

# The use of optimistic tone by narcissistic CEOs

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## Abstract

**Purpose** – The purpose of this paper is to examine how CEO narcissism can be related to the usage of an abnormal optimistic tone in financial disclosures. Drawing on upper echelons theory, this paper suggests a link between CEO characteristics, such as narcissism, and accounting choices, such as optimistic financial reporting language.

**Design/methodology/approach** – To measure the narcissistic trait of a CEO, the study builds on a model using a set of 15 archival indicators. The usage of an abnormal optimistic tone is assessed quantitatively when looking at firms' 10-K filings, where "abnormal" refers to tone that is unrelated to a firm's performance, risk, and complexity. This approach allows for the use of firm-fixed effects for a sample of US listed firms over the period 1992-2012.

**Findings** – The results show that CEO narcissism is significantly positively related to abnormal optimistic tone in 10-K filings. If a highly abnormal optimistic tone is present, the level of CEO narcissism is positively related to the likelihood of future seasoned equity offerings and larger future investments in research and development.

**Research limitations/implications** – The findings are relevant for shareholders and stakeholders as well as auditors and legislators. All stakeholders should be aware of the overly optimistic reporting language resulting from CEO narcissism and need to make allowances for it when assessing firm performance based on financial disclosures.

**Originality/value** – This study is the first to show in a large-scale sample how CEO narcissism can be related to a firm's use of optimistic language, and thus contributes to the question of how personality traits affect an organization's financial reporting strategy.

**Keywords** Language, Textual analysis, Financial reporting, CEO narcissism, Tone

**Paper type** Research paper

## 1. Introduction

A considerable body of research in the field of accounting and finance examines the role of linguistic tone in firm disclosures. Research on this topic has particularly increased in recent years due to the big data movement and new technologies that significantly have affected accounting research (Guthrie and Parker, 2016). Financial disclosures are important as they are regarded as a useful tool for lowering information asymmetries between stakeholders, including shareholders, and the management of a firm. Accountability plays a key part in financial disclosures as it obliges the management to provide explanations for the firm's performance to its stakeholders. However, it also gives the management the opportunity to describe current firm events in a subjective manner and thus interpret the relevant information. Therefore, the information provided by the management may also be biased (Merkl-Davies *et al.*, 2011). Studies have shown that managers use an optimistic tone when reporting a firm's financial performance (Craig and Amernic, 2008; Evans, 2004; Brennan *et al.*, 2009; Huang *et al.*, 2014; Li, 2011) as investors react strongly to positive language disclosed in financial reports (Loughran and McDonald, 2011; Feldman *et al.*, 2010; Smith and Taffler, 2000). Still, whether manager-specific characteristics influence the usage of optimistic tone has only received limited attention in research (Davis *et al.*, 2014;



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Brennan and Conroy, 2013). Davis *et al.* (2014) show that gender, age, educational level, and career experience influence the way a manager adopts an optimistic tone in financial disclosures. We identify narcissism as another managerial character trait that relates to an abnormal optimistic tone in financial reporting. Brennan and Conroy (2013) find evidence of hubris in the letters of one CEO to shareholders, which becomes more pronounced the longer the CEO serves.

Narcissism, also described as self-love, helps individuals to function successfully since it is based on self-esteem. In the case of limited self-esteem, excessive self-love leads to an abnormal desire for self-enhancement (Hiller and Hambrick, 2005). Narcissists manage to present themselves in a self-enhancing manner (Collins and Stukas, 2008) and have a strong propensity to creating good first impressions (Vazire *et al.*, 2008; Holtzman and Strube, 2010). In accounting terms, it is theoretically argued that narcissistic CEOs tend to make unequivocal choices in their attempt to present the company's financial status in an overly positive light (Amernic and Craig, 2010). Empirically, it has been found that CEO narcissism is associated with optimistic earnings figures, leading all the way to financial misreporting (Rijsenbilt and Commandeur, 2013; Godfrey *et al.*, 2003; Olsen *et al.*, 2014; Schrand and Zechman, 2012).

In this study, we draw upon upper echelons theory to examine the link between CEO narcissism and optimistic language and the follow-up effects of this relationship. This study shows that narcissism as a personal characteristic is significantly associated with managers' accounting choice to report in an "abnormal optimistic tone." Abnormal optimistic tone is estimated by controlling for firm quantitative fundamentals such as financial performance, risk, and complexity. To learn more about the potential incentives of using abnormal optimistic tone in financial reporting, this paper discusses whether tone can help a narcissistic CEO to conduct corporate activities, such as seasoned equity offerings (SEO) or research and development (R&D) investments, that ensure high firm visibility and thus self-enhancement in the future.

To mitigate endogeneity problems, including potential omitted variable bias and time-invariant unobservable heterogeneity, a firm-fixed effects estimation is chosen as the model specification. We also conduct a difference-in-difference analysis to examine whether a switch from a less narcissistic CEO to a more narcissistic CEO relates to a change in financial reporting language. The CEO narcissism measure is derived from a large data set using archival data instead of self-report measurements. Optimistic tone is assessed quantitatively by drawing on the data sets made available by Loughran and McDonald (2011), which give researchers access to analysis of words in the content of 10-K filings for US listed firms over the period 1992-2012[1], ultimately consisting of 712 unique firms and 6,700 firm-year observations.

Overall, we find that the level of CEO narcissism is positively related to the occurrence of an abnormal optimistic tone in 10-K filings. A newly appointed CEO with higher than average narcissistic tendencies is also related to a significant increase in the occurrence of positive language. The results further show that if a highly abnormal optimistic tone is present, CEO narcissism is associated with a higher likelihood of SEO and more R&D investments in the future.

This study contributes to the literature on how language choices in corporate disclosures are related to manager-specific traits. Particularly, it contributes to a string of literature that is still limited, namely on how managers' characteristics can have an effect on an organization's financial reporting language (Davis *et al.*, 2014; Brennan and Conroy, 2013). Among those characteristics, we expect narcissism as a CEO personality trait to affect narratives in organization's financial reporting. By providing evidence that CEO narcissism is significantly associated with the occurrence of an abnormal optimistic tone in financial reporting, this study presents an alternative explanation for the observed reporting bias

despite the frequently used agency-based approach (Merkl-Davies *et al.*, 2011). Specifically, the reporting bias in this study refers to irrational behavior based on a narcissist's strong motivation to produce desirable outcomes and a simultaneous low motivation to avoid potential litigation risk. Unlike rational managers who are capable of deliberately adjusting the level of optimistic tone depending on the level of litigation risk (Tama-Sweet, 2009; Davis and Tama-Sweet, 2012), we expect narcissistic CEOs to see optimistic financial reporting – irrespective of inherent risks – as an opportunity to satisfy their insatiable desire for self-enhancement. The findings in this study further indicate that narcissistic CEOs resort to optimistic language when planning corporate activities that ensure firm growth and visibility. Accordingly, narcissistic CEOs attempt to assure the positive responses of a firm's disclosure audience if, for example, the issue of equities succeeds. Hence, narcissistic CEOs portray a firm's – and inherently their own performance – in a favorable light to reach their desired level of self-affirmation and admiration through third parties, which, according to Merkl-Davies and Brennan (2011), reflects a self-serving bias. Thus, the results in this study also lend support for the deliberate exploitation of an existing abnormal optimistic tone and extend the findings of Brennan and Conroy (2013), who fully assign biased financial reporting – caused by CEO hubris – to a subconscious cognitive bias in corporate narratives.

## 2. Background

### 2.1 Narcissism

Whereas clinical research refers to narcissism as a stable mental disorder involving excessive and dysfunctional self-love, in subclinical terms it is measured as a personality dimension with a set of character traits such as self-confidence, egotism, or dominance (American Psychiatric Association, 2013). The original Narcissistic Personality Inventory (NPI) psychometric scale proposed by Raskin and Hall (1979) was validated, and the number of measurement items further reduced in subsequent studies (Raskin and Terry, 1988; Emmons, 1984). Finally, leadership/authority, superiority/arrogance, self-absorption/self-admiration, and exploitativeness/entitlement were identified as the four principal components of narcissism (Emmons, 1987). Applying the NPI, Wallace and Baumeister (2002) find that narcissistic persons consider their abilities and themselves superior have immoderately high self-expectations, and a disproportionate sense of personal control over their world. Narcissists manage to present themselves in a self-enhancing manner (Collins and Stukas, 2008). This leads narcissistic CEOs to have a strong belief system and to develop charisma as well as a grand vision, which are seen as premises for effective leadership (Rosenthal and Pittinsky, 2006). CEO narcissism also correlates highly with self-esteem and core self-evaluation, which can be seen as the inevitable traits of successful company leaders. Nevertheless, more narcissistic people have to be supervised separately, since they feel a constant need for affirmation of their self-view, and thus only exhibit fragile self-esteem and core self-evaluation (Chatterjee and Hambrick, 2007; Sputtek, 2012). Furthermore, narcissists perform better if they see an opportunity to garner admiration as a medium to self-enhancement (Wallace and Baumeister, 2002). Accordingly, narcissists have a much stronger motivation for setting ambiguous targets and may pursue challenging but attainable goals more often than their less confident counterparts (Soyer *et al.*, 1999). This tendency toward achieving self-worth may be misinterpreted as self-confidence and inherently help a narcissistic individual to be chosen as a CEO since self-confidence and self-esteem are seen as essential characteristics of the job (O'Reilly *et al.*, 2014; Graham *et al.*, 2013; Goel and Thakor, 2008). As a result of this link between self-confidence and narcissism, the proportion of narcissistic CEOs among firm leaders has increased over the last two decades, which can also be interpreted as a result of the increasing level of narcissism within the general population and, inherently, firms' employees (Young *et al.*, 2016; Maccoby, 2004).

Given this property, narcissistic CEOs can be beneficial to themselves or others insofar as they can recover quickly after negative financial shocks, e.g., financial crises, as was the case in 2007 (Campbell and Campbell, 2009; Patel and Cooper, 2014). In fact, narcissists have a strong bias toward positive appearance, which feeds their desire to be the center of attention and helps promote their status (Vazire *et al.*, 2008). This finding is supported by a positive correlation between narcissism and attractiveness in a short-term mating context (Holtzman and Strube, 2010). Thus, narcissists perform very well on signaling status and positively influencing impressions by making appropriate use of a positive appearance.

### 2.2 Tone management

Language has been found to provide information to investors about a firm's risks, financial performance and constraints, and future corporate transactions (Li, 2011; Henry, 2008; Smith and Taffler, 2000; Guay *et al.*, 2016; Dyer *et al.*, 2016). Other studies explore whether investors react to textual information and find that optimistic disclosures lead to strong positive reactions by investors (Davis *et al.*, 2012; Feldman *et al.*, 2010). The results suggest that CEOs positively express their opinion regarding optimistic future firm performance and provide additional information which is incremental to investors (Yuthas *et al.*, 2002; Patelli and Pedrini, 2014; Abrahamson and Amir, 1996). By contrast, the results of Huang *et al.* (2014) indicate that managers start to make use of the market signaling function and, in an opportunistic manner, choose more optimistic language when reporting a firm's financial performance. Their findings provide evidence that firms use optimistic language when financial performance is poor or major corporate activities are planned for the near future. It is also possible that the use of optimistic language by managers is the result of their personalities, experiences, and values. Davis *et al.* (2014) are among the first to examine whether manager-specific characteristics are likely to be associated with optimistic language. These scholars show that observable characteristics such as gender, age, and educational and career experience can explain the presence of manager-specific optimism in tone. Not only female CEOs, but also young managers tend to use less optimistic language when announcing earnings in conference calls, whereas managers involved in charitable organizations use a more positive tone (Davis *et al.*, 2014). In short, the consensus of prior literature is that there is a link between managerial status and the use of optimistic tone. However, it is unclear whether the use of said tone is motivated by the truth or opportunism. Therefore, this paper analyzes the relationship between CEO narcissism and managers' financial reporting behavior, namely the use of an abnormal optimistic tone in 10-K filings.

### 2.3 Framework

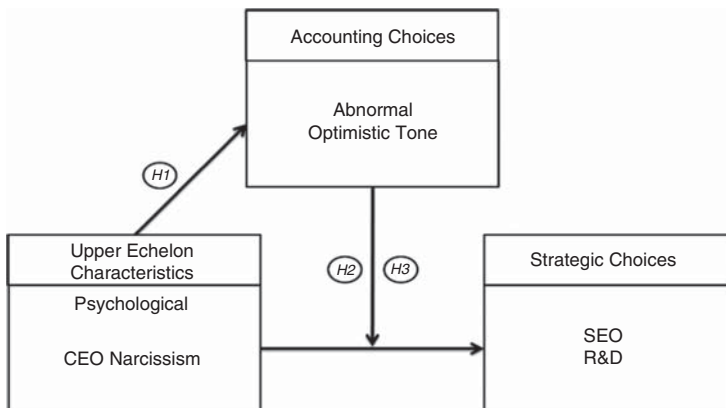
As argued by upper echelons theory, managers' experiences, values and personalities strongly influence their strategic decision making (Hambrick and Mason, 1984). Specifically, advocates of upper echelons theory provide evidence that there is a significant CEO effect on firm performance (Bertrand and Schoar, 2003; Lieberman and O'Connor, 1972; Hambrick and Quigley, 2014). However, opponents argue that CEOs have limited ability to affect firm performance because they are constrained by their environment, which includes such factors as entrenched cultures, industry structure, fixed asset allocation, institutional pressures, or predecessors who remain as board chairs (Hannan and Freeman, 1977, 1989; DiMaggio and Powell, 1983; Quigley and Hambrick, 2012). Accordingly, Wasserman *et al.* (2010) transform the key question from "Does leadership matter?" to "When does leadership matter?" based on their finding of a markedly varying CEO effect on firm performance across industries. In addition, the findings of prior literature suggest that the CEO effect also varies across firms, countries, and time (Quigley and Hambrick, 2015; Crossland and Hambrick, 2007, 2011). By combining the advocates' as well as opponents' view, the concept of managerial discretion has been evoked. Specifically, CEOs can only influence firms'

outcomes to the extent that they have discretion to do so (Hambrick and Finkelstein, 1987; Finkelstein and Hambrick, 1990). Consequently, the question arises whether narcissistic CEOs have the discretion to influence a firm's disclosure policy.

### 3. Hypothesis development

Managerial characteristics can have a particularly strong impact on corporate actions when there are no constraints or alternatives to decisions taken by a manager (Hambrick, 2007). Prior research agrees that tone in financial disclosure can signal managers' expectations about future firm performance and influence investors' perceptions. Therefore, positive tone can diminish the potential concerns of investors and other stakeholders regarding planned corporate activities. To ensure the successful presentation of corporate activities, we expect that narcissistic CEOs resort to the presence of an abnormal optimistic tone according to their psychological traits. Figure 1 provides an overview of the model and displays the hypothesized relationship between CEO narcissism and accounting choices, such as the use of an abnormal optimistic tone, as well as corporate activities such as SEO and R&D investments. The link in the causal chain is described in detail in the following.

Caused by their self-enhancement bias, narcissists have a positive illusion about themselves resulting in optimistic expectations about their own future performance (Robins and Beer, 2001). Specifically, narcissistic persons are more likely to perceive their current performance as good than moderately narcissistic individuals would of their own performance, because narcissists generally attribute their good past performance to their own ability and effort. Furthermore, narcissistic individuals will strongly aim to maintain this positive self-view in the future (Farwell and Wohlwend-Lloyd, 1998). Relating this to the context of CEOs, a narcissistic CEO must have encountered specific situations in the past that positively affected their personal optimism. It is reasonable to assume that narcissistic CEOs must have proven their ability to run a business in the past in order to achieve their current status of CEO. This relationship should hold especially true for CEOs of large companies such as those listed in the S&P500. In consequence, self-confidence, as one character trait within the narcissism personality dimension, can be affected by self-attribution bias. It leads managers to attribute good performance to internal factors such as their own ability and poor performance to external factors such as economic crises (Billett and Qian, 2008). In addition, past success can increase self-esteem and self-efficacy



**Note:** The figure provides an overview of the theoretical model based on upper echelons theory

**Figure 1.**  
Theoretical model

and thus reinforce one's sense of self-admiration (Hiller and Hambrick, 2005). Hence, good past performance can influence a CEO's confidence and self-admiration and encourage the narcissistic CEO to report on performance using an overly optimistic tone.

In an opposing view, it can be argued that narcissism is related to pessimism or depressive disorders. This can be the case when narcissistic individuals lose their positive self-view (Švrakić, 1987; Yang and Huang, 2004). Taking the complexity of narcissism into account, it can be divided into an adaptive and a maladaptive form (Emmons, 1984; Raskin and Terry, 1988). Whereas adaptive narcissism coincides with beneficial traits such as leadership, authority, or confidence, maladaptive narcissism is characterized by the tendency to be pessimistic and depressive. Breaking narcissism down into its NPI subscales, leadership/authority, superiority/arrogance, and self-absorption/self-admiration positively correlate with optimism. By contrast, exploitativeness/entitlement is a more pathological or maladaptive dimension of narcissism and reveals a contrary relationship (Hickman *et al.*, 1996). Maladaptive narcissism therefore correlates with pessimism. In line with these results, Watson and Morris (1990) indicate that adaptive (maladaptive) narcissism is associated with less (more) irrational beliefs. In the context of linguistics, maladaptive narcissism can cause a tendency to employ an abnormal pessimistic tone in financial reporting.

We expect that narcissistic CEOs tend to be more commonly linked to adaptive rather than maladaptive narcissism for two main reasons. First, it has been found that adaptive narcissistic characteristics, such as confidence, are more prevalent in higher-status occupations, where a higher probability for attention and admiration is given (Hill and Yousey, 1998). Second, CEOs must have proven their ability to successfully run a business in the past. Since both relationships hold true for CEOs of companies listed in the S&P500, we hypothesize a positive relationship between CEO narcissism and optimistic reporting. Referring to Figure 1, in line with upper echelons theory we expect that the accounting choice to use optimistic language in financial reporting is partially a function of a CEO's personality characteristics. Specifically, we expect CEO narcissism to positively influence the occurrence of an abnormal optimistic tone in 10-K filings:

*H1.* The level of CEO narcissism is positively related to an abnormal optimistic tone used in 10-K filings.

In the following, we examine whether the occurrence of an abnormal optimistic tone can help the narcissistic CEO in their pursuit of self-enhancement. Taking the social psychological perspective of Merkl-Davies and Brennan's (2011) conceptual framework of impression management into account, an abnormal optimistic tone is adopted in financial reporting for two main reasons. On the one hand, it merely reflects narcissistic CEOs' optimism and inherently their propensity to paint an overly rosy picture of future performance. Thus, for example, a narcissistic CEO reports very optimistically simply because they truly believe the firm's future performance will be better than that of other firms. On the other hand, using an abnormal optimistic tone serves to build a context around the narcissist's decision making. Specifically, managers attempt to avoid the unfavorable responses of a firm's disclosure audience if corporate activities fail (Merkl-Davies and Brennan, 2011). In light of the setting of this study, we accordingly expect that narcissistic CEOs attempt to assure the positive responses of a firm's disclosure audience if, for example, the issue of equities succeeds. Additional R&D investments and SEO are corporate activities that ensure high firm visibility for the near future. They deliver new capital and know-how to the firm and thus lay the groundwork for future firm growth. According to upper echelons theory, we expect that narcissistic CEOs resort to optimistic language when corporate activities, such as offering new equity or investing in R&D, are planned (tabulated in Figure 1).

Chatterjee and Hambrick (2007) suggest that narcissistic CEOs make large investments in an attempt to achieve self-enhancement. These scholars show a positive relationship between CEO narcissism and acquisitions and argue that narcissistic CEOs favor mergers and acquisitions (M&A) since they are great attention getters. While the number of M&A is already included in the narcissism measure, M&A cannot be examined as a follow-up effect of CEO narcissism. To avoid potential endogeneity, this study therefore concentrates on SEO. These often go hand in hand with M&A in order to raise the needed capital for acquisitions. Additionally, CEOs face a strong incentive to settle an SEO successfully as they will disgrace themselves in case of failure, which especially harms a narcissistic CEO's positive self-view. Irrespectively of specific manager traits, it is found that firms raise reported earnings before issuing equity to achieve a higher cash inflow via the SEO (Teoh *et al.*, 1998). In regard to tone management, empirical evidence shows that managers strategically change their disclosure strategy by using a more optimistic tone when planning an SEO (Huang *et al.*, 2014; Lang and Lundholm, 2000). In summary, fostering SEOs by an abnormal optimistic tone helps to avoid the failure of equity issues. This support of corporate activities displays a strategic incentive because it forestalls the negative responses of a firm's reporting audience. Therefore, we expect that narcissistic CEOs resort to an abnormal optimistic tone when SEOs are planned in the future:

*H2.* In the presence of high abnormal optimistic tone, the level of CEO narcissism is positively related to the likelihood of future SEO.

Traditionally, innovation is seen as a source of good firm performance: it helps incumbent firms to preserve their oligopolistic position or offers start-ups the first-mover advantage (Mudambi and Swift, 2014). Building on the proposal of Klette and Griliches (2000), investments in R&D can be seen as a source of firm growth. We expect that narcissistic CEOs give a significant amount of attention to R&D intensity as they see it as a good opportunity to garner admiration resulting in self-enhancement. In further detail, the findings of Mudambi and Swift (2014) suggest that an increase in R&D expenditures coincides with a higher likelihood of often cited patents. Thus, a higher number of patents accordingly serve the narcissistic CEO's pursuit of praise and admiration. It reflects the narcissistic CEO's level of innovation and can therefore increase admiration by external parties such as competitors, suppliers, and buyers. In addition, the findings of Gerstner *et al.* (2013) suggest that narcissistic CEOs aggressively adopt technical discontinuities since major technical business changes cause widespread admiration if they prove successful. The effect is further moderated by the scrutiny of outsiders since higher audience engagement provokes a narcissistic CEO's need to engage in bold corporate actions. In summary, narcissistic CEOs are prone to forestall a critique from firm's reporting audience that it is not being innovative. In line with this argument, Chatterjee and Hambrick (2007) show for a sample of software and hardware companies, that strategic dynamism – with R&D intensity as one main component – is positively associated with CEO narcissism. Our study examines the joint effects of CEO narcissism and use of abnormal optimistic tone on R&D expenditures. As higher R&D costs can be related to a narcissist's aim for prestige, this approach can offer new evidence on whether narcissistic CEOs resort to optimistic tone management when following their personal strategy and gaining additional visibility and self-enhancement. We therefore expect that narcissistic CEOs resort to an abnormal optimistic tone when future R&D investments are planned in the future, which fosters firm growth and thus a firm's visibility:

*H3.* In the presence of high abnormal optimistic tone, the level of CEO narcissism is positively related to the level of future R&D investments.

#### 4. Methodology

##### 4.1 CEO narcissism score (CNS)

Measuring personality is challenging, since it is not as easy to observe as an individual's financial position, socioeconomic roots, education, or age. Instead of self-reported measurements, the use of archival data offers the major advantage that data can be compiled independently of the CEO's available time, willingness, and self-perception. To capture the narcissism trait, a CEO narcissism measure is built on a model proposed by Rijsenbilt (2011). There are three reasons for this. First, to the best of our knowledge, the defined model uses the largest set of indicators when measuring CEO narcissism and simultaneously mitigates a potential bias due to a single indicator's low ability to illustrate the specific trait. Second, the CNS is theoretically grounded in the work of Emmons (1987) and reflects the four core dimensions of narcissism: authority, superiority, self-admiration, and entitlement. Third, the CNS has empirically demonstrated its ability to reveal a relationship between narcissism and financial reporting since narcissistic CEOs' higher propensity to engage in fraud has been identified by Rijsenbilt and Commandeur (2013).

The CNS consists of 15 indicators reflecting 5 determinants. These are media exposure, perquisites, compensation, power, and growth. The wide range of determinants is chosen to adequately reflect the distinctive pattern of CEOs' narcissistic traits since it affects their idiosyncratic strategic actions (Rijsenbilt, 2011).

First, excessive media exposure serves the narcissistic CEO as a means to achieve public acknowledgment and reinforcement. The exposure indicators are the number of awards and the number of lines in their biography as listed in the Marquis Who's Who database. The number of publications in major news outlets is taken from Dow Jones Factiva and reflects the number of joint CEO/firm mentions. In addition, the size of the CEO photograph and its form of appearance in the annual report are measured on a 12-point scale. One point marks the lower range (if no photographs of the CEO feature in the annual report), and 12 points marks the upper range if the photo shows the CEO alone on a full page plus on an additional photograph elsewhere in the report. Where there is no annual report present, the score is 0.

Second, the perquisite determinant reflects the personal use of the corporate jet, since this reflects the CEO's status and grandeur. The value of private jet use, expressed in US dollars, is taken from Form DEF 14A, which is downloadable via the US Security Exchange Commission's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system. When no disclosure is available, the value is 0.

Third, the compensation determinant contains five variables, indicating a CEO's self-importance. Cash and total compensation data are taken from Compustat's ExecuComp database, and consist of the CEO's salary and bonus as the cash component, plus all other forms of dollar-denominated compensation to determine the total package. The compensation structure within a firm can be interpreted as an appraisal system in which a higher compensation package expresses higher hierarchical status and prestige. Since the potential of a CEO to influence the compensation structure is high, the relative cash and total compensation is also calculated. The relative compensation is derived from the ratio of the CEO's compensation in relation to the second-best paid executive. Finally, the CEO's rank is measured as the ordinal rank, with the highest compensation ranked at 1, and higher ranks express less narcissism.

Fourth, narcissistic CEOs strive for power and attention and overestimate their own abilities. To cope with their personality traits they centralize decision-making power, which is reflected in CEO duality, a higher number of role titles, and a weaker corporate governance (CG) system. The variable for CEO duality takes the value of 1 if a CEO is also the Chairman of the Board. The number of role titles ranges from one to five, which include CEO, chairman, founder, president, director, or principal executive. The data for CEO



duality and role titles are taken from Compustat's ExecuComp database. The originally applied Gompers Index – a proxy for CG – is limited, since it is only available up to 2006 so it is substituted by the strengths minus concerns in the CG dimension taken from MSCI STATS, formerly known as the Kinder, Lynderberg, and Domini database. Strengths and concerns resulting from compensation are excluded, since five indicators already take compensation into account. In addition, ethical concerns can lead to misleading inferences if not excluded, since this study attempts to interpret the CNS in its entirety as a proxy for unethical behavior. This step allows for the extension of the end of the sample period from 1992 to 2012.

Fifth, to corroborate their superiority, narcissistic CEOs tend to acquire other companies in their aim for growth. To account for this trait, the number and value of acquisitions are taken from the Thomson One Banker SDC database. An acquisition is taken into account if the acquiring firm purchases more than 50 percent of the target shares and the deal value is at least US\$10 million. The value is scaled by the market value of the acquirer. Both variables are cumulated and divided by the years of overall tenure, and set to 0 if no data for acquisitions are available.

An overview of the indicators, including the data source and description, is given in Table I. All companies in the S&P500 index are included for which data from the various databases for the period 1992 to 2012 were available. To ensure a CEO can unfold their narcissistic trait in full, a minimum tenure of three years is required. A principal components analysis (PCA) on these 15 variables is performed (based on the correlation matrix). PCA is a data reduction method used to re-express multivariate data with fewer dimensions.

Variable	Source	Description
Publicity	Dow Jones Factiva	Number of publications divided by the number of tenure years
Awards	Marquis Who's Who	Number of awards
Lines in biography	Marquis Who's Who	Number of biography lines
Corporate jet use	EDGAR – Form DEF 14A	Amount in US\$ reflecting personal use of corporate aircraft
Cash compensation	Compustat's ExecuComp	Salary and bonus for every fiscal year
Total compensation	Compustat's ExecuComp	Cash plus all other forms of compensation for every fiscal year
Ratio of cash compensation	Compustat's ExecuComp	CEO's cash compensation compared to second best paid executive
Ratio of total compensation	Compustat's ExecuComp	CEO's total compensation compared to second best paid executive
Compensation rank	Compustat's ExecuComp	Executive rank by salary and bonus
CEO duality	Compustat's ExecuComp	CEO is also chairman
Role titles	Compustat's ExecuComp	Number of titles (CEO   President   COO   Chairman   Director   Principal Executive   Founder)
Governance index	MSCI ESG STATS	Total strengths minus total concerns (excl. compensation strengths and concerns as well as ethical concerns)
Photograph	Annual Report	Size of CEO's photograph in annual report
Value of acquisition	Thomson One Banker (SDC)	Amount in US\$ per CEO tenure year
Number of acquisitions	Thomson One Banker (SDC)	Number per CEO tenure year

**Notes:** The table provides an overview of the 15 indicators, reflecting the narcissism score proposed by Rijsenbilt (2011). A principal components analysis (PCA) on these 15 variables (based on the correlation matrix) is performed to reduce the 15 dimensions to four uncorrelated ones. The goal is to re-orient the data so that the multitude of original variables can be summarized with a few components that capture maximum possible information from original variables. The factor loadings matrix is rotated. Since the variables are correlated with each other in real life, oblique rotation is used, where correlation is allowed between the rotated factors

**Table I.**  
Components of the  
CEO narcissism  
score (CNS)

The goal is to re-orient the data so that the multitude of original variables can be summarized in just a few components that capture the maximum possible information from the original variables. In line with Rijsenbilt (2011) and to ensure comparable results, four components are used. The factor loadings matrix is rotated in order to lower most factor loadings and keep only a few factor loadings large. This ensures a simple structure which allows factors to be easily interpreted as clusters of variables that are highly correlated with a particular factor. The variables are correlated with each other in real life. Therefore, oblique rotation is used as it allows for correlation between the rotated factors.

Although the model to measure narcissism has already been applied in prior research, a validation has so far been neglected. Rijsenbilt (2011) provides only weak evidence of construct validity by comparing narcissistic CEOs (indicated by a high CNS) in her sample with narcissistic CEOs as identified by Rosenthal and Pittinsky (2006) as well as prior research. To validate the CNS further, we reconstruct the CNS as established by Chatterjee and Hambrick (2007), which has been externally validated and widely accepted in research. These scholars use a set of five indicators to reflect the narcissistic construct by archival data: first, the size of the CEO's photograph in the company's annual report; second, the frequency of mentions of the CEO in the company's press releases; third, the CEO's use of first-person singular pronouns in interviews; fourth and fifth, the CEO's cash and non-cash compensation ratio compared to that of the second-highest-paid executive in the firm. This is done for a subsample of firms by dividing the sample into ten CNS deciles. For every decile, the five highest-ranked narcissistic CEOs in relation to firm size are chosen, resulting in a subsample of 50 CEOs. To test whether the subsample differs in variation of the CNS from the full sample, a mean comparison as well as the Kolmogorov-Smirnov two-sample test is performed. Both tests are insignificant ( $p > 0.56$  and  $p > 0.88$ ), indicating no significant difference in the mean and its overall distribution of the CNS. Subsequently, the CEO narcissism for this subsample is rated using the approach established by Chatterjee and Hambrick (2007). This analysis shows that the CNS is significantly correlated with the narcissism measure defined by Chatterjee and Hambrick (2007), with a correlation coefficient of 0.33 ( $p < 0.02$ ). Therefore, the results provide assurance that the scoring approach provides a reasonable measure of CEO narcissism.

#### 4.2 Optimistic tone

The term "word lists" is used where a collection of words attempts to identify a particular attribute of a document, such as an optimistic tone. An optimistic tone in firm's 10-K filings is therefore assessed based on content analysis, specifically the number of words used in these filings relating to positive vs negative language.

Prior research investigating positive language used in financial disclosure uses word lists that were developed for psychology and sociology translates, such as *Diction* and *Harvard Psychosociological Dictionary* (Cho *et al.*, 2010; Davis and Tama-Sweet, 2012; Davis *et al.*, 2014). However, Loughran and McDonald (2011) define alternative keyword lists with specific business terminology when analyzing all 10-K filings published on the EDGAR website ([www.sec.gov](http://www.sec.gov)). These scholars prove that their word lists better reflect a positive or negative language used in financial disclosures. Most notably, these scholars prove that three-quarters of the words in traditional word lists such as the Harvard Psychosociological Dictionary are misclassified in a financial context. For example, words such as tax, cost, and liability are classified as negative in the Harvard word lists, although they are not considered negative in a financial environment. Words in the positive word list include achieve, attain, efficient, improve, profitable, and upturn. Words in the negative word list include loss, unpaid, restated, litigation, and misstatement. The negative word list contains 2,329 keywords and the positive word list 354 keywords[2]. Loughran and McDonald's (2011) keyword list is already widely used and predominantly accepted within the research

field of text analysis in accounting (Davis *et al.*, 2014; Kearney and Liu, 2014; Davis and Tama-Sweet, 2012).

The Loughran and McDonald data set as published on Loughran and McDonald's website[3] serves as a data source in this paper. The data set has also been used by Loughran and McDonald (2011) and is updated by them on a constant basis. The data set offers the total number of positive and negative words for all 10-K and 10-Q filings published online by the SEC and covers the period 1989-2012[4]. For our analysis, only the observations referring to the summarized contents of 10-K filings are used from the Loughran and McDonald data set. 10-K filings include 10-K, 10-K-A, 10-K405, or 10-K405-A filings. If there is more than one firm-year observation with the summarized total number of words of a firm's 10-K filing in the Loughran and McDonald data set, we take the firm-year observation relying on the most extensive 10-K filing. After eliminating duplicates and 10-Q files, 159,723 firm-year observations and 33,216 unique firms remain. In line with the majority of financial language studies (Feldman *et al.*, 2010; Huang *et al.*, 2014), we take the total number of positive words minus the total number of negative words as a percentage of the total number of words used in 10-K filings to measure optimistic tone (*OPT\_TONE*).

Whereas some argue that when investigating the tone in financial disclosures only the management discussion and analysis (MD&A) subsection of the 10-K must be considered, Loughran and McDonald (2011) find that the MD&A does not allow for the capture of tone any more clearly than the total report. This paper refers to 10-K filings rather than other financial disclosures, such as earnings press releases, as the included financial statements are audited, their content and format are dictated by strict accounting rules, and they thus represent a high-quality source of information.

Positive language in 10-K filings can arise for two reasons. On the one hand, it can simply express truly good financial performance. On the other hand, it can be upwardly biased by the management. When business performance is actually better than what can be displayed in the financials, an abnormal optimistic wording reflects positive future performance. However, management may also use an optimistic tone to mislead investors to distract from actual business performance. Therefore, a positive bias in tone may be used to provide investors with private positive information about a future firm performance that accounting numbers cannot capture, or it may be used to strategically influence investors or cover up poor current firm performance. Thus, optimistic tone has a normal and an abnormal component. Whereas the normal component reflects actual business performance as backed up by the financials, the residual abnormal component captures the discretionary feature of tone. Thus, abnormal optimistic tone captures effects that are orthogonal to the underlying firm fundamentals. To obtain abnormal positive tone that is unrelated to current firm performance, optimistic tone (*OPT\_TONE*) is controlled for information about firm fundamentals as explained in the following. In line with Huang *et al.* (2014), tone determinants are chosen that measure current available fundamental information, growth opportunities, operating risks, and complexity. Financial performance is captured by earnings (*EARN*), change in earnings (*D\_DEARN*), and whether a firm generates profits measured with a dummy variable that is equal to 1 if earnings are negative (*LOSS*). These three profitability and earnings performance benchmarks capture a firm's ability to generate cash flows in the current year. Information on growth opportunities is measured by annual stock returns (*RET*) and book-to-market ratio (*BTM*). Therefore, the forward-looking property of the two market variables captures the present value of consequent future cash flows beyond what is conveyed by current accounting numbers. Operating risks are measured by the volatility of earnings (*STD\_EARN*) and stock returns (*STD\_RET*). Operating complexity is measured by the number of geographical (*GEOSEG*) and business segments (*BUSSEG*). *SIZE* and *FIRMAGE* capture a firm's life cycle stage. We refrain from controlling for expectations of future performance for two reasons. First, forecast variables,

e.g. measured by analyst data, would reduce the sample and bias it toward large companies with analysts' data. Second, it is debatable whether expectations of future performance variables are tone determinants or proxies for strategic incentives to manage tone (Huang *et al.*, 2014). All variables are defined in detail in Table II.

#### 4.3 Sample selection

The applied measure of the CNS consists of several indicators as described in Section 4.1. and restricts the analysis to companies for which information is available. Therefore, companies are selected, which are listed in the S&P500 index. In total, the sample consists of 731 companies with 1,207 CEOs and 7,603 firm-year observations for the period 1992-2012. The data set is merged by CIK[5] and financial year with the Loughran and McDonald data set[6]. Financial data are taken from CRSP/Compustat merged database. Stock return data are taken from CRSP. When merging the three data sets, the missing firms further reduce the sample size to a total of 712 unique firms and 6,700 firm-year observations. Since this study does not require firms to have earnings, returns, or R&D data to be included in the sample, the sample sizes vary across different test specifications and are noted in the tables.

#### 4.4 Model specification

Initially, Huang *et al.* (2014) applied a first stage regression to decompose *OPT\_TONE* into a normal component, which refers to a non-discretionary description of firm performance, and an abnormal component, reflecting management's choice to provide incremental information or to manipulate a firm's corporate narratives' audience. Although we resort to this method in testing *H2* and *H3*, we omit this step when testing *H1*. Otherwise we would have applied Equation (1) as a first stage regression and without our variable of interest – *CNS* – and subsequently regress the residual as approximation of an abnormal optimistic tone (*AB\_TONE*) on *CNS* in a second stage regression. However, by including *CNS* in Equation (1) we measure the association between *OPT\_TONE* and *CNS*, which is orthogonal to all control variables and specifically reveals the relationship between an abnormal optimistic tone and CEO narcissism. Thus, to identify whether the level of CEO narcissism positively relates to abnormal optimistic tone used in 10-K filings (*H1*), the following model is proposed:

$$OPT\_TONE_{i,t} = \alpha + \beta_1 CNS_{i,t} + \sum CONTROLS_{i,t} + \sum TIME_t + \varepsilon_{i,t} \quad (1)$$

where *CNS* measures a CEO's level of narcissism for firm *i* in time *t* as described above. *OPT\_TONE* stands for optimistic tone and is a net measure of positive and negative language used in a firm's 10-K filings. This study refers to the term "abnormal optimistic tone" as the *CONTROLS* estimate abnormal tone by controlling for firm characteristics related to fundamentals such as firm performance, growth, risk, and complexity. Abnormal optimistic tone therefore captures effects that are orthogonal to the underlying fundamentals. By doing so, this study overcomes major limitations of prior works (Allee and Deangelis, 2015), that have ignored the nature and the magnitude of underlying business news. Firm fundamentals include *EARN*, *RET*, *SIZE*, *BTM*, *FIRMAGE*, *STD\_RET*, *STD\_EARN*, *BUSSEG*, *GEOSEG*, *D\_EARN*, and *LOSS* are discussed in Section 4.2. In addition, we control for insider holdings (*INSIDER\_OWN*) as a proxy for pecuniary rewards. By doing so, the separation of managers' incentives to use an abnormal optimistic tone in their pursuit of prestige or pecuniary rewards as questioned by Huang *et al.* (2014, p. 1085) is strengthened. All variables are defined in detail in Table II. Firm-fixed effects are used to overcome potential issues resulting from differing corporate culture which may affect corporate reporting behavior and correlate with CEO narcissism (Duchon and Drake, 2009).

Variable	Source	Description
<i>OPT_TONE</i>	Loughran and McDonald (2011)	Measure of optimistic tone used in 10-K filings by subtracting words denoting negative implications in a financial sense ( <i>n_negative</i> ) from words denoting positive implications in a financial sense ( <i>n_positive</i> ) and dividing it by the total number of words used in 10-K filings. The number of positive, negative, and total words is provided in a data set published by Loughran and McDonald and are taken as a secondary source for this analysis. The word lists categorizing negative ( <i>n_negative</i> ) and positive ( <i>n_positive</i> ) words were also defined by Loughran and McDonald (2011)
<i>AB_TONE</i>	Own source	Measure of abnormal optimistic tone used in 10-K filings. Building on a model by Huang <i>et al.</i> (2014), the author expects that various economic factors drive optimism in the tone of 10-K filings. This study runs an annual cross-sectional first stage regression to control for firms' performance, growth, risk, and complexity as described in Section 4.2. "Optimistic tone." The residual measures the abnormal positive tone and thus captures effects that are orthogonal to the underlying quantitative fundamentals
<i>CNS</i>	See Table I	CEO narcissism score as described in Table I
<i>AFTER</i>	Compustat's ExecuComp	Dummy variable that is equal to 1 for the two firm-year observations after year of CEO change
<i>CNS_CHANGE</i>	Compustat's ExecuComp; CNS	Dummy variable that is equal to 1 for firms where the prior CEO has a low level of CEO narcissism and is replaced by a new CEO with a high level of CEO narcissism. High (low) level of CEO narcissism is measured by above (below) sample mean by fiscal year and Fama-French 12 industry of the CNS score
<i>EARN</i>	CCM	Earnings as ratio of earnings before interest and tax to lagged total assets. Compustat items: EBIT/AT
<i>RETURN</i>	CRSP	Stock return based on monthly data for 12 months ending three months after the fiscal year-end. Compustat item: RET
<i>SIZE</i>	CCM	Natural logarithm of market value of equity plus one. Compustat items: $\ln([\text{PRCC}_F \times \text{CSHO}] + 1)$
<i>BTM</i>	CCM	Book-to-market ratio, measured as book value of equity divided by market value of equity. Compustat items: $\text{SEQ}/(\text{CSHO} \times \text{PRCC}_F)$
<i>STD_RETURN</i>	CRSP	Standard deviation of returns based on monthly data over the last 12 months ending three months after the fiscal year-end. Compustat item: RET
<i>STD_EARN</i>	CCM	Standard deviation of EARN over the last five years
<i>FIRMAGE</i>	CCM	Natural logarithm of years the firm is entered in the CRSP database data set plus one
<i>BUSSEG</i>	Compustat (Segment Data File)	Natural logarithm of number of business segments plus one, or one if item is missing from Compustat
<i>GEOSEG</i>	Compustat (Segment Data File)	Natural logarithm of number of geographic segments plus one, or one if item is missing from Compustat
<i>LOSS</i>	CCM	Dummy variable that is equal to 1 if EARN is negative, 0 otherwise.
<i>D_EARN</i>	CCM	Annual change in earnings before extraordinary items divided by lagged total assets
<i>INSIDEROWN</i>	Thomson One Banker	Percentage of closely held shares
<i>R&amp;D</i>	Compustat	Research and development costs divided by lagged total assets. Compustat items: XRD/AT
<i>SEO</i>	Thomson One Banker	A dummy variable taking the value of 1 if the company is mentioned to issue equity
<i>DISC_ACCRUALS</i>	CCM	Discretionary accruals determined by the performance-adjusted (modified) cross-sectional Jones model (Kothari <i>et al.</i> , 2005)

Table II.  
Variable definitions

To additionally test the first hypothesis, this study investigates whether the use of an abnormal optimistic tone in 10-K filings significantly increases after a more narcissistic CEO replaces a prior less narcissistic CEO. This study performs a difference-in-difference analysis with the following model:

$$OPT\_TONE_{i,t} = \alpha + \beta_1 CNS\_CHANGE_{i,t} \times AFTER_{i,t} + \beta_2 AFTER_{i,t} + \beta_3 CNS\_CHANGE_{i,t} + \sum CONTROLS_{i,t} + \sum TIME_t + \varepsilon_{i,t} \quad (2)$$

To investigate whether a change from a prior less narcissistic CEO to a more narcissistic CEO relates to a change in optimistic tone, *OPT\_TONE* is used as the dependent variable. *AFTER* is a binary variable that is equal to 1 for the two years following the year of a CEO change. Running this regression, only firms that underwent a CEO change are examined. Two years prior to and the two years following the CEO change are included. Accordingly, the number of observations decreases from 6,570 in Model (1) to 792 in Model (2). *CNS\_CHANGE* is a dummy variable that is equal to 1 for all firms where there was a change from a less to a more narcissistic CEO. The year in which the CEO change occurred is considered, plus the two years after a change from lower to higher CEO narcissism, as it may take some time for the narcissistic character trait to take effect and thus be captured by the measure of CEO narcissism. A higher (lower) CNS is defined as a CNS score above (below) the sample median by year and industry[7]. All other variables are defined as described above.

To further explore potential motivations of the use of an abnormal optimistic tone by a narcissistic CEO, this study considers future corporate activities as an instrument for incentives to enhance firm visibility (*H2* and *H3*). The following model is based on firm-fixed effects:

$$SEO_{i,t+1} \text{ or } R\&D_{i,t+1} = \alpha + \beta_1 CNS_{i,t} \times HIGH\_AB\_TONE_{i,t} + \beta_2 CNS_{i,t} + \beta_3 HIGH\_AB\_TONE_{i,t} + \sum CONTROLS_{i,t} + \sum TIME_t + \varepsilon_{i,t} \quad (3)$$

Corporate activities planned for the near future will be assessed by looking at whether a firm offers seasoned equity within the next year or not and the amounts of *R&D* costs divided by lagged total assets in *t+1*.

*HIGH\_AB\_TONE* is a dummy variable that is equal to 1 where the firm shows an above-sample median abnormal optimistic tone by year and industry. In Equation (3), *AB\_TONE* is used as an explanatory variable. Thus, first optimistic tone (*OPT\_TONE*) needs to be decomposed into a normal component to reflect a neutral description of current performance, and an abnormal component that proxies for the abnormal tone unrelated to financial performance. Therefore, the abnormal tone component measures the managerial language choices in financial disclosures. To identify the abnormal language component, in a first stage annual cross-sectional regression, optimistic tone (*OPT\_TONE*) is regressed on tone determinants that account for current firm performance, growth opportunities, operating risks, and complexity. All tone determinants that considered in the pre-regression are described in the "Optimistic Tone" section and include *EARN*, *RET*, *SIZE*, *BTM*, *FIRMAGE*, *STD\_RET*, *STD\_EARN*, *BUSSEG*, *GEOSEG*, *D\_EARN*, and *LOSS*[8]. Abnormal optimistic tone (*AB\_TONE*) is then the residual of the first stage regression (results are available upon request).

*CONTROLS* in Equation (3) include *EARN*, *RET*, *SIZE*, *BTM*, *STD\_RET*, and *STD\_EARN*. In order to control for other possibilities of manipulating investors' perceptions, discretionary accruals (*DISC\_ACCRUALS*) determined by the performance

adjusted cross-sectional Jones model (Kothari *et al.*, 2005) are also included in the model. By doing so, this study extracts the incremental effect of abnormal optimistic tone usage on the relationship between CEO narcissism and future corporate activities and avoids spurious inferences driven by earnings management.

It is rather unlikely that a CEO will launch an SEO or invest more in R&D in year  $t$  just because they used an abnormal optimistic tone in the annual report  $t-1$ . Therefore, we do not argue that an abnormal optimistic tone leads to future corporate activities. Rather, we argue that it serves the CEO in their role as a moderator to ensure, for example, the successful placement of an SEO. Similar to Huang *et al.* (2014), the relationship in  $H2$  and  $H3$  is employed to illustrate whether a CEO resorts to an abnormal optimistic tone to benefit from a positive perception of the firm's status.

## 5. Results

### 5.1 Descriptive statistics

Table III presents summary statistics of all variables used in the sample. The net measure of an optimistic tone lies at approximately  $-0.799$ . In line with prior literature, the results show that, on average, firms use more negative than positive words in their 10-K filings (Davis and Tama-Sweet, 2012; Loughran and McDonald, 2011). It is common for 10-K filings to show a less optimistic tone than other financial disclosures as they are constrained by regulations and are more subject to evidentiary use in litigations. In contrast, financial disclosures such as earnings press releases are more likely to be used by management to hype up the firm (Huang *et al.*, 2014). Thus, referring to the total number of words used 10-K filings instead of those used in earnings press releases is a more conservative approach as it ensures that the sample is not upwardly biased toward optimistic tone usage. By design, the mean of  $AB\_TONE$  is 0. More importantly,  $AB\_TONE$  shows considerable variation within the sample. Considering the level of CEO narcissism within the sample, the mean also lies at around 0. The summary statistics for the remaining variables are similar to those found in previous research. The sample firms are profitable and in general show low operating risks. They are large and mature firms with an average of 3.64 geographical and 3.52 business sectors. Only half of the sample firms report R&D investments, which account for 2.7 percent of lagged total assets. An SEO is placed in 8.6 percent of all firm-year observations.

In Panel B, the sample is classified by a median split by industry and year of the level of CEO narcissism. Univariate tests demonstrate that firms with a higher CNS show higher abnormal optimistic tone ( $AB\_TONE$ ). However, the differences are not statistically significant. Based on the firm characteristics, firms with a higher CNS are, on average, larger, older, and more complex. They not only show significantly smaller earnings but also a lower frequency of losses. In addition, they show significantly fewer risks measured by the standard deviation of returns and earnings. On average, firms with more narcissistic CEOs are more likely to conduct an SEO and invest more in R&D.

Table IV shows correlations of all variables used in the regressions. CEO narcissism is not significantly correlated with optimistic tone. However, when identifying the abnormal optimistic tone used in 10-K filings ( $AB\_TONE$ ), which is unrelated to financial firm performance, the level of CEO narcissism significantly correlates with it. The majority of control variables show significant correlations with optimistic tone. By design, abnormal optimistic tone is not correlated with its control variables as it is the residual of a first stage regression.

### 5.2 Regressions

Table V reports estimated results for  $H1-H3$ . The results for  $H1$  are based on Equations (1) and (2) and highlight the relationship of CEO narcissism and abnormal optimistic tone. Model (1) shows that the level of CEO narcissism ( $CNS$ ) is positively associated with

## Panel A: summary statistics

Variable	<i>n</i>	Mean	SD	Min.	P25	Med.	P75	Max.
<i>CNS</i>	6,700	0.043	2.712	-8.951	-1.694	-0.073	1.697	16.968
<i>OPT_TONE</i>	6,700	-0.799	0.529	-4.695	-1.095	-0.798	-0.471	1.274
<i>AB_TONE</i>	6,569	0.000	0.436	-3.628	-0.230	0.024	0.269	1.743
<i>EARN</i>	6,607	0.119	0.089	-0.072	0.057	0.105	0.167	0.436
<i>RET</i>	6,700	0.126	0.385	-2.854	-0.058	0.136	0.320	4.191
<i>SIZE</i>	6,700	9.141	1.166	6.574	8.367	9.076	9.809	12.217
<i>BTM</i>	6,700	0.447	0.309	-0.014	0.235	0.378	0.585	1.738
<i>FIRMAGE</i>	6,700	3.353	0.763	0.000	2.890	3.466	3.892	4.466
<i>STD_RET</i>	6,700	0.091	0.053	0.017	0.057	0.078	0.110	0.589
<i>STD_EARN</i>	6,581	0.036	0.037	0.002	0.012	0.023	0.045	0.193
<i>BUSSEG</i>	6,700	1.258	0.556	0.693	0.693	1.386	1.792	2.944
<i>GEOSEG</i>	6,700	1.292	0.491	0.693	0.693	1.099	1.609	3.401
<i>D_EARN</i>	6,599	0.011	0.044	-0.148	-0.004	0.009	0.026	0.182
<i>LOSS</i>	6,607	0.036	0.186	0.000	0.000	0.000	0.000	1.000
<i>INSIDEROWN</i>	6,700	0.088	0.121	0.000	0.004	0.021	0.137	0.530
<i>SEO</i>	6,700	0.086	0.281	0.000	0.000	0.000	0.000	1.000
<i>R&amp;D</i>	3,093	0.027	0.030	0.000	0.003	0.019	0.040	0.324
<i>DISC_ACCRUALS</i>	6,495	0.034	0.347	-1.056	-0.042	0.002	0.047	2.274

## Panel B: univariate tests

Variable	Firms with low CNS			Firms with high CNS			Difference test	
	<i>n</i>	Mean	Med.	<i>n</i>	Mean	Med.	<i>T</i> -stats	<i>p</i> -value
<i>CNS</i>	3,415	-1.875	-1.638	3,285	2.027	1.685	-83.640	0.000
<i>OPT_TONE</i>	3,415	-0.801	-0.797	3,285	-0.798	-0.800	-0.221	0.825
<i>AB_TONE</i>	3,345	-0.004	0.022	3,224	0.004	0.027	-0.697	0.486
<i>EARN</i>	3,363	0.122	0.106	3,244	0.117	0.105	2.151	0.032
<i>RET</i>	3,415	0.122	0.125	3,285	0.130	0.144	-0.803	0.422
<i>SIZE</i>	3,415	8.879	8.861	3,285	9.413	9.333	-19.274	0.000
<i>BTM</i>	3,415	0.449	0.373	3,285	0.445	0.382	0.511	0.610
<i>FIRMAGE</i>	3,415	3.254	3.367	3,285	3.456	3.584	-10.917	0.000
<i>STD_RET</i>	3,415	0.095	0.081	3,285	0.087	0.075	5.483	0.000
<i>STD_EARN</i>	3,349	0.038	0.025	3,232	0.033	0.021	5.748	0.000
<i>BUSSEG</i>	3,415	1.208	1.099	3,285	1.310	1.386	-7.567	0.000
<i>GEOSEG</i>	3,415	1.269	1.099	3,285	1.316	1.386	-3.877	0.000
<i>D_EARN</i>	3,360	0.010	0.008	3,239	0.012	0.009	-1.956	0.051
<i>LOSS</i>	3,363	0.041	0.000	3,244	0.031	0.000	2.099	0.036
<i>INSIDEROWN</i>	3,415	0.104	0.037	3,285	0.071	0.012	11.392	0.000
<i>SEO</i>	3,415	0.071	0.000	3,285	0.102	0.000	-4.490	0.000
<i>R&amp;D</i>	1,481	0.024	0.017	1,612	0.029	0.020	-4.777	0.000
<i>DISC_ACCRUALS</i>	3,319	0.036	0.002	3,176	0.032	0.003	0.507	0.612

**Notes:** The table (Panel A) presents the summary statistics of all variables used in the sample. Panel B presents the univariate tests for all variables. The sample is split into firms with low (high) CEO narcissism score (*CNS*). Differences in mean (*t*-statistics) tests are reported. All variables are defined in detail in Table II

**Table III.**  
Descriptive statistics

optimistic tone in 10-K filings at a 1 percent significance level. In line with previous empirical evidence, our results suggest that optimistic tone is more positive when the firm is large, profitable, growing, has more volatile stock returns and earnings, and fewer business segments (Loughran and McDonald, 2011; Huang *et al.*, 2014; Davis *et al.*, 2014). All financial fundamentals being equal, and thus also the normal optimistic tone component that is related to fundamentals, the results indicate that a one-unit increase in CEO narcissism relates to a 0.009 increase in abnormal optimistic tone within 10-K filings. Model (2) shows that in the case of a CEO change from a less narcissistic CEO to a more narcissistic CEO, the new CEO causes an increase in the use of abnormal optimistic tone in financial disclosures at a 10 percent significance level.



	1	2	3	4	5	6	7	8	9
1. OPT_TONE	1.0000								
2. AB_TONE	0.8200	1.0000							
3. CNS	0.0120	0.0370	1.0000						
4. EARN	0.2010	0.0000	-0.0050	1.0000					
5. RET	0.0330	0.0000	0.0350	0.1000					
6. SIZE	-0.0290	0.0000	0.3130	0.1940	1.0000				
7. BTM	-0.1900	0.0000	-0.0600	-0.5310	0.0850	1.0000			
8. FIRMAGE	0.1210	0.0000	0.1260	-0.0300	-0.2170	-0.2780	1.0000		
9. STD_RET	-0.2050	0.0000	-0.0660	-0.1600	0.0390	-0.2110	-0.0070	1.0000	
10. STD_EARN	-0.1660	0.0000	-0.0320	0.1590	0.0060	-0.0830	0.0740	-0.1890	1.0000
11. BUSSEG	-0.1020	0.0000	0.1410	-0.1170	-0.0350	0.0750	0.0740	0.1920	0.3920
12. GEOSSEG	0.0040	0.0000	0.0830	0.1600	0.0180	0.1000	-0.1920	0.0760	-0.0380
13. D_EARN	0.0680	0.0000	0.0600	0.4820	0.1980	0.1350	-0.2090	-0.0570	0.1080
14. LOSS	-0.1670	0.0000	-0.0460	-0.3430	-0.0570	-0.1590	0.1800	-0.0580	0.3070
15. INSIDEROWN	-0.0260	0.0110	-0.1730	0.0560	-0.0020	-0.1570	-0.0390	-0.1130	0.0570
16. SE0	-0.0840	-0.0180	0.0680	-0.1270	-0.0640	0.0000	0.1180	-0.0530	0.1360
17. R&D	-0.0300	0.0270	0.1340	0.0530	0.0290	0.0830	-0.1540	-0.1380	0.1870
18. DISC_ACCRUALS	-0.0500	-0.0140	0.0040	0.0190	-0.0660	0.0330	-0.0290	-0.0260	-0.0270
	10	11	12	13	14	15	16	17	18
1. OPT_TONE									
2. AB_TONE									
3. CNS									
4. EARN									
5. RET									
6. SIZE									
7. BTM									
8. FIRMAGE									
9. STD_RET									
10. STD_EARN									
11. BUSSEG	1.0000								
12. GEOSSEG	-0.0860	1.0000							
13. D_EARN	0.1970	0.1580	1.0000						
14. LOSS	0.0920	-0.0440	0.0380	1.0000					
15. INSIDEROWN	0.2970	-0.0100	0.0380	-0.2190	1.0000				
16. SE0	0.0370	-0.0990	-0.0110	-0.0180	0.0250	1.0000			
17. R&D	0.0060	0.0140	-0.0250	-0.0260	0.1060	-0.0140	1.0000		
18. DISC_ACCRUALS	0.2980	0.0800	0.2840	0.0640	0.1650	-0.1190	0.0050	1.0000	
	-0.0010	0.0190	0.0520	-0.0020	-0.0020	0.0100	0.0140	-0.0060	1.0000

Notes: The table presents the Pearson's correlation matrix of all variables used in the sample. To alleviate potential problems associated with extreme outliers, all continuous variables were winsorized at the 1st and 99th percentiles. Coefficients in italic format indicate significance at the 1 percent level. All variables are defined in detail in Table II

Table IV.  
Pearson's correlation  
matrix

	(1) <i>OPT_TONE</i>	(2) <i>OPT_TONE</i>	(3) <i>F.SEO</i>	(4) <i>F.R&amp;D</i>
<i>CNS</i>	0.009*** [0.004]		0.072*** [0.027]	0.000 [0.000]
<i>CNS_CHANGE</i> × <i>AFTER</i>		0.077* [0.040]		
<i>CNS_CHANGE</i>		0.045 [0.124]		
<i>AFTER</i>		-0.059* [0.033]		
<i>CNS</i> × <i>HIGH_AB_TONE</i>			0.071** [0.034]	0.001** [0.000]
<i>HIGH_AB_TONE</i>			-0.211** [0.103]	0.001 [0.001]
<i>DISC_ACCRUALS</i>			-0.078 [0.138]	-0.002*** [0.001]
<i>EARN</i>	0.457*** [0.165]	0.172 [0.498]	-2.498*** [0.958]	0.043*** [0.016]
<i>RET</i>	-0.005 [0.012]	-0.067* [0.036]	-0.208 [0.135]	0.003*** [0.001]
<i>SIZE</i>	0.064*** [0.021]	0.200*** [0.049]	0.028 [0.064]	-0.004** [0.002]
<i>BTM</i>	-0.160*** [0.034]	0.080 [0.094]	0.391 [0.240]	-0.009*** [0.003]
<i>FIRMAGE</i>	-0.101* [0.061]	-0.351* [0.186]		
<i>STD_RET</i>	-0.420*** [0.142]	-0.789 [0.486]	5.553*** [1.059]	-0.000 [0.010]
<i>STD_EARN</i>	-1.005*** [0.324]	0.086 [0.665]	-0.642 [1.798]	-0.007 [0.030]
<i>BUSSEG</i>	-0.043* [0.022]	-0.035 [0.042]		
<i>GEOSEG</i>	0.035 [0.035]	0.050 [0.077]		
<i>D_EARN</i>	-0.067 [0.149]	-0.586* [0.342]		
<i>LOSS</i>	-0.022 [0.031]	-0.119 [0.078]		
<i>INSIDEROWN</i>	-0.084 [0.088]	-0.077 [0.197]		
Observations	6,570	792	6,377	3,000
Number of ID	695	179	587	361
<i>R</i> <sup>2</sup>	0.358	0.210	0.123	0.066
Model	Firm-fixed effects	Firm-fixed effects	Logit	Firm-fixed effects
Industry dummies			Yes	
Time dummies	Yes	Yes	Yes	Yes

**Notes:** The table reports the results on the *H1-H3*. In Columns 1 and 2, the effects of the level of CEO narcissism on an abnormal optimistic tone were examined. Equation (1) is estimated in Column 1 and equation (2) is estimated in Column 2 to test *H1* and thus whether CEO narcissism positively relates to higher abnormal optimistic tone usage in 10-K filings. In Model 1, the direct relationship between the level if CEO narcissism and optimistic tone is investigated. *CNS* is the variable of interest and measures the level of CEO narcissism. *OPT\_TONE* is the dependent variable and stands for the optimistic tone used in 10-K filings and is controlled by firm fundamentals and business environment such as current market and financial performance, growth prospects, and firm operating risk and complexity. Control variables include *EARN*, *RET*, *SIZE*, *BTM*, *FIRMAGE*, *STD\_RET*, *STD\_EARN*, *BUSSEG*, *GEOSEG*, *D\_EARN*, *LOSS*, and *INSIDEROWN*. Model specifications are firm-fixed effects and time dummies are included. In Model 2, the change from a low to high narcissistic CEO and its effect on the usage of optimistic in 10-K filings is investigated. The sample is minimized to firms showing a change of CEO. Two years before and after the CEO change are investigated. *CNS\_CHANGE* × *AFTER* is the main variable of interest and interacts the variables *CNS\_CHANGE* and *AFTER*. *CNS\_CHANGE* is a dummy variable that is equal to 1 when a firm changes its CEO from a prior low to a now high narcissistic CEO. *AFTER* is equal to 0 two years before the CEO change and equal to 1 for the two years after the CEO change. Model specifications are firm-fixed effects and time dummies are included. Column 3 and 4 report the effects of an abnormal optimistic tone on the relationship between CEO narcissism and future SEO (*F.SEO*) and R&D investments (*F.R&D*). Equation (3) is estimated using logit regression to test *H2* and firm-fixed effects to test *H3*. *HIGH\_AB\_TONE* is a dummy variable that is equal to 1 whenever a firm shows higher abnormal optimistic tone than the sample median by industry and fiscal-year. *CNS* measures the level of CEO narcissism. *CNS* × *HIGH\_AB\_TONE* interacts the two variables and measures whether the positive relationship between *CNS* and *F.SEO/F.R&D* is higher when CEOs use a high abnormal optimistic tone. Control variables include *DISC\_ACCRUALS*, *EARN*, *RET*, *SIZE*, *BTM*, *STD\_RET*, and *STD\_EARN*. Time dummies are included in the models. For detailed variable definitions of all variables see Table II. Robust standard errors clustered at the firm level are used to compute *t*-statistics. \*, \*\*, \*\*\*Significant at 10, 5, and 1 percent levels, respectively

**Table V.**  
CEO narcissism  
and abnormal  
optimistic tone

Our results confirm the prior literature's argument that narcissistic CEOs positively influence reporting to obtain frequent praise and admiration (Rijsenbilt and Commandeur, 2013). Narcissistic CEOs use their organizations as tools to satisfy their need for attention and applause. Thus, they are more likely to undertake actions that ensure appreciation by investors such as a positive financial reporting strategy, irrespective of the consequences for the organization where financial reporting is unrelated to true firm performance. Godfrey *et al.* (2003) provide empirical evidence for stronger positive reporting strategies based on upward earnings and impression management after a CEO change. This study confirms these findings when looking at a particular case, namely where a more narcissistic CEO replaces a less narcissistic predecessor.

To test the second and third hypotheses, we examine the effects of an abnormal optimistic tone on the relationship between a narcissistic CEO and their investment plans for the near future; specifically, future ( $t+1$ ) SEO and R&D costs as the narcissist's planned corporate activities. The results are based on Equation (3). Columns (3) and (4) show that narcissistic CEOs are associated with a significantly higher likelihood of future SEO as well as higher R&D investments in the near future when there is a high abnormal optimistic tone. The results indicate that narcissistic CEOs can benefit from an abnormal optimistic tone, as optimistic language helps to offer more seasoned equity or investing in R&D. There is also a significantly positive relationship between CEO narcissism and the likelihood of future SEO when the abnormal tone is low. The significantly positive relationship between CEO narcissism and higher R&D investments is only present when the prior year's annual report uses a high abnormal optimistic tone. Overall, the results are in line with Huang *et al.* (2014) who show that managers – irrespectively of their characteristics – opportunistically adopt an abnormal optimistic tone when planning future corporate actions that require additional equity offerings.

### 5.3 Robustness

In line with many empirical accounting studies, we rerun regressions while excluding all financial institutions such as banks, diversified financials, insurance, and real estate companies (Chih *et al.*, 2010; Leuz *et al.*, 2003; Zheng *et al.*, 2012; Shen and Chang, 2009), since these firms' accounting rules and risk models and thus financial disclosures differ substantially from those in other industries. Based on Fama-French 12 industry definitions, we exclude industry No. 11, "Money." The results remain the same and are available upon request.

The research questions defined in this paper may suffer from endogeneity concerns. It can be argued that the anticipation of SEO and R&D may either drive narcissism, optimistic language or both but not the other way around. The first concern is theoretically addressed by psychological research stating that a person's degree of narcissism is relatively enduring and stable (Cramer, 1998; Campbell *et al.*, 2002), since it stems primarily from a combination of genetic and early childhood factors (Chatterjee and Hambrick, 2007). To empirically test the stability of the CNS, the correlation between the average CNS in years 2 and 3 as well as the average CNS in years 5 and 6 is measured. The correlation is 0.73 ( $p < 0.001$ ) which is similar to the coefficient of 0.67 obtained by Chatterjee and Hambrick (2007). Thus, the correlation coefficient suggests that the CNS is highly stable over time. However, the absence of a perfect correlation also suggests that narcissism changes to a certain extent. Narcissism can increase, for instance, with every success which reinforces the sense of self-admiration (Hiller and Hambrick, 2005). Such an event could be the placement of an SEO or the launch of a technological innovation. However, it is more likely that a reinforcement of self-admiration emerges after a success occurs, not in anticipation of a potential achievement. Accordingly, narcissism as a character trait is less likely to be influenced by the anticipation of corporate activities. However, the level of CEO

narcissism can change in case of a CEO transition. Therefore, we control for such a CEO transition in models (3) and (4). The results are equal to those tabulated above and ensure robustness regarding potential endogeneity between CEO narcissism and the anticipation of corporate activities. This relationship is most relevant in this study, since it extends the revealed relationship between firms' misuse of financial reporting language and firms' motivation to obtain certain incentives (Huang *et al.*, 2014) to include the effect of managers' characteristics.

Nevertheless, the second concern, namely potential endogeneity in the relationship between financial reporting language and the anticipation of SEO and R&D, cannot be ruled out, as Lang and Lundholm (2000) have previously acknowledged. However, these researchers also suggest that the appliance of an alternative approach like a simultaneous system of equations is limited, too. Concerning this aspect, the results obtained in models (3) and (4) have to be interpreted with caution.

## 6. Discussion

### 6.1 *The ambiguous role of CEO narcissism in narrative disclosures*

The results reveal a positive relationship between CEO narcissism and abnormal optimistic tone as well as a joint positive effect on future corporate activities, indicating that narcissistic CEOs resort to an abnormal optimistic reporting language to elicit the praise and admiration they need. The reporting behavior of narcissistic CEOs is classified as irrational and thus clearly deviates from opportunistic reporting behavior sometimes witnessed in rational managers (Merkl-Davies and Brennan, 2011). However, the results leave it open to interpretation whether narcissistic CEOs' tendency toward abnormal optimistic reporting is unconscious or deliberate. Specifically, if narcissistic CEOs resort to abnormal optimistic reporting in order to protect his or her own self-image, the consensus of prior literature refers to egocentric or unconscious biased reporting. By contrast, if they anticipate negative consequences from the disclosures' audience, such as in the case of the failure of corporate activities, narcissistic CEOs will manipulate their tone resulting in self-serving or deliberate biased reporting (Merkl-Davies and Brennan, 2011, 2017). To explain the relationship between CEO narcissism and an abnormal optimistic tone, we will first discuss the egocentric bias. Subsequently, we will explicitly point out the correlation between the nature of CEO narcissism and impression management, which refers to a self-serving reporting bias.

### 6.2 *CEO narcissism and egocentric discretionary narrative disclosures*

Narcissistic CEOs may simply follow their optimistic attitude to indicate good future performance because they truly perceive it to be that way. Irrespective of a particular characteristic trait, this kind of positive reporting bias has been referred to as the "Pollyanna effect" (Rutherford, 2005). Their optimistic mood can also coincide with a tendency to engage in grandiose corporate activities, while the occurrence of an abnormal optimistic tone does not necessarily indicate an intended action. Accordingly, it is argued that narcissistic CEOs tend to make accounting choices with the intention of presenting the company's financial status in an overly positive light (Amernic and Craig, 2010). They do so because they interpret performance as a reflection of their personal track record. Supporting this view, an association between misleading reporting techniques and a chairman's propensity to associate themselves with the firm's underlying financial performance is found (Clatworthy and Jones, 2006). The constant pursuit of self-enhancement and the resulting accounting choices lead to the proposition that narcissistic CEOs unconsciously make use of the distinctive and unique features of financial accounting language to pursue corporate policies that enhance firm visibility. By doing so, it further boosts their ego and maintains a positive sense of self-esteem.

Taken together, the confirmation of *HI* supports the argumentation of Brennan and Conroy (2013), who predict that a financial reporting bias is caused unconsciously by hubris constituting self-deception or an egocentric bias.

### 6.3 CEO narcissism and self-serving discretionary narrative disclosures

Alternatively, another string of literature argues that an abnormal optimistic tone results from a self-serving bias caused by psychological factors that influence managers' decision making to counteract undesirable consequences of information releases triggered by stakeholders (Davis *et al.*, 2014; Aerts, 2005). Accordingly, narcissistic CEOs see financial reporting as an instrument to manipulate the descriptions of causality of performance attribution in order to avoid stakeholder's potential discredit. To corroborate this notion, we will further discuss whether the tendency of narcissistic CEOs to manage impressions is determined by the nature of their trait.

Impression management is defined as "the process by which individuals attempt to control the impressions others form of them" (Leary and Kowalski, 1990, p. 34). Organizational impression management is used to enhance corporate reputation and – in accounting terms – to control the impression conveyed to readers of financial information in annual reports (Highhouse *et al.*, 2009; Sydserff and Weetman, 2002). To create a link between CEO narcissism and impression management, we subsequently analyze a narcissist's motivation to manage impressions in an organizational context. Approach and avoidance theory proposes a motivated behavior toward desirable outcomes (approach) and away from undesirable outcomes (avoidance). This theory implies that, in the case of a narcissistic CEO, the individual is strongly motivated to undertake grand, visible actions with desirable outcomes, such as large acquisitions, expansions, and revenue increases. On the other hand, a narcissistic CEO is less motivated to avoid potential threats, such as periods of economic distress, the loss of reputational assets, or lawsuits (Foster and Trimm, 2008). In line with approach-avoidance motivation, narcissistic CEOs resort to an abnormal optimistic tone to support their pursuit of potential firm growth and visibility. They do so rather than fearing the potential loss of reputation that could ensue if outsiders ascribe an abnormal optimistic tone to language usage that is unrelated to performance.

According to the framework proposed by Leary and Kowalski (1990), individuals' motivation to manage self-presentations before others is a function of three factors: "the goal-relevance of impressions, the value of desired outcomes, and the existing discrepancy between the individual's current image and the image he or she desires to convey" (p. 36). First, social and material outcomes, self-esteem maintenance and identity development are suggested as goals. Publicity is identified as highly relevant for these specified goals. One principal component of narcissism, namely leadership/authority, forces narcissists to be at the center of attention (Emmons, 1984, 1987). In consequence, narcissistic CEOs consider the goals to be relevant since they are under the scrutiny of many stakeholders such as the media, analysts, or employees. This is particularly true for large firms, such as those in the S&P500, as they face closer scrutiny from stakeholder groups. In addition, narcissistic individuals have a lack of empathy and a propensity to exploit others in order to achieve their personal goals (Campbell *et al.*, 2011). Second, the value of desired outcomes is determined, for example, by the target's ability to serve as an attention getter. Narcissists are likely to show inflated estimates of their own abilities, which is in line with one principal component of narcissism, namely superiority/arrogance, and undertake bold initiatives such as M&A, aggressive international expansion, or large-scale new product launches (Chatterjee and Hambrick, 2007; Campbell *et al.*, 2004). Since these actions are big attention-getters and funding resources are scarce, narcissistic CEOs will value these outcomes highly. Third, discrepancies between the desired and current image can be related in accounting terms to the company's financial status.

Thus, it has been argued that extremely narcissistic CEOs tend to make accounting choices to positively influence stakeholders and present the company's financial status in the best possible light. Supporting this argumentation, it is found that narcissistic CEOs engage in earnings management in order to positively manage impressions (Godfrey *et al.*, 2003). Olsen *et al.* (2014) show that narcissistic CEOs positively influence financial accounting by inflating a firm's earnings per share. These scholars state that the public nature of financial reporting, along with its estimation of future accounting numbers, opens up opportunities for affirmation and praise and thus meet the needs and desires of narcissists. To push their own objectives, narcissists are even willing to commit white-collar crime (Blickle *et al.*, 2006) and specifically fraud (Rijsenbilt and Commandeur, 2013). In pursuit of the desired image of the company, narcissistic CEOs seek to achieve self-enhancement through self-affirmation and/or by admiration through third parties (Amernic and Craig, 2010). They do so in response to their self-admiration and entitlement needs. In summary, due to their character trait, narcissistic CEOs are likely to be highly motivated to influence stakeholders' perceptions and positively manage the company's self-presentation by resorting to an abnormal optimistic tone.

It should not be forgotten that the strong motivation of narcissistic CEO's toward visible actions might come at a high cost. Specifically, the likelihood of becoming the subject of shareholder litigation significantly increases for managers if they make use of an optimistic language (Rogers *et al.*, 2011). Furthermore, reputational costs arise because shareholders lose trust in the firm and sell their stocks in cases where the management is abnormally optimistic and engages in "cheap talk." This leads to severe long-term welfare losses that negatively affect all parties involved, including investors, the firm itself, as well as its environment (Rezaee, 2005). We expect that narcissistic CEOs are aware of the high risks arising from the revelation that they used an unjustifiably optimistic tone in their financial disclosures. However, arguing in line with approach-avoidance motivation theory, narcissistic CEOs have a weak motivation to avoid undesirable outcomes, such as financial and reputational losses. By contrast, rational managers are capable of deliberately adjusting the level of optimistic tone depending on the level of litigation risk or other strategic reporting incentives (Tama-Sweet, 2009; Davis and Tama-Sweet, 2012). In other words, rational managers knowingly adapt their choice of tone to maximize their personal utility. Accordingly, agency theory is often cited to explain the observed practice of opportunistic reporting language (Merkl-Davies and Brennan, 2007; Huang *et al.*, 2014).

In a nutshell, the complexity of narcissism is displayed by the aforementioned explanations as well as empirical support for *H2* and *H3* stating a positive relationship between CEO narcissism and an abnormal optimistic tone in the face of clear incentives such as the success of corporate activities. Specifically, we cannot rule out that a narcissistic CEO deliberately or proactively shapes the perception of a firm's reporting audience, which reflects impression management. Therefore, we broaden Brennan and Conroy's (2013) narrow view of the reasons for discretionary narrative disclosures and give credit to both explanations they put forward, namely narcissism/hubris as well as impression management. That said, we build instead on the classifications within the socio-psychological perspective as proposed by Merkl-Davies and Brennan (2011, 2017). Nevertheless, depending on the level of information asymmetry, the perceptions of the firm's financial reporting audience can be likewise biased, regardless whether the bias is unconscious or deliberate. Either way, managers induce reporting bias with the intention of receiving appreciation or to avoid criticism. Thus, the reporting bias is inevitably linked to accountability since the financial reporting process requires managers to report their view of the actions and decisions that were undertaken in the past fiscal year (Merkl-Davies *et al.*, 2011; Frink and Ferris, 1998).

## 7. Summary and conclusion

This study examines the role of managerial character traits on narrative tone in financial disclosures. We find evidence suggesting that CEO narcissism is positively related to an abnormal optimistic tone used in 10-K filings. It further investigates in detail the transition from a less narcissistic CEO to a more narcissistic CEO and the effect of this transition on financial reporting language. The results show that a switch from a less to a more narcissistic CEO relates to a significant increase in optimistic tone. In addition, the results suggest that in firms where a high abnormal optimistic tone is present, the level of CEO narcissism is positively related to a higher likelihood of future SEO as well as higher R&D costs. Thus, the results confirm prior literature, stating that narcissists have a strong motivation to undertake challenging and bold actions to obtain frequent praise and admiration, irrespective of related risks such as reputational losses due to misreporting.

### 7.1 Strengths and limitations of this paper

The presented results imply that the use of an optimistic tone by a narcissistic CEO positively relates to the likelihood of future SEO and R&D investments. The findings support prior literature suggesting that language can be used to influence shareholder and investor perceptions and garner support for future actions. However, it cannot certainly be distinguished whether the narcissistic CEO unconsciously or deliberately resorts to an abnormal optimistic tone to successfully conduct future corporate activities that are in line with their narcissistic striving. The discussion opens a fruitful path for future more detailed research into the intention of a narcissist's deliberate engagement in managing impressions.

Two issues can be raised considering the language measures used in this analysis. First, the results depend on the "bag-of-words" approach to accurately measure tone: the analyzed text is simply represented as a bag of words with other characteristics of narrative structure, such as grammar and word order, being disregarded. Second, language measures are calculated based on a subsample provided by Loughran and McDonald (2011). We check for similarities considering descriptive statistics between the subsample and its original data set to ensure the subsample's validity. Referring to the CEO narcissism measurement, as CEO duality and the MSCI Governance Index were considered when assessing narcissism, it cannot be ruled out that our score also partly measures low CG at firm level. However, many variables considered in the score to reflect the various facets of CEO narcissism do not relate to CG. This includes the number of publications, awards, and biography lines relating to the CEO. Also, the number of CEO role titles and the size of the CEO's photograph in the annual report do not measure CG but directly relate to the CEO's desire for excessive media exposure.

### 7.2 Implications of the research

Taken together, the empirical results as well as the theoretical link between CEO narcissism and tone management reveal new aspects for upper echelons theory and its main implication that CEO characteristics matter in terms of organizational outcomes. Upper echelons theory has mainly been applied in management literature where it is used in an organizational context (Wang *et al.*, 2016). Thereby, it is linked to CEO narcissism, explaining firm performance, entrepreneurial orientation and various strategic choices such as acquisitions, technological discontinuities, internationalization decisions, as well as levels and profiles of corporate social responsibility (Patel and Cooper, 2014; Gerstner *et al.*, 2013; Aktas *et al.*, 2016; Engelen *et al.*, 2016; Petrenko *et al.*, 2016; Oesterle *et al.*, 2016). However, upper echelons theory has found only scarce recognition within financial accounting research. Initially, manager-specific effects are linked to financial reporting quality without consideration of a special trait (Bamber *et al.*, 2010; Ge *et al.*, 2011). Davis *et al.* (2014) further specify the research string on managerial reporting strategies by linking observable manager-specific effects to optimism

and the influence on the tone in financial disclosures. Patelli and Pedrini (2015) concentrate on a specific management characteristic and link traits of ethical leadership to financial reporting aggressiveness. Along with the aforementioned overall CEO effects on a firm's disclosure policy, the findings of Brennan and Conroy (2013) indicate a reporting bias caused by a specific executive attribute, namely CEO hubris. Specifically, Brennan and Conroy (2013) examine CEO letters to shareholders in annual reports of one bank headquartered in the UK. However, although their approach bears the advantage of directly measuring the CEO's trait and considers variation over time, it falls short of indicating CEOs' discretion over narrative disclosures across firms, industries, and countries. Given narrative disclosures' dependency of stakeholders' pressures, firm size, country and industry type (Lewis *et al.*, 2014; Graffin *et al.*, 2011; Elzahar and Hussainey, 2012; Aerts and Yan, 2017), their study thereby neglects CEOs' varying discretion across firms, countries, and industries. Therefore, our approach of using a large-scale sample extends the prior work of Brennan and Conroy (2013). Since our sample refers to US listed firms, our study further lends support for the notion that CEOs have discretion over narrative disclosures in the USA beside existing evidence for the UK. To sum up, our findings serve as an incremental step toward understanding the relationship between a top management team's characteristics and a firm's disclosure policy on the level of specific executive attributes.

The results presented in this study have clear practical implications and are relevant for shareholders, board members, accountants, and policymakers. Specifically, auditors should scrutinize their client's financial reports more carefully since an abnormal optimistic tone increases a firm's litigation risk (Rogers *et al.*, 2011). The consideration of their client's character traits should aid them to better examine whether overly optimistic reporting is inside or outside legal boundaries. Theory and practice refer to the three-legged fraud triangle to explain why a certain action is outside legal boundaries. Specifically, three factors are identified to influence fraudulent conduct: the opportunity to act dishonestly, the motivation to do so, and the capacity to rationalize by the fraudster (Trompeter *et al.*, 2013; Davis and Pesch, 2013; Morales *et al.*, 2014). Of these three, the opportunity resulting from a lack of effectiveness of internal control systems (Chartered Institute of Management Accountants, 2008) as well as the motivation, such as compensation incentives (Erickson *et al.*, 2004), are frequently analyzed. However, only scarce evidence exists that refers to the client's management attitudes or traits and inherently their ability to rationalize fraud. Additionally, the findings imply that an individual's capacity to rationalize is the strongest driving force for fraudulent conduct, which applies to very narcissistic individuals in particular measure (Murphy, 2012). In an experimental setting, Johnson *et al.* (2013) find that auditors step up when faced with higher client narcissism. According to the findings in this study, auditors should also consider their clients' management traits as they prepare and assess their clients' annual reports.

Nevertheless, all parties with a close relationship to a firm with a narcissistic CEO need to account for an abnormal optimistic tone. The identification of a CEO's level of narcissism seems a difficult task. However, psychology literature argues that observers are able to assess another person's traits even more accurately than through self-assessments (Lievens *et al.*, 2001; Funder, 2012; Mount *et al.*, 1994). For example, analysts may gather personal experience through conference calls during which CEOs have to reply to the audience's questions. Recipients of financial reports must downgrade reported contents due to the abnormal usage of optimistic tone by narcissistic CEOs. Accountants and board members also need to critically assess whether the set disclosure precedents can be maintained since escapist reporting has significant negative consequences for a firm's reputation and credibility. As for the implications for legislators, the results highlight the necessity to further improve reporting standards, as currently language in financial disclosure can be used by management to create optimal starting conditions for future corporate activities that support firm growth, such as SEO and investments in R&D.



**Notes**

1. The sample can be found online at [www3.nd.edu/~mcdonald/Word\\_Lists.html](http://www3.nd.edu/~mcdonald/Word_Lists.html)
2. The word lists can be found online at [www3.nd.edu/~mcdonald/Word\\_Lists.html](http://www3.nd.edu/~mcdonald/Word_Lists.html)
3. The data set can also be found online at [www3.nd.edu/~mcdonald/Word\\_Lists.html](http://www3.nd.edu/~mcdonald/Word_Lists.html)
4. It is important to note that this paper uses the Loughran and McDonald data set as a secondary source. Therefore, the downloading and parsing process of 10\_K filings have been done completely by Loughran and McDonald. A detailed description of their parsing process for the 10-K filings can be found here: [www3.nd.edu/~mcdonald/Word\\_Lists\\_files/Documentation/Documentation\\_StageOne\\_10-X\\_Parse.pdf](http://www3.nd.edu/~mcdonald/Word_Lists_files/Documentation/Documentation_StageOne_10-X_Parse.pdf)
5. A Central Index Key (CIK) is an identification number assigned to a firm by the US Securities and Exchange Commission. Amongst others, the number is used to identify the filings of a firm in EDGAR.
6. To ensure that our identified sample is representable of the Loughran and McDonald data set, we compare descriptive statistics on language measures for both samples. We compare the mean of the total number of positive (negative) words divided by the total number of words used in 10-K filings and find 0.00 percent (0.16 percent) differences between the two samples.
7. Referring to narcissism as a character trait, in subclinical terms there is no generally accepted cut-off score that implies high narcissism (Campbell and Miller, 2011; Johnson *et al.*, 2013). Therefore, the median is taken. However, a sensitivity analysis is conducted to mitigate concerns regarding an arbitrarily chosen cut-off point. The CNS score is converted into deciles. First, regressions based on the first model are rerun leaving out the fifth decile. Second, regressions are rerun leaving out the fourth to the sixth decile. The results remain the same and underline the general picture of different reporting behavior conditional on CEO narcissism.
8. The following model is used to estimate abnormal optimistic tone:

$$\begin{aligned}
 OPT\_TONE_{i,t} = & \alpha + \beta_1 EARN_{i,t} + \beta_2 RET_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 BTM_{i,t} + \beta_5 FIRMAGE_{i,t} \\
 & + \beta_6 STD\_RET_{i,t} + \beta_7 STD\_EARN_{i,t} + \beta_8 BUSSEG_{i,t} \\
 & + \beta_9 GEOSEG_{i,t} + \beta_{10} D\_EARN_{i,t} + \beta_{11} LOSS_{i,t} + \varepsilon_{i,t}
 \end{aligned}$$

where *ABTONE*, abnormal positive tone, is the residual of this cross-sectional annual regression. Therefore, *ABTONE* is by construction unrelated to firm fundamentals and business environment indicators such as current market and financial performance, growth prospects, and firm operating risk and complexity.

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