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Speaking of the short-term: disclosure horizon and managerial myopia

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Abstract We study conference calls as a voluntary disclosure channel and create a proxy for the time horizon that senior executives emphasize in their communications. We find that our measure of disclosure time horizon is associated with capital market pressures and executives' short-term monetary incentives. Consistent with the language emphasized during conference calls partially capturing short-termism, we show that our proxy is associated with earnings and real activities management. Overall, the results show that the time horizon of conference call narratives can be informative about managers' myopic behavior.

Keywords Short-termism · Managerial myopia · Earnings management · Real activities management · Accounting performance

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1 Introduction

Commentators have argued that many corporations exhibit short-termism, a tendency to take actions that maximize reported short-term earnings and stock prices at the expense of long-term corporate performance (e.g., Levitt 2000; Donaldson 2005).[1] Prior studies in accounting and finance have documented the sources of short-termism, such as capital market pressures and managerial monetary incentives, as well as the negative effects of short-termism on future shareholder value (e.g., Bushee 1998; Bhojraj et al. 2009; Edmans et al. 2014). While those studies rely on quantitative publicly disclosed information as proxies for managerial myopia (e.g., discretionary accruals, earnings guidance), whether voluntary corporate disclosures to investors are revealing of managers' excessive focus on the short-term remains unexplored.

We fill this gap by exploring whether the time horizon of corporate voluntary disclosure is symptomatic of short-termism. To do so, we identify qualitative properties of corporate voluntary disclosures to investors that are likely to reveal managerial myopia. We use conference calls as a voluntary disclosure channel and develop a proxy for corporate disclosure horizon by creating a dictionary of short- and long-term oriented keywords. Conference calls are an appropriate candidate for our inquiry, given that managers can communicate corporate strategies and forward-looking information as well as interact with and answer questions from sell-side analysts. We first investigate whether our proxy captures documented short-term capital market pressures and managerial monetary incentives, controlling for cross-sectional variations in managerial discourse that merely reflect underlying economic forces such as industry affiliation, firm size, the length of the operating cycle, or cash flow volatility. Then we examine whether greater emphasis on the short-term reflects managerial myopic behavior to inflate short-term reported accounting numbers to beat benchmarks and avoid reporting losses.

While we posit that voluntary disclosure is likely to reflect inter-temporal accounting and investment discretion, there is tension in this hypothesis for at least two reasons. First, there could be a disconnection between firms' public disclosure and internal investment decisions. Indeed, short-term oriented firms could strategically use long-term oriented discourse as cheap talk to hide this moral hazard problem (Beyer et al. 2010). Relatedly, the influence of firms' legal and investor relations departments on corporate disclosures could mitigate the use of language signaling potential moral hazard problems. Moreover, executives of poorly performing firms could emphasize long-term plans to distract attention from current performance. Second, economic factors, as opposed to opportunism, could be the impetus behind greater emphasis on the short-term in voluntary disclosures (e.g., managers' explaining poor short-term performance).

We rely on previous studies to identify the primary determinants and symptoms of corporate short-termism. More specifically, investors with shorter time horizons

[1] We mostly use the term "short-termism" but also occasionally refer to it as "myopia," another commonly used word to describe excessive focus on the short term in the corporate world and capital markets.

and sell-side analysts fixated on quarterly forecasts are likely to press managers to focus on short-term performance maximization (Bushee and Noe 2000; Healy and Wahlen 1999; He and Tian 2013). Moreover, managerial compensation tied to stock performance is likely to incentivize managers to excessively focus on the short-term (Edmans et al. 2014; Gopalan et al. 2014). Disclosure patterns such as quarterly guidance issuance also seem related to an excessive focus on the short-term (Call et al. 2014; Cheng et al. 2014). Regarding the symptoms of short-termism, prior literature has shown that short-term oriented managers focus on meeting or just beating quarterly analysts' forecasts as well as avoiding reporting losses (Degeorge et al. 1999). To do so, they are more likely to manage accounting earnings and forgo valuable investments (Graham et al. 2005; Roychowdhury 2006).

We first use a determinants model of corporate short-termism with the major sources of short-termism identified by prior literature as explanatory variables, controlling for firm economic characteristics that could influence the time horizon of corporate disclosure. We find a positive association between our proxy for short-termism and the residual proportion of total executive compensation that is stock-based after controlling for economic factors that explain cross-sectional variation in the use of stock-based incentives (Cheng et al. 2015). Short-term oriented firms are also more likely to issue (quarterly) earnings guidance. We also find a positive association between short-termism and the presence of short-term investors using Bushee's (2001) institutional investor classification, suggesting a significant degree of congruence among capital market participants. Furthermore, we find firms with higher analyst coverage to discuss more the short-term. Importantly, we do not infer causality in our determinants model, but we use this test to *validate* our proxy for short-termism. All in all, the results consistently indicate that our short-termism proxy is positively associated with documented sources of corporate myopia. The results hold when we measure short-termism separately for the corporate presentation section of the conference call and the more interactive Q&A section.

Next, we examine whether our proxy is associated with symptoms of short-termism documented in the literature. That is, we test whether firms that emphasize the short-term, according to our measure, are more likely to make accounting and real investment decisions to meet short-term capital-market benchmarks. We find that short-term oriented firms have higher absolute discretionary accruals and exhibit higher likelihood of just beating analyst forecasts and a higher likelihood of reporting small positive earnings. Our results hold when we measure short-termism separately in the presentation and Q&A sections of the conference call. The results also hold when we control for previously identified sources of corporate short-termism, except for small positive earnings surprises, which are primarily driven by firms issuing earnings guidance and having greater analyst coverage, consistent with those firms using guidance to walk down analysts to a beatable benchmark (Kim and Park 2012).

We also find that short-term oriented firms are more likely to exhibit lower discretionary research and development (R&D) and advertising expenditures, consistent with myopic firms engaging in real activities management. When we separately measure short-termism in the presentation and Q&A portions of the call, we find that the effect is driven by the presentation. This suggests that analysts do

not follow up on management's short-term focus associated with reduced investment. Short-term oriented firms also appear to further cut R&D (as per the presentation text) and advertising (as per the entire call) expenses to avoid reporting losses. The results hold after controlling for other capital market pressures, including short-term investors, whose presence is also associated with reduced discretionary expenses (Bushee 1998). Altogether, this set of results suggests that our measure is positively related to both earnings and real activities management and captures managerial opportunism. Our measure also has incremental explanatory power over and above the other measures of short-termism, potentially because it captures a short-term managerial inclination that other metrics cannot perfectly proxy for.

In additional analysis, we assess the robustness of our findings to including controls for other linguistic measures used by past studies. Specifically, we control for the abnormal positive tone and complexity of the language in conference calls and also the propensity to discuss about the future using forward-looking statements. We find that our results are unchanged. Furthermore, we perform lead-lag analyses and find that lagged short-termism is associated with future (1) short-term investor holdings and (2) earnings management (not tabulated). Lastly, we examine the association between short-termism and future accounting performance. Controlling for current return on equity (*ROE*), we find that firms with greater emphasis on the short-term experience lower ROE over the next 2 years. This further suggests that short-term oriented firms engage in costly myopic behavior.

Our study contributes to the emerging literature on the properties of voluntary disclosure that examines management communication during conference calls and its association with information content (Hollander et al. 2010; Matsumoto et al. 2011), future performance (Mayew and Venkatachalam 2012), and financial fraud (Larcker and Zakolyukina 2012). We provide a new construct focused on time horizon, which we find to be robustly associated with measures of short-term monetary incentives, short-term capital pressures, and managerial myopia. Disclosure horizon is a relatively understudied, yet important, aspect of corporate communication. We show that textual analysis can capture a granular—but economically meaningful—dimension of disclosure horizon and provide insights beyond inferences based on metrics such as earnings guidance (Chen et al. 2011; Houston et al. 2010; Call et al. 2014; Cheng et al. 2014).

Furthermore, this paper adds to prior studies that examine textual properties of voluntary disclosure channels other than conference calls. Earlier papers show how soft-talk disclosures in earnings announcement press releases interact with hard information such as earnings performance (Miller 2002) and verifiable forward-looking statements (Hutton et al. 2003). While Huang et al. (2014) detect managerial opportunism by analyzing the linguistic tone of earnings announcements, we find that the temporal dimension of managers' discourse during conference calls partially reveals opportunism as well, and incrementally so over abnormal tone.

Lastly, the results of this paper contribute to the literature on the capital market effects of managerial and investor horizons. Our study is related to that of Bushee

and Noe (2000), who show that higher disclosure quality is associated with the presence of transient institutional investors and results in higher stock return volatility. Our results add to their work by explicitly investigating the properties of information disclosure that capture short- and long-term horizons and linking those properties to the investor base. We also add to other studies that examine the association between managerial short-termism, investor short-termism, and capital market pressures to meet short-term goals. While Bhojraj and Libby (2005) show that managers behave myopically in the presence of capital market pressures using an experimental design, we provide large-sample archival evidence on managerial short-termism. Our paper also builds on Bushee (1998), who finds a positive association between the presence of transient investors and real activities management, and Cheng and Warfield (2005), who document a positive association between equity-based compensation and accrual earnings management. Our findings add to those studies by identifying textual disclosure patterns that reveal managerial short-termism.

The rest of the paper proceeds as follows. Section 2 discusses the literature review. Section 3 presents the sample selection and our proxy for disclosure horizon. Section 4 outlines the research design and variables used in our tests. Section 5 presents the summary statistics, results and additional analysis, and Sect. 6 concludes.

2 Prior literature

Prior studies in accounting and finance have documented internal and external factors that give rise to short-termism and have linked these determinants to managerial actions. As demonstrated in several theoretical models, monetary incentives cause managers to behave myopically (e.g., Narayanan 1985; Stein 1989). Empirical studies attempt to measure the extent to which monetary incentives are related to managers' myopia of maximizing short-term reported performance at the expense of long-term performance. Managerial compensation tied to stock performance is likely to incentivize managers to excessively focus on the short-term (Edmans et al. 2014; Gopalan et al. 2014).

Another source of managerial short-termism is the time-horizon orientation of the investor base. Previous studies have examined the endogenous relation between investors' and managers' short-termism. Short-term investors will seek to pressure companies to maximize short-term earnings growth and resell their stock to overoptimistic short-term investors (Bolton et al. 2006). This is because short-term investors aim to maximize profits by frequently rebalancing their portfolios and holding a stock with long-term pay-offs is costly (Shleifer and Vishny 1990). As a result, managers will prefer to cater to their short-term investors' sentiment by undertaking investments that maximize short-term earnings and stock price (Von Thadden 1995; Polk and Sapienza 2009). Furthermore, short-term oriented investors are more likely to align an executive's compensation horizon with their own (Cadman and Sunder 2014).

In addition, external short-term benchmarks set by sell-side analysts are likely to lead managers to excessively focus on the short-term (He and Tian 2013). Managers respond to these pressures by issuing guidance, which may further exacerbate focus on the short-term. Critics argue that earnings guidance encourages managers, investors, and analysts to fixate on short-term earnings (Fuller and Jensen 2002). Evidence on the association between guidance issuance and short-termism is mixed. Call et al. (2014) find that frequent guiders are less prone to managing earnings through accruals, whereas Cheng et al. (2014) find that frequent guiders underinvest in R&D and experience lower future earnings growth. Houston et al. (2010) find no evidence that firms that stop issuing guidance increase their long-term investments, as many of the firms in their sample stop guidance because of poor performance, but Chen et al. (2011) find an increase in the holdings of long-term investors after guidance cessation.

A recent strand of literature shows that qualitative properties of firm disclosures can reveal information about managers' actions, investment decisions, and moral hazard costs above and beyond quantitative metrics. For example, some papers find disclosure narratives to be distinctly informative about firms' investments such as R&D (e.g., Merkley 2014) or future marginal rates of returns (Li et al. 2013). Other studies find that textual properties of firm disclosures can reveal managerial opportunism through linguistic complexity (Li 2008) or tone (Huang et al. 2014). We investigate whether the disclosure horizon in conference calls—a previously underexplored dimension of voluntary disclosures—reveals managerial opportunism caused by monetary incentives and capital market pressures and predicts myopic managerial actions to maximize short-term performance.

3 Sample selection and proxy for disclosure horizon

3.1 Sample selection

Our primary data contain full-text earnings conference call transcripts from the Thomson Reuters Street Events database. The dataset covers 159,749 full-text conference call transcripts from 6102 US and international firms during 2002–2008, including information on the participants, date, duration, and location of the call.[2]

To construct our sample of conference calls, we exclude transcripts from international firms (33,206 calls) and transcripts with missing company names (29,223 calls). We further eliminate conference calls with missing dates (15,568 calls) and missing information on participants (11,063 calls). To obtain firms' financial information, we hand match firms in Thomson Reuters with identifiers in Compustat and CRSP using a firm's name and ticker, and we delete observations where the total assets of a firm are missing (647 calls). Sample selection is summarized in Panel A of Table 1.

[2] StreetEvents also includes full transcripts from conference presentations that are excluded from the population of conference call transcripts that we use.

Table 1 Sample selection

Panel A: Number of transcripts analyzed	
Analyst conference calls with full transcripts less:	159,749
Conference calls of international firms	33,206
Conference calls with missing company name	29,223
Conference calls with missing date	15,568
Conference calls with unidentified participants	11,063
Conference calls of firms with missing values for total assets	647
Total	70,042
Panel B: Number of firms by year	
2002	1356
2003	2078
2004	2298
2005	2592
2006	2867
2007	3165
2008	3427
Total	17,783

This table reports sample selection procedure followed to identify public companies with full earnings conference call transcripts for the period 2002–2008

Our final sample includes 70,042 earnings conference calls for 3613 unique firms during 2002–2008 for a total of 17,783 firm-year observations. Firm-year observations increase over time, as Thomson Reuters expanded its coverage (Panel B of Table 1). We obtain financial variables for the companies in our sample from Compustat, stock prices from CRSP, analyst coverage and earnings guidance from I/B/E/S, and FirstCall, investor base characteristics from Thomson Reuters, and compensation data from BoardEx. Sample size varies in the empirical tests depending on data availability. For example, in our tests for the relation between our proxy for short-termism, investor clientele, and monetary incentives, our sample decreases to 13,245 observations because data on institutional ownership classification and executive compensation are not available.

3.2 Proxy for disclosure horizon

Our main proxy for short-termism is the total number of keywords related to short-term information disclosed through the fiscal year in conference calls divided by the total number of keywords related to long-term information disclosed in the same period (*Short Horizon*).

Commonly used dictionaries such as Global Inquirer do not include terms pertaining to time horizons. We rely on Li (2010) and employ the following methodology to identify words referring to the time horizon of managers' disclosure. We read approximately 33,000 lines of conference call transcripts to collect key phrases referring to the horizon of a firm's strategy and investment decisions. Based on our reading, we identify 10 (11) words referring to the short

(long) term. We characterize the following words as short-term oriented: "day(-s or daily)," "week(-s or -ly)," "month(-s or -ly)," "quarter(-s or -ly)," "latter half (of the year)," "short-term," "short-run." We define the following words as long-term oriented: "year(-s or annual(-ly))," "long-term," "long-run," "look(ing) forward," "go(ing) forward," "looking ahead," "trend," "expect," "anticipate," "outlook," "intend." Note that while terms such as "expect" or "anticipate" are technically horizon neutral, our reading of conference call transcripts suggests that they are more often used to refer to longer-term horizons.

We then ask human subjects to validate the accuracy of our dictionary. They were asked to rank the words in our dictionary on a Likert scale, where one referred to extremely short horizons and five to extremely long horizons, with the option to respond that a word is unclassified.[3] Human subjects categorized the following words as strictly short-term oriented (i.e., average score of 2.7 and below): "day(-s or daily)," "month(-s or -ly)," "week(-s or -ly)," "quarter(-s or -ly)," "short-term," "short-run." They categorized the following words as long-term oriented (i.e., average score of 3.3 and above): "year(-s or annual(-ly))," "long-term," "long-run," "looking ahead," and "outlook." We exclude words with an average score around 3 (± 0.3) as well as words that human subjects could not classify as either long- or short-term oriented. These words are "intend," "anticipate," "trend," "going forward," "looking forward," "expect," and "latter half (of the year)." The list of words referring to time horizon is reported in Appendix 1.[4]

To provide readers with further information about our proxy for short-termism, Panel A of Table 2 shows examples of industries that, according to our measure, are more short-term- or long-term oriented. We classify industries according to the average short-termism score across all companies in that industry. Companies that sell pharmaceutical products, apparel, beverages, consumer goods, automobiles, and defense contracts are more long-term oriented. Long-term industries also include aerospace, construction, and utilities. In contrast, companies that sell electronic equipment, computers, business services, and supplies are more short-term oriented. Short-term oriented industries also include banking, energy, trading, steel, and wholesale. One observation that emerges from this descriptive evidence is that companies that sell products to individual consumers are more long-term oriented compared to companies that sell products to other businesses, although exceptions can be found. Another observation that emerges is that companies whose performance is driven by branding and innovation are more long-term oriented compared to companies whose performance is driven by efficiency of execution,

[3] An electronic survey was sent to 170 business undergraduate and graduate students. The response rate was 47 %. Students were asked the following questions: "Rate the following words based on whether they refer to short or long time horizons for decision-making. Use your judgment." We use a 1-to-5 Likert scale, with one referring to very short-term decisions and five to very long-term decisions. Students had the sixth option of responding "cannot say if the word refers to either the short- or long-term." They were required to give an answer for all words in our dictionary and were given unlimited time to complete the survey, though the average response time was approximately 4 min.

[4] The word "quarter" is the keyword that appears with the highest frequency in the conference call transcripts and exhibits the highest score among all short-term keywords (i.e., is classified as the least short-term oriented). In robustness tests, we construct our proxy for short-termism excluding this keyword, and our results hold (untabulated test).

Table 2 Examples of short- and long-term oriented industries and companies

Panel A: Examples of industries with short- and long-term focus, based on Fama–French industry classification (48 industries)	
Long-term oriented industries	Short-term oriented industries
Aerospace	Electronic Equipment
Apparel	Computers
Beverages	Banking
Utilities	Trading
Agriculture	Energy
Consumer goods	Steel
Defense	Business Services
Automobiles and Trucks	Shipbuilding, Railroad Equipment
Construction	Wholesale
Pharmaceutical	Business Supplies
Panel B: Examples of short-term and long-term oriented firms	
Long-term oriented companies	Short-term oriented companies
Teco Energy Inc.	Apache Corp.
Mosanto Co.	Seagate Technology Corp.
Pepsico Inc.	Chevron
Northrop–Grumman Corp.	Cisco Systems Inc.
General Mills Inc.	ConocoPhillips
Colgate-Palmolive Co.	Cypress Semiconductor Corp.
Allegheny Energy Inc.	General Cable Corp.
General Mills Inc.	Goldman Sachs Group Inc.
Coca-Cola Enterprises Inc.	United States Steel Corp.
Coca-Cola Co.	Netgear Inc.
Caterpillar Inc.	Netopia Inc.
Ford Motor Co.	On Semiconductor Corp.
Walt Disney Co.	Packaging Corp of America
Dow Chemical	Lorillard Inc.
Nike Inc.	Skyworks Solutions Inc.
Kohl's Corp.	Valero Energy Corp.

This table reports examples of sample industries (Panel A) and companies (Panel B) with a high focus on the long- and short-term

although exceptions again can be found. Because the short-termism measure varies systematically across industries, we include industry fixed effects in all our specifications at the two-digit SIC level. Panel B of Table 2 shows examples of large corporations that our measure classifies in the top quintile or bottom quintile of short-termism. Long-term oriented companies include Coca-Cola Enterprises, Monsanto, Colgate-Palmolive, Walt Disney, General Mills, Kohl's, Nike, PepsiCo, and Northrop. Short-term oriented companies include Chevron, Cisco, Conoco Phillips, Goldman Sachs, Netgear, and United States Steel.

Table 3 shows that, on average, firms use more short- than long-term keywords during their communications with analysts. The mean short-term to long-term words disclosed in conference calls is 1.48, suggesting that firms disclose more information related to shorter time horizons. However, there is significant variation in the time horizon in earnings conference calls, with a 25th percentile of 0.97, a 75th percentile of 1.82, and a standard deviation of 0.68. One concern regarding this measure is that the language in the conversations between analysts and managers might partly reflect sell-side analysts' rather than managerial preferences. Sell-side analysts are not passive actors in conference call settings, as Mayew and Venkatachalam (2012) find that analysts who ask questions during conference call Q&As exhibit superior private information. To alleviate this concern, we develop two variations of our proxy for short-termism using the language communicated during the presentation and Q&A section of the call. Investigating the effect of the former while controlling for the effect of the latter is likely to provide us with a proxy for corporate horizon that is not influenced by sell-side analysts' horizon orientation. The mean short-term to long-term information disclosed in the presentation and Q&A sections is 1.66 and 1.37, respectively.

4 Research design and variable definitions

4.1 Sources of short-termism

To test whether our proxy for short-termism is positively related to capital market pressures and monetary incentives that prior studies have documented as sources of managerial myopia, we use an ordinary least square (OLS) model where the dependent variable is our short-termism proxy (*Short Horizon*).

$$\begin{aligned} \textit{Short Horizon} = {} & \alpha + \beta_1 \textit{Long Term Investors} + \beta_2 \textit{Earnings Guidance} \\ & + \beta_3 \textit{Analyst Coverage} + \beta_4 \textit{Stock Based Compensation} \\ & + \beta_5 \textit{CFO Volatility} + \beta_6 \textit{Operating Cycle} + \beta_7 \textit{Leverage} \\ & + \beta_8 \textit{Liquidity} + \beta_9 \textit{ROE} + \beta_{10} \textit{O Score} + \beta_{11} \textit{Market to Book} \\ & + \beta_{12} \textit{Size} + \text{Industry FE} + \text{Year FE} \qquad (\textit{Model } 1) \end{aligned}$$

We rely on prior literature and use several proxies for capital market pressures. First, *Long-term Investors* is defined as the difference between shares held by dedicated and quasi-index investors minus shares held by transient investors based on Bushee's (2001) classification of institutional investor base, divided by total shares. Second, *Earnings Guidance* is defined as the number of quarters per year during which the firm issues earnings guidance.[5] Third, we include the natural

[5] Chuk et al (2013) document coverage biases in First Call. Specifically, they document that only 51 % of hand-collected earnings-forecast press releases are picked up by First Call. Furthermore, we obtain our guidance data by merging our sample with that of Brochet et al. (2011), who examine S&P 1500 firms. Hence our measure understates actual guidance issuance. While we cannot be sure how this coverage bias might influence our variable, it is conceivable that it helps capture short-termism (i.e., if firms that issue

Table 3 Descriptive statistics

Variable	N	Mean	SD	Q1	Median	Q3
Conference call discussions						
Short Horizon	17,783	1.48	0.68	0.97	1.31	1.82
Short Horizon PrsTxt	17,783	1.66	0.88	1.00	1.42	2.08
Short Horizon QA	17,783	1.37	0.74	0.85	1.17	1.67
Short-term pressures						
Long-term Investors	14,712	0.48	0.26	0.33	0.53	0.68
Earnings Guidance	17,783	0.47	1.00	0.00	0.00	0.00
Analyst Coverage	17,783	0.28	0.13	0.22	0.30	0.36
Stock-based Compensation	15,671	0.28	0.19	0.16	0.28	0.32
Myopic behavior						
Discretionary Accruals	15,090	0.15	0.14	0.00	0.05	0.12
Small Positive Earnings Surprise	17,707	0.21	0.41	0.00	0.00	0.00
Loss Avoidance	17,783	0.02	0.13	0.00	0.00	0.00
Discretionary R&D Expenses	9923	−0.04	0.37	−0.11	−0.02	0.01
Discretionary Advertising Expenses	7024	−0.01	0.09	−0.02	−0.01	0.00
Economic determinants						
CFO Volatility	17,783	0.06	0.07	0.02	0.03	0.06
Operating Cycle	17,783	4.73	1.20	4.18	4.71	5.14
Leverage	17,783	0.29	0.28	0.04	0.23	0.44
Liquidity	17,783	2.58	2.34	1.29	2.01	2.72
ROE	17,783	0.04	0.26	−0.74	0.10	0.17
O-score	17,783	−0.65	8.92	−4.31	−0.96	0.84
Market-to-Book	17,783	2.82	4.10	1.34	2.09	3.40
Size	17,783	7.00	1.73	5.81	6.84	8.04

This table reports summary statistics for the variables used in our primary analysis. The values of continuous variables are winsorized at 1 and 99 %. Variables are defined in Appendix 2

logarithm of the number of analysts covering the firm in I/B/E/S as a determinant of its disclosure horizon. To alleviate the concern that this proxy is driven by firm's size, we deflate using the natural logarithm of total assets (*Analyst Coverage*). He and Tian (2013) find that greater analyst coverage causes firms to reduce investments in innovation, which is a common symptom of managerial myopia (Graham et al. 2005). This is consistent with high analyst following creating more pressure on firms to meet their earnings expectations.

We use *Stock-based Compensation* as our proxy for managers' short-term monetary incentives. *Stock-based Compensation* is the residual from regressing top five executives' average stock- and option-based compensation on market capitalization, market-to-book ratio, and year and industry fixed effects (Cheng

Footnote 5 continued
frequent forecasts are more likely to be picked up by First Call.) However, in untabulated tests, we find that our inferences remain unaffected if we limit our sample to S&P 1500 firms.

et al. 2015).[6] Overall, we expect that our proxy for short-termism will be positively related to equity-based compensation, earnings guidance issuance, and analyst coverage and negatively related to the presence of a long-term investor base.

We control for expected determinants of firms' disclosure horizon due to economic forces that are unrelated to opportunistic motives. Previous research (Bushee and Noe 2000) has documented various factors that explain variation in disclosure patterns and stock return movements. We employ these factors as control variables in our models, since they are also likely to be correlated with the horizon of firms' disclosures. We use the standard deviation of cash flows from operations over the last 5 years, deflated by total assets (*CFO Volatility*), and operating cycle, defined as the natural logarithm of [(Inventory/COGS) × 360 + (Accounts Receivable/Sales) × 360] (*Operating Cycle*), as proxies for a company's operating risks. We expect firms with more volatile cash flow to emphasize the short term in their calls to explain variation from one period to the other. We posit that firms with longer operating cycles will exhibit a longer time horizon in their calls that maps into those cycles. Our controls for financial distress include leverage, defined as total debt to total assets (*Leverage*); liquidity, defined as current assets to current liabilities (*Liquidity*); and Ohlson's (1980) measure of bankruptcy risk (*O-score*). We expect firms facing greater financial constraints to focus more on the short term, to map into the repayment obligations they face. Hence we predict a negative coefficient on *Liquidity* and a positive one on *O-Score*. As for leverage, the relationship may not be linear. While, all else equal, greater leverage could mean greater distress and therefore a greater need to focus on the short-term, high leverage can also be a choice by healthy firms that want to take advantage of the interest tax shield. Hence we make no prediction on the coefficient sign for leverage. We further control for firms' growth opportunities using the market-to-book ratio, defined as the ratio of market capitalization to book value of equity (*Market-to-Book*). We expect managers of growth firms to have longer investment and discussion horizons (Cadman et al. 2013). Finally, we control for a firm's performance and reputation using return on equity, defined as net income to shareholders' equity (*ROE*), and size, defined as the natural logarithm of market capitalization (*Size*). We expect a negative coefficient on *ROE*, as firms with lower performance are more likely to talk about the short term to explain relatively poorer performance. In contrast, larger firms should have more leeway to talk about the long term, due to greater reputation and visibility in the marketplace. We also include year and industry (two-digit SIC) fixed effects to control for persistent effects across industries and years. All variables are defined in Appendix 2.

4.2 Myopic behavior

To examine whether our proxy for short-termism is revealing of managerial myopic behavior, we test whether our proxy predicts accruals and real activities management that previous studies have documented (e.g., Healy and Wahlen 1999).

[6] Ideally, we would like to use executive pay duration measures as developed by Gopalan et al. (2014) or Edmans et al. (2014). However, those measures can only be constructed from 2006 onward, thereby excluding a large portion of our sample.

$$\begin{aligned} Accruals\ Earnings\ Management = {} & \alpha + \beta_1 Short\ Horizon + \beta_2 CFO\ Volatility \\ & + \beta_3 Operating\ Cycle + \beta_4 Leverage \\ & + \beta_5 Liquidity + \beta_6 ROE + \beta_7 O\ Score \\ & + \beta_8 Market\ to\ Book + \beta_9 Size \\ & + \beta_{10} Long\ Term\ Investors \\ & + \beta_{11} Earnings\ Guidance \\ & + \beta_{12} Analyst\ Coverage \\ & + \beta_{13} Stock\ Based\ Compensation \\ & + \text{Industry FE} + \text{Year FE} \qquad (Model\ 2) \end{aligned}$$

$$\begin{aligned} Real\ Activities\ Management = {} & \alpha + \beta_1 Short\ Horizon + \beta_2 Target + \beta_3 Target \\ & \times Short\ Horizon + \beta_4 CFO\ Volatility \\ & + \beta_5 Operating\ Cycle + \beta_6 Leverage + \beta_7 Liquidity \\ & + \beta_8 ROE + \beta_9 O\ Score + \beta_{10} Market\ to\ Book \\ & + \beta_{11} Size + \beta_{12} Long\ Term\ Investors \\ & + \beta_{13} Earnings\ Guidance + \beta_{14} Analyst\ Coverage \\ & + \beta_{15} Stock\ Based\ Compensation \\ & + \text{Industry FE} + \text{Year FE} \qquad (Model\ 3) \end{aligned}$$

In *Model* 2, we rely on previous studies to construct several proxies for our dependent variable of accruals earnings management. First, we use the absolute value of company's discretionary accruals derived from the performance-matched modified Jones model (Kothari et al. 2005). Second, previous studies suggest that firms manage earnings to avoid negative earnings surprises and losses (Healy and Wahlen 1999; Matsumoto 2002). We use annual earnings forecasts from I/B/E/S and define a small positive earnings surprise as a binary variable that equals one if a firm reports one cent higher earnings per share than the 90-day consensus forecast and zero otherwise. We define loss avoidance as a binary variable that equals one if the ratio of firm's earnings before taxes, interest, and amortization (EBITDA) over market capitalization ranges from zero to 0.01 and zero otherwise.[7] We expect that our proxy for short-termism is positively related to accruals earnings management. Similar to our test on the sources of corporate short-termism (*Model 1*), we control for economic fundamentals and other commonly used proxies for short-termism. All variables are defined in Appendix 2.

In *Model* 3, we use an OLS specification and rely on previous studies to construct two proxies for real activities management that short-term oriented companies are likely to engage into avoid falling short of market expectations. We employ Roychowdhury's (2006) research design to estimate discretionary R&D and

[7] When our dependent variable is performance-adjusted accruals, we use an OLS model. When our dependent variables are loss avoidance and small positive earnings surprises, we use probit models.

advertising expenses. More specifically, we estimate the following regression by industry (two-digit SIC) and year:

$$R\&D(Advertising)\ Expenses_t/Total\ Assets_{t-1} = \alpha + \beta_1(1/Total\ Assets_{t-1}) + \beta_2(Sales_{t-1}/Total\ Assets_{t-1}) \quad (Model\ 4)$$

Discretionary R&D (Advertising) Expenses is defined as the difference between the actual R&D (advertising) expenses to previous year's total assets and the "normalized" value of R&D (advertising) expenses using the parameters of the regression above. We expect short-termism to manifest in one or two ways. First, short-term oriented firms may, on average, appear to underinvest in innovation and branding, which would translate into a negative β_1 in *Model* 3. Second, if short-term oriented companies are likely to fall short of benchmarks (i.e., analysts' forecasts or zero profits—summarily labeled as *Target* in *Model* 3 above), we expect them to be more inclined to reduce investments in R&D and advertising. This would translate into a negative β_3 (as well as $\beta_1 + \beta_3$) in *Model* 3. Similar to our test on the sources of corporate short-termism (*Model* 1), we control for firm's financial characteristics and other commonly used proxies for short-termism.

5 Summary statistics and empirical results

5.1 Summary statistics

Table 3 reports summary statistics for the short-termism measure, investor base, earnings guidance, analyst coverage, executive compensation, accounting and real activities management, and other firm characteristics for our sample. The mean (median) market value of equity is $5.4 billion ($946 million), and tabulated values are log-transformed. The mean (median) return on equity is 0.04 (0.10). The mean (median) leverage is 0.29 (0.23). And the mean (median) liquidity is 2.58 (2.01). The mean (median) volatility of operating cash flows is 0.06 (0.03), and the mean (median) market to book value of equity is 2.82 (2.09).

In terms of our proxies for capital market pressures, the average firm in our sample has more dedicated and quasi-index investors than transient ones (mean *Long-term Investors* of 0.48) and issues quarterly earnings guidance 0.47 times on average per year. The mean (median) number of analysts covering a company is 8.72 (7.00). The mean (median) stock-based compensation of top executives as a percentage of total compensation is 0.28 (0.28).

In terms of our proxies for managerial myopia, the mean (median) performance matched discretionary accruals is 0.15 (0.05). The mean probability of reporting a small profit or beating analysts' forecasts by one penny is 0.02 and 0.21 respectively. The mean (median) discretionary R&D and advertising intensity is −0.04 (−0.02) and −0.01 (−0.01).

Table 4 reports the univariate correlations between our proxy for short-termism and the other variables. A higher tendency of using short-term words in conference calls is positively related to stock-based compensation (0.01), quarterly earnings

Table 4 Correlation matrix

Panel A: Short horizon, short-term pressures and firm characteristics

N = 13,245	*Short Horizon*	*Short Horizon PrsTxt*	*Short Horizon QA*	*Long-term Investors*	*Earnings Guidance*	*Analyst Coverage*
Short Horizon	1.00					
Short Horizon PrsTxt	0.86	1.00				
Short Horizon QA	0.81	0.56	1.00			
Long-term Investors	−0.19	−0.02	−0.02	1.00		
Earnings Guidance	0.02	0.01	0.03	−0.07	1.00	
Analyst Coverage	0.10	0.08	0.10	−0.22	0.15	1.00
Stock-based Compensation	0.01	0.02	0.02	−0.11	0.17	0.08
CFO Volatility	0.16	0.14	0.13	−0.04	−0.05	0.00
Operating Cycle	0.11	0.06	0.15	0.06	−0.04	−0.06
Leverage	−0.15	−0.12	−0.16	−0.03	−0.02	−0.11
Liquidity	0.12	0.10	0.12	0.05	−0.08	0.02
ROE	−0.16	−0.15	−0.13	−0.01	0.09	−0.03
O-Score	0.03	0.04	−0.01	−0.09	−0.01	0.07
Market-to-Book	−0.02	−0.02	0.00	−0.11	0.03	0.03
Size	−0.27	−0.22	−0.24	−0.38	0.23	0.14

Table 4 continued

Panel A: Short horizon, short-term pressures and firm characteristics

N = 13,245	*Stock-based Compensation*	*CFO Volatility*	*Operating Cycle*	*Leverage*	*Liquidity*	*ROE*	*O-Score*	*Market-to-Book*	*Size*
Stock-based Compensation	1.00								
CFO Volatility	−0.02	1.00							
Operating Cycle	−0.02	−0.06	1.00						
Leverage	0.02	−0.13	−0.11	1.00					
Liquidity	−0.02	0.04	0.07	−0.28	1.00				
ROE	0.02	−0.21	0.03	0.02	−0.12	1.00			
O-Score	0.01	0.16	−0.06	0.01	0.05	−0.38	1.00		
Market-to-Book	0.03	0.03	−0.06	−0.09	0.01	0.04	−0.00	1.00	
Size	0.16	−0.26	0.02	0.15	−0.19	0.35	−0.12	0.10	1.00

Panel B: Short horizon and myopic behavior

N = 15,023	*Short Horizon*	*Short Horizon PrsTxt*	*Short Horizon QA*	*Discretionary Accruals*	*Earnings Surprises*	*Loss Avoidance*
Short Horizon	1.00					
Short Horizon PrsTxt	0.90	1.00				
Short Horizon QA	0.81	0.55	1.00			
Discretionary Accruals	0.07	0.05	0.08	1.00		
Earnings Surprises	0.01	−0.01	0.02	0.01	1.00	
Loss Avoidance	0.10	0.08	0.09	0.03	0.02	1.00
N = 4399						
Disc. R&D	−0.05	−0.05	−0.03			
Disc. Advertising	−0.11	−0.11	−0.08			

Variables are described in Appendix 2. The values of continuous variables are winsorized at 1 and 99 %

guidance (0.02) and analysts' coverage (0.10) and negatively related to the presence of long-term institutional investors (−0.19). In addition, short-term oriented disclosure is negatively related to ROE (−0.16), leverage (−0.15), market-to-book ratio (−0.02) and size (−0.27) and positively related to cash flow volatility (0.16), length of operating cycle (0.11), and distress score (0.03). Focusing on managerial myopia, our proxy for short-termism is positively related to discretionary accruals (0.07), the probability of reporting small profit (0.10), and just meeting or beating analysts' forecasts (0.01). Also, our different short-termism constructs are highly correlated with each other. The proxy based on the entire call is highly correlated with the one based on the presentation text (0.86) and the Q&A section of the conference call (0.81). Also, short-term oriented voluntary disclosures in the presentation text are highly correlated with short-term oriented disclosures in the Q&A section (0.56).

5.2 Empirical results

5.2.1 Sources of short-termism

We first test Model 1, i.e., whether our short-termism proxies are associated with other documented sources of myopic behavior, using an OLS regression specification.

Table 5 reports the results for the test on the sources of short-termism. In specification I, *Short Horizon* is the dependent variable. Consistent with our expectations, we find that a voluntary disclosure horizon with a short-term focus is positively related to stock-based compensation, earnings guidance, and analyst coverage, controlling for the company's financial performance. More specifically, an increase by one standard deviation in stock-based compensation, earnings guidance, and analyst coverage increases our proxy for short-termism by 0.02, 0.06, and 0.02, respectively, a magnitude that is equal to 2, 9, and 3 percent of the standard deviation of the short-termism measure. As discussed in Sect. 3, the positive association between short-termism and analyst coverage can be interpreted in different ways. Consistent with the results in He and Tian (2013), our result suggests that analyst coverage proxies for capital market pressure to maximize short-term performance. However, our result in terms of analyst coverage could mean that firms with better information environments talk more about the short term during conference calls but discuss long-term plans in other venues, such as analyst-sponsored conferences (Bushee et al. 2011).

Our proxy for short-termism is negatively correlated to long-term investor base. More specifically, an increase by one standard deviation in long-term investor base decreases our proxy for short-termism by 0.08 or 12 % of its standard deviation. In addition, larger companies and companies with higher ROE and more leverage have a more long-term oriented voluntary disclosure horizon. Importantly, these results do not imply a causal relation between capital market and internal pressures and short-termism but help to *validate* our conjecture that the time horizon of managers' voluntary disclosures captures determinants of myopia reported in previous studies. In addition, the results hold when we use as dependent variables the short-term oriented voluntary disclosures in the presentation (specification II) or Q&A section (specification III) of the conference call.

Table 5 Determinants of time horizon emphasized during conference calls

	Prediction	(I) *Short Horizon*	(II) *Short Horizon PrsTxt*	(III) *Short Horizon QA*
Long-term Investors	−	−0.301***	−0.309***	−0.305***
		(−7.38)	(−6.18)	(−7.24)
Earnings Guidance	+	0.059***	0.065***	0.045***
		(6.82)	(5.70)	(5.83)
Analyst Coverage	+	0.062***	0.061***	0.068***
		(7.58)	(6.16)	(7.77)
Stock-based Compensation	+	0.089***	0.063	0.095***
		(2.69)	(1.49)	(2.84)
CFO Volatility	+	0.373***	0.494***	0.247*
		(2.94)	(2.90)	(1.86)
Operating Cycle	−	0.024**	0.021	0.026***
		(2.29)	(1.49)	(2.55)
Leverage	?	−0.189***	−0.194***	−0.158***
		(−4.40)	(−3.80)	(−3.80)
Liquidity	−	−0.005	−0.007	−0.004
		(−0.65)	(−1.14)	(−0.81)
ROE	−	−0.142***	−0.182***	−0.148***
		(−5.48)	(−4.60)	(−4.20)
O-Score	+	0.001	0.002	−0.002**
		(0.67)	(1.00)	(−2.34)
Market-to-Book	−	−0.001	−0.003	−0.000
		(−0.93)	(−0.43)	(−0.13)
Size	−	−0.133***	−0.151***	−0.115***
		(−19.10)	(−16.79)	(−17.96)
Intercept		2.493***	2.489***	2.398***
		(32.78)	(25.40)	(32.23)
Industry and Year FE		Yes	Yes	Yes
Obs.		13,245	13,245	13,245
Adj.-R^2		28.33 %	23.09 %	24.95 %

This table reports the tests for the relation of short-termism with short-term pressures. The dependent variable in the first specification is the ratio of short-term oriented to long-term oriented keywords disclosed over the fiscal year, and in the second and third specification, the dependent variable is the ratio of short-term oriented to long-term oriented keywords disclosed in the presentation and Q&A section of conference calls, respectively. We use OLS regressions to estimate the models, and coefficient t-statistics are in parentheses. Cluster is at the firm level, and standard errors are corrected for heteroskedasticity. All values of the continuous variables are winsorized at 1 and 99 % level. Fixed effects for year and industry (two-digit SIC) are included. Variables are described in Appendix 2

***, **, * Significant at 1, 5, and 10 % level, two-tailed tests

5.2.2 Myopic behavior

After validating that our short-termism proxy reflects the capital market and internal pressures previously documented as sources of managerial myopia, we test whether a more short-term oriented voluntary disclosure horizon is revealing of managerial actions that are associated with myopia.

Panel A of Table 6 reports the results for the association between our proxy for short-termism and accounting earnings management. The dependent variables are performance matched discretionary accruals (specification I), small positive earnings surprise (specification II), and loss avoidance (specification III). In the first, fourth, and seventh columns, the coefficient on *Short Horizon* is positive and significant. That is, our proxy for short-termism is positively associated with discretionary accruals, the incidence of small positive earnings surprises, and loss avoidance, respectively. In terms of economic significance, an increase by one standard deviation in our proxy for short-termism increases discretionary accruals by 2 % of its standard deviation. Moreover, we find that an increase in our proxy for short-termism by one standard deviation is associated with a 1 and 0.4 % higher probability of posting a positive earnings surprise or just avoiding posting a loss, respectively (unconditional probabilities of 21 and 2 %, respectively). We reach similar conclusions when we estimate corporate time horizon when focusing on managers' language used in the presentation section of the call and the language used during the Q&A section (with the exception of *Short Horizon Prstxt* when the dependent variable is the probability of reporting small earnings surprises). All in all, the disclosure horizon reveals managerial actions associated with accounting earnings management to boost short-term earnings. The results hold after controlling for common economic determinants of firms' accruals and earnings surprises. Of note, firms with greater growth opportunities and less leverage also consistently report higher discretionary accruals and narrowly beat common earnings benchmarks, while firms with more transient investors are more likely to report small positive earnings. By and large, the control variables load in a way that is consistent with Matsumoto (2002).

In Panel B of Table 6, we replicate the tests on the relation between accounting earnings management and our proxy for short-termism by also controlling for well-documented sources of short-termism such as capital market and compensation pressures. We find that our proxy for short-termism has incremental predictive power for discretionary accruals and loss avoidance. Indeed, in the first and last three columns, the coefficients on *Short Horizon*, *Short Horizon PrsTxt*, and *Short Horizon QA* are positive and significant. That is, whether we measure short-termism over the entire call or separately between the presentation and the Q&A, we find that it is positively associated with discretionary accruals and loss avoidance. The magnitude of the effect appears to be unaffected by the inclusion of the other documented sources of myopia. In contrast, the incidence of small positive earnings surprises appears to be primarily related to analyst coverage and earnings guidance. This suggests that firms resort to guidance to walk down analysts to a beatable target. Overall, though, our proxy appears to be a measure of short-termism that

Table 6 The relation between earnings management and corporate time horizon in conference calls

Panel A: The relation between accruals earnings management and our proxy for short-termism

	(I) *Discretionary Accruals*			(II) *Small Positive Earnings Surprises*			(III) *Loss Avoidance*		
Short Horizon	**0.004****			**0.012****			**0.005*****		
	(**2.03**)			(**2.28**)			(**5.16**)		
Short Horizon Prstxt		**0.002****			**0.002**			**0.002*****	
		(**2.00**)			(**0.60**)			(**3.56**)	
Short Horizon QA			**0.005****			**0.016*****			**0.005*****
			(**2.33**)			(**2.95**)			(**4.96**)
CFO Volatility	0.034***	0.034***	0.034***	−0.144*	−0.139*	−0.143*	−0.014*	−0.014*	−0.015*
	(3.07)	(3.12)	(3.11)	(−1.90)	(−1.86)	(−1.87)	(−1.69)	(−1.67)	(−1.72)
Operating Cycle	−0.000	−0.000	−0.000	−0.005	−0.005	−0.005	0.002***	0.002***	0.002***
	(−0.07)	(−0.09)	(−0.07)	(−1.07)	(−1.05)	(−1.07)	(2.62)	(2.61)	(2.53)
Leverage	−0.017***	−0.018***	−0.018***	−0.077***	−0.080***	−0.077***	−0.024***	−0.026***	−0.024***
	(−2.99)	(−3.04)	(−3.00)	(−4.58)	(−4.73)	(−4.56)	(−5.35)	(−5.55)	(−5.28)
Liquidity	−0.001*	−0.001*	−0.001*	0.002	0.002	0.002	0.001***	0.001***	0.001***
	(−1.85)	(−1.85)	(−1.84)	(1.13)	(1.11)	(1.07)	(3.93)	(3.87)	(4.00)
ROE	0.002	0.001	0.001	0.095***	0.093***	0.094***	−0.002	−0.003	−0.003
	(0.28)	(0.23)	(0.27)	(6.05)	(5.93)	(5.97)	(−0.76)	(−0.96)	(−0.83)
O-Score	−0.000***	−0.000***	−0.000***	−0.002***	−0.002***	−0.002***	0.000	0.000	0.000
	(−2.82)	(−2.82)	(−2.77)	(−3.90)	(−3.89)	(−3.88)	(0.19)	(0.20)	(0.24)
Market-to-Book	0.001***	0.001***	0.001***	0.004***	0.004***	0.004***	0.001***	0.001***	0.001***
	(2.46)	(2.48)	(2.42)	(4.79)	(4.81)	(4.79)	(7.13)	(7.11)	(7.07)

Table 6 continued

Panel A: The relation between accruals earnings management and our proxy for short-termism

	(I) *Discretionary Accruals*			(II) *Small Positive Earnings Surprises*			(III) *Loss Avoidance*		
Size	−0.002*	−0.002**	−0.002*	0.014***	0.013***	0.014***	−0.002***	−0.002***	−0.002***
	(−1.84)	(−2.03)	(−1.88)	(5.50)	(5.14)	(5.59)	(−3.39)	(−3.87)	(−3.58)
Intercept	0.035***	0.040***	0.035***						
	(2.73)	(3.29)	(2.79)						
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	15,090	15,090	15,090	17,700	17,700	17,700	14,228	14,228	14,228
Adj.-R^2	9.11 %	9.03 %	8.68 %						
Pseudo-R^2				7.08 %	7.10 %	7.12 %	14.32 %	14.40 %	14.24 %

Panel B: The relation between accruals earnings management and our proxy for short-termism controlling for other proxies of short-term pressures

Short Horizon	**0.006****			**−0.005**			**0.006*****		
	(**2.31**)			(**−0.62**)			(**4.16**)		
Short Horizon Prstxt		**0.003***			**−0.007**			**0.002*****	
		(**1.93**)			(**−1.56**)			(**2.98**)	
Short Horizon QA			**0.005****			**0.002**			**0.005*****
			(**2.28**)			(**0.26**)			(**3.76**)
Long-term Investors	−0.002	−0.002	−0.002	0.000	−0.000	0.001	−0.005***	−0.005***	−0.005***
	(−1.19)	(−1.26)	(−1.22)	(0.08)	(−0.00)	(0.18)	(−3.57)	(−3.74)	(−3.75)
Earnings Guidance	−0.002	−0.002	−0.002	0.016***	0.016***	0.016***	−0.002*	−0.002*	−0.002*
	(−1.39)	(−1.34)	(−1.35)	(3.93)	(4.00)	(3.87)	(−1.86)	(−1.65)	(−1.62)
Analyst Coverage	−0.106***	−0.104***	−0.106***	0.365***	0.368***	0.361***	0.014*	0.018**	0.016*
	(−6.81)	(−6.72)	(−6.82)	(8.50)	(8.59)	(8.45)	(1.70)	(2.07)	(1.85)

Table 6 continued

Panel B: The relation between accruals earnings management and our proxy for short-termism controlling for other proxies of short-term pressures

Stock-based Compensation	−0.002	−0.002	−0.002	−0.013	−0.012	−0.013	0.001	0.001	0.000
	(−0.30)	(−0.27)	(−0.31)	(−0.61)	(−0.59)	(−0.64)	(0.11)	(0.16)	(0.08)
Firm Characteristics, Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	11,260	11,260	11,260	13,205	13,205	113,205	8965	8965	8965
Adj.-R^2	9.58 %	9.56 %	9.58 %						
Pseudo-R^2				7.91 %	7.90 %	7.82 %	15.36 %	14.79 %	15.10 %

This table reports the tests for the relation of short-termism with accruals earnings management. The dependent variable in the first specification is the absolute value of performance-matched discretionary accruals using the modified Jones model (Kothari et al. 2005). The dependent variable in the second specification is a binary variable that equals one if the company meets or beats analysts' forecast by one penny in the fiscal year and zero otherwise. The dependent variable in the third specification is a binary variable that equals one if the ratio of firm's earnings before taxes, interest, and amortization (EBITDA) over market capitalization ranges from zero to 0.01 and zero otherwise. In specification (I), we use OLS regressions to estimate the models, and coefficient t-statistics are in parentheses. In specifications (II) and (III), we use a probit model; marginal effects are reported and z-statistics are in parentheses. In Panel B, we further control for other proxies of short-term pressures reported in prior studies. Cluster is at the firm level, and standard errors are corrected for heteroskedasticity. All values of the continuous variables are winsorized at 1 and 99 % level. Fixed effects for year and industry (two-digit SIC) are included. Variables are described in Appendix 2

***, **, * Significant at 1, 5, and 10 % level, two-tailed tests. Coefficients of interest are in boldface type

incrementally captures capital market and incentive pressures giving rise to actions related to managerial myopia.

Panel A of Table 7 reports the results for the association between our proxy for short-termism and real activities management. In the first (last) two columns of Panel A, the dependent variable is *Discretionary R&D Expenses* (*Discretionary Advertising Expenses*). In all four columns, the coefficient on *Short Horizon* is negative and statistically significant ($p < 0.05$). That is, short-term oriented companies invest less in R&D and advertising, suggesting that these companies sacrifice investments with long-term pay-offs to maximize their current financial performance. Moreover, we find that short-term oriented companies are more likely to further decrease investments in advertising to avoid reporting losses (column three). This lends additional support to the interpretation of the association between short horizon and advertising expense management being driven by short-term capital market incentives.

Panel B of Table 7 reports real activities management where we estimate our proxy for short-termism using the presentation and Q&A section of conference calls separately. The results indicate that the presentation portion of the call drives the results. Indeed, the coefficient on *Short Horizon PrsTxt* is negative and significant ($p < 0.01$), both when the dependent variable is *Discretionary R&D* (columns 1 and 2) and *Discretionary Advertising* (columns 5 and 6). In contrast, the coefficients on *Short Horizon QA* are insignificant. This suggests that the time horizon of management's discussion during the uninterrupted part of the call reveals the investment horizon as captured by discretionary R&D and advertising expenses. However, analysts do not seem to follow up on the topic in a detectable fashion. Furthermore, the association between the horizon of the presentation and discretionary R&D is incrementally significant in firms facing capital market pressures around the zero-earnings threshold, as captured by the negative coefficient on *Short Horizon PrsTxt* × *Loss Avoidance* ($p < 0.10$) in column 1.

Panel C of Table 7 reports the results for the association between our proxy for short-termism and real activities management while controlling for other capital market pressures and monetary incentives. The negative and significant association between *Short Horizon* and real activities management is robust to the inclusion of those additional proxies in all four columns, and so is the incremental effect of loss avoidance on the association between short-termism and discretionary advertising expenses (column 3). The presence of short-term investors is also negatively and significantly associated with discretionary expenditures, consistent with Bushee (1998). While executives with greater stock-based monetary incentives report higher discretionary R&D on average, as per the positive and significant coefficient on *Stock-based Compensation* in column 1, the significantly negative coefficients on *Stock-based Compensation* × *Loss Avoidance* and *Stock-based Compensation* × *Small Positive Earnings Surprises* suggest that managers whose compensation is more sensitive to stock price are more likely to reduce R&D to meet expectations benchmarks. All in all, the main takeaway from Table 7 is that our short-termism proxy captures, to some extent, firms' propensity to cut R&D and advertising expenses opportunistically.

Table 7 The relation between real activities management and corporate time horizon in conference calls

Panel A: The relation between real activities management and our proxy for short-termism

	(I) *Discretionary R&D Expenses*		(II) *Discretionary Advertising Expenses*	
Short Horizon	**−0.013****	**−0.010****	**−0.005****	**−0.005****
	(−2.19)	**(−1.98)**	**(−2.27)**	**(−2.37)**
Loss Avoidance	−0.047		0.384*	
	(−0.12)		(1.90)	
Short Horizon × Loss Avoidance	**0.015**		**−0.349***	
	(0.04)		**(−1.89)**	
Small Positive Earnings Surprises		−0.006		0.003
		(−0.58)		(0.97)
Short Horizon × Small Positive Earnings Surprises		**0.008**		**−0.003**
		(0.40)		**(−0.50)**
CFO Volatility	0.232***	0.255***	−0.012	−0.002
	(5.60)	(3.72)	(−0.86)	(−0.18)
Operating Cycle	−0.018***	−0.017***	−0.006***	−0.006***
	(−3.65)	(−3.61)	(−2.45)	(−2.44)
Leverage	−0.053***	−0.050***	−0.006	−0.006
	(−3.60)	(−3.33)	(−0.87)	(−0.74)
Liquidity	−0.006***	−0.006***	−0.001*	−0.001**
	(−3.80)	(−4.29)	(−1.84)	(−2.04)
ROE	−0.030*	−0.032*	0.012**	0.016***
	(−1.84)	(−1.86)	(2.20)	(2.66)

Table 7 continued

Panel A: The relation between real activities management and our proxy for short-termism

	(I) *Discretionary R&D Expenses*		(II) *Discretionary Advertising Expenses*	
O-Score	0.000	0.000	−0.000	−0.000
	(0.63)	(0.59)	(−0.73)	(−0.33)
Market-to-Book	0.004***	0.004***	0.000	0.000
	(3.67)	(3.57)	(0.84)	(0.52)
Size	−0.011***	−0.010***	−0.000	−0.001
	(−5.01)	(−4.38)	(−0.17)	(−0.97)
Intercept	0.127**	0.142***	0.041***	0.058***
	(2.29)	(2.59)	(2.41)	(4.04)
Industry and Year FE	Yes	Yes	Yes	Yes
Obs.	9923	9871	7024	6993
Adj.-R^2	8.92 %	9.09 %	16.48 %	16.58 %

Panel B: The relation between real activities management and our proxy for short-termism measured in the presentation and Q&A transcript text

	(I) *Discretionary R&D Expenses*				(II) *Discretionary Advertising Expenses*			
Short Horizon PrsTxt	**−0.016****	**−0.016****			**−0.005****	**−0.005****		
	(−3.67)	**(−3.54)**			**(−3.05)**	**(−3.03)**		
Short Horizon QA			**0.021**	**0.001**			**−0.001**	**−0.001**
			(1.55)	**(0.11)**			**(−0.43)**	**(−0.40)**
Loss Avoidance	−0.059		−0.045		0.005		0.003	
	(−1.72)		(−1.46)		(0.50)		(0.25)	

Table 7 continued

Panel B: The relation between real activities management and our proxy for short-termism measured in the presentation and Q&A transcript text

	(I) *Discretionary R&D Expenses*				(II) *Discretionary Advertising Expenses*			
Short Horizon PrsTxt × Loss Avoidance	**−0.054***				**−0.006**			
	(−1.84)				**(−0.71)**			
Short Horizon QA × Loss Avoidance			**1.263**				**−0.002**	
			(1.57)				**(−0.17)**	
Small Positive Earnings Surprises		−0.007		−0.007		0.004		0.004
		(−0.74)		(−0.84)		(1.48)		(1.52)
Short Horizon PrsTxt × Small Positive Earnings Surprises		**0.000**				**0.000**		
		(0.01)				**(0.13)**		
Short Horizon QA × Small Positive Earnings Surprises				**−0.016**				**−0.001**
				(−0.65)				**(−0.18)**
Firm Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9923	9871	9924	9871	7024	6993	7024	6993
Adj.-R^2	9.22 %	9.16 %	8.90 %	9.05 %	16.81 %	16.56 %	16.63 %	16.31 %

Panel C: The relation between real earnings management and corporate time horizon in conference calls controlling for other for other proxies of short-term pressures

	(I) *Discretionary R&D Expenses*		(II) *Discretionary Advertising Expenses*	
Short Horizon	**−0.018*** **	**−0.017*** **	**−0.007*** **	**−0.006** **
	(−2.70)	**(−2.55)**	**(−2.59)**	**(−2.10)**
Long-term Investors	**−0.013*** **	**−0.012*** **	**−0.003***	**−0.003***
	(−3.57)	**(−3.25)**	**(−1.82)**	**(−1.79)**

Table 7 continued

Panel C: The relation between real earnings management and corporate time horizon in conference calls controlling for other for other proxies of short-term pressures

	(I) *Discretionary R&D Expenses*		(II) *Discretionary Advertising Expenses*	
Earnings Guidance	**0.000**	**−0.000**	**−0.000**	**0.000**
	(**0.08**)	(**0.01**)	(**−0.28**)	(**0.07**)
Analyst Coverage	**−0.031**	**−0.039**	**0.015**	**0.013**
	(**−0.84**)	(**−1.06**)	(**0.94**)	(**0.79**)
Stock-based Compensation	**0.032***	**0.024**	**−0.005**	**−0.006**
	(**1.70**)	(**1.28**)	(**−0.70**)	(**−0.74**)
Loss Avoidance	−0.155		0.431*	
	(−0.37)		(1.85)	
Short Horizon × Loss Avoidance	**0.091**		**−0.396***	
	(**0.24**)		(**−1.85**)	
Long-term Investors × Loss Avoidance	**−0.022**		**−0.012**	
	(**−0.84**)		(**−0.84**)	
Earnings Guidance × Loss Avoidance	**0.144*****		**−0.002**	
	(**3.99**)		(**−0.27**)	
Analyst Coverage × Loss Avoidance	**−0.144**		**−0.001**	
	(**−0.54**)		(**−0.01**)	
Stock-based Compensation × Loss Avoidance	**−0.420****		**0.007**	
	(**−2.32**)		(**0.08**)	
Small Positive Earnings Surprises		−0.005		0.019*
		(−0.48)		(1.87)
Short Horizon × Earnings Surprises		**0.20**		**−0.010**
		(**0.40**)		(**−1.38**)

Table 7 continued

Panel C: The relation between real earnings management and corporate time horizon in conference calls controlling for other for other proxies of short-term pressures

	(I) *Discretionary R&D Expenses*		(II) *Discretionary Advertising Expenses*	
Long-term Investors × Earnings Surprises		**−0.003**		**−0.000**
		(−0.41)		**(−0.17)**
Earnings Guidance × Earnings Surprises		**0.001**		**−0.004***
		(0.15)		**(−1.60)**
Analyst Coverage × Earnings Surprises		**−0.033**		**−0.019**
		(−0.33)		**(−0.62)**
Stock-based Compensation × Earnings Surprises		**−0.078***		**0.007**
		(−1.63)		**(0.56)**
Firm characteristics	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes
Obs.	7515	7502	5393	5386
Adj.-R^2	10.34 %	10.16 %	16.94 %	16.72 %

This table reports the tests for the relation of short-termism with real earnings management. The dependent variables in Specifications (I) and (II) are *Discretionary R&D Expenses* and *Discretionary Advertising Expenses* based on the discretionary expenses model in Roychowdhury (2006). In Panel B, we estimate our proxy for disclosure horizon using the presentation and the Q&A section of the earnings calls separately. In Panel C, we further control for other proxies for short-term pressures, such as capital market pressures and monetary incentives. We use OLS regressions to estimate the models, and coefficient t-statistics are in parentheses. Cluster is at the firm level, and standard errors are corrected for heteroskedasticity. All values of the continuous variables are winsorized at 1 and 99 % level. Fixed effects for year and industry (two-digit SIC) are included. Variables are described in Appendix 2

***, **, * Significant at 1, 5, and 10 % level, two-tailed tests. Coefficients of interest are in boldface type

5.3 Additional analyses

5.3.1 Other linguistic measures

One of our central assumptions is that we construct a unique proxy for corporate moral hazard related to managers engaging in earnings or real activities management to maximize current financial performance. However, past studies provide widely established proxies based on content analysis for managerial moral hazard. Thus a natural question that arises is whether our proxy for short-termism adds to these measures or captures a different dimension of managerial moral hazard.

We attempt to address this concern by employing measures of tone (Loughran and McDonald 2011; Huang et al. 2014) and complexity (Li 2008; Bushee et al. 2014). While the time horizon measure we construct here differs conceptually from those measures, we test whether it empirically captures a different dimension. However, we remain agnostic ex ante about whether our short-termism proxy is positively or negatively correlated with linguistic tone, complexity, and the use of forward-looking statements, for lack of theoretical guidance as to how those variables should co-move. Consistent with the aforementioned studies, we (1) count positive and negative words in conference calls using Loughran and McDonald's (2011) dictionary and use the residual from a regression of tone on firm characteristics following Huang et al. (2014) to derive abnormal tone (*Abnormal Positive Tone*), and (2) we use the Fog Index (*FOG*) to measure linguistic complexity (Li 2008). We measure *FOG* only based on managers' presentation and answers during the Q&A, as Bushee et al. (2014) find that the *FOG* of analysts' questions has opposite implications for capital market reactions to calls.

Relatedly, we construct a measure of the propensity to discuss the future to ensure that our measure is not simply capturing a firm's willingness to discuss future outlook. Rather, our measure captures discussions of the near term versus the long term. We construct a measure of the propensity to discuss the future using the vocabulary of forward-looking words documented by Bozanic et al. (2013). Our proxy is defined as the ratio of total number of forward-looking words in earnings conference call transcripts over a year to the number of words in the conference calls over the same period (*Forward-looking Statements*).

Results are reported in Table 8. The determinants model in Panel A suggests that firms scoring high on the short-term horizon metric also have less positive tone and use more complex language. This is consistent with a variety of interpretations, which depend—among other factors—on the extent to which the linguistic measures capture opportunism versus normal economic factors. For example, firms emphasizing the short term are more likely to try to explain poor current performance (hence the more negative tone), and they use complicated language in trying to do so, as a host of factors might be causing that performance. Moreover, we find no statistically significant relationship between our proxy for short-termism and manager's propensity to discuss the future. Thus our proxy seems not strictly related to previously used variables of managers' moral hazard and forward-looking

Table 8 The relation between managerial myopia and corporate time horizon in conference calls controlling for other linguistic measures

Panel A: Determinants of time horizon emphasized during conference calls		
	Prediction	*Short Horizon*
Abnormal Positive Tone	?	−18.399***
		(−10.96)
FOG	?	0.023***
		(3.12)
Forward-looking Statements	?	3.158
		(1.39)
Long-term Investors	−	−0.306***
		(−7.92)
Earnings Guidance	+	0.058***
		(7.07)
Analyst Coverage	+	0.064***
		(7.51)
Stock-based Compensation	+	0.098***
		(3.06)
CFO Volatility	+	0.378***
		(2.94)
Operating Cycle	−	0.020**
		(1.97)
Leverage	?	−0.236***
		(−6.20)
Liquidity	−	−0.003
		(−0.63)
ROE	−	−0.124***
		(−3.99)
O-Score	+	−0.000
		(−0.06)
Market-to-Book	−	0.001
		(0.69)
Size	−	−0.124***
		(−18.07)
Intercept		1.383
		(10.73)
Industry and Year FE		YES
Obs.		13,245
Adj.-R^2		39.97 %

Table 8 continued

Panel B: The relation between accruals earnings management and corporate time horizon in conference calls

	(I) *Discretionary Accruals*	(II) *Small Positive Earnings Surprises*	(III) *Loss Avoidance*
Short Horizon	**0.004****	**0.017*****	**0.005*****
	(**2.08**)	(**2.93**)	(**5.20**)
Abnormal Positive Tone	**0.019**	**0.908*****	**−0.107**
	(**0.06**)	(**6.15**)	(**−0.64**)
FOG	**0.096****	**−0.012*****	**0.001****
	(**2.04**)	(**−3.56**)	(**2.00**)
Forward-looking Statements	**0.814*****	**0.166**	**0.614*****
	(**2.48**)	(**0.17**)	(**3.44**)
CFO Volatility	0.032***	−0.134*	−0.015*
	(2.94)	(−1.83)	(−1.86)
Operating Cycle	−0.000	−0.004	0.002***
	(−0.01)	(−0.98)	(2.66)
Leverage	−0.016***	−0.074***	−0.023***
	(−2.75)	(−4.35)	(−5.17)
Liquidity	−0.001**	0.002	0.001***
	(−2.00)	(1.47)	(3.84)
ROE	0.002	0.090***	−0.001
	(0.32)	(5.72)	(−0.42)
O-Score	−0.000***	−0.002***	0.000
	(−2.90)	(−3.91)	(0.09)
Market-to-Book	0.001***	0.004***	0.001***
	(2.49)	(5.18)	(7.07)
Size	−0.001	0.014***	−0.002***
	(−1.09)	(5.41)	(−3.25)
Intercept	0.001		
	(0.04)		
Industry and Year FE	Yes	Yes	Yes
Obs.	15,090	17,700	14,228
Adj.-R^2	9.52 %		
Pseudo-R^2		7.38 %	15.07 %

Table 8 continued

Panel C: The relation between real earnings management and corporate time horizon in conference calls controlling for other linguistic proxies

	(I) *Discretionary R&D Expenses*		(II) *Discretionary Advertising Expenses*	
Short Horizon	**−0.011***	**−0.013****	**−0.003***	**−0.004**
	(−1.84)	**(−2.01)**	**(−1.63)**	**(−1.56)**
Abnormal Positive Tone	**1.818*****	**1.596****	**1.235*****	**1.240*****
	(2.61)	**(2.24)**	**(3.84)**	**(3.76)**
FOG	**0.125**	**0.006***	**−0.107***	**−0.001**
	(0.84)	**(1.63)**	**(−1.63)**	**(−0.50)**
Forward-looking Statements	**−2.657*****	**−2.572*****	**0.159**	**0.041**
	(−2.61)	**(−2.53)**	**(0.45)**	**(0.12)**
Loss Avoidance	0.041		0.347*	
	(0.09)		(1.69)	
Short Horizon × Loss Avoidance	**−0.059**		**−0.310***	
	(−0.15)		**(−1.64)**	
Abnormal Positive Tone × Loss Avoidance	**0.597**		**3.919**	
	(0.11)		**(1.31)**	
FOG × Loss Avoidance	**−0.032**		**−0.021****	
	(−1.32)		**(−2.34)**	
Forward-looking statements × Loss Avoidance	**4.948**		**0.110**	
	(0.49)		**(0.06)**	
Small Positive Earnings Surprises		−0.024		0.005
		(−1.01)		(0.73)
Short Horizon × Small Positive Earnings Surprises		**0.011**		**−0.001**
		(0.68)		**(−0.24)**
Abnormal Positive Tone × Small Positive Earnings Surprises		**2.164**		**−0.451**
		(1.20)		**(−0.89)**
FOG × Small Positive Earnings Surprises		**−0.007**		**0.001**
		(−0.99)		**(0.38)**
Forward-looking Statements × Small Positive Earnings Surprises		**−3.349**		**−0.763**
		(−1.34)		**(−1.32)**

Table 8 continued

Panel C: The relation between real earnings management and corporate time horizon in conference calls controlling for other linguistic proxies

	(I) *Discretionary R&D Expenses*		(II) *Discretionary Advertising Expenses*	
Firm characteristics	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes
Obs.	9923	9871	7024	6993
Adj.-R^2	9.22 %	9.25 %	17.22 %	17.25 %

This table reports the tests of the analysis that corroborates whether alternative linguistic measures relate to our proxy for short-termism, and whether our primary results are robust after controlling for these linguistic measures that proxy for (1) managers' moral hazard and (2) corporate time horizon. The linguistic proxies for managerial moral hazard are (1) *Abnormal Positive Tone*, which captures the excessive positive tone in conference calls based on Huang et al. (2014), and (2) *FOG*, which captures the complexity of disclosure in conference calls based on Li (2008) and Bushee et al. (2014). The linguistic proxy for corporate time horizon is the number of forward looking keywords based on Bozanic et al. (2013) to total number of words in conference calls (*Forward-looking statements*)

Panel A of this table reports the determinant model for our proxy of short-termism. We use OLS regressions to estimate the models, and coefficient t-statistics are in parentheses. Panel B of this table reports the results of the tests on the relation between our proxy for short-termism and the other linguistic measures and accrual earnings management. The dependent variable in the first specification is performance-matched discretionary accruals (Kothari et al., 2005). The dependent variable in the second specification is a binary variable that equals one if the company meets or beats analysts' forecast by one penny in the fiscal year and zero otherwise. The dependent variable in the third specification is a binary variable that equals one if the ratio of firm's earnings before taxes, interest, and amortization (EBITDA) over market capitalization ranges from zero to 0.01 and zero otherwise. In specification (I), we use OLS regressions to estimate the models, and coefficient t-statistics are in parentheses. In specifications (II) and (III), we use a probit model; marginal effects are reported, and z-statistics are in parentheses. Panel C of this table reports the results of the tests on the relation between our proxy for short-termism and the other linguistic measures and real activities management. The dependent variables in Specifications (I) and (II) are *Discretionary R&D Expenses* and *Discretionary Advertising Expenses* based on the discretionary expenses model in Roychowdhury (2006). We use OLS regressions to estimate the models, and coefficient t-statistics are in parentheses

Cluster is at the firm level, and standard errors are corrected for heteroskedasticity. All values of the continuous variables are winsorized at 1 % and 99 % level. Fixed effects for year and industry (two-digit SIC) are included. Variables are described in Appendix 2

***, **, * Significant at 1, 5, and 10 % level, two-tailed tests. Coefficients of interest are in boldface type

disclosures. More importantly, the statistical and economic significance of the association between our short-termism proxy and sources of capital market pressure remains unaffected by the inclusion of those three other linguistic proxies for managerial incentives. However, note that the adjusted R^2 goes from about 28 % in column 1 of Table 5 to 40 % in Panel A of Table 8. This indicates that other linguistic measures have significant incremental explanatory power for short-termism, and empirical examinations of any of those constructs should probably control for the others. In Panel B and C of Table 8, we test whether our findings for a significant relation between accrual earnings and real activity management and short-termism holds after controlling for the other linguistic proxies. Indeed, controlling for these other measures leaves the relation between the short-termism

measure and myopic behavior unchanged in Panels B and C for accruals and real earnings management, respectively.

5.3.2 Future performance

Thus far, the results suggest that short-term disclosure horizon is associated with documented sources of managerial myopia, and accrual and real earnings management. While the earnings management results suggest that short-term oriented firms may engage in value-destroying activities such as decreasing R&D and advertising to meet short-term benchmarks, the fact that their investor and analyst clienteles are also short-term oriented may simply reflect an equilibrium where all parties find the right match in terms of horizon. We examine the association between short-termism and future performance to test whether our proxy for short-termism captures, in fact, value-destroying behavior. We note that value destruction would not be the result of just the actions we document in the earnings management tests. Rather, the earnings management tests suggest that managers in firms that score high on our short-termism measure are willing to engage in a set of actions that maximize short-term reported performance, potentially at the expense of long-term value.

To test whether our proxy for short-termism predicts future accounting performance, we use an OLS model where the dependent variable is return on equity (*ROE*) 1 and 2 years ahead, controlling for current year's *Short Horizon* and firm's ROE. Table 9 reports the results for the tests of the association between our short-termism proxy and future accounting performance (*ROE*) over the next 2 years. The significantly negative coefficient on *Short Horizon* is consistent with short-termism being associated with lower future profitability, controlling for current profitability and companies' underlying fundamentals. More specifically, an increase of one standard deviation in our proxy for short-termism corresponds with a decrease in next-year's return on equity by 1 %, controlling for current accounting performance. This result also holds for 2 years in the future. Of course, to establish a (causal) link between short-termism and future performance would warrant more exhaustive conceptual and empirical analyses. However, we hereby provide some preliminary evidence suggestive of a negative association.

5.3.3 Other robustness tests

We conduct a series of robustness tests (untabulated), none of which affects our conclusions. First, we exclude banks (two-digit SIC: 60–64) and firms in regulated industries (two-digit SIC: 40–45) from our sample, because those firms may be subject to regulatory constraints that affect the horizon of their communication. We estimate industry fixed effects using Fama–French 48 industry classification in our regressions.

In addition, to alleviate the concern that our proxy for short-termism reflects extreme disclosure choices by managers, we also calculate the ratio of short-minus

Table 9 The relation between future accounting performance and corporate time horizon in conference calls

	(I) ROE_{t+1}			(II) ROE_{t+2}		
Short Horizon $_t$	**−0.012*****			**−0.007*****		
	(**−4.61**)			(**−2.27**)		
Short Horizon PrsTxt $_t$		**−0.007*****			**−0.003**	
		(**−2.96**)			(**−1.25**)	
Short Horizon QA $_t$			**−0.011*****			**−0.007*****
			(**−3.79**)			(**−2.47**)
ROE_t	0.457***	0.457***	0.456***	0.246***	0.217***	0.216***
	(38.09)	(28.19)	(28.14)	(17.68)	(17.73)	(17.67)
CFO Volatility $_t$	−0.017	−0.042	−0.041	−0.046	−0.047*	−0.046
	(−0.56)	(−1.33)	(−1.32)	(−1.59)	(−1.62)	(−1.59)
Operating Cycle $_t$	0.003	0.002	0.002	0.003	0.003	0.003
	(0.96)	(0.88)	(0.98)	(1.13)	(1.10)	(1.16)
Leverage $_t$	0.081***	0.024***	0.023***	0.024**	0.025***	0.024***
	(6.43)	(2.47)	(2.39)	(2.33)	(2.42)	(2.33)
Liquidity $_t$	−0.010***	−0.007***	−0.007***	−0.009***	−0.009***	−0.009***
	(−10.31)	(−7.36)	(−7.32)	(−7.95)	(−7.96)	(−7.94)
O-score $_t$	−0.001***	−0.003***	−0.003***	−0.003***	−0.003***	−0.003***
	(−5.24)	(−11.14)	(−11.21)	(−9.30)	(−9.30)	(−9.35)
Market-to-Book $_t$	0.003***	0.006***	0.006***	0.005***	0.005***	0.005***
	(2.37)	(6.87)	(6.70)	(6.19)	(6.18)	(6.21)
Size $_t$	0.014***	0.020***	0.019***	0.022***	0.023***	0.022***
	(10.50)	(15.67)	(15.40)	(16.94)	(17.36)	(16.98)
Intercept	−0.260***	−0.284***	−0.259***	0.004	−0.012	0.008
	(−12.02)	(−14.04)	(−11.55)	(0.19)	(−0.61)	(0.35)
Industry and Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	17,595	17,595	17,595	17,426	17,426	17,426
Adj.-R^2	33.55 %	33.52 %	33.56 %	24.76 %	24.65 %	24.76 %

This table reports the relation between short-termism and future accounting performance. The dependent variables in specifications (I) and (II) are net income to shareholders' equity (*ROE*) 1 and 2 years ahead, respectively. We use OLS regressions to estimate the models, and coefficient t-statistics are in parentheses. Cluster is at the firm level, and standard errors are corrected for heteroskedasticity. All values are winsorized at 1 and 99 % level. Fixed effects for year and industry (two-digit SIC) are included. Variables are described in Appendix 2

***, **, * Significant at 1, 5, and 10 % level, two-tailed tests. Coefficients of interest are in boldface type

long-term oriented keywords to the total number of short- and long-term oriented keywords.[8]

Second, we calculate long-term investor base using dedicated minus transient investors as our proxy, divided by total shares. Third, we eliminate analysts'

[8] We deflate with the total number of short- and long-term oriented keywords rather the total number of words in conference calls so that our proxy is not driven by company size (i.e., conference calls of larger companies are longer).

questions from the Q&A discussion to avoid the concern that our results are driven by the specific questions analysts ask. However, managers seem to use similar disclosure horizon to analysts. The correlation between the short-termism measure from the presentation text and the short-termism measure derived from analyst questions is 0.61. Thus we rule out the possibility that analysts are focusing on the long-term and managers replying by disclosing short-term information, or vice versa.[9] Fourth, we exclude the keyword "quarter" because it is by far the most frequently used keyword in the conference calls and the least-short term oriented, among all the short-term keywords, according to the survey we conducted. The only change is that now earnings guidance and stock-based compensation are not anymore significantly associated with the short-termism measure. All other associations with myopia and future performance hold as before.

Should the time horizon of corporate disclosures be influenced by internal or external investor relations counsel, we also re-run our tests by controlling for the number of investor relations firms hired by a company during the year, as per Solomon (2012). Solomon (2012) shows that companies hire IR firms to increase their media coverage and increase short-term stock prices. Hence it is plausible that IR firms may increase the short-term focus of firm disclosures. Alternatively, IR firms may induce greater long-term focus if long-term information is more likely to attract media attention and generally improve the information environment of the firm (Bushee and Miller 2012). While the effect of IR firms on short-termism, if any, is unclear ex ante, we check that this additional facet of firms' information environment does not affect our inferences drawn from other similar variables (such as firm size, analyst coverage, or earnings guidance). Untabulated results indicate a significantly negative correlation between short-termism and IR firm hiring. In the regression model, the coefficient on IR firm is significantly negative when we measure short-termism during the presentation but not the Q&A portion of the call. This suggests that IR advisors script firms' conference call presentations to talk more about the long-term but analysts do not follow up on that. This is consistent with Solomon (2012), who finds that IR firms fail to influence market perceptions of earnings news.

Lastly, as emphasized throughout the paper, we document an association between our short-termism proxy and various other symptoms of managerial myopia.

[9] Prior studies have explored the role of leadership and different managerial styles in influencing firms' investment strategies (Bertrand and Schoar 2003). However, organizational inertia and path dependence are likely to limit managers' effectiveness in determining or changing firms' investment horizons (Liebowitz and Margolis 1995). To investigate the role of individual managers in inducing short-termism, we identify companies in our sample that experience a CEO turnover in 2002–2008, using data on corporate boards from the Corporate Library database. We choose CEOs as the unit of analysis because CEOs set the tone in an organization and are responsible for the overall performance of the company. We identify 12 instances of CEO turnover in our sample where the newly hired CEO also comes from a firm with complete earnings conference call disclosure data. We track the differences (distance) in the short-termism that these 12 pairs of companies exhibit before and after the CEO move. In untabulated results, we find that the correlation between the short-termism that a CEO's past and current company exhibit significantly increases after the turnover (0.11 vs. 0.36 before and after CEO's move). The average short-termism distance of past and current CEO's employer is 0.28 before the turnover and 0.20 afterward. However, the difference of the means is not statistically significant (t-stat = 1.59), potentially due to the small number of observations.

Naturally, it would be interesting to establish causality, one way or the other. While doing so is beyond the scope of this paper, we perform lead-lag analyses of our short-termism proxy vis-à-vis (1) investor base and (2) earnings management. Untabulated results indicate that both lagged investor base leads short horizon and lagged short horizon leads investor base, 1–3 years out. Furthermore, we find that lagged short-termism leads future earnings management, also over three years, although with diminishing economic significance over time.[10]

6 Conclusion

The debate over short-termism has attracted considerable attention over the past few years, and critics argue that short-termism has dominated investment decisions at the expense of long-term value creation. We explore whether managers' voluntary disclosures reveal their opportunism. To address this question, we use conference call transcripts as a channel of voluntary disclosure to assess the horizon over which firms communicate with investors. We create a measure of short-termism based on the ratio of keywords referring to the short-term scaled by keywords referring to the long-term.

First, we show that our proxy is positively associated with previously identified sources and symptoms of managerial myopia. We find that firms with more equity-based executive compensation, transient investors, high analyst coverage and those that issue earnings guidance tend to have a relatively more short-term disclosure horizon in their conference calls. Moreover, our short-termism proxy is positively associated with accruals and real earnings management to meet short-term capital-market related goals, after controlling for other proxies for short-termism. This indicates that we do not simply capture disclosure horizon driven by economic forces and business model choices but also underlying managerial actions geared towards myopic performance maximization. In addition, our results are robust to controlling for other widely used linguistic proxies for corporate time horizon and managerial moral hazard costs. Lastly, we find that short-term oriented companies have lower accounting performance in the future, after holding constant current accounting performance, suggesting that the voluntary disclosure horizon is revealing of future earnings. Hence, these results confirm the analytical models' consensus that managerial short-termism decreases future performance.

Our paper has limitations that are opportunities for future research. For example, we cannot systematically investigate the role of individual executives in short-termism. How large is the effect of individual executives, and how fast can new executives change short-termism? Future research may examine the role of managers in shaping or changing corporate myopia. Relatedly, what is the role of

[10] In untabulated analyses, we also test whether our short horizon proxy is associated with the probability of a firm being subject to an AAER. We find a significantly positive coefficient on *Short Horizon*, when the dependent variable is the probability of an AAER being released in the next year, after controlling for other determinants of short-termism. This lends incremental support to the idea that short-termism is associated with opportunism. We acknowledge, though, that this test is rudimentary and caution against inferring too much from this result alone.

top executives other than the CEO in influencing short-termism? Moreover, the decision to hold an earnings conference call is a voluntary disclosure choice, and firms use other channels (e.g., industry conferences). Do corporate disclosures vary systematically across different disclosure channels, and if so, why? We leave these questions for future research.

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Appendix 1

See Table 10.

Table 10 List of words referring to time horizon

Short-term horizon	Score	Long-term horizon	Score
Day(-s or daily)	1.26	Long-term (or long term)	4.75
Short-run (or short run)	1.52	Long-run (or long run)	4.34
Short-term (or short term)	1.59	Year(-s or annual(-ly))	3.95
Week(-s or -ly)	1.63	Look(ing) ahead	3.71
Month(-s or -ly)	2.21	Outlook	3.68
Quarter(-s or -ly)	2.52		
Neutral words			Score
Latter half (of the year)			3.03
Look(ing) forward			3.19
Go(ing) forward			3.25
Expect			2.98
Trend			3.01
Anticipate			2.82
Intend			2.83

Appendix 2

See Table 11.

Table 11 Variable definitions

Variables	Definition
Corporate time horizon	
Short Horizon	Ratio of short-term oriented to long-term oriented keywords disclosed in conference calls (see Appendix 1)
Short Horizon PrsTxt	Ratio of short-term oriented to long-term oriented keywords disclosed in presentations of conference calls (see Appendix 1)
Short Horizon QA	Ratio of short-term oriented to long-term oriented keywords disclosed in the QA section of conference calls (see Appendix 1)
Short-term pressures	
Earnings Guidance	Number of quarters per year that the firm issues earnings guidance; zero if the company does not issue guidance or if item is missing from First Call/S&P 1500
Stock-based Compensation	The residual from regressing top five executive average stock- and option-based compensation on market capitalization, market-to-book ratio, and year and industry fixed effects (Chen et al. 2011)
Long-term Investors	Dedicated and quasi-index minus transient investors' holdings based on Bushee's (1998) classification of institutional investors, divided by total shares
Analyst Coverage	The natural logarithm of sell-side analysts following the company, divided by the natural logarithm of the company's total assets
Managerial myopia	
Discretionary Accruals	The absolute value of performance-matched discretionary accruals derived from the modified Jones model (Kothari et al. 2005)
Small Positive Earnings Surprises	Binary variable that equals one if a firm reports one cent higher earnings per share than the consensus forecast and zero otherwise
Loss Avoidance	Binary variable that equals one if the ratio of firm's earnings before taxes, interest, and amortization (EBITDA) over market capitalization ranges from zero to 0.01 and zero otherwise
Discretionary R&D Expenses	We run the following regression by industry (two-digit SIC) and year: $R\&D_t/\text{Total Assets}_{t-1} = \alpha + \beta_1 \times (1/\text{Total Assets}_{t-1}) + \beta_2 \times (\text{Sales}_{t-1}/\text{Total Assets}_{t-1})$. Discretionary R&D expenses is the difference between the actual R&D expenses to Total Assets_{t-1} and the "normalized" value of R&D expenses using the parameters of the regression above
Discretionary Advertising Expenses	We run the following regression by industry (two-digit SIC) and year: $\text{Advertising}_t/\text{Total Assets}_{t-1} = \alpha + \beta_1 \times (1/\text{Total Assets}_{t-1}) + \beta_2 \times (\text{Sales}_{t-1}/\text{Total Assets}_{t-1})$. Discretionary Advertising Expenses is the difference between the actual advertising expenses to Total Assets_{t-1} and the "normalized" value of advertising expenses using the parameters of the regression above
Performance	
ROE	Net income to book value of equity
CFO Volatility	Five-year standard deviation of cash flows from operations deflated by total assets

Table 11 continued

Variables	Definition
Operating Cycle	Natural logarithm of (Inventory/COGS) × 360 + (Accounts Receivable/Sales) × 360
O-score	Ohlson's (1980) score: O-Score = −1.32 − 0.407 × log(total assets/GNP price-level index) + 6.03 × (total liabilities/total assets) − 1.43 × (working capital/total assets) + 0.076 × (current liabilities/current assets) − 1.72 × (1 if total liabilities > total assets, else 0) − 2.37 × (net income/total assets) − 1.83 × (funds from operations/total liabilities) + 0.285 × (1 if net loss for the last 2 years, else 0) − 0.521 × (net income − lag net income)/(|net income| + |lag net income|)
Leverage	Total debt to total assets
Liquidity	Current assets deflated by current liabilities
Market-to-Book	Market price deflated by book value per share
Size	Natural logarithm of market capitalization (shares outstanding × stock price)

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