How Managers Communicate about Capital Budgeting to Investors

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ABSTRACT

We create a lexicon of 45 capital budgeting terms and document manager language usage in 96,568 earnings conference calls during 2010-2020. Managers often use technical language like *cash flow, free cash flow, operating income, return on investment,* and *return on capital* during conference calls. We substantiate the survey evidence of Graham and Harvey (2001) by demonstrating that managers actually use concepts like *payback period* and *ROI* in conference calls. Capital budgeting counts are associated with larger capitalization, higher fixed assets, and lower R&D intensity firms. Capital budgeting term usage and the number of words spoken by managers peak in the first quarter of the calendar year. This finding illustrates the information density of annual versus quarterly communications, since the majority of the firms have December fiscal year ends. We also document how manager's word selections vary on the basis of whether or not net income is positive. If the firm has positive net income, managers use phrases like *cash flow, free cash flow, operating income,* and *operating profit* significantly more often than if net income is negative. In contrast, when net income is negative, managers have significantly higher counts of the aggressive non-GAAP phrase *EBITDA*. As Graham and Harvey (2001) emphasized, it is difficult to measure the forms and extent of formal capital budgeting techniques that are used in a firm since they cannot be directly observed. Their survey results went a long way in providing at least one indirect approach to capturing data on this important but elusive topic. We provide another lens through which we can gain a more precise understanding of the actual uses and practices associated with capital budgeting.

JEL codes: D82; D83; G14; G31; G32.
Key words: Textual analysis; conference calls; capital budgeting; EBITDA; free cash flow; job transitions.

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1. Introduction

Do managers participating in earnings conference calls signal the actual relevance of capital budgeting and reveal preferences for specific capital budgeting technologies? By examining language usage during earnings conference calls, we can identify capital budgeting terms that managers believe are relevant to their firm's operations and important for investors to be cognizant of. Obviously, the first step in this process is to create a list of tokens capturing terms essential to capital budgeting. We create a lexicon of 45 capital budgeting terms that managers could potentially use during quarterly earnings conference calls in their prepared statement or in the question and answer (Q&A) segment of the call. The seminal results from the surveys initiated by Graham and Harvey (2001) motivate our focus on capital budgeting terminology. As Graham and Harvey (2001) note, "Surveys measure beliefs and not necessarily actions" (page 189). Their Figure 2 contains a list of various capital budgeting methods (i.e., internal rate of return (IRR), net present value (NPV), payback, and hurdle rate) that provide an initial basis for our list.

Our paper supplements their list, following the technique advocated by Loughran and McDonald (2011), by examining capital budgeting-related terms frequently used in corporate finance and valuation textbooks. The terms we select could be one word or a common phrase. We find that the most frequently occurring capital budgeting terms in conference calls are *cash flow, EBITDA, free cash flow, operating income, operating profit, capital spending, capital investment,* and *EBIT*.

Our paper reports the results of analyzing language contained in 96,568 earnings conference calls generated by 4,530 unique companies during the 2010-2020 period. First, we substantiate the survey evidence of Graham and Harvey (2001), who, using a random sample of 392 chief financial officers (CFOs), asked in their initial study over 100 questions pertaining to

capital budgeting, cost of capital, and capital structure. We find, on average, that more than eight of the capital budgeting tokens are utilized during an earnings conference call. More than 87% of conference calls use at least one of the capital budgeting terms one or more times. Managers' use of terms like *ROI, IRR, return on invested capital (ROIC)*, *payback period,* and *discount rate* during a conference call, when discussing their firm's operations with investors and analysts, provides direct evidence of their actions. The results also document which financial measures managers think are most important when describing their operating performance to investors.

For example, Yum! Brands CEO David Novak in a July 2014 earnings conference call states during his prepared comments, "That's because in China, we now generate 3-year cash paybacks at KFC as we've improved the business model and 2-year cash paybacks at Pizza Hut Casual Dining." This is direct evidence that *payback* is one of Yum! Brands central evaluation techniques. Likewise, in a January 2011 Amazon conference call, CFO Thomas Szkutak began the presentation by stating, "Trailing 12-month free cash flow decreased 14% to $2.52 billion. Return on invested capital was 34%, down from 66%." The immediate use of *free cash flow* and *return on invested capital* in the prepared statement provides evidence on what Amazon believes are their key operating performance metrics for their capital budgeting decisions. This is especially true since much of the conference call dialog by managers is carefully scripted.

Graham and Harvey (2001) are intrigued by the relatively high usage of payback as a project evaluation technique in their survey results. They state on page 200, "This is surprising because financial textbooks have lamented the shortcomings of the payback criterion for decades. (Payback ignores the time value of money and cash flows beyond the cutoff date; the cutoff is usually arbitrary.)" Part of a manager's usage of payback period may not deal with a lack of sophistication as argued by Graham and Harvey (2001), but relate to how profitable the projects

are. If Yum! Brands has available projects in China with a payback period of only two years, highly complicated evaluation models are irrelevant in deciding whether to do the project.

In 4.44% of all conference calls, managers mention, at least once, the tokens *payback, pay back, pay back period,* or *payback period.* The payback tokens appear 6,185 times in the conference call transcripts. The usage of *payback* and *payback period* by managers is consistent with the Graham and Harvey (2001) assertion that CFOs often use simple decision rules in their capital budgeting process. In addition, Graham (2022) notes that managers increasingly have a short-term focus given their inability to have reliable corporate plans beyond two years. He argues, on page 1977, that "A short and decreasing reliability horizon makes planning difficult and affects corporate decisions, such as encouraging a focus on short-term investment projects."

Second, we report that some capital budgeting terms almost never occur in conference calls. For example, the tokens *capital asset pricing model (CAPM), real options,* and *simulation analysis* rarely appear in any earnings conference calls. Although Graham and Harvey (2001) note that the majority of CFO survey respondents say they always use CAPM in their capital budgeting process, the term appears only five times in 96,568 earnings conference calls during our time period. Obviously, managers do not feel the need to walk analysts and investors through every step in their capital budgeting thought process. Thus, even though managers might typically use CAPM in their capital budgeting process to derive a discount rate, there is no need to go into these details during a conference call.

Third, we document that capital budgeting terms are disproportionally used by firms in capital intensive commodity and manufacturing industries. In terms of average capital budgeting token counts, Telecommunications, Coal, Automobiles, Fabricated Products, and Agriculture are the top Fama and French (1997) 49-industries. Conversely, Banking, Pharma, Trading, Apparel,

and Insurance have the lowest average capital budgeting term usage by managers. We find that firms with higher capital budgeting counts have higher market values, PP&E, and prior stock return performance. Higher capital budgeting usage firms tend to have lower free cash flow, lower Tobin's Q, and less R&D intensity.

Fourth, we document that both capital budgeting term usage and the number of words spoken by managers peak in the first quarter of the calendar year. This finding illustrates the information density of annual versus quarterly communications, since the majority of the firms have December fiscal year ends. Managers increasingly use the capital budgeting terms while discussing their annual results with analysts and investors.

Fifth, we document how manager's word selections vary on the basis of whether or not net income is positive. If the firm has positive net income, managers use phrases like *cash flow, free cash flow, operating income,* and *operating profit* significantly more often than if net income is negative. In contrast, when net income is negative, managers have significantly higher counts of the aggressive non-GAAP phrase *EBITDA*. This finding is consistent with Loughran and McDonald's (2016) assertion that "managers direct investor's attention to non-GAAP numbers when non-GAAP results paint a rosier picture of the firm's prospects" (page 1221).

Lastly, we present evidence on whether capital budgeting token usage is driven by the manager's job title. Looking at 473 senior managers who transitioned to different firms with at least four conference calls at each company, we find that managers with the job title of CFO or CEO use significantly more capital budgeting tokens than managers with other job titles. Not surprisingly, managers who work in the area of Investor Relations seldomly use any of our Capital Budgeting terms during a conference call in either their first or second jobs. In terms of Capital Budgeting usage, the job title of the manager matters.

In summary, our paper documents how managers convey capital budgeting insights to analysts and investors in earnings conference calls during 2010-2020. Fairly common usage of words like *cash flow, EBITDA,* and *free cash flow* by executives illustrates which terms are most important in communicating their capital budgeting decisions to investors. Interestingly, we find that firms losing money lean more on measures such as EBITDA. In addition, we create a 45-word capital budgeting lexicon for use by other researchers.

2. Literature Review

As data on how corporations make decisions are not readily available, surveys have been used to better understand how corporate executives evaluate capital budgeting opportunities. Graham and Harvey (2001) note on page 189 that the survey approach "offers a balance between large sample analyses and clinical studies" and allows investigators to "ask very specific and qualitative questions." The authors note, however, that the survey approach does have some problems as surveys measure self-reported beliefs and not necessarily actions. Furthermore, survey analysis "faces the risk that the respondents are not representative of the population of firms or that the survey questions are misunderstood" (page 189). Our work complements the long survey literature by examining conference calls to identify the terms used by corporations in conference calls to describe capital budgeting.

Figure 1 of Burns and Walker (2009) lists nineteen studies published between 1984 and 2007 surveying large U.S. corporations on their capital budgeting processes. The most well-known of these papers is Graham and Harvey (2001), who sent questionnaires about capital budgeting, cost of capital, and capital structure to CFOs at 4,440 firms and received 392 useable responses. Most relevant to our work, Graham and Harvey find 74.9% (75.7%) of CFOs always or almost always use net present value (internal rate of return) to evaluate capital budgeting decisions and

over 55% of the CFOs always or almost always use the payback capital budgeting method. Graham and Harvey also report that CEOs with MBAs tend to be more likely than non-MBA CEOs to use net present value. Finally, the authors examine whether the payback method is more likely to be used by capital constrained firms and find no evidence of a relation between the use of the payback method and leverage, credit ratings, or dividend policy. Rather, they find that older, longer-tenured CEOs without an MBA are more likely to use the payback criterion.

Using survey results from March 2019 and March 2020, Graham (2022) finds that at least 75% of large firms indicate they always or almost always use NPV and IRR in their capital budgeting decisions. He also finds that many firms rely on payback and ROIC, which he notes do not directly account for risk or the time value of money. Indeed, for small firms with less than $1 billion in annual revenue, the payback rule is used more frequently than the NPV and the IRR rules. Graham suggests, on page 2033, that his survey results "show that cash flows are a more important determinant of corporate investment than are discount rates…"

Writing that "most large U.S. firms have long used discounted cash flow methods to evaluate investment opportunities" (page 445), Jagannathan et al. (2016) survey CFOs of U.S. companies in the Compustat database to investigate the interest rates used by firms to discount project cash flows. Using completed surveys from 127 CFOs, Jagannathan et al. find that 97% of their sample firms use a discounted cash flow method when making capital budgeting decisions. The authors find that 74% of their sample uses the weighted average cost of capital (WACC) as a basis for their discount rates. Consistent with Graham and Harvey (2001), Jagannathan et al. find that most firms use the CAPM to estimate the cost of equity capital. In contrast, we find that corporate management teams in our sample rarely mention WACC or CAPM in conference calls, which likely does not contradict their reported usage and instead reflects that managers do not

believe communicating the derivation of specific variables used in their capital budgeting methods are critical to convey to investors.

Adame et al. (2023) construct a sample of earnings releases from 2004 through 2016 made by S&P 1500 firms to investigate the frequency with which the term 'free cash flow' appears. The authors identify 3,086 earnings announcements with at least one mention of free cash flow. Adame et al. find that capital-intensive firms and firms with more onetime events are more likely to disclose free cash flow. We find that the phrases *cash flow* and *free cash flows* are two of the top three capital budgeting tokens used by management in conference calls.

Gompers et al. (2016) survey 79 private equity (PE) firms and find that PE investors rarely use discounted cash flows to evaluate investment opportunities. Rather, PE firms use the internal rate of return (IRR) or the multiple of invested capital (MOIC) metrics. The authors write that the use of IRRs and MOICs by PE investors "contrasts with the results in Graham and Harvey (2001)" who find "that chief financial officers use net present values as often as internal rates of return." Gompers et al. (2020) survey 885 institutional venture capitalists (VCs) at 681 firms to better understand how VCs make their investment decisions. Similar to PE investors, Gompers et al. find that VCs use the MOIC and the IRR metrics rather than discounted cash flows to evaluate investment opportunities. We find that return on investment (ROI) and return on invested capital (ROIC) are two of the top seven capital budgeting terms used in our sample of conference calls and that both of these terms are used more frequently than NPV, IRR, or payback.

Several of the capital budgeting terms searched for in this paper are non-GAAP accounting figures.[1] Bradshaw and Sloan (2002) and Black, Christensen, Ciesielski, and Whipple (2018)

[1] GAAP was developed by the Financial Accounting Standards Board to standardize financial reporting and to provide a uniform set of rules and formats to facilitate analysis by investors and creditors. Investopedia notes that "GAAP is the U.S. financial reporting standard for public companies, whereas non-GAAP is not. Unlike GAAP, non-GAAP figures do not include non-recurring or non-cash expenses. Also, because there are no standards under non-GAAP,

present evidence suggesting that non-GAAP earnings are more value relevant than GAAP earnings. Gomez et al. (2023) hand collect firm earnings press releases for non-GAAP reporters from 2003 through 2010 and find that for a sample of 26,121 earnings press releases with non-GAAP numbers, 15.85% of firm-quarters have non-GAAP income statements. Gomez et al. find that firms voluntarily disclose non-GAAP income statements when firm and disclosure complexity, analyst following, and institutional ownership are higher. Henry et al. (2020) use textual analysis to examine whether non-GAAP earnings are emphasized more than GAAP earnings in earnings conference calls. The authors find that firms place greater relative emphasis on non-GAAP earnings and include more general non-GAAP content when the non-GAAP results exceed GAAP results. We present evidence that non-GAAP terms are frequently used in conference calls between 2010 and 2020.

The National Investor Relations Institute (1996) states that conference calls are second only to press releases as a means of disseminating corporate information. In their seminal paper, Frankel et al. (1999) note that conference calls are often used to supplement mandated disclosures. They examine 1,056 conference calls made by 808 firms in the CRSP database from February through November 1995 and find that firms that hold conference calls tend to be relatively larger, more profitable, and more heavily followed by analysts.[2] They also find that conference call firms access capital markets more frequently than other firms. Matsumoto et al. (2011) examine whether conference calls are incrementally informative over the accompanying press releases. They examine over 10,000 conference calls and find that both the presentation and the discussion

companies may use different methods for financial reporting. As a result, it is difficult to compare financial results between companies in an industry and between industries." See https://www.investopedia.com/articles/financial-analysis/062716/gaap-vs-nongaap-which-should-you-consider-evaluation.asp. Using our conference call sample, we report an increasingly frequency of the token "non-GAAP". For example, in 2010, 43% of our sample uses the term non-GAAP at least once compared to 61% in 2020.

[2] Lerman et al. (2023) note that in 2018, approximately 95% of Compustat firms with analyst following held at least one earnings conference call during the year.

segment of conference calls have incremental information content over the accompanying press release.

Finally, Heinrichs et al. (2019) utilize a proprietary dataset that identifies institutional clients that listened to conference call broadcasts or downloaded conference call transcripts to investigate who, if anyone, consumes conference calls. The authors find that institutional investors who do not hold a position in the firm are the primary consumers of conference calls and they are more likely to hold positions in competitors and purchase the stock in the subsequent quarter. Heinrichs et al. also find that suppliers, strategic partners, bank advisors, consultants, and the media frequently consume conference calls. The authors conclude that "investors who do not have an existing monitoring or contracting relationship with the firm, but who have a valuation interest, are actually the dominant consumers" of conference calls. Together, the conference call literature suggests that firms use conference calls to convey new, value relevant information to potential investors and key stakeholders.

The relatively long literature examining whether and how individual managers affect corporate behavior begins with the seminal work of Bertrand and Schoar (2003). As management effects could be correlated with other firm-specific characteristics, Bertrand and Schoar construct a manager-firm matched panel set where they track individual top managers across different firms over time. More specifically, they construct a sample of just over 600 corporate managers who work at least three years at two or more firms between 1969 and 1999. Using this sample, Bertrand and Schoar estimate how much of the unexplained variation in firm practices can be attributed to manager fixed effects, after controlling for firm fixed effects and time-varying fixed effects. While the authors show that managers matter in core strategic operational and financing decisions, the

magnitude of managers' influence varies. The effects are larger for high profile strategic decisions like acquisitions and smaller for operational financing decisions like cash holdings.

Bamber et al. (2010) create a sample of managers that change firms between 1995 and 2005 to investigate the impact of a manager's 'style' on five aspects of management forecasts: forecast frequency, forecast precision, news conveyed by the forecast, and the bias in and accuracy of the forecast. After demonstrating managers exhibit individual-specific disclosure styles, Bamber et al. examine the extent to which managers' personal experiences influence their own disclosure styles. The authors find the disclosure styles of managers promoted from accounting and finance tend to be conservative and less ambiguous, the disclosure styles of managers from legal backgrounds favor downward guidance, and managers born before World War II are more reluctant to make forecasts. Finally, Bamber et al. find that managers with MBAs develop styles that tend to guide expectations upward and that their forecasts are more accurate.

Utilizing similar empirical strategies, Davis et al. (2015) examine the effect of manager-specific optimism on earnings conference calls and Wells (2020) examines the impact of management on a firm's accounting quality. Bochkay et al. (2019) find that younger CEOs exhibit greater optimism in their disclosures. Brown et al. (2019) survey 610 Investor Relations Officers (IROs) and conduct 14 follow up interviews and find that IROs have a significant influence on corporate disclosures. In this paper, we use this empirical strategy to examine whether the CFOs, CEOs, Investor Relations Officers use different words in conference calls to communicate capital budgeting initiatives.

3. Earnings Conference Call Data

The use of earnings conference calls to analyze manager behavior is well-established in the literature (see Mayew (2008), Mayew and Venkatachalam (2012), Davis et al. (2015), Dasgupta

et al. (2020), Larcker and Zakolyukina (2012), and Gow, Larcker, and Zakolyukina (2021)). Capital IQ is our source for the earnings conference call transcripts available from the Wharton Research Data Services (WRDS) website. Although there are some transcripts available before 2010, the bulk of the transcripts on Capital IQ begin in 2010. Thus, our sample period is 2010 to 2020. There is an upward trend in the number of quarterly observations: 880 in first quarter of 2010 compared to 2,505 in the first quarter of 2020.

Table 1 reports the impact of the various data screens. To enter the final sample, we require the firm to be on the Center for Research in Security Prices (CRSP) at the time of the call, have at least 400 words in the transcript, and not be a delayed transcript. Firms must also be an operating company (i.e., have a CRSP "shrcd" code of 10 or 11) and have available Compustat and CSRP information (i.e., book value of equity, property, plant & equipment, prior stock returns, stock price, and shares outstanding).

Due to the large number of international firms in the Capital IQ database, the screen with the greatest impact is the CRSP requirement (dropping 54,553 firm-quarter observations). We focus on dialogue spoken by managers (i.e., the Capital IQ variable "Executives") either in the prepared statement (Capital IQ variable "Presenter Speech") at the beginning of the call or in manager responses ("Answer") in the Q&A section of the earnings call. The final sample contains 96,568 firm-quarter earnings conference calls during 2010-2020.

4. Methodology

To create our capital budgeting lexicon, we start with the technical terms contained in Graham and Harvey (2001). In their paper, they mention capital budgeting words like *cash flow, IRR, NPV, hurdle rate, payback, sensitivity analysis, price to earnings, real options, simulation analysis, CAPM, profitability index, capital budgeting, accounting rate of return, discount rate,*

weighted average cost of capital, free cash flow, and *value at risk*. We included all these terms in our capital budgeting lexicon. In addition, we examine the index of best-selling corporate finance (Corporate Finance by Ross, Westerfield, and Jordan) and equity valuation (McKinsey & Company's Valuation: Measuring and Managing the Value of Companies) textbooks for commonly used financial terms pertaining to corporate capital budgeting decisions not contained in Graham and Harvey (2001). From these textbooks, we added terms like *ROIC (return on invested capital), EBITDA, EBIT, operating income, operating profit, NOPAT (net operating profit after tax), enterprise value, opportunity cost, economic value added (EVA),* and *economic profit* to our list. Business word usage changes over time. Although Graham and Harvey (2001) do not include the term *ROIC* in their survey, Graham (2022) does include the term in his updated survey. In total, our capital budgeting list contains 45 terms.

Table 2 reports our complete capital budgeting lexicon in order of total counts. For some of the terms (i.e., *cash flow, EBITDA, free cash flow, EBIT, IRR,* and *NPV*), we include the plural of the token in our counts. That is, the total count value for *free cash flow* includes the combined counts of both *free cash flow* and *free cash flows*. To simplify the count totals, we also combine acronyms with their full name terms. Thus, the counts for *ROIC* and *ROI* are combined respectively with *return on invested capital* and *return on investment*. Not surprisingly, managers typically use the acronyms for the longer phrases during conference calls. For example, of the total count of 208,386 for *EBITDA*, managers use the phrase *earnings before interest, taxes, depreciation, and amortization* only 15 separate times.

The most commonly occurring tokens spoken by managers in earnings conference calls, as reported in Table 2, are *cash flow, EBITDA, free cash flow, operating income, operating profit, capital spending, capital investment, EBIT, return on investment (ROI), return on invested capital*

(ROIC), pay back, and *operating income before depreciation and amortization (OIBDA)*. The term *cash flow* appears in more than 68% of all calls (with a total count of more than 272,000) while *return on invested capital (ROIC)* occurs in 4.43% of all calls. Graham (2022) reports in his 2022 survey that 57% of large firm CFOs always or almost always use ROIC when deciding which projects or acquisitions to pursue. Our counts for *ROIC* in earnings conference calls are consistent with the Graham (2022) survey evidence that ROIC is a relatively important capital budgeting technique.[3]

Since some managers focus primarily on one of the capital budgeting tokens, the count totals do not follow the rank order of the percentage of calls pattern. For example, *operating income before depreciation and amortization (OIBDA)* has the twelfth highest total count (4,708). However, the percentage of conference calls mentioning *OIBDA* is only 0.67%, good for the twenty fourth highest percentage among the capital budgeting terms. This highlights the focus by some managers on one or two particular capital budgeting terms while other firms completely ignore them. As an example, Warner Bros. Discovery executives used the term *OIBDA* 21 times in their 2015-02-19 conference call while more than 99% of the firms never use the acronym.

Figure 1 plots the percentage of calls over time where *cash flow, EBITDA, free cash flow,* or *operating income* are used by managers at least once during 2010-2020. The figure shows a fairly steady rise in usage of both *EBITDA* and *free cash flow* by managers when describing their operations to analysts and investors while the frequency of *cash flow* remains relatively steady at about 68%.[4] In contrast, there is a declining usage of *operating income* during calls. As an

[3] In his American Finance Association Presidential Address, Graham (2022) notes the importance of debt-to-EBITDA as a measure of capital structure. He mentions that almost half of large firm CFOs use debt-to-EBITDA as their primarily capital structure measure while almost three quarters have it as one of their top three debt metrics. We find that managers are increasingly using *debt-to-EBITDA* during their conference calls. Specifically, in 2010, 3.57% of all conference calls in our sample mention *debt-to-EBITDA* at least once compared to 4.69% of all calls during 2020.
[4] Similarly, Figure 1 of Adame et al. (2023) shows the frequency of free cash flow disclosure increases from 10% of their sample in 2004 to over 20% of their earnings release sample for 2016.

example, the percentage of calls mentioning *EBITDA* goes from 30% in first quarter of 2010 to 42% in the last quarter of 2020. It is interesting that a non-GAAP term like *EBITDA* would see increasing usage by company insiders. Similarly, the fraction of calls mentioning *free cash flow* by executives has gone from 25% in 2000 to 39% by the end of the sample. This is evidence that business language usage is constantly changing.

As might be expected, several of our 45 capital budgeting terms occur only rarely during conference calls. For example, the tokens *simulation analysis*, *CAPM*, *capital rationing*, and *MIRR* (*modified internal rate of return*) only appear a handful of times during the sample of 96,568 earnings calls. Since these tokens are highly specialized, it makes sense that they only occur infrequently during a call with analysts and investors. That is, although some managers will certainly use *CAPM* in their capital budgeting process to estimate an appropriate discount rate, there does not appear to be justification to mention the specific term during the earnings conference call.

5. Summary Statistics

The summary statistics of our main variables are reported in Table 3. *Capital Budgeting* is defined as the total count of the words from our 45-word capital budgeting lexicon spoken by executives during the earnings conference call. *Word Count* is the number of words spoken by all participants during the conference call according to Capital IQ. The *% Capital Budgeting* variable is defined as *Capital Budgeting* divided by the number of words spoken in the conference call times 10,000. *Market Value* is the market value of equity of the firm in millions of dollars three days prior to the conference call. *Prior Return* is the buy-and-hold return for the firm in the prior year minus the CRSP value-weighted Index over an identical period. *% Fixed Assets* (defined as net property, plant, and equipment/total assets), *R&D Intensity* (research & development

expense/total assets), *FCF* (defined as net cash flows from operations minus preferred dividends and common dividends), *NI Loss Dummy* (set to one if net income is less than zero, else zero), and *Tobin's Q* (defined as total assets minus book value of equity plus market value of equity/total assets) will also be used as control variables. Appendix A provides more detailed definitions of the variables used in our analysis.

Table 3 notes that the average conference call contains 8.59 words from our capital budgeting lexicon spoken by firm managers while the median value (6) is slightly lower.[5] Note that the 10th percentile for *Capital Budgeting* has a value of 0. Thus, in more than 12% of the conference call sample, investors never hear managers use a single word from our lexicon. The 90th percentile has 20 capital budgeting words used during the call. The average (5,663) and median (5,626) number of words in the conference calls are almost identical. Thus, unlike annual reports, there are not many extremely lengthy earnings conference calls. The median market value of equity is $1.3 billion while the average firm has a *Prior Return* value of 0.63%. The average firm has net property, plant & equipment of 22% of total assets while 30% of the observations have negative net income in the prior year. There is some skewness in Tobin's Q, even after winsorizing the variable at the 1% and 99% levels, given that the mean value (2.37) is notably higher than the median value (1.59).

Panel A of Figure 2 reports the time series pattern for the mean number of words spoken in the conference call and the average of *Capital Budgeting*. The graph clearly shows the information density of annual versus quarterly communications, to the extent the majority of the firms have December fiscal year ends. There is a consistent spike in the number of words and the

[5] For comparison purposes, we find that the rank order of capital budgeting tokens by analysts generally follows the usage of the terms by managers. The most common capital budgeting tokens spoken by analysts are *cash flow, EBITDA, free cash flow, EBIT,* and *operating income*. Interestingly, analysts do not frequently use tokens off our capital budgeting lexicon. The mean capital budgeting count by analysts is only 1.10 while the median value is 0.

count of *Capital Budgeting* in the first calendar quarter where the annual results are generally discussed by managers. Although *Word Count* is fairly flat over our time period, there is an upward trend in *Capital Budgeting*. That is, *Capital Budgeting* has a value of 8.1 in the first quarter of 2010 while its value is 10.7 in the first quarter of 2020. This increase in the usage of capital budgeting terms is in spite of a slight decrease in the average number of words spoken in the respective conference calls (5,809 in Q1 of 2010 versus 5,696 in Q1 of 2020).

Panel B of Figure 2 reports that the pattern for *% Capital Budgeting* is also upward sloping with spikes in the first quarter of each calendar year. For example, *% Capital Budgeting* has a value of 14.2% in the first quarter of 2010 compared to a value of 18.7% in the first quarter of 2020. The dramatic drop in *% Capital Budgeting* in the last three quarters of 2020 is related to COVID-19 and its negative impact on capital expenditure spending during the pandemic.[6] In those quarters, managers were discussing their responses to the worldwide pandemic and not their capital budgeting decisions. Overall, managers are increasingly using more of our capital budgeting tokens.

A. Capital Budgeting Usage by Industry

The top and bottom five Fama and French (1997) 49-industry classifications in terms of the mean capital budgeting token counts are reported in Table 4. As would be expected, capital intensive commodity and manufacturing industries where managers need to make decisions on long-term, massive projects dominate the highest average industry token counts. The Telecommunications industry tops the list at 15.7 capital budgeting tokens per call, while the Coal industry is slightly less at 15.2 tokens per call. The industries of Automobiles, Fabricated Products, and Agriculture finish up the top five. Since making successful decisions on whether or not to

[6] See https://www.census.gov/library/publications/2023/econ/2021-aces-covid-impact.html.

build a new coal mine, corn processing facility, auto plant, or laying fiber optical cables typically requires the tools of capital budgeting, it is not surprising that these industries are at the top of list.

The bottom five Fama-French Industries in terms of average capital budgeting token counts are slightly tilted towards financial service companies. Banks (2.5 tokens per call), Trading (5.1), Apparel (5.1), and Insurance (5.6) typically are not creating sophisticated manufacturing facilities that would warrant discussion with analysts and investors during a conference call. Thus, it should not be surprising to see very low capital budgeting token usage during the conference calls for these industries. The Pharmaceutical Industry (3.0 tokens per call) certainly makes long-term, high expenditure decisions in regard with their pipeline products. For example, Merck spent $13.6 billion in research & development in 2020 according to its Form 10-K filed on 2021-02-05. Yet, pharmaceutical managers usually are not mentioning *free cash flow* or *EBITDA* terminology with analysts during the call. Instead, pharma insiders often use phrases like "launching new medicines", "FDA approval", and "advancing our pipeline" during their earnings conference calls. Overall, our counts appear to be capturing the capital budgeting diversity of the various Fama-French (1997) industries.

6. Empirical Results

A. Capital Budgeting Firm Attributes

What firm level attributes explain capital budgeting percentages during earnings conference calls? Table 5 reports regression results with *% Capital Budgeting* as the dependent variable. The regression could be run using *Capital Budgeting* as the dependent variable instead of *% Capital Budgeting* and adding *log(Word Counts)* as an additional control variable. If we use the latter specification instead, all of the results are essentially the same as in our current Table 5 regression. Thus, using either the relative percentage or the total count of capital budgeting terms

gives us the same interpretation. The control variables, defined in Appendix A, are *log(market value), Prior Return, % Fixed Assets, R&D Intensity, FCF, NI Loss Dummy,* and *Tobin's Q*. In addition to the coefficient estimates and *t*-statistics (in parentheses where the standard errors are clustered by year and firm) presented in the table, the regression includes Fama-French (1997) 49-industry dummies and calendar year dummies.

Six of our independent variables are statistically significant at the 1% level. The variables, *log(market value), Prior Return,* and *% Fixed Assets*, all have positive coefficients. The positive coefficient on *NI Loss Dummy* is only significant at the 10% level. Larger market value, better prior year returns, and more PP&E on the balance sheet are all associated with higher capital budgeting percentages. The coefficient on *% Fixed Assets* is consistent with our Fama-French Industry results. Firms with higher concentrations of PP&E are more likely to be discussing capital budgeting during conference calls with analysts and investors.

R&D Intensity, FCF, and *Tobin's Q* all have negative coefficient values in the Table 5 regression. The negative relation between capital budgeting percentages and *R&D Intensity* is consistent with the low counts for pharmaceutical firms. During conference calls, managers at pharma firms like Merck and Eli Lilly are focusing their discussion on news of FDA approval and the prospects of their pipeline, and not on capital budgeting. Cash flow tends to become more critical for firms losing market value or operating at low margins in a competitive environment, thus it is not surprising that higher values of *FCF* and *Tobin's Q*—signals of a successful firm—are associated with less usage of capital budgeting terms.

B. Manager's Word Selection while having Negative Net Income

Do managers use different frequencies of capital budgeting terms if they have negative net income? For the top five most frequent words on our capital budgeting lexicon, Table 6 reports

the average token count and *t*-test on the mean difference categorizing the sample on the basis of whether net income is positive or negative. For the terms *Cash Flow, Free Cash Flow, Operating Income,* and *Operating Profit*, managers have significantly higher token counts if net income is greater than zero than if net income is negative. For example, managers average 2.97 counts for *Cash Flow* if net income is greater than zero compared to an average count of 2.48 for *Cash Flow* when the firm has negative net income. The difference in mean *Cash Flow* usage is statistically significant (*t*-statistic of 18.59). This pattern is very plausible. If a firm has positive net income, the managers should be more likely to mention terms like *Cash Flow, Free Cash Flow,* and *Operating Income* during the conference call with investors since things are going relatively well.

In contrast, we find that managers mention the aggressive non-GAAP term *EBITDA* significantly more often when the company's net income is negative. Firms with negative net income have an average count of 2.48 per conference call for *EBITDA* compared to an average count of 2.02 for companies with positive net income (*t*-statistic of -16.03 on the difference). This makes sense. If a firm has negative net income, the managers are much more likely to spend time talking about *EBITDA,* which will more often be positive since this accounting measure does not incorporate interest expense, taxes, depreciation, nor amortization in its value, than discussing *Free Cash Flow* or *Operating Profit*. Our Table 6 results show that non-GAAP measures are not necessarily a more accurate description of economic income, but that they are measures that can make bad periods look good. More generally, the fact that firms use of capital budgeting tokens depends, in part, on whether net income is positive or negative suggests that these tokens are associated with the actions taken by firms and/or the events that occur within firms.

C. Top Managers in Terms of Capital Budgeting Usage

We next identify which individual executives are the most frequent users of our capital budgeting terms. Table 7 reports the top 25 managers in terms of capital budgeting counts. Because we are sorting by total counts across all periods, all of the listed executives are long-term senior managers. For example, the first name on the list with a capital budgeting total count of 1,128 is Perry Sook, the founder and long-term CEO of Nexstar Media Group. The second name on the list is Brian Jellison who joined Roper Technologies as president and CEO in 2001. Jellison averaged an impressive 28.91 capital budgeting total count per conference call. Some of the managers focus primarily on just one of our 45 capital budgeting tokens. For Jellison, his favorite token in our lexicon was *EBITDA*. In a July, 2013 conference call, CEO Jellison spoke the word *EBITDA* 24 separate times during his prepared comments and his responses in the Q&A session.

The third name listed in Table 7 is John Stephens who spent 10 years as the CFO of AT&T. Stephens has an MBA from Columbia Business School at Columbia University. Marathon Oil CEO Lee Tillman has the fourth highest count of capital budgeting terms (average token count of 27.62). Fitting his oil company employment, Tillman has a chemical engineering degree from Texas A&M University and a Ph.D. in chemical engineering from Auburn University. Constellation Brands CFO Robert Ryder has the highest token count per call value of 33.50. Ryder has an accounting degree from the University of Scranton and is a certified public accountant.

D: Capital Budgeting Counts: Is manager proclivity impacted by position?

Are the capital budgeting counts related to a person's job title? To answer this question, we focus our attention on managers who participated in conference calls and transitioned from one firm to another. The sample includes 473 unique managers with at least four different conference calls in both their first and second jobs. For example, Frank Calderoni was CFO for Cisco Systems

from May 2004 to January 2015. From June 2015 to January 2017, Calderoni was CFO of Red Hat. As CFO at Cisco Systems, Calderoni averaged 6.75 capital budgeting terms per conference call in his last four calls while he averaged 7.75 capital budgeting terms per call in his first four calls while at Red Hat.[7]

To understand what could account for differences in term usage between jobs, we hand collected the personal characteristics for each of the 473 managers using LinkedIn and other sources like press releases and DEF 14-A filings. In their second job, 25% of the sample were CEOs, 47% were CFOs, and 19% had a job title within Investor Relations (IR). For the transitioning managers, we find that 67% had identical titles in both their first and second jobs, 31% changed firms within the same Fama-French industries, 19% were CPAs, 49% had MBAs or EMBAs, and 16% received their MBA or EMBA from a prestigious US graduate program.

Table 8 reports the raw (Panel A) and detrended (Panel B) *Capital Budgeting* counts for the sample of transitioning managers. Of the 473 managers, 68 had the title of CEO in both firms, 16 CFOs were promoted to CEO in their new firm, 192 remained as CFO at their new job, 90 remained involved with Investor Relations, and 107 managers had some other job title change (i.e., IR to CFO, CFO to COO, CEO to CFO, …). In Panel A, the bottom row reports that both the mean and median raw *Capital Budgeting* counts increased (mean *Capital Budgeting* counts went from 2.65 in the first job to 3.77 in the second job). In a paired *t*-test, the *t*-statistic for the mean *Capital Budgeting* counts difference between jobs 1 and 2 is -4.97.

From the Panel A raw *Capital Budgeting* counts, it is apparent that there is a job title pecking order in terms of term counts. CFOs are the most frequent users of the capital budgeting

[7] The four Cisco System conference calls for Frank Caleroni are 2014-02-12, 2014-05-14, 2014-08-13, and 2014-11-12 while the four calls used during his employment at Red Hat are 2015-09-21, 2015-12-17, 2016-03-22, and 2016-06-22.

terms (5.93 mean count in job 2) while CEOs use the terms slightly less frequently (mean of 3.01 in job 2 if job 1 was also as CEO). Investor Relations managers seldomly use the capital budgeting terms (mean of 0.40 in job 2 compared to mean of 0.17 in job 1). In conference calls, since the CFOs often present and answer questions relating to the firm's accounting results, the higher CFO counts is reassuring. Notice that for no changes in CEO or CFO job titles, there still is a slight increase in the mean *Capital Budgeting* counts. That is, the mean *Capital Budgeting* count is 4.59 in the last four conference calls when job 1 is CFO compared to a mean count of 5.93 for the first four conference calls when the job title 2 remains CFO.

Given the upward trend in *Capital Budgeting* counts reported in Panel A of Figure 2, detrending the *Capital Budgeting* counts is a reasonable methodology. For the sample of 473 transitioning managers, Panel B of Table 8 reports the detrended *Capital Budgeting* counts using regressions including the entire sample universe of 96,568 conference calls. Even with detrending, there is an increase in counts when the job titles remain the same. For example, the detrended mean counts for CFOs increase from 3.91 (job 1) to 4.60 in job 2. The bottom row of Panel B reports that the detrended counts went from 2.27 in their first job to 2.92 in their second job. The *t*-statistics, in a paired *t*-test, is -3.65 for the mean detrended *Capital Budgeting* counts between the manager's first and second job.

In our last table, we report the regression results with *Capital Budgeting 2* (token count of capital budgeting terms spoken by the manager in the first four conference calls of their second job) as the dependent variable. The sample includes only the 473 managers who transitioned to a new job during our sample period. The control variables include *Capital Budgeting 1* (token count of capital budgeting terms spoken by the manager in the last four conference calls of their first job) and dummy variables for whether the manager was *CEO, CFO*, or *Investor Relations* in their

second job. Also included are dummy variables if the manager has the same job title at both firms (*Same Title*), transition to a new firm within the same Fama-French industry (*Same Industry*), a *CPA* dummy, an *MBA* dummy, and a *Prestigious MBA* dummy. More detailed definitions of the variables are provided in Appendix A.

In the Table 9 regressions, the first column uses the raw capital budgeting counts for both *Capital Budgeting 1* and *2* while the second column uses the detrended counts. Both the raw and detrended overall results are identical in nature. Column (1) reports that the coefficient on *CFO* is 4.22 (with a *t*-statistic of 5.08). Thus, controlling for other personal characteristics and the capital budgeting count in their first job, managers with the job title of CFO speak 4.22 capital budgeting tokens more than other job titles. Notice that the coefficients in both columns for *Capital Budgeting 1* are positive and statistically significant at the 1% level, although both coefficient values are substantially less than one. It is interesting that the coefficient on *Prestigious MBA* is negative and significant at the 5% level in both regressions. Hence managers with an MBA or EMBA degree from one of the top US graduate schools use about one fewer capital budgeting terms per conference call than non-prestigious MBA graduates.

7. Conclusions

We create a lexicon of 45 tokens to document how managers convey capital budgeting information to analysts and investors during earnings conference calls in the 2010-2020 time period. The large counts of capital budgeting terms like *cash flow, EBITDA, free cash flow, operating income, EBIT,* and *ROI* spoken by managers identifies the particular terms that drive firm investment decisions. That is, if *ROIC* and *payback period* are mentioned during the call, these are key components in the capital budgeting decisions by managers.

We find that managers with negative net income mention *EBITDA* during the call more often than other managers. There is a spike in the usage of the capital budgeting terms in the first quarter of the calendar year. Since the first quarter is generally when managers discuss the annual numbers with analysts and investors, this fact shows the information density of annual versus quarterly communications. Firms with higher capital budgeting counts tend to be from more capital-intensive industries like Coal and Auto. Finally, we report that CFOs are much more likely to mention the capital budgeting terms than CEOs or Investor Relations personnel on the call.

As Graham and Harvey (2001) emphasized, it is difficult to measure the forms and extent of formal capital budgeting techniques that are used in a firm since they cannot be directly observed. Their survey results went a long way in providing at least one indirect approach to capturing data on this important but elusive topic. We provide another lens through which we can gain a more precise understanding of the actual uses and practices associated with capital budgeting. Our results are consistent with those of Graham and Harvey (2001) and provide some additional insights as an artifact of observing the language managers use to describe their business processes.

Appendix A. Definitions of variables in the analysis

Capital Budgeting	A count of the 45 capital budgeting words spoken by managers in either the presentation or Q&A sessions of the earnings conference call. We make our Capital Budgeting lexicon available at https://xxxxxxxx/.
Word Count	Total number of words spoken during the earnings conference call. This variable is from Capital IQ.
% Capital Budgeting	This variable is (*Capital Budgeting*/*Word Count*) *10,000. This variable is from Capital IQ.
Market Value	The market value of equity (stock price multiplied by number of shares outstanding) in millions of dollars for the firm as of three trading days before the earnings conference call. This variable is from CRSP.
Prior Returns	Abnormal buy-and-hold returns during the year before the conference call. Performance is measured against the CRSP value-weighted return over an identical period. This variable is from CRSP.
% Fixed Assets	Defined as net property, plant, & equipment (item PPENT)/ total assets (item AT). This variable is from Compustat.
R&D Intensity	Defined as research & development expenses (item XRD)/ total assets (item AT). Missing values for XRD are assigned a value of zero. This variable is from Compustat.
FCF	Following Coles, Daniel, and Naveen (2008), FCF is defined as net cash flow from operating activities (item OANCF) minus preferred dividends (item DVP) minus common dividends (item DVC). Missing values DVP and DVC are assigned a value of zero. This variable is in millions of dollars and is from Compustat.
NI Loss Dummy	A dummy variable set to one if net income (item NI) is less than zero, else zero. This variable is from Compustat.
Tobin's Q	Defined as (total assets (item AT) minus book value of shareholder equity (item CEQ) plus market value of equity)/total assets (item AT). Values are winsorized at the 1% and 99% levels. This variable is from merged CRSP/Compustat.

Capital Budgeting 1	A count of the capital budgeting terms used by transitioning managers in the last four earnings conference calls of their first job. This variable is from Capital IQ.
Capital Budgeting 2	A count of the capital budgeting terms used by transitioning managers in the first four earnings conference calls of their second job. This variable is from Capital IQ.
CEO	A dummy variable set to one if the transitioning manager has a job title of CEO in their second job, else zero. This variable is from LinkedIn and other data sources.
CFO	A dummy variable set to one if the transitioning manager has a job title of CFO in their second job, else zero. This variable is from LinkedIn and other data sources.
Investor Relations	A dummy variable set to one if the transitioning manager has a job title of within Investor Relations in their second job, else zero. This variable is from LinkedIn and other data sources.
Same Title	A dummy variable set to one if the transitioning manager has the same job title in both their first and second jobs, else zero. This variable is from LinkedIn and other data sources.
Same Industry	A dummy variable set to one if the transitioning managers had both jobs within the same Fama-French industry. This variable is from LinkedIn and other data sources.
CPA	A dummy variable set to one if the transitioning manager has a CPA, else zero. This variable is from LinkedIn and other data sources.
MBA	A dummy variable set to one if the transitioning manager has an MBA or EMBA degree, else zero. This variable is from LinkedIn and other data sources.
Prestigious MBA	A dummy variable set to one if the manager has an MBA/ EMBA from a prestigious institution, else zero. Prestigious institutions include Harvard, Wharton, MIT, Columbia Business School, Yale, Dartmouth-Tuck, Stanford, University of Chicago-Booth, Northwestern University-Kellogg, Michigan-Ross, and NYU-Stern. The schools are from the combined 2023 US News (https://www.usnews.com/best-graduate-schools/top-business-schools/mba-rankings) and 2023 Fortune (https://fortune.com/education/business/best-mba-programs/) list of best MBA programs.

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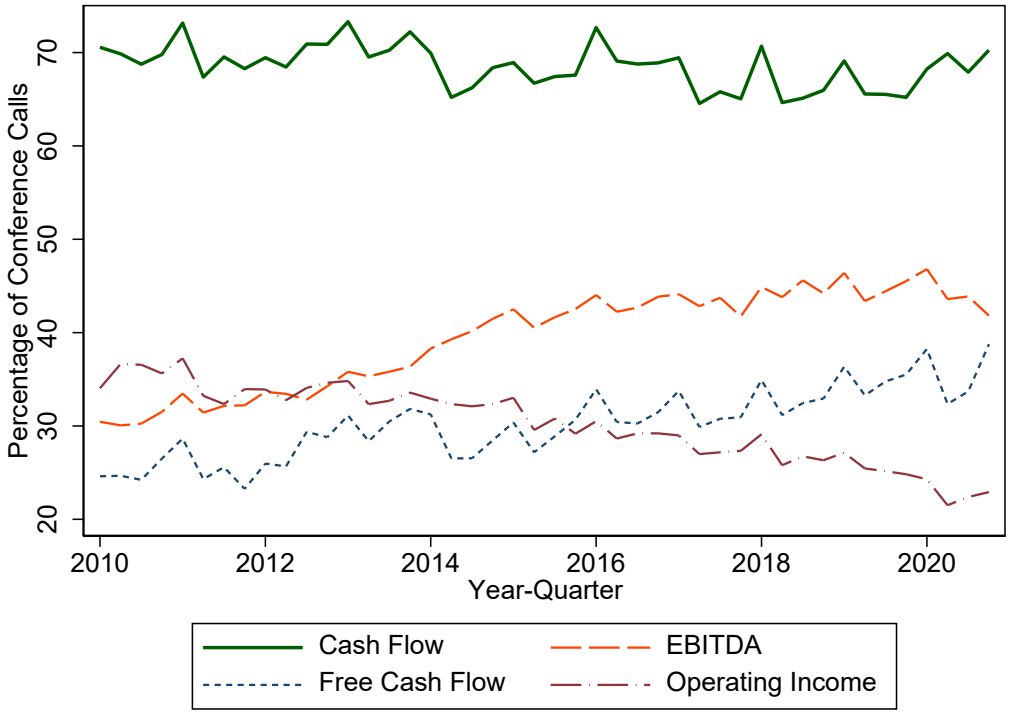
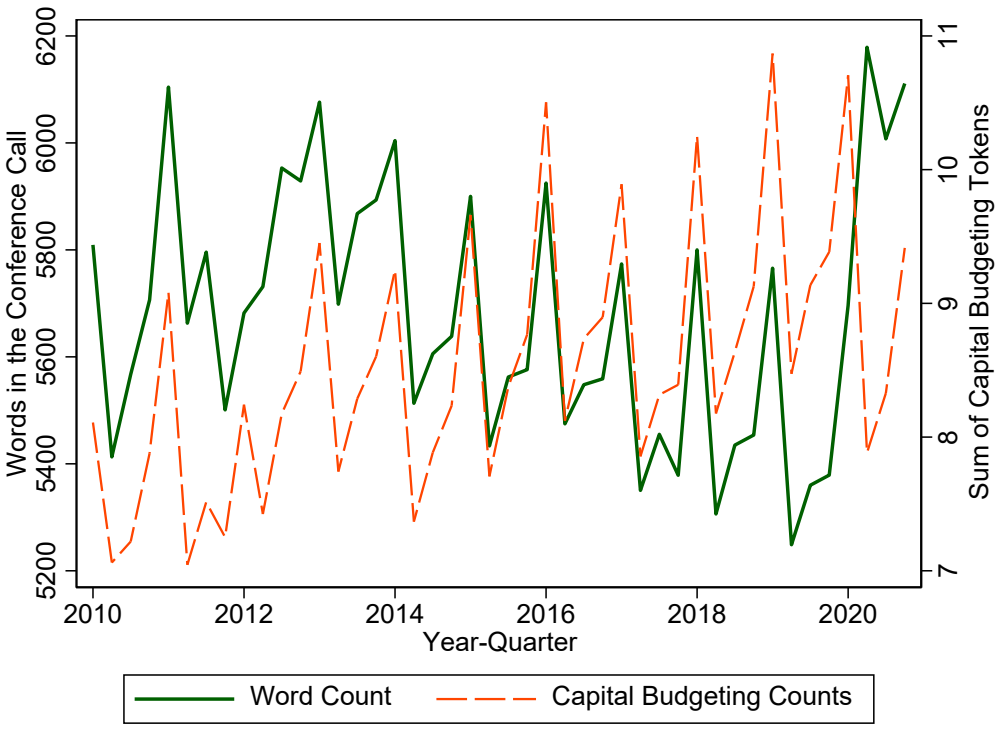
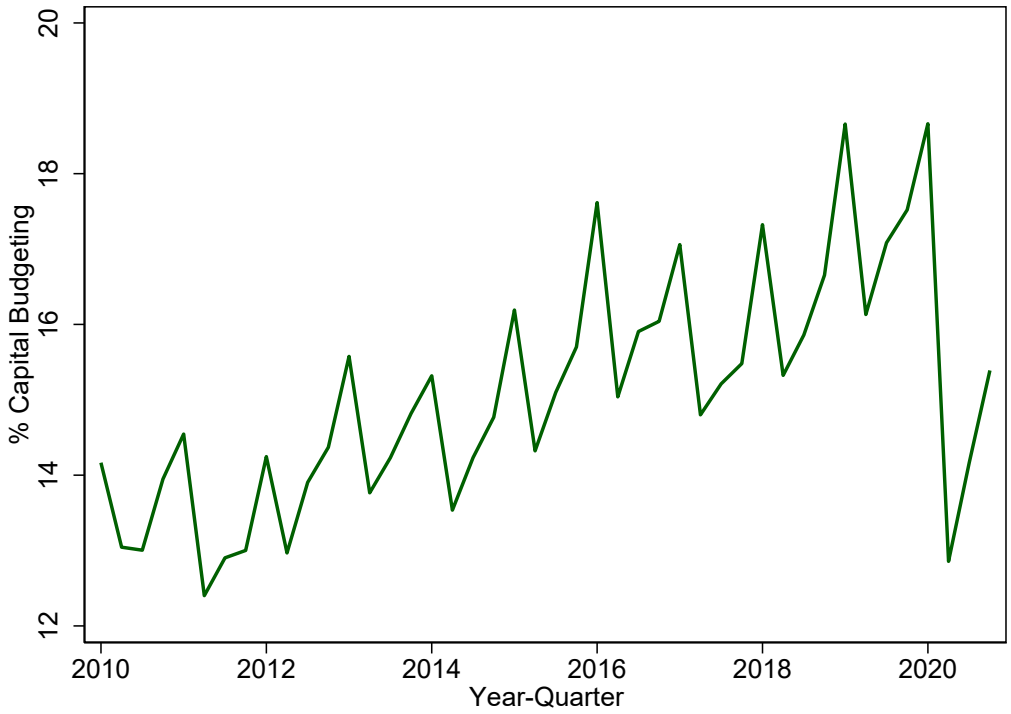


Figure 1. Quarterly time series of *Cash Flow, EBITDA, Free Cash Flow,* and *Operating Income* usage in earnings conference calls, 2010-2020.



Panel A of Figure 2. Quarterly time series of the mean *Word Count* and *Capital Budgeting* tokens, 2010-2020.



Panel B of Figure 2. Quarterly time series of the mean *% Capital Budgeting*, 2010-2020.

Table 1
Earnings Conference Call Sample Creation

	Dropped Earnings Calls	Number of Earnings Calls
Initial sample of earnings conference calls during 2010-2020		187,291
Drop if a delayed conference call	6,276	181,015
Drop if number of words in transcript < 400	83	180,932
Drop if firm is not on CRSP	54,553	126,379
Drop if not ordinary common equity according to CRSP	28,566	97,813
Drop if missing relevant accounting and CRSP data	1,245	96,568

Table 2
List of the 45 Capital Budgeting Words Occurring in Earnings Conference Calls Ranked by Total Counts, 2010-2020

Target	Total Count	% of Calls
Cash flow(s) (CF)	272,623	68.28%
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	208,386	40.17%
Free cash flow(s) (FCF)	98,602	30.55%
Operating income	97,399	29.90%
Operating profit	35,244	12.00%
Capital spend(ing)	22,232	13.53%
Capital investment	14,542	10.02%
Earnings before interest and taxes (EBIT)	12,870	3.64%
Return on investment (ROI)	10,663	7.25%
Return on invested capital (ROIC)	7,604	4.43%
Payback or Pay Back or Payback period	6,185	4.44%
Operating income before depreciation and amortization (OIBDA)	4,708	0.67%
(Net)Present value(s) (NPV)	4,307	2.40%
Discount rate	4,059	2.18%
Return on capital (ROC)	4,050	2.49%
Capital budget	3,925	2.57%
Return on assets (ROA)	3,192	1.98%
Enterprise value (EV)	2,931	1.54%
Internal rate (of return(s)) (IRR)	2,471	1.77%
Earnings before interest, taxes, depreciation, amortization, and rental expense (EBITDAR)	1,720	0.51%
Earnings before interest, taxes, depreciation, amortization, and exploration expense (EBITDAX)	1,702	0.72%
Weighted average cost	1,547	1.32%
Net asset value (NAV)	1,525	0.77%
Hurdle rate	1,331	1.03%
Discounted cash flow(s) (DCF)	1,102	0.56%
Economic value added (EVA)	1,040	0.38%
Price to earnings (PE)	969	0.58%
Weighted average cost of capital (WACC)	874	0.68%
Economic profit	509	0.23%
Opportunity cost	432	0.38%
Earnings before interest, taxes, and amortization (EBITA)	271	0.11%
Sensitivity analysis	241	0.22%
Risk analysis	121	0.11%
Cash flow return on investment (CFROI)	49	0.03%
Net operating profit after taxes (NOPAT)	28	0.02%
Real options	20	0.02%
Modified internal rate (of return(s)) (MIRR)	10	0.01%
Value at risk	8	0.01%
Capital asset pricing model (CAPM)	5	<0.01%
Simulation analysis	5	<0.01%
Capital rationing	3	<0.01%
Accounting rate of return	1	<0.01%
Profitability index	1	<0.01%
Earnings multiple approach	0	0.00%
Net operating profit less adjusted taxes (NOPLAT)	0	0.00%

Table 3
Summary Statistics, 2010-2020

The final sample consists of 96,568 firm-quarter conference call observations. *Capital Budgeting* is a count of the 45 capital budgeting words spoken by managers in either the presentation or Q&A sessions of the earnings conference call. The other variables are defined in Appendix A.

Variable	Mean	Median	Standard Deviation	10%	90%
Capital Budgeting	8.59	6	9.02	0	20
Word Count	5,663	5,626	2,049	3,043	8,207
% Capital Budgeting	15.18	11.09	15.09	0	35.00
Market Value	$8,775	$1,307	$35,880	$94	$16,524
Prior Returns	0.63%	-4.09%	56.25%	-50.03%	47.01%
% Fixed Assets	21.91%	12.51%	23.58%	1.37%	62.61%
R&D Intensity	5.65%	0.00%	18.40%	0.00%	16.04%
FCF	$609	$79	$3,008	-$18	$1,187
NI Loss Dummy	0.30	0.00	0.46	0.00	1.00
Tobin's Q	2.37	1.59	2.23	0.96	4.64

Table 4
The Top and Bottom 5 Fama and French (1997) 49-Industries in Terms of Mean Capital Budgeting Total Counts

The final sample consists of 96,568 firm-quarter conference call observations. *Capital Budgeting* is a count of the 45 capital budgeting words spoken by managers in either the presentation or Q&A sessions of the earnings conference call.

Top 5 Industries	Mean Count per Call	Bottom 5 Industries	Mean Count per Call
Telecommunications	15.7	Banking	2.5
Coal	15.2	Pharmaceutical	3.0
Automobiles	15.1	Trading	5.1
Fabricated Products	14.7	Apparel	5.1
Agriculture	14.5	Insurance	5.6

Table 5
Determinants of % Capital Budgeting Usage during Earnings Conference Calls, 2010-2020

Table 5 examines determinants of capital budgeting term usage for our sample of earnings conference calls. The dependent variable, *% Capital Budgeting*, is the count of words spoken by managers from our 45-word capital budgeting lexicon divided by the number of words spoken during the conference call *10,000. The seven independent variables are defined in Appendix A. The regression includes an intercept, Fama and French (1997) 49-industry dummies, and calendar year dummies. The *t*-statistics are in parentheses with standard errors clustered by year and firm. *** and * indicate significance at the 0.01 and 0.10 levels, respectively.

log(Market value)	0.83***
	(7.87)
Prior Return	0.89***
	(3.25)
% Fixed Assets	7.36***
	(5.41)
R&D Intensity	-6.38***
	(-4.92)
FCF	-0.20***
	(-4.09)
NI Loss Dummy	0.60*
	(1.84)
Tobin's Q	-1.02***
	(-12.67)
Fixed Effects	Year/Industry
R-Squared	18.4%
Sample Size	96,568

Table 6
Mean Manager Token Counts Categorized by *NI Loss Dummy*, 2010-2020

Table 6 reports the average manager token count for *Cash Flow, EBITDA, Free Cash Flow, Operating Income,* and *Operating Profit* categorized by *NI Loss Dummy* for the five most frequently occurring tokens. There are 67,739 firm-quarter observations with net income greater than zero while 28,829 firm-quarter observations have negative net income. The *t*-statistic is from a two-sample *t*-test with equal variance.

Capital Budgeting Token	Mean Count if Net Income $\geq$ 0	Mean Count If Net Income < 0	*t*-statistic on Mean Difference
Cash Flow	2.97	2.48	18.59
EBITDA	2.02	2.48	-16.03
Free Cash Flow	1.10	0.84	15.59
Operating Income	1.21	0.54	40.35
Operating Profit	0.44	0.20	22.32

Table 7
The Top 25 Managers in Terms of Capital Budgeting Total Counts

Manager Name	# of Calls	Total Count	Firm Name	Tokens per call
Perry Sook	40	1,128	Nexstar Media Group	28.20
B. Jellison	34	983	Roper Technologies	28.91
John Stephens	39	908	AT&T	23.28
Lee Tillman	29	801	Marathon Oil Corporation	27.62
Douglas Dietrich	39	795	Minerals Technologies	20.38
Kirkland Andrews	36	783	NRG Energy	21.75
Thomas Carter	40	774	Nexstar Media Group	19.35
R. Turicchi	42	767	Ziff Davis	18.26
Craig Safian	26	755	Gartner.	29.04
Peter Huntsman	41	745	Huntsman Corporation	18.17
Robert Ryder	22	737	Constellation Brands	33.50
Steven Nicola	40	736	Matthews International	18.40
Peter Minan	24	712	Harsco Corporation	29.67
George Pita	28	709	MasTec	25.32
Rick Weller	42	700	Euronet Worldwide	16.67
Glenn Tynan	41	696	Curtiss-Wright Corporation	16.98
Sunit Patel	29	692	Level 3 Parent	23.86
David Honan	31	689	Quad/Graphics	22.23
Eric Tanzberger	29	686	Service Corporation International	23.66
Michael Simonte	28	683	American Axle & Manufacturing	24.39
Michael McMurray	33	677	Owens Corning	20.52
Paul Auvil	34	670	Proofpoint	19.71
William Plummer	32	669	United Rentals	20.91
Laurans Mendelson	43	663	HEICO Corporation	15.42
Catherine Lesjak	33	652	HP	19.76

Table 8
Capital Budgeting Counts for Managers who Transition to Different Firms

Table 8 presents Capital Budgeting term counts for 473 managers participating in conference calls and transitioning from one firm to another. First firm is chronologically the first firm the manager spoke at during a conference call. Second firm is the subsequent company where the transitioning manager participated in the conference call. Column (1) is the job title transition from job 1 to job 2. The Capital Budgeting counts in the last four conference calls at their first firm are reported in columns (3) and (4). The Capital Budgeting counts in the first four conference calls at their second firm are reported in columns (5) and (6). IR is Investor Relations. Panel A reports the raw Capital Budgeting counts while Panel B reports the detrended (based on regressions including the whole sample) Capital Budgeting counts. In paired *t*-tests, the *t*-statistic for difference in means between jobs 1 and 2 in Panel A is -4.97 while it is -3.65 for the mean job difference in Panel B.

Panel A: Raw Capital Budgeting Counts

		Capital Budgeting Counts			
Job Title Transition from Job 1 to Job 2 (1)	N (2)	Job 1 Mean (3)	Job 1 Median (4)	Job 2 Mean (5)	Job 2 Median (6)
CEO to CEO	68	2.27	1.75	3.01	1.625
CFO to CEO	16	5.80	4.125	5.05	2.875
CFO to CFO	192	4.59	3.25	5.93	4.5
IR to IR	90	0.17	0	0.40	0
Other	107	1.00	0	3.01	1
All	473	2.65	1	3.77	1.75

Panel B: Detrended Capital Budgeting Counts

		Detrended Capital Budgeting Counts			
Job Title Transition from Job 1 to Job 2 (1)	N (2)	Job 1 Mean (3)	Job 1 Median (4)	Job 2 Mean (5)	Job 2 Median (6)
CEO to CEO	68	2.00	1.45	2.32	1.31
CFO to CEO	16	4.86	3.19	3.95	2.24
CFO to CFO	192	3.91	2.63	4.60	3.53
IR to IR	90	0.15	0	0.32	0
Other	107	0.87	0	2.33	0.81
All	473	2.27	0.78	2.92	1.33

Table 9
Regression for Average Capital Budgeting Token Count in Second Job
for the Same Managers, 2010-2020

Table 9 presents the regression results for 473 managers participating in conference calls and transitioning from one firm to another. *Capital Budgeting 2* (token count from our 45-word capital budgeting lexicon in the first four calls at the second firm for the same manager) is the dependent variable. *Capital Budgeting 1* is the Capital Budgeting token count across the last four calls at their first firm for the same manager. The other independent variables are defined in Appendix A. The *t*-statistics are in parentheses. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 levels, respectively. The regressions include an intercept. The detrended count column uses detrended capital budgeting counts.

	Raw Counts (1)	Detrended Counts (2)
Capital Budgeting 1	0.44***	0.41***
	(8.21)	(8.66)
CEO	1.84**	1.39**
	(2.24)	(2.21)
CFO	4.22***	3.22***
	(5.08)	(5.07)
Investor Relations	-0.18	-0.15
	(-0.21)	(-0.22)
Same Title	-0.60	-0.47
	(-1.27)	(-1.31)
Same Industry	0.02	0.03
	(0.06)	(0.10)
CPA	-0.74	-0.53
	(-1.34)	(-1.26)
MBA	0.47	0.38
	(1.04)	(1.11)
Prestigious MBA	-1.24**	-0.93**
	(-2.01)	(-1.98)
Adjusted R-Squared	28.8%	29.7%
Sample Size	473	473