Growth Matters: Disclosure Level and Risk Premium[*]

Atif Ellahie
atif.ellahie@eccles.utah.edu

Rachel M. Hayes
rachel.hayes@eccles.utah.edu

Marlene A. Plumlee
marlene.plumlee@eccles.utah.edu

David Eccles School of Business, University of Utah

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Abstract

A number of theoretical studies predict an unconditional negative association between firm risk premium and firm disclosure level, where additional disclosure reduces estimation risk or information asymmetry. Empirical studies based on these models frequently report mixed results. Dutta and Nezlobin (2016) propose a model where the effect of disclosure on risk premium differs based on the firm's long-term growth rate relative to a threshold rate, which reflects the relative importance of short-term cash flows and long-term cash flows. When the long-term growth rate exceeds the threshold, greater disclosure increases the firm's risk premium, rather than decreasing it. Motivated by the findings in their model, we estimate four long-term growth rate thresholds and reexamine the relation between risk premium and disclosure level conditional on those thresholds. We provide evidence that the association between risk premium and disclosure is positive (negative) for firms with long-term growth rates above (below) a threshold long-term growth rate, as predicted by Dutta and Nezlobin (2016).

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1. Introduction

A broad theoretical and empirical literature examines the link between firm disclosure and a firm's risk premium.[1] A number of theoretical studies predict that better disclosure will be negatively associated with a firm's risk premium, wherein the uncertainty surrounding future expected cash flows, and their riskiness, is reduced through firm-provided disclosures (e.g., Coles, Loewenstein and Suay, 1995; Christensen, de la Rosa and Feltham, 2010; Lambert, Leuz and Verrecchia, 2007; Easley and O'Hara, 2004). Even so, the empirical evidence in this area is somewhat mixed. For example, Botosan and Plumlee (2002) find that a firm's expected return is negatively associated with better annual report disclosure but positively associated with better quarterly disclosures, a more timely source of financial information. Similarly, Richardson and Welker (2001) find that higher quantity and quality of financial disclosures is negatively associated with a firm's expected returns, but the opposite is true when a firm provides more extensive social disclosures. In a recent theoretical paper, Dutta and Nezlobin (2016) build on this earlier work, using a dynamic model to explore the potential role that firm growth plays in explaining the contradictory empirical findings. Instead of assuming that post-disclosure cash flows are consumed, they expand the traditional framework to include the preferences of overlapping generations of investors and show that the effect of disclosure quality on risk premium is conditional on the firm's long-term growth rate. In this study, we provide empirical evidence consistent with the propositions in Dutta and Nezlobin (2016), demonstrating that the mixed findings about the association between disclosure and expected returns from prior studies are likely explained by the interaction with growth. In doing so, we extend our understanding of the critical link between firm disclosure and risk premium.

Dutta and Nezlobin (2016) model the effects of information disclosure on risk premium and investor welfare in a setting where an infinitely lived firm is owned by overlapping generations of risk-averse investors. The return to each generation of investors has two components — cash flows distributed

[1] Consistent with Cochrane (2005), we define risk premium as expected return less the risk-free rate (i.e., the expected excess return). We refer to risk premium instead of "expected" risk premium throughout the study, consistent with the terminology in Dutta and Nezlobin (2016), although the empirical analysis is focused on expectations of risk premium, not realizations.

as dividends, and the capital gains that accrue from the sale of the firm to the next generation — and the cash flows associated with both short-term and long-term components are uncertain. More informative disclosure is expected to reduce the uncertainty around the cash flows distributed as dividends, leading to a negative correlation between disclosure quality and the risk premium related to these dividend payments. At the same time, however, more informative disclosure might decrease or increase uncertainty about the capital gains component: when the long-term growth rate of the firm exceeds some threshold (e.g., the risk-free rate or the growth rate of GDP), better disclosure will *increase*, rather than decrease, the uncertainty about those future cash flows. Thus the *measured* link between risk premium and disclosure level — which incorporates both the association of disclosure with dividend risk and the association of disclosure with the capital gains risk — is a function of a firm's expected long-term growth rate. Two factors come into play in this process. First, when the long-term growth rate exceeds the threshold, the association between the expected rate of return on the capital gain and disclosure is positive, rather than negative. Second, higher expected long-term growth results in a larger (smaller) weight being put on the capital gain (dividend) portion of firm value. The net effect of these factors can be either positive or negative, which suggests that the empirical association between risk premiums and disclosure quality depends on expected long-term growth rates. In short, while most prior work predicts a consistent negative association between risk premium and disclosure, the Dutta and Nezlobin (2016) model proposes that the association between disclosure and risk premium for firms with higher long-term growth rates will be positive (or less negative than for firms with lower long-term growth rates). We empirically examine this proposition.

We use information from 8Ks filed by firms with the Securities and Exchange Commission (SEC) to create four measures of firm-level disclosure. For comparability with prior work, our fifth disclosure measure uses management forecast data. We measure firm-specific risk premium using two implied cost of capital methods as well as realized returns. To measure firm growth rates and calculate the implied cost of capital measures, we collect forecasted long-term growth rates from I/B/E/S. Our primary

sample includes a broad cross-section of firms — over 70,000 firm-quarters with I/B/E/S long-term growth forecasts that file 8Ks from 2001 to 2013.

In univariate analysis of the full sample, we find generally negative correlations between firm disclosure and risk premium for two of our risk premium proxies, and positive correlations for the third. We then partition the sample based on potential long-term growth rate thresholds and find evidence that the relation between firm disclosure and risk premium is a function of the firm's long-term growth rate relative to a threshold. While the association between disclosure and risk premium is not consistently negative for any of the risk premium measures across the partitions, we find that the association between disclosure and risk premium increases (i.e., the association becomes more positive or less negative) as the forecasted long-term growth rate increases. This pattern holds when we use four of our five disclosure measures and two of our three proxies for risk premium.

Our multivariate analyses provide additional insight into the role that long-term growth rates play in explaining whether the measured relation between disclosure and risk premium is positive or negative. In specifications that control for industry and quarter fixed effects but do not condition on growth, we find a positive relation between disclosure and risk premium. Subsequent regressions of risk premium on disclosure include the interaction of long-term growth rates with disclosure, and results indicate that the positive relation between risk premium and disclosure is moderated for observations with low rates of long-term growth. Our analysis also provides evidence on the association between risk premiums and all types of disclosures, whether mandatory or voluntary. While most of the prior work in this area focuses on voluntary disclosures, the theoretical predictions in Dutta and Nezlobin (2016) relate to disclosure "regimes," which correspond well with mandatory disclosures.

Overall, our results provide support for Dutta and Nezlobin's predictions. We also highlight the importance of examining a broad set of firm disclosure measures—when we rely on a management-forecast-based disclosure measure, we observe a limited association between disclosure and risk premium. The weaker association could be attributable to the management-forecast-based measure being restricted to a particular set of voluntary disclosures that include a forecasted value, in contrast with the

broader set of disclosures contained in the other measures. Similarly, when we rely on realized returns to measure risk premium, we document a negative association between disclosure and risk premium across the full sample, even after controlling for cash flow news. While realized returns are frequently used as a proxy for expected returns, much of this work relies on portfolios, rather than firm-specific realized returns. Our findings could be affected by the noise in realized returns or an inability to properly control for cash flow news and discount rate news. It is also possible that realized returns are less connected to fundamentals.[2]

The rest of the paper proceeds as follows. Section 2 discusses background literature and develops hypotheses. Section 3 describes the research design. Section 4 presents our empirical results, and Section 5 concludes.

2. Literature review and hypotheses development

2.1. Literature review

Many theoretical studies in the accounting and finance literature suggest that a firm's expected return is negatively associated with disclosure level (e.g., Coles, Loewenstein and Suay, 1995; Christensen et al. 2010; Easley and O'Hara 2004; Hughes et.al. 2007; Lambert et. al. 2007), as more disclosure decreases both the investors' uncertainty about future cash flows and their required rate of return. These models focus on the association between disclosure and the expected returns in a single, post-disclosure, period. In these settings, an investor's risk premium is decreasing in the precision of the information received about the forthcoming cash flows. At the end of the period, the cash flows are consumed.[3]

In contrast, Dutta and Nezlobin (2016) model a setting where information disclosure affects the investor's risk premium for holding the firm when part of the cash flows (labeled dividends) are received in a post-disclosure period (after a disclosure is made) and the remaining cash flows (labeled capital

[2] Elton (1999) suggests that information surprises make realized returns a poor proxy for expected returns.
[3] Lambert et al. (2007) mention this point (e.g., see their footnote 8).

gains) are received from selling the firm to the next generation in a pre-disclosure period (prior to an additional disclosure being made). The conditional variance of the capital gains portion of firm value will be a function of the firm's *anticipated* disclosure. When the firm's expected growth rate exceeds a threshold, higher quality disclosure *increases* the uncertainty of the capital gain cash flows, rather than decreasing it. Ultimately, each generation's investors face a risk premium composed of a weighted average of the post-disclosure risk premium and the pre-disclosure risk premium. The relative strengths of those relationships determine a firm's overall risk premium.

There is also a significant stream of empirical research that seeks to document the predicted negative association between disclosure quality and risk premium, with somewhat conflicting results. For example, Botosan and Plumlee (2002) examine the association between firm expected returns and three related measures of firm disclosure quality based on survey data from the AIMR. While they document a significant negative association between expected returns and higher quality annual report disclosure for their sample, they also report an unexpected negative association between expected returns and higher quality quarterly and more timely disclosures. Likewise, Richardson and Welker (2001) examine the link between a firm's expected return and the quantity and quality of its financial and social disclosures. Similar to the mixed findings in Botosan and Plumlee (2002), Richardson and Welker (2001) find their predicted negative association between financial disclosures and expected return but also report a "statistically reliable positive association" between enhanced social disclosures and expected returns.

2.2. Hypotheses development

As discussed above, while several empirical studies provide evidence that the association between firm disclosure and expected returns is not always negative, much of the prior theoretical literature supports a negative association. The multi-period model in Dutta and Nezoblin (2016) extends this literature by providing conditions under which disclosure quality can have a positive association with risk premium. Consistent with earlier theoretical work (e.g., Easley and O'Hara 2004; Lambert et al. 2007) the relation between the risk premium on the short-term cash flows and disclosure is negative.

However, the relation between disclosure and the expected risk premium on the long-term cash flows is conditional on the expected growth of those cash flows. Since the risk premium measured at each point in time is a weighted average of the risk premium related to the short-term and long-term cash flows, the relation with disclosure depends on expected growth. Specifically, Dutta and Nezlobin (2016) condition the relation between disclosure and risk premium on whether the expected long-term growth rate for the firm exceeds a certain threshold, which they assume to be the risk-free rate. In our empirical analysis, we also consider whether the growth threshold varies across time and across industries. This leads to our primary hypothesis:

> *H1: The association between disclosure and risk premium for firms with long-term growth rates below a threshold is negative, or less positive, than for firms with long-term growth rates above that threshold.*

3. Sample selection and research design

3.1. Sample selection

We start our sample selection process with 108,097 firm quarters from the intersection of Compustat, CRSP, and I/B/E/S. We include all observations from January of 2001 through December of 2013 with non-missing returns, earnings, and analysts' earnings forecast data. Our primary disclosure measures are based on data drawn from 8K filings available on the SEC's Edgar website, so we eliminate firm-quarter observations that are missing these data (11,308 observations).[4] In some cases we are unable to estimate our expected risk premium measures due to missing data items; this reduces our sample by 13,574 observations. Finally, we eliminate firms with current period losses or forecasted losses (11,451 firm-quarters or 13.7% of the total sample including loss firms) because risk premium estimates for loss firms are difficult to interpret. Our primary sample includes 71,764 observations from the first calendar quarter in 2001 through the fourth calendar quarter in 2013 (52 quarters). When our analyses use the

[4] Some firms do not file any 8Ks during a quarter, which would lead to a disclosure value of zero. A zero value for a particular quarter differs from a missing 8K disclosure measure, which exists when a firm has not filed an 8K in the current quarter or any prior quarter.

frequency of management forecasts as the disclosure measure, we lose an additional 12,529 observations. Panel A of Table 1 details the sample selection process. Panel B presents the industry and year breakdown for our sample. We use the Fama-French 17 industry classification to determine industry affiliation of firms. The largest industry representation is for services and other (27.7%), finance (21.4%), and machinery (12.5%), and the smallest industry representation is for fabricated products (0.7%) and mining (0.7%). We also report the industry representations for the entire CRSP-Compustat merged universe of firms and note that the industry breakdown for our sample is quite similar. Our sample is distributed evenly across the 13-year period, with no more than 10% of the sample falling in a single year.

3.2. Research design

We use both univariate and multivariate analyses to examine the relation between disclosure and risk premium conditional on a firm's expected growth rate relative to a long-term growth rate threshold. Our analysis requires measures of three primary variables: risk premium, disclosure quality, and a long-term growth rate threshold. We discuss our proxies for each of these variables below. We also provide details about our multivariate model.

3.2.1. Risk premium measures

We estimate firm-specific risk premiums using three different methodologies drawn from prior literature. We use two measures from the implied cost of capital literature as well as realized returns. Our first measure is based on the price-earnings-growth method (Easton 2004). The findings in Botosan and Plumlee (2005) and Botosan et al. (2011) suggest that implied cost of capital measures based on the price-earnings-growth (PEG) method provide a valid proxy for risk premium. We estimate RP_{PEG} as the square root of the difference between forecasts of longer-term earnings and 12-month-ahead earnings scaled by the current stock price, less the risk-free rate:

$$RP_{PEG} = \sqrt{\frac{E_t[LTF_i] - E_t[F12_i]}{P_{i,t}}} - RF_t$$

where $E_t[F12_i]$ is the constant horizon 12-month ahead I/B/E/S earnings forecast for each firm (i) every quarter (t), which is calculated by time-weighting the I/B/E/S consensus annual earnings forecasts for the one-year-ahead ($F1$) and two-year-ahead ($F2$) periods. Specifically, $E_t[F12_i] = w_{i,t}E_t[F1_i] + (1 - w_{i,t})E_t[F2_i]$, where the weights ($w_{i,t}$) are based on the number of days between the forecast date and the fiscal period end date for the firm's one-year-ahead forecast. This procedure delivers a time series of forward earnings forecasts with a constant horizon of 12 months for each firm. We then calculate longer-term earnings forecasts for each firm as $E_t[LTF_i] = E_t[F12_i] \times (1 + E_t[LTG_i])$, where LTG is the median I/B/E/S long-term growth forecast.

Our second measure, RP_{FEP}, is calculated as the inverse of the forward price-to-earnings ratio less the risk-free rate. A vast body of literature in accounting (Beaver, 1970) has measured expected rate of return using the earnings-to-price ratio, which we modify to incorporate forward earnings. Specifically, we estimate RP_{FEP} as:

$$RP_{FEP} = \frac{E_t[LTF_i]}{P_{i,t}} - RF_t$$

where $E_t[LTF_i]$ is the longer-term earnings forecast calculated as before in the estimation of RP_{PEG}.[5] Our final measure, RP_{RR}, is realized stock returns over the subsequent 12 months less the risk-free rate. Since realized returns are being used as a proxy for expected returns, we also control for cash flow news over the subsequent 12 months when using this risk premium measure.

3.2.2. Disclosure measures

We consider five measures of disclosure in our study: four 8K-based measures and one based on management forecasts. Our first disclosure measure is the number of 8Ks filed in the prior year, consistent with measures used in previous work (e.g., Leuz and Schrand, 2009; Li, 2013; Balakrishnan, Core, and Verdi, 2014; Guay, Samuels, and Taylor, 2016). As noted by Cooper et al. (2016), however, a simple count of the number of 8Ks provides a relatively crude measure of disclosure, since a single 8K

[5] We repeat our analyses using one- and two-year-ahead forecasts instead of longer-term earnings forecasts when estimating risk premiums and find similar results.

sometimes (but not always) includes multiple reportable items and those items might be related either to mandatory items or to voluntary items. The second disclosure measure we consider is the number of the *items* disclosed within 8Ks, which expands the 8K count measure and captures additional variation when firms elect to disclose multiple reportable items within a single 8K. Our third and fourth disclosure measures partition firms' 8K disclosures into voluntary and mandatory items. While Dutta and Nezlobin's (2016) model does not distinguish between voluntary and mandatory disclosures, many of the earlier theoretical and empirical studies focus on the effect of *voluntary* disclosure on risk premium (e.g., Verrecchia 1983; Botosan and Plumlee 2002; Francis et al. 2008). Thus, as part of our analysis, we include disclosure partitioned into voluntary and mandatory items and examine whether the association between disclosure and risk premium differs according to the type of disclosure. Our final measure is the number of management forecasts provided by a firm in the previous 12 months, similar to prior studies (e.g., Bergman and Roychowdhury 2008; Guay et al. 2016; Plumlee et al. 2015). While the management forecast measure is restricted to a specific type of voluntary disclosure and is not available for all sample firms, we include it in our analysis to facilitate comparison with prior literature.[6] As with our other measures, we use a simple count of management forecasts to measure disclosure rather than conditioning on the actual information content of the disclosure.

The first four disclosure measures are based on data drawn from 8K filings, which are available via EDGAR on the SEC's website. We use these data and the technique developed in Cooper et al. (2016) to construct each of the four measures. *8KCount* is the number of 8Ks filed by a firm during the 12-month period prior to the date the risk premium is estimated. *TDisc* is the total number of *reportable items* disclosed in the 8Ks issued by a firm during the 12-month period prior to the date the risk premium is estimated. *VDisc* and *MDisc* are the number of voluntary and mandatory reportable items disclosed in the

[6] The voluntary disclosure literature relies on a number of alternative measures of firm-level voluntary disclosure, including the presence or number of management forecasts (e.g., Bergman and Roychowdhury 2008; Brown, et al. 2004; Guay et al. 2016; Kalay 2015), the number of 8K filings (e.g., Guay et al. 2016; Leuz and Schrand 2009), self-constructed scores (e.g., Francis et al. 2008; Plumlee et al. 2015), and externally generated scores (e.g., AIMR scores and Standard & Poor's (S&P) scores) (e.g., Botosan and Plumlee 2002; Lang and Lundholm 1993). While each of these measures captures cross-sectional variation in disclosure, they also have weaknesses. See Beyer et al. (2010) and Berger (2011) for comprehensive discussions of these measures.

8Ks issued by a firm during the 12-month period prior to the date the risk premium is estimated. We follow Cooper et al. (2016) and partition the reportable 8K items into SEC-required disclosures (mandatory) and other disclosures (voluntary), counting the number of each type of disclosure to form *MDisc* and *VDisc*.[7] Our final measure, *FreqMF*, is the number of management forecasts issued during the 12-month period prior to the date the risk premium is estimated (e.g., Guay et al. 2016). We calculate this measure for the subset of firms included in the I/B/E/S Guidance database from Thomson Reuters, so it is available only for firms that have issued at least one such forecast during the sample period.

3.2.3. Long-term growth rate thresholds

Our analysis requires us to estimate a threshold long-term growth rate that is expected to trigger a positive rather than negative association between disclosure and the risk premium. We consider four potential long-term growth rate thresholds. To form the first threshold, we rank all observations within each of the 52 sample quarters into quartiles (lowest, second, third, and highest *LTG*), based on the I/B/E/S long-term growth rate forecast at that point in time. Observations in the lowest long-term growth quartile are considered to have growth rates below the threshold cross-sectional long-term growth rate (we refer to this threshold as "Cross-Sectional LTG").[8] This process does not generate a single value for the long-term growth rate threshold across the entire sample, but instead allows for that threshold to vary across the 52 sample quarters. The second threshold is generated by refining the process that generated the cross-sectional long-term growth rate threshold — we again rank observations within each sample quarter into quartiles based on the I/B/E/S long-term growth rate, but in this case the ranking is done

[7] Cooper et al. (2016) report that they are able to construct their 8K disclosure measures for almost twice as many firms during their sample period as they are able to construct disclosure based on the management earnings forecasts. In addition, they find that the set of firms for which they are able to construct the 8K disclosure measures but not the management earnings forecast disclosure measure is significantly different in terms of size (market value, number of analysts), profitability (frequency of losses, return on assets), and other attributes (book to market, capital expenditures, return volatility, increase in shares outstanding) from the set of firms for which both measures can be constructed.

[8] Our regression analysis bases the threshold value on the lowest LTG quartile, although we present univariate results for all of the LTG quartiles.

within each of the Fama-French 17 industries.[9] This process allows us to control for industry differences in risk premium in determining the long-term growth rate threshold. For each of the 52 sample quarters, we combine the observations from each quartile across all industries. Observations in each of the lowest *within-industry* long-term growth rate quartiles are considered to have growth rates below the industry-adjusted long-term growth rate threshold (we refer to this threshold as "Within-Industry LTG"). Again, this process does not generate a set threshold for the full sample, but instead allows for that threshold to vary across the 52 quarters and by industry.

The other two long-term growth rate thresholds, the risk-free rate and GDP growth, are based on economy-wide factors. Dutta and Nezlobin (2016) show that, when cash flows are serially uncorrelated, the long-term growth rate threshold is the risk-free rate (pg. 4); accordingly, we use this value as our third threshold. Finally, given the importance of the macroeconomic environment and business cycles in influencing firm-level earnings growth, we use GDP growth as the fourth long-term growth rate threshold. Appendix A provides a detailed description of the calculations for each long-term growth rate threshold.

3.2.4. Multivariate model

As noted earlier, we use both univariate and multivariate analysis to provide evidence on the role played by long-term growth rates in explaining the association between disclosure and risk premiums. Our multivariate model is consistent with prior studies (e.g., Botosan and Plumlee 2002; Francis et al. 2008; Plumlee et al. 2015) that examine the unconditional association between disclosure and risk premiums. Specifically, we estimate the following cross-sectional model for each risk premium measure (k) and each disclosure measure (j):

$$RP_{k,i} = \gamma_0 + \gamma_1 Disclosure_{j,i} + \gamma_2 BelowThreshold + \gamma_3\left(BelowThreshold \times Disclosure_{j,i}\right) + \gamma_4 Size_i + \gamma_5 Beta_i + \gamma_6 Lev_i + \gamma_7 B/P_i + \varepsilon_i \quad (1)$$

[9] This process is tantamount to industry-adjusting the long-term growth rates. We also note that if industry affiliation is determined using Fama-French 48 industries instead of 17 industries, the univariate and multivariate results are substantively similar.

where

RP_k	One of the three risk premium measures discussed above.
$Disclosure_j$	One of the five disclosure measures discussed above.
BelowThreshold	An indicator variable that equals one when the firm belongs to a group with long-term growth below one of the four long-term growth rate thresholds discussed above, zero otherwise.
BelowThreshold × *Disclosure*	Interaction between the *BelowThreshold* indicator and *Disclosure*. This is the main variable of interest.
Size	Natural logarithm of market value of equity as of the end of the last fiscal period.
Beta	Firm-specific beta estimated for each quarter using rolling regressions of firm returns on the value-weighted market index returns over the prior 36 months (minimum of 24 months required).
Lev	Leverage calculated as long term liabilities scaled by total assets.
B/P	The book-to-price ratio computed as book value of common equity at the end of the last fiscal period scaled by market value of equity.

The dependent variable in our tests is one of the three risk premium measures, and the explanatory variable *Disclosure* is one of the five disclosure measures. We operationalize the Dutta and Nezlobin (2016) long-term growth rate thresholds using an indicator variable (*BelowThreshold*) to capture the set of observations that have long-term growth rates below the threshold values, using one of the four long-term growth thresholds discussed above. This indicator variable is interacted with *Disclosure*. The primary explanatory variables of interest are *Disclosure* and its interaction with the indicator variable (*BelowThreshold*). We predict that the interaction variable (*BelowThreshold* × *Disclosure*), which captures the association between disclosure and risk premium for firms with long-term growth rates below the threshold value, will be negatively associated with risk premium. We expect that the association between disclosure and risk premium for firms classified as having growth rates that exceed the threshold will be positive.

Consistent with prior studies that examine the association between risk premium and disclosure, we also include several control variables: *Size*, *Beta*, *Lev*, and *B/P*. *Size* is the log of market value of equity at the end of the prior fiscal year. *Beta* is the CAPM beta, which is the coefficient from a regression of firm-specific returns on the value-weighted market index returns. *Lev* is total long-term

liabilities scaled by total assets. *B/P* is the firm's book value of equity scaled by market value of equity. These variables control for firm-specific characteristics that theory and prior studies suggest are associated with risk premium. We expect that *Size* (*Beta*, *Lev*, *B/P*) will be negatively (positively) associated with risk premium. We incorporate an additional variable (*CFNews*) to control for cash flow news (Botosan et al. 2011) when we employ RP_{RR} as the dependent measure.

4. Results

4.1. Descriptive statistics

Table 2 presents descriptive statistics for the variables used in our analysis. Panel A presents descriptive statistics for the pooled sample. In Panel B, we group the observations according to long-term growth quartile and present descriptive statistics for the lowest and highest quartiles of cross-sectional long-term growth. Panel C presents descriptive statistics for the sample sorted into the 17 Fama-French industries.

Looking first at the pooled sample in Panel A, we note that the mean estimated risk premium varies across the three risk premium proxies, from a low of 0.069 (RP_{FEP}) to a high of 0.100 (RP_{RR}). The magnitudes of these values are generally consistent with prior studies for this time period. For example, before the adjustment for the risk-free rate, Larocque and Lyle (2016) report mean (median) values for the RP_{PEG} model of 0.099 (0.090) and for the RP_{RR} model of 0.137 (0.087) over their sample period (1971-2012). The latter part of their sample period, which corresponds with ours (see their Table 2 Panel B), shows mean and median values that are lower than their pooled sample means and medians, and are consistent with our reported values. Also consistent with prior findings, we document large differences in the cross-sectional variation of these measures; the standard deviation of the risk premium proxies ranges from a low of 0.036 (RP_{PEG}) to a high of 0.420 (RP_{RR}).

We also document substantial differences in the means, medians, and standard deviations of the disclosure measures. *8KCount* has a mean (median) value of 11.29 (10.0), which is comparable to the values reported in Balakrishnan et al. (2014) (the average firm in their sample, which is limited to larger

firms, files approximately seven 8Ks a year) and Cooper et al. 2016 (the average firm in their sample files approximately 8.8 8Ks a year). Not surprisingly, *TDisc* has the largest mean and standard deviation (22.64 and 14.78) of our disclosure measures, as it is based on the number of *items* within filed 8Ks where each 8K has at least one reportable item. *VDisc* and *MDisc*, which partition the items included in *TDisc* into voluntary and mandatory disclosures, have mean (median) values of 9.10 (8.0) and 13.53 (12.0), respectively. Finally, *FreqMF*, which is available for a subset of our sample and captures only one type of disclosure — management forecasts — has a mean of 8.97 and a median of 7.0. The values of the control variables (e.g., *Size*, *Beta*, *Lev*, *B/P*) are consistent with prior studies.

Panel B presents descriptive statistics for observations partitioned by cross-sectional long-term growth.[10] The lowest and highest long-term growth quartiles are obtained from quarterly sorts of all firms on the basis of I/B/E/S long-term growth forecasts. Looking at the descriptive statistics for these two quartiles, we observe that mean and median RP_{PEG} are lower in the lowest long-term growth quartile than in the highest long-term growth quartile. The opposite is true for mean and median values of RP_{FEP} and RP_{RR}. When we examine disclosure, however, we find that the values of all four of the 8K-based measures are higher in the lowest long-term growth quartile than in the highest long-term growth quartile. The opposite is true for *FreqMF*. We also find that firm observations classified in the lowest long-term growth quartile are larger and more levered, and have lower *Beta* and higher *B/P* ratios, than firms in the highest long-term growth quartile.

Finally, Panel C of Table 2 presents median values for the variables across the 17 Fama-French industries. As expected, we document differences in the risk premium and disclosure measures, as well as long-term growth rates, across the 17 industries. These findings are consistent with prior work (e.g., Gebhardt, Lee, and Swaminathan 2001) and with practitioner views (e.g., Duff and Phelps 2015). The cross-industry variation suggests that controlling for industry may be important as we estimate the long-term growth rate threshold.

[10] In untabulated analysis we also calculate descriptive statistics for observations partitioned by *within-industry* long-term growth. The results are substantively similar to those presented in Panel B based on cross-sectional long-term growth.

Table 3 presents correlations among the risk premium and disclosure measures. Consistent with using a within-quarter multivariate research design, we report the average of the quarterly cross-sectional Pearson and Spearman correlations between variables, rather than correlations based on a pooled sample. Not surprisingly, and consistent with prior studies, the three risk premium proxies are positively associated: the highest correlation is between RP_{PEG} and RP_{FEP} (Pearson ρ= 0.715) and the lowest is between RP_{PEG} and RP_{RR} (Pearson ρ= 0.095). The low correlation between the risk premium based on the PEG method and realized returns is consistent with findings in prior work. We also report very high correlations among the four disclosure measures based on 8K data and a positive correlation between those measures and *FreqMF*. The lowest correlation among the 8K-based proxies is between *VDisc* and *MDisc* (Pearson ρ= 0.661), consistent with the findings in Cooper et al. (2016). The low correlation highlights that, even though voluntary and mandatory disclosures are positively related, there is variation in one that is incremental to the other. While *FreqMF* is positively related to the other measures of disclosure, the magnitudes are economically much smaller, consistent with *FreqMF* capturing a limited portion of the information provided via the 8K measures.

We also report generally negative associations between RP_{PEG} and RP_{RR} and the disclosure measures (other than *FreqMF*), consistent with the unconditional negative association between disclosure and expected return suggested by prior research. RP_{FEP} is *positively* associated with four of the five disclosure measures, however. Finally, we find that forecasted long-term growth is negatively associated with the disclosure measures (except *FreqMF*) and positively (negatively) associated with RP_{PEG} (RP_{FEP} and RP_{RR}).

4.2. Univariate analyses

We begin our analysis by presenting correlations between risk premium and disclosure across quartiles of long-term growth. Table 4 reports the correlations between each of the three measures of risk premium and each of the five disclosure measures. We partition the sample based on the four long-term growth rates we use to create growth thresholds: cross-sectional LTG, within-industry LTG, risk-free rate,

and GDP growth period.

The first five rows in the table present correlations between RP_{PEG} and the disclosure measures, the next five rows present correlations between RP_{FEP} and the disclosure measures, and the last five rows present correlations between RP_{RR} and the disclosure measures. We reproduce the full sample correlations from Table 3 in column (1) of Table 4 to simplify comparisons with the partitioned correlations. Columns (2) through (5) report the correlations by cross-sectional LTG quartile (from the lowest to the highest quartile). Columns (6) through (9) report the correlations by within-industry LTG quartile (from the lowest to the highest quartile). Columns (10) and (11) report the correlations when we partition based on whether the firm-specific long-term growth forecast is below or above the prevailing risk-free rate. The final two columns present correlations for the observations where GDP growth for the period is in the lowest (highest) quartile of GDP growth rates across the sample period.

When we partition based on the cross-sectional LTG quartiles (columns (2)-(5)), the results using RP_{PEG} to estimate risk premium tell a consistent story. The correlations between RP_{PEG} and the four 8K-based disclosure measures are negative, but increasing, across the lowest three quartiles. In the highest LTG quartile, the correlation is positive. The correlations between RP_{FEP} and the first four disclosure measures show the same systematic increase across the growth quartiles. In this case, the correlations are all positive, but they are increasing in magnitude. These systematic changes in the correlations are consistent with our hypothesis based on the Dutta and Nezlobin (2016) model, and they highlight the importance of controlling for long-term growth rates in examining the relation between risk premium and disclosures. In contrast with these results, however, when we use realized returns as a proxy for expected risk premium or we measure disclosure using only management forecasts, the correlations between risk premium and disclosure across the LTG quartiles are generally decreasing.

The results based on our second method of estimating the long-term growth rate threshold (Within-Industry LTG) show a similar increasing pattern to those based on Cross-Sectional LTG. Across the four within-industry LTG quartiles (columns (6)-(9)), we again find that the correlations between RP_{PEG} and RP_{FEP} and 8K-based disclosure are increasing with the long-term growth rates. For example,

when we rely on RP_{PEG} to estimate the risk premium, we document negative correlations between risk premium and disclosure in the three lowest within-industry LTG quartiles. The sign of the correlation becomes positive in the highest within-industry LTG quartile. The results when we use realized returns to estimate risk premium or management forecasts to estimate disclosure are similar to those reported above: the correlations between risk premium and disclosure are decreasing or unrelated across within-industry LTG partitions.

A comparison of the results for the first two growth partitions suggests that industry growth rates affect the growth rate threshold. Focusing on the results using RP_{PEG} and the 8K-based disclosure measures, we note that while the correlations are negative for the lowest quartile, positive for the highest quartile, and increasing across the four quartiles for both growth partitions, correlations in the second and third quartiles are of opposite sign for the two partitions. When the forecasted long-term growth rate is calculated relative to industry, only firms in the highest long-term growth quartile show a positive correlation between risk premium and disclosure; for the other three quartiles, disclosure is negatively correlated with risk premium on average. In contrast, when we use quarterly cross-sectional growth rates to determine growth quartiles, the average correlation between risk premium and disclosure is positive for all but the lowest growth quartile.

The results based on the final two methods of estimating the long-term growth rate threshold suggest that these thresholds are less informative. When we use the risk-free rate to partition the sample, the vast majority of our observations (almost 70,000 of the 71,764 sample observations) are classified as having long-term growth rates that exceed the threshold. Even so, we generally find that the correlation between the risk premium and disclosure for the set of firms with lower long-term growth rates is lower (and frequently negative) than for the set of firms with higher long-term growth rates. The results based on sorting firms into lowest and highest growth quartiles based on GDP growth (columns (12) and (13))

are somewhat mixed.[11]

Overall, the results presented in Table 4 support a link between long-term growth rates and the sign of the association between a firm's risk premium and disclosure based on a cross-sectional or within-industry LTG threshold. These results are based on two risk premium proxies (RP_{PEG} and RP_{FEP}) and are consistent across 8K-based disclosure measures. The failure to document a link using RP_{RR} and with *FreqMF* likely reflects issues with these measures that have been identified in earlier work. Estimating risk premium using realized returns — particularly without controlling for cash flow news — suffers from the concerns raised in a number of prior studies (e.g., Elton 1999, Botosan et al. 2011). Likewise, the limitations of management forecasts as a comprehensive measure of disclosure have been well documented (e.g., Beyer, Cohen, Lys, and Walther 2010).

4.3. Multivariate analyses

We begin our multivariate analysis by presenting the results of an empirical specification similar to the regression models used in prior studies. As Dutta and Nezlobin (2016) highlight in motivating their model, the prior empirical work examining the relation between disclosure and risk premium tends to report mixed results. In addition, much of this work examines voluntary disclosure using relatively small samples, often during limited time periods.[12] By contrast, we calculate a measure of both voluntary and mandatory disclosure for all firms that file 8Ks with the SEC from 2001 to 2013. Thus, to provide a comparison with the prior work (e.g., Botosan and Plumlee 2002; Francis et al. 2008), our first regression examines the unconditional association between risk premium and *TDisc*, the most comprehensive of our 8K-based disclosure measures. In addition to providing a baseline for our subsequent analysis, these

[11] We note that for the risk premium measure based on realized returns (RP_{RR}), the relation with disclosure is negative in the lowest GDP growth quartile. We cautiously interpret this as evidence that the beneficial effect of information disclosure on firm-specific risk premium is stronger in downside states of the world, when the market risk premium is high.

[12] Many of these studies rely on hand-collected measures of disclosure (e.g., Francis et al. 2008; Plumlee et al. 2015) or disclosure measures that are available for a limited set of firms (e.g., Clarkson et al. 2013; Botosan and Plumlee 2002; Richardson and Welker 2001), which generally limits the sample size. In addition, these disclosure measures generally focus on a single source for disclosure (e.g., annual reports, sustainability reports, management earnings forecasts).

results document the relation between the risk premium and a broad disclosure measure that incorporates both mandatory and voluntary reports.

We present a set of results for each of the three risk premium measures in Table 5. For each risk premium measure, we present four sets of regression coefficients and *t*-statistics that differ in terms of how we control for time-series and cross-sectional dependence. Specifically, in the first column of each set of results (columns (1), (5), and (9)), we present the mean of the coefficients from the cross-sectional regressions estimated each sample quarter. The *t*-statistics are formed using the mean and standard deviations of these coefficients (Newey-West *t*-statistics). When we estimate this model, we include indicator variables for each of the 17 Fama-French industries. Estimating this regression on a quarter-by-quarter basis provides a control for quarter fixed effects, and including industry indicators in the model provides a control for industry fixed effects. The second and third columns of each set of results (columns (2), (6), (10) and columns (3), (7), (11)) present coefficients and *t*-statistics based on (i) a pooled regression model without industry or quarter fixed effects and (ii) a pooled regression model with industry fixed effects. The coefficients and *t*-statistics in the fourth and final columns of each set (columns (4), (8), and (16)) are based on a pooled regression model with both industry and quarter fixed effects. The results presented in the first columns (labeled FMB) are similar — in terms of sign and magnitude — to the results presented in the fourth columns, and demonstrate the impact of controlling for industry and quarterly effects. When we do not control for these effects, we find significant negative associations between *TDisc* and each of the risk premium proxies. Including industry and quarter fixed effects results in a significant *positive* association between *TDisc* and RP_{PEG} and an insignificant positive association between *TDisc* and RP_{FEP}, although the association between *TDisc* and RP_{RR} remains negative. Overall, our results suggest that risk premium based on the price-earnings-growth model (but not realized returns) is positively associated with our disclosure measure.

We present our primary results in Table 6. Drawing on the univariate associations presented in Table 2, Panel B we use the third quartile of long-term growth rates to operationalize the growth threshold — i.e., the growth rate above which we expect firm disclosure will be positively associated with risk

premium. Panel A reports results when we use cross-sectional long-term growth rates (Cross-Sectional LTG) to measure the growth threshold, and Panel B reports the results when the within-industry long-term growth rate (Within-Industry LTG) is used. The model predicts that firms with long-term growth rates below the LTG threshold will benefit from increased disclosure, such that the interaction between *BelowThreshold* and *TDisc* and risk premium will be negative. Increased disclosure by other firms — those with long-term growth rates above the long-term growth threshold — will be positively associated with risk premium.

In Panel A we document significant positive associations between *TDisc* and RP_{PEG}. In addition, we document negative associations between RP_{PEG} and both *Lowest LTG Quartile* and the interaction between *TDisc* and *Lowest LTG Quartile*, where *Lowest LTG Quartile* identifies firms that are *BelowThreshold.* These results are consistent with our expectations and the effects posited by Dutta and Nezlobin (2016). The findings for RP_{FEP} are directionally similar to the RP_{PEG} results, although generally insignificant. The associations when we measure risk premium using RP_{RR} are opposite of our expectations, however, even after controlling for cash flow news.

The results in Panel B, when the threshold is based on a within-industry long-term growth rate, yield similar — and in some cases, stronger — results as those in Panel A. Again, we find that the associations between RP_{PEG} and RP_{FEP} and *TDisc* are positive, and between RP_{PEG} and RP_{FEP} and the interaction between *TDisc* and *Lowest Within-Industry LTG Quartile* are negative, where *Lowest Within-Industry LTG Quartile* identifies firms that are *BelowThreshold*. In this case, however, the associations are statistically significant across both models, except in the pooled RP_{FEP} model. As in Panel A, the associations when we measure risk premium using RP_{RR} are opposite of our expectations, even after controlling for cash flow news. These findings may be attributable to the noise in realized returns as a

measure of expected return (Elton 1999), particularly given our inability to control for discount rate news.[13]

To provide a visual representation of the associations between disclosure and risk premiums, in Figures 1 and 2 we plot the time series of the coefficient on disclosure from quarterly cross-sectional regressions using RP_{PEG} as the dependent variable. We present the time series for each of our five disclosure measures (Panels A – E). In each panel of Figure 1, we plot the time series for observations where the long-term growth rate falls in the lowest quartile of cross-sectional long-term growth rates (in grey) and for the rest of the sample (in black). Panel F reports the proportion of the sample where the coefficient on the disclosure measure is negative. Figure 2 presents analogous charts when within-industry long-term growth rates are used.

Across Panels A – D of Figure 1, the lowest LTG subsample coefficients are consistently lower than the coefficients for the rest of the sample. More importantly, the coefficients for the lowest LTG sample are consistently negative for most of the sample periods, while the coefficients for the rest of the sample regressions are positive. These trends are confirmed by the high proportion of the lowest LTG quartile with negative coefficients, shown in Panel F. Specifically, up to 80.8 percent of the coefficients in the lowest LTG sample are negative (when only mandatory disclosures are considered), while the highest proportion of negative coefficients within the rest of the sample is less than 8 percent for the 8K-based disclosure measures. While we do not specifically examine issues related to mandatory and voluntary disclosures, it is interesting to note differences in the impact of the long-term growth rate threshold when disclosure is limited to either mandatory or voluntary disclosures. The results presented in Panel E — with management forecasts as our measure of disclosure — differ substantially from those based on our other measures, although we still document a higher proportion of negative coefficients in the lowest LTG subsample than in the rest of the sample.

[13] Botosan et al. (2011) examine the efficacy of using realized returns after controlling for cash flow news as a proxy for risk premium. Their findings suggest that this measure performs worse than a risk premium proxy based on the PEG method.

The plots in Figure 2 share many of the characteristics of those in Figure 1. Like Panels A – D of Figure 1, Panels A – D of Figure 2 show that the lowest within-industry LTG subsample coefficients are consistently lower than the coefficients for the rest of the sample. However, the rest of the sample has larger frequency of negatives than in Figure 1. This pattern is similar to the univariate results, where the negative correlations are not restricted to the lowest quartile for within-industry. Further, we observe greater variation in the magnitudes of the coefficients, both positive and negative. Finally, the Panel E results show that coefficients are mostly positive for both groups — and more consistently so than in Figure 1 — when management forecasts are the measure of disclosure.

In Table 7 Panels A and B we expand our analysis by examining the association between RP_{PEG} and our four alternative measures of disclosure, after controlling for growth thresholds. Panel A reports results based on the lowest cross-sectional long-term growth threshold, while Panel B reports results based on the lowest within-industry long-term growth quartile. In column (1) we use *8KCount* as our measure of disclosure. Columns (2) and (3) report results with *VDisc* as the disclosure measure, with and without a control for *MDisc*. In column (4) we include *MDisc* on its own, and in column (5) we use *FreqMF*. The results here support our univariate findings and the relation posited in the Dutta and Nezlobin (2016) paper. Specifically, we document negative associations between disclosure and risk premium for observations with growth rates below the long-term growth threshold and positive associations between disclosure and risk premium when they are above the long-term growth threshold. The findings in Panel B are similar to those in Panel A. As in Table 6, the coefficients in Panel B are both larger in magnitude and more statistically significant than in Panel A, although the underlying relationship is the same. However, consistent with our earlier findings related to *FreqMF*, we find that, even in a multivariate setting, the sign of the association between *FreqMF* and risk premium is inconsistent with our expectations.

5. Conclusions and further work

We reexamine the association between firm disclosure and firm risk premium, relying on the findings in Dutta and Nezlobin (2016) to guide our analysis. Using their theoretical framework, we estimate four potential long-term growth rate thresholds, where the association between disclosure and firm risk premium for firms with long-term growth rates that exceed (are less than) that threshold is expected to be positive (negative). We calculate disclosure measures for a broad cross-section of firms and, using those measures, provide evidence that the firm's long-term growth rate is an important factor in understanding how disclosure affects risk premium.

The primary results from our study are based on a firm's overall disclosure, which includes both voluntary and mandatory disclosures. In future versions of this study, we will further explore whether and how risk premium is differentially affected by voluntary versus mandatory disclosures. Our analysis provides some evidence that the nature of the risk premium/disclosure relation differs across these disclosure types. For example, we find that the associations between risk premium and mandatory disclosure for the lowest LTG firms are more frequently negative (80.8 percent of the time) than for voluntary disclosure (53.8 percent of the time) (see Panel F in Figure 1). This result raises new questions relative to the prior theoretical and empirical research that frequently focuses on the link between voluntary disclosure and risk premium.

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Appendix A. Variable Definitions

Variables	Descriptions
Risk Premium Measures:	
Risk Premium	We use four different methodologies to estimate firm-specific expected returns over the subsequent 12-month horizon, and compute the risk premium (*RP*) as the expected returns in excess of the risk-free rate (RF). The risk-free rate is collected from Kenneth French's website.
RP_{PEG}	The expected returns based on the price-earnings-growth method (Easton 2004) less the risk-free rate calculated as: $$RP_{PEG} = \sqrt{\frac{E_t[LTF_i] - E_t[F12_i]}{P_{i,t}}} - RF_t$$ $E_t[F12_i]$ is the constant horizon 12-month ahead I/B/E/S earnings forecast for each firm (*i*) every quarter (*t*), which is calculated by time-weighting the I/B/E/S consensus annual earnings forecasts for the one-year-ahead ($F1$) and two-year-ahead ($F2$) periods. Specifically, $E_t[F12_i] = w_{i,t}E_t[F1_i] + (1 - w_{i,t})E_t[F2_i]$, where the weights ($w_{i,t}$) are based on the number of days between the forecast date and the fiscal period end date for the firm's one-year-ahead forecast. $E_t[LTF_i]$ is the longer-term earnings forecast for each firm, estimated using the median I/B/E/S long-term growth forecast (*LTG*) as: $$E_t[LTF_i] = E_t[F12_i] \times (1 + E_t[LTG_i])$$
RP_{FEP}	Expected returns based on the earnings-to-price method (Beaver 1970), modified to incorporate longer term earnings forecasts less the risk-free rate. $$RP_{FEP} = \frac{E_t[LTF_i]}{P_{i,t}} - RF_t$$ $E_t[LTF_i]$ is the longer term earnings forecast as calculated
RP_{RR}	Realized stock returns over the subsequent 12 months less the risk-free rate.
Disclosure Measures:	
8KCount	A count of 8K filings over the prior 12 months (Leuz and Schrand, 2009).
TDisc	Total disclosure, based on the items disclosed within 8K filings over the prior 12 months (Cooper, He, and Plumlee 2016).
VDisc	Voluntary disclosure, based on voluntary items disclosed within 8K filings over the prior 12 months (Cooper, He, and Plumlee 2016).
MDisc	Mandatory disclosure, based on other than voluntary items disclosed within 8K filings over the prior 12 months (Cooper, He, and Plumlee 2016).
FreqMF	Voluntary disclosure, based on the number of management forecasts for sales, earnings and other items issued over the prior 12 months (Guay et al. 2016).

Variables	Descriptions
Growth Measures / Thresholds For Partitions:	
LTG	The firm-specific median long-term growth forecast in I/B/E/S.
Risk-Free Rate	The quarterly long-term risk-free rate (GS10) collected from the FRED database of the Federal Reserve Bank of St. Louis.
GDP Growth	Annual GDP growth over the most recent quarter with data collected from the FRED database of the Federal Reserve Bank of St. Louis.
Additional Variables:	
Size	Natural logarithm of market value of equity at fiscal period end.
Beta	Firm-specific beta is estimated using rolling regressions of firm returns on the value-weighted market index returns over the prior 36 months (minimum of 24 months).
Lev	Leverage calculated as long-term liabilities scaled by total assets.
B/P	The book-to-price ratio computed as book value of common equity at the end of each fiscal period scaled by market value of equity.
CFNews	Changes in expectations of future earnings growth (i.e., cash flow news) over the subsequent 12 months estimated using revisions in the 12-month ahead I/B/E/S earnings forecast: $$CFNews_{i,t} = \frac{E_{t+12}[F12_i] - E_t[F12_i]}{P_{i,t}}$$

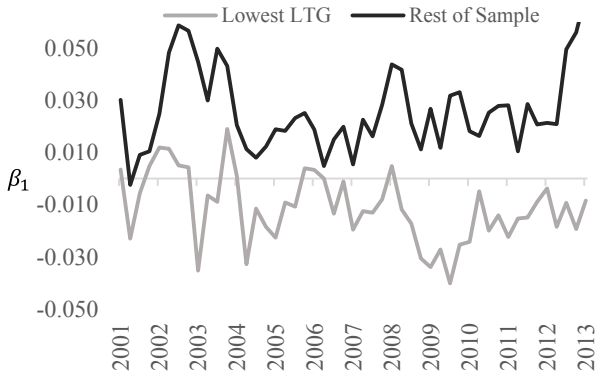
Figure 1. The Relation Between Risk Premium and Disclosure

These figures plot the time series of the coefficient on disclosure from quarterly cross-sectional regressions of risk premium on various measures of disclosure. Specifically, the following model is estimated each quarter for each disclosure measure (*j*):

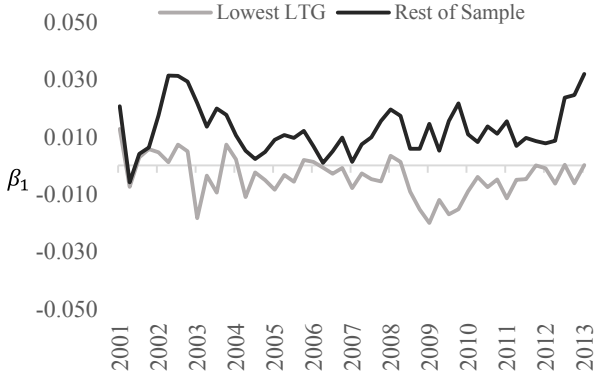
$$RP_{PEG,i} = \beta_0 + \beta_1 Disclosure_{j,i} + \beta_2 Size_i + \beta_3 Beta_i + \beta_4 Lev_i + \beta_5 \frac{B}{P_i} + \varepsilon_i$$

RP_{PEG} is risk premium based on the price-earnings-growth method, less the risk-free rate. Disclosure measures are computed over the 12-month period prior to the date the risk premium measure is estimated. *8KCount* is the number of 8-Ks filed, *TDisc* is the total number of items disclosed, *VDisc* (*MDisc*) is the total number of items classified as voluntary (not classified as voluntary) disclosed in the firm's 8-K filings, and *FreqMF* is the total number of management forecasts for sales, earnings and other items. *Lowest LTG* refers to firms in the lowest LTG quartile when sorted on the basis of long-term growth using the cross-section of the entire sample. *Rest of Sample* refers to the firms other than those in the lowest LTG quartile.

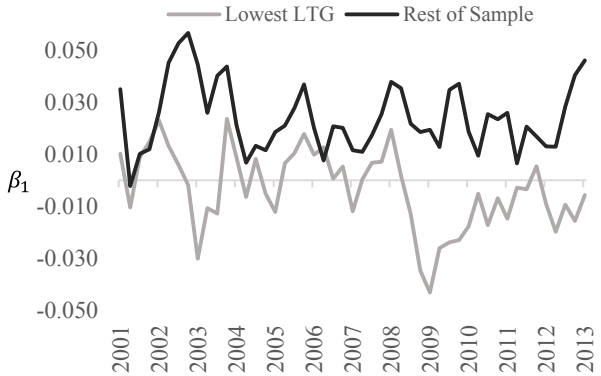
Panel A: *Disclosure$_i$ = 8K Count*



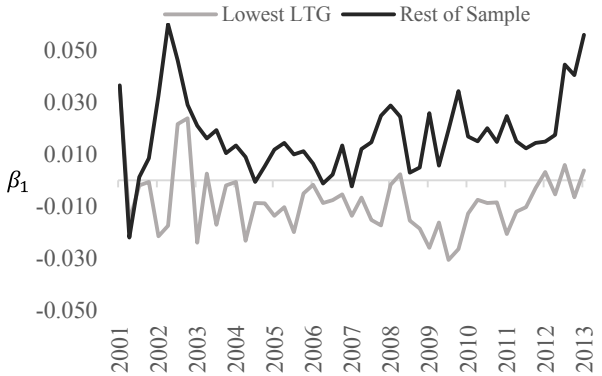
Panel B: *Disclosure$_i$ = TDisc*



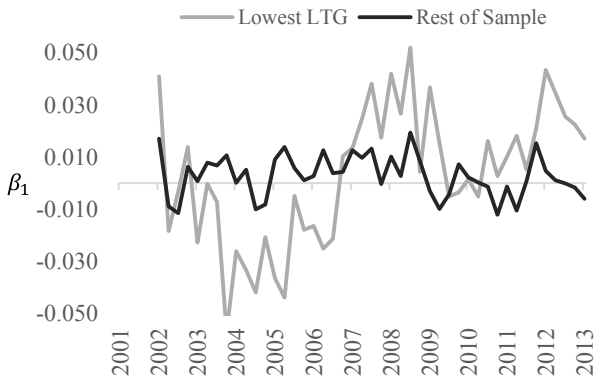
Panel C: *Disclosure$_i$ = VDisc*



Panel D: *Disclosure$_i$ = MDisc*



Panel E: *Disclosure$_i$ = FreqMF*



Panel F: Frequency of Negative Coefficients (%)

	Lowest LTG	Rest of Sample
8K Count	73.1	1.9
TDisc	67.3	1.9
VDisc	53.8	1.9
MDisc	80.8	7.7
FreqMF	38.5	32.7

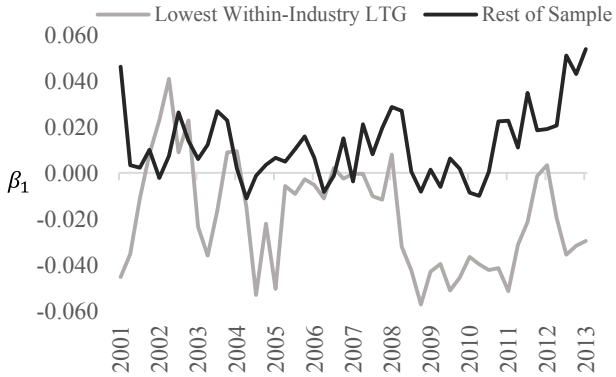
Figure 2. The Relation Between Risk Premium and Disclosure (Within-Industry LTG)

These figures plot the time series of the coefficient on disclosure from quarterly cross-sectional regressions of risk premium on various measures of disclosure. Specifically, the following model is estimated each quarter for each disclosure measure (*j*):

$$RP_{PEG,i} = \beta_0 + \beta_1 Disclosure_{j,i} + \beta_2 Size_i + \beta_3 Beta_i + \beta_4 Lev_i + \beta_5 \frac{B}{P_i} + \varepsilon_i$$

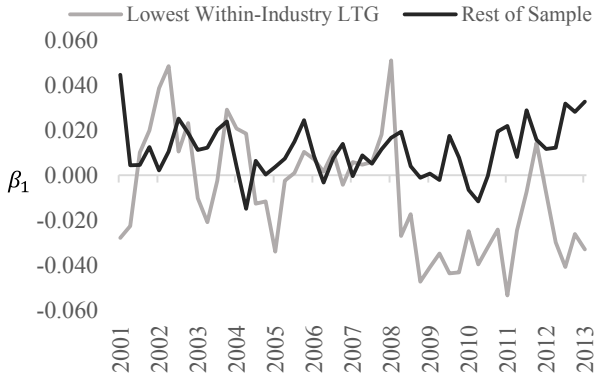
RP_{PEG} is risk premium based on the price-earnings-growth method. Disclosure measures are computed over the 12-month period prior to the date the risk premium measure is estimated. *8KCount* is the number of 8-Ks filed, *TDisc* is the total number of items disclosed, *VDisc* (*MDisc*) is the total number of items classified as voluntary (not classified as voluntary) disclosed in the firm's 8-K filings, and *FreqMF* is the total number of management forecasts for sales, earnings and other items. *Lowest Within-Industry LTG* refers to firms in the lowest LTG quartile when sorted within their industries on the basis of long-term growth. *Rest of Sample* refers to the firms other than those in the lowest within-industry LTG quartile.

Panel A: *Disclosure$_i$ = 8K Count*

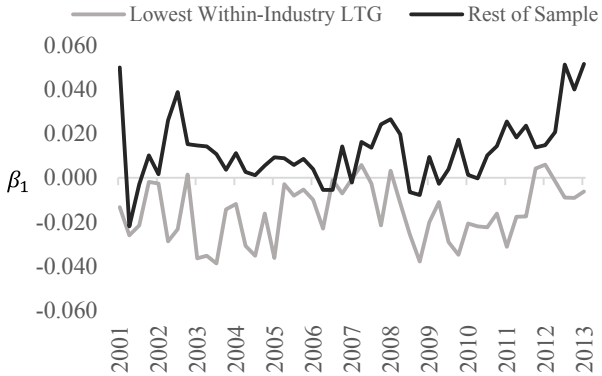


Panel B: *Disclosure$_i$ = TDisc*

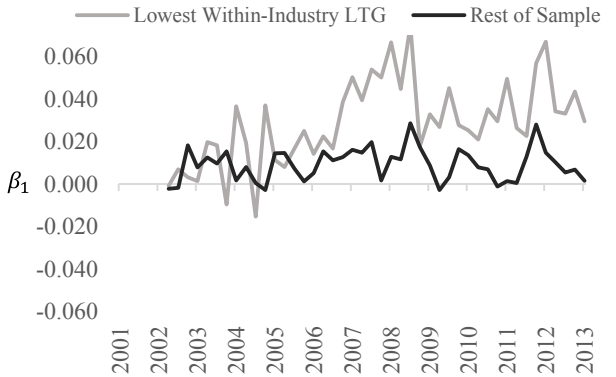
Panel C: *Disclosure$_i$ = VDisc*



Panel D: *Disclosure$_i$ = MDisc*



Panel E: *Disclosure$_i$ = FreqMF*



Panel F: Frequency of Negative Coefficients (%)

	Lowest Within-Industry LTG	Rest of Sample
8K Count	76.9	19.2
TDisc	71.2	19.2
VDisc	57.7	15.4
MDisc	86.5	17.3
FreqMF	9.6	11.5

Table 1. Sample Selection Procedures

Panel A: Sample Selection Process

	Firm-quarters
Non-missing CRSP returns, Compustat data and I/B/E/S LTG forecasts (2001–2013)	108,097
Exclude observations with missing 8K disclosure measures	(11,308)
Exclude observations with missing risk premium measures	(13,574)
Exclude loss and forecasted loss firms	(11,451)
Final sample used for primary analysis (2001–2013)	71,764
Exclude observations with missing management forecast disclosure measure	(12,529)
Sample used for management forecast disclosure analysis	59,235

Panel B: By Industry Breakdown

Industry	Firm-quarters	Freq % in Our Sample	Freq % in Entire CRSP-Compustat Merged Universe
Automotive	1,682	2.3%	1.7%
Chemicals	1,322	1.8%	1.7%
Clothing	1,081	1.5%	2.3%
Construction	2,207	3.1%	3.7%
Consumer Products	1,866	2.6%	4.0%
Durable Goods	1,312	1.8%	2.8%
Fabricated Products	481	0.7%	1.0%
Finance	15,388	21.4%	21.8%
Food	1,782	2.5%	3.1%
Machinery	8,976	12.5%	12.0%
Mining	482	0.7%	2.2%
Oil	2,485	3.5%	4.7%
Services and Other	19,874	27.7%	25.3%
Retail	5,230	7.3%	5.6%
Steel	734	1.0%	1.7%
Transportation	2,873	4.0%	3.3%
Utilities	3,989	5.6%	3.4%

Panel B: By Year Breakdown

Year	Firm-quarters	Freq %
2001	2,899	4.0%
2002	4,565	6.4%
2003	5,832	8.1%
2004	6,828	9.5%
2005	6,808	9.5%
2006	6,554	9.1%
2007	6,417	8.9%
2008	5,946	8.3%
2009	4,600	6.4%
2010	5,458	7.6%
2011	5,670	7.9%
2012	5,307	7.4%
2013	4,880	6.8%

Table 2. Descriptive Statistics

Panel A presents descriptive statistics for all the variables used in our analyses for the pooled sample, Panel B presents descriptive statistics for the highest and lowest long-term growth quartiles. Each quarter we sort all firms in the cross-section on the basis of I/B/E/S long-term growth forecasts into the highest and lowest quartile. Panel C presents medians of the main variables by industry. RP_{PEG} is risk premium based on the price-earnings-growth method, RP_{FEP} is risk premium based on the forward earnings-to-price, and RP_{RR} is risk premium based on realized returns. *8KCount* is the number of 8-Ks filed in the 12-month period prior to the date the expected risk premium measures are estimated. *TDisc* is the total number of items disclosed in the firm's 8-K filings over the 12 months prior to the date the expected return premium measures are estimated. *VDisc* (*MDisc*) is the total number of items classified as voluntary (not classified as voluntary) disclosed in the firm's 8-K filings over the 12 months prior to the date the expected return premium measures are estimated. *FreqMF* is the number of management forecasts issued in the 12 months prior to the date the risk premium measures are estimated. *LTG* is the median I/B/E/S long-term growth forecast. *Size* is the natural logarithm of market value of equity, *Beta* is the beta coefficient from a rolling regression of firm returns on market returns over the prior 36 months, *Lev* is leverage computed as long-term liabilities scaled by total assets, *B/P* is the book-to-price ratio computed as book value of common equity scaled by market value of equity, and *CFNews* is cash flow news measured using revisions in equity analyst expectations of future earnings growth over the subsequent 12 months. See Appendix A for a detailed description of the variables included in the study.

Panel A: Pooled Sample

Variable	Observations	Mean	Std. Dev.	25th	Median	75th
Risk Premium Measures:						
RP_{PEG}	71,764	0.079	0.036	0.055	0.078	0.099
RP_{FEP}	71,764	0.069	0.052	0.036	0.063	0.090
RP_{RR}	71,764	0.100	0.420	-0.138	0.076	0.293
Disclosure Measures:						
8KCount	71,764	11.292	6.803	7.000	10.000	14.000
TDisc	71,764	22.635	14.783	13.000	20.000	29.000
VDisc	71,764	9.102	6.572	5.000	8.000	12.000
MDisc	71,764	13.533	9.622	7.000	12.000	19.000
FreqMF	59,235	8.975	8.715	2.000	7.000	13.000
Growth Measures and Additional Variables:						
LTG	71,764	0.141	0.074	0.100	0.130	0.171
Size	71,764	7.279	1.486	6.211	7.227	8.287
Beta	71,764	1.099	0.766	0.557	0.989	1.496
Lev	71,764	0.375	0.290	0.118	0.326	0.564
B/P	71,764	0.533	0.344	0.302	0.468	0.684
CFNews	62,673	0.003	0.033	-0.008	0.005	0.015

Panel B: Cross-Sectional Long-Term Growth Partitions

Variable	Observations	Mean	Std. Dev.	25th	Median	75th
Lowest LTG Quartile						
Risk Premium Measures:						
RP_{PEG}	17,438	0.056	0.028	0.037	0.057	0.073
RP_{FEP}	17,438	0.072	0.049	0.041	0.067	0.091
RP_{RR}	17,438	0.103	0.338	-0.070	0.094	0.259
Disclosure Measures:						
8KCount	17,438	12.409	7.147	8.000	11.000	16.000
TDisc	17,438	24.717	15.584	14.000	22.000	32.000
VDisc	17,438	10.355	7.074	6.000	9.000	13.000
MDisc	17,438	14.362	10.042	7.000	13.000	20.000
FreqMF	12,849	6.691	7.157	1.000	5.000	10.000
Growth Measures and Additional Variables:						
LTG	17,438	0.068	0.022	0.050	0.070	0.082
Size	17,438	7.446	1.449	6.442	7.436	8.423
Beta	17,438	0.798	0.630	0.356	0.682	1.127
Lev	17,438	0.555	0.262	0.371	0.542	0.854
B/P	17,438	0.646	0.353	0.432	0.586	0.796
CFNews	15,209	0.004	0.034	-0.006	0.004	0.014

Variable	Observations	Mean	Std. Dev.	25th	Median	75th
Highest LTG Quartile						
Risk Premium Measures:						
RP_{PEG}	17,891	0.096	0.039	0.069	0.093	0.118
RP_{FEP}	17,891	0.057	0.050	0.024	0.050	0.080
RP_{RR}	17,891	0.088	0.524	-0.235	0.025	0.326
Disclosure Measures:						
8KCount	17,891	10.543	6.869	6.000	10.000	14.000
TDisc	17,891	21.182	15.029	12.000	19.000	28.000
VDisc	17,891	8.216	6.506	5.000	7.000	10.000
MDisc	17,891	12.966	9.697	6.000	12.000	18.000
FreqMF	15,585	10.089	9.081	3.000	8.000	15.000
Growth Measures and Additional Variables:						
LTG	17,891	0.235	0.078	0.198	0.200	0.250
Size	17,891	6.888	1.435	5.854	6.767	7.829
Beta	17,891	1.405	0.879	0.808	1.278	1.866
Lev	17,891	0.197	0.213	0.028	0.112	0.312
B/P	17,891	0.411	0.290	0.221	0.339	0.522
CFNews	15,473	0.004	0.032	-0.008	0.006	0.017

Panel C: Industry Medians of Main Variables (Fama-French 17 Industry Classification)

	Obs.	RP_{PEG}	RP_{FEP}	RP_{RR}	*8KCount*	*TDisc*	*VDisc*	*MDisc*	*FreqMF*	*LTG*
Automotive	1,682	0.088	0.073	0.107	10.000	20.000	7.500	12.000	6.000	0.135
Chemicals	1,322	0.080	0.073	0.141	11.000	22.000	8.000	14.000	6.000	0.100
Clothing	1,081	0.092	0.077	0.049	9.000	17.000	6.000	11.000	12.000	0.150
Construction	2,207	0.081	0.067	0.085	10.000	19.000	7.000	12.000	5.000	0.125
Consumer Products	1,866	0.086	0.061	0.098	10.000	20.000	7.000	12.000	9.000	0.150
Durable Goods	1,312	0.080	0.069	0.029	10.000	19.000	7.000	12.000	8.000	0.130
Fabricated Products	481	0.088	0.074	0.136	9.000	19.000	7.000	12.000	8.000	0.130
Finance	15,388	0.070	0.068	0.071	11.000	22.000	9.000	12.000	1.000	0.100
Food	1,782	0.073	0.063	0.104	10.000	19.000	7.000	12.000	8.000	0.100
Machinery	8,976	0.083	0.059	0.048	9.000	18.000	6.000	11.000	9.000	0.150
Mining	482	0.075	0.069	0.114	14.000	29.000	12.000	17.000	6.000	0.116
Oil	2,485	0.081	0.076	0.128	13.000	27.000	11.000	16.000	4.000	0.110
Services and Other	19,874	0.080	0.053	0.059	9.000	19.000	7.000	11.000	9.000	0.150
Retail	5,230	0.087	0.064	0.062	11.000	22.000	8.000	13.000	10.000	0.150
Steel	734	0.083	0.076	0.077	11.000	22.000	7.000	14.000	5.000	0.123
Transportation	2,873	0.083	0.070	0.122	11.000	21.000	8.000	13.000	5.000	0.135
Utilities	3,989	0.054	0.066	0.110	14.000	27.000	11.000	15.000	6.000	0.056

Table 3. Averages of Quarterly Cross-Sectional Correlations

This table reports averages of quarterly cross-sectional Pearson and Spearman correlations between variables for the period from 2001 to 2013 based on 71,764 firm-quarter observations (59,235 firm-quarter observations when the correlations involve *FreqMF*). Pearson correlations are reported above the diagonal, and Spearman correlations are reported below the diagonal. See Appendix A for variable descriptions.

	RP_{PEG}	RP_{FEP}	RP_{RR}	*8KCount*	*TDisc*	*VDisc*	*MDisc*	*FreqMF*	*LTG*	*Size*	*Beta*	*Lev*	*B/P*	*CFNews*
RP_{PEG}		0.715	0.095	-0.033	-0.025	-0.037	-0.012	0.064	0.492	-0.094	0.158	-0.189	-0.029	-0.071
RP_{FEP}	0.658		0.134	0.050	0.049	0.054	0.037	-0.032	-0.131	-0.002	0.002	0.127	0.196	-0.097
RP_{RR}	0.078	0.143		-0.007	-0.010	-0.006	-0.012	0.003	-0.039	-0.026	-0.002	-0.005	0.038	0.476
8K Count	-0.042	0.074	0.000		0.940	0.895	0.816	0.017	-0.093	0.223	-0.039	0.207	0.065	0.022
TDisc	-0.030	0.075	-0.003	0.936		0.894	0.924	0.017	-0.083	0.195	-0.026	0.204	0.071	0.022
VDisc	-0.049	0.085	0.000	0.846	0.861		0.661	0.009	-0.107	0.192	-0.056	0.221	0.065	0.014
MDisc	-0.011	0.053	-0.008	0.810	0.910	0.614		0.019	-0.050	0.161	0.003	0.158	0.066	0.024
FreqMF	0.091	-0.026	0.007	0.011	0.013	0.011	0.008		0.102	0.132	0.032	-0.220	-0.158	-0.020
LTG	0.550	-0.169	-0.066	-0.137	-0.123	-0.158	-0.072	0.154		-0.143	0.282	-0.408	-0.255	0.012
Size	-0.099	-0.008	0.020	0.219	0.194	0.186	0.157	0.140	-0.145		-0.082	0.070	-0.310	0.003
Beta	0.192	-0.021	-0.014	-0.046	-0.034	-0.071	0.000	0.051	0.317	-0.074		-0.249	-0.008	-0.006
Lev	-0.198	0.195	0.033	0.257	0.253	0.274	0.193	-0.214	-0.508	0.126	-0.270		0.244	0.021
B/P	-0.038	0.263	0.034	0.086	0.085	0.085	0.075	-0.176	-0.335	-0.315	-0.028	0.260		-0.033
CFNews	-0.054	-0.101	0.481	0.025	0.025	0.012	0.031	-0.010	0.029	0.013	0.013	0.019	-0.041	

Table 4. Univariate Analysis of Risk Premium Measures and Disclosure

This table reports time–series averages of cross-sectional Pearson correlations between various Risk Premium (*RP*) measures and various disclosure measures for the full sample (column 1) as well as for different growth threshold partitions. Columns 2 through 5 report the RP-Disclosure correlation for the sample partitioned each quarter into quartiles on the basis of long-term growth (i.e., Cross-Sectional LTG Quartiles). Columns 6 through 9 report the RP-Disclosure correlation for the sample partitioned into quartiles on the basis of industry long-term growth within each industry. Each quarter we sort firms into quartiles on the basis of long-term growth within each of the 17 industries, and then combine the firms in each quartile across industries (i.e., Within-Industry LTG Quartiles). Columns 10 and 11 partition the sample based whether the firm-specific LTG forecast is below or above the risk-free rate. Columns 12 and 13 partition the time period covered by the sample into the lowest and highest quartile of GDP growth. See Appendix A for descriptions of variables.

		Growth Threshold Partitions											
		Cross-Sectional LTG Quartile				Within-Industry LTG Quartile				Risk-Free Rate		GDP Growth Period	
	Full Sample (1)	Lowest Quartile (2)	Second Quartile (3)	Third Quartile (4)	Highest Quartile (5)	Lowest Quartile (6)	Second Quartile (7)	Third Quartile (8)	Highest Quartile (9)	LTG < threshold (10)	LTG > threshold (11)	Lowest Quartile (12)	Highest Quartile (13)
Observations	71,764	17,438	18,142	18,293	17,891	17,131	18,414	19,067	17,152	1,770	69,994	16,506	18,928
ρ(RP_{PEG}-*8KCount*)	-0.033	-0.023	0.045	0.042	0.068	-0.081	-0.058	-0.030	0.031	-0.062	-0.023	-0.025	-0.034
ϱ(RP_{PEG}-*TDisc*)	-0.025	-0.018	0.038	0.044	0.070	-0.074	-0.043	-0.017	0.035	-0.051	-0.017	-0.022	-0.024
ϱ(RP_{PEG}-*VDisc*)	-0.037	-0.008	0.034	0.040	0.074	-0.069	-0.062	-0.029	0.033	-0.049	-0.027	-0.033	-0.034
ϱ(RP_{PEG}-*MDisc*)	-0.012	-0.023	0.035	0.039	0.056	-0.067	-0.019	-0.004	0.030	-0.041	-0.006	-0.009	-0.012
ϱ(RP_{PEG}-*FreqMF*)	0.064	0.052	0.039	-0.019	-0.076	0.140	0.116	0.056	-0.035	-0.032	0.056	0.083	0.048
ϱ(RP_{FEP}-*8KCount*)	0.050	0.017	0.051	0.045	0.056	0.002	0.040	0.058	0.095	-0.085	0.054	0.042	0.058
ϱ(RP_{FEP}-*TDisc*)	0.049	0.021	0.043	0.047	0.058	0.006	0.039	0.055	0.094	-0.075	0.053	0.040	0.057
ϱ(RP_{FEP}-*VDisc*)	0.054	0.034	0.039	0.042	0.068	0.019	0.034	0.059	0.100	-0.062	0.058	0.045	0.063
ϱ(RP_{FEP}-*MDisc*)	0.037	0.006	0.040	0.041	0.042	-0.005	0.037	0.043	0.073	-0.075	0.040	0.031	0.040
ϱ(RP_{FEP}-*FreqMF*)	-0.032	-0.008	-0.001	-0.024	-0.047	0.003	-0.019	-0.039	-0.055	-0.027	-0.032	-0.005	-0.055
ϱ(RP_{RR}-*8KCount*)	-0.007	0.009	-0.018	-0.001	-0.025	0.003	-0.008	0.009	-0.030	-0.014	-0.007	-0.031	0.013
ϱ(RP_{RR}-*TDisc*)	-0.010	0.009	-0.029	-0.005	-0.026	0.003	-0.011	0.004	-0.032	0.011	-0.011	-0.033	0.009
ϱ(RP_{RR}-*VDisc*)	-0.006	0.005	-0.024	-0.001	-0.017	0.001	-0.016	0.010	-0.023	0.014	-0.007	-0.033	0.011
ϱ(RP_{RR}-*MDisc*)	-0.012	0.011	-0.028	-0.008	-0.028	0.004	-0.005	-0.002	-0.035	0.013	-0.013	-0.027	0.004
ϱ(RP_{RR}-*FreqMF*)	0.003	0.043	0.012	0.010	-0.024	0.005	0.011	0.023	-0.025	0.067	0.003	0.032	-0.012

Table 5. The Relation Between Risk Premium Measures and Disclosure

This table reports coefficient estimates from pooled and Fama-Macbeth regressions of risk premium measures on disclosure and additional control variables. Specifically, the following model is estimated for each risk premium measure (k) using 71,764 firm-quarter observations (time subscripts suppressed):

$$RP_{k,i} = \beta_0 + \beta_1 TDisc_i + \beta_2 Size_i + \beta_3 Beta_i + \beta_4 Lev_i + \beta_5 \frac{B}{P_i} + \varepsilon_i$$

RP_{PEG} is risk premium based on the price-earnings-growth method, RP_{FEP} is risk premium based on the forward earnings-to-price, and RP_{RR} is risk premium based on realized returns. Disclosure is measured using *TDisc*, which is the total number of items disclosed in the firm's 8-K filings over the 12-month period prior to the date the risk premium measures are estimated. *Size* is the natural logarithm of market value of equity, *Beta* is the beta coefficient from a rolling regression of firm returns on market returns over the prior 36 months, *Lev* is leverage computed as long-term liabilities scaled by total assets, *B/P* is the book-to-price ratio computed as book value of common equity scaled by market value of equity. *CFNews* is cash flow news measured using revisions in equity analyst expectations of future earnings growth over the subsequent 12 months. This additional control variable is included when the risk premium measure is based on realized returns. In columns (1), (5) and (9) Fama-Macbeth (FMB) regressions were used and these columns report the average coefficients and R^2 from quarterly cross-sectional regressions with Newey-West t-statistics. In pooled regressions the t-statistics reported are based on standard errors clustered by firm and quarter. The asterisks *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. See Appendix A for descriptions of variables.

	(1) FMB RP_{PEG}	(2) Pooled RP_{PEG}	(3) Pooled RP_{PEG}	(4) Pooled RP_{PEG}	(5) FMB RP_{FEP}	(6) Pooled RP_{FEP}	(7) Pooled RP_{FEP}	(8) Pooled RP_{FEP}	(9) FMB RP_{RR}	(10) Pooled RP_{RR}	(11) Pooled RP_{RR}	(12) Pooled RP_{RR}
TDisc	0.010***	-0.021***	-0.020**	0.008***	0.001	-0.031***	-0.034***	-0.000	-0.051**	-0.152*	-0.167*	-0.053***
	(5.26)	(-2.70)	(-2.51)	(3.15)	(0.59)	(-3.36)	(-3.55)	(-0.09)	(-2.19)	(-1.68)	(-1.82)	(-3.03)
Size	-0.002***	-0.000	-0.000	-0.001***	0.001	0.003***	0.002***	0.001	-0.007	-0.000	-0.002	-0.005
	(-4.97)	(-0.75)	(-0.58)	(-4.59)	(1.18)	(4.04)	(3.14)	(1.52)	(-1.53)	(-0.11)	(-0.50)	(-1.62)
Beta	0.004***	0.000	-0.001	0.002***	0.001	-0.005***	-0.006***	-0.002	0.016	-0.008	-0.008	0.006
	(3.13)	(0.23)	(-1.39)	(2.62)	(0.39)	(-3.26)	(-4.33)	(-1.44)	(0.91)	(-0.89)	(-0.90)	(0.63)
Lev	-0.010***	-0.020***	-0.007***	-0.008***	0.016***	0.007***	0.020***	0.018***	-0.017	-0.074***	-0.012	-0.017
	(-10.50)	(-10.46)	(-2.81)	(-3.91)	(9.95)	(2.65)	(5.53)	(5.51)	(-1.24)	(-3.85)	(-0.67)	(-1.23)
B/P	-0.001	0.013***	0.015***	0.001	0.022***	0.041***	0.041***	0.024***	0.055***	0.184***	0.193***	0.101***
	(-1.01)	(5.89)	(6.75)	(0.87)	(16.60)	(13.39)	(13.48)	(12.03)	(3.27)	(5.41)	(5.52)	(4.83)
CFNews									5.602***	6.042***	6.026***	5.363***
									(17.94)	(17.49)	(17.59)	(21.48)
Observations	71,764	71,764	71,764	71,764	71,764	71,764	71,764	71,764	62,673	62,673	62,673	62,673
Average / Adjusted R^2	0.142	0.045	0.085	0.368	0.131	0.084	0.113	0.289	0.325	0.243	0.248	0.419
Industry Indicators	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes
Quarter Indicators	No	No	No	Yes	No	No	No	Yes	No	No	No	Yes

Table 6. The Relation Between Risk Premium Measures and Disclosure, Conditional on Growth

This table reports coefficient estimates from pooled and Fama-Macbeth regressions of risk premium measures on disclosure, the interaction of long-term earnings growth (LTG) and disclosure, and additional control variables. For Panel A we estimate the following model using the indicated number of firm-quarters (time subscripts suppressed):

$$RP_{k,i} = \gamma_0 + \gamma_1 TDisc_i + \gamma_2 BelowThreshold + \gamma_3 (BelowThreshold \times TDisc_i) + \Sigma \gamma X_t + \varepsilon_i$$

RP_{PEG} is risk premium based on the price-earnings-growth method, RP_{FEP} is risk premium based on the forward earnings-to-price, and RP_{RR} is risk premium based on realized returns. *TDisc* is the total number of items disclosed in the firm's 8-K filings computed over the 12-month period prior to the date the risk premium measures are estimated. In Panels A and B we use two groups of firms identified as being *BelowThreshold*. *Lowest Cross-Sectional LTG Quartile* is an indicator for whether the firm is in the lowest quartile of I/B/E/S long-term growth forecasts. Each quarter we sort firms into quartiles on the basis of long-term growth and then combine the firms in the lowest quartile. *Lowest Within-Industry LTG Quartile* is an indicator for whether the firm is in the lowest quartile of I/B/E/S long-term growth forecasts within its industry. Each quarter we sort firms into quartiles on the basis of long-term growth within each industry, and then combine the firms in the lowest quartile across all industries into one group. The control variables X_t include *Size*, *Beta*, *Lev*, and *B/P* in all specifications and *CFNews* is added when the dependent variable is RP_{RR}. The *t*-statistics reported are based on standard errors clustered by firm and quarter. In columns (1), (3) and (5) of both panels we use Fama-Macbeth (FMB) regressions and report the average coefficients and R^2 from quarterly cross-sectional regressions with Newey-West *t*-statistics. In pooled regressions the *t*-statistics reported are based on standard errors clustered by firm and quarter. The asterisks *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. See Appendix A for descriptions of variables.

Panel A: Lowest Cross-Sectional LTG Quartile

	(1) FMB RP_{PEG}	(2) Pooled RP_{PEG}	(3) FMB RP_{FEP}	(4) Pooled RP_{FEP}	(5) FMB RP_{RR}	(6) Pooled RP_{RR}
TDisc	0.009***	0.009***	0.002	0.002	-0.067***	-0.062***
	(5.49)	(3.69)	(0.91)	(0.46)	(-2.72)	(-2.72)
Lowest LTG Quartile	-0.028***	-0.027***	-0.004***	-0.003	-0.017	-0.012
	(-51.28)	(-22.95)	(-3.12)	(-1.51)	(-1.57)	(-0.95)
Lowest LTG Quartile × TDisc	-0.003	-0.011***	-0.003	-0.008	0.078**	0.034
	(-1.14)	(-2.76)	(-0.71)	(-1.33)	(2.30)	(0.75)
Size	-0.001***	-0.001***	0.001	0.001	-0.006	-0.005
	(-4.15)	(-4.01)	(1.27)	(1.63)	(-1.48)	(-1.62)
Beta	0.002*	0.001	0.000	-0.002	0.017	0.006
	(1.98)	(0.93)	(0.22)	(-1.62)	(0.92)	(0.60)
Lev	-0.000	0.001	0.018***	0.020***	-0.016	-0.015
	(-0.44)	(0.45)	(10.52)	(5.90)	(-1.15)	(-1.09)
B/P	0.004***	0.005***	0.023***	0.025***	0.056***	0.102***
	(3.85)	(4.89)	(17.49)	(12.44)	(3.35)	(4.82)
CFNews					5.602***	5.363***
					(17.80)	(21.50)
Observations	71,764	71,764	71,764	71,764	62,673	62,673
Average / Adjusted R^2	0.280	0.463	0.134	0.290	0.328	0.419
Industry Indicators	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Indicators	No	Yes	No	Yes	No	Yes

Panel B: Lowest Within-Industry LTG Quartile

	(1) FMB RP_{PEG}	(2) Pooled RP_{PEG}	(3) FMB RP_{FEP}	(4) Pooled RP_{FEP}	(5) FMB RP_{RR}	(6) Pooled RP_{RR}
TDisc	0.011***	0.009***	0.005**	0.001	-0.054**	-0.057***
	(6.22)	(3.84)	(2.02)	(0.32)	(-2.28)	(-2.89)
Lowest Within-Industry LTG Quartile	-0.023***	-0.022***	0.000	-0.001	0.000	0.002
	(-43.16)	(-22.19)	(0.07)	(-0.39)	(0.04)	(0.15)
Lowest Within-Industry LTG Quartile × TDisc	-0.014***	-0.015***	-0.016***	-0.008	0.035	0.024
	(-4.53)	(-4.31)	(-2.71)	(-1.35)	(0.82)	(0.63)
Size	-0.001***	-0.001***	0.001	0.001	-0.007	-0.005*
	(-3.33)	(-3.05)	(1.37)	(1.63)	(-1.60)	(-1.67)
Beta	0.002*	0.000	0.001	-0.002	0.018	0.006
	(1.75)	(0.65)	(0.26)	(-1.53)	(0.99)	(0.68)
Lev	-0.001	0.001	0.017***	0.019***	-0.022	-0.020
	(-0.76)	(0.52)	(11.03)	(5.72)	(-1.62)	(-1.41)
B/P	0.004***	0.006***	0.023***	0.025***	0.052***	0.100***
	(5.13)	(5.26)	(17.63)	(12.27)	(3.15)	(4.72)
CF News					5.611***	5.363***
					(17.80)	(21.50)
Observations	71,764	71,764	71,764	71,764	62,673	62,673
Average / Adjusted R^2	0.273	0.456	0.133	0.289	0.328	0.419
Industry Indicators	Yes	Yes	Yes	Yes	Yes	Yes
Quarter Indicators	No	Yes	No	Yes	No	Yes

Table 7. Other Measures of Disclosure and the Relation with RP_{PEG}

This table reports coefficient estimates from pooled regressions of RP_{PEG} on various measures of disclosure and interactions of long-term earnings growth (LTG) with disclosure. For Panel A we estimate the following model using the indicated number of firm-quarter observations for each disclosure measure (time subscripts suppressed):

$$RP_{PEG,i} = \gamma_0 + \gamma_1 Disclosure_i + \gamma_2 BelowThreshold + \gamma_3 (BelowThreshold \times Disclosure_i) + \Sigma \gamma X_t + \varepsilon_i$$

RP_{PEG} is risk premium based on the price-earnings-growth method. Disclosure measures are computed over the 12-month period prior to the date the risk premium measure is estimated. *VDisc* (*MDisc*) is the total number of items classified as voluntary (not classified as voluntary) disclosed in the firm's 8-K filings. *FreqMF* is the total number of management forecasts for sales, earnings and other items. In Panels A and B we use two groups of firms identified as being *BelowThreshold*. *Lowest Cross-Sectional LTG Quartile* is an indicator for whether the firm is in the lowest quartile of I/B/E/S long-term growth forecasts. Each quarter we sort firms into quartiles on the basis of long-term growth and then combine the firms in the lowest quartile. *Lowest Within-Industry LTG Quartile* is an indicator for whether the firm is in the lowest quartile of I/B/E/S long-term growth forecasts within its industry. Each quarter we sort firms into quartiles on the basis of long-term growth within each industry, and then combine the firms in the lowest quartile across all industries into one group. The control variables X_t include *Size*, *Beta*, *Lev*, *B/P* in all the specifications. The *t*-statistics reported are based on standard errors clustered by firm and quarter. The asterisks *, **, and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. See Appendix A for descriptions of variables.

Panel A: Lowest Cross-Sectional LTG Quartile

	(1) RP_{PEG}	(2) RP_{PEG}	(3) RP_{PEG}	(4) RP_{PEG}	(5) RP_{PEG}
8K Count	0.021***				
	(4.07)				
VDisc		0.017***	0.017***		
		(3.46)	(2.83)		
MDisc			0.001	0.012***	
			(0.19)	(3.26)	
FreqMF					0.005
					(1.28)
Lowest LTG Quartile	-0.027***	-0.028***	-0.028***	-0.027***	-0.030***
	(-22.18)	(-25.23)	(-25.23)	(-24.05)	(-25.69)
Lowest LTG Quartile × 8K Count	-0.020**				
	(-2.35)				
Lowest LTG Quartile × VDisc		-0.014	-0.014		
		(-1.61)	(-1.61)		
Lowest LTG Quartile × MDisc				-0.020***	
				(-3.24)	
Lowest LTG Quartile × FreqMF					0.004
					(0.54)
Size	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-4.13)	(-4.02)	(-4.03)	(-3.92)	(-4.14)
Beta	0.001	0.001	0.001	0.001	0.000
	(0.90)	(0.92)	(0.92)	(0.95)	(0.68)
Lev	0.001	0.001	0.001	0.001	0.004*
	(0.45)	(0.49)	(0.49)	(0.53)	(1.81)
B/P	0.005***	0.006***	0.006***	0.006***	0.006***
	(4.84)	(4.89)	(4.91)	(4.95)	(4.92)
Observations	71,764	71,764	71,764	71,764	59,235
Adj. R-squared	0.463	0.463	0.463	0.463	0.471
Industry Indicators	Yes	Yes	Yes	Yes	Yes
Quarter Indicators	Yes	Yes	Yes	Yes	Yes

Panel B: Lowest Within-Industry LTG Quartile

	(1) RP_{PEG}	(2) RP_{PEG}	(3) RP_{PEG}	(4) RP_{PEG}	(5) RP_{PEG}
8K Count	0.020***				
	(4.16)				
VDisc		0.017***	0.016***		
		(3.67)	(2.67)		
MDisc			0.002	0.012***	
			(0.50)	(3.34)	
FreqMF					0.003
					(0.72)
Lowest Within-Industry LTG Quartile	-0.022***	-0.023***	-0.023***	-0.023***	-0.027***
	(-20.94)	(-24.06)	(-24.04)	(-23.97)	(-26.26)
Lowest Within-Industry LTG Quartile × 8K Count	-0.029***				
	(-3.78)				
Lowest Within-Industry LTG Quartile × VDisc		-0.025***	-0.025***		
		(-3.07)	(-3.06)		
Lowest Within-Industry LTG Quartile × MDisc				-0.023***	
				(-4.44)	
Lowest Within-Industry LTG Quartile × FreqMF					0.023***
					(3.73)
Size	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(-3.14)	(-3.03)	(-3.05)	(-2.97)	(-3.23)
Beta	0.000	0.000	0.000	0.000	0.000
	(0.63)	(0.65)	(0.64)	(0.66)	(0.37)
Lev	0.001	0.001	0.001	0.001	0.004**
	(0.52)	(0.55)	(0.53)	(0.59)	(2.04)
B/P	0.006***	0.006***	0.006***	0.006***	0.007***
	(5.23)	(5.29)	(5.28)	(5.31)	(5.35)
Observations	71,764	71,764	71,764	71,764	59,235
Adj. R-squared	0.456	0.456	0.456	0.456	0.464
Industry Indicators	Yes	Yes	Yes	Yes	Yes
Quarter Indicators	Yes	Yes	Yes	Yes	Yes