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CFO narcissism and the power of persuasion over analysts: a mixed-methods approach

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Abstract
We study the role of CFO narcissism in the intent and ability to positively influence sell-side analysts' perceptions of the firm. Consistent with narcissists casting favorable impressions on others, we find CFO narcissism is associated with overly optimistic analyst valuations. We then study public persuasion attempts by analyzing conference call transcripts and private persuasion attempts through a laboratory study. In the conference call setting, we show that narcissistic CFOs use more persuasive language and are more inclined to call on bearish analysts, both of which we link to price target revisions following the call. In the lab study, we simulate a one-on-one conversation and find that narcissists are especially more likely to use coercive methods to induce higher valuations from analysts. Collectively, we show that narcissistic CFOs use persuasion to favorably influence analysts' perceptions of firm value.

Keywords Executive Narcissism · Persuasion · Sell-Side Analysts · Valuation

JEL Classification G24 · G30 · G41

1 Introduction

A key role of sell-side financial analysts involves the acquisition and processing of information related to firm value. Analysts collect and process both public and private information and disseminate their judgments to capital market participants, which impacts stock price (e.g., Gleason and Lee 2003). However, despite

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their role as sophisticated information intermediaries (e.g., Bradshaw, Ertimur, and O'Brien 2017), research finds that analysts' judgments are subject to behavioral biases (Hirst and Hopkins 1998; Sedor 2002; Kadous et al. 2006) as well as economically incentivized biases owing to career concerns and the desire to curry favor with management (Feng and McVay 2010; Brown et al. 2015).[1] In recent years, a separate stream of literature has established the importance of managerial fixed effects on firms' decision-making and associated outcomes. For example, researchers have linked executive narcissism to suboptimal capital allocation and deficient risk management.[2]

We seek to combine these strands of literature by examining the association between CFO narcissism and both the intent and ability to influence analysts' valuation forecasts. We focus on CFOs because of their primary role in discussing financial forecasts and other accounting performance measures with analysts during earnings conference calls (e.g., Lu, Matsumoto, and Moon 2023)[3] and because the CFO is the most likely executive to privately interact with analysts (Brown et al. 2015). Indeed, we find that CFOs are over four times more likely than CEOs to use valuation and economic fundamental terms during conference calls.[4] Moreover, practitioners agree that CFOs assume a predominant role in communicating growth prospects to market participants (Sinfeld and Trotter 2016) and that CFOs' communications role often positions them as the primary liaison for institutional investors (Sweeney 2013) due to their ability to help analysts and investors interpret financial data in the context of the firm's valuation narrative (Narayanan 2014).[5] We thus predict that narcissistic CFOs will induce a positive bias in analysts' valuations through their willingness and ability to persuade. We focus on price targets because they represent a comprehensive assessment of the firm's long-term economic prospects, which allows CFOs to influence analysts through various valuation channels (e.g., cash flows, risk, growth). Furthermore, unlike optimistic earnings forecasts, which create explicit benchmarks that harm the firm if missed, price target optimism

[1] Other factors influencing analysts include earnings changes (De Bondt and Thaler 1990), peer analysts (Jegadeesh and Kim 2010), analyst affiliation (Michaely and Womack 1999), and competition (Hong and Kacperczyk 2010).

[2] A non-exhaustive list of papers linking firm-level outcomes to executive narcissism include Chatterjee and Hambrick (2007), Rijsenbilt and Commandeur (2013), Olsen, Dworkis, and Young (2014), Aktas, Bodt, Bollaert, and Roll (2016), Ham, Lang, Seybert, and Wang (2017); Ham, Seybert, and Wang (2018), Buchholz, Lopatta, and Mass (2020), Abdel-Mequid, Jennings, Olsen, and Soliman (2021), Hong, Lee, and Roh (2022), Larcker, O'Reilly, Tayan, and Zakolyukina (2021), and Hou, Fairchild, and Perotti (2025).

[3] Lu et al. (2023) find that the CFO is more likely to be to be called on to address specific questions raised by analysts.

[4] In untabulated analyses, we examine a lexicon of 45 terms related to valuation and economic fundamentals (e.g., EBITDA and free cash flow) used on earnings calls, as defined by Battalio, Loughran, and McDonald (2024). After scaling for total words spoken, we find that CFOs use these terms over four times more than CEOs on calls.

[5] Some interviews from CFOs where they discuss their importance in conveying data to analysts can be seen here: https://www.sfmagazine.com/articles/2023/june/cfo-to-cfo-the-power-of-storytelling-in-the-finance-function and here: https://strategiccfo360.com/did-you-hear-the-one-about-the-cfo-telling-a-story/.

generates positive investor sentiment without the risk of negative consequences from unmet expectations. Using signature size as an unobtrusive proxy for narcissism and price targets from I/B/E/S over the sample period of 1999–2020, we document that analysts issue higher price targets for firms with more narcissistic CFOs.[6] Subsequent analyses of returns reveal that these price targets are less likely to be achieved, indicating that analysts' optimism for firms with narcissistic CFOs is not economically justified.

We test two major channels through which CFO narcissism may induce analyst optimism. The first entails *public* communication, where narcissistic CFOs' communication abilities (Goncalo et al. 2010) may enable them to better craft a narrative about the firm's financial strengths and opportunities while also being more effective at downplaying the firm's weaknesses and potential challenges. The second channel entails *private* communication, wherein analysts and the CFO interact one-on-one behind closed doors. Brown et al. (2015) report that analysts rate private phone calls as one of the most useful types of direct contact with management for valuation purposes and that over half of the analysts surveyed have private communications with management five or more times per year. In these private settings, we argue that narcissistic CFOs may be more willing to engage in coercive tactics, for example, pressuring analysts to commit to favorable forecasts, offering favorable access, or threatening a loss of access to private communication if analysts do not issue desirable forecasts.[7] To test these theories, we use a mixed-methods design. For the public channel, we analyze the transcripts of firms' conference calls, where data are publicly observable. To examine the private channel, where archival data do not exist, we conduct a laboratory study to glean insights into what could occur in private interactions between analysts and CFOs. Through this approach, we illuminate how CFO narcissism can influence analysts' valuations.

We focus on conference calls as our public setting of interest for several reasons: (1) nearly all public firms hold conference calls following earnings announcements, (2) executives interact heavily with analysts during these calls, and (3) call transcripts are publicly available. We analyze persuasion from textual analyses of conference calls over the sample period of 2003–2020 and find that narcissistic CFOs (1) interact with analysts for longer portions of the call, (2) use more persuasive and argumentative language, (3) adopt a more positive tone, and (4) employ more corporate euphemisms—which have been shown to mute market responses to negative fundamental news (Suslava 2021). We also find that narcissistic CFOs are more

[6] Signature size has been used as a proxy for narcissism in prior studies of CEOs, CFOs, and auditors (Church et al. 2020; Chou et al. 2021; Hou et al. 2025) and is the only previously validated method for capturing CFO narcissism (Ham et al. 2017). The signature size proxy has been extensively validated in numerous peer-reviewed studies (see Appendix B) via the NPI, the most widely applied measure for the assessment of narcissistic personality traits as well as field-based methods such as employee surveys and manager self-portrayals.

[7] Research finds that exploitativeness is a key component of clinical narcissism (Raskin and Hall 1979; Emmons 1984; Ames et al. 2006), which suggests that narcissistic CFOs may be more likely to pressure analysts for desired outcomes.

likely to engage with bearish analysts on conference calls, which has been shown to attenuate their pessimism (Flake 2025).[8]

Next we conduct two sets of analyses to link the persuasion tactics above to the optimism in analysts' valuations. First, we examine whether CFOs' use of persuasive language on conference calls attenuates analysts' price target revisions following negative earnings surprises.[9] We use a design akin to that of Suslava (2021), whereby we examine analysts' price target revisions following the firm's earnings announcement. As expected, we find that, following the earnings announcement, analysts revise their price targets in the direction of the earnings surprise. However, analyst revisions to the earnings surprise are muted when the CFO uses more persuasive language on the conference call, and this attenuation is entirely driven by the bad news calls (when earnings missed the consensus analyst forecast). This finding is consistent with persuasive language—which is more likely to be used by narcissistic CFOs—influencing analysts away from using reported fundamentals to value the firm when focusing on fundamentals would be most detrimental. Second, following Flake (2025), we examine whether CFOs' willingness to engage with bearish analysts on conference calls leads these analysts to positively revise their price targets following the call. Using a design similar to that of Flake (2025), we find that bearish analysts upwardly revise their price targets following the call more when they participate on the call. Taken together, these analyses suggest that public persuasion—which narcissistic CFOs are more likely to engage in—is associated with positive responses from analysts following conference calls. We view these results as providing evidence consistent with public persuasion tactics serving as a channel through which CFO narcissism influences analyst optimism.

Next we conduct a laboratory study to provide evidence on CFOs' *private* persuasion attempts. This is important not only because it illuminates the private channel but also because we are aware of no research directly eliciting narcissists' *intent* to persuade. In our laboratory study, we simulate CFOs' private interactions with analysts and examine whether narcissistic managers are more likely to influence analysts behind closed doors. We investigate two modes of persuasion: coercion (e.g., making a threat, offering a favor, or asking for commitment) and self-presentation (e.g., establishing social consensus, claiming authority, or behaving in a likeable manner).[10] We recruit participants who have served in a management role and have

[8] Mayew (2008) finds that managers are more likely to select optimistic analysts to participate on conference calls. Narcissistic CFOs could also further slant the questions towards optimistic analysts, rewarding optimistic analysts by calling on them to ask a question (or punishing pessimistic analysts by avoiding calling on them).

[9] Research has documented that analysts generally derive their price target valuations from price-to-earnings based multiples (e.g., Bradshaw 2002; Bradshaw 2004; Asquith et al. 2005). That is, more positive (negative) earnings surprises lead to higher (lower) revisions to the firm's target valuation.

[10] While we acknowledge that a laboratory study of experienced business professionals may not generalize to CFOs, archival data on private calls are unavailable. Our design also provides a notable advantage in that it allows us to isolate the effect of narcissism on participants' behavior while controlling for firm-level variables, mitigating endogeneity concerns found in archival data related to the nonrandom assignment of CFOs to firms. Additionally, anecdotal evidence indicates that some firms only grant corporate access to analysts with favorable views: https://www.wsj.com/articles/new-wall-street-conflict-analysts-say-buy-to-win-special-access-for-their-clients-1484840659.

substantial business and accounting knowledge and ask them to assume the role of a CFO preparing for a one-on-one call with a financial analyst who issued a lackluster valuation of their company.[11] We directly measure participants' narcissism using the NPI-16 psychometric scale (Ames et al. 2006). Guided by Cialdini's (2001) model of persuasion, we elicit participants' intent to engage in six different persuasive tactics on the call. Three of these tactics correspond to coercion tactics: scarcity, reciprocity, and commitment. The remaining three tactics correspond to self-presentation tactics: social proof, authority, and liking. Our design allows us to investigate whether participants with greater narcissism are more likely to employ either type of tactics and, in particular, whether they are more likely to employ coercive tactics in a private setting.

We find that narcissists are significantly more willing to use both coercion and self-presentation tactics to persuade analysts to increase their valuations, but the association significantly strengthens for coercive tactics. Overall, these results suggest that narcissistic CFOs are more likely to employ multiple methods of persuasion when interacting with analysts and that the specific methods they employ depend on whether the interactions are public or private. Publicly, narcissistic CFOs rely more on indirect persuasion tactics, such as impression management, whereas in private settings, narcissists also engage in more coercive tactics.

Having examined what drives the relation between CFO narcissism and analysts' optimistic valuations, we conduct additional archival tests that explore cross-sectional variation in analysts' optimistic valuations. We find that the relation between CFO narcissism and analyst optimism strengthens for firms with higher valuation uncertainty (e.g., firms with high stock return volatility and poor economic performance). In these scenarios, tactics employed by narcissistic CFOs may more significantly affect analysts' perceptions, leading to more optimistic valuations. Next we consider the influence of CFO narcissism on analysts' earnings forecast optimism. Consistent with managers preferring optimistic long-term but beatable short-term forecasts (Richardson et al. 2004; Cotter et al. 2006; Bradshaw et al. 2016), we find that CFO narcissism is positively associated with earnings forecast optimism but only at longer horizons. Third, we provide some evidence that CFO narcissism is positively associated with stock recommendation optimism. Finally, we provide evidence consistent with our expectation that CFO narcissism has a stronger influence than CEO narcissism on analysts' optimism.

Overall, our evidence is consistent with narcissistic CFOs obtaining optimistic valuations from analysts. Narcissistic CFOs appear more willing to use persuasion to influence analysts' opinions in public conference calls, while behind closed doors, they may apply coercive tactics. Our archival tests are subject to at least one important caveat—endogeneity via executive-firm matching (i.e., executives are not randomly assigned to firms). This concern is most salient within our archival analyses that examine the intent to persuade financial analysts (the conference call transcript analyses), as firms could seek to attract individuals more likely to take such actions. However, we observe similar inferences regarding the willingness to persuade in our

[11] We received institutional review board approval for this study at the corresponding institution.

laboratory study, which ameliorates such concerns. In our main empirical analyses that examine analyst optimism, the more salient endogeneity threat stems from the possibility that optimistic analysts follow firms with narcissistic CFOs.[12] We address this concern by using individual analysts' forecasts and exploiting variation within each analyst's coverage portfolio in a given year (i.e., including analyst-by-year fixed effects). By focusing only on variation in CFO narcissism across firms covered by the same analyst at the same time, we lessen concerns that our results are driven by optimistic analysts being more likely to cover the firm. Nevertheless, we acknowledge that selection effects cannot be ruled out from our study.

Our study makes three primary contributions. First, we extend the literature on executive narcissism beyond its effects on firm decision-making by exploring how narcissism relates to external stakeholders' perceptions of the firm, a dimension that has received limited attention and has focused on CEOs (Marquez-Illescas and Zhou 2023; Hou et al. 2025). Our findings also highlight a possible positive aspect of narcissism, providing a new perspective that diverges from the generally negative view in the literature and offering a potential rationale for why narcissists often achieve high-ranking positions (Brunell et al. 2008; Goncalo et al. 2010). Second, we enhance the understanding of the optimism in analysts' valuation assessments. While studies acknowledge that analysts' price targets and recommendations are generally optimistic yet informative (Bradshaw et al. 2013, 2019), we identify CFO narcissism as a contributor to the optimism in analysts' valuations. Finally, our study contributes to the psychology literature on narcissism and persuasion. Research suggests narcissists rise to power by exuding authority and confidence, leading others to believe they have superior skills and competence even when they do not (Brunell et al. 2008; Goncalo et al. 2010; Nevicka et al. 2011a, 2011b; Ong et al. 2016). However, it remains unclear whether narcissists *intentionally* influence other stakeholders, especially when promoting the firm (versus themselves). To our knowledge, our study is the first to document intentional persuasion attempts by narcissists, which also extends prior accounting research highlighting the importance of one-on-one interactions between management and analysts (Brown et al. 2015).

2 Literature and hypothesis development

2.1 Managers' incentives to influence analysts

Research documents that analysts provide valuable information that impacts the capital market's view of the firm's prospects and hence its stock price. For example, Brav and Lehavy (2003) and Asquith et al. (2005) find that the market reacts to the disclosure of analysts' price targets and that these disclosures

[12] An alternative explanation would involve a correlated omitted firm characteristic that causes the presence of a narcissistic CFO, the optimism in analysts' price target forecasts (unconditionally), and optimism in analysts' earnings forecasts (only at longer horizons). However, it is unclear which firm characteristic might produce this pattern.

contain information related to future abnormal price movements. While Gleason and Lee (2003) find similar market reactions for earnings forecast revisions, our analyses focus on price targets for several reasons. First, price targets represent analysts' most direct estimate of firm value (Brav and Lehavy 2003) and holistically assess the firm's long-run economic future, allowing the CFO to persuade analysts through multiple valuation channels (e.g., cash flows, risk, earnings quality, and long-term growth prospects). Second, earnings forecasts have a clear reckoning date against which they are compared—the firm's earnings announcement. Missing analysts' earnings expectations leads to capital market consequences in the form of share price drops (Skinner and Sloan 2002; Bartov et al. 2002; Bhojraj et al. 2009) and career penalties in the form of reduced compensation and a greater likelihood of forced turnover (Matsunaga and Park 2001; Farrell and Whidbee 2003; Mergenthaler, Rajgopal, and Srinivasan 2012; Park et al. 2021). To avoid these negative consequences, management has incentives to walk down analyst forecasts to beatable targets (Richardson et al. 2004; Cotter et al. 2006). Third, near-term earnings predictions are subject to less information uncertainty, and analyst accuracy is explicitly measured for earnings forecasts, with the literature showing negative career consequences for poor accuracy (Hong, Kubik, and Solomon 2000; Hong and Kubik 2003). We therefore argue that managers' preferences for optimistic outputs will strengthen for price target forecasts relative to earnings forecasts. However, in additional analyses, we also examine analysts' earnings forecasts while conditioning on the forecast horizon.

2.2 The role of narcissism in persuasion

Given that influencing analyst valuations can benefit the firm, one might expect all executives to attempt to persuade. However, it is well established in psychology that influencing others and managing impressions are difficult and energy-draining (Vohs et al. 2005). Individuals who engage in impression management at work generally suffer from feelings of insincerity and are more likely to subsequently perform poorly (Klotz et al. 2018; Chawla et al. 2020). In fact, the mere act of *being visible* in a meeting depletes psychological resources and worsens performance in both current and subsequent interactions (Shockley et al. 2021). Further, distorting the truth to benefit others or censoring one's words (in this case, the CFO distorting or embellishing the truth to benefit the firm) depletes psychological resources in a similar way (Cantarero and Tilburg 2015; Koopman et al. 2023).

Although persuasion taxes individuals' cognitive resources, research in psychology suggests that narcissists may be more willing and able to engage in persuasion. Psychology and management research indicates that narcissists present themselves and their skills more confidently and exude authority (Brunell et al. 2008; Goncalo et al. 2010; Nevicka et al. 2011a, 2011b; Ong et al. 2016). Narcissistic executives are more likely to report aggressively and manage earnings (Rijsenbilt and Commandeur 2013; Olsen et al. 2014; Majors 2016; Ham et al. 2017; Buchholz et al. 2020; Abdel-Mequid et al. 2021) as well as a variety of other unethical practices (Duchon and Drake 2009; Amernic and Craig 2010; Van Scotter and Roglio 2020).

In addition, narcissists overestimate their own performance (Robins and John 1997) and view themselves as more competent and superior to others (Raskin and Hall 1981; Raskin and Terry 1988; Paulhus 1998). Narcissists are also more likely to take risks to achieve results (Buyl, Boon, and Wade 2019; Chatterjee and Hambrick 2007; Ham et al. 2018) and present themselves more favorably to superiors to get promoted at work (Nevicka et al. 2011a, 2011b). Taken together, research suggests that narcissistic executives may be both more willing and able to persuade financial analysts.

2.3 The role of the CFO in influencing analysts

While the CEO is frequently assumed to be tasked with increasing firm value, accounting and finance research suggests that CFO characteristics generally have stronger effects than CEO characteristics on firm decisions in the financial domain. For example, Malmendier et al. (2023) find that CFO overconfidence (but not CEO overconfidence) predicts financing and leverage decisions. Jiang et al. (2010) show that CFO (as compared to CEO) equity incentives are a stronger predictor of accruals earnings manipulation to exceed analysts' forecasts. Ham et al. (2017) find that CFO (as compared to CEO) narcissism is more strongly associated with financial reporting quality. Finally, Biggerstaff et al. (2021) document an association between CFO (but not CEO) leisure consumption and earnings quality, earnings guidance, conference call participation, analyst forecast dispersion, and audit fees.[13]

In addition, practitioners recognize the CFO as the key figure responsible for communicating a company's growth prospects to market participants, and analysts and investors look to the CFO to interpret the numbers in the broader context of company strategy and the business environment (Sweeney 2013; Narayanan 2014; Sinfeld and Trotter 2016). Moreover, the CFO plays a primary role in discussing financial forecasts and related performance measures with analysts during earnings conference calls (e.g., Lu, Matsumoto, and Moon 2023). As discussed earlier, we find that CFOs are over four times more likely than the CEO to use valuation and economic fundamental terms during conference calls. CFOs also privately interact with analysts following such calls. As Brown et al. (2015) note: "[I]nterviewees reported having private phone calls with senior management—most often the CFO—at least quarterly. Many analysts said companies schedule analyst 'call-backs' immediately after their public earnings conference calls: one-on-one, private calls from the CFO, who answers additional questions from individual analysts" (Brown et al. 2015, pp. 16–19). Taken together, our formal hypothesis on the influence of CFO narcissism on analysts' valuations follows:

[13] As part of our robustness tests, in Sect. 7.4, we examine whether CEO narcissism also plays a role in explaining analyst optimism.

H1: CFO narcissism is positively associated with the optimism in analysts' valuations.

3 Measuring CFO narcissism

Following research on executive narcissism (e.g., Ham et al. 2017), we hand-collect CFO signatures from the SEC's website.[14] In 2002, the SEC required the senior executives of nearly 950 firms to certify the accuracy of their financial statements, requiring signed statements from each firm. As noted by Ham et al. (2017), this data source provides several advantages. First, the signatures are notarized, which ensures each executive actually wrote their signature. It also eliminates concerns of a digital signature being used and potentially resized or reformatted. Second, each executive signed a similar document for an identical (mandatory) purpose, which eliminates concerns about alternative motivations for presenting or signing a document. By way of comparison, an alternative proxy for executive narcissism uses the size of the executive's photo in the annual report. This measure includes a series of decisions that may or may not have input from the executive in question and may relate to other firm characteristics (e.g., investor relations resources, prior news, and CEO attractiveness).[15] Third, the documents were standardized across firms, which enhances the comparability of the signatures.[16]

We hand-collect the documents on the SEC's website and match each CFO to Execucomp, which we use to determine when each executive was in office.[17] Following research on CFO narcissism (e.g., Ham et al. 2017), we use the CFO's signature size to proxy for CFO narcissism. We measure the area of each signature by drawing a rectangle around the signature, with each side of the rectangle touching the signature's most extreme endpoint (Zweigenhaft 1977; Ham et al. 2017, 2018). We control for CFO name length by scaling the signature area by the number of letters in the executive's name to create an area-per-letter signature size metric.[18] *CFO Signature Size* is our primary variable of interest and proxies for CFO narcissism.

[14] https://www.sec.gov/spotlight/officerstatements.htm.

[15] Executive photos typically appear in annual reports on investor websites, distinct from 10-K filings. Firms can opt not to have separate reports. The measure captures whether an executive photo is included and its size. However, other parties besides the executive (e.g., investor relations, marketing, and legal teams) also likely contribute input.

[16] See Ham et al. (2017) for examples of the form.

[17] Execucomp coverage extended from 1992 to 2020. However, I/B/E/S price target data starts in 1999 and Seeking Alpha's conference call coverage starts in 2003, thus limiting the sample for each analysis accordingly.

[18] We scale the signature area by the number of letters in the signed name. If the signature is illegible, we scale by the number of letters in the printed name below the signature.

4 Archival analysis of CFO narcissism and analysts' price target optimism

4.1 Data and sample

We use a sample of analysts' price target forecasts from I/B/E/S. Price targets are available in I/B/E/S for forecasts issued in 1999 and later, so we limit the sample period to 1999–2020 in these analyses. We estimate our analyses using both the consensus file and the detail file because each has benefits and drawbacks. The consensus file focuses on the aggregate forecast that is most commonly used by market participants (and averages away any idiosyncratic effects stemming from individual analysts), but we have limited identification since we can only exploit cross-sectional variation across firms. The results could thus be subject to concerns that certain analysts choose to follow firms with more narcissistic CFOs. The detail file analyses enable us to improve our identification by using analyst-by-year fixed effects, but they do not enable us to determine whether results aggregate up to the consensus level. We thus incorporate both sets of analyses. We keep each price target made during each CFO's tenure for which we have nonmissing *CFO Signature Size*. The final sample includes 47,219 consensus (104,785 detail) price targets, corresponding to the same set of 673 unique firms (and thus the same 673 unique CFOs).

4.2 Empirical specification

Hypothesis 1 predicts that CFO narcissism is associated with the optimism in analysts' valuations. Therefore, in our main specification, we regress analyst price target optimism on CFO narcissism by estimating the model in Eq. 1.

$$Analyst\ Optimism = \beta_1\ CFO\ Signature\ Size + Controls + Fixed\ Effects + \varepsilon. \quad (1)$$

We use measures of analyst optimism (*Analyst Optimism*) for analysts' valuation-based outputs. Following Bradshaw et al. (2013) and Bradshaw et al. (2019), we use both ex ante and ex post price target measures. The ex ante measure (*Price Target/Current Price*) scales the price target forecast by the prior day stock price, whereas the ex post measure (*Price Target/Future Price*) instead scales the price target forecast by the one-year-ahead stock price. A benefit of using both is that we can consider optimism both relative to the current price as well as the future realized price, which evaluates whether the ex ante optimism is justified via subsequent returns.[19] We use the mean price target forecast in the consensus file analyses and the individual price target forecast in the detail file analyses.

CFO Signature Size is our primary variable of interest and proxies for CFO narcissism. We also include a variety of firm and CFO control variables that we expect to be associated with analysts' price targets, the decision to hire a narcissistic CFO,

[19] Results are similar if we use the maximum share price achieved over the year after the price target forecast.

or both. These include firm size, growth opportunities, leverage, past earnings performance, firm age, as well as signed returns, return volatility, and trading volume over the 100 trading days before the forecast date (e.g., Dechow and You 2020).[20] Regarding CFO controls, we include gender, age, and tenure. We winsorize continuous variables at the 1% and 99% levels. See Appendix A for variable definitions. In the consensus price target analysis, we include industry-by-year fixed effects to capture time-varying factors at the industry (two-digit SIC) level, and we cluster standard errors by firm.[21] In the detail price target analysis, we include analyst-by-year fixed effects to examine variation in CFO narcissism across firms within each analyst's portfolio of covered firms at a given point in time (that is, holding the analyst and time constant, exploiting cross-sectional variation in CFO narcissism across each analyst's covered firms), and we cluster standard errors by analyst.

4.3 Empirical results

Descriptive statistics are reported in Table 1. Panel A (B) reports descriptive statistics for the consensus (detail) price target forecast analyses. The consensus price target forecasts are 20.4% above the stock price the day before the forecast and 26.3% above the stock price one year following the forecast, consistent with optimism in analysts' price target forecasts (e.g., Bradshaw et al. 2013; Palley et al. 2025). The individual price target forecasts are similar, but slightly less optimistic at 16.8% above the prior day share price and 24.1% above the one-year-ahead stock price. The mean CFO signature size is comparable across the samples as well as with the mean signature size reported in Ham et al. (2017). Most CFOs in the sample are male, the average age is in the early fifties, and the average tenure is between five and six years. The firm characteristics are also similar across the samples.

Table 2 presents the results of the relation between CFO narcissism and analysts' price target optimism. The consensus forecasts are used in columns 1 and 2. In column 1, we use the ex ante optimism measure (*Price Target/Current Price*), and in column 2, we use the ex post optimism measure (*Price Target/Future Price*). In column 1, the coefficient on *CFO Signature Size* is significantly positive (coef. = 0.029; t-stat. = 3.206). Column 2 reports the results using *Price Target/Future Price* and our inferences remain unchanged (coef. = 0.092; t-stat. = 3.052).

In columns 3 and 4 of Table 2, we report the results of the relation between CFO narcissism and price target optimism using individual analysts' forecasts. We again use *Price Target/Current Price* (*Price Target/Future Price*) in column 3 (column 4). In these models, we include analyst-by-year fixed effects to exploit variation in CFO narcissism within each analyst's portfolio in a given year. In both specifications, we

[20] Unless noted, all accounting-related controls are obtained from the most recent 10-K before the forecast date.

[21] Because we only have one CFO per firm, we cannot include firm fixed effects in the model (i.e., we have no within-firm variation in our proxy for CFO narcissism). Results are robust to clustering by industry.

continue to find evidence of a positive relation between *CFO Signature Size* and price target optimism (e.g., coef. = 0.008; t-stat. = 2.636 in column 3).

Collectively, the results show that analysts' price targets tend to be more optimistic for firms with more narcissistic CFOs, using both consensus and individual analyst forecasts. This forecast optimism is consistent with managers' incentives to elicit high valuations and thus provides some evidence consistent with narcissistic CFOs being more effective in persuading analysts. Next we explore two settings in which analysts could persuade analysts—a public channel (Sect. 5) and a private channel (Sect. 6).

5 Public persuasion channel: analysis of conference calls

CFOs interact heavily with analysts on earnings conference calls, which is a publicly observable setting in which we can examine CFOs' persuasion attempts. CFOs can attempt to persuade through their level of engagement (e.g., number of words spoken), the use of argumentative words, the tone of their responses (e.g., Mayew and Venkatachalam 2012; Davis et al. 2015; Chen et al. 2018), the use of corporate euphemisms (Suslava 2021), or a combination of these. In addition, while managers are more likely to engage with optimistic analysts on conference calls (Mayew 2008), engaging with unfavorable analysts attenuates the bearishness of their outputs (Flake 2025). Therefore, CFOs may also attempt to persuade through the analysts they choose to communicate with on the calls. Alternatively, CFOs could use the ability to ask a question on the call as a reward for optimistic analysts (or a punishment for pessimistic analysts by not allowing them to participate). In this case, we would expect narcissistic CFOs to call on optimistic analysts during the call to an even greater extent.

5.1 Data and sample

We examine CFOs' public persuasion attempts through their interactions with analysts on conference calls. We view earnings conference calls as a useful setting to examine CFOs' persuasion attempts, given that most firms hold these calls, CFOs and analysts interact heavily on these calls, and transcript data is publicly observable to analyze.[22] We use a sample of earnings conference call transcripts from Seeking Alpha over the period 2003–2020. We keep call observations for firm-quarters in which we have nonmissing *CFO Signature Size*. In the CFO content analyses, we consider answers given during the question and

[22] CFOs interact with analysts in more private settings as well, including via private meetings (e.g., Soltes 2014), broker-hosted investor conferences (Green et al. 2014), and callbacks following conference calls (Brown et al. 2015). While we expect persuasion is more likely to occur in these private settings, these interactions are largely unobservable. We thus conduct a controlled laboratory study to simulate a private conversation between a manager and an analyst.

Table 1 Descriptive statistics

Panel A: Price target forecasts—consensus						
Variable	**N**	**Mean**	**StdDev**	**P25**	**Median**	**P75**
CFO Signature Size	47,219	0.748	0.418	0.464	0.637	0.921
Dummy(CFO Male)	47,219	0.925	0.264	1.000	1.000	1.000
Log(CFO Age)	47,219	3.957	0.114	3.892	3.951	4.043
Log(CFO Tenure)	47,219	1.749	0.606	1.386	1.792	2.197
Price Target/Current Price	47,219	1.204	0.256	1.057	1.142	1.271
Price Target/Future Price	47,219	1.263	0.734	0.892	1.063	1.351
Log(Market Value)	47,219	8.458	1.390	7.496	8.387	9.306
Tobin's Q	47,219	1.446	1.157	0.764	1.079	1.693
Leverage	47,219	0.620	0.186	0.499	0.615	0.748
ROA	47,219	0.055	0.067	0.019	0.050	0.088
Log(Firm Age)	47,219	2.899	0.362	2.833	2.944	3.135
Returns[−100,−1]	47,219	0.054	0.238	−0.079	0.047	0.172
Std Dev Returns[−100,−1]	47,219	0.023	0.013	0.015	0.020	0.028
Trading Volume[−100,−1]	47,219	0.842	0.667	0.409	0.632	1.036
Panel B: Price target forecasts—detail						
Variable	**N**	**Mean**	**StdDev**	**P25**	**Median**	**P75**
CFO Signature Size	104,785	0.756	0.418	0.477	0.640	0.913
Dummy(CFO Male)	104,785	0.911	0.284	1.000	1.000	1.000
Log(CFO Age)	104,785	3.968	0.112	3.892	3.970	4.060
Log(CFO Tenure)	104,785	1.843	0.607	1.386	1.946	2.303
Price Target/Current Price	104,785	1.168	0.199	1.057	1.145	1.244
Price Target/Future Price	104,785	1.241	0.701	0.881	1.058	1.343
Log(Market Value)	104,785	9.070	1.325	8.142	8.994	9.904
Tobin's Q	104,785	1.674	1.403	0.823	1.238	2.017
Leverage	104,785	0.605	0.201	0.464	0.600	0.752
ROA	104,785	0.064	0.074	0.021	0.057	0.101
Log(Firm Age)	104,785	2.941	0.355	2.833	2.996	3.178
Returns[−100,−1]	104,785	0.056	0.264	−0.096	0.060	0.197
Std Dev Returns[−100,−1]	104,785	0.024	0.013	0.014	0.020	0.028
Trading Volume[−100,−1]	104,785	1.000	0.781	0.476	0.763	1.223

This table reports descriptive statistics. Panel A reports statistics for the consensus price target forecast sample. Panel B reports statistics for the detail price target forecasts sample. N is the number of observations. StdDev is the standard deviation. P25 (P75) is the 25th (75th) percentile of the variable's distribution. Refer to Appendix A for variable definitions

answer (Q&A) portion of the call and aggregate the number of answers provided, the words spoken, or both, such that each unit of observation is at the call level. In the analyst participation analyses, we examine whether certain analysts (i.e., bullish versus bearish) were called on to ask a question, so each unit of observation is at the analyst-by-call level.

Table 2 CFO narcissism and price target optimism

	Consensus		Detail	
	Price Target/Current Price	Price Target/Future Price	Price Target/Current Price	Price Target/Future Price
	(1)	(2)	(3)	(4)
CFO Signature Size	0.029***	0.092***	0.008***	0.053***
	(3.206)	(3.052)	(2.636)	(4.905)
Log(Market Value)	−0.005	0.027**	0.006***	0.031***
	(−1.538)	(2.151)	(3.721)	(5.816)
Tobin's Q	−0.004	0.061***	−0.005***	0.042***
	(−0.929)	(3.330)	(−3.040)	(6.817)
Leverage	−0.004	0.038	0.037***	0.087**
	(−0.132)	(0.338)	(3.228)	(2.373)
ROA	−0.278***	−1.718***	−0.026	−0.916***
	(−3.330)	(−5.385)	(−0.924)	(−10.466)
Log(Firm Age)	−0.025**	−0.080*	−0.025***	−0.122***
	(−2.217)	(−1.913)	(−4.703)	(−5.977)
Returns[−100,−1]	−0.517***	−0.247***	−0.173***	0.160***
	(−55.580)	(−7.645)	(−35.670)	(10.612)
Std Dev Returns[−100,−1]	6.775***	3.921***	2.411***	−5.908***
	(15.531)	(2.639)	(13.631)	(−9.581)
Trading Volume[−100,−1]	−0.009	0.135***	−0.003	0.118***
	(−1.284)	(4.643)	(−0.911)	(9.872)
Dummy(CFO Male)	0.010	0.005	0.010**	0.028**
	(1.021)	(0.129)	(2.208)	(2.143)
Log(CFO Age)	0.020	0.214*	−0.012	0.029
	(0.586)	(1.843)	(−0.812)	(0.581)
Log(CFO Tenure)	−0.014**	−0.028	0.003	−0.012
	(−2.110)	(−1.191)	(1.146)	(−1.371)
Observations	47,219	47,219	104,785	104,785
R-squared	0.567	0.342	0.447	0.494

This table presents results from tests of the effect of CFO narcissism on price target optimism. Columns 1 and report results using consensus price target forecasts, and columns 3 and 4 report results using detail price target forecasts. Refer to Appendix A for variable definitions. The specifications in columns 1 and 2 include industry-by-year fixed effects and standard errors clustered by firm. The specifications in columns 3 and 4 include analyst-by-year fixed effects and standard errors clustered by analyst. T-statistics are reported in parentheses. P-values are two-tailed, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively

5.2 Empirical specification

5.2.1 Characteristics of CFOs' answers

We examine CFOs' public persuasion attempts by regressing various conference call measures on CFO narcissism using the following model:

$$Conference\ Call\ Measure = \beta_1\ CFO\ Signature\ Size + Controls + Fixed\ Effects + \varepsilon. \quad (2)$$

We examine CFO persuasion attempts along three dimensions. First, we consider the CFO's level of engagement, which we measure as the number of answers provided or words spoken by the CFO during the Q&A. In our engagement analysis, we control for the total number of answers provided or words spoken by all firm executives to account for the length of the call and the overall level of engagement at the firm level. Second, we consider the frequency with which the CFO uses argumentative words and corporate euphemisms, which research shows attenuate the negative market reaction to negative earnings news (Suslava 2021). We define argumentative words using the word list of Somasundaran et al. (2007) and euphemisms using the word list of Suslava (2021).[23] In these specifications, the dependent variable is the natural log of one plus the count of the number of words used by the CFO. We control for the natural log of one plus the total number of CFO words to ensure our results are not driven solely by the number of words spoken by the CFO. Finally, we consider the tone of the CFO's responses. We use two common tone measures in accounting research, using the word lists from Henry (2008) and Loughran and McDonald (2011).[24] We measure tone as the number of positive words minus the number of negative words from each word list, scaled by the total number of positive and negative words.

CFO Signature Size is again our primary variable of interest and proxies for CFO narcissism. We include the firm and executive control variables from Eq. 1. We also include the current earnings surprise to control for the degree of news in the call. See Appendix A for variable definitions. We include industry-by-year fixed effects to capture time-varying factors at the industry (two-digit SIC) level. Finally, we cluster standard errors by firm.

5.2.2 Analyst responses to the characteristics of CFOs' answers

We also examine whether CFOs' use of public persuasion influences the extent to which analysts incorporate earnings news from conference calls into their subsequent price target revisions. Analysts revise their outputs in response to earnings news such that following a positive (negative) earnings surprise, expected valuations tend to increase (decrease). However, research has documented that executives' language choices during conference calls can affect how the market reacts to the news delivered during the call. Specifically, Suslava (2021) shows that the use of euphemisms mutes the price response to negative earnings news. We build on this study by examining whether the use of persuasive language on the call decreases analysts' responsiveness to negative earnings surprises. We test this assertion using a model akin to an earnings response coefficient, though we are interested in analyst price

[23] The MPQA Arguing Lexicon is available at the following link: http://mpqa.cs.pitt.edu/lexicons/arg_lexicon/.

[24] We appreciate Ian Gow providing Python code for implementing the Loughran and McDonald (2011) tone measure. See https://github.com/iangow/ling_features/tree/master/tone.

target revisions to the earnings surprise rather than market responses to the earnings surprise. We estimate the model in Eq. 3.

$$\begin{aligned} \textit{Price Target Revision} = & \beta_1 \textit{ Earnings Surprise} + \beta_2 \textit{ PCA(Persuasive Language)} \\ & + \beta_3 \textit{ Earnings Surprise} * \textit{PCA(Persuasive Language)} \\ & + \textit{Controls} + \textit{Fixed Effects} + \varepsilon. \end{aligned} \tag{3}$$

Price Target Revision is the first mean consensus price target following the earnings announcement minus the mean consensus price target prior to the earnings announcement, scaled by the prior mean consensus price target. We measure *Earnings Surprise* as actual quarterly EPS less the prevailing consensus EPS forecast, scaled by the stock price on the day prior to the earnings announcement. We measure persuasive language as *PCA(Persuasive Language)*, which is a measure of the first principal component of our five conference call measures in Eq. 2.[25] We expect analysts' price target revisions to respond to the earnings surprise (a positive coefficient β_1), though for calls in which the CFOs use more persuasive language, we expect this relation to be muted for negative earnings surprises (a negative coefficient β_3). We make no prediction for the main effect on the use of persuasive language (β_2).[26] We continue to include industry-by-year fixed effects and cluster standard errors by firm.

5.2.3 Analyst participation on calls

We also examine whether narcissistic CFOs are more likely to engage with bullish or bearish analysts by estimating the model in Eq. 4.

$$\begin{aligned} \textit{Participate Dummy} = & \beta_1 \textit{ Bearish Dummy} + \beta_2 \textit{ CFO Signature Size} \\ & + \beta_3 \textit{ Bearish Dummy} * \textit{CFO Signature Size} \\ & + \textit{Controls} + \textit{Fixed Effects} + \varepsilon. \end{aligned} \tag{4}$$

Participate Dummy is an indicator variable equal to one if the analyst asks a question on the call and zero otherwise. *Bearish Dummy* is an indicator variable equal to one if the analyst's outstanding price target prior to the call is below the mean consensus price target. We expect β_1 to be significantly negative, consistent with managers being more likely to engage with more optimistic analysts (Mayew 2008). Our primary variable of interest is the interaction *Bearish Dummy * CFO Signature Size*.[27] The call could be used to persuade bearish analysts, in which case we would expect narcissistic CFOs to be more likely to engage with bearish analysts ($\beta_3 > 0$). On the other hand, being able to ask a question on the call could be used as a bargaining

[25] The five measures are *Log (# CFO Answers)*, *Log(# CFO Words)*, *Log (# CFO Argumentative Words)*, *Log (# CFO Euphemism Words)*, and *Henry Tone*. We use the first component because it is the only one having an eigenvalue greater than one (e.g., Allee, Do, and Raymundo 2022). In untabulated analyses, we estimate Eq. 3 using each of the five measures individually and obtain similar inferences.

[26] We do not necessarily expect unconditional positive revisions surrounding the call because the price targets could already be optimistic prior to the call.

[27] In addition to firm and CFO control variables, we also include analyst control variables (e.g., number of years the analyst has covered the firm and size of the brokerage).

chip (rewarding optimistic analysts with more airtime and punishing pessimistic analysts with less), in which case we would expect narcissistic CFOs to be less likely to engage with bearish analysts ($\beta_3 < 0$). Given the more detailed unit of analysis at the analyst-by-conference call level, we vary the fixed effects across specifications. In our most robust specification, we include analyst and firm-by-quarter fixed effects, which allows us to hold time-varying firm characteristics constant and exploit variation in optimism across analysts in the same conference call (while also holding constant any fixed analyst characteristics). We continue to cluster standard errors by firm.

5.2.4 Analyst responses to participation on calls

Flake (2025) shows that unfavorable analysts attenuate their negative recommendations following calls in which they participated (e.g., become less pessimistic). We thus also examine whether CFOs' willingness to engage with bearish analysts influences those analysts' price target revisions after the call. To the extent that narcissistic CFOs are more willing to engage with bearish analysts ($\beta_3 > 0$ in Eq. 4), we expect that participating bearish analysts become less pessimistic following the call. To test this assertion, we estimate the model in Eq. 5.

$$\begin{aligned} \textit{Price Target Revision} = & \beta_1 \textit{ Participate Dummy} + \beta_2 \textit{ Bearish Dummy} \\ & + \beta_3 \textit{ Participate Dummy} * \textit{Bearish Dummy} \\ & + \textit{Controls} + \textit{Fixed Effects} + \varepsilon. \end{aligned} \tag{5}$$

Price Target Revision represents the first price target issued by the individual analyst within 30 days after the call minus the outstanding price target prior to the call, scaled by the outstanding price target prior to the call. If the analyst does not issue a revision within 30 days following the call, the measure equals zero. *Participate Dummy* and *Bearish Dummy* are defined as in Eq. 4. Our main variable of interest is the interaction term *Participate Dummy * Bearish Dummy*. Consistent with Flake (2025), we expect bearish analysts to revise upwards more when they participate on the call ($\beta_3 > 0$). As in Eq. 4, we include analyst and firm-by-quarter fixed effects in our most robust specification and cluster standard errors by firm.

5.3 Empirical results

5.3.1 Characteristics of CFOs' answers

Panel A of Table 3 presents descriptive statistics for our conference call analysis. The analysis includes 2,970 conference call observations for 168 unique firms (and thus 168 unique CFOs). On average, firm executives provide 47.6 answers and speak 3,354 words in total during the Q&A. The CFO represents a significant contributor to these calls; on average, the CFO provides 20.4 answers and speaks 1,318 words. CFOs in our sample average 30.8 argumentative words and 2.42 corporate euphemisms per call.[28] Finally,

[28] The relatively few corporate euphemisms spoken is consistent with Suslava (2021).

Table 3 CFO narcissism and conference call dynamics

Panel A: CFO conference call descriptive statistics

Variable	N	Mean	StdDev	P25	Median	P75
Total # Answers	2,970	47.564	25.116	31.000	43.000	59.000
Total # Words	2,970	3354.000	1543.501	2352.000	3229.000	4148.000
# Executive Participants	2,970	3.012	1.360	2.000	3.000	4.000
# CFO Answers	2,970	20.417	16.238	8.000	16.000	28.000
# CFO Words	2,970	1317.678	1135.752	480.000	1018.500	1819.000
# Arglex CFO Words	2,970	30.823	28.369	10.000	23.000	43.000
# Euphemism CFO Words	2,970	2.415	2.965	0.000	1.000	4.000
Henry CFO Tone	2,970	0.415	0.357	0.233	0.464	0.647
Loughran-McDonald CFO Tone	2,970	0.129	0.431	−0.085	0.167	0.414
CFO Signature Size	2,970	0.799	0.470	0.488	0.671	0.946
Earnings Surprise	2,970	0.000	0.009	0.000	0.000	0.002
Log(Market Value)	2,970	8.706	1.321	7.785	8.651	9.581
Tobin's Q	2,970	1.335	0.870	0.757	1.101	1.645
Leverage	2,970	0.613	0.186	0.496	0.606	0.736
ROA	2,970	0.059	0.062	0.024	0.056	0.093
Log(Firm Age)	2,970	3.125	0.202	3.045	3.135	3.258
Returns[−100,−1]	2,970	0.056	0.201	−0.057	0.054	0.165
Std Dev Returns[−100,−1]	2,970	0.020	0.011	0.012	0.016	0.023
Trading Volume[−100,−1]	2,970	0.904	0.672	0.479	0.702	1.084
Dummy(CFO Male)	2,970	0.929	0.257	1.000	1.000	1.000
Log(CFO Age)	2,970	4.013	0.103	3.951	4.025	4.078
Log(CFO Tenure)	2,970	2.052	0.549	1.609	2.079	2.485

Table 3 (continued)

Panel B: CFO conference call dynamics

	CFO Participation		CFO Word Choice		CFO Tone	
	Log (# CFO Answers)	Log(# CFO Words)	Log (# CFO Argumentative Words)	Log (# CFO Euphemism Words)	Henry Tone	Loughran McDonald Tone
	(1)	(2)	(3)	(4)	(5)	(6)
CFO Signature Size	0.274***	0.444***	0.117***	0.115**	0.035**	−0.022
	(5.011)	(5.590)	(2.822)	(2.354)	(2.269)	(−0.887)
Log(# Total Answers)	0.924***					
	(24.844)					
Log(# Total Words)		0.911***				
		(13.889)				
Log(# CFO Words)			0.864***	0.416***		
			(41.465)	(16.414)		
Earnings Surprise	−1.620	−3.816**	0.752	0.530	0.499	1.874*
	(−1.220)	(−2.112)	(1.017)	(0.381)	(0.526)	(1.918)
Log(Market Value)	−0.005	0.060	0.025	0.010	0.029***	0.036***
	(−0.136)	(1.361)	(1.463)	(0.367)	(2.884)	(2.740)
Tobin's Q	0.129**	0.174**	0.034	−0.005	0.004	−0.003
	(2.205)	(2.139)	(0.813)	(−0.111)	(0.236)	(−0.094)
Leverage	−0.143	−0.496	−0.083	−0.189	0.000	0.140
	(−0.597)	(−1.176)	(−0.439)	(−1.241)	(0.002)	(1.324)
ROA	−0.578	−1.405	−0.170	0.088	−0.010	−0.059
	(−0.935)	(−1.436)	(−0.626)	(0.175)	(−0.047)	(−0.184)
Log(Firm Age)	−0.008	−0.245	0.227	0.260	−0.118	0.065
	(−0.040)	(−0.684)	(1.072)	(1.487)	(−1.555)	(0.531)
Returns[−100,−1]	−0.000	0.051	0.044	−0.074	0.104**	0.107**
	(−0.006)	(0.670)	(1.016)	(−1.194)	(2.477)	(2.452)

Table 3 (continued)

Std Dev Returns[−100,−1]	−1.748	−1.093	−1.188	−1.126	−3.973**	−3.128**
	(−0.750)	(−0.306)	(−0.864)	(−0.427)	(−2.464)	(−2.082)
Trading Volume[−100,−1]	0.024	0.101	0.037	0.065	−0.016	−0.007
	(0.499)	(1.155)	(1.216)	(1.236)	(−0.892)	(−0.255)
Dummy(CFO Male)	0.039	−0.014	0.119	0.148	−0.070	−0.030
	(0.337)	(−0.085)	(1.191)	(1.519)	(−1.326)	(−0.552)
Log(CFO Age)	−0.891**	−1.692***	−0.199	−0.729***	−0.274*	0.084
	(−2.004)	(−2.732)	(−0.839)	(−2.653)	(−1.900)	(0.405)
Log(CFO Tenure)	−0.126	−0.146	−0.038	0.045	0.036	−0.070**
	(−1.296)	(−1.114)	(−0.866)	(0.888)	(1.635)	(−2.207)
Observations	2,970	2,970	2,970	2,970	2,970	2,970
R-squared	0.616	0.539	0.887	0.466	0.119	0.165

This table presents results from tests of the effect of CFO narcissism on conference call characteristics. Panel A presents descriptive statistics. N is the number of observations. StdDev is the standard deviation. P25 (P75) is the 25th (75th) percentile of the variable's distribution. Panel B reports results using conference call observations. Refer to Appendix A for variable definitions. All specifications include industry-by-year fixed effects and standard errors clustered by firm. T-statistics are reported in parentheses. P-values are two-tailed, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively

average CFO tone is 0.42 using the Henry (2008) word list and 0.13 using the Loughran McDonald (2011) word list.[29]

Panel B of Table 3 presents our results on the characteristics of CFOs' conference call answers. Columns 1 and 2 report results for CFO engagement. We find evidence consistent with narcissistic CFOs speaking more on conference calls. In particular, *CFO Signature Size* is positively associated with *Log (# CFO Answers)* (coef. = 0.274; t-stat. = 5.011 in column 1) and *Log(# CFO Words)* (coef. = 0.444; t-stat. = 5.590 in column 2).[30]

Columns 3 and 4 present our results for the CFO's use of persuasive words. We find that narcissistic CFOs use more argumentative words (Somasundaran et al. 2007) and more corporate euphemisms (Suslava 2021), as *CFO Signature Size* is positively associated with *Log (# CFO Argumentative Words)* (coef. = 0.117; t-stat. = 2.822 in column 3) and *Log (# CFO Euphemism Words)* (coef. = 0.115; t-stat. = 2.354 in column 4).

Finally, columns 5 and 6 present our results for CFO tone on conference calls. Consistent with narcissistic CFOs speaking with a more positive tone, we find *CFO Signature Size* is significantly positively associated with tone using the Henry (2008) word list (coef. = 0.035; t-stat. = 2.269 in column 5). However, we find no evidence of a significant association between *CFO Signature Size* and tone using the Loughran and McDonald (2011) word list (coef. = −0.022; t-stat. = −0.887 in column 6). Note that Davis et al. (2015) suggest that the Henry (2008) word list is more appropriate for the conversational nature of conference calls.[31]

5.3.2 Analyst responses to the characteristics of CFOs' answers

Table 4 presents the results from estimating Eq. 3, which examines the influence of CFOs' use of persuasive language on the sensitivity of analysts' price target revisions to earnings surprises. Column 1 (2, 3) reports the results for the sample of all (negative, positive) earnings surprises.[32] Consistent with analysts incorporating earnings surprises in their price target revisions, we find a significantly positive coefficient on *Earnings Surprise* in all three specifications (e.g., coef. = 1.929; t-stat. = 5.469 in column 1). However, the interaction term *Earnings Surprise* * *PCA(Persuasive Language)* is significantly negative in column 1 (coef. = −0.309; t-stat. = −2.109), suggesting the use of persuasive language attenuates the sensitivity of price target revisions to earnings surprises. Importantly and consistent with our expectations, this significantly negative association is concentrated in the subsample

[29] The higher average tone using the Henry (2008) word list, compared to the Loughran and McDonald (2011) word list, aligns with research on conference calls (Davis et al. 2015).

[30] Of the 3,218 conference calls in our sample with available CFO signature size data, the CFO did not provide at least one answer in 248 calls (7.7%). Our CFO engagement results remain consistent when treating the number of answers and words as zero for nonparticipating CFOs.

[31] In addition, Henry and Leone (2016) show that the Henry (2008) list outperforms Loughran and McDonald (2011) in predicting market reactions to earnings announcements.

[32] The sample size in column 1 of Table 4 (2,899) is slightly smaller than the sample size in Table 3 (2,970) due to missing values of *Price Target Revision*.

of *negative* earnings surprises (coef. = −0.393; t-stat. = −2.931 in column 2); we find no evidence of a significant association in the positive surprise subsample (coef. = −0.093; t-stat. = −0.287 in column 3).[33] Taken together, these findings suggest that persuasive language—which narcissistic CFOs use more frequently—mutes analysts' responses to negative news, thereby serving as a potential mechanism to elicit higher price targets.

5.3.3 Analyst participation on calls

Table 5 presents the results of our analyst participation analysis. The unit of observation is analyst-by-conference call, and the outcome variable is an indicator denoting whether the analyst asks a question (*Participate Dummy*). Panel A presents descriptive statistics. On average, 47.2% of analysts covering the firm participate in the conference call. Panel B reports that *Bearish Dummy* is significantly negatively associated with *Participate Dummy* (e.g., coef. = −0.117; t-stat. = −6.820 in column 1), consistent with managers being less likely to engage with pessimistic analysts (Mayew 2008). However, the coefficient on the interaction *CFO Signature Size* * *Bearish Dummy* is significantly positive (e.g., coef. = 0.034; t-stat. = 2.129 in column 1), suggesting that CFO narcissism attenuates the negative relation between price target pessimism and analyst participation. We find evidence of attenuation using industry-by-year fixed effects (column 1), firm-by-quarter fixed effects (column 2), and analyst and firm-by-quarter fixed effects (column 3). The second specification allows us to hold time-varying firm characteristics constant and exploit variation in analyst optimism across analysts on the same call, and the third specification further allows us to hold time-invariant analyst characteristics constant.

5.3.4 Analyst responses to participation on calls

Table 6 presents the results from estimating Eq. 5, which examines the influence of analyst participation on their post-call price target revisions. The unit of observation in these analyses is analyst-by-call, and the outcome variable is the percentage change in the analyst's price target (*Price Target Revision*). *Bearish Dummy* is positively associated with *Price Target Revision*, consistent with pessimistic analysts becoming less pessimistic, on average, after the call. More importantly, the interaction term *Participate Dummy* * *Bearish Dummy* is significantly positive (e.g., coef. = 0.009; t-stat. = 5.126 in column 1), suggesting the positive influence of analyst participation on price target revisions is more pronounced among bearish analysts. We find consistent evidence when including firm-by-quarter fixed effects (column 2) and analyst and firm-by-quarter fixed effects (column 3).[34] Overall, these findings

[33] In untabulated analyses, we find evidence of persuasive language attenuating price target revision sensitivity to earnings surprises (e.g., a significantly negative interaction term) in the negative earnings surprise subsample when we use our individual conference call characteristic measures (instead of the principal component analysis measure).

[34] In untabulated analyses, we find similar results using a continuous measure of the analyst's relative price target pessimism prior to the call (instead of *Bearish Dummy*).

Table 4 CFO conference call persuasion and price target revisions to earnings news

Earnings Surprise Subsample:	All	Negative Surprise	Positive Surprise
	Consensus Price Target Revision		
	(1)	(2)	(3)
Earnings Surprise	1.929***	0.824**	1.624*
	(5.469)	(2.020)	(1.913)
PCA(Persuasive Language)	−0.000	−0.002	−0.001
	(−0.303)	(−1.044)	(−0.842)
PCA(Persuasive Language) * Earnings Surprise	−0.309**	−0.393***	−0.093
	(−2.109)	(−2.931)	(−0.287)
Log(Market Value)	0.000	0.004	−0.002
	(0.214)	(1.103)	(−1.016)
Tobin's Q	−0.001	−0.001	−0.001
	(−0.524)	(−0.125)	(−0.399)
Leverage	−0.005	−0.034	−0.002
	(−0.604)	(−1.265)	(−0.167)
ROA	−0.026	−0.183**	0.005
	(−0.803)	(−2.303)	(0.114)
Log(Firm Age)	−0.001	−0.028	−0.001
	(−0.125)	(−0.683)	(−0.052)
Returns[−100,−1]	0.179***	0.184***	0.168***
	(19.168)	(7.572)	(15.481)
Std Dev Returns[−100,−1]	−0.390*	−0.371	−0.492*
	(−1.692)	(−0.648)	(−1.715)
Trading Volume[−100,−1]	0.002	0.002	0.000
	(0.822)	(0.184)	(0.068)
Dummy(CFO Male)	−0.007*	−0.017	−0.008
	(−1.726)	(−0.860)	(−1.366)
Log(CFO Age)	0.003	0.034	−0.002
	(0.166)	(0.744)	(−0.116)
Log(CFO Tenure)	−0.002	−0.013	0.005
	(−0.744)	(−1.642)	(1.298)
Observations	2,899	669	2,083
R-squared	0.382	0.366	0.339

This table presents results from tests of the effect of conference call persuasion on analysts' mean consensus price target revisions to earnings surprises. Refer to Appendix A for variable definitions. All specifications include industry-by-year fixed effects and standard errors clustered by firm. T-statistics are reported in parentheses. P-values are two-tailed, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively

suggest that engaging with bearish analysts—which narcissistic CFOs are more likely to do—leads to positive price target revisions (consistent with Flake 2025), serving as another potential mechanism for CFOs to elicit higher price targets.

Table 5 CFO narcissism and analyst participation on conference calls

Panel A: Descriptive statistics

Variable	N	Mean	StdDev	P25	Median	P75
Participate Dummy	29,817	0.472	0.499	0.000	0.000	1.000
Bearish Dummy	29,817	0.469	0.499	0.000	0.000	1.000
CFO Signature Size	29,817	0.817	0.494	0.522	0.686	0.930
Earnings Surprise	29,817	0.000	0.006	0.000	0.000	0.001
Log(Market Value)	29,817	9.248	1.239	8.303	9.167	10.153
Tobin's Q	29,817	1.506	0.996	0.834	1.252	1.906
Leverage	29,817	0.590	0.193	0.479	0.587	0.740
ROA	29,817	0.069	0.064	0.029	0.062	0.106
Log(Firm Age)	29,817	3.133	0.203	3.045	3.135	3.258
Returns[−100,−1]	29,817	0.056	0.199	−0.060	0.056	0.168
Std Dev Returns[−100,−1]	29,817	0.019	0.011	0.012	0.016	0.022
Trading Volume[−100,−1]	29,817	0.978	0.708	0.512	0.778	1.169
Firm Experience	29,817	5.963	5.935	2.000	4.000	8.000
General Experience	29,817	14.316	8.347	7.000	15.000	21.000
All-Star	29,817	0.225	0.417	0.000	0.000	0.000
Log(Firms Covered)	29,817	2.719	0.521	2.485	2.773	3.045
Log(Brokerage Size)	29,817	4.073	1.038	3.466	4.263	4.836

Table 5 (continued)

Panel B: Analyst participation analysis			
	Participate Dummy		
	(1)	**(2)**	**(3)**
Bearish Dummy	−0.117***	−0.121***	−0.067***
	(−6.820)	(−6.946)	(−6.105)
CFO Signature Size	−0.024		
	(−1.366)		
Bearish Dummy * CFO Signature Size	0.034**	0.040**	0.024**
	(2.129)	(2.450)	(2.343)
Earnings Surprise	−0.366		
	(−0.690)		
Log(Market Value)	−0.047***		
	(−4.880)		
Tobin's Q	0.000		
	(0.017)		
Leverage	−0.018		
	(−0.242)		
ROA	−0.005		
	(−0.035)		
Log(Firm Age)	0.163*		
	(1.748)		
Returns[−100,−1]	0.013		
	(0.753)		
Std Dev Returns[−100,−1]	0.848		
	(1.051)		
Trading Volume[−100,−1]	−0.035*		

Table 5 (continued)

	(−1.972)		
Firm Experience	0.000	0.000	0.002**
	(0.125)	(0.275)	(2.259)
General Experience	−0.001	−0.001	
	(−0.916)	(−0.538)	
All-Star	0.039***	0.038**	−0.010
	(2.607)	(2.500)	(−0.783)
Log(Firms Covered)	0.077***	0.079***	0.048***
	(5.432)	(5.336)	(3.528)
Log(Brokerage Size)	0.074***	0.078***	0.037***
	(11.536)	(12.191)	(3.662)
Fixed Effects	Industry-Year	Firm-Quarter	Analyst, Firm-Quarter
Observations	29,817	29,694	29,562
R-squared	0.114	0.119	0.379

This table presents results from tests of the effect of CFO narcissism on the likelihood an analyst asks a question on the conference call. Panel A presents descriptive statistics. N is the number of observations. StdDev is the standard deviation. P25 (P75) is the 25th (75th) percentile of the variable's distribution. Panel B reports results using analyst-by-conference call observations. Refer to Appendix A for variable definitions. All specifications include standard errors clustered by firm. T-statistics are reported in parentheses. P-values are two-tailed, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively

Table 6 Analyst participation on conference calls and price target revisions

	Detail Price Target Revision		
	(1)	(2)	(3)
Participate Dummy	−0.000	−0.001	−0.001
	(−0.403)	(−0.926)	(−0.722)
Bearish Dummy	0.014***	0.015***	0.021***
	(13.762)	(14.920)	(16.501)
Participate Dummy * Bearish Dummy	0.009***	0.008***	0.008***
	(5.126)	(5.480)	(4.611)
Earnings Surprise	1.331***		
	(6.786)		
Log(Market Value)	0.001		
	(0.823)		
Tobin's Q	0.003**		
	(2.064)		
Leverage	−0.002		
	(−0.326)		
ROA	−0.062***		
	(−2.969)		
Log(Firm Age)	−0.001		
	(−0.214)		
Returns[−100,−1]	0.104***		
	(16.678)		
Std Dev Returns[−100,−1]	−0.011		
	(−0.077)		
Trading Volume[−100,−1]	0.000		
	(0.215)		
Firm Experience	0.000**	0.000**	0.000
	(2.564)	(2.340)	(1.427)
General Experience	−0.000	−0.000	
	(−1.560)	(−1.260)	
All-Star	−0.001	0.000	−0.000
	(−0.665)	(0.132)	(−0.148)
Log(Firms Covered)	0.002***	0.002**	0.001
	(3.299)	(2.179)	(0.656)
Log(Brokerage Size)	−0.001	−0.001	−0.001
	(−1.398)	(−1.648)	(−1.320)
Fixed Effects	Industry-Year	Firm-Quarter	Analyst, Firm-Quarter
Observations	29,817	29,694	29,562
R-squared	0.191	0.362	0.372

This table presents results from tests of the effect of analyst participation on conference calls on detail-level price target revisions within 30 days following the calls. Refer to Appendix A for variable definitions. All specifications include standard errors clustered by firm. T-statistics are reported in parentheses. P-values are two-tailed, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively

6 Private persuasion channel: laboratory investigation of narcissism and persuasion

CFOs also can interact with analysts in private settings, for example, via private meetings (e.g., Soltes 2014), broker-hosted investor conferences (Green et al. 2014), and one-on-one callbacks following conference calls (Brown et al. 2015). Because these private interactions are unobservable using archival data, we rely on a laboratory study using experienced professionals with accounting and finance knowledge to examine whether more narcissistic individuals are more likely to try to persuade an analyst in a private call. Following Cialdini's (2001) six principles of persuasion, participants rate the likelihood with which they use each of six tactics (we describe these principles and their operationalization in Sect. 6.2). We further classify these six tactics into *coercion* and *self-presentation* tactics. While we expect narcissistic individuals will be more likely to engage in all persuasion tactics, we expect them to be relatively more likely to use coercion in private interactions. Coercive tactics have been studied in political and firm negotiations and can involve offering financial support or imposing costs, such as threatening boycotts or harm (Aplin and Hegarty 1980; Nalick et al. 2016). Self-presentation tactics entail the strategic presentation of positive information about the self to establish a favorable impression with the counterparty (e.g., Barrick et al. 2009).

6.1 Participants

Participants are recruited through CloudResearch Connect, an online research platform that connects research participants with researchers and uses various control and incentive mechanisms developed by psychology researchers to ensure high participant quality (Hauser et al. 2022). CloudResearch Connect also mandates verified government-issued photo identification and requires participants to enter and maintain a consistent demographic profile that researchers can use to screen participants. We ensure that participants possess sufficient education, work experience, management experience, and business and accounting knowledge to approximate individuals with an appropriate background for the experimental task (Libby et al. 2002). For this reason, we put platform-level controls in place requiring participants to reside in the United States, hold at least a bachelor's degree, be at least 25 years old, and possess experience in finance, sales/marketing, or business administration.[35] At the survey level, we required participants to have worked in a supervisory or management role (with employees reporting to them) and to have completed at least four accounting and finance classes.[36] The 143 participants that completed

[35] CloudResearch Connect has no "accounting" subfield for work experience.

[36] Four-hundred and ten participants began the study, but only 143 met these additional requirements. The remaining participants were redirected to the end of the study and paid full compensation for participating. All participants correctly completed a basic attention check embedded in the demographic questions.

the study possess significant experience and education (as displayed in Table 7). On average, participants are 40.7 years old and have 18.9 years of work experience. All participants report experience in a managerial role of some sort (i.e., a role where other employees reported to them), and 32.2% possess a graduate degree while the remaining 67.8% possess a bachelor's degree. Participants have taken an average of 7.5 finance/accounting classes and 10.6 other business or economics classes, 38.5% are female, and 61.5% are male.

6.2 Design

All participants learn that they are a CFO at a public company. The CFO will soon hold a one-on-one call with a financial analyst who is pessimistic about their company, and investors are likely to be unhappy if the analyst does not issue a more favorable report. We measure *Narcissism* using the 16-item Narcissistic Personality Inventory (NPI-16) developed by Ames et al. (2006).

Our dependent variables of interest are built around Cialdini's (2001) six principles of persuasion: reciprocity, commitment/consistency, consensus/social proof, authority, liking, and scarcity. Reciprocity involves taking actions that help the other party so that these actions are repaid in the future (i.e., a give-to-get strategy). Commitment/consistency involves persuading another party to voluntarily commit to a future action. Consensus/social proof is based on the principle that people will often follow the consensus in the form of a bandwagon effect. Authority involves establishing oneself as an expert or authority figure, such that the other party will defer to the expert's opinion. Liking involves creating personal bonds that establish goodwill. Finally, scarcity involves offering or withholding a scarce resource (e.g., unique information or exclusive benefits) to encourage the other party to willfully comply or favorably behave.

We develop six persuasion tactics that correspond to these principles in the context of the analyst call (displayed in Table 8). These tactics range from relatively innocuous and friendly persuasion attempts (e.g., "I would try to get the analyst to like me on a personal level") to questionable coercive attempts (e.g., "I would tell the analyst I might be less responsive to his questions in future calls"). We further characterize three tactics as a form of *coercion* (scarcity, reciprocity, and commitment), and the remaining three tactics as a form of *self-presentation* (social proof, authority, liking).

6.3 Procedure

Participants respond to an advertisement on the CloudResearch Connect platform targeted at their demographic group. They are compensated $1.00 plus a $0.50 bonus for correctly answering an attention check question for approximately 10 min of their time. They first complete a Captcha to screen out bots, followed by the consent form and two demographic screening questions, and then read information about their role in the company and the unfavorable analyst forecast. They rate their likelihood of engaging in the six persuasion tactics

Table 7 Laboratory study descriptive statistics

General Demographic Information		
Age in years (mean)		40.7
Work experience in years (mean)		18.9
Business and economics courses taken (mean)		10.6
Accounting and finance courses taken (mean)		7.5
Bachelor's degree (%)		67.8
Graduate degree (%)		32.2
Experience as manager (%)		100
Gender (% female)		38.5
Narcissism Descriptive Statistics (NPI-16 score)		
Mean		4.8
Median		4
Q1		1
Q3		7
Mean for low narcissism		2.0
Mean for high narcissism		8.1
Likelihood Ratings	**Low-Narcissism**	**High-Narcissism**
Reciprocity	34.1	50.2
Scarcity	14.5	31.5
Commitment	50.4	68.8
Social Proof	63.2	71.1
Authority	60.6	68.7
Liking	57.5	67.1

This table presents descriptive statistics of demographic variables for the 143 participants in the study. Participants were required to reside in the United States, be at least 25 years old, possess at least a bachelor's degree, work in the functional areas of either finance, business administration, or sales/marketing, have taken at least four accounting/finance classes, and have worked as a supervisor/manager with employees reporting to them

on a scale from 0 (very unlikely) to 100 (very likely). Participants then complete a distractor task from an unrelated study regarding viewing a job advertisement and rating the extent to which they think they are a good fit for the job; this is implemented to avoid potential carryover effects from the analyst task to the narcissism questionnaire (although, since narcissism is a relatively stable individual trait, carryover effects are very unlikely, even without a distractor task). Finally, participants complete the NPI-16 scale and then answer demographic questions with an embedded attention check.

6.4 Results

We first examine whether *Narcissism* is positively correlated with the likelihood of engaging in various persuasion tactics. Table 8 presents the correlation and

Table 8 Laboratory study persuasion tactic statements and correlations with NPI-16 Score

Persuasion Tactic	Correlation with NPI-16 Score	p-value
[reciprocity] I would do a favor for the analyst or offer to hold more frequent personal calls with the analyst if he provides a more favorable valuation of my company	0.282	< 0.001
[scarcity] I would tell the analyst that I might be less responsive to his questions in future calls or be less willing to participate in phone calls with him, if he does not provide a more favorable valuation	0.390	< 0.001
[commitment/consistency] I would attempt to get the analyst to commit to giving favorable valuations in the future if the company meets certain performance targets	0.290	< 0.001
[consensus/social proof] I would emphasize that many other analysts have positive views of our company	0.139	0.049
[authority] I would emphasize that, as a senior executive, I know best about our company's current performance and future prospects	0.213	0.006
[liking] I would try to get the analyst to like me on a personal level	0.185	0.014
Coercion Scale (Tactics 1–3)	0.397	< 0.001
Self-Presentation Scale (Tactics 4–6)	0.235	0.003
Overall Persuasion Scale (Tactics 1–6)	0.372	< 0.001

This table presents the six persuasion tactics, the two subscales (coercion and self-presentation), and the overall composite scale from the laboratory study. The Pearson correlation between these ratings and the participants' NPI-16 scores as well as the p-value for each correlation is presented to the right of each tactic. All p-values are one-tailed

significance for each tactic. Correlations range from a low of 0.139 (consensus/social proof) to a high of 0.390 (scarcity). All correlations are significant at $p < 0.05$, one-tailed. Figure 1 presents a graphical plot of the relative likelihood of engaging in each tactic for high-narcissism participants (those above median NPI) versus low-narcissism participants (those at or below the median NPI). The relative increase for high-narcissism individuals ranges from a low of 13% (social proof, authority) to a high of 117% (scarcity). It is also evident from visual inspections of Fig. 1 and Table 8 that the correlations between *Narcissism* and the *Coercion* tactics are higher than those for the *Self-Presentation* tactics. The bottom of Table 8 displays the composite correlation for each of these factors as well as for the overall composite of all six tactics. The appropriate test of differences between two interdependent sets of correlations (x,y) and (x,z), accounting for the correlation (y,z) is derived from Williams (1959).[37] *Narcissism* is more

[37] We used the "cortesti" module in Stata. There appears to be a typo in one of the equations in the code based on examination of Williams (1959). We corrected this typo, but it did not affect the statistical significance of the test.

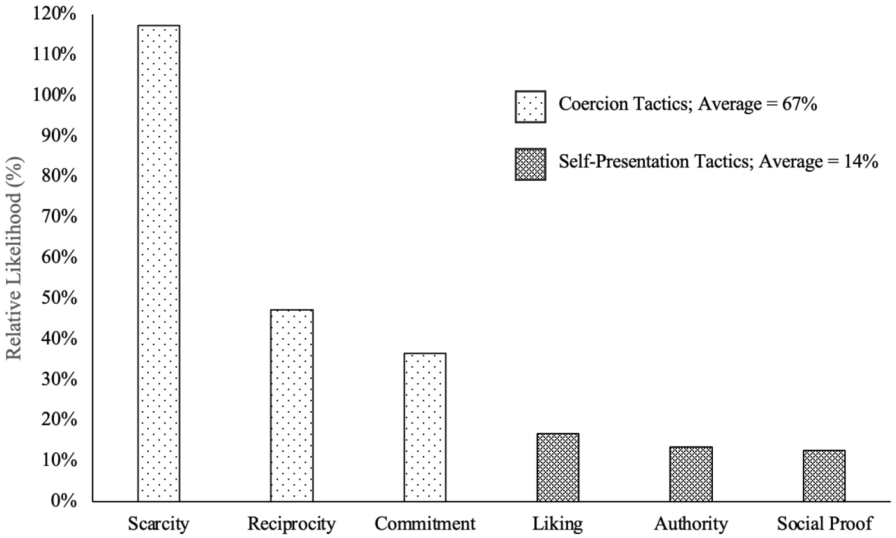
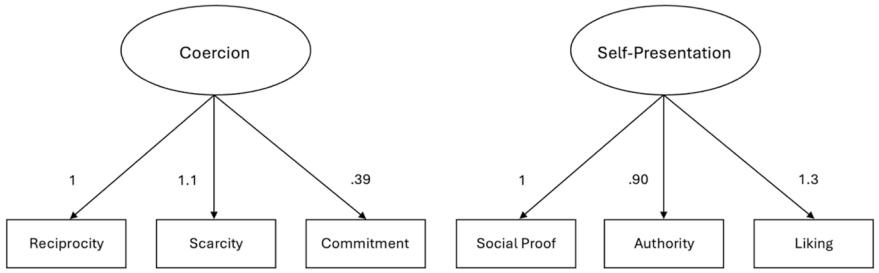


Fig. 1 Laboratory study results plot of relative likelihood of engaging in six persuasion tactics by professionals high in narcissism (versus low in narcissism). This figure presents the graphical plot of results from the laboratory study, conducted with 143 business management professionals who rate the likelihood that they would take six different hypothetical actions (based on Cialdini 2001) to influence an analyst in a private setting. Coercion tactics: *1) Scarcity* (Threatening to remove access to private communications if the analysts does not give a higher valuation); *2) Reciprocity* (Offering to increase access to private communications in exchange for a higher valuation); *3)* Commitment (Asking the analyst to commit to giving a higher valuation in exchange for meeting a performance target). Self-Presentation tactics: *4) Liking* (Behaving in a way to increase likability from the analyst); *5) Authority* (Behaving in a way that conveys expertise); *6) Social Proof* (Reminding the analysts that others think highly of the firm). Dependent variables are rated on a scale from 0 (very unlikely) to 100 (very likely). Results are graphed by performing a median-split of *Narcissism* (measured using the NPI-16) to create high- and low-narcissism groups. The relative increase in use of tactic is calculated as *Relative Likelihood = (High-Narcissism response ÷ Low-Narcissism response) - 1*

strongly correlated with *Coercion* than with *Self-Presentation* ($r = 0.397$ versus 0.235, $t(140) = 2.03$, $p = 0.022$, one-tailed).

Confirmatory factor analysis provides additional insight into the structure of narcissism and persuasion. Using structural equations modeling, we test the fit of two alternative models. The first model assumes two latent constructs—*Coercion* and *Self-Presentation*—while the second assumes one common latent construct—*Persuasion*. Figure 2 displays the models and their fit statistics. The dual construct model yields an insignificant chi-square goodness of fit, an RMSEA of well below 0.06, and CFI and TLI of well in excess of 0.95 (nearly 1), all indicating excellent fit (Hu and Bentler 1999). The second model, however, has a highly significant chi-square, an RMSEA of above 0.10, and TLI below 0.9. These all indicate poor fit. A relative fit test displayed at the bottom of Fig. 2 indicates that the *Coercion* and

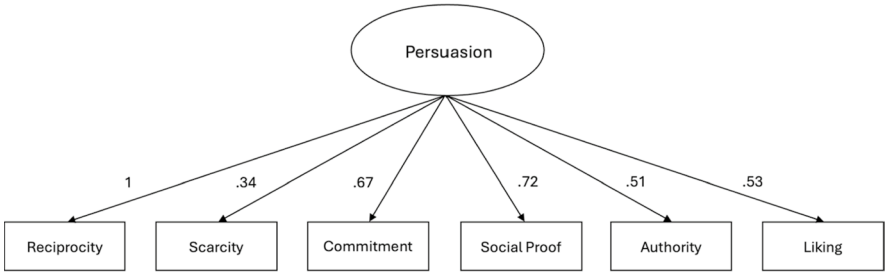
Two-factor model:



All p < 0.001

Fit Statistics			
Model vs. Saturated Goodness of Fit	$\chi^2(6) = 6.35, p = 0.385$	Comparative Fit Index	0.998
RMSEA	0.020	Tucker-Lewis Fit Index	0.995

One-factor model:



All p < 0.001

Fit Statistics			
Model vs. Saturated Goodness of Fit	$\chi^2(7) = 21.80, p = 0.003$	Comparative Fit Index	0.924
RMSEA	0.122	Tucker-Lewis Fit Index	0.838

Model Fit Comparison (Two-Factor versus One-Factor): $\chi^2(1) = 15.96, p < 0.001$

Fig. 2 Laboratory study confirmatory factor analysis. This figure presents two confirmatory models using SEM. Our hypothesized model assumes two latent factors—coercion (which includes reciprocity, scarcity, and commitment tactics) and self-presentation (which includes social proof, authority, and liking tactics). The alternate model assumes all six tactics can be explained by one latent variable—persuasion. Fit statistics indicate that the two-factor provides a very good fit for the data

Self-Presentation model fits significantly better than the unidimensional *Persuasion* model ($\chi^2(1) = 15.96, p < 0.001$).

Taken together, the laboratory results are consistent with narcissistic CFOs engaging in private channels of persuasion. Use of persuasion increases as participant narcissism increases, and this is particularly true for *Coercion* tactics in a private setting. We acknowledge that the laboratory study has several limitations. First, it cannot speak to the magnitude of the persuasion effect in the real world. Second, it cannot

guarantee that managers' private persuasion attempts measurably affect analysts' valuations—managers may try but fail to persuade analysts. Third, our participants, though possessing significant business experience and education, are not actual senior executives. However, the results complement the publicly observable conference call analyses and illuminate how more narcissistic business professionals are more willing to use persuasion that involves *Coercion* tactics on a private call.

7 Additional analyses

7.1 CFO narcissism and analysts' optimism for harder-to-value firms

We next consider whether the influence of CFO narcissism on analysts' optimism is concentrated in firms that are more difficult for analysts to value, using three proxies: (1) *Loss*, an indicator equal to one if the firm has negative income before extraordinary items, (2) *Returns[−100,−1]*, the cumulative buy-and-hold returns in the 100 day window prior to the consensus price target date, and (3) *Std Dev Returns[−100,−1]*, the standard deviation of daily stock returns in the 100 day window prior to the consensus date. We argue that loss firms, firms with negative returns, and firms with high return volatility are more difficult for analysts to value.

Table 9 presents the results of our cross-sectional tests using the ex post optimism measure (*Price Target/Future Price*). We interact our cross-sectional proxies with *CFO Signature Size* to test whether CFO narcissism has differential effects on price target optimism based on valuation difficulty. The relation between *CFO Signature Size* and *Price Target/Future Price* strengthens for firms with negative earnings (coef. = 0.205; t-stat. = 2.031). We document similar findings using the return and return volatility proxies as the effect is more pronounced for firms with poor returns and high return volatility. Overall, the evidence in Table 9 is consistent with narcissistic CFOs being better at influencing analysts' optimism when analysts face a more difficult valuation task.

7.2 CFO narcissism and analysts' earnings forecast optimism

We also examine whether CFO narcissism is associated with analysts' earnings forecast optimism. We measure earnings forecast optimism via the signed quarterly earnings per share forecast error as our optimism measure and estimate the model in Eq. 1. *EPS Forecast Error* is equal to the forecasted EPS less the actual EPS, scaled by the stock price one day prior to the forecast date. We use the mean EPS forecast in the consensus file analyses and the individual EPS forecast in the detail file analyses, resulting in a sample of 185,387 consensus (659,707 detail) quarterly EPS forecasts.

Columns 1 and 2 (3 and 4) of Table 10 present the results of the relation between CFO narcissism and analysts' quarterly *EPS Forecast Error* using the consensus EPS forecasts (individual forecasts). In column 1, we find no evidence of a significant positive association between CFO narcissism and

Table 9 CFO narcissism and price target optimism—cross-sectional tests

	Consensus Price Target/Future Price		
	(1)	(2)	(3)
CFO Signature Size	0.056**	0.104***	−0.088
	(2.502)	(3.208)	(−1.504)
CFO Signature Size * Loss	0.205**		
	(2.031)		
CFO Signature Size * Returns[−100,−1]		−0.234***	
		(−2.788)	
CFO Signature Size * Std Dev Returns[−100,−1]			7.365***
			(2.764)
Controls	Yes	Yes	Yes
Observations	47,219	47,219	47,219
R-squared	0.374	0.343	0.345

This table presents results from cross-sectional tests of the effect of CFO narcissism on mean consensus price target optimism. Refer to Appendix A for variable definitions. All specifications include industry-by-year fixed effects and standard errors clustered by firm. T-statistics are reported in parentheses. p-values are two-tailed, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Control variables from Table 2 and the corresponding main effects of the cross-sectional variables are included but not tabulated for brevity

Table 10 CFO narcissism and earnings forecast optimism

	Consensus		Detail	
	EPS Forecast Error		EPS Forecast Error	
	(1)	(2)	(3)	(4)
CFO Signature Size	0.029	−0.183***	−0.023	−0.186***
	(0.760)	(−3.347)	(−1.554)	(−7.397)
CFO Signature Size * Log(Days to EA)		0.044***		0.034***
		(2.847)		(5.888)
Log(Days to EA)		0.049***		0.060***
		(4.073)		(9.766)
Controls	Yes	Yes	Yes	Yes
Observations	185,387	185,387	659,707	659,707
R-squared	0.241	0.248	0.302	0.307

This table presents results from tests of the effect of CFO narcissism on earnings forecast optimism. Columns 1 and 2 report results using consensus earnings forecasts, and columns 3 and 4 report results using detail earnings forecasts. Refer to Appendix A for variable definitions. The specifications in columns 1 and 2 include industry-by-year fixed effects and standard errors clustered by firm. The specifications in columns 3 and 4 include analyst-by-year fixed effects and standard errors clustered by analyst. T-statistics are reported in parentheses. P-values are two-tailed, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Control variables from Table 2 are included but not tabulated for brevity

earnings forecast optimism (unconditional on the forecast horizon). However, the literature on the forecast walkdown argues that analysts' earnings forecasts begin optimistic when the earnings announcement is far away, but are walked down to beatable levels as the announcement date approaches (e.g., Richardson et al. 2004; Cotter et al. 2006; Bradshaw et al. 2016; Berger et al. 2019; Ham et al. 2022). Therefore, managers' incentives for earnings forecast optimism vary based on when the forecast is issued. When the forecast is far from the earnings announcement, managers prefer optimistic forecasts, and when the forecast is issued close to the earnings announcement, managers prefer neutral or even pessimistic guidance (to enable them to meet or beat expectations). Therefore, in column 2, we interact *CFO Signature Size* with the number of days between the forecast date and the earnings announcement date (*Log[Days to EA]*). We find a significantly positive coefficient on the interaction term *CFO Signature Size * Log(Days to EA)* (coef. = 0.044; t-stat. = 2.847 in column 2). These results suggest that firms with more narcissistic CFOs receive more optimistic earnings forecasts at longer horizons, consistent with the forecast walkdown. Using individual forecasts in columns 3 and 4, we continue to find no significant relation between *CFO Signature Size* and *EPS Forecast Error* in column 3 and a significantly positive coefficient on the interaction term in column 4 (coef. = 0.034; t-stat. = 5.888).

7.3 CFO narcissism and analysts' recommendation optimism

Next we examine whether CFO narcissism is associated with analysts' recommendation optimism. We focus on price targets in our main analysis because recommendations are revised infrequently and have less variation than price targets given their discrete nature (Kadan et al. 2008). We measure recommendation optimism using the consensus or detail-level recommendations from I/B/E/S. We transform the recommendation levels so that they increase with optimism (e.g., strong sell is set equal to one and strong buy is set equal to five). Columns 1–3 (columns 4 and 5) of Table 11 present the results of the recommendation optimism analyses using the consensus (detail-level) file.[38] Using several measures of recommendation optimism, we find some evidence of a positive association between *CFO Signature Size* and recommendation optimism. For example, *CFO Signature Size* is significantly positively associated with the likelihood that the mean recommendation level is above a hold (coef. = 0.037; t-stat. = 2.392 in column 2). We view the recommendation optimism results as additional evidence of CFO narcissism influencing analyst valuations.

[38] The number of observations in the consensus file (46,871) exceeds the number of observations in the detail-level file (42,163) because the summary file in I/B/E/S has a monthly observation for each firm with an outstanding recommendation, whereas the detail-level file only has observations for new recommendations, revised recommendations, or reiterations of stale recommendations (which have not been updated for a total of 180 days).

Table 11 CFO narcissism and recommendation optimism

	Consensus			Detail	
	Mean Rec Level	Dummy (Mean Rec > 3)	Dummy (% Buys > 50)	Rec Level	Dummy (Rec > 3)
	(1)	(2)	(3)	(4)	(5)
CFO Signature Size	0.041	0.037**	0.059**	0.034**	0.012
	(1.517)	(2.392)	(2.443)	(2.353)	(1.600)
Controls	Yes	Yes	Yes	Yes	Yes
Observations	46,871	46,871	46,871	42,163	42,163
R-squared	0.344	0.225	0.289	0.158	0.112

This table presents results from tests of the effect of CFO narcissism on recommendation optimism. Columns 1–3 report results using consensus recommendations, and columns 4 and 5 report results using detail recommendations. Refer to Appendix A for variable definitions. The specifications in columns 1–3 include industry-by-year fixed effects and standard errors clustered by firm. The specifications in columns 4 and 5 include analyst-by-year fixed effects and standard errors clustered by analyst. T-statistics are reported in parentheses. P-values are two-tailed, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Control variables from Table 2 are included but not tabulated for brevity

7.4 CEO narcissism and analysts' optimism

We focus on the role of CFO narcissism in this study, as we expect CFO narcissism to have a stronger influence than CEO narcissism on analysts' valuations. Nevertheless, given the availability of CEO signatures, we test the relative influence of CFO and CEO narcissism on analysts' optimism in Table 12. Columns 1–5 (6–10) present results using consensus (detail) forecasts including both *CFO Signature Size* and *CEO Signature Size*.[39] The coefficient on *CFO Signature Size* (or its interaction) remains positive and significantly significant in nine of the 10 specifications, whereas the coefficient on *CEO Signature Size* is positive and significant in only six of the 10 specifications (and the corresponding coefficient magnitude is smaller in eight of the 10 specifications). Overall, we view the results in Table 12 as consistent with our expectation that CFO narcissism plays a stronger role than CEO narcissism in influencing analyst outputs.

[39] To avoid sample attrition when including the CFO's and CEO's signature size in the same model, if the signature size is missing we set the corresponding value to zero and include an indicator variable set equal to one in these instances.

Table 12 CFO narcissism, CEO narcissism, and analyst optimism

	Consensus					Detail				
	Price Target/ Current Price	Price Target/ Future Price	EPS Forecast Error	Mean Rec Level	Dummy (Mean Rec > 3)	Price Target/ Current Price	Price Target/ Future Price	EPS Forecast Error	Rec Level	Dummy (Rec > 3)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
CFO Signature Size	0.028***	0.084***	−0.088**	0.050*	0.047***	0.007***	0.057***	−0.094***	0.024*	0.006
	(3.227)	(2.945)	(−2.222)	(1.889)	(2.911)	(2.678)	(5.809)	(−4.712)	(1.783)	(0.908)
CEO Signature Size	0.010*	0.031	−0.018	0.060***	0.035***	0.006***	0.026***	−0.023	0.012	0.007
	(1.802)	(1.472)	(−0.573)	(2.783)	(3.212)	(2.994)	(3.405)	(−1.447)	(1.261)	(1.342)
CFO Signature Size * Log(Days to EA)			0.025***					0.017***		
			(2.603)					(4.878)		
CEO Signature Size * Log(Days to EA)			0.012					0.008**		
			(1.586)					(2.223)		
p-value: CFO Signature Size = CEO Signature Size	0.080	0.138		0.773	0.534	0.765	0.010		0.455	0.964

Table 12 (continued)

	Consensus					Detail				
	Price Target/ Current Price	Price Target/ Future Price	EPS Forecast Error	Mean Rec Level	Dummy (Mean Rec > 3)	Price Target/ Current Price	Price Target/ Future Price	EPS Forecast Error	Rec Level	Dummy (Rec > 3)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
p-value: CFO Signature Size * Log(Days to EA) = CEO Signature Size * Log(Days to EA)			0.221					0.073		
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	79,366	79,366	314,320	77,945	77,945	195,030	195,030	1,220,253	73,897	73,897
R-squared	0.536	0.319	0.219	0.326	0.197	0.426	0.451	0.268	0.159	0.107

This table presents results from tests of the effect of CFO narcissism and CEO narcissism on analyst optimism. Columns 1–5 report results using consensus forecasts, and columns 6–10 report results using detail forecasts. Refer to Appendix A for variable definitions. The specifications in columns 1–5 include industry-by-year fixed effects and standard errors clustered by firm. The specifications in columns 6–10 include analyst-by-year fixed effects and standard errors clustered by analyst. T-statistics are reported in parentheses. P-values are two-tailed, and *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. Control variables from Table 2 are included but not tabulated for brevity

8 Conclusion

We use a mixed-methods approach to examine the role of CFO narcissism on a key group of external stakeholders—sell-side analysts. We examine whether analyst valuations are more optimistic when the firm's CFO is more narcissistic. We predict and find that CFO narcissism is associated with overly optimistic price targets. To test the channels through which CFOs may elicit such valuations using persuasion, we rely on conference call data to examine public persuasion attempts and a laboratory study to simulate persuasive actions taken by narcissists in private settings. Conference call transcript analyses confirm that narcissistic CFOs are more willing to engage in persuasion tactics, as documented by textual analyses of their speech patterns and their willingness to engage with bearish analysts on the call. We also document that these public persuasion tactics contribute to analysts' optimism. In the laboratory setting, we directly measure individuals' trait narcissism and demonstrate that narcissists are more likely to use persuasion, particularly through coercion (e.g., being more willing to threaten withholding private access to management) to obtain a favorable valuation from an analyst.

We contribute to the literature in several ways. Our study is the first to demonstrate narcissistic CFOs' *intent and ability* to opportunistically influence external stakeholders and provides evidence of a possible silver lining to the accompanying negative effects stemming from CFO narcissism. We thus provide a new perspective that diverges from the generally negative view of narcissistic leaders and reveal at least one additional reason why these individuals achieve high-ranking positions (Brunell et al. 2008). In addition, our paper is unique in that the signature size measure is the only previously validated method for capturing CFO narcissism (Ham et al. 2017), enabling us to expand the investigation of narcissism beyond the traditional setting involving CEO decision-making and firm outcomes (e.g., Ham et al. 2018; Abdel-Meguid et al. 2021). Further, our laboratory study is the first behavioral research, to our knowledge, to directly elicit narcissists' *intent* to persuade, suggesting that the tendency to present one's ideas more confidently appears to be a conscious effort and not merely an unintended side effect of narcissism (e.g. Goncalo et al. 2010). These results also expand upon accounting research suggesting that one-on-one interactions between executives and external parties are a key component of the firm's information environment (Brown et al. 2015). Finally, we contribute to the literature on analysts' price targets (e.g., Bradshaw et al. 2013, 2019; Dechow and You 2020) by documenting that CFO narcissism is one channel through which analysts' valuations can become optimistically biased.

Appendix A

Variable definitions

Variable	Data Source	Definition
All-Star	Institutional Investor, I/B/E/S	An indicator variable equal to one if the analyst is ranked as an all-star analyst and zero otherwise
Bearish Dummy	I/B/E/S	An indicator variable equal to one if the analyst's outstanding price target prior to the conference call is below the mean consensus price target and zero otherwise
CEO Signature Size	SEC	CEO's signature size in squared centimeters scaled by the number of letters in the executive's name
CFO Signature Size	SEC	CFO's signature size in squared centimeters scaled by the number of letters in the executive's name
Dummy(% Buys > 50)	I/B/E/S	An indicator variable equal to one if greater than 50% of the number of analysts included in the consensus file have a buy or strong buy recommendation and zero otherwise
Dummy(CFO Male)	Execucomp	An indicator variable equal to one if the CFO is male and zero otherwise
Dummy(Mean Rec > 3)	I/B/E/S	An indicator variable equal to one if the consensus mean recommendation level is greater than three (buy or strong buy) and zero otherwise
Dummy(Rec > 3)	I/B/E/S	An indicator variable equal to one if the detail-level recommendation is greater than three (buy or strong buy) and zero otherwise
Earnings Surprise	I/B/E/S	Actual quarterly earnings less the consensus mean forecasted earnings, scaled by the day[-1] stock price before the earnings announcement (all split-adjusted)
EPS Forecast Error	I/B/E/S	Consensus mean or detail-level quarterly forecasted earnings less actual quarterly earnings, scaled by the day[-1] stock price before the forecast date (all split-adjusted)
Firm Experience	I/B/E/S	The number of years the analyst has issued earnings forecasts for the firm
General Experience	I/B/E/S	The number of years the analyst has issued earnings forecasts for any firm
Henry Tone	Henry (2008)	The number of Henry (2008) positive words minus the number of Henry negative words, scaled by the number of Henry positive plus Henry negative words

Variable	Data Source	Definition
Leverage	Compustat	Total liabilities scaled by total assets
Log (# CFO Answers)	Seeking Alpha	The natural log of one plus the number of answers CFO provides
Log (# CFO Argumentative Words)	MPQA Arguing Lexicon from Somasundaran et al. (2007)	The natural log of one plus the number of argumentative words spoken by the CFO
Log (# CFO Euphemism Words)	Suslava (2021)	The natural log of one plus the number of euphemism words spoken by the CFO
Log(# CFO Words)	Seeking Alpha	The natural log of one plus the number of words CFO speaks
Log(# Total Answers)	Seeking Alpha	The natural log of one plus the total number of answers provided by firm executives
Log(# Total Words)	Seeking Alpha	The natural log of one plus the total number of words spoken by firm executives
Log(Broker Size)	I/B/E/S	The natural log of one plus the number of analysts issuing earnings forecasts at the brokerage during the year
Log(CFO Age)	Execucomp	The natural log of one plus the CFO's age
Log(CFO Tenure)	Execucomp	The natural log of one plus the CFO's tenure
Log(Days to EA)	I/B/E/S	The natural log of one plus the number of days between the forecast date and the corresponding earnings announcement
Log(Firm Age)	Compustat	The natural log of one plus the number of years the firm has financial data in Compustat
Log(Firms Covered)	I/B/E/S	The natural log of one plus the number of firms the analyst issues earnings forecasts for during the year
Log(Market Value)	Compustat	The natural log of common shares outstanding times year-end stock price
Loss	Compustat	An indicator variable equal to one if income before extraordinary items in the current period is less than zero and zero otherwise
Loughran McDonald Tone	Loughran and McDonald (2011)	The number of Loughran and McDonald positive words minus the number of Loughran and McDonald negative words, scaled by the number of Loughran and McDonald positive plus Loughran and McDonald negative words
Mean Rec Level	I/B/E/S	The consensus-level mean recommendation level. Strong sell is set equal to one, and strong buy is set equal to five
Participate Dummy	Seeking Alpha, I/B/E/S	An indicator variable equal to one if the analyst asks a question on the conference call and zero otherwise

Variable	Data Source	Definition
PCA(Persuasive Language)	Seeking Alpha, MPQA Arguing Lexicon from Somasundaran et al. (2007), and Suslava (2021)	A principal component analysis variable using the first component of the following five measures: *Log (# CFO Answers)*, *Log(# CFO Words)*, *Log (# CFO Argumentative Words)*, *Log (# CFO Euphemism Words)*, and *Henry Tone*
Price Target/Current Price	I/B/E/S, CRSP	The mean consensus or detail-level price target, scaled by the day [-1] stock price
Price Target/Future Price	I/B/E/S, CRSP	The mean consensus or detail-level price target, scaled by the one-year-ahead stock price
Price Target Revision	I/B/E/S	The first mean consensus or detail-level price target issued within 30 days following the earnings announcement date minus the price target prior to the earnings announcement, scaled by the price target prior to the earnings announcement. For the detail-level analysis, if the analyst does not issue a revision within 30 days following the call, the measure equals zero
Rec Level	I/B/E/S	The detail-level recommendation level. Strong sell is set equal to one, and strong buy is set equal to five
Returns[-100,-1]	CRSP	Cumulative buy-and-hold returns from day [-100, -1]
ROA	Compustat	Income before extraordinary items scaled by lagged total assets
Std Dev Returns[-100,-1]	CRSP	The standard deviation of daily stock returns from day [-100, -1]
Tobin's Q	Compustat	Market value plus the book value of short- and long-term debt scaled by total assets
Trading Volume[-100,-1]	CRSP	The sum of daily trading volume from day [-100, -1], scaled by total shares outstanding

This table provides variable definitions in alphabetical order. We winsorize all continuous variables at the 1% and 99% levels to reduce the influence of outliers

Appendix B

Research validating signature size proxy for narcissism

Paper	Journal	Sample	Instrument	Method	Sample Size	Correlation	p-value
Ham et al. (2017)	*Journal of Accounting Research*	Undergraduate business students at a US University	NPI-40 (psychometric test)	Experiment	N = 63	r = 0.33	p = 0.017
Ham et al. (2018)	*Review of Accounting Studies*	Graduate business students at a US University	NPI-16 (psychometric test)	Experiment	N = 53	r = 0.36	p < 0.01
Ham et al. (2018)	*Review of Accounting Studies*	Undergraduate business students at a US University	NPI-16 (psychometric test)	Experiment	N = 61	r = 0.23	p = 0.07
O'Reilly et al. (2018)	*The Leadership Quarterly*	Firm employees of the CEO	Survey of employees' assessment of CEO narcissism	Field	N = 24	r = 0.55	p < 0.01
Church et al. (2020)	*Contemporary Accounting Research*	Undergraduate students at a Chinese University	NPI-40 (psychometric test)	Experiment	N = 52	r = 0.27	p = 0.053
Chou et al. (2021)	*The Accounting Review*	Undergraduate accounting students at a large public university in Taiwan	NPI-40 (psychometric test)	Experiment	N = 145	r = 0.39	p < 0.001
Shang et al. (2023)	*Contemporary Accounting Research*	Managers of hospitals	Text-based analyses of narcissism based on managers' self-descriptions	Field	N = 18	r = 0.51	p < 0.05
Total Number of validations		7					
Total Number of participants		416					
Average Correlation of all validations		r = 0.38					
Average p-value of all validations		p < 0.03					

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