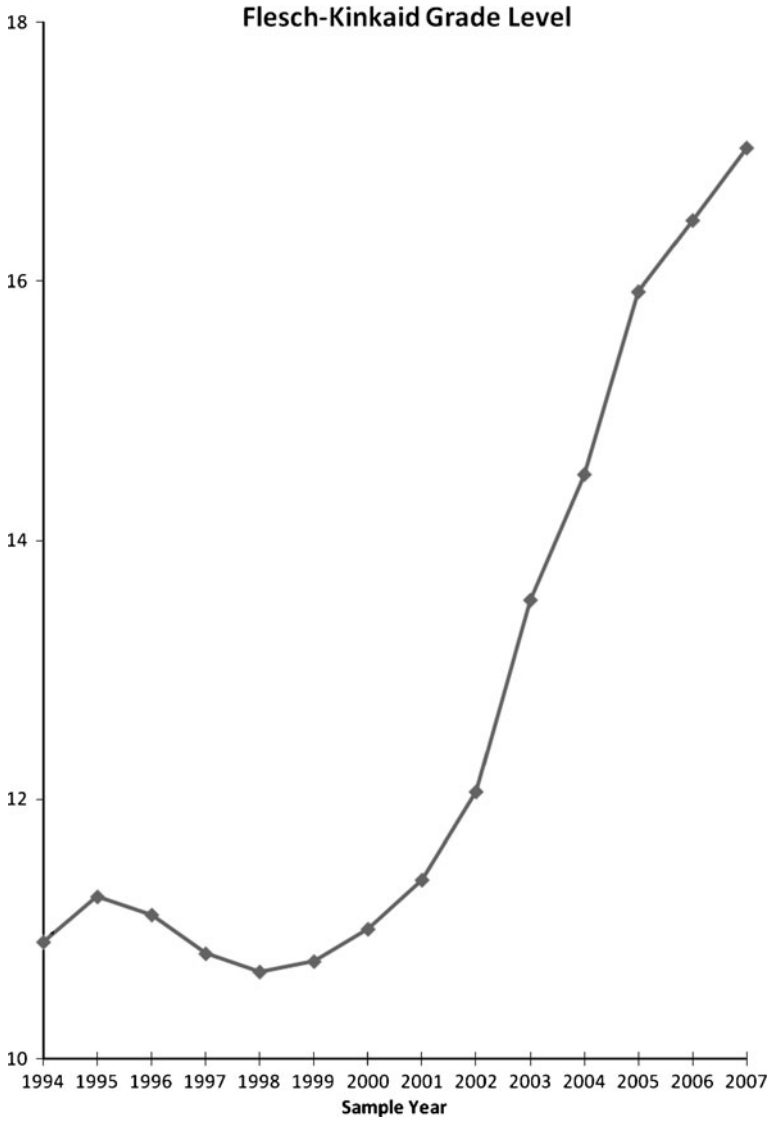

Fig. 1 FLKGRADE scores for annual reports by sample year

have responded with an extra degree of rigor in their reporting in order to shield themselves from political attack. The additional internal control and corporate governance constraints imposed on firms by SOX reasonably account for the persistent increase in reading difficulty.

Some confirming evidence for this idea is provided by the year-by-year length of the annual report. As shown in Fig. 2, the mean number of words comprising annual reports more than doubled over the sample period, with sharp increases in word length occurring between 1996 and 1999, and again between 2003 and 2005.

Whether or not this is an accurate reflection of the true underlying state of affairs is an empirical question that requires detailed content analysis beyond the scope of

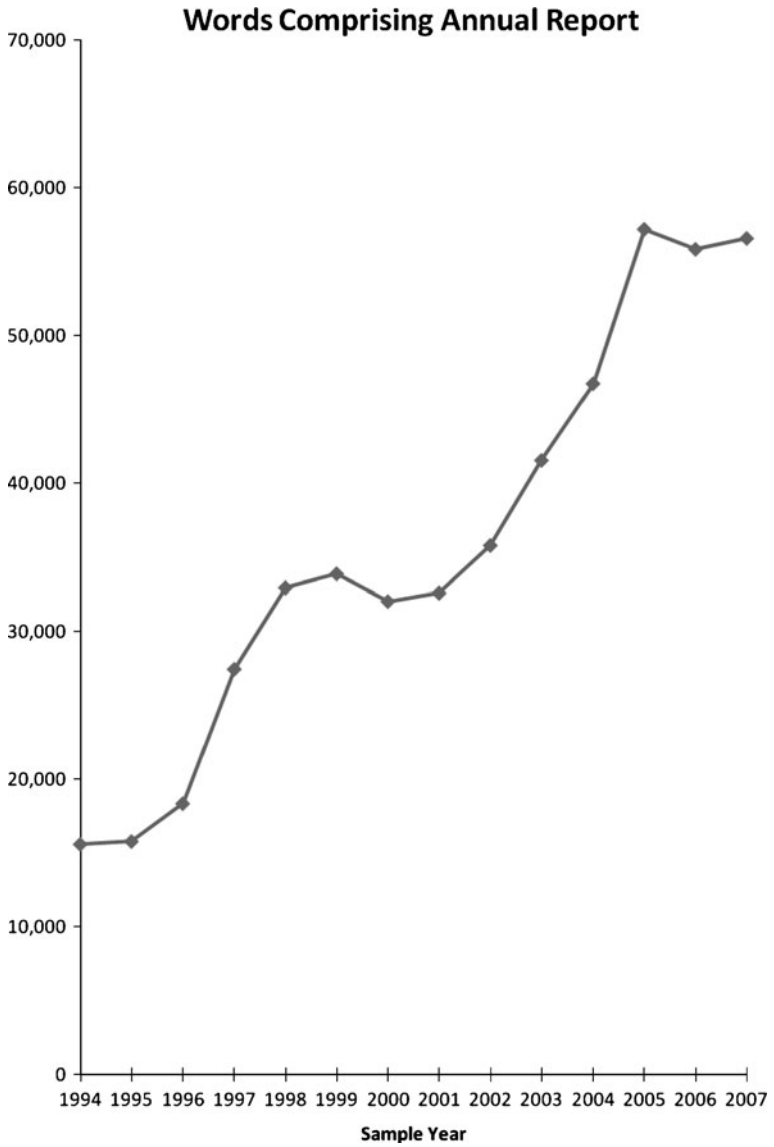

Fig. 2 Average number of words comprising annual reports by sample year

the current study. Nonetheless, of interest is whether the positive relation between residual opacity and excess returns holds despite the overall increase in opacity during the 2000 decade.

In order to address this question, we create period dummy variables based on the observed intertemporal shifts in readability, and append them to the reduced form model analyzed earlier:

$$\begin{aligned} FLKGRADE = & \beta_0 + \beta_1 ROA + \beta_2 LOSS2YR + \beta_3 MARYLAND + \beta_4 PRE2003 \\ & + \beta_5 YR2004 + \beta_6 YR2005 + \beta_7 YR2006 + \beta_8 YR2007 \end{aligned} \quad (4)$$

Table 4 Regression Results with Control Dummies for Different Regulatory Environments. This table presents regression results repeated with dummy variables corresponding to the observable overall shifts in opacity over time (see Fig. 1). Panel A of the table adds indicator variables for PRESOX (the period before 2003 in which SOX took effect) and for each year following SOX enactment (YR2004, YR2005, YR2006, and YR2007). Panel B of the table employs the residuals from the Panel A model in a test of whether incremental opacity beyond that possibly suggested by the more rigorous SOX disclosure requirements has incremental power in explaining excess firm returns. Values shown are the estimated slope coefficients and two-tailed p-values

	β	(p-value)
Panel A First stage regression results $FLKGRADE = \beta_0 + \beta_1 ROA + \beta_2 LOSS2YR + \beta_3 MARYLAND + \beta_4 PRE2003 + \beta_5 YR2004 + \beta_6 YR2005 + \beta_7 YR2006 + \beta_8 YR2007$		
Intercept	13.947	(<.001)
ROA	-5.182	(<.001)
LOSS2YR	-0.648	(.003)
MARYLAND	0.144	(.268)
PRESOX	-2.547	(<.001)
YR2004	0.849	(.005)
YR2005	2.194	(<.001)
YR2006	2.803	(<.001)
YR2007	3.374	(<.001)
Adjusted R^2	.53	
Panel B Second stage regression results $RET\_RF = \beta_0 + \beta_1 MRP + \beta_2 SMB + \beta_3 HML + \beta_4 RESID_{FLKGRADE}$		
Intercept	-0.004	(.625)
MRP	0.588	(<.001)
SMB	0.686	(<.001)
HML	0.821	(<.001)
$RESID_{FLKGRADE}$	0.008	(.008)
Adjusted R^2	.35	

Again, we employ the residuals from this model to explain excess returns:

$$RET\_RF = \beta_0 + \beta_1 MRP + \beta_2 SMB + \beta_3 HML + \beta_4 RESID_{FLKGRADE} \quad (5)$$

Table 4 presents both sets of regression results. Panel A shows an adjusted R^2 of .53, a considerable rise in explanatory power relative to the adjusted R^2 for the reduced opacity model results presented in Table 2 of .03. Furthermore, each of the dummy variables is highly significant, suggesting that the post-SOX era is associated with systematically increasing opacity. It thus appears that, on the one hand, the SEC would like more readability in the annual report. But on the other hand, regulatory "fixes" in the disclosure environment necessarily give rise to more cryptic reports. Panel B of Table 4 shows that residual opacity, after controlling for the above intertemporal impacts of the regulatory environment, continues to be significant in the explanation of returns beyond the Fama-French risk factors.[14]

[14] Again, when using a four factor baseline model, the Carhart Momentum factor was found to be significantly negative, while the $RESID_{FLKGRADE}$ remained significantly positive at the .01 level.

Conclusion

Our central hypothesis, that the relationship between profitability and financial disclosure is impacted by the economic consequences of obfuscation is confirmed. Specifically, we find that annual report opacity is significantly greater for poorer performing firms in terms of return on assets (ROA), and that the residual opacity unexplained by ROA performance and other control variables is found to be a significantly priced risk factor beyond the Fama-French three-factor risk premia. Given the REIT industry's generally heavy reliance on external financing and its resulting heightened market exposure to priced information risk, we regard these results as having important implications for this industry's disclosure practices. Clearly, there is a trade-off between any opportunistic benefits of strategic obfuscation and the cost of external capital (excess returns). Interestingly, despite the substantially increased regulatory constraints imposed by the Sarbanes-Oxley Act of 2002, not only does annual report readability markedly decrease overall, but the residual opacity that remains after controlling for intertemporal disclosure level differences continues to be penalized by the market in terms of higher implied capital costs.

Future research into disclosure opacity is clearly warranted along a number of dimensions. Notably, beyond ROA we find that the most significant variables in terms of explaining report opacity are (1) whether a firm experienced losses within the previous 2 years (negatively related to opacity), and (2) whether the firm is headquartered in Maryland. With regard to the first, this suggests that firms reporting recent losses have little to gain from obfuscation and are actually inclined to improve readability in order to convince capital providers they are worthy of receiving external funding. The remaining question, however, is whether the obfuscation of *current* poor performance translates into persistence in the future. If so, is such a firm "caught" in terms of subsequent increases in future incurred capital costs? In addition, the results of our study suggest a more detailed content analysis approach to studying pre-SOX and post-SOX annual report disclosures may well be worthy of exploration by future research. In sum, the results of this analysis should be viewed as a meaningful step forward toward a fuller understanding of the linkages between firm performance and the opacity of firm disclosures.

References

Akerlof, G. (1970). The market for "lemons": quality uncertainty and the market mechanism. *Quarterly Journal of Economics, 90*(4), 629–650.

Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics, 17*(2), 223–249.

Amihud, Y., & Mendelson, H. (2000). The liquidity route to a lower cost of capital. *Journal of Applied Corporate Finance, 12*(4), 8–25.

Anderson, R. C., Duru, A., & Reeb, D. M. (2009). Founders, heirs, and corporate opacity in the United States. *Journal of Financial Economics, 92*(2), 205–222.

Arbel, A., & Strebel, P. (1982). The neglected and small firm effects. *Financial Review, 17*(4), 201–218.

Bloomfield, R. J. (2002). The "incomplete revelation hypothesis" and financial reporting. *Accounting Horizons, 16*(3), 233–243.

Botosan, C. A. (1997). Disclosure level and the cost of equity capital. *The Accounting Review, 72*(3), 323–350.

Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics, 24*(1), 99–126.

Bushman, R. M., & Smith, A. J. (2003). Transparency, financial accounting information, and corporate governance. *FRBNY Economic Policy Review, 9*(1), 65–87.

Carhart, M. M. (1997). On persistence in mutual fund performance. *Journal of Finance, 52*(1), 57–82.

Chai, M. L., & Tung, S. (2003). The effect of earnings-announcement timing on earnings management. *Journal of Business Finance and Accounting, 29*(9&10), 1337–1354.

Chen, C. R., & Mohan, N. J. (1994). Timing the disclosure of information: management's view of earnings announcements. *Financial Management, 23*(3), 63–69.

Daines, R. (2001). Does Delaware law improve firm value? *Journal of Financial Economics, 62*(3), 525–558.

Damodaran, A. (1989). The weekend effect in information releases: a study of earnings and dividend announcements. *Review of Financial Studies, 2*(4), 607–623.

Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *Journal of Business, 72*(1), 1–33.

Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. *Journal of Finance, 46*(4), 1325–1359.

Easley, D., & O'Hara, M. (2004). Information and the cost of capital. *Journal of Finance, 59*(4), 1553–1583.

Easley, D., Hvidkjaer, S., & O'Hara, M. (2002). Is information risk a determinant of asset returns? *Journal of Finance, 57*(5), 2185–2221.

Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *Journal of Finance, 47*(2), 427–465.

Fama, E. F., & French, K. R. (1993). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics, 33*(1), 3–56.

Flesch, R. (1948). A new readability yardstick. *Journal of Applied Psychology, 32*(3), 221–233.

Gelb, D., & Zarowin P. (2000). Corporate disclosure policy and the informativeness of stock prices. New York University Working Paper.

Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. *American Economic Review, 70*(3), 393–408.

Han, B. (2006). Insider ownership and firm value: evidence from real estate investment trusts. *Journal of Real Estate Finance & Economics, 32*(4), 471–493.

Hartzell, J. C., Kallberg, J. G., & Liu, C. H. (2008). The role of corporate governance in initial public offerings: evidence from real estate investment trusts. *Journal of Law and Economics, 51*(3), 539–562.

Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: a review of the empirical disclosure literature. *Journal of Accounting and Economics, 31*(1–3), 405–440.

Healy, P. M., Hutton, A., & Palepu, K. G. (1999). Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research, 16*(3), 485–520.

Jones, M. J., & Shoemaker, P. A. (1994). Accounting narratives: a review of empirical studies of content and readability. *Journal of Accounting Literature, 13*, 142–184.

Kalay, A., & Loewenstein, U. (1985). Predictable events and excess returns: the case of dividend announcements. *Journal of Financial Economics, 14*(3), 423–449.

Kim, O., & Verrecchia, R. E. (1994). Market liquidity and volume around earnings announcements. *Journal of Accounting and Economics, 17*(1–2), 41–67.

Kincaid, J.P., Fishburne, R. P., Jr., Rogers, R. L., & Chissom, B. S. (1975). Derivation of new readability formulas (Automated Readability Index, Fog count, and Flesch Reading Ease Formula) for Navy enlisted personnel. *Navy Technical Training Command Research Branch Report.*

Kothari, S. P., Li, X., & Short, J. E. (2008). The effect of disclosures by management, analysts, and financial press on cost of capital, return volatility, and analyst forecasts: A study using content analysis. Unpublished Working Paper. MIT Sloan School of Management.

Kross, W., & Schroeder, D. A. (1984). An empirical investigation of the effect of quarterly earnings announcement timing on stock returns. *Journal of Accounting Research, 22*(1), 153–176.

Lambert, R. A., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research, 45*(2), 385–420.

Lambert, R. A., Leuz, C., & Verrecchia, R. E. (2008). Information asymmetry, information precision, and the cost of capital. Wharton and University of Chicago Working Paper.

Leuz, C., & Verrecchia, R. E. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research, 38*(Supplement), 91–124.

Li, F. (2008). Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics, 45*(2–3), 221–247.

Lin, C. Y., & Yung, K. (2004). Real estate mutual funds: performance and persistence. *Journal of Real Estate Research, 26*(1), 69–93.

Ling, D. C., & Ryngaert, M. (1997). Valuation uncertainty, institutional involvement, and the underpricing of IPOs: the case of REITs. *Journal of Financial Economics, 43*(3), 433–456.

Lintner, J. (1965). The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets. *Review of Economics & Statistics, 47*(1), 13–37.

Lurie, A. J., & Pastena, V. S. (1975). How promptly do corporations disclose their problems? *Financial Analysts Journal, 31*(5), 55–61.

Mikhail, M., Walther, B., & Willis, R. (2004). Earnings surprises and the cost of equity capital. *Journal of Accounting, Auditing and Finance, 19*(4), 491–513.

Miller, J. S. (2005). Effects of preannouncements on analyst and stock price reactions to earnings news. *Review of Quantitative Finance and Accounting, 24*(3), 251–275.

Myers, S., & Majluf, N. (1984). Corporate financing and investment decisions when firms have different information that investors do not have. *Journal of Financial Economics, 13*(2), 187–221.

Nelson, K., & Pritchard, A. (2007). Litigation risk and voluntary disclosure: The use of meaningful cautionary language. *Rice University Working Paper.*

Patell, J. M., & Wolfson, M. A. (1982). Good news, bad news, and the intraday timing of corporate disclosures. *The Accounting Review, 57*(3), 509–527.

Pennebaker, J. W., & King, L. A. (1999). Linguistic styles: language use as an individual difference. *Journal of Personality and Social Psychology, 77*(6), 1296–1312.

Riedl, E. J., & Srinivasan, S. (2006). The strategic reporting of special items: Does management presentation reflect underlying firm performance or opportunism? Unpublished Working Paper. Harvard Business School.

Romano, R. (2005). Is regulatory competition a problem or irrelevant for corporate governance? *Oxford Review of Economic Policy: Corporate Governance, 21*(2), 212–231.

Schroeder, N., & Gibson, C. (1992). Are summary annual reports successful? *Accounting Horizons, 6*(2), 28–37.

Sharpe, W. F. (1964). Capital asset prices: a theory of market equilibrium under conditions of risk. *Journal of Finance, 19*(3), 425–442.

Shu, S. (1998). Firms' discretionary disclosure choices in the face of imminent earnings disappointments. Unpublished working paper. University of Rochester.

Skinner, D. J. (1997). Earnings disclosures and stockholder lawsuits. *Journal of Accounting and Economics, 23*(3), 249–282.

Sloan, R. G. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings? *The Accounting Review, 71*(3), 289–315.

Soffer, L. C., Thiagarajan, S. R., & Walther, B. R. (2000). Earnings preannouncement strategies. *Review of Accounting Studies, 5*(1), 5–26.

Subramanian, G. (2002). The influence of antitakeover statutes on incorporation choice: evidence on the "race" debate and antitakeover overreaching. *University of Pennsylvania Law Review, 150*(6), 1795–1873.

Subramanian, R., Insley, R. G., & Blackwell, R. D. (1993). Performance and readability: a comparison of annual reports of profitable and unprofitable corporations. *Journal of Business Communication, 30*(1), 49–61.

Tan, H. T., Libby, R., & Hunton, J. E. (2002). Analysts' reactions to earnings preannouncement strategies. *Journal of Accounting Research, 40*(1), 223–246.

Welker, M. (1995). Disclosure policy, information asymmetry and liquidity in equity markets. *Contemporary Accounting Research, 11*(2), 801–828.