Corporate Long-termism: Looking Toward an (Un)certain Future

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Abstract

Do investors benefit when managers have a long-term perspective? The conventional narrative suggests that they do. This paper exploits the characteristics of language used in annual reports and offers a nuanced answer. We find that greater future-focused language is associated with more investment in tangible assets, more impactful innovation, lower corporate risk, lower cost of capital, wider lender base, and higher firm value only when accompanied by lower uncertainty. These associations either disappear or reverse when uncertain tone is high, indicating that corporate long-termism is value-enhancing only when accompanied by low uncertainty.

JEL Classifications: *G10, G20, G30, G31, M4, M41*

Key Words: *Textual Analysis; Long-termism; Short-termism; Future-focused Language; Uncertain Tone; Corporate Risk; Corporate Investment; Innovation; Cost of Capital*

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1. Introduction

Managerial short-termism, i.e., the focus on short-term outcomes at the expense of long-term performance, continues to engender debate in academic research and the popular business press (e.g. Porter, 1992; Barton et al., 2017). For example, almost 80% of over 400 corporate executives have reported that they are willing to sacrifice long-term value to meet investors' short-term earnings expectations, according to Graham et al. (2005). Anecdotal evidence and a stream of academic research suggest that such lack of long-termism is not only becoming more prevalent (Barton et al., 2017; McKinsey Global Institute, 2017), but is also associated with various negative consequences such as reduced innovation, stalled economic growth, and insufficient corporate social responsibility (Tomaskovic-Devey et al., 2015; Garicano and Rayo, 2016; Erhemjamts and Huang, 2019)[1]. At the same time, a growing strand of recent literature suggests that short-termism may instead be optimal in certain contexts (e.g., Gryglewicz et al., 2020; Thakor, 2020). For instance, a short-term view can curb managerial incentives for extracting private benefits (e.g., Ferreira et al., 2014; Thakor, 2015), and short-term incentives can be value-enhancing for shareholders in some situations (e.g., Cuñat et al., 2012; Gompers et al., 2003; Giannetti and Yu, 2020). Moreover, trends in research and development (R&D), venture capital and private equity investments, and current high valuations, particularly for growth firms, continue to challenge claims of a widespread negative impact associated with short-termism (Bebchuk, 2021; Kaplan, 2018).

The primary empirical challenge in this debate has been the difficulty of measuring temporal orientation. In this study, we attempt to overcome this challenge and quantify corporate

[1] https://www.mckinsey.com/featured-insights/long-term-capitalism/where-companies-with-a-long-term-view-outperform-their-peers

long-termism by exploiting the information contained in the text of annual reports. Humanities and linguistics literature posit that language reveals how we think and reflects social and psychological processes (Pennebaker, 2011; Newman, Groom, Handelman, and Pennebaker, 2008). As such, wording choices convey both intended (e.g., quantitative information) and unintended information (Loughran and McDonald, 2016). To the extent managers are responsible for drafting and signing off on the annual reports, it follows that the word choices in annual reports reveal soft information about managers' frame of mind regarding their future thinking and orientation. According to an interdisciplinary body of behavioral consistency literature in sociology and psychology (e.g., Epstein, 1979; Funder and Colvin, 1991; Sherman, Nave, and Funder, 2010) and financial economics (e.g. Cronqvist et al., 2012; Graham et al., 2013; Biggerstaff et al., 2015), corporate policies manifest CEO preferences.[2] Moreover, there is empirical and theoretical evidence indicating that the time horizon of corporate policies is associated with CEO time horizon (Glaeser et al., 2020; Gryglewicz et al., 2020; Marinovic and Varas, 2019; Dechow and Sloan, 1991) because of career concerns (Narayanan, 1985a; Gibbons and Murphy, 1992), or short-term compensation structure (Stein, 1988; Flammer and Bansal, 2017). Thorstad and Wolff (2018) demonstrate that when people think more distantly into the future, they are more likely to invest in the future and forgo short-term rewards for larger long-term rewards. Thus, we expect firms with a longer-term perspective to use future-focused language more frequently.

[2] For instance, prior research documents consistent patterns between firms' use of debt and their CEO's personal leverage choice (Cronqvist et al., 2012); there is also evidence that CEO's personal conservatism and risk-taking behavior are reflected in corporate policies (Graham et al., 2013). Biggerstaff et al. (2015) find that CEOs who personally benefited from options backdating are more involved in corporate misconduct. Benmelech and Frydman (2015) find that military CEOs are more conservative and behave more ethically. Cain and McKeon (2016) show that firms led by pilot CEOs have higher equity volatility, higher leverage, and higher acquisition activities.

Furthermore, the degree of uncertainty associated with long-term strategies may moderate the relationship between long-termism and corporate outcomes, suggesting interactive effects between future orientation and uncertainty. In a related study, Giannetti and Yu (2020) note that short-term corporate orientation could enhance firm value when the economic environment is unstable. This insight is consistent with anecdotal evidence suggesting that long-termism could diminish value if the firm operates in a rapidly changing and uncertain environment.[3] Consequently, a central theme underlying our analyses is that uncertain sentiment contextualizes the effects of long-termism. Specifically, we examine how uncertain sentiment moderates the association between corporate long-termism with investment and innovation policies as well as cost of capital. As we do with long-termism, we gauge uncertain sentiment by exploiting the language used in the annual reports. Just as the frequency of future-focused language may reveal the extent of a firm's long-termism, the use of uncertain language may also reveal the extent of uncertain sentiment due to internal or external forces.

We obtain annual reports filed by all publicly traded companies in the U.S. between 2000 and 2016 and utilize the widely used dictionary approach in textual analysis research that assigns words by sentiment or function into categories (e.g., positive, negative, pronoun) based on extensive psychological and linguistic research. We measure the frequency of future-focused language using the Linguistic Inquiry and Word Count (LIWC) text analysis software. Examples of future-focused words include, among others, *will, shall, expect, forthcoming, ahead,* and *future.* We gauge the intensity of uncertain sentiment using information obtained from the Loughran-McDonald Software Repository for Accounting and Finance.[4] Consistent with anecdotal evidence

[3] "The tyranny of the long-term," *The Economist*, November 22, 2014.

[4] Loughran and McDonald (2011) find that almost three-fourths of the words identified as negative by the widely used Harvard-IV-4 Psychosocial Dictionary are typically not considered negative in financial contexts. Unlike commonly

of growing short-termism, we find that the proportion of future-focused words used in annual reports has declined substantially over time.

Our findings are consistent with the conjecture that the use of uncertain tone moderates the link between long-termism and corporate policies. With respect to corporate investment, we find that firms that use more future-focused language invest more for the future. However, the type of investment varies depending on the uncertain sentiment expressed in the language. When the text contains more uncertain language, the association between future-focused language and corporate investment is significantly stronger for intangible forms of investment with a wider range of potential payoffs. For example, when there is a higher level of uncertain tone, future-focused language is positively associated with subsequent R&D expenditure, which is more intangible, and negatively associated with acquisition activities that tend to be more tangible. In contrast, when uncertain sentiment is low, future-focused language has a greater incremental effect on subsequent acquisition activity and capital expenditure and a relatively low effect on R&D expenditure. We also provide evidence that while future-focused language is positively associated with different proxies of corporate risk, the effect is significantly lower when accompanied by a low degree of uncertain tone.

Corporate innovation is the quintessential issue in the short-termism debate. Because innovation requires long gestation periods and often involves a high failure rate (Aghion et al., 1994; Hall et al. 2005; Holmstrom, 1989), a lack of long-term orientation can inhibit innovation. Prior research documents that short-term pressures to meet earnings targets hinder innovation (Benner and Ranganathan, 2012; He and Tian, 2013), and that long-termism is essential for innovation (Azoulay et al., 2011; Cheng, 2004; Aghion et al., 2013; Lerner and Wulf, 2007). Our

used classifications of positive and negative words, classifying words that identify temporal focus is not subject to interpretation according to the context.

empirical framework paints a more nuanced picture. We demonstrate that corporate long-termism as measured by the use of future-focused language is associated with more patent filings, higher citations, and more impactful patents only when accompanied by low levels of uncertain tone. Conversely, corporate innovation is unrelated to long-termism when there is a high level of uncertain tone in the language.

We provide evidence of a similar moderating mechanism for cost of equity and debt capital. We find that corporate long-termism increases firms' implied cost of equity mostly when there is a high degree of uncertain tone. When uncertain tone in the text is low, future-focused language is largely unrelated to the implied cost of equity. Similarly, future-focused language increases yield spreads when uncertain tone is high and reduces yield spreads by about the same amount when uncertain tone is low. Additionally, the non-pricing features of debt contracts are more favorable when future-focused language is accompanied by low uncertain tone. These results show that long-term orientation should be value enhancing only when the accompanying uncertain sentiment is low. Finally, we provide evidence supporting this prediction by documenting a positive association between future-focused language and firm value that exists only when uncertain tone is low.

Our findings contribute to the literature on two main fronts. First, we contribute to the debate on corporate policy time horizon. While most of prior studies focus on short-termism (e.g., Narayanan, 1985a, 1985b; Stein,1989; Bolton et al., 2006; Edmans, 2009; Edmans et al., 2012; Marinovic and Varas, 2019; Varas, 2017; Glaeser et al., 2020), we construct an alternative measure of corporate long-termism, examine whether companies benefit from long-termism, and offer a more refined answer. Our findings suggest that firms benefit from long-termism only when framed by lower uncertainty. We show that greater future-focused language is associated with more investment in tangible assets, less corporate risk, and higher quality innovation when uncertain sentiment is lower. In a similar vein, the cost of capital is lower, lending terms are better, and

valuations are higher. In contrast, when uncertain tone is high, long-termism is associated with higher corporate risk, more risky corporate investments, relatively higher cost of capital, shortened loan maturity, and more loan covenants, and has no impact on corporate innovation or firm value.

Second, an important and hitherto unexplored consideration in extant work that employs textual analysis is the possibility that one language characteristic may moderate the outcomes associated with another characteristic. A developing body of research uses statutory filings such as annual reports and IPO prospectuses (Durnev and Mangen, 2020; Hanley and Hoberg, 2012), social media and internet message boards (Sun, Najand, and Shen, 2016; Renault, 2017), newspapers (Alexopoulos and Cohen, 2015; Garcia, 2013), and communications of regulatory agencies (Picault and Renault, 2017; Smales and Apergis, 2017) to examine the implications and effects of language characteristics. Typically, a single language characteristic is studied: positive vs. negative tone, uncertainty, ambiguity, document length, readability, redundancy, or passive vs. active voice (e.g. Cazier and Pfeiffer, 2016; Loughran and McDonald, 2014; Ertugrul, Lei, Qiu and Wan, 2017; Dyer, Lang and Stice-Lawrence, 2017). Within this literature, the study of time perspective has been limited to grammatical differences between languages (Chen, 2013) and remains underexplored. We fill this void by investigating organizational time perspective based on language characteristics used in corporate discourse and show that the soft information hidden in the future-focused language has significant implications for corporate policies.

We organize the remainder of the paper as follows. Section 2 discusses the relevant literature and presents our hypotheses. Section 3 describes the data. In Section 4, we present our results on corporate investment, innovation, and risk. Section 5 provides the results on the costs of equity and debt. We comment on endogeneity and identification issues in Section 6 and conclude in Section 7.

2. Background and Framework

2.1 Literature review

Human behavior and choices are embedded in time (McGrath and Kelly, 1992; Bluedorn, 2002). In their seminal work, Zimbardo and Boyd (1999, p. 1271) note that time perspective "emerges from cognitive processes partitioning human experience into past, present, and future temporal frames." In particular, an orientation towards the future is "dominated by a striving for future goals and rewards." Thorstad and Wolff (2018) demonstrate that when people think more distantly into the future, they are more likely to invest in the future and forgo short-term rewards for larger long-term rewards, and less likely to engage in uncertain and risky behavior. Hence, future orientation should be closely associated with a long-term perspective. A significant amount of prior work demonstrates that long-term perspective and future orientation matter at the individual level resulting in improved health, lower HIV rates, greater savings for retirement, and stronger public support for policies with long time horizons, among other outcomes (Ireland et al., 2015; Rolison et al., 2017; Pérez and Tavitzs, 2017). At the country level, Preis et al. (2012) argue that country-level future orientation has significant macroeconomic implications.

At the firm level, we expect time perspective to be an important characteristic that reflects firm fundamentals and affects firm outcomes. Short-termism is overvaluing the present and undervaluing the future by sacrificing positive net present value projects for short-term gains (e.g., quarterly earnings). Essentially, it is a misalignment between manager's time preference and those of the shareholders. Corporate short-termism could be due to the short-term orientation of the entire market, of certain investors such as activist shareholders, or the myopic behavior of managers themselves (Jiang, 2018). However, the evidence in Van Binsbergen et al. (2012) and Van Binsbergen et al. (2016) based on dividend stripes runs counter to the implications of a short-term oriented market. Dividend strips are short-term assets that pay dividend on a stock index up

to a prespecified time, allowing investors to trade directly on the expected future incremental and timed dividend. Using the observed market value of dividend strips, Van Binsbergen et al. (2012) back out the implied discount rates and show that the implied discount rates on these short-term assets are higher than on the index. Further, the results in Cohen et al. (2013) also indicate that firms with a poor record in long-term R&D investments are overvalued, while those with a successful record are undervalued, implying that the market is perhaps too tolerant of past failures and certainly not penalizing firms for making investment in long-term projects. Moreover, a stream of hedge fund activism research suggests that activist shareholders do not necessarily encourage managerial short-termism.[5]

The above evidence rules out short-term orientation of the entire market or that of certain investors such as activist shareholders as the underlying reasons for corporate short-termism. We now focus on the third potential reason, managerial myopia. A strand of theoretical literature suggests that managers prefer short-term policies (Bolton et al., 2006; Edmans, 2009; Edmans et al., 2012; Marinovic and Varas, 2019; Varas, 2017; Gryglewicz et al., 2020).[6] Similarly, extensive psychology and economics literature investigate intertemporal decision-making at the individual level and document that individuals tend to prefer short-term gains to long-term rewards even when the latter is significantly greater (Ainslie 1975; Frederick et al., 2002; Loewenstein and Prelec, 1992; O'Donoghue and Rabin, 1999; Thaler and Shefrin, 1981). Furthermore, Gryglewicz et al.'s (2020) theoretical model implies that long-termism may be suboptimal and that short-

[5] This literature documents that the significant average abnormal returns around the hedge fund intervention are not due to trading frictions or stock piling. Further, there is no reversion in post-intervention long-run returns and that return on assets (ROA), operating performance, productivity, and innovation increase significantly after the hedge fund intervention (Brav et al., 2008; Clifford 2008; Brav et al., 2009; Greenwood and Schor, 2009; Bebchuk et al., 2015; Brav et al. 2015a,b; Brav et al., 2018). Also, the likelihood of hedge fund intervention is positively associated with the presence of other long-term institutional shareholders. The reason is that hedge funds do not seek a controlling stake in their targets and cannot implement their agendas without the support of other institutional investors.

[6] One notable exception to this literature is Thakor (2020) in which managers prefer long-termism.

termism could be optimal in certain settings. Theoretical evidence in Ferreira et al. (2014) and Thakor (2015) also indicates that short-termism ameliorates managerial incentives for extracting private benefits. Such mixed theoretical and empirical evidence leaves the debate on the benefits and drawbacks of long- and short-termism unresolved.

A key issue in this debate is that firms' temporal orientation is largely unobservable. Prior research uses proxies such as stock market listing, earnings management, executive compensation structure, short-term beta, and asset durability to measure firms' temporal orientation (Souder and Bromiley, 2012; Gonzalez and Andre, 2014; Flammer and Bansal, 2017). For example, Flammer and Bansal (2017) use the structure of CEO compensation as a proxy and show that adoption of long-term executive compensation (i.e., long-term focus) increases firm value, operating performance, and innovation. In contrast to prior research, we exploit language characteristics used in the annual reports to investigate the consequences of organizational time perspective. The tone and word choices in annual reports should reveal the soft information about managers' frame of mind regarding their future thinking. Therefore, the text used in their annual reports should reflect firms' temporal orientation, and we expect firms with a longer-term perspective to use more future-focused language.

The implications of future-focused language on corporate policy choices and firm outcomes are underexplored. Research on the future-focused language at the corporate level has been limited to the recent cross-country studies that examine the grammatical differences in the way different languages refer to the future. Strong future time reference (FTR) languages such as English and French require speakers to grammatically distinguish between future, present, and past events. In contrast, weak-FTR languages such as Japanese and German do not grammatically distinguish between future and present tense. This lack of separation has implications for how speakers convey events (Dahl, 1985; Dancygier and Sweetser, 2009). Therefore, the choice of

language tense can create a sense of immediacy for an event. Chen et al. (2017) show that firms in weak-FTR language countries have substantially higher average cash holdings. We are aware of only a couple of prior studies in finance and accounting that investigate the effects of future-focused language across firms that use English. Karapandza (2016) counts the frequency of three specific future tense words ("*will", "shall",* and *"going to"*) and finds that firms that speak less about the future generate positive abnormal stock returns. Using a machine learning approach, Li (2010) analyzes forward-looking statements in the management discussion and analysis section and studies their determinants and their relation with future earnings.

Further, long-term strategies have more varied uncertainty levels than short-term strategies. The extent of uncertain sentiment manifested by word choices could approximate the firm-level uncertainty due to internal or external forces. In prior work, Alexopoulos and Cohen (2015) extract general macroeconomic uncertainty measures from newspapers and show that these text-based indicators are associated with economic activity and market returns. Loughran and McDonald (2013) report that greater uncertain sentiment in the text of S-1 filings (e.g., uncertain/weak modal words like may, could, depend, and approximately) contributes to greater IPO underpricing by conveying higher ambiguity about future cash flow projections and greater difficulty for investors to evaluate the IPO. Li (2006) posits that uncertain language serves as a signal of poor future performance. He finds that an emphasis on risk, measured by the frequency of words related to risk or uncertainty in the 10-K, is associated with lower future earnings and stock returns.

More recently, Giannetti and Yu (2020) show that firms with disproportionately more short-term investors are more successful in adapting to a shock to the economic environment and tend to have better long-term performance measures. This insight is consistent with the premise that long-termism can be value-enhancing in a stable environment but value-diminishing if the firm operates in a rapidly changing and uncertain environment. This finding suggests that the

uncertainty associated with long-term policies can moderate the effect of such policies. Hence, we explore the interplay between future orientation and the uncertain sentiment expressed in the language and use uncertain tone as a conditioning mechanism underlying the association between future orientation and firm outcomes.

2.2. Hypotheses development

Prior research on the relationship between future orientation and investment at the individual level demonstrates that individuals with long-term view save and invest more (Ireland et al., 2015; Asker et al., 2015). Similarly, we expect firms with a longer-term perspective to use more future-focused language and invest more for the future. While an expected direct association between future orientation and investment is intuitive, the relationship may be more complex. In particular, we expect uncertainty conveyed by managers, stemming from either internal or external forces, to affect the nature of investments. Theoretical research including Bernanke (1983), Dixit and Pindyck (1994), Abel and Eberly (1994), Chen and Funke (2003), Bloom et al. (2007), and Bloom et al. (2016) suggests that the value of the "wait and see" option increases in uncertainty if projects are irreversible. For example, prior research documents that higher uncertainty is associated with lower acquisition activities (Nguyen and Phan, 2017; Bonaime et al., 2018). However, in contrast to Dixit and Pindyck (1994) who assume there is no lag between investment and investment payoff, Bar-Ilan and Strange (1996) show that including investment lags fundamentally alters the investment decision and can speed up the decision to invest when uncertainty increases. The intuition is that the long investment lags required for most R&D projects to generate cash flows create valuable real put options, which offset the negative effects of losing the values of the wait option when R&D projects begin. Thus, R&D can have a positive association

with uncertainty as empirically demonstrated by Stein and Stone (2013).[7] Therefore, the type of investment associated with future-focused language could vary depending on managers' level of uncertain sentiment. This leads to our first hypothesis.

Hypothesis 1: Future-focused language is directly associated with greater (in)tangible corporate investment when the level of uncertain tone is low (high).

Does short-termism adversely affect corporate innovation? Prior research demonstrates that corporate innovation predicts economic growth, aggregate stock market value, and firm profitability (Hsu, 2009; Hirshleifer et al. 2013; and Kogan et al., 2017). Therefore, short-termism's intolerance for the long gestation periods required for innovation can adversely affect the economy. For example, by creating short-term pressure to meet earnings targets, analysts can undermine innovation (Benner and Ranganathan, 2012; He and Tian, 2013). Flammer and Bansal (2017) provide evidence that corporate long-term orientation increases innovation. They show that the number of patents and citations increased following the shareholder proposals on long-term executive compensation that passed by a small margin compared to those that marginally failed. Furthermore, there is empirical evidence that uncertainty can lower innovation (Bhattacharya et al., 2017; Xu, 2020). Thus, we expect future-future language and innovation to be positively associated, particularly when uncertain tone is low. This leads to our second hypothesis:

Hypothesis 2: Lower (higher) levels of uncertain tone strengthen (weaken) the association between future-focused language and innovation.

Extant literature demonstrates that characteristics such as corporate governance, ownership structure, and the regulatory environment affect the riskiness of corporate policy choices (e.g.,

[7] This argument here is based on the idea of learning by doing. Because R&D projects are characterized by a high degree of uncertainty including technical uncertainty (Stein and Stone, 2013), firms are encouraged to invest in R&D to learn the unknown. Firms can abandon projects midway if unfavorable outcomes are revealed.

Agrawal and Madelker, 1987; John, Litov, and Yeung, 2008; Laeven and Levine, 2009). *Hypothesis 1* has a direct bearing on firm risk since long-term investments typically entail significant payoff uncertainty relative to their economic benefits and are perceived as riskier even if such investments are essential to long-term survival (Bhagat and Welch, 1995; Kothari, Laguerre and Leone, 2002; Coles, Daniel and Naveen, 2006). As such, we investigate the relationship between future-focused language and firm risk. Following *Hypotheses 1-2*, we expect uncertain sentiment to moderate the association:

Hypothesis 3: Higher (lower) levels of uncertain tone strengthen (weaken) the association between future-focused language and corporate risk.

To the extent corporate future-focused language is associated with greater subsequent corporate risk, the cost of capital should also increase. Prior research demonstrates that the perceived risk of information asymmetry affects cost of equity (Diamond and Verrecchia, 1991; Easley and O'Hara, 2004). Investors perceive securities with relatively less information as riskier because of the increased uncertainty associated with the true parameters of their return distributions (Barry and Brown, 1985; Clarkson, Guedes and Thompson, 1996). Recent work also documents that lower annual report readability increases the cost of equity (Garel et al., 2019; Rjiba et al., 2021). Thus, in line with the view that the greater use of future-focused language increases perceived risk to equity holders due to greater uncertainty of long-term investments, future-focused language should be positively associated with the cost of equity. However, this association could be increasing in uncertain sentiment. For example, Rjiba et al. (2021) identify a pronounced adverse effect of textual complexity of annual reports on the cost of equity when the disclosure tone is more ambiguous. This leads to our fourth hypothesis:

Hypothesis 4: Higher (lower) levels of uncertain tone strengthen (weaken) the association between future-focused language and the cost of equity.

To complete the picture of the hypothesized effect of long-termism on the cost of capital, we examine the cost of debt. We surmise that future-focused language serves as a channel to communicate relevant information about long-termism to bond market participants, thereby affecting the market pricing of the firm's corporate debt securities. Prior research (Han and Zhou, 2014; Mansi, Maxwell and Miller, 2011; Butler, 2008) show that bond market efficiently prices information; therefore, disclosure associated with future orientation should be directly captured in the yield spread, *ceteris paribus*. However, we expect uncertain sentiment to moderate the association between future-focused language and the cost of debt by altering the precision of information, which impacts the risk premium (i.e., yield spread) through its effect on the perception of default. According to Vallascas and Keasey (2013), investors associate borrowers that are more difficult to value with greater default risk. In a similar vein, Zer (2015) shows that banks' management can alleviate a deteriorating supply of public information by increasing their disclosure of private information, which leads to an improvement in investors' assessment of bank loan default risk. Within the textual analysis literature, Bonsall and Miller (2017) find that less readable financial disclosures are associated with lower ratings, greater bond rating agency disagreement, and a higher cost of debt. Likewise, using Loughran and McDonald's (2011) word lists, Ertugrul et al. (2017) examine the effect of ambiguous tone in firms' annual reports on the cost of debt and find that the uncertain tone in corporate filings is associated with a higher cost of borrowing. Therefore, we conjecture that bond market participants use uncertain tone to price future orientation. To the extent that more (less) uncertain language reflects a higher (lower) uncertainty associated with corporate policies, the market should assess a greater (lesser) likelihood of default. This leads to our fifth hypothesis:

Hypothesis 5: Higher (lower) levels of uncertain tone strengthen (weaken) the association between future-focused language and the cost of debt.

Finally, we extend our hypotheses to firm value. Beginning with the seminal work of Modigliani and Miller (1958), there is a well-supported theoretical and empirical association between the cost of capital and firm value. If long-term orientation affects the cost of debt and equity capital through its impact on corporate risk and innovation, then it should have an impact on firm value. However, long-term orientation is not always value-enhancing; in certain situations, short-termism may be an optimal strategy. Thus, our framework and prior hypotheses suggest that corporate long-term orientation is value-enhancing only when uncertain sentiment is low. This leads us to our last hypothesis:

Hypothesis 6: Lower (higher) levels of uncertain tone strengthen (weakens) the association between future-focused language and firm value.

3. Data and Sample Selection

We download all consolidated 10-K filings for the fiscal years 2000-2016 from the Securities and Exchanges Commission (SEC) Edgar website. In line with previous research, we exclude financial firms and utilities industries. The resulting dataset begins with 53,711 firm-year observations. Similar to Li (2006) and related research, we analyze the annual reports in their entirety and use the most recent report in cases of companies submitting revised annual reports.

We measure future-focused language intensity using the LIWC text analysis software, which counts words across a number of psychological categories including verb tenses. Each category has a different number of words, and words may fall into several categories. In the future focus category, there are 97 words (e.g., *anticipate, going,* and *will*) as illustrated in Appendix 1. We count the number of words in annual reports that appear in the future focus category, and the total number of words, and compute the percentage of future-focused words. We utilize the percentage, not the number, since the length and complexity of annual reports have increased

significantly in the recent years.[8] We gauge uncertain sentiment using data with the UNC_P item from the "Lm_10x_summaries_2016" file obtained from the Loughran-McDonald Software Repository for Accounting and Finance.[9] As defined by McDonald and Loughran (2011, p. 45), "The Fin-Unc list includes words denoting uncertainty, with emphasis on the general notion of imprecision rather than exclusively focusing on risk. The list includes 285 words such as *approximate, contingency, depend, fluctuate, indefinite, uncertain,* and *variability*."

Table 1 Panel A provides descriptive statistics for variables used in the primary analyses. As Panel A illustrates, 1.314% of all words in the 10-K are future-focused. Similarly, 1.322% are uncertain.[10] Figure 1 provides the distributions of future-focused (Panel A) and uncertain words (Panel B) in our sample. While the distribution of future-focused words is positively skewed, the distribution of uncertain words is relatively symmetric with little skew. Figure 2 illustrates the time trends. We illustrate mean future (Panel A) and uncertain (Panel B) word use for the overall sample and for subsets of high-tech and low-tech firms using Francis and Schipper's (1999) SIC3-based definitions to illustrate contrasts between industries that tend to be more forward-looking yet more uncertain (high-tech) vs. less forward-looking but more certain (low-tech). Consistent with anecdotal evidence pointing to declines in long-termism, Panel A illustrates that the proportion of future-focused words has declined since 2010 across all firms including both low- and high-tech

[8] For example, Vipal and Chasan (2015) point out "Companies are spending an increasing amount of time and energy beefing up their regulatory filings to meet disclosure requirements. The average 10K is getting longer—about 42,000 words in 2013, up from roughly 30,000 words in 2000."

[9] https://sraf.nd.edu/textual-analysis/resources/

[10] The (untabulated) pairwise correlation between future-focused and uncertain language proportions is -0.201, suggesting that firms that use more future-focused language do not necessarily use more uncertain language. In addition, our measure of uncertainty correlates with widely used measures of firm-level and macro-level uncertainty. For instance, regressing our uncertainty measure on firm-level realized (implied) volatility that includes year fixed effects generates a coefficient of 0.091 (0.274) with a t-stat of 21.86 (34.38), respectively. We find a coefficient of 1.92 (*t*-statistic=30.91) when regressing our uncertainty measure on a logged transformed measure of economic policy uncertainty constructed by Baker et al. (2016).

firms (see footnote 1). On the other hand, Panel B demonstrates that uncertain tone is increasing over the same period, presumably due to increasing litigation risk as discussed by Loughran and McDonald (2013).

We examine the association between future focused language and corporate investment policy choices as outlined in *Hypothesis 1* using alternative measures of tangible and intangible forms of investment including R&D intensity, selling and general administrative expenses (SG&A), capital expenditure intensity, and acquisitiveness. We measure intangible investment by R&D expenditure scaled by total assets, which is set to zero when R&D is missing, and gauge the firm's level of organizational slack with SG&A scaled by net sales. Lev and Radhakrishnan (2005) argue that SG&A can serve as a resource buffer that facilitates experimentation with responsive solutions if new threats arise. Capital expenditures scaled by total assets measures tangible long-term investment. Because firms not only grow organically but also by acquisition, we measure acquisitiveness as the aggregated yearly deal values scaled by the book value of assets. Table 1 Panel B1 reports summary statistics of the corporate investment policy measures. Appendix 2 provides details about the construction of these variables. To examine innovation outcomes per *Hypothesis 2*, we obtain all patents filed by the companies in our sample from PATSTAT, a global patent database maintained by the European Patent Office. We compute the total number of patents filed by a firm in each year. We assess innovation productivity using the (logged) number of applications scaled by R&D spending. Table 1 Panel B2 provides summary statistics for the innovation measures. As Panel B2 illustrates, patent data is highly skewed and the median firm does not have any patents.

Since patents build on prior patents, prior research uses the number of subsequent citations to measure patent quality (Trajtenberg, 1990; Harhoff, Narin, Scherer and Vopel, 1999; Jaffe and De Rassenfosse, 2016; Hirschey and Richardson, 2004). Therefore, we gauge innovation

efficiency using measures of patent citations and number of high impact patents scaled by R&D. We count the total number of citations that patents of a firm receive in the following 5-year period. Hence, we compute the citation-based variables only for firms that filed patents through 2012 to allow for a 5-year window and to control for the truncation bias. Similar to patents, the distribution of citations is also highly skewed. Trajtenberg (1990) notes that there is a sharp drop-off in citations and most patents have little value. Hence, we compute the number of high-impact patents in addition to the total number of citations. We define *high-impact* (*impactful*) patents as those that rank in the top decile (quartile) within its 3-digit technology class based on the number of citations.

We test the prediction of *Hypothesis 3* using alternative measures of firm risk. First, we examine the standard deviation of income before extraordinary items scaled by total assets (*ROA*) measured over a maximum of three years subsequent to each firm-year observation. Next, we use the variance of monthly stock returns using a maximum of 24 subsequent months and the idiosyncratic component of stock return using a single-index market model estimated over the subsequent 24 months. Finally, we measure systematic risk using the methodology described by Schwert and Strebulaev (2014) to calculate the unlevered asset beta measured over the subsequent 24 months. We present the corporate risk measures and control variables drawn from the CRSP and Compustat databases in Table 1 Panels B3-B4. Our choice of control variables follows the empirical specifications of Cassell et al. (2012) and Coles, Daniel and Naveen (2006).

To examine the implications of *Hypothesis 4* regarding the required return demanded by equity holders, we measure the cost of equity with three alternative metrics. We refer to these measures as ICC_GLS (Claus and Thomas, 2001), ICC_CTW (Gebhardt, Lee and Swaminathan, 2001), and ICC_EW (Gode and Mohanram, 2003). Consistent with Gebhardt, Lee and Swaminathan (2001) and Dhaliwal, Heitzman, and Li (2006), we estimate the cost of equity in June of each year and subtract corresponding constant-maturity monthly 10-year Treasury Note

rate obtained from the Federal Reserve of St. Louis Economic Data (FRED). We provide a detailed description of these measures in Appendix 3.

To investigate the interactive effect of future orientation and the use of uncertain tone on the cost of corporate debt as outlined in *Hypothesis 5*, we use a comprehensive dataset of secondary bond market transactions over 2000-2016. We merge the Mergent Fixed Income Securities Issues Database (FISD) Transactions dataset with the Trade Reporting and Compliance Engine (TRACE) dataset. The FISD Transactions file provides individual daily corporate bond transactions by insurance companies beginning in 1994, while the TRACE dataset provides intra-daily secondary market transactions for investment grade and high yield debt beginning in 2002. We eliminate duplicate transactions from the combined file, resulting in comprehensive coverage of secondary market bond transactions. We measure the cost of debt as the weighted average yield spread measured on the day closest to each issuer's fiscal year-end (FYE) date. We convert individual buy and sell transactions from the combined file to an aggregate trade-weighted daily yield to maturity using the par amounts of each transaction as weights. Similar to the procedure described by Chuluun, Prevost and Puthenpurackal (2014), for each firm-year we use the yield spread of the closest trade-day to the FYE date using a window of (-180, +180) days where day-zero is the 10-K accepted date. We use the *FISD* Issues file as the source of other bond-level characteristics. Bond yield spreads are calculated as (i_{Corp} - i_{Govt}), where i_{Corp} is the daily yield-to-maturity of a given corporate bond and i_{Govt} is the interpolated yield-to-maturity for the point on the Treasury yield curve corresponding to the same time to maturity as the sample corporate bond using

constant-maturity Treasury bond indices from FRED.[11] We winsorize yield spreads at the 5% tails to minimize the effect of outlying values.

4. Corporate Investment, Innovation, and Risk

4.1. Corporate investment

We begin our empirical analysis by examining the multivariate associations between the language measures and corporate investment policy measures. To investigate these associations independent of additional control variables that affect investment policy, we specify the following regression model:

$$Investment\ measure_{i,t+1} = \alpha_0 + \alpha_1 Log(Future-focused\ language)_{i,t} + Controls_{i,t} + \sum_i \alpha_i FFI49\ fixed\ effects + \sum_i \alpha_i Year\ fixed\ effects + e_i \quad (1)$$

We measure the dependent variables in the following (t+1) year to mitigate potential endogeneity-related biases. In Table 2 Panel A, we estimate the models using all available observations, while in Panel B we estimate Equation (1) over subsets based on high (top 30%) and low (bottom 30%) uncertainty using the cross-sectional distribution of the uncertainty language measure.

Focusing on Panel A, in Model 1, firms that use more future-focused language in their annual reports invest relatively more in intangible investment as gauged by R&D expenditure. Consistent with the view that organizational slack is more important for firms with greater focus on the future, Model 2 illustrates that the percentage of future-focused words in annual reports is significantly associated with expenditures on SG&A. Model 3 demonstrates that the intensity of future-focused language has the expected positive effect on tangible investment as measured by capital expenditures. Conversely, future-focused language measure appears to be unrelated to acquisitiveness in Model 4. As predicted by *Hypothesis 1,* these results suggest that corporate long-

[11] *FRED* provides daily yields to maturity for constant maturity Treasury bond indices including 3-month, 6-month, 1-year, 2-year, 3-year, 5-year, 7-year, 10-year, and 20-year maturities. We interpolate these indices to obtain a yield curve for any maturity between 3 months and 20 years.

termism as measured by future-focused language is associated with more investment, in both tangible and intangible assets.

In Table 2 Panel B, we examine whether the intensity of uncertain language moderates the association between future-orientation and investment.[12] The pattern of results reveals that in the presence of greater (lesser) use of uncertain tone, future-focused language is associated more with intangible (tangible) form of investments. In Models 1-2, the association between future focus and R&D expenditure, which features highly uncertain payoffs, is over twice the magnitude when there is greater uncertainty. Consistent with the notion that greater uncertainty increases the need for organizational slack among future-focused firms, in Models 3-4 the association between future focus and SG&A expenditure also significantly strengthens for the subset of firms with the greatest uncertainty. In contrast, lower uncertainty strengthens the association between future focus and tangible investment such as capital expenditure (Models 5-6) and acquisitions (Models 7-8). In particular, the direction of the association between future-focused language and acquisitiveness depends on the uncertain sentiment in the text. Consistent with prior findings (Nguyen and Phan, 2017; Bonaime et al., 2018), firms reduce their acquisition activities when uncertain tone is high. The opposite is true when uncertain tone of the text is low. These opposing associations could be the reason for the insignificant (unconditional) relationship between future-focused language and acquisition activities documented in Panel A.

[12] Pooling groups and adding a dummy for one of the groups requires the variance of the error term to be the same in the two groups to obtain unbiased estimates. This condition is not satisfied in our subsamples. To illustrate, we test the residuals for equality of variances using the high and low uncertainty groups in Table 2 Models 1-2. We calculate Levene's statistic (W0) and, alternatively, Brown-Forsythe statistics (W50 and W10). The three test statistics reject the hypothesis of equality of residual variances between groups at the 1 percent level (p=0.00). Given the nature of the data, we believe that the subset approach provides a more accurate test of the differences in coefficients between groups.

These effects are economically significant. For instance, a one standard deviation increase in the use of future-focused language in high- (0.29) and low- (0.40) uncertain subsets is associated with 0.03 and 0.015 increase in R&D spending (scaled by total asset), respectively. For an average firm in our sample with total assets of $3,611 (million), these figures are equivalent to about $99.9 million (high uncertainty) and $53.5 million (low uncertainty) in R&D expenditure, respectively. As reported in the final row of Panel B, the coefficient estimates in the high and low uncertainty subsamples are significantly different at the 1% level based on a Chow test of coefficient equality. Overall, these results suggest that not only corporate long-termism is associated with greater subsequent investment. However, the extent of uncertainty surrounding the future, as reflected in the uncertain tone of the text, alters the nature of subsequent investments. Consistent with *Hypothesis 1*, the association between future-orientation and corporate investment is stronger for tangible (intangible) forms of investment when uncertain tone is low (high).

4.2. Corporate innovation

Given the importance of innovation to companies' long-term success and survival and the long payoff period of R&D investments, we examine the relationship between corporate long-termism and innovation outcomes. We regress measures of subsequent innovation productivity and efficiency on *Future-focused language* and additional control variables, including past R&D investment, as follows:

$$Innovation\ productivity\ (or\ efficiency)_{i,t+1} = \alpha_0 + \alpha_1 Log(Future - focused\ language)_{i,t} + Controls_{i,t} + \sum_i \alpha_i FFI49\ fixed\ effects + \sum_i \alpha_i Year\ fixed\ effects + e_i \quad (2)$$

The results in Table 3 Panel A using the full sample illustrate that future-focused language has a significant positive relationship with the number of patent applications and citations, but insignificant associations with the patent impact variables. However, once we account for the extent of uncertain sentiment expressed using high and low uncertainty subsets in Panel B, a more

nuanced picture emerges where the degree of uncertainty affects the association of future orientation with innovation outcomes. Comparisons of the coefficient estimates between these subsets show that more long-termism, as captured by greater use of future-focused language, is associated with significantly greater innovation productivity (applications scaled by R&D) and efficiency (citations and high impact patents scaled by R&D) in the low uncertainty subset. In support of *Hypothesis 2* and in contrast to Flammer and Bansal (2017) who document that long-term orientation of companies is generally associated with more innovation, we provide evidence that long-termism is associated with more innovation, in terms of quantity as well as quality, only when accompanied with lower uncertainty. Economically, a one percent increase in the use of future-focused language is associated with 1.77% increase in the number of patent applications (more than twice as many compared to high uncertainty subset) when accompanied with lower uncertain sentiment. Similarly, a one percent increase in the use of future-focused language is associated with approximately 0.75%, 0.64%, and 0.62% increase in total citations, impactful, and high impact patents, respectively, only when accompanied with lower uncertain sentiment. These associations are insignificant when future-focused language is accompanied by high uncertainty.

4.3. Corporate risk

Hypothesis 3 predicts that the extent of uncertainty moderates the association between future-orientation and firm risk. We examine this premise with Equation (3) using alternative measures of subsequent firm risk measured over the (*t*, *t*+2) period including *ROA* volatility, total and idiosyncratic stock return volatility, and the unlevered asset beta as described earlier:

$$Risk\ measure_{i,t+2} = \alpha_0 + \alpha_1 Log(Future - focused\ language)_{i,t} + Controls_{i,t} + \sum_i \alpha_i FFI49\ fixed\ effects + \sum_i \alpha_i Year\ fixed\ effects + e_i \quad (3)$$

Since an action delayed into the future is uncertain by nature, we expect greater uncertainty to accentuate the positive associations between future focus and the risk measures. Table 4

provides evidence supporting this conjecture. In Panel A, we present base-case regressions using the full sample. In Model 1 using ROA volatility as the dependent variable, *Future-focused language* is positive and significant at the 1% level, demonstrating that future orientation is associated with riskier corporate policy choices and higher earnings volatility. In a similar vein, Model 2 illustrates a significant positive effect on total return volatility, while Models 3-4 demonstrate that future orientation is significantly associated with idiosyncratic return volatility and firm systematic risk as captured by the asset beta.

In Panel B, we segment the sample by the extent of uncertain language. Consistent with our prior results that demonstrate a pronounced effect of future-focused language on riskier corporate investment within the high uncertainty subsets, the positive associations between future focus and corporate risk significantly strengthen when uncertainty is higher. For example, in Models 1-2, the effect of *Future-focused language* on *Std.* (*ROA*) is more than twice the magnitude in the highest uncertainty subset compared to the lowest, and the coefficient estimates are significantly different at the 5% level. This contrast becomes more distinct in Models 3-4, where *Future-focused language* is only significantly associated with stock return volatilities when uncertainty is high. Finally, Models 5-8 illustrate the effect of future focus on idiosyncratic volatilities and the asset beta is greater in magnitude in the high uncertainty subset. Overall, these results are consistent with *Hypothesis 3* and demonstrate that corporate long-termism is generally associated with greater corporate risk. However, the risk is significantly lower, by half to one-third, when low uncertain tone conditions future-focused language.[13]

[13] In unreported analysis, we redefine the uncertainty subsets at the industry level. We classify a given firm-year in the high (low) uncertainty subset if the proportion of uncertain language is in the top (bottom) 30th percentile among the firms in the same Fama-French 17 industry classification. We obtain similar results as those reported here.

5. Cost of Capital and Firm Value

5.1. Cost of equity

Prior research (e.g., Froot and Frankel, 1989; Elton, 1999) demonstrates that *ex post* realized returns are a noisy proxy for expected returns although many extant studies rely on *ex post* returns to estimate *ex ante* expected returns. Gebhardt et al. (2001), Pastor et al. (2008), and Chava and Purnanandam (2010) discuss the advantages of using the implied cost of equity as a proxy for expected returns. The implied cost of equity estimates the *ex-ante* cost of equity capital implied in financial analyst forecasts and stock prices and does not depend on a particular asset pricing model. In essence, the implied cost of equity represents the rate the market uses to discount the expected cash flows of the firm. We investigate the contemporaneous association between future focus and the implied cost of equity using the following specification:

$$Cost\ of\ equity_{i,t} = \alpha_0 + \alpha_1 Log(Future - focused\ language)_{i,t} + Controls_{i,t} + \sum_i \alpha_i FFI49\ fixed\ effects + \sum_i \alpha_i Year\ fixed\ effects + e_i \quad (4)$$

We select control variables following Gebhardt et al. (2001). Firm size and the logged number of analysts covering the firm proxy for the availability of information and liquidity. Because equity risk increases with lack of available information and liquidity, firms that are larger and with a greater analyst coverage should have a lower implied cost of equity. The Capital Asset Pricing Model (CAPM) suggests that market risk positively affects the cost of equity. To capture this effect, we include the (logged) stock return volatility and stock return synchronicity. We use these two measures instead of the CAPM beta because Riedl and Serafeim (2011) show that the equity beta decomposes to stock return volatility and synchronicity components. The debt ratio captures the effect of financial leverage on the cost of equity (Modigliani and Miller, 1958). We include the market-to-book ratio in the model based on the findings of Fama and French (1992), who report that the book-to-market ratio represents a risk factor. The mean long-term growth

estimate captures analysts' possible over-optimism (e.g., LaPorta, 1996). Finally, we include other analyst characteristics including forecast accuracy and the logged number of estimates to control for the quality of the information environment surrounding the firm. We provide summary statistics for these variables in Table 5 Panel A and additional details on the three cost of equity measures in Appendix 3.

We present regression estimates corresponding to Equation (4) in Table 5 Panel B using the three alternative cost of equity measures. The results confirm our conjecture that firms' future-orientation is directly related to all three cost of equity measures. To investigate the prediction of *Hypothesis 4,* we segment the sample into high and low uncertain language subsets in Panel C. These results show that the high uncertain tone subset drives the positive link between long-termism and cost of equity. Using the average of the three coefficients for the high uncertainty subsets, a one standard deviation increase in *Future-focused language* (0.29) corresponds to a 1.70% increase in the cost of equity. In contrast, with the exception of ICC_CTW, cost of equity is unrelated to future-focused language when uncertain sentiment is low. The corresponding average effect of *Future-focused language* using the three low uncertainty subsets is less than half of the estimate using the high uncertainty subsets. Viewed collectively, these results demonstrate that corporate long-term orientation is associated with relatively lower (higher) cost of equity capital when accompanied by lower (higher) uncertainty.

5.2. Cost of debt

We explore how bond market participants price corporate long-termism using the risk premium ('yield spread') on corporate debt securities to measure the cost of debt. We examine if the use of future-focused language affects the contemporaneous cost of corporate debt securities using the following model:

$$Yield\ Spread_{i,t} = \alpha_0 + \alpha_1 Log(Future - focused\ language)_{i,t} + Bond - level\ controls_{i,t} + Firm - level\ controls_{i,t} + Macroeconomic - level\ controls_{i,t} + \sum_i \alpha_i FFI49\ fixed\ effects + \sum_i \alpha_i Year\ fixed\ effects + e_i \quad (5)$$

Consistent with related work, the additional control variables are at the bond, firm, and macroeconomic levels. At the bond level, we control for reinvestment risk associated with embedded fixed-price call provisions. The logged time to maturity controls for term effects. We control for liquidity with logged bond age and, alternatively, the number of days the bond trades in a given calendar year. Logged issue amount also controls for liquidity: larger issues are associated with economies of scale in underwriting and reduction in liquidity risk (Bhojraj and Sengupta, 2003). Finally, *Subordinate* is an indicator variable equal to one if the bond is subordinate to other debt issues, and should be positively related to yield spreads as subordinate bonds have lower recovery rates in the event of bankruptcy.

At the firm level, we control for firm size effects with logged total assets. *Cash ratio* controls for the effect of cash holdings, *Debt ratio* measures leverage, and *Market-book ratio* and *Three-year sales growth* are alternative measures of growth opportunities. *ROA* and *Std*. (ROA) gauge profitability and cash flow risk, respectively, using the prior three years to measure the latter. HHI measures concentration in the firm's industry using the Herfindahl-Hirschman Index. We measure the quality of the information environment surrounding the firm with the logged number of analysts following the firm's stock and, alternatively, the mean daily stock bid-ask spread measure using daily high and low prices following the methodology developed by Corwin and Schultz (2012, Equation 12). Mean bid-ask spread is the mean of the BAS measure over a 200-day window ending 6 days prior to the issue date. Finally, we include the slope of the yield curve (10-year minus 6-month) measured at the month of the accepted date, and the difference between the Moody's seasoned Baa and Aaa monthly credit spread indices to control for the effect of the

broader interest rate environment. We provide summary statistics for these variables in Table 6 Panel A.

To control for default risk, our main control variable is *Credit rating* using the Moody's rating obtained from Mergent. Since the rating partially captures the information contained in the remaining bond- and firm-level control variables (e.g. Mansi, Maxwell and Miller, 2011), we create *Residual credit rating* that is unrelated to the information contained in the remaining control variables. *Residual credit rating* is the residual from regressing the Moody's rating coded to a numerical equivalent ranging from 1 ('C') to 21 ('Aaa') on all other independent variables included in the regression model.

We present coefficient estimates corresponding to Equation (5) in Table 6 Panel B. In Model 1, the *Future-focused language* estimate is small and insignificantly different from zero in the overall sample. However, Models 2-3 reveal sharply contrasting coefficient estimates. The coefficients have the same magnitude but opposite signs. In Model 2, the positive and strongly significant *Future-focused language* estimate illustrates that future orientation is associated with significantly greater default risk by bond market participants when uncertain language is more intensive. In contrast and consistent with our prior findings that future language leads to safer investments, lower risk, and relatively lower cost of equity when uncertainty is lower, the estimate is significantly negative at the 5% level in the presence of lower uncertain tone (Model 3). Moreover, these estimates are significantly different at the 1% level. In the high (low) uncertainty subset, a one-standard deviation increase in the *Future-focused language* measure corresponds to a 13 basis points increase (16 basis points decrease) in the yield spread, respectively.

The effects of long termism, as gauged by *Future-focused language*, and its interaction with uncertain tone potentially vary for bonds of different maturities. Investors may associate future orientation with greater corporate reinvestment risk associated with relatively short maturity

bonds, particularly when uncertainty is higher. Conversely, investors holding long-term bonds may associate corporate long-termism with lower default risk when uncertainty is lower. To examine these premises, we segment our sample based on bond maturity. For bonds with short- to medium-term maturities (less than 5 years), future-focused language is positively associated with yield spread when uncertain sentiment is high (Model 4). The association is statistically insignificant when uncertain sentiment is low (Model 5). For long-term bonds, future orientation has no impact on yield spreads when uncertain tone is high (Model 6), but it is negatively associated with yield spreads when accompanying uncertain tone in the text is low (Model 7). These findings suggest a clientele effect of corporate long-termism in the bond market. Overall, these results support the contention of *Hypothesis 5* that bond market participants view future orientation differently based on the level of uncertainty.

5.2.1. Debt contract design

In addition to requiring a higher risk premium, lenders have the option to change the non-price contractual features (NFP) of their debt contracts to mitigate their risk exposure (Dennis, Nandy and Sharpe, 2000; Goss and Roberts, 2011). Creditors can shorten the maturity, reduce the size of the loan, increase up-front fees, include debt covenants, or issue secured loans, among others. For example, Graham, Li and Qiu (2008) illustrate that loans issued to borrowers with questionable financial information quality have shorter maturities and higher security status, and include more debt covenants. Ertugrul et al. (2017) find that the uncertain tone in corporate filings is associated with more stringent bank loan contractual terms. Based on these findings, our conceptual framework predicts that future orientation combined with high (low) uncertain tone should be associated with more (less) stringent contractual features in debt contracts.

We begin this analysis by focusing on debt covenants as a non-price feature of debt contracts. We collect the covenants included in all publicly traded bonds of our sample firms from

FISD. Following the approach of Helwege, Huang, and Wang (2016) and Amiri-Moghadam et al. (2021), we create an indicator variable that takes a value of one if one of the firm's public debt instruments has at least one covenant restricting a particular activity, and zero otherwise. The sum of the indicators at the firm-level is the covenant count. Following Chava, Kumar and Warga (2010) and Helwege, Huang and Wang (2016), we further group these covenants into different categories: restrictions on subsequent financing, investment, and firm behavior during specific events such as mergers and acquisitions or rating downgrades. We focus on FISD (public debt) covenants because most private loans are renegotiated several times over the life of the contract (most initiated in the absence of default) and at least one covenant is modified or relaxed in each round of negotiation (Roberts, 2015). As noted by Denis and Wang (2014), these renegotiated loans (amended credit agreements) appear in the DealScan database as independent loan contracts, thereby undermining the link with the future oriented language in our cross-sectional setting.

We use the following regression model to estimate the contemporaneous association between *Future-focused language* and the non-pricing features of loan contracts. We control for additional variables identified by prior research (e.g., Chava, 2014) to be relevant for the respective loan characteristic:

$$NPF_{i,t} = \alpha_0 + \alpha_1 Log(Future - focused\ language)_{i,t} + Firm - level\ controls_{i,t} + \sum_i \alpha_i\ Loan\ T\&P\ fixed\ effects + \sum_i \alpha_i FFI49\ fixed\ effects + \sum_i \alpha_i Year\ fixed\ effects + e_i \quad (6)$$

Since theoretical research (Smith and Warner, 1979) and empirical evidence (Chava, Kumar, and Warga, 2010) suggest that measures of managerial entrenchment are significantly associated with the use of bond covenants, we also include CEO tenure as a measure of managerial entrenchment in our specification. We report the results in Table 7 Panel A. We find that corporate long-termism as reflected in the future-focused language is generally associated with more covenants. However, this effect is driven exclusively by the high uncertainty subset. When the

accompanying uncertain sentiment is low, future-focused language has no link to covenant count. We find similar result for other covenant groups.

Next, we analyze the non-pricing features of private loan contracts with data from Thomson Reuters Loan Pricing Corporation DealScan. We identify each loan as a distinct facility-level observation to which the price and nonprice terms are fixed. For each facility, we collect the number of participants in the loan syndicate, upfront fees, size, maturity, and the security status. As illustrated in Table 7 Panel B, we find that firms with long-term orientation enjoy a larger number of lenders participating in their loan syndicate and pay lower upfront fees only when the uncertain tone is low. In contrast, lenders shorten the loan maturity for firms with long-term orientation only when the uncertain tone is high. The coefficients for secured loans and the loan amount are insignificant but the direction of the coefficients is consistent with our conjecture. Overall, these results demonstrate that corporate long-term orientation is associated with less (more) stringent nonprice contractual terms of bank loans only when the accompanying uncertain tone is low (high), and are also consistent with our earlier finding that yield spreads decline when future-orientation is accompanied by lower uncertain sentiment (Table 6) as well as with the evidence in Chava (2014), Heinkel et al. (2001), and Merton (1987) associating a wider investor base with a lower cost of capital.

5.3. Firm value

Our findings suggest that corporate long-term orientation is associated with relatively lower cost of debt and equity capital, lower corporate risk, more innovation, and a wider lender base only when accompanied by lower uncertain sentiment. These associations either disappear, or change sign, when there is high uncertain sentiment. Extensive literature documents the association between firm value and the cost of capital (e.g., Modigliani and Miller, 1958). It

follows that corporate long-term orientation should be value enhancing only when uncertain sentiment is low. We provide empirical evidence consistent with this prediction in Table 8.

We measure firm value using the market-to-book and, alternatively, enterprise value-sales ratios measured in (t+1), where enterprise value is the sum of market capitalization, long term debt, preferred stock, and minority interest minus cash. The full sample *Future-focused language* coefficient estimates in the first column of each panel are significantly positive, indicating that corporate long-term orientation generally enhances firm value. However, segmenting the sample into high and low uncertainty subsets yields a more nuanced picture. We find that the positive association between future-focused language and firm value is exclusively driven by the low uncertainty subset. Consistent with our earlier results, we find that irrespective of how firm value is measured, corporate long-termism is value enhancing only when accompanied by low uncertain sentiment. This is consistent with Giannetti and Yu's (2020) findings showing that firms with disproportionately more short-term investors are more successful in adapting to uncertainty following a shock to the economic environment and tend to have better long-term performance measures.

6. Remarks on Endogeneity and Identification

Given our research question and empirical setup, our research design is susceptible to endogeneity issues in the form of correlated omitted variables and reverse causality. Addressing these concerns requires as-if random variation, "quasi-experiment", in the future-focused language measure. Further, since we argue uncertainty moderates long-termism, we need random variation in uncertain tone as well. Identifying such a setting that approximates random variation in future-focused language and uncertain tone is unlikely. As highlighted by Armstrong et al. (2022), there are many causal research questions for which quasi-experiments, i.e., settings with random assignment between the treatment and control groups, are simply unavailable. Our research

question is one of them. Armstrong et al. (2022) point out how identification is extremely difficult when testing whether an effect is higher or lower based on a partitioning variable. However, we argue that our evidence throughout the paper is *consistent with* and *suggestive of* causality.

A reliable causal inference calls for a compelling theoretical framework. Theory gives meaning to correlations and separates correlations randomly happening in the data with no particular meaning from causal relations. Theory is also required to generalize the inferences, and generalizability depends on the research question rather than on the method (Armstrong et al., 2022). The issue of generalizability is also paramount for causal inference because of the tradeoff between reliable identification and generalizability (Glaeser and Guay, 2017). Our research question concerns how long-term orientation benefits firms, and our framework predicts the benefits of long-termism are realized only when uncertainty surrounding the business environment is low. This research question requires inferences that can be generalized since the benefits of long-termism can manifest in various aspects of firms and their policies. Therefore, we provide evidence across various firm characteristics including their investment policy, risk, innovation, cost of debt and equity capital, non-pricing features of debt contract and firm value. Across all these corporate outcomes, we find similar patterns that are consistent with our framework's predictions. These patterns emerge from cross-sectional tests, where we partition the sample based on the uncertain tone of the language in the annual report. Despite the endogeneity concerns associated with this conditioning variable, as pointed out by Armstrong et al. (2022) and Glaeser and Guay (2017), these tests help rule out alternative explanations and limit the ways in which correlated omitted variables would explain all our findings, and thereby mitigate endogeneity concerns and facilitate identification of the causal mechanism of our central research question. Further, each of the corporate outcomes are proxied by several measures which assures that our results are robust and are not specific to one measure. Thus, the triangulation of our results across several corporate

outcomes, each proxied by multiple measures, along with the cross-sectional tests and inclusion of several fixed effects is *consistent with* and *suggestive of* a causal relationship.

Armstrong et al. (2022) argue that in situations where quasi-experiments are ill-suited, providing evidence using other methods is acceptable and can facilitate causal inference. After all, it is rare, if not infeasible, to have research design with perfect identification and generalizability, and therefore, uncovering a causal relationship likely comes from a mosaic of studies that would collectively update our priors (Glaeser and Guay, 2017). While we cannot completely rule out endogeneity issues, given our framework and the generalizability of the results, we believe our evidence help researchers update their priors on this topic.

7. Conclusions

We contribute to the research on corporate long-termism and textual analysis literature by measuring long-term corporate perspective using the information extracted from the language used in annual reports. We use the frequency of future-focused and uncertain words in 10-K filings to capture the degree of future orientation and uncertainty, respectively. Our findings paint a nuanced picture of the impact of long-termism on firms. We provide empirical evidence that when long-termism is accompanied by low uncertainty, firms invest more in tangible assets, become more innovative both in terms of quantity and quality, have lower corporate risk and lower cost of capital, a wider lender base, and higher valuations. Conversely, when long-termism is accompanied by high uncertainty, it is associated with higher corporate risk, more risky corporate investments, relatively higher cost of capital, shortened loan maturity and more covenants, and has no impact on corporate innovation and firm value.

Overall, our results show that corporate time perspective, as reflected in the future-focused language, is significantly associated with various corporate outcomes. Yet, the relationship is moderated by the degree of uncertainty expressed. Hence, our study contributes to a growing

literature that documents a more complex impact of corporate temporal orientation on corporate policies. Consequently, our study suggests that companies benefit from a long-term perspective when looking to a more certain future.

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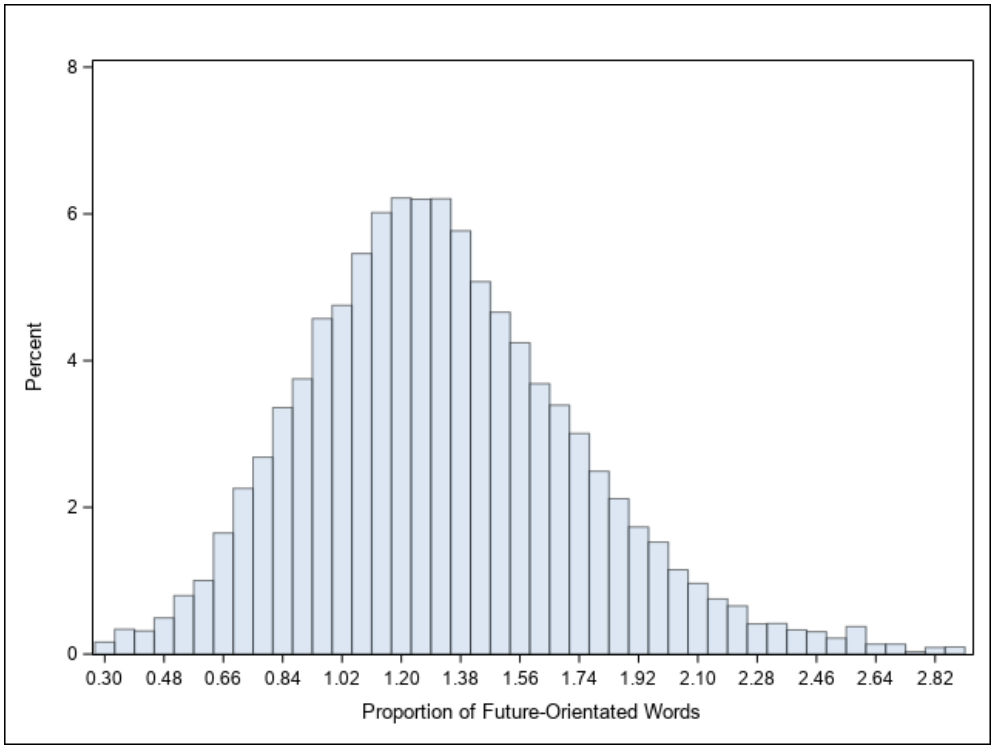
Figure 1: Frequency Distributions of Future-Focused and Uncertain 10-K Language

Panel A: Future-focused word distribution



Panel B: Uncertain word distribution

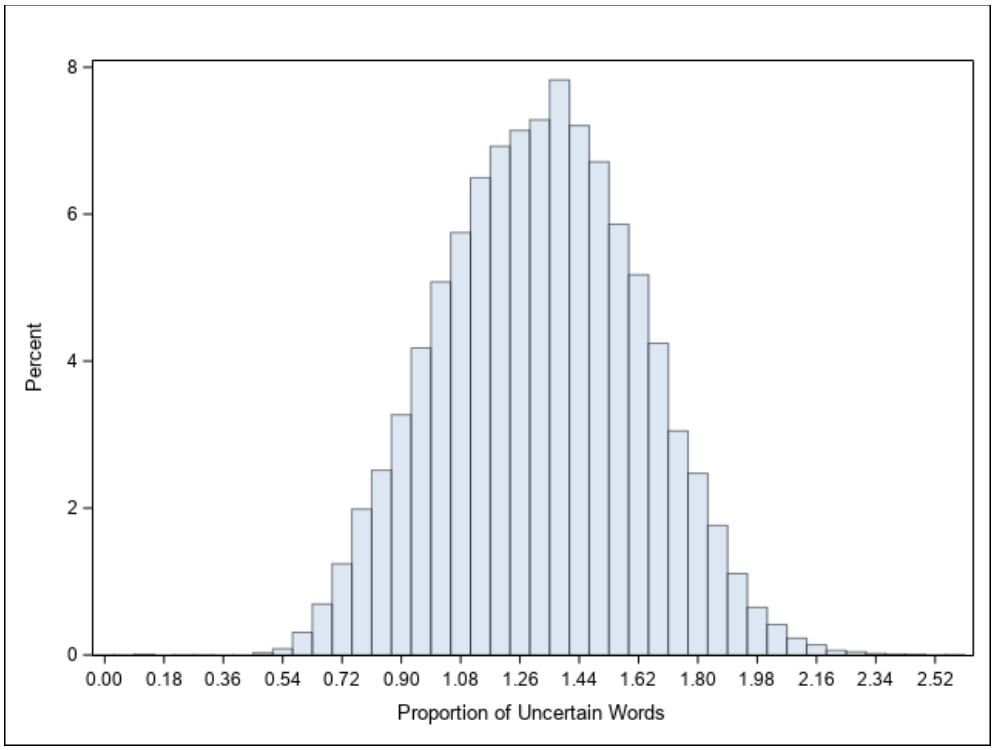
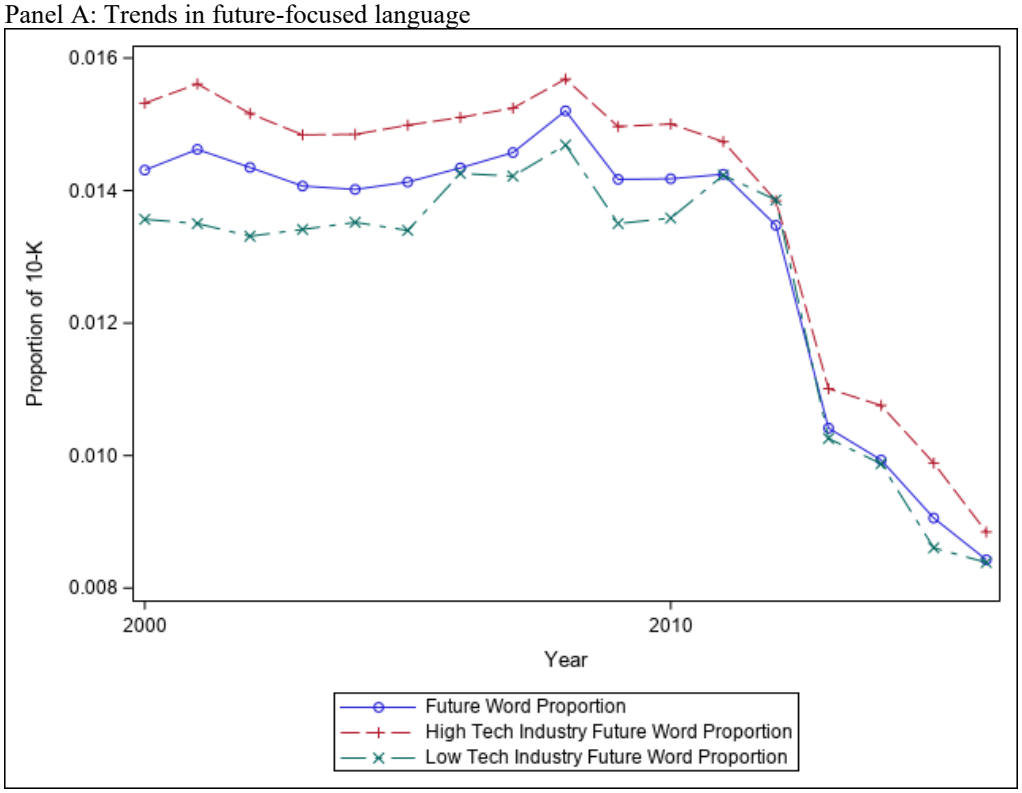


Figure 2: Trends in Future and Uncertain Language Usage

Panel A: Trends in future-focused language



Panel B: Trends in uncertain language

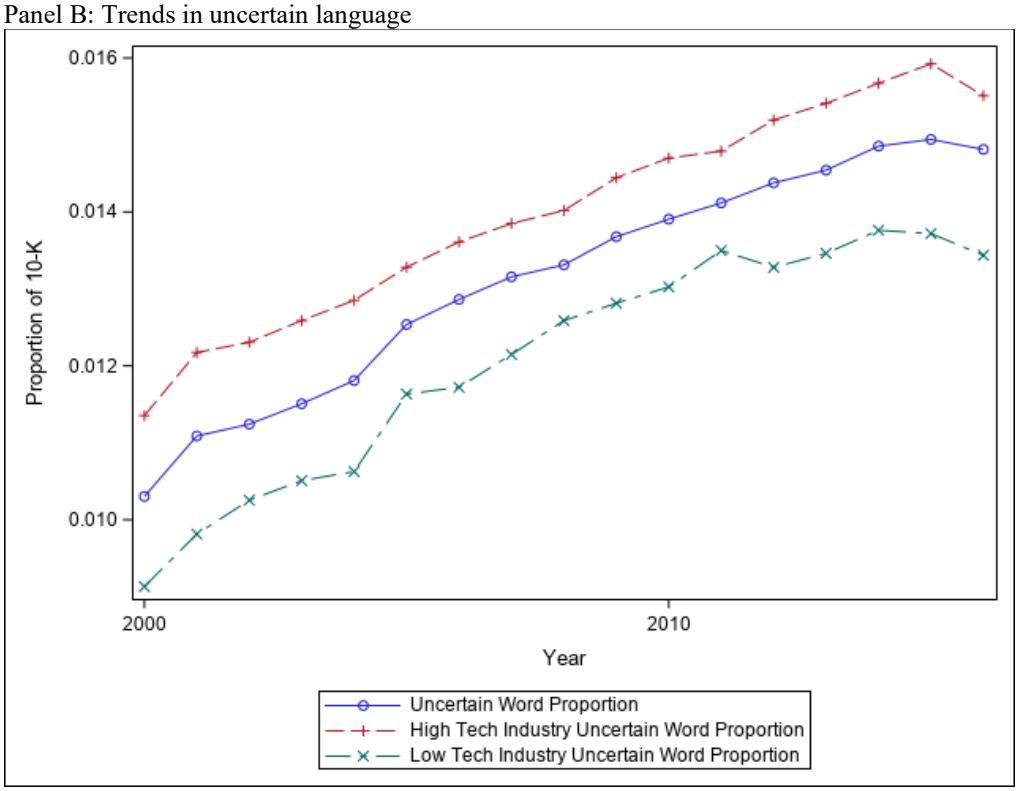


Table 1: Descriptive Statistics for Measures Used in the Investment Policy Choice, Innovation, and Firm Risk Analyses

This table provides summary statistics for the variables used in Tables 2-4.

Panel A: Language measures (percentage)

	No. Obs.	Mean	Std. Dev.	P25	Median	P75
Percentage future-focused language	30,716	1.314	0.416	1.032	1.279	1.561
Percentage uncertain language	30,716	1.322	0.298	1.110	1.326	1.528

Panel B: Measures of investment policy, firm risk, and associated control variables

	No. Obs.	Mean	Std. Dev.	Q25	Median	Q75
Panel B1: Investment policy						
R&D	30,716	0.046	0.090	0.000	0.005	0.059
SG&A	30,716	0.387	0.725	0.128	0.246	0.415
Capex	30,716	0.045	0.053	0.014	0.028	0.055
Acquisitiveness	30,716	0.027	0.064	0.000	0.000	0.017
Panel B2: Innovation measures						
No. Applications	35,518	11.837	95.013	0.000	0.000	1.000
No. Citations	7,741	223.662	1315.779	5.000	21.000	90.000
No. Impactful patents	7,741	3.542	19.406	0.000	0.000	2.000
No. High-impact patents	7,741	8.957	46.099	0.000	1.000	4.000
Panel B3: Corporate risk measures						
Std.(ROA)	29,099	0.062	0.124	0.008	0.021	0.059
Stock return volatility	29,099	0.025	0.040	0.006	0.013	0.027
Stock idiosyncratic volatility	29,099	0.123	0.081	0.070	0.102	0.149
Asset beta	29,099	1.103	1.137	0.469	0.950	1.582
Panel B4: Control variables						
Total assets ($MM)	30,716	3610.766	20006.467	111.754	456.100	1853.140
Firm age	30,716	19.572	16.445	8.118	14.932	25.915
Market-to-book ratio	30,716	1.982	1.392	1.157	1.548	2.264
Three-year sales growth	30,716	0.114	0.261	-0.004	0.073	0.175
Three-year adjusted stock return	30,716	0.169	0.547	-0.114	0.152	0.421
Cash surplus	30,716	0.061	0.134	0.011	0.066	0.128
Debt ratio	30,716	0.197	0.202	0.006	0.155	0.314
Dividend Payer Dummy	30,716	0.347	0.476	0.000	0.000	1.000
Panel B5: Firm value measures (measured in t+1)						
Market-to-book ratio	32,652	2.020	1.417	1.168	1.570	2.321
EV-to-sales ratio	32,652	4.729	21.991	0.601	1.241	2.620

Table 2: Impact of Future Orientation on Investment Policy Conditioned on Uncertain Tone

This table reports coefficient estimates of alternative measures of corporate investment activity regressed on the future-focused language measure and other explanatory variables. We use robust cluster-adjusted standard errors by firm and year. Panel A uses the entire sample. In Panel B, we split the sample into high and low uncertainty subsets and estimate the regressions for each subset separately. *P*-values are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full sample

	Model (1) $R\&D_{t+1}$	Model (2) $SG\&A_{t+1}$	Model (3) $Capex_{t+1}$	Model (4) $Acquisitiveness_{t+1}$
Future-focused language$_t$	0.061***	0.304***	0.008***	-0.000
	(0.000)	(0.000)	(0.002)	(0.957)
Uncertain language$_t$	0.029***	0.077**	-0.000	0.002
	(0.000)	(0.013)	(0.906)	(0.399)
Log (total assets)$_t$	-0.008***	-0.047***	-0.000	0.003***
	(0.000)	(0.000)	(0.435)	(0.000)
Log (firm age)$_t$	-0.003***	-0.045***	-0.003***	-0.003***
	(0.006)	(0.000)	(0.001)	(0.000)
Market-book ratio$_t$	0.011***	0.108***	0.003***	-0.000
	(0.000)	(0.000)	(0.000)	(0.186)
Sales growth$_t$	-0.015***	-0.246***	0.011***	0.009***
	(0.000)	(0.000)	(0.000)	(0.000)
Stock return$_t$	-0.011***	-0.044***	0.004***	0.006***
	(0.000)	(0.000)	(0.000)	(0.000)
Cash surplus$_t$	-0.008	-1.718***	0.023***	0.029***
	(0.525)	(0.000)	(0.000)	(0.000)
Debt ratio$_t$	0.010*	-0.216***	-0.007**	-0.005
	(0.083)	(0.000)	(0.016)	(0.108)
FFI49 fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
No. Obs.	30,716	30,716	30,716	30,716
R-squared	0.365	0.279	0.333	0.039

Panel B: Uncertain tone subsets

	$R\&D_{t+1}$		$SG\&A_{t+1}$		$Capex_{t+1}$		$Acquisitiveness_{t+1}$	
	Model (1) High Uncertainty	Model (2) Low Uncertainty	Model (3) High Uncertainty	Model (4) Low Uncertainty	Model (5) High Uncertainty	Model (6) Low Uncertainty	Model (7) High Uncertainty	Model (8) Low Uncertainty
Future-focused language$_t$	0.094***	0.037***	0.554***	0.202***	-0.001	0.011***	-0.015**	0.008**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.909)	(0.001)	(0.012)	(0.015)
Uncertain language$_t$	-0.003	0.020***	0.002	0.049	-0.010	0.001	0.016**	-0.009
	(0.827)	(0.001)	(0.981)	(0.427)	(0.119)	(0.862)	(0.040)	(0.128)
Additional control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FFI49 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	8,701	9,422	8,701	9,422	8,701	9,422	8,701	9,422
R-squared	0.367	0.364	0.302	0.271	0.415	0.270	0.047	0.048
Difference in Coefficients χ^2		22.66		12.08		3.05		9.00
(*p*-value)		(0.000)		(0.000)		(0.081)		(0.003)

Table 3: Impact of Future Orientation on Innovation Productivity and Efficiency Conditioned on Uncertain Tone

This table reports the coefficient estimates of logged measures of patent applications, citations, and impact scaled by R&D expenditure regressed on the future-focused language measure and other explanatory variables. Panel A uses the entire sample. In Panel B, we split the sample into high and low uncertainty subsets and estimate the regressions for each subset separately. We use robust cluster-adjusted standard errors by firm and year. *P*-values are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full sample

	Model (1) Applications$_{t+1}$	Model (2) Total Citations$_{t+1}$	Model (3) Impactful Cites$_{t+1}$	Model (4) High-Impact Patents$_{t+1}$
Future-focused language$_t$	1.212***	0.259**	0.231	0.194
	(0.000)	(0.040)	(0.110)	(0.101)
Uncertain language$_t$	0.907***	0.328**	0.172	0.347**
	(0.000)	(0.040)	(0.356)	(0.021)
Log (1+R&D)$_t$	0.577***	0.428***	0.345***	0.346***
	(0.000)	(0.000)	(0.000)	(0.000)
Log (total assets)$_t$	0.180***	0.321***	0.293***	0.285***
	(0.000)	(0.000)	(0.000)	(0.000)
Log (firm age)$_t$	-0.029	-0.088***	-0.087***	-0.055**
	(0.177)	(0.001)	(0.004)	(0.028)
Market-book ratio$_t$	0.159***	0.153***	0.166***	0.142***
	(0.000)	(0.000)	(0.000)	(0.000)
Sales growth$_t$	-0.033	0.011	0.039	0.014
	(0.477)	(0.853)	(0.569)	(0.803)
Stock return$_t$	-0.007	-0.079**	-0.082**	-0.065**
	(0.810)	(0.029)	(0.046)	(0.047)
Cash surplus$_t$	0.146	0.150	0.216	0.098
	(0.157)	(0.229)	(0.160)	(0.415)
Debt ratio$_t$	-0.704***	-0.681***	-0.667***	-0.554***
	(0.000)	(0.000)	(0.000)	(0.000)
Capital expenditure$_t$	0.463	2.325***	2.695***	2.353***
	(0.197)	(0.000)	(0.000)	(0.000)
FFI49 fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
No. Obs.	35,518	7,741	7,741	7,741
Pseudo *R*-squared	0.182	0.142	0.163	0.162

Panel B: Uncertain tone subsets

	Applications$_{t+1}$		Total Citations$_{t+1}$		Impactful Cites$_{t+1+1}$		High-Impact Patents$_{t+1}$	
	Model (1) High Uncertainty	Model (2) Low Uncertainty	Model (3) High Uncertainty	Model (4) Low Uncertainty	Model (5) High Uncertainty	Model (6) Low Uncertainty	Model (7) High Uncertainty	Model (8) Low Uncertainty
Future-focused language$_t$	0.827***	1.774***	-0.042	0.746***	-0.040	0.640**	-0.065	0.619***
	(0.000)	(0.000)	(0.880)	(0.001)	(0.899)	(0.014)	(0.792)	(0.006)
Uncertain language	0.672	-0.203	0.020	0.203	-0.143	1.032	0.190	0.861
	(0.129)	(0.668)	(0.969)	(0.737)	(0.818)	(0.125)	(0.685)	(0.145)
Additional control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FFI49 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	10,152	10,933	2,595	1,520	2,595	1,520	2,595	1,520
R-squared	0.193	0.181	0.153	0.160	0.165	0.193	0.170	0.193
Difference in Coefficients χ^2		4.28		4.82		2.79		4.21
(*p*-value)		(0.039)		(0.028)		(0.095)		(0.040)

Table 4: Impact of Future Orientation on Corporate Risk Conditioned on Uncertain Tone

This table reports coefficient estimates of alternative measures of corporate risk regressed on the future-focused language measure and other explanatory variables. We use robust cluster-adjusted standard errors by firm and year. *P*-values are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Full sample

	Model (1) Std. (ROA)$_{t+2}$	Model (2) Stock Return Volatility$_{t+2}$	Model (3) Stock Idiosyncratic Volatility$_{t+2}$	Model (4) Asset Beta$_{t+2}$
Future-focused language$_t$	0.037***	0.008***	0.017***	0.315***
	(0.000)	(0.002)	(0.005)	(0.000)
Uncertain language$_t$	0.010**	0.002*	0.004	0.187***
	(0.039)	(0.089)	(0.152)	(0.004)
Log (total assets)$_t$	-0.012***	-0.004***	-0.016***	0.009
	(0.000)	(0.000)	(0.000)	(0.447)
Log (firm age)$_t$	-0.005***	-0.004***	-0.011***	-0.081***
	(0.000)	(0.000)	(0.000)	(0.000)
Market-book ratio$_t$	0.012***	-0.000	-0.002**	0.052***
	(0.000)	(0.236)	(0.012)	(0.000)
Sales growth$_t$	-0.010	0.002	0.008**	0.015
	(0.166)	(0.322)	(0.021)	(0.824)
Stock return$_t$	-0.021***	-0.003***	-0.005**	0.030
	(0.000)	(0.006)	(0.035)	(0.464)
Cash surplus$_t$	-0.216***	-0.051***	-0.128***	-0.729***
	(0.000)	(0.000)	(0.000)	(0.000)
Debt ratio$_t$	0.024***	0.016***	0.039***	-0.469***
	(0.004)	(0.000)	(0.000)	(0.000)
FFI49 fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
No. Obs.	29,098	29,098	29,098	29,098
R-squared	0.225	0.207	0.273	0.072

Panel B: Uncertain tone subsets

	Std. (ROA)$_{t+2}$		Stock Return Volatility$_{t+2}$		Stock Idiosyncratic Volatility$_{t+2}$		Asset Beta$_{t+2}$	
	Model (1) High Uncertainty	Model (2) Low Uncertainty	Model (3) High Uncertainty	Model (4) Low Uncertainty	Model (5) High Uncertainty	Model (6) Low Uncertainty	Model (7) High Uncertainty	Model (8) Low Uncertainty
Future-focused language$_t$	0.060***	0.026***	0.014***	0.003	0.025***	0.010*	0.455***	0.240***
	(0.000)	(0.004)	(0.002)	(0.237)	(0.005)	(0.092)	(0.008)	(0.000)
Uncertain language$_t$	-0.021	0.011	-0.003	0.005	-0.007	0.009	0.138	0.054
	(0.328)	(0.102)	(0.588)	(0.158)	(0.492)	(0.203)	(0.264)	(0.577)
Additional control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FFI49 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	8,343	8,902	8,343	8,902	8,343	8,902	8,343	8,902
R-squared	0.223	0.240	0.221	0.218	0.332	0.345	0.108	0.074
Difference in Coefficients χ^2		5.26		4.83		2.62		2.43
(*p*-value)		(0.022)		(0.026)		(0.105)		(0.119)

Table 5: Impact of Future Orientation on the Implied Cost of Equity Conditioned on Uncertain Tone

The following models regress measures of the implied cost of equity regressed on the future-focused language measure and other explanatory variables. We use robust cluster-adjusted standard errors by firm and year. *P*-values are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Cost of equity measures and additional control variables

	No. Obs.	Mean	Std. Dev.	P25	Median	P75
ICC_GLS	18,629	0.070	0.134	0.033	0.050	0.068
ICC_CTW	18,629	0.086	0.187	0.028	0.045	0.066
ICC_EW	18,629	0.107	0.129	0.051	0.073	0.113
Total assets ($MM)	18,629	5,791	26,368	323	1,022	3,367
Stock return volatility	18,629	0.030	0.016	0.019	0.026	0.036
Stock return synchronicity	18,629	-0.617	0.888	-1.176	-0.575	0.007
Debt ratio	18,629	0.209	0.198	0.014	0.181	0.328
Market-book ratio	18,629	2.226	1.536	1.295	1.744	2.577
Mean long-term growth estimate	18,629	0.164	0.099	0.108	0.150	0.200
Forecast accuracy	18,629	-0.527	4.092	-0.098	-0.023	-0.007
No. estimates	18,629	2.716	2.401	1.000	2.000	3.000

Panel B: Full sample

	Model (1) ICC_GLS_t	Model (2) ICC_CTW_t	Model (3) ICC_EW_t
Future-focused language$_t$	0.0295***	0.0523***	0.0208***
	(0.000)	(0.000)	(0.001)
Uncertain language$_t$	-0.0088	0.0101	-0.0175*
	(0.412)	(0.490)	(0.086)
Log (total assets)$_t$	-0.0095***	-0.0112***	-0.0060***
	(0.000)	(0.000)	(0.000)
Stock return volatility$_t$	1.9942***	3.3990***	2.6677***
	(0.000)	(0.000)	(0.000)
Stock return synchronicity$_t$	-0.0044***	-0.0085***	-0.0059***
	(0.002)	(0.000)	(0.000)
Debt ratio$_t$	0.1927***	0.0782***	0.0478***
	(0.000)	(0.000)	(0.000)
Market-book ratio$_t$	0.0025**	-0.0084***	-0.0105***
	(0.037)	(0.000)	(0.000)
Mean long-term growth estimate$_t$	-0.0875***	0.0199	0.0084
	(0.000)	(0.447)	(0.561)
Forecast accuracy$_t$	-0.0021***	-0.0014**	-0.0014***
	(0.000)	(0.011)	(0.000)
Log (No. estimates)$_t$	0.0059**	0.0131***	0.0060**
	(0.028)	(0.000)	(0.018)
FFI49 fixed effects	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
No. Obs.	18,629	18,629	18,629
R-squared	0.155	0.113	0.146

Panel C: Uncertain tone subsets

	ICC_GLS_t		ICC_CTW_t		ICC_EW_t	
	Model (1) High Uncertainty	Model (2) Low Uncertainty	Model (3) High Uncertainty	Model (4) Low Uncertainty	Model (5) High Uncertainty	Model (6) Low Uncertainty
Future-focused language$_t$	0.0481***	0.0172	0.0755***	0.0296**	0.0497***	-0.0018
	(0.003)	(0.133)	(0.006)	(0.027)	(0.001)	(0.855)
Uncertain language$_t$	0.0060	0.0289	-0.0098	0.0217	-0.0113	-0.0430
	(0.866)	(0.304)	(0.875)	(0.566)	(0.759)	(0.102)
Additional control variables	Yes	Yes	Yes	Yes	Yes	Yes
FFI49 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	5,741	5,388	5,741	5,388	5,741	5,388
R-squared	0.162	0.185	0.138	0.104	0.148	0.158
Difference in Coefficients χ^2		2.41		2.26		8.04
(*p*-value)		(0.121)		(0.133)		(0.005)

Table 6: Impact of Future Orientation on the Cost of Corporate Debt Conditioned on Uncertain Tone

Panel A reports descriptive statistics for variables used in the yield spread analyses. Panel B reports coefficient estimates of transaction-level bond yield spreads regressed on the future-focused language measure and other explanatory variables. All dependent and explanatory variables are measured contemporaneously at year *t*. We use robust cluster-adjusted standard errors by firm and year. *P*-values are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Cost of debt and additional bond- and firm-level control variables

	No. Obs	Mean	St. Dev.	P25	Median	P75
Bond-level characteristics						
Moody rating	29,846	12.410	3.775	10.000	13.000	15.000
Yield spread	29,846	0.034	0.037	0.013	0.022	0.043
FPC provision	29,846	0.205	0.404	0.000	0.000	0.000
Bond age	29,846	4.346	4.361	1.079	3.060	6.192
Trade days per year	29,846	41.966	49.984	8.000	21.000	56.000
Time to maturity (years)	29,846	9.842	10.789	3.904	6.819	10.019
Offering amount ($MM)	29,846	481	442	235	350	550
Subordinate	29,846	0.063	0.242	0	0	0
Issuer-level characteristics						
Total assets	29,846	28,066	53,708	4,229	11,719	29,213
Cash ratio	29,846	0.089	0.095	0.023	0.057	0.122
Debt ratio	29,846	0.334	0.154	0.224	0.308	0.425
Market-book ratio	29,846	1.746	0.801	1.206	1.520	2.034
Adjusted one-year stock return	29,846	0.062	0.338	-0.108	0.053	0.216
Three-year sales growth	29,846	0.043	0.105	-0.007	0.032	0.077
ROA	29,846	0.044	0.086	0.020	0.053	0.083
Std. (ROA)	29,846	0.037	0.047	0.012	0.022	0.041
HHI	29,846	0.193	0.175	0.085	0.145	0.235
Analyst coverage	29,846	4.091	2.933	2.000	3.000	6.000
Stock bid-ask spread × 100	29,846	0.736	0.450	0.448	0.610	0.866
Market-level characteristic						
Yield curve slope	29,846	0.020	0.011	0.014	0.020	0.028
Baa-Aaa index spread	29,846	0.011	0.005	0.009	0.009	0.013

Panel B: Regression estimates

	Full Sample			Years to Maturity ≤ 5		Years to Maturity > 5	
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)
	Full Sample	High Uncertainty	Low Uncertainty	High Uncertainty	Low Uncertainty	High Uncertainty	Low Uncertainty
Future-focused language$_t$	-0.0007	0.0043***	-0.0040*	0.0152***	-0.0015	-0.0016	-0.0046***
	(0.604)	(0.004)	(0.060)	(0.000)	(0.767)	(0.291)	(0.000)
Uncertain language$_t$	-0.0018	0.0039	-0.0050*	-0.0264**	-0.0013	0.0064	-0.0002
	(0.591)	(0.402)	(0.081)	(0.028)	(0.914)	(0.246)	(0.949)
Residual Moody's rating$_t$	-0.0029***	-0.0024***	-0.0033***	-0.0026***		-0.0023***	-0.0031***
	(0.000)	(0.000)	(0.000)	(0.003)		(0.000)	(0.000)
Fixed price call$_t$	0.0117***	0.0144***	0.0097***	0.0268***	0.0238***	0.0125***	0.0074***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log (bond age)$_t$	0.0027***	0.0026***	0.0021***	-0.0011	-0.0058***	0.0025***	0.0012***
	(0.000)	(0.000)	(0.000)	(0.481)	(0.003)	(0.000)	(0.000)
Log (No. trades)$_t$	-0.0013***	-0.0014***	-0.0016***	-0.0015	0.0010	-0.0002	-0.0004*
	(0.000)	(0.001)	(0.002)	(0.243)	(0.327)	(0.457)	(0.069)
Log (time to maturity)$_t$	-0.0084***	-0.0065***	-0.0101***	-0.0301***	-0.0462***	0.0005	-0.0028***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.566)	(0.000)
Log (Issue amount)$_t$	-0.0014**	-0.0018	-0.0014*	-0.0046	-0.0074*	-0.0001	-0.0014**
	(0.038)	(0.109)	(0.079)	(0.140)	(0.050)	(0.763)	(0.023)
Subordinate$_t$	0.0028*	0.0013	0.0053***	0.0010	0.0054*	0.0018	0.0057***
	(0.064)	(0.496)	(0.003)	(0.787)	(0.074)	(0.220)	(0.000)
Log (total assets)$_t$	-0.0013*	-0.0006	-0.0020**	0.0008	-0.0019	-0.0025***	-0.0027***
	(0.060)	(0.470)	(0.015)	(0.691)	(0.265)	(0.000)	(0.000)
Cash ratio$_t$	0.0102***	0.0072*	0.0169***	0.0005	0.0237	0.0057*	0.0173***
	(0.008)	(0.066)	(0.005)	(0.964)	(0.232)	(0.077)	(0.001)
Debt ratio$_t$	0.0205***	0.0142***	0.0238***	0.0292***	0.0446***	0.0075***	0.0172***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)
Market-book ratio$_t$	-0.0023**	-0.0010	-0.0046***	0.0024	-0.0025	-0.0026***	-0.0043***
	(0.018)	(0.178)	(0.000)	(0.105)	(0.240)	(0.000)	(0.000)
Adjusted 1-year stock return$_t$	-0.0106***	-0.0099***	-0.0119**	-0.0209***	-0.0233**	-0.0055**	-0.0057**
	(0.009)	(0.002)	(0.036)	(0.003)	(0.015)	(0.014)	(0.049)
Three-year sales growth$_t$	-0.0064*	-0.0125**	-0.0058*	-0.0202*	-0.0197**	-0.0059*	-0.0056*
	(0.074)	(0.031)	(0.085)	(0.089)	(0.025)	(0.051)	(0.058)
ROA$_t$	-0.0450***	-0.0621***	-0.0264***	-0.1286***	-0.0410***	-0.0399***	-0.0307***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Std. (ROA)$_t$	0.0239*	0.0334***	0.0238**	0.0538***	0.0043	0.0198**	0.0223***
	(0.070)	(0.000)	(0.019)	(0.004)	(0.895)	(0.033)	(0.009)
HHI$_t$	0.0007	0.0008	0.0023	0.0034	-0.0089	0.0054*	-0.0004
	(0.707)	(0.824)	(0.159)	(0.615)	(0.373)	(0.067)	(0.808)
Analyst coverage$_t$	-0.0026***	-0.0037***	-0.0028***	-0.0048**	-0.0050***	-0.0030***	-0.0019***
	(0.000)	(0.000)	(0.003)	(0.039)	(0.001)	(0.000)	(0.000)
Stock bid-ask spread$_t$ × 100	0.0344***	0.0345***	0.0304***	0.0568***	0.0490***	0.0250***	0.0209***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Yield curve slope$_t$	-0.1972	-0.2710***	-0.1488	-0.4677	-0.3605	-0.2355**	-0.1170
	(0.167)	(0.001)	(0.435)	(0.199)	(0.490)	(0.030)	(0.260)
Baa-Aaa spread$_t$	1.0887***	1.2699***	1.7507**	0.2327	1.1441	0.8879***	1.1081***
	(0.003)	(0.000)	(0.012)	(0.597)	(0.534)	(0.000)	(0.001)
FFI49 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	29,846	8,951	8,921	3,070	3,112	5,884	5,803
R-squared	0.622	0.713	0.604	0.726	0.594	0.802	0.754
Difference in Coefficients χ^2			8.58		5.77		1.66
(*p*-value)			(0.003)		(0.016)		(0.197)

Table 7: Impact of Future Orientation on Other Debt Contracting Characteristics Conditioned on Uncertain Tone

This table reports coefficient estimates of the association between future-focused language and additional debt contracting characteristics. In Panel A, the dependent variables in each panel are the total covenants, financing, investing, and the number of event-related covenants, obtained from FISD. In Panel B, the dependent variables are the logged number of lenders, log maturity, indicator variable that is equal to one if the loan is secured, log upfront fees, and log loan amount for loan contracts at origination. Loan data is obtained from DealScan. All dependent and explanatory variables are measured contemporaneously at year *t*. We use robust cluster-adjusted standard errors by firm and year. *P*-values are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Panel A: Covenant structure

	Total Covenant Count$_t$			Financing Covenant Count$_t$			Investment Covenant Count$_t$			Event-Related Covenant Count$_t$		
	Entire Sample	High Uncertainty	Low Uncertainty	Entire Sample	High Uncertainty	Low Uncertainty	Entire Sample	High Uncertainty	Low Uncertainty	Entire Sample	High Uncertainty	Low Uncertainty
Future-focused language$_t$	0.458*	2.382**	0.351	0.166	0.728*	0.146	0.163	1.158**	0.071	-0.059	0.625*	0.024
	(0.087)	(0.018)	(0.423)	(0.250)	(0.086)	(0.566)	(0.471)	(0.032)	(0.821)	(0.544)	(0.076)	(0.840)
Uncertain language$_t$	0.059	-0.344	0.342	-0.282***	-0.266	-0.618*	0.020	0.425	-0.545	0.017	0.488	-0.232
	(0.829)	(0.730)	(0.531)	(0.006)	(0.552)	(0.075)	(0.875)	(0.440)	(0.174)	(0.827)	(0.183)	(0.350)
Log (CEO tenure)$_t$	0.179***	0.271**	0.149	0.048	0.147**	0.041	0.118***	0.112	0.178***	0.068***	0.074	0.078**
	(0.004)	(0.048)	(0.106)	(0.195)	(0.049)	(0.461)	(0.005)	(0.190)	(0.002)	(0.007)	(0.121)	(0.014)
Log (total assets)$_t$	-0.096	-0.183	-0.110	-0.067*	-0.070	-0.059	-0.128***	-0.147*	-0.159***	-0.092***	-0.119***	-0.100***
	(0.241)	(0.294)	(0.153)	(0.064)	(0.273)	(0.181)	(0.001)	(0.088)	(0.003)	(0.001)	(0.001)	(0.000)
Market-book ratio$_t$	-0.063	-0.047	-0.104	-0.138***	-0.122*	-0.182	-0.116***	-0.057	-0.199**	-0.061***	-0.018	-0.114*
	(0.425)	(0.760)	(0.589)	(0.000)	(0.060)	(0.120)	(0.007)	(0.550)	(0.021)	(0.006)	(0.775)	(0.062)
Debt ratio$_t$	-0.714	-1.646*	0.168	0.784***	0.721*	1.424***	0.520*	0.463	0.629	0.027	0.120	0.006
	(0.108)	(0.056)	(0.842)	(0.001)	(0.061)	(0.000)	(0.067)	(0.343)	(0.301)	(0.868)	(0.764)	(0.982)
Operating income$_t$	0.005	-1.066	0.868	0.089	-0.152	0.189	0.015	-0.645	1.097	0.173	-0.282	0.807
	(0.995)	(0.433)	(0.538)	(0.760)	(0.776)	(0.820)	(0.976)	(0.495)	(0.234)	(0.551)	(0.577)	(0.322)
Asset maturity$_t$	0.001	0.014	0.024	-0.003	0.002	0.003	0.001	0.002	0.022***	-0.002	-0.002	0.005
	(0.942)	(0.416)	(0.109)	(0.545)	(0.825)	(0.732)	(0.938)	(0.905)	(0.006)	(0.539)	(0.850)	(0.466)
Tangibility$_t$	0.227	2.224***	-1.872*	0.022	1.259***	-0.601	0.231	1.931***	-1.284**	0.167	0.849**	-0.250
	(0.696)	(0.000)	(0.069)	(0.938)	(0.005)	(0.298)	(0.580)	(0.009)	(0.030)	(0.467)	(0.038)	(0.500)
Std. (Operating income)$_t$	-1.198	-0.674	-1.215	-0.569	0.080	-2.194	-0.995	-0.580	-1.024	-0.308	-0.667	0.901
	(0.366)	(0.785)	(0.732)	(0.475)	(0.944)	(0.290)	(0.269)	(0.737)	(0.574)	(0.600)	(0.488)	(0.593)
Z-score$_t$	0.082*	0.049	-0.026	0.056*	0.033*	0.043	0.015	0.018	-0.088	-0.010	-0.011	-0.075*
	(0.063)	(0.153)	(0.839)	(0.085)	(0.073)	(0.559)	(0.574)	(0.463)	(0.240)	(0.675)	(0.675)	(0.089)
Rated dummy$_t$	1.892***	2.002***	2.160***	1.192***	1.221***	1.379***	1.289***	1.568***	1.745***	0.264**	0.602***	0.495***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.044)	(0.001)	(0.000)
Yield curve slope$_t$	-0.127	0.102	-0.172	-0.055	0.105	0.042	-0.070	0.255	-0.090	-0.084	0.054	-0.047
	(0.358)	(0.765)	(0.449)	(0.434)	(0.634)	(0.663)	(0.474)	(0.282)	(0.227)	(0.161)	(0.540)	(0.505)
Baa – Aaa spread$_t$	-0.139	-0.171	-0.362*	-0.118*	-0.037	-0.085	-0.021	-0.036	-0.058	-0.039	0.111	-0.090*
	(0.323)	(0.547)	(0.069)	(0.064)	(0.818)	(0.418)	(0.565)	(0.790)	(0.362)	(0.542)	(0.561)	(0.093)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FFI49 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	4,460	833	1,768	4,460	833	1,768	4,460	833	1,768	4,460	833	1,768
Adj *R*-squared	0.135	0.199	0.134	0.147	0.300	0.156	0.188	0.316	0.223	0.207	0.284	0.292
Difference in Coefficients $\chi 2$			6.11			3.13			6.64			5.21
(*p*-value)			0.013			0.077			0.010			0.022

Panel B: Non-price features of loan contracts

	Log (lenders)$_t$			Log (Maturity)$_t$			Secured Loans$_t$			Log (upfront fees)$_t$			Log (loan amount)$_t$		
	Entire Sample	High Uncerty	Low Uncerty	Entire Sample	High Uncerty	Low Uncerty	Entire Sample	High Uncerty	Low Uncerty	Entire Sample	High Uncerty	Low Uncerty	Entire Sample	High Uncerty	Low Uncerty
Future-focused language$_t$	0.091	-0.119	0.145**	-0.021	-0.150***	-0.001	-0.028	0.047	-0.056	-0.215	0.061	-0.578***	0.121*	-0.039	0.122
	(0.162)	(0.576)	(0.025)	(0.373)	(0.007)	(0.989)	(0.459)	(0.478)	(0.360)	(0.174)	(0.917)	(0.004)	(0.066)	(0.765)	(0.155)
Uncertain language$_t$	0.024	-0.160	-0.012	0.012	0.040	-0.037	0.039*	0.119	-0.124**	-0.155	-0.570	-0.770*	0.099	0.055	0.218
	(0.545)	(0.369)	(0.913)	(0.480)	(0.508)	(0.532)	(0.055)	(0.200)	(0.020)	(0.166)	(0.338)	(0.069)	(0.113)	(0.739)	(0.160)
Log (total assets)$_t$	0.178***	0.213***	0.163***	-0.037***	-0.022**	-0.043***	-0.097***	-0.109***	-0.094***	-0.058	-0.107	-0.067	0.686***	0.716***	0.693***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.030)	(0.000)	(0.000)	(0.000)	(0.000)	(0.110)	(0.170)	(0.203)	(0.000)	(0.000)	(0.000)
Market-book ratio$_t$	-0.022*	-0.038**	0.016	-0.006	-0.007	-0.001	-0.053***	-0.030***	-0.061***	-0.100**	-0.105*	-0.003	0.056***	0.055**	0.071***
	(0.082)	(0.033)	(0.366)	(0.275)	(0.210)	(0.899)	(0.000)	(0.003)	(0.000)	(0.044)	(0.090)	(0.964)	(0.000)	(0.021)	(0.003)
Debt ratio$_t$	0.048	0.150	-0.004	0.121***	0.187***	0.093***	0.449***	0.446***	0.422***	0.811***	1.266***	0.568**	0.368***	0.096	0.416***
	(0.440)	(0.179)	(0.972)	(0.000)	(0.001)	(0.008)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.024)	(0.000)	(0.627)	(0.004)
Operating income$_t$	0.564***	0.366	0.680***	0.195***	0.103	0.244	-0.411***	-0.376***	-0.409**	-0.172	0.615	-0.649	0.457**	0.420	0.413
	(0.000)	(0.219)	(0.002)	(0.009)	(0.419)	(0.163)	(0.000)	(0.010)	(0.011)	(0.751)	(0.416)	(0.493)	(0.020)	(0.270)	(0.200)
Asset maturity$_t$	0.002	0.004	-0.002	-0.000	0.001	-0.001	-0.006***	-0.008***	-0.005***	-0.003	-0.019	0.002	0.002	0.004	-0.001
	(0.185)	(0.215)	(0.254)	(0.936)	(0.357)	(0.541)	(0.000)	(0.000)	(0.003)	(0.631)	(0.182)	(0.718)	(0.169)	(0.208)	(0.734)
Tangibility$_t$	-0.159**	-0.449***	0.175*	-0.055	-0.158**	-0.012	0.088	0.044	0.064	0.030	-0.003	-0.076	-0.061	0.065	0.089
	(0.034)	(0.004)	(0.067)	(0.335)	(0.037)	(0.838)	(0.104)	(0.630)	(0.314)	(0.916)	(0.996)	(0.828)	(0.589)	(0.575)	(0.637)
Std. (Operating income)$_t$	-0.498***	-0.524**	-0.496**	-0.298**	-0.337	-0.256	0.091	0.070	0.039	1.032**	1.198	4.185***	-0.208	-0.552	-0.135
	(0.006)	(0.026)	(0.019)	(0.045)	(0.242)	(0.204)	(0.353)	(0.648)	(0.644)	(0.011)	(0.165)	(0.004)	(0.284)	(0.107)	(0.401)
Z-score$_t$	0.021**	0.034*	0.007	0.000	-0.004	-0.006	-0.025***	-0.019*	-0.020**	-0.115***	-0.134*	-0.120**	0.040***	0.048***	0.044
	(0.036)	(0.060)	(0.594)	(0.997)	(0.693)	(0.337)	(0.001)	(0.075)	(0.030)	(0.000)	(0.056)	(0.045)	(0.000)	(0.009)	(0.118)
Rated dummy$_t$	0.024	-0.025	0.065	0.060***	0.039	0.071***	0.058***	0.072**	0.075***	0.020	-0.011	0.152	-0.017	-0.033	-0.030
	(0.433)	(0.652)	(0.160)	(0.000)	(0.121)	(0.000)	(0.002)	(0.039)	(0.004)	(0.730)	(0.942)	(0.155)	(0.605)	(0.609)	(0.487)
Yield curve slope$_t$	0.018	-0.094***	0.038	0.021*	-0.011	0.025	0.004	0.009	0.009	-0.043	0.099	-0.128*	-0.029	-0.000	-0.062
	(0.271)	(0.001)	(0.285)	(0.067)	(0.627)	(0.352)	(0.576)	(0.575)	(0.658)	(0.385)	(0.537)	(0.099)	(0.254)	(0.998)	(0.252)
Baa – Aaa spread$_t$	0.024	0.039	0.020	0.010*	-0.030	0.042	0.008	0.055**	0.028*	0.104	-0.057	0.017	0.005	0.043	0.032
	(0.153)	(0.241)	(0.406)	(0.069)	(0.180)	(0.257)	(0.433)	(0.015)	(0.060)	(0.123)	(0.663)	(0.917)	(0.790)	(0.420)	(0.265)
Log(maturity)$_t$	0.280***	0.332***	0.222***				0.060***	0.065***	0.066***	0.161**	0.258*	0.176	0.316***	0.378***	0.310***
	(0.000)	(0.000)	(0.000)				(0.000)	(0.005)	(0.000)	(0.016)	(0.084)	(0.126)	(0.000)	(0.000)	(0.000)
Log(loan amount)$_t$	0.237***	0.232***	0.225***	0.071***	0.071***	0.072***	-0.040***	-0.030***	-0.046***	-0.070**	-0.015	-0.039			
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.019)	(0.824)	(0.496)			
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FFI49 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Loan type & purpose FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	13,077	2,886	4,639	13,084	2,889	4,641	10,168	2,281	3,612	1,794	391	624	13,084	2,889	4,641
Adj R-squared	0.466	0.495	0.474	0.486	0.516	0.490	0.357	0.358	0.381	0.377	0.404	0.415	0.647	0.640	0.661
Difference in Coefficients $\chi 2$			4.71			4.58			1.72			2.12			1.11
(*p*-value)			0.029			0.0323			0.189			0.146			0.293

Table 8: Impact of Future Orientation on Firm Value Conditioned on Uncertain Tone

This table reports coefficient estimates of the association between future-focused language and firm value, as gauged by the market-book and EV-to-sales ratios. The dependent are measured at year *t+1*. We use robust cluster-adjusted standard errors by firm and year. *P*-values are in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	Market-book ratio$_{t+1}$			Enterprise value-sales ratio$_{t+1}$		
	Full Sample	High Uncertainty	Low Uncertainty	Full Sample	High Uncertainty	Low Uncertainty
Future-focused language$_t$	0.168**	0.085	0.167*	2.362**	0.813	2.561***
	(0.023)	(0.666)	(0.060)	(0.014)	(0.767)	(0.008)
Uncertain language$_t$	0.001	-0.022	0.110	0.757	4.743	0.590
	(0.989)	(0.920)	(0.293)	(0.374)	(0.239)	(0.631)
Cash ratio$_t$	1.818***	1.689***	1.991***	19.910***	21.680***	18.080***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Debt ratio$_t$	0.628***	0.753***	0.499***	4.924***	5.556	4.892***
	(0.000)	(0.000)	(0.000)	(0.004)	(0.124)	(0.005)
Log (total assets)$_t$	-0.060***	-0.056***	-0.055***	-0.275	0.148	-0.484***
	(0.000)	(0.000)	(0.000)	(0.178)	(0.675)	(0.006)
Three-year sales growth$_t$	0.307***	0.283***	0.241***	-7.857***	-11.133***	-4.993***
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.002)
Adjusted 1-year stock return$_t$	0.339***	0.426***	0.262***	1.769***	2.513**	0.418
	(0.000)	(0.000)	(0.000)	(0.000)	(0.014)	(0.516)
Dividend payer$_t$	0.246***	0.243***	0.181***	0.010	-0.101	-0.113
	(0.000)	(0.000)	(0.000)	(0.969)	(0.812)	(0.773)
ROA$_t$	0.036***	0.031***	0.038***	-0.010	0.018	0.022
	(0.000)	(0.000)	(0.000)	(0.680)	(0.626)	(0.377)
Std. (ROA)$_t$	0.472***	0.400***	0.525***	10.392***	11.441***	11.388***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Capital expenditure$_t$	3.134***	3.405***	2.995***	6.464**	10.595	4.898
	(0.000)	(0.000)	(0.000)	(0.037)	(0.124)	(0.365)
Tangibility$_t$	-0.522***	-0.612***	-0.456***	1.254	1.574	1.437
	(0.000)	(0.000)	(0.000)	(0.335)	(0.587)	(0.135)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
FFI49 fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
No. Obs.	32,652	9,513	9,835	32,652	9,513	9,835
Adj *R*-squared	0.298	0.297	0.300	0.176	0.201	0.149
Difference in Coefficients $\chi 2$			0.39			0.47
(*p*-value)			0.535			0.495

Appendix 1: List of Words with Future Focus

The following list contains 97 words included in the future focus category of the most recent dictionary of Linguistic Inquiry and Word Count (LIWC) software.

ahead	finna	henceforth	oncoming	prospect*	tonight*
anticipate*	fixin (fixin')	hope	onward	shall	up-and-coming*
anticipation	forbod*	hopeful	plan	shan't (shant)	upcoming
approaching	foresee*	hopefully	planner	she'll	wanna
attainable	foreshadow*	hoping	planning	someday	wants
coming	foresight	i'll	plans	sometime	we'll
destin*	foreseeable	i'mma (ima, imma)	potential*	soon	what'll (whatll)
eventual	forthcoming	imminent	pray	sooner	who'll (wholl)
eventually	futur*	impending	prayed	soonest	will
expect*	going	it'll (itll)	prayer*	that'll (thatll)	wish
fate	gonna (gon, gunna)	Looming	praying	then	wishes
fated	gotta	may	predict*	thereafter	wishing
fates	he'll	might	prepar*	they'll (they'll)	won't (wont)
feasible	headin*	obtainable	promising	tomorrow*	you'll (youll)

Appendix 2: Language, Investment, Risk, Innovation, and Valuation Measure Descriptions

Panel A: Language measures	
Future-focused language	Number of future tense words divided by all words in the 10-K. There are 97 words in this category. *Source*: SEC Edgar (10-K statements) and LIWC software
Uncertain language	Number of uncertain words divided by all words in the 10-K. There are 285 words in this category. *Source*: Software Repository for Accounting and Finance (https://sraf.nd.edu/textual-analysis/resources/)
Panel B: Measures of investment policy, risk, and innovation activity	
Panel B1: Investment policy measures	
R&D	R&D expenditure (XRD) divided by total assets (AT); set to zero if R&D is missing *Source*: Compustat
SG&A	Selling, general, and administrative expense (XSGA) divided by net sales (SALE) *Source*: Compustat
Capex	Capital expenditure (CAPX) divided by total assets (AT). *Source of inputs*: Compustat
Acquisitiveness	Average aggregated yearly deal values (ACQ) divided total assets (AT). *Source*: Compustat
Working capital	Net working capital (ACT – LCT) divided by total assets (AT). *Sources*: Compustat
Cash ratio	Cash holdings (CHE) divided by total assets (AT). *Sources*: Compustat
Panel B2: Corporate risk measures	
Std. (ROA)	Standard deviation of income before extraordinary assets (IB) scaled by total assets (AT) measured over a maximum of three years. *Sources*: Compustat
Stock return volatility	Variance of monthly stock returns measured over a maximum of two years (24 months). *Source*: *CRSP*
Stock idiosyncratic volatility	Standard deviation of the regression residual of a single factor model using monthly returns and the CRSP value-weighted index, measured over a maximum of two years. *Source*: *CRSP*
Asset beta	Unlevered beta calculated using the method of Schwert and Strebulaev (2014). *Source*: CRSP and Compustat
Panel B3: Innovation activity measures	
Applications	Number of patents that the firm applied for in a given year scaled by R&D expenditure (XRD). *Source*: PATSTAT (patent information) and Compustat
Cites	Number of citations that patents filed in a specific year received in the following 5-year period scaled by R&D expenditure. Computed through 2012. *Source*: PATSTAT and Compustat
Impactful patents	Number of patents that rank in the top quartile based on the number of citations within its 3-digit technology class. *Source*: PATSTAT and Compustat
High-impact patents	Number of patents that rank in the top decile based on the number of citations within its 3-digit technology class. *Source*: PATSTAT and Compustat
Panel B4: Valuation measures	
Market-book ratio	Total assets (TA) net of the book value of equity (CEQ) plus the market capitalization of equity (CSHO×PRCC_F), divided by total assets (AT). *Source*: Compustat
EV-sales ratio	Sum of (market capitalization of equity (CSHO×PRCC_F), long term debt (DLTT), preferred stock (PSTKL), and minority interest (MIB)) minus cash (CHE) divided by net sales (SALE). *Source*: Compustat

Appendix 3: Cost of Equity Measures

The Claus and Thomas (2001) model is based on residual income. Under the clean surplus accounting assumption, the share price is expressed in terms of the current book value of equity plus a function of future expected abnormal accounting earnings, a proxy for economic profits. The discount rate that equates the current stock price and the future abnormal accounting earnings plus the current book value, estimated through the model specific growth rate assumptions and constant payout ratio, represents the implied cost of equity.

The Gebhardt, Lee and Swaminathan (2001) measure is also based on the residual income model. Under the clean surplus accounting assumption, this model shows that the current share price is a function of the current equity book value and the future expected return on equity. Similar to the Claus and Thomas (2001) model, the implied cost of equity is estimated by solving for the discount rate that equates the current share price and the right-side function in the equation.

Finally, we employ the Ohlson and Juettner-Nauroth (2005) model. This is a generalized Gordon constant growth model where the current share price is related to the next year's earnings per share, the next year's dividends, the short-term growth rate, and an assumed perpetual growth rate. We implement this model through the strategy provided by Gode and Mohanram (2003).