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ORIGINAL PAPER

The Deliberate Engagement of Narcissistic CEOs in Earnings Management

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Abstract

Corroborating upper echelons theory, this study picks up the notion that narcissistic chief executive officers (CEOs) take advantage of accounting choices to enhance their firms'—and inherently their own—personal track records. Using a set of 15 indicators, reflecting the narcissistic trait of 1126 CEOs for the period 1992 to 2012, we find evidence of highly narcissistic CEOs engaging in accrual-based earnings management (ABEM). In contrast to prior research, the results show evidence not only for income-increasing but also for income-decreasing ABEM. This indicates that highly narcissistic CEOs not only strive to influence stakeholders' perception of current performance. We conclude that they also assess their potential to influence perception of current and future earnings. The results imply that highly narcissistic CEOs' accounting choices are driven by self-serving behavior rather than by the intention to provide additional information to the market. When earnings management techniques are used to derive personal advantage from the presentation of a firm's earnings, the literature refers to this as a case of low earnings quality reflecting unethical behavior. Accordingly, this study contributes to the field of business ethics by showing that CEO narcissism is related to low earnings quality in that it is associated to discretionarily decreasing accruals.

Keywords CEO narcissism · Earnings management · Upper echelons theory · Personality · Corporate governance

JEL Classification G34 · M12 · M41 · M51

Introduction

Earnings management refers to management's discretion to exercise judgement about a firm's financial performance (Schipper and Vincent 2003). On the one hand, management can use its superior information to better inform stakeholders about the firm's future earnings prospects (Healy and Wahlen 1999). They do so to enhance a firm's earnings quality, and more generally financial reporting quality, and by extension to increase firm value (Gaio and Raposo 2011). On the other hand, prior literature considers behavior to be unethical if management uses its discretion to derive personal advantages, such as securing their compensation, status, or job (McManus 2016; Harris and Bromiley 2007). Such earnings management practices can be quite harmful (Kaplan 2001). The National Commission on Fraudulent Financial Reporting (1987, pp. 5, 6) concludes that earnings management practices can mislead financial statement users and sometimes are precursors to more serious illegal and fraudulent reporting activities. Accordingly, earnings management practices probably raise the greatest ethical issues facing the accounting profession (Merchant and Rockness 1994). In addition, recent findings suggest an association between personality traits and ethical misconduct (van Scotter and Roglio 2018). Therefore, this study attempts to provide further insights into the relationship between CEO narcissism as a personality trait and earnings management.

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Upper echelons theory posits that organizational outcomes such as earnings quality are a reflection of chief executive officers' (CEO) decision-making and consequently originate in CEOs' characteristics (Hambrick and Mason 1984). Specifically, CEOs' observable characteristics such as tenure, age, or gender as well as psychological characteristics such as values or personality influence their decision-making (Bromiley and Rau 2016; Carpenter et al. 2004). More specifically, Amernic and Craig (2010) theoretically propose that CEO narcissism as a personality trait is related to a company's earnings quality. Accordingly, extremely narcissistic CEOs tend to make equivocal accounting choices to present their company's financial status in the best possible light. By inflating perceived company performance, they seek to achieve self-enhancement through self-affirmation and/or admiration from third parties (Campbell et al. 2000; Horvath and Morf 2010). In the case of CEO narcissism, it is further argued that striving for self-enhancement can harm a company's financial outcomes or reputation (Lubit 2002).

In response to this issue, this study analyzes the influence of personality on decisions involving earnings quality by exploring whether CEOs manage earnings contingent on their narcissism. Prior literature finds empirical evidence that greater CEO narcissism coincides with a higher likelihood of committing fraud (Rijsenbilt and Commandeur 2013) or releasing financial misstatements (Schrand and Zechman 2012; McManus 2016). More closely related to this study, a positive relationship has been found between CEO narcissism and earnings management (Olsen et al. 2014; Capalbo et al. 2017). However, while prior literature indicates that earnings are inflated, it has not examined whether narcissistic CEOs also decrease earnings to possibly prepare the ground for inflating future earnings. It is well known in accounting literature that accruals are a function of the difference between reported earnings and real cash flows and that both items have to converge over time (Baber et al. 2011; DeFond and Park 2001; Chan et al. 2004). In this regard, income-decreasing accrual-based earnings management (ABEM) is an opportunity to retain earnings for future benefits, for example (Jones 1991). Accordingly, this study examines whether narcissistic CEOs are associated with low earnings quality by discretionarily decreasing accruals besides overstating earnings whenever possible.

We build on a model that uses a set of 15 indicators to measure CEO narcissism—namely publicity, number of awards, number of lines in the CEO's personal profile, personal use of the firm's corporate jet, cash compensation, total compensation, ratios of cash and total compensation compared to that of the second-best paid executive, compensation rank, CEO duality, number of role titles, governance measurement, appearance in annual reports, value, and number of acquisitions. Consistent with upper echelons theory, using a sample of 671 S&P 500 companies with 1126 CEOs over the period 1992 to 2012, we provide empirical evidence that ABEM is associated with CEOs' narcissistic trait. The findings suggest that highly narcissistic CEOs do not solely strive to optimize their firm's short-term financial performance, as indicated by a prior finding of a positive association between CEO narcissism and ABEM (Capalbo et al. 2017). Interestingly, income-decreasing activities are also associated with highly narcissistic CEOs in that they give them the opportunity of subsequent reversal of accruals. We refer to this action as an opportunistic bias with regard to ABEM, reflecting narcissistic CEOs' tendency to not only be influenced by their narcissistic myopia but also to assess their potential to influence earnings in the current as well as in future periods. We see that these higher levels of discretionary accruals—in both directions—result from a desire to present a firm's—and inherently the CEO's own—track record in a better light rather than to better inform stakeholders about a firm's future financial performance. This finding contributes new aspects to the field of business ethics because earnings management—regardless of its direction—is seen as a violation of ethical practices when it serves management's incentives (Merchant and Rockness 1994).

This study also extends the line of research that examines top management personalities to identify aspects relating to corporate governance (CG) mechanisms (Libby et al. 2015). As it is challenging to measure an individual's personality in a large-scale survey, most earnings management research has so far concentrated on CG mechanisms that mitigate managers' self-serving behavior, with little emphasis on individuals' traits (García-Meca and Sánchez-Ballesta 2009). However, mechanisms to mitigate managers' self-serving behavior—such as a code of conduct, organizational rules, or the monitoring of actions—have little to no impact on unethical behavior when taking organizational narcissism into account (Duchon and Drake 2009; Collier and Roberts 2001). Accordingly, these mechanisms are not effective in helping companies avoid the potential harm caused by CEO narcissism. Therefore, this study helps to better understand the influence of individuals' traits on underlying CG mechanisms.

Literature Review and Framework

Narcissism

Narcissism refers to "a pervasive pattern of grandiosity (in fantasy or behavior), need for admiration, and lack of empathy" (American Psychiatric Association 2013, p. 669). 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 (Raskin and Hall 1979). 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 (Emmons 1984; Raskin and Hall 1981). Finally, leadership/authority, superiority/arrogance, self-absorption/self-admiration, and exploitativeness/entitlement were identified as the four principal components of narcissism (Emmons 1987). In the following we look at narcissism as a personality trait rather than a disorder because our measure of narcissism is based on archival data which, in contrast to personal interviews, makes it difficult or even impossible to assess an underlying disorder.

We then shed further light on this distinction by reviewing the literature on the relationship between narcissism and its subcomponents in more detail. Firstly, there is a consensus in prior research that there is a particularly strong association between the component of authority and dominance (Bradlee and Emmons 1992; Raskin and Terry 1988) which positively moderates the relationship between narcissism and self-esteem (Brown and Zeigler-Hill 2004). Accordingly, narcissists have a strong bias towards positive appearance, which feeds their desire to be the center of attention and helps them to emerge as leaders (Vazire et al. 2008; Hogan and Kaiser 2005; Brunell et al. 2008). Secondly, narcissistic individuals tend to predict positive illusions about themselves, which causes them to consider their abilities and themselves superior (Hickman et al. 1996; Robins and Beer 2001; Gabriel et al. 1994). Thus, narcissists make initial positive impressions, but—over time—are negatively perceived within groups due to their arrogance (Paulhus 1998; Hogan and Hogan 2001). Thirdly, the component of self-admiration helps narcissists to maintain a strong belief system and to develop charisma and grand visions, which are seen as premises for effective leadership (Rosenthal and Pittinsky 2006). However, narcissistic individuals exhibit pervasive patterns of grandiosity and self-importance which causes them to constantly crave attention that reaffirms their positive self-view and admiration by others (DeWall et al. 2011; Morf and Rhodewalt 2001; Horvath and Morf 2010). As a consequence, narcissistic leaders spend a considerable amount of time engaging in self-aggrandizement rather than promoting firm outcomes (Bass and Steidlmeier 1999). Fourthly, the component of entitlement depicts a pattern of selfish and self-serving beliefs and behavior to accentuate one's self-importance, such as insisting on a higher salary than that earned by their fellow employees (Campbell et al. 2004a). In combination with lack of empathy, narcissists exploit others to increase their self-worth (Morf and Rhodewalt 2001).

In sum, narcissism positively correlates with determinants of effective leadership such as high self-esteem but also with a constant need for admiration from others, which reveals a contradiction—namely the narcissistic paradox (Emmons 1984). Unraveling the complex nature of narcissism, Kets de Vries and Miller (1985) differentiate in its extremes between reactive and constructive leadership types. In the former case, narcissists only exhibit fragile self-esteem and core self-evaluation because they feel a constant need for affirmation of their self-view (Chatterjee and Hambrick 2007; Sputtek 2012). Thus, narcissistic leaders apply self-enhancement strategies in pursuit of continuous self-affirmation (Horvath and Morf 2010; Morf and Rhodewalt 2001; Paulhus and Williams 2002), moderated by perceived self-enhancement opportunity (Wallace and Baumeister 2002; Campbell et al. 2000). Most relevant to the present study are defensive self-enhancement strategies to protect CEOs from failure or shame, such as in the case of poor accounting numbers (Raskin et al. 1991; Morf and Rhodewalt 1993). Taking the reactive and constructive side of narcissism into account, we see narcissism as a trait that is associated with individuals'—in our case CEOs'—behavior and consequently their accounting choices in an equivocal way.

Earnings Management and Unethical Behavior

Companies have always engaged extensively in earnings management practices (for an overview see Healy and Wahlen 1999), yet they are not representative of unethical behavior per se. Managers can make financial statements more informative and inherently signal their superior knowledge to the market (Healy and Wahlen 1999). However, earnings management practices may also turn into earnings manipulation if management decides to make use of its discretion to take personal advantage. These advantages vary broadly, e.g., creating the impression of complying with legal requirements, guaranteeing executive compensation, meeting analyst's forecasts, issuing equity offerings, acquiring firms, influencing import relief investigations, and many more (McManus 2016; Harris and Bromiley 2007; Cheng and Warfield 2005; Bergstresser and Philippon 2006; Cohen and Zarowin 2010; Erickson and Wang 1999; Jones 1991). Such manipulative earnings management practices are believed to be unethical (Hong and Andersen 2011) as they reduce transparency and leads to misleading financial information that may in the end be harmful for the firms, their investors, and other stakeholders (Kim et al. 2012; Grasso et al. 2009). Accordingly, earnings management practices raise questions about managements' ethics (Bruns and Merchant 1990), which may negatively impact managers and firms (Kaplan 2001) as well as other financial statement users (Merchant and Rockness 1994). In addition, earnings management is not necessarily unlawful but many researchers questioned the ethics of such practices.

Applying an ethics perspective, Merchant and Rockness (1994, p. 82) ask "How does a society, the accounting profession, or an individual firm draw the line between acceptable

and unacceptable earnings management practices?". From an ethical perspective the question is whether engaging in earnings management is the right thing to do (Kaplan 2001). This is not always an easy question to answer, because many types of earnings management behavior are not obviously acceptable or unacceptable. Merchant and Rockness (1994) provide initial evidence on how individuals judge earnings management practices from an ethical perspective. In their study, they examined the ethical judgements of various organizational members (e.g., general managers, corporate staff, and internal auditors). Some of the findings show areas of general agreement with regard to some characteristics. For example, the individuals surveyed have a higher tolerance for operating expense manipulation than financial accounting manipulation (Merchant and Rockness 1994, p. 89). In another study, Fischer and Rosenzweig (1995) compare the ethical judgments of accounting students and accounting professionals. They confirm the aforementioned findings and try to interpret the findings by differentiating between a rule-based view of ethics and a view based on the ethical assessments of the decision's effects on stakeholder groups (Fischer and Rosenzweig, 1995, p. 439).

In line with Thompson and Loewenstein (1992), the above-mentioned studies show that there are differences in the interpretation of ethical judgment on earnings management practices depending on the different roles of the individuals. By fulfilling different roles, individuals are affected in different ways and therefore their ethical assessment is also expected to differ. In this study, we look at the role of CEOs' personal traits when it comes to engaging in earnings management.[1]

We measure ABEM by discretionary accruals, namely the accruals that are determined by management's discretion and specifically by management's accounting choices. Accordingly, RAM represents the cash flows, production levels, or discretionary expenses that are determined by management's discretion, such as granting discounts or decreasing advertising expenses in order to polish company profits.

Framework

As argued by upper echelons theory, managers' experiences, values, and personalities strongly influence their decision-making and consequently firm outcomes (Hambrick and Mason 1984; Carpenter et al. 2004; Hambrick 2007; Wang et al. 2016). Upper echelons theory is hence linked to CEO narcissism, explaining firm performance, entrepreneurial orientation, and various management 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; Zhu and Chen 2015a).

To analyze whether managerial characteristics have an impact on accounting choices, prior literature has linked manager-specific effects to earnings quality without considering a specific trait (Bamber et al. 2010; Ge et al. 2011). Furthermore, there is evidence that earnings management is affected by CEOs' decisions which depend, for example, on their reputation, the tone at the top, or equity incentives (Cheng and Warfield 2005; Bergstresser and Philippon 2006; Francis et al. 2008; Patelli and Pedrini 2015; Plöckinger et al. 2016). In addition, Ali and Zhang (2015) find that CEO tenure is associated with earnings management, a link which is, however, less present in firms with greater external and internal monitoring. There is further evidence that an effective CG policy reduces management's discretion to manage earnings (Cornett et al. 2008; Armstrong et al. 2010). However, managerial characteristics have also been found to have an impact on the setting of a firm's management accounting and control systems (Hiebl 2014; Morelli and Lecci 2014; Naranjo-Gil et al. 2009; Abernethy et al. 2010; Harlez and Malagueño 2016; Su et al. 2015). More specifically, CEOs have been found to have the power to force CFOs and accountants to inflate reported earnings to meet or exceed targets (Davis et al. 2006; Feng et al. 2011; Graham et al. 2013). Given that managerial characteristics can have an impact on accounting choices, this study examines whether narcissistic CEOs are associated with low earnings quality.

Hypothesis Development

Taking a narcissist's striving for power and self-importance into account, we expect the relationship between CEO narcissism and its inherent discretion to manage earnings to be more pronounced for narcissistic CEOs than for their non-narcissistic peers. As such, narcissistic CEOs tend to weaken a firm's CG in order to corroborate their power (Grant and McGhee 2013). In addition, narcissistic CEOs tend to grant themselves higher compensation packages than fellow employees to reassure their self-importance (Hayward and Hambrick 1997). Furthermore, narcissistic CEOs lean towards selecting directors who have a similarly strong narcissistic trait. This supports the notion that CEO narcissism potentially weakens control by the board (Zhu and Chen 2015b). In a nutshell, the literature theoretically proposes that narcissistic CEOs identify with the company they lead, and use accounting measures to gain the admiration of their share- and other stakeholders, which can also result in organizational misbehavior including accounting fraud or stock

[1] Whenever we use the term "earnings management," we refer to both ABEM as well as real activities management (RAM).

price manipulation (Amernic and Craig 2010; Anderson and Tirrell 2004; Domino et al. 2015; Harrison et al. 2016). Supporting this view Marquez-Illescas et al. (2018) find that qualitative disclosures in firms with narcissistic leaders are biased upward. Building on the proposition that accounting choices are related to narcissism, in this study we provide empirical evidence that ABEM is associated with a CEO's decision-making and inherently with the corresponding strength of their narcissism.

According to approach-avoidance motivation theory, narcissists approach desirable outcomes and are less motivated to avoid negative consequences than less narcissistic individuals (Foster et al. 2009; Foster and Trimm 2008). Although narcissists perceive risks in the same manner as less narcissistic individuals, they take more risks in anticipation of higher rewards (Foster et al. 2009b). These include their pursuit of a grandiose status, which can be accomplished by enhancing the company's financial status, since this is an indicator of the CEO's entrepreneurial ability and potentially leads to admiration by stakeholders. Hence, narcissistic CEOs are—in the same manner as less narcissistic CEOs—aware of the risks arising from engaging in earnings management, such as damage to their reputation or the potential for being blamed if a company's accounting choices are denounced (Foster and Trimm 2008). Accordingly, by their very character narcissistic CEOs are weakly motivated to avoid these undesirable outcomes. They are hence more likely to be influenced by social praise than by rational aspects—given an exaggerated level of narcissism—as they are far more motivated to beat their ambiguous targets than to minimize potential threats. Supported by the empirical evidence that greater CEO narcissism coincides with a higher likelihood of committing fraud (Rijsenbilt and Commandeur 2013) or releasing financial misstatements (Schrand and Zechman 2012; McManus 2016), we hypothesize that higher levels of ABEM are more related to highly narcissistic CEOs than less narcissistic CEOs.

H1 ABEM is more frequently associated with highly narcissistic CEOs than with their less narcissistic peers.

In the following two hypotheses, the general association with ABEM is further analyzed by differentiating between income-increasing and -decreasing ABEM. By doing this we aim to divide highly narcissistic CEOs' motivation to manage earnings in two parts, one reflecting a sub-conscious and one reflecting a deliberate bias. The understanding of "deliberate" as used in this study corresponds to the way it is proposed by Brennan and Conroy (2013). In particular, Brennan and Conroy (2013) considers management decisions to be deliberate when they arise "from opportunistic managerial behavior with the objective of manipulating organizational audiences' perceptions of the firm" (p. 174). By contrast, a sub-conscious cognitive bias results from self-deception or egocentric bias. This means that highly narcissistic CEOs use ABEM sub-consciously by inflating current performance to present the company's financials and inherently their own track record in an overly positive light (Amernic and Craig 2010). In doing so, they protect themselves from failure or shame and satisfy their constant need for self-affirmation (Zeigler-Hill and Jordan 2011; Wallace 2011). In line with the empirical findings of a positive relationship between narcissism and earnings management (Capalbo et al. 2017; Olsen et al. 2014), we hypothesize that highly narcissistic CEOs employ more sub-conscious usage of ABEM than less narcissistic CEOs.

H2 Income-increasing ABEM is more frequently associated with highly narcissistic CEOs than with their less narcissistic peers.

While income-increasing ABEM serves the need for favorable-looking accounting numbers in the current period and therefore reflects a sub-conscious decision, income-decreasing ABEM allows CEOs to polish earnings in future periods. This action can be seen as a deliberate decision in line with the aforementioned understanding. First, the decision of income-decreasing ABEM creates the potential for earnings recoveries in future periods. And second, creating reserves enables the firm to withstand potential future earnings shocks. Accordingly, we argue that highly narcissistic CEOs do not solely strive to optimize their track record in the short run by income-increasing ABEM, but are also are aware of the long-term effects of their accounting choices. It is well known in accounting literature that accruals are a function of the difference between reported earnings and real cash flows, and that both items have to converge over time (Baber et al. 2011; DeFond and Park 2001; Chan et al. 2004).

Highly narcissistic CEOs' motivation for income-decreasing ABEM can be threefold. First, excessive income-decreasing ABEM will lead to higher reported earnings in subsequent periods and vice versa (Jones 1991; Dechow et al. 2012). For instance, overstating the allowance for bad debt will lower current earnings and discretionary accruals, so the measurement and reversal of accruals is at the CEO's discretion, reflecting their superiority and power. Furthermore, establishing large reserves with a probability of subsequent reversal helps highly narcissistic CEOs to protect themselves from failure or shame such as in the case of future poor accounting numbers. Second, CEO narcissism is positively related to strategic dynamism and results in fluctuating organizational performance (Chatterjee and Hambrick 2007). However, higher firm valuation is linked to earnings predictability, which is a function of analysts' ability to predict future earnings (Schipper and Vincent 2003).

As a result, income-decreasing ABEM allows highly narcissistic CEOs to smooth their earnings in order to present financial figures more conservatively than they actually are which results in higher firm valuation (Bao and Bao 2004). Third, it has been empirically shown that CEOs make use of income-decreasing ABEM for future earnings recoveries or to establish a lower base for future compensation plans when, for example, they take the helm of the company (Murphy and Zimmerman 1993; Pourciau 1993). Thus, income-decreasing ABEM in the first year allows to save earnings for future periods in order to be able to manage earnings when needed without being held responsible for future financials. In a nutshell, income-decreasing ABEM helps top management (CEO) to manipulate organizational audiences' perceptions of the firm and therefore reflects an opportunistic decision. We hence hypothesize that highly narcissistic CEOs employ more deliberate usage of ABEM than less narcissistic CEOs.

H3 Income-decreasing ABEM is more frequently associated with highly narcissistic CEOs than with their less narcissistic peers.

Data and Methods

CEO Narcissism Score

Measuring personality is challenging since it is not as easy to observe as an individual's financial position, socioeconomic background, education, or age. Instead of self-reported measurements, the use of archival data offers the major advantage in that data can be compiled independently of the CEO's available time and willingness to cooperate. To capture the narcissism trait, we build on the CEO Narcissism Score (CNS) proposed by Rijsenbilt (2011). There are several reasons why we choose this model over others that employ just one indicator such as first-person pronoun usage (Aktas et al. 2016), signature size (Ham et al. 2017), or ratings of video samples of CEOs (Petrenko et al. 2016). Closest to our study is the measurement proposed by Chatterjee and Hambrick (2007) with a set of five indicators, which we explain in more detail later in this section. Some studies have adjusted this model and use a set of three (Olsen et al. 2014) or four indicators (Oesterle et al. 2016; Gerstner et al. 2013; Engelen et al. 2016). To the best of our knowledge, then, the defined model in this study uses the largest set of indicators to measure CEO narcissism and simultaneously mitigates a potential bias due to a single indicator's weak ability to illustrate a specific trait. Furthermore, the CNS reflects the four core dimensions of narcissism: leadership/authority, superiority/arrogance, self-absorption/self-admiration, and exploitativeness/entitlement, which are theoretically grounded in the work of Emmons (1987). Finally, the CNS has been empirically demonstrated to reveal a relationship between narcissism and financial reporting. Specifically, Rijsenbilt and Commandeur (2013) identify a narcissistic CEO's higher propensity to engage in fraud.

The CNS consists of fifteen indicators reflecting five determinants. These are (1) media exposure, (2) perquisites, (3) compensation, (4) power, and (5) growth. The wide range of determinants is chosen to adequately reflect the distinctive pattern of a CEO's narcissistic trait since it affects their idiosyncratic actions.

First, excessive media exposure helps narcissistic CEOs to gain public acknowledgement and reinforcement. The exposure indicators are number of awards and 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's photograph and its placement in the annual report are measured on a twelve-point scale. The score is one if there is no photograph of the CEO in the annual report and twelve if the CEO is pictured alone on a full page plus on an additional photograph elsewhere in the report. Where there is no annual report, the score is zero.

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

The third determinant, compensation, 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 larger compensation package expresses higher hierarchical status and prestige. Since the potential of a CEO to influence the compensation structure is high, relative cash and total compensation is also calculated. Relative compensation is derived from the ratio of the CEO's compensation to that of the second-best paid executive. Finally, the CEO's rank is measured as the ordinal rank, with the highest compensation ranked one, and higher ranks expressing less narcissism.

Fourth, narcissistic CEOs strive for 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 weaker CG. The variable for CEO duality takes the value of one if a CEO is also the Chairman of the Board. The

Table 1 Components of the CEO narcissism score

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 lines in biography
Photograph	Annual report	Size of CEO's photograph in annual report
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
Corporate jet use	EDGAR—Form DEF 14A	Amount in $ of personal use of corporate aircraft
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)
Shareholder rights	Institutional Shareholder Services (ISS)	Bebchuk et al.'s (2009) entrenchment index (E index) based on six provisions: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, and supermajority requirements for mergers as well as charter amendments
Value of acquisitions	Thomson One Banker (SDC)	Amount in $ per CEO tenure year
Number of acquisitions	Thomson One Banker (SDC)	Number per CEO tenure year

Table 1 provides an overview of the 15 indicators, reflecting the applied narcissism score. A principal components analysis on these 15 variables is performed to reduce the 15 dimensions to four uncorrelated ones. The factor loadings matrix is rotated

number of role titles ranges from one to five and includes CEO, Chairman, Founder, President, Director, or Principal Executive. The data for the two variables are taken from Compustat's ExecuComp database. The originally applied Gompers Index—a proxy for shareholder rights—is limited since it is only available up to 2006, so we replace it by Bebchuk et al.'s (2009) entrenchment index measuring six actions that limit shareholder rights: staggered boards, limits to shareholder bylaw amendments, poison pills, golden parachutes, supermajority requirements for mergers, and charter amendments. These six actions are seen as the most relevant from the originally applied Gompers Index (Bebchuk et al. 2009) and they are available throughout our sample period from 1992 to 2012. For 2007 onwards, the variable referring to the supermajority requirement for mergers takes the value of one if a majority of more than 50% is required. This results in a final score ranging from zero to six, reflecting the number of provisions a firm has invoked.

Fifth, to corroborate their superiority, narcissistic CEOs tend to acquire other companies. To account for this behavior, 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% 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 zero if no data for acquisitions are available.

An overview of the indicators, including the data source and description, is given in Table 1. All companies in the S&P500 index are included for which data from the various databases for the period 1992 to 2012 is available. To ensure CEOs can unfold their narcissistic trait in full, a minimum tenure of 3 years is required. This requirement is chosen with respect to the CEO life cycle (Hambrick and Fukutomi 1991). A Principal Components Analysis (PCA) of these fifteen variables is performed based on the correlation matrix. PCA is a data reduction method used to re-express multivariate data with fewer dimensions. 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, we use four components. Accordingly, the five aforementioned determinants result in four factors representing leadership/authority, superiority/arrogance, self-absorption/self-admiration, and exploitativeness/entitlement. The factor loadings matrix is rotated in order to keep only a few factor loadings large. This simplifies the structure and allows us to easily interpret factors as clusters of variables that are highly correlated with a particular factor. The oblique rotation method is chosen since factors are not expected to be uncorrelated.

Although our model to measure narcissism has already been applied in prior research, so far it has not been validated in a different context. Rijsenbilt (2011) provides only weak evidence of construct validity by comparing the CNS of five highly narcissistic CEOs in her sample with the narcissistic CEOs identified by Rosenthal and Pittinsky (2006). To further validate the CNS, we reconstruct the CEO narcissism score by Chatterjee and Hambrick (2007), which has been externally validated and widely accepted in research. They use a set of five indicators to reflect the narcissistic construct using archival data: first, the size of the CEO's photograph in the company's annual report; second, the frequency of a CEO mention in the company's press releases; third, the CEO's use of first-person singular pronouns in interviews; fourth and fifth, the CEO's ratio of cash and non-cash compensation to that of the second-highest-paid executive in the firm. We do this for a subsample of 436 CEOs and subsequently rate CEO narcissism for this subsample using the approach established by Chatterjee and Hambrick (2007). We find that our CNS is significantly correlated with the narcissism measure defined by Chatterjee and Hambrick (2007), with a correlation coefficient of 0.53 ($p < 0.001$). These results are assurance that our scoring approach provides a reasonable measure of CEO narcissism.

Earnings Management

To measure the effect of the association between CEO narcissism and ABEM, we build on the cross-sectional modified Jones model (DeFond and Subramanyam 1998). We rely on a cross-sectional model in order to avoid the data loss inherent in a time-series approach. In addition, the model is adjusted for performance as proposed by Kothari et al. (2005) by including return on assets in the prior year as an additional regressor in model (1), since extreme past performance has a mechanical relationship with accrual estimates. The following model is estimated based on the two-digit Standard Industry Classification (SIC) when there are 20 or more companies available per industry and year. To increase the model fit, discretionary accruals are identified as the error term from regressions, based on the one-digit SIC when fewer than 20 companies per industry and year are allocable (Lee and Masulis 2011):

$$\mathrm{TA}_{it} = \alpha_0 + \alpha_1\left(\Delta\mathrm{REV}_{it} - \Delta\mathrm{REC}_{it}\right) + \alpha_2\mathrm{PPE}_{it} + a_3\mathrm{IBXI}_{it-1} + \varepsilon_{it}, \quad (1)$$

where TA_{it} are the total accruals for firm i in year t, and measured as the change in working capital, excluding the current portion of long-term debt minus depreciation and amortization. In addition, $\Delta\mathrm{REV}_{it}$ is the change in revenues for firm i in year t, $\Delta\mathrm{REC}_{it}$ is the change in receivables for firm i in year t, PPE_{it} is PPE for firm i in year t, and IBXI_{it} is income before extraordinary items for firm i in year t. All variables—including the intercept term in Eq. (1)—are scaled by lagged total assets. Discretionary accruals are first estimated for all available company years in Compustat (149,373 observations) for the period 1992 to 2012 and merged afterwards with existing data on the CNS. This step enhances the reliability of inferences drawn from discretionary accruals estimates.

The model proposed by DeFond and Subramanyam (1998) refers to the change in balance sheet items to calculate accruals and is hence allocated to the balance sheet approach. This approach can be weakened by non-operating events such as mergers and acquisitions (M&A) and exhibits discretionary accruals, although these are not caused by management's pure discretion. Specifically, acquisitions lead to changes in balance sheet items but do not affect the income statement which finally causes immoderate accruals (Hribar and Collins 2002). By contrast, the model proposed by Dechow and Dichev (2002) and amended by McNichols (2002) refers directly to items in the operating section of the statement of cash flows. Thus, this model is not affected by non-operating changes in balance sheet items and is accordingly allocated to the cash flow approach. Again, the following model is estimated based on the two-digit SIC. When there are fewer than 20 companies available per industry and year, we estimate Eq. (2) based on the one-digit SIC:

$$\begin{aligned}\Delta\mathrm{WC}_{it} = {} & \alpha_0 + \alpha_1\mathrm{CFO}_{it-1} + \alpha_2\mathrm{CFO}_{it} \\ & + a_3\mathrm{CFO}_{it+1} + \alpha_4\Delta\mathrm{REV}_{it} \\ & + \alpha_5\mathrm{PPE}_{it} + \varepsilon_{it},\end{aligned} \quad (2)$$

where $\Delta\mathrm{WC}_{it}$ is the change in working capital accruals for firm i in year t, measured as the sum of changes in accounts receivable (recch), the change in inventory (invch), the change in accounts payable (apalch), the change in taxes payable (txach), and change in other assets (aoloch). In addition, $\Delta\mathrm{WC}_{it}$ is multiplied by minus one, and CFO is cash from operations (oancf). All variables—except the intercept term in Eq. (2)—are scaled by average total assets. Unlike Dechow and Dichev (2002), we do not rely on the standard deviation of these residuals as a measure of ABEM. We employ signed accruals to distinguish between increasing and decreasing ABEM. The proxies for working capital accruals are estimated for all available company years in the period 1992 to 2012, resulting in 127,966 observations.

To control for the finding that managers opt for one of the two earnings management choices—namely ABEM or RAM—according to their personal preferences (Zang 2012), we additionally calculate three proxies for RAM, namely abnormal cash flows from operations (AB_CFO), abnormal production costs (AB_PROD), and abnormal discretionary expenses (AB_EXP). Given management's intention to increase reported earnings by granting discounts, total sales increase but cash inflow per sale decreases, leading to

lower AB_CFO. AB_PROD will instead increase if management decides to capitalize rather than expend per-unit fixed costs by raising production levels. Finally, management may postpone period costs such as advertisement, research and development, or selling, general and administrative expenses, leading to decreasing AB_EXP for a given year (Cohen et al. 2008; Roychowdhury 2006). To generate the combined impact of RAM (COM_RAM), we multiply *AB_CFO* and *AB_EXP* by minus one. Thus, all proxies increase with higher levels of RAM. Accordingly, COM_RAM is defined as *AB_CFO* plus *AB_PROD* plus *AB_EXP*. Again, the proxies for RAM are estimated for all available company years, resulting in 146,185 observations for COM_RAM.

Control Variables

Several variables are included to control for effects other than that of our variable of interest—the CNS or more specifically, its extreme decile—on accruals. At first, tenure, age, and gender are included, since according to upper echelons theory these may also affect personal behavior. It is found that long-tenured CEOs tend to refrain from making severe changes, which is known as the "stale in the saddle" paradigm (Miller 1991). Supporting this paradigm, Barker and Mueller (2002) find that CEO tenure is negatively associated with a firm's research and development (R&D) expenses. These researchers also find that CEO age negatively correlates with R&D expenses, indicating a lower willingness among long-tenured and older CEOs to take risks. In addition, it is found that older CEOs make more diversifying acquisitions, manage firms with more diversified operations, and maintain lower operating leverage (Serfling 2014). It is reported that female board members are more risk-averse and act more conservatively than their male counterparts, resulting in the (attempted) avoidance of earnings management (Adams and Ferreira 2009; Ho et al. 2015). Furthermore, Ingersoll et al. (2017) find that female CEOs are less likely to exhibit a narcissistic trait than their male counterparts.

Since Petrenko et al. (2016) find that CEO narcissism has positive effects on levels and profile of corporate social responsibility (CSR), we consider a measure of CSR. We further propose that CSR is associated with earnings management in two ways. On the one hand, it restricts managerial ability to manage earnings; on the other, it can also be used to satisfy different stakeholder groups in order to obtain more managerial discretion (Martínez-Ferrero and García-Sánchez 2015; Kim et al. 2012). To operationalize CSR, we include the standardized value of the sum of total strengths minus total concerns for the sub-dimensions community, diversity, employees, environment, and product, as taken from MSCI ESG STATS, formerly known as the Kinder, Lynderberg, and Domini database. Thus, higher levels of the proxy variable indicate higher levels of CSR.

To complement CSR, we include an aggregated CG measure since Cornett et al. (2008) find that effective CG reduces management's discretion to manage earnings. The aggregated CG measure is derived from the CG dimension taken from MSCI ESG STATS. The CG measure refers to a firm's sustainability reporting quality, its support for public policies, its business ethics, governance practices, and executive compensation. The final element is of particular importance for this study since prior literature states that performance-based compensation is a vital incentive for CEOs to manage earnings, which may also lead to misreporting and increased litigation risk (Burns and Kedia 2006; Holthausen et al. 1995; Bergstresser and Philippon 2006). We measure CG as the difference between the strengths and concerns in the CG dimension of the MSCI ESG STATS database. Again, higher levels of the proxy variable indicate higher levels of overall CG.

Since executive compensation captures a predominant value of the CNS, our results may be driven by exaggerated compensation. Therefore, considering the CG measure helps to control for a possible mechanical relationship between the CNS construction and discretionary accruals. A mechanical relationship may also be established by considering the number and value of acquisitions in the CNS. Hribar and Collins (2002) argue that discretionary accruals measured by a model relying on the balance sheet approach correlate with M&A transactions in a given year. Thus, a higher number and value of acquisitions result in a higher CNS—all else being equal—and, accordingly, in higher discretionary accruals. To control our results concerning this mechanical relationship—beside the additional model to measure accruals with the cash flow approach—we include a binary variable which takes the value of one if an M&A transaction is indicated in Compustat's revenue footnote one for a given year.

The natural logarithm of market capitalization and market-to-book ratio are also included as proxies for firm size and growth opportunity (Roychowdhury 2006). Leverage is included because it has been established that companies manage earnings to avoid debt covenant violations (DeFond and Jiambalvo 1994). Empirical evidence suggests that companies report lower levels of discretionary accruals if they are audited by one of the big auditing firms (Becker et al. 1998; Francis et al. 1999). Therefore, a binary variable is included which takes the value of one if the company is audited by one of the big auditors. Companies planning a seasoned equity offering (SEO) in the near future strive to present their financial status in the best light possible (Rangan 1998; Teoh et al. 1998). Therefore, a binary variable is included which takes the value of one if the company issues equity in the following year. A company's age is measured

Table 2 Variable description

Variable	Source	Description
Discretionary accruals (DA)	Compustat	Discretionary accruals (cross-sectional modified Jones model adjusted for performance)
Working capital accruals (WCA)	Compustat	Working capital accruals are calculated based on the model proposed by Dechow and Dichev (2002) and modified by McNichols (2002)
Abnormal cash flow from operations (AB_CFO)	Compustat	AB_CFO is defined as the residual from normal CFO as a linear function of sales and change in sales. The variable is multiplied by minus one so that a positive coefficient indicates increasing earnings management
Abnormal production costs (AB_PROD)	Compustat	AB_PROD is defined as the residual from cost of goods sold and change in inventory as a linear function of contemporaneous sales
Abnormal discretionary expenses (AB_EXP)	Compustat	AB_EXP is defined as the residual from discretionary expenses as a function of lagged sales. The variable is multiplied by minus one so that a positive coefficient indicates increasing earnings management
Real activities management (COM_RAM)	Compustat	AB_CFO + AB_PROD + AB_EXP
CEO tenure	Compustat's ExecuComp	Logarithm of full tenure in years
CEO age	Compustat's ExecuComp	Age in years
CEO gender	Compustat's ExecuComp	A binary variable taking the value of one if the CEO is female
CSR *Z*-score	MSCI ESG STATS	Standardized value of the sum of total strengths minus total concerns for the sub-dimensions: community, diversity, employees, environment, product
Corporate governance score	MSCI ESG STATS	Total strengths minus total concerns for the sub dimension: corporate governance
Acquisition	Compustat	A binary variable which takes the value of one if an M&A transaction is indicated in Compustat's revenue footnote one
Size	Compustat	Logarithm of total assets as a proxy for firm size
Market-to-book ratio	Compustat	Market value divided by book value of equity
Leverage	Compustat	Debt-to-assets ratio as a proxy for leverage
BIG auditing firm	Compustat	A binary variable taking the value of one if the company is audited by a Big auditor
Seasoned equity offering	Thomson One Banker	A binary variable taking the value of one if the company issues equity in the following year
Firm age	CRSP	One plus the natural logarithm of years since the company is listed in the CRSP database

Table 2 provides an overview of all dependent and independent variables besides the CNS. All continuous variables in Panel B are winsorized at the 1st and 99th percentiles excluding the absolute value of discretionary accruals, which is winsorized at the 99th percentile only

by the first entry of the time series in the Center for Research and Security Prices to control for different development stages of the firm.

All continuous variables are winsorized at the top and bottom 1% level, except in the case of the absolute value of discretionary accruals, which is only winsorized at the top 1% level, respectively. An overview of the dependent and independent variables is provided in Table 2.

To mitigate concerns of an omitted variable bias, we control for the influence of CEO optimism (Campbell et al. 2004b; Schrand and Zechman 2012), insider and blockholder ownership (Cheng and Warfield 2005; Shleifer and Vishny 1986), poor financial status (Altman 1968), a firm's headquarters location (Leuz et al. 2003), business and operating risk as well as a crisis dummy in additional specifications. In summary, all results remain the same and are available upon request.

Empirical Models

To capture the relationship between ABEM and behaviorally driven accounting choices, we set the following

specifications: first absolute, second positive, and third negative discretionary accruals are regressed on CEO narcissism while controlling for RAM, various CEO-specific controls, as well as firm, time, and sector controls. To test our hypotheses, we also include a binary variable as our main variable of interest reflecting the effect of extreme narcissism occurrence.

The narcissistic personality disorder affects around 6% of the entire U.S. population, rising to nearly 8% among men (Stinson et al. 2008). Self-confidence and self-esteem are seen as essential characteristics for being appointed to a CEO position. However, a narcissist's exaggerated sense of self-worth may often be misinterpreted as self-confidence and inherently helps a narcissistic individual to be selected as CEO (O'Reilly et al. 2014). Accordingly, we expect CEOs to be more narcissistic than the general population and thus set the threshold at 10% to indicate if a CEO is highly narcissistic. The higher threshold is also justified since almost all CEOs in the sample are male. Therefore, the coefficient α_2 is a binary variable, which takes the value of one if a CEO is in the top decile. While the regressions in Table 6 are based on the balance sheet approach, we refer to the cash flow approach in Table 7. Thus, our model to measure the impact of CEO narcissism on ABEM is specified as follows:

$$\begin{aligned} \mathrm{EM}_{\mathrm{measure}_{it}} = {} & \alpha_0 + \alpha_1 \mathrm{Narcissism}_{it} + \alpha_2 \mathrm{Narcissism\ (TopDecile)}_{it} \\ & + \alpha_3 \mathrm{COM}_{\mathrm{RAM}_{it}} + \alpha_4 \mathrm{Controls}_{it} + \alpha_5 \mathrm{Time}_t \\ & + \alpha_6 \mathrm{Industry}_{it} + \varepsilon_{it}. \end{aligned} \tag{3}$$

The model is re-estimated using fixed effects regression so as to avoid misleading inferences resulting from a potential correlation between the unobservable component of the error term and the CNS. It also mitigates the potential criticism that accounting choices are influenced by many actors such as accountants, board members, or auditors who are involved in a company's financial reporting. The estimation using fixed effects has to be run at the cost of losing variables with a stable mean, like gender or tenure, since they drop out. We also skip the variables representing CEO and firm age, since an observation of a 52-year-old CEO with a mean age of 55 results in the same value as a 62-year-old CEO with a mean age of 65. In both cases, the variable would reflect a relative difference of 3 years, whereas in fact there is an absolute difference of 10 years between these observations. Accordingly, the model controlling for potential firm-specific and unobservable heterogeneity is specified as follows:

$$\begin{aligned} \mathrm{EM}_{\mathrm{measure}_{it}} = {} & \alpha_0 + \alpha_1 \mathrm{Narcissism}_{it} + \alpha_2 \mathrm{Narcissism(TopDecile)}_{it} \\ & + \alpha_3 \mathrm{COM}_{\mathrm{RAM}_{it}} + \alpha_4 \mathrm{Controls}_{it} + \alpha_5 \mathrm{Time}_t \\ & + \alpha_6 \mathrm{Industry}_{it} + \eta_i + \varepsilon_{it}. \end{aligned} \tag{4}$$

In additional regressions, the CEO's first year of tenure is excluded to control for a potential bias resulting from anomalies surrounding CEO takeovers and successions (Hazarika et al. 2012; Wilson and Wang 2010). The untabulated results display the same pattern and thus can be seen as robust to this aspect.

Results

Descriptive Statistics

The descriptive statistics for the full sample are displayed in Table 3. The CNS shows a mean of zero and a standard deviation of 2.71, while the minimum (maximum) is − 10.44 (19.30). Absolute discretionary accruals in this study have a mean value of 0.15. As the mean (median) for total assets of all sample companies is $34,020 ($8037) million, the absolute value of discretionary accruals for an average sample company is $5103 ($1206) million ($34,020 × 0.15 or $8037 × 0.15). Positive (negative) accruals exhibit a mean value of 0.17 (− 0.11). Mean tenure is almost 7 years (exp. [1.93]), a CEO is on average 56 years old, and 2% of CEOs are female.

Table 4 reports the mean and median for the control sample (decile 1 to 9) as well as the 10th decile of the CNS. The mean and median for the absolute value and positive (negative) accruals are all significantly higher (lower) for the 10th decile compared to the control sample. The mean absolute value of discretionary accruals for highly narcissistic CEOs is 0.21 and significantly different ($p < 0.01$) from the control group, for which the mean value of accruals is 0.15. The increase by six percentage points or 40% indicates that highly narcissistic CEOs are substantially more associated with ABEM than their less narcissistic peers. Given the mean (median) for total assets of all sample companies, discretionary accruals increase from $5103 ($1206) million ($34020 × 0.15 or $8037 × 0.15) to $7144 ($1688) million ($34,020 × 0.21 or $8037 × 0.21). Despite the statistical significance, we also consider the difference of $2041 ($482) million for an average sample company to be economically large. In light of possible concerns regarding the choice of the control group, we rerun the analysis and compare the mean and median of the 1st (lowest CNS) and 10th decile (highest CNS). The results of the univariate analysis are robust to this aspect. The mean and median tenure as well as the age of highly narcissistic CEOs are slightly—but statistically significantly—higher. The proportion of women does not significantly differ between the two groups.

The correlation matrix is reported in Table 5, showing that the CNS, as well as its extreme decile, correspond positively (negatively) with absolute and positive (negative) discretionary accruals. The variance inflation factors (VIFs) of all independent variables are below four. Thus, we do not see any multicollinearity issues.

Table 3 Descriptive statistics for the full sample

Variable	# of observations	Mean	SD	Min.	0.25	Mdn	0.75	Max
Discretionary accruals (absolute value)	6939	0.15	0.37	0.00	0.02	0.04	0.11	2.64
Discretionary accruals (signed)	6939	0.03	0.34	−1.01	−0.04	0.00	0.05	2.23
Discretionary accruals (positive)	3606	0.17	0.38	0.00	0.02	0.04	0.12	2.23
Discretionary accruals (negative)	3333	−0.11	0.19	−1.01	−0.11	−0.04	−0.02	0.00
Working capital accruals (absolute value)	6736	0.03	0.03	0.00	0.01	0.02	0.04	0.14
Working capital accruals (positive)	3175	0.03	0.02	0.00	0.01	0.02	0.04	0.11
Working capital accruals (negative)	3561	−0.03	0.03	−0.11	−0.04	−0.02	−0.01	0.00
Real activities management	6939	−0.06	1.13	−5.58	−0.27	0.00	0.24	4.83
CEO narcissism score	6939	0.00	2.71	−10.44	−1.81	−0.13	1.67	19.30
CEO narcissism score (10th decile)	6939	0.10	0.30	0.00	0.00	0.00	0.00	1.00
CEO tenure (ln)	6939	1.93	0.68	0.69	1.39	1.95	2.40	3.89
CEO age	6939	56.35	6.42	34.00	52.00	57.00	61.00	85.00
CEO gender	6939	0.02	0.13	0.00	0.00	0.00	0.00	1.00
CSR *Z*-score	6939	0.49	1.45	−4.03	−0.42	0.48	1.38	7.68
Corporate governance score	6939	−0.47	0.77	−4.00	−1.00	0.00	0.00	2.00
Acquisition	6939	0.22	0.41	0.00	0.00	0.00	0.00	1.00
Size (ln)	6939	9.08	1.20	6.44	8.28	9.02	9.79	12.21
Total assets (in $ million)	6939	34,020	130,000	189	3,255	8,037	21,625	2,400,000
Market-to-book ratio	6939	3.59	3.53	−3.28	1.69	2.64	4.17	22.25
Leverage	6939	0.60	0.20	0.14	0.46	0.60	0.73	1.02
BIG auditor	6939	0.91	0.29	0.00	1.00	1.00	1.00	1.00
Seasoned equity offerings	6939	0.08	0.28	0.00	0.00	0.00	0.00	1.00
Firm age (ln)	6939	4.33	0.81	1.00	3.89	4.47	4.91	5.45

Table 3 provides descriptive statistics of all dependent and independent variables (excluding industry and year dummies)

Relationship Between CEO Narcissism and Accrual-Based Earnings Management

Models 1 to 4 report the coefficients of OLS regressions, whereas Models 5 to 8 in Table 6 control for CEO fixed effects resulting from time-invariant unobservable heterogeneity. The dependent variable is measured as discretionary accruals based on the model proposed by DeFond and Subramanyam (1998) using the balance sheet approach. At first, the association between the absolute value of discretionary accruals and the CNS—without a separation of any decile—is measured in Model 1. The insignificant coefficient supports previous findings which show no relationship between CEO narcissism and ABEM (Olsen et al. 2014). The CNS coefficient in Model 5—when controlling for CEO fixed effects—also displays no significant relationship. By contrast, the coefficient for the CNS in its extreme decile is significantly positive ($p < 0.01$) in Model 2, indicating that absolute discretionary accruals increase by 5.60 percentage points when a highly narcissistic CEO is at the helm of the business. This result supports the findings of the univariate analysis, Hypothesis 1, and contradicts previous findings. The difference results from the observance of the 10th decile in comparison to the less narcissistic deciles. When controlling for CEO fixed effects in Model 6, the positive relationship between absolute discretionary accruals and the extreme decile remains. This indicates that ABEM is associated with highly narcissistic CEOs regardless of whether their behavior is affected by unobservable heterogeneity or not.

In the following, discretionary accruals are separated into positive and negative outcomes to gain a deeper insight into whether income-increasing or -decreasing ABEM is associated with highly narcissistic CEOs. Models 3 and 4 report that positive (negative) discretionary accruals are significantly positive (negative) associated with the CNS in its extreme decile ($p < 0.05$), indicating that earnings-increasing and -decreasing management is associated with highly narcissistic CEOs. These findings support Hypotheses 2 and 3 as well as the notion that highly narcissistic CEOs resort to ABEM for sub-conscious and deliberate biases. The relationship for both directions remains significant in a fixed effect regression, as can be seen in Models 7 and 8. To check the robustness of our results, we rerun the analysis in Models 2 to 4 by reducing the control group to CEOs who are in the 1st decile of the CNS. We observe that the significant association between ABEM and CEO narcissism holds true in the case of positive discretionary accruals ($p < 0.10$). We

Table 4 Descriptive statistics by firms with highly narcissistic CEOs versus control firms

Variable	Control sample		10th decile		Difference in	
	Mean	Median	Mean	Median	Means (*t* value)	Median (*p* value)
Discretionary accruals (absolute value)	0.15	0.04	0.21	0.06	−3.83	−5.66
Discretionary accruals (signed)	0.03	0.00	0.04	0.00	−0.06	1.66
Discretionary accruals (positive)	0.16	0.04	0.23	0.06	−2.75	−4.19
Discretionary accruals (negative)	−0.11	−0.04	−0.14	−0.06	2.98	3.87
Real activities management	−0.05	0.00	−0.13	0.03	1.72	−2.10
CEO narcissism score	−0.56	−0.46	5.05	4.50	−66.65	−43.45
CEO narcissism score (10th decile)	0.00	0.00	1.00	1.00	−226.10	−83.14
CEO tenure (ln)	1.92	1.95	1.99	1.95	−2.69	−2.55
CEO age	56.30	57.00	56.83	57.00	−2.08	−1.98
CEO gender	0.02	0.00	0.01	0.00	0.56	0.56
CSR *Z*-score	0.49	0.48	0.48	0.03	0.17	1.81
Corporate governance score	−0.45	0.00	−0.69	−1.00	8.10	8.78
Acquisition	0.21	0.00	0.35	0.00	−8.73	−8.68
Size (ln)	9.00	8.96	9.80	9.71	−17.12	−14.99
Market-to-book ratio	3.56	2.64	3.79	2.73	−1.60	−2.23
Leverage	0.60	0.60	0.61	0.60	−1.64	−1.45
BIG auditor	0.91	1.00	0.95	1.00	−4.17	−4.16
Seasoned equity offerings	0.08	0.00	0.10	0.00	−1.41	−1.41
Firm age (ln)	4.31	4.47	4.44	4.62	−3.95	−5.59

Table 4 presents the means and medians for the control sample (deciles 1 to 9) and firms with a highly narcissistic CEO (10th decile). *T*-statistics are from *t* tests for the difference in means, and *z*-statistics from Wilcoxon–Mann–Whitney test for the differences in medians

explain the loss of significance for the relationship between absolute and negative discretionary accruals and the CNS by the reduced number of observations. To further mitigate concerns regarding the choice of the control group, we also run a sensitivity analysis and change the threshold of 10% between the variable of interest and the control group. Our results remain robust to the inference drawn that highly narcissistic CEOs are associated with income-decreasing earnings management in the range of 3 to 11%.

Absolute and positive (negative) discretionary accruals are—except in Model 7—positively (negatively) associated with the combined proxy for RAM ($p < 0.05$). This is in contrast to prior findings that indicate that managers opt for one of the two earnings management choices according to their personal preferences (Zang 2012). In untabulated results, only one out of three single measures of RAM, namely AB_EXP, is significantly positive ($p < 0.01$) related to ABEM, whereas AB_CFO and AB_PROD are significantly negative ($p < 0.01$). Therefore, the unexpected relationship between ABEM and RAM can be extensively explained by the positive relationship between AB_EXP and discretionary accruals. Overall, we do not see a consistent pattern which refutes existing findings that managers choose between these two earnings management techniques. In addition, we do not find a consistent pattern between the relationship between CEO narcissism and RAM irrespective of separating any decile.

The additional personal variables such as tenure, age, or gender do not—or only to a lesser extent—have a significant relationship with ABEM. This is in line with the findings of Cornett et al. (2008), who report no significant relationship between discretionary accruals and CEO characteristics such as tenure and age.

Table 7 reports the coefficients of OLS regressions in Models 1 to 3, whereas Models 4 to 6 control for CEO fixed effects resulting from time-invariant unobservable heterogeneity. The dependent variable is measured as working capital accruals based on the model proposed by Dechow and Dichev (2002) and amended by McNichols (2002) using the cash flow approach. This model is applied to control for the effect of non-accurate accruals identification in case of non-operating events such as M&A. This represents a non-negligible aspect in this study since M&A transactions are present in 22% of all firm-year observations, as can be seen in Table 3. Nevertheless, the significance remains for all of the coefficients reflecting the CNS in its extreme decile compared to the coefficients in Table 6. Given the significantly positive relationship ($p < 0.01$) between our variable of interest and the absolute value of discretionary accruals in Models 1 and 4, we see further support for Hypothesis 1, which states that ABEM is more associated with highly narcissistic CEOs than their less narcissistic peers. We

Table 5 Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
(1)	Discretionary accruals (absolute value)	1																		
(2)	Discretionary accruals (signed)	**0.50**	1																	
(3)	Discretionary accruals (positive)	**1.00**	**1.00**	1																
(4)	Discretionary accruals (negative)	**− 0.91**	**1.00**	.	1															
(5)	Real activities management	**0.05**	0.01	**0.03**	**− 0.09**	1														
(6)	CEO narcissism score	**0.06**	0.02	**0.06**	**− 0.07**	−0.02	1													
(7)	CEO narcissism score (10th decile)	**0.05**	0.00	**0.05**	**− 0.05**	−0.02	**0.62**	1												
(8)	CEO tenure (ln)	0.00	−0.02	−0.01	−0.02	−0.01	**0.03**	**0.03**	1											
(9)	CEO age	**−0.03**	0.00	**− 0.04**	0.03	0.02	**0.06**	**0.03**	**0.42**	1										
(10)	CEO gender	**0.06**	**0.03**	**0.07**	**− 0.05**	−0.01	0.00	−0.01	**− 0.06**	**− 0.08**	1									
(11)	CSR *Z*-score	**0.08**	**0.04**	**0.11**	**− 0.07**	**− 0.03**	**0.03**	0.00	0.01	**− 0.04**	**0.13**	1								
(12)	Corporate governance score	**− 0.06**	**− 0.03**	**− 0.07**	**0.05**	−0.01	**− 0.12**	**− 0.10**	−0.01	**0.03**	−0.01	**0.15**	1							
(13)	Acquisition	**0.04**	**0.02**	**0.04**	−0.03	0.01	**0.15**	**0.10**	0.02	−0.01	−0.01	−0.02	**−0.03**	1						
(14)	Size (ln)	**0.11**	**0.04**	**0.12**	**− 0.12**	**− 0.05**	**0.28**	**0.20**	0.00	**0.03**	**0.03**	**0.25**	**− 0.15**	**0.04**	1					
(15)	Market-to-book ratio	**0.06**	**0.03**	**0.08**	**− 0.06**	**− 0.14**	0.01	0.02	0.02	**− 0.05**	**0.03**	**0.12**	**− 0.04**	0.01	**0.25**	1				
(16)	Leverage	**− 0.04**	−0.02	**− 0.05**	**0.06**	**0.10**	**0.12**	0.02	**− 0.09**	**0.07**	**0.03**	**− 0.03**	**− 0.04**	**− 0.06**	0.00	−0.01	1			
(17)	BIG auditor	**0.04**	0.02	**0.04**	**− 0.05**	−0.02	**0.08**	**0.05**	−0.01	**− 0.07**	**0.04**	**0.09**	**− 0.05**	**0.03**	**0.15**	0.02	−0.01	1		
(18)	Seasoned equity offerings	−0.01	−0.01	−0.01	0.01	**0.04**	**0.05**	0.02	0.01	−0.02	−0.02	−0.02	**− 0.04**	**0.03**	−0.01	**− 0.05**	**0.09**	−0.02	1	
(19)	Firm age (ln)	**− 0.03**	**− 0.03**	**− 0.05**	0.02	**0.03**	**0.10**	**0.05**	0.01	**0.16**	−0.02	−0.01	**0.13**	**− 0.04**	**0.11**	**− 0.02**	**0.18**	**− 0.07**	**− 0.04**	1

This table displays the Pearson's correlation coefficients. Coefficients in bold indicate significance at the 5% level

Table 6 CEO narcissism and accrual-based earnings management (balance sheet approach)

Models	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	DA abs. value	DA abs. value	DA pos.	DA neg.	DA abs. value	DA abs. value	DA pos.	DA neg.
CEO narcissism score	−0.000577	−0.00462**	−0.00610**	0.00269*	0.000403	−0.00488	−0.00377	0.00380
	(0.00186)	(0.00208)	(0.00284)	(0.00160)	(0.00324)	(0.00325)	(0.00598)	(0.00269)
CEO narcissism score (10th decile)		0.0560***	0.0619**	−0.0340**		0.0739***	0.0958**	−0.0444**
		(0.0217)	(0.0295)	(0.0134)		(0.0257)	(0.0443)	(0.0179)
Real activities management	0.0179***	0.0179***	0.0172**	−0.0158***	0.0186***	0.0187***	0.0175	−0.0173***
	(0.00585)	(0.00585)	(0.00841)	(0.00451)	(0.00678)	(0.00678)	(0.0111)	(0.00640)
CEO tenure	0.0189*	0.0181*	0.0235*	−0.00729				
	(0.0102)	(0.0102)	(0.0130)	(0.00681)				
CEO age	−0.00119	−0.00117	−0.000579	0.00105				
	(0.000962)	(0.000962)	(0.00123)	(0.000674)				
CEO gender	0.0321	0.0320	0.0447	0.0147				
	(0.0426)	(0.0428)	(0.0542)	(0.0276)				
CSR Z-score$_{t-1}$	0.0110**	0.0114***	0.0119**	−0.00472	8.79e−05	−0.000100	0.0166	0.00728
	(0.00432)	(0.00434)	(0.00564)	(0.00302)	(0.00935)	(0.00933)	(0.0139)	(0.00655)
Corporate governance score$_{t-1}$	0.00470	0.00488	0.00313	−0.00827	0.0111	0.0109	0.0165	−0.00906
	(0.00767)	(0.00769)	(0.00950)	(0.00507)	(0.0105)	(0.0106)	(0.0138)	(0.00846)
Acquisition	0.0237*	0.0228*	0.00585	−0.0170*	0.0242	0.0237	−0.00904	−0.0186
	(0.0126)	(0.0126)	(0.0158)	(0.00970)	(0.0152)	(0.0152)	(0.0200)	(0.0122)
Size (ln)$_{t-1}$	−0.00302	−0.00369	0.00440	0.00567	−0.00646	−0.00604	0.000445	0.00294
	(0.00589)	(0.00591)	(0.00735)	(0.00398)	(0.0173)	(0.0173)	(0.0298)	(0.0143)
Market-to-book ratio$_{t-1}$	−0.000947	−0.00108	−0.00345	−0.000599	0.000289	3.35e−05	−0.00435	0.00124
	(0.00235)	(0.00235)	(0.00305)	(0.00122)	(0.00317)	(0.00316)	(0.00548)	(0.00229)
Leverage$_{t-1}$	0.000634	0.00537	0.0351	0.0250	0.0364	0.0414	0.231	0.0736
	(0.0331)	(0.0330)	(0.0446)	(0.0230)	(0.113)	(0.113)	(0.168)	(0.0893)
BIG auditing firm	−0.0397**	−0.0398**	−0.0299	0.0318**	0.00120	0.00280	0.000519	−0.0202
	(0.0198)	(0.0198)	(0.0246)	(0.0137)	(0.0362)	(0.0356)	(0.0667)	(0.0301)
Seasoned equity offerings$_{t+1}$	−0.0300*	−0.0284*	−0.0371*	0.00794	−0.0529**	−0.0507**	−0.0298	0.0266*
	(0.0162)	(0.0163)	(0.0210)	(0.0112)	(0.0206)	(0.0206)	(0.0289)	(0.0155)
Firm age (ln)	−0.00479	−0.00501	−0.0133	−0.00515				
	(0.00833)	(0.00832)	(0.0107)	(0.00496)				
Constant	0.0468	0.0175	−0.00290	−0.0877*	0.0835	0.0690	−0.0786	−0.112
	(0.0797)	(0.0841)	(0.129)	(0.0466)	(0.166)	(0.166)	(0.279)	(0.139)
Observations	5,813	5,813	3,047	2,766	5,813	5,813	3,047	2,766
R-squared	0.216	0.218	0.282	0.284	0.054	0.056	0.105	0.093
Time controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry controls	Yes	Yes	Yes	Yes	No	No	No	No
CEO fixed effects	No	No	No	No	Yes	Yes	Yes	Yes
Number of CEOs					1126	1126	1015	993

Table 6 displays regression results for models 1 to 4: $\mathrm{EM}_{\mathrm{measure}_{it}} = \alpha_0 + \alpha_1 \mathrm{Narcissism}_{it} + \alpha_2 \mathrm{Narcissism\ (Top\ Decile)}_{it} + \alpha_3 \mathrm{COM}_{\mathrm{RAM}_{it}} + \alpha_4 \mathrm{Controls}_{it} + \alpha_5 \mathrm{Time}_t + \alpha_6 \mathrm{Industry}_{it} + \varepsilon_{it}$ and for models 5 to 8, respectively: $EM\_\mathrm{measure}_{it} = \alpha_0 + \alpha_1 \mathrm{Narcissism}_{it} + \alpha_2 \mathrm{Narcissism\ (Top\ Decile)}_{it} + \alpha_3 \mathrm{COM}_{\mathrm{RAM}_{it}} + \alpha_4 \mathrm{Disc.Accruals}_{it} + \alpha_5 \mathrm{Controls}_{it} + \alpha_6 \mathrm{Time}_t + \alpha_7 \mathrm{Industry}_{it} + \eta_i + \varepsilon_{it}$. Absolute, positive, and negative discretionary accruals (DA) are the dependent variables in each model. Accruals are calculated based on the model proposed by DeFond and Subramanyam (1998) and adjusted for performance as proposed by Kothari et al. (2005). The variable of interest is a binary variable which takes the value of one if the manager is in the 10th decile of the CNS. Models 1 to 3 apply an OLS regression, whereas models 4 to 6 control for the CEO fixed effect of time-invariant unobservable heterogeneity resulting from the influence of organizational culture on CEOs' ability to enforce their accounting choices. Heteroscedasticity-consistent standard errors are displayed in parentheses and clustered on CEO level. Asterisks indicate significance at the 10% (*), 5% (**) and 1% (***) levels

Table 7 CEO narcissism and accrual-based earnings management (cash flow approach)

Models	(1)	(2)	(3)	(4)	(5)	(6)
Variables	WCA abs. value	WCA pos.	WCA neg.	WCA abs. value	WCA pos.	WCA neg.
CEO narcissism score	−0.000350	−0.000249	0.000363	−1.15e−05	0.000537	0.000495
	(0.000225)	(0.000278)	(0.000294)	(0.000341)	(0.000457)	(0.000454)
CEO narcissism score (10th decile)	0.00447***	0.00434**	−0.00419**	0.00526***	0.00496*	−0.00612**
	(0.00161)	(0.00210)	(0.00207)	(0.00178)	(0.00289)	(0.00250)
Real activities management	−0.000115	−0.000142	−7.75e−05	7.12e−05	0.000734	6.81e−05
	(0.000370)	(0.000482)	(0.000470)	(0.000380)	(0.000557)	(0.000523)
CEO tenure	0.000207	−0.000124	−0.000429			
	(0.000851)	(0.000962)	(0.00101)			
CEO age	−3.00e−05	−1.02e−05	4.18e−05			
	(8.30e−05)	(9.36e−05)	(0.000101)			
CEO gender	0.00220	−0.00109	−0.00459			
	(0.00424)	(0.00427)	(0.00562)			
Constant	0.0639***	0.0656***	−0.0447***	0.0168	0.0160	−0.00592
	(0.0134)	(0.0160)	(0.00723)	(0.0166)	(0.0208)	(0.0232)
Observations	5,632	2,656	2,976	5,632	2,656	2,976
R-squared	0.114	0.134	0.128	0.028	0.033	0.045
Firm controls	Yes	Yes	Yes	Yes	Yes	Yes
Time controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry controls	Yes	Yes	Yes	No	No	No
CEO fixed effects	No	No	No	Yes	Yes	Yes
Number of CEOs				1125	1010	1045

Table 7 displays regression results for models 1 to 3: $EM_{measure_{it}} = \alpha_0 + \alpha_1 Narcissism_{it} + \alpha_2 Narcissism(Top\ Decile)_{it} + \alpha_3 COM_{RAM_{it}} + \alpha_4 Controls_{it} + \alpha_5 Time_t + \alpha_6 Industry_{it} + \varepsilon_{it}$ and for models 4 to 6, respectively: $EM\_measure_{it} = \alpha_0 + \alpha_1 Narcissism_{it} + \alpha_2 Narcissism(Top\ Decile)_{it} + \alpha_3 COM_{RAM_{it}} + \alpha_4 Disc.Accruals_{it} + \alpha_5 Controls_{it} + \alpha_6 Time_t + \alpha_7 Industry_{it} + \eta_i + \varepsilon_{it}$. Absolute, positive, and negative abnormal changes in working capital accruals (WCA) are the dependent variables in each model. Accruals are calculated based on the model proposed by Dechow and Dichev (2002) and modified by McNichols (2002). The variable of interest is a binary variable which takes the value of one if the manager is in the 10th decile of the CNS. Firm-specific control variables include CEO tenure, CEO age, CEO gender, CSR *Z*-score, corporate governance, acquisition, size (ln), market-to-book ratio, leverage, BIG auditing firm, seasoned equity offerings, and firm age (ln). Models 1 to 3 apply an OLS regression, whereas models 4 to 6 control for the CEO fixed effect of time-invariant unobservable heterogeneity resulting from the influence of organizational culture on CEOs' ability to enforce their accounting choices. Heteroscedasticity-consistent standard errors are displayed in parentheses and clustered on CEO level. Asterisks indicate significance at the 10% (*), 5% (**), and 1% (***) levels

consider the increase of 0.45 percentage points (Model 1) as economically large, too, given the mean and standard deviation of 3% for absolute working capital accruals (see Table 3). In addition, the coefficients for the CNS in its extreme decile are significantly positive (negative) in Models 2 and 5 (3 and 6), indicating that income-increasing (-decreasing) ABEM is more associated with highly narcissistic CEOs than with their less narcissistic peers. Therefore, the results referred from accruals measured by a cash flow approach also support Hypotheses 2 and 3.

Accrual-Based Earnings Management Surrounding CEO Turnovers

To further strengthen Hypothesis 3, we apply a difference-in-difference analysis around CEO turnovers. At this point, CEOs have the possibility to decrease earnings and make their predecessors responsible for the resulting poor performance while benefiting from higher reported earnings in future periods. In addition, a lower base for future compensation plans is also established (Moore 1973; Pourciau 1993). However, it has to be mentioned that CEOs in general are able to exploit earnings management techniques around CEO turnovers (Wells 2002; Godfrey et al. 2003).

Table 8 Accrual-based earnings management surrounding CEO turnovers

Models	(1)	(2)
Variables	DA neg.	DA neg.
CEO change * after	−0.0369	−0.166*
	(0.0486)	(0.0940)
CEO change	0.00826	0.128
	(0.0213)	(0.0934)
After	−0.00111	0.0138
	(0.0276)	(0.0495)
Real activities management	−0.0190**	−0.0233
	(0.00887)	(0.0186)
CEO tenure	0.00689	
	(0.0163)	
CEO age	−0.00106	
	(0.00154)	
CEO gender	0.00522	
	(0.0680)	
Constant	−0.112	−1.327***
	(0.148)	(0.370)
Observations	582	582
R-squared	0.328	0.191
Firm controls	Yes	Yes
Time controls	Yes	Yes
Industry controls	Yes	No
CEO fixed effects	No	Yes
Number of CEOs		443

Table 8 displays regression results for model 1: $\text{DA neg}_{it} = \alpha_0 + \alpha_1 \text{CNS\_CHANGE}_{it} * \text{AFTER}_{it} + \alpha_2 \text{CNS\_CHANGE}_{it} + \alpha_3 \text{AFTER}_{it} + \alpha_4 \text{COM}_{\text{RAM}_{it}} + \alpha_5 \text{Controls}_{it} + \alpha_6 \text{Time}_t + \alpha_7 \text{Industry}_{it} + \varepsilon_{it}$ and for model 2, respectively: $\text{DA neg}_{it} = \alpha_0 + \alpha_1 \text{CNS\_CHANGE}_{it} * \text{AFTER}_{it} + \alpha_2 \text{CNS\_CHANGE}_{it} + \alpha_3 \text{AFTER}_{it} + \alpha_4 \text{COM}_{\text{RAM}_{it}} + \alpha_5 \text{Controls}_{it} + \alpha_6 \text{Time}_t + \alpha_7 \textit{Industry}_{it} + \eta_i + \varepsilon_{it}$. Negative discretionary accruals (DA) is the dependent variable in each model. The change from a weakly to strongly narcissistic CEO and its effect on decreasing earnings management is investigated. The sample is minimized to firms showing a CEO turnover. Two years before, the year of change, and 1 year 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 binary variable that is equal to one when a firm changes its CEO from a prior low to a now highly narcissistic CEO (10th decile). AFTER is equal to zero 2 years before the CEO change and equal to one for the 2 years after the CEO change. Firm-specific control variables include CEO tenure, CEO age, CEO gender, CSR Z-score, corporate governance, acquisition, size (ln), market-to-book ratio, leverage, BIG auditing firm, seasoned equity offerings, and firm age (ln). Model 1 applies an OLS regression, whereas model 2 controls for the CEO fixed effect of time-invariant unobservable heterogeneity resulting from the influence of organizational culture on CEOs' ability to enforce their accounting choices. Heteroscedasticity-consistent standard errors are displayed in parentheses and clustered on CEO level. Asterisks indicate significance at the 10% (*), 5% (**), and 1% (***) levels

Accordingly, the difference-in-difference analysis allows us to isolate the association between highly narcissistic CEOs and income-decreasing ABEM while controlling for a general effect that occurs around CEO turnovers and succession. Thus, the model to measure the impact of highly narcissistic CEOs on decreasing ABEM is specified as follows:

$$\begin{aligned}&\text{Negative discretionary accruals}_{it}\\&= \alpha_0 + \alpha_1 \text{CNS\_CHANGE}_{it} * \text{AFTER}_{it}\\&+ \alpha_2 \text{CNS\_CHANGE}_{it} + \alpha_3 \text{AFTER}_{it}\\&+ \alpha_4 \text{COM}_{\text{RAM}_{it}} + \alpha_5 \text{Controls}_{it} + \alpha_6 \text{Time}_t\\&+ \alpha_7 \text{Industry}_{it} + \varepsilon_{it}. \end{aligned} \quad (5)$$

Again, a fixed effect regression is estimated to control for unobservable heterogeneity:

$$\begin{aligned}&\text{Negative discretionary accruals}_{it}\\&= \alpha_0 + \alpha_1 \text{CNS\_CHANGE}_{it} * \text{AFTER}_{it}\\&+ \alpha_2 \text{CNS\_CHANGE}_{it} + \alpha_3 \text{AFTER}_{it}\\&+ \alpha_4 \text{COM}_{\text{RAM}_{it}} + \alpha_5 \text{Controls}_{it} + \alpha_6 \text{Time}_t\\&+ \alpha_7 \text{Industry}_{it} + \eta_i + \varepsilon_{it}. \end{aligned} \quad (6)$$

To examine whether a change from a prior, less narcissistic CEO to a highly narcissistic CEO is associated with ABEM, we use negative discretionary accruals as our dependent variable. *AFTER* is a binary variable that is equal to one in the year and the subsequent year of the CEO change. Running this regression, we only examine firms that underwent a CEO change. We include the 2 years before, the year of the change, and the year after the CEO change. *CNS_CHANGE* is a binary variable that is equal to one for all firms that changed from a weakly to a highly narcissistic CEO. We consider the year in which the CEO change occurred plus the two subsequent years for a change from low to high CEO narcissism, as it may take some time for the narcissistic character traits to take effect and thus be captured by our measure of CEO narcissism. A high CNS is defined as a CNS score in the 10th decile of the sample. All other variables are defined as described above.

The coefficient *CEO change * after* which reflects the relationship between highly narcissistic CEOs and negative discretionary accruals around CEO turnovers is significant in the fixed effect regression, indicating that CEO fixed effects are present. In a nutshell, we interpret our results as evidence that highly narcissistic CEOs mainly strive to assure their positive self-view and even embrace brazen self-enhancement strategies, such as making others responsible for poor performance (Campbell et al. 2000; Horvath and Morf 2010). This result further supports Hypothesis 3.

Robustness

It has been shown that incentives on their own, and corporate governance features on their own, also affect earnings management (Armstrong et al. 2010; Buyl et al. 2017). Thus, the question that arises is whether the results are driven by

the construct of narcissism—the CNS—as a whole, by its principal components, or separate indicators. Therefore, we rerun all regressions while separately considering each principal component reflecting leadership/authority, superiority/arrogance, self-absorption/self-admiration, and exploitativeness/entitlement. In addition, we control for the existence of a mechanical relationship by separately considering each indicator reflecting the incentives and CG mechanisms which influence earnings management—namely cash and total compensation, ratio of cash and total compensation, compensation rank, CEO duality, role titles, shareholder rights, value of acquisitions, and number of acquisitions. We find that none of these principal components or indicators are able to consistently explain the results on their own. Accordingly, we conclude that our results are driven by the CNS as a whole rather than by its principal components or indicators individually.

Discussion and Conclusion

In this study, we examine CEO narcissism and its implications for accounting choices in S&P 500 companies for the period 1992 to 2012. Based on a set of 15 indicators measuring CEO narcissism, we hypothesize that an extreme level of narcissism is associated with ABEM. We posit that the pursuit of self-enhancement on the part of highly narcissistic CEOs has to be seen as selfish behavior, since it mainly serves to help them cope with their trait. In particular, reputational loss will lead to lower firm values and harm shareholders if opportunistic accounting choices are detected and denounced. As discussed by Healy and Wahlen (1999), we do not consider discretionary accruals as a proxy for opportunistic accounting choices or more specifically, earnings management per se. It is hardly—maybe not ever—possible to distinguish between a manager's discretion that reflects additional information about a firm's future financial performance and accounting choices that turn into earnings manipulation. Although it is a challenging task, there are two reasons why we believe that the results reflect self-serving behavior rather than the intention to provide the market with additional information about a firm's future financial performance.

First, the results provide evidence that highly narcissistic CEOs are more associated with ABEM than their less narcissistic peers. It has to be noted that the higher level of earnings-increasing accruals can be driven by the fact that narcissistic individuals are likely to be more optimistic (Hickman et al. 1996). Yet we doubt that an increase of 40% or $2041 ($482) million in absolute discretionary accruals based on mean (median) total assets of an average sample company—as illustrated in the descriptive statistics—is solely driven by a possible propensity to paint too optimistic a picture of future financial performance.

Second, an overstatement of future financial performance caused, e.g., by optimism, ought to lead mainly to income-increasing earnings management. However, the results disclose a strong relationship with earnings-increasing as well as -decreasing accounting choices. The finding relating to earnings-decreasing accounting choices indicates opportunistic behavior that is employed to prepare the ground for increasing future earnings. Supporting this view, the difference-in-difference analysis provides evidence that income-decreasing earnings management is employed at a specific point in time—namely the changeover from a weakly to a highly narcissistic CEO—which is an opportunity to make one's predecessor responsible for poor performance, or to strengthen one's position in preparation for executive compensation negotiations. To sum up, we conclude that accounting choices, both income-increasing and -decreasing, by highly narcissistic CEOs are rather driven by self-serving or opportunistic behavior than the intention to provide the market with additional information about a firm's future financial performance. Accordingly, we see a negative association between CEO narcissism and firms' earnings quality.

Our results have implications for upper echelons theory in that they reflect that the CEO's decision to manage earnings is a function of the manager's personality trait. At first glance, our results of an association between narcissistic CEOs and earnings management supplement the prior findings of Olsen et al. (2014) and Capalbo et al. (2017), which state that narcissistic CEOs tend to inflate reported earnings. Accordingly, an inflation of reported earnings supports the proposition that highly narcissistic CEOs are limited in their actions by narcissistic myopia (Lakey et al. 2008; Campbell and Miller 2011). Specifically, narcissistic individuals are found to exhibit short-sighted behavior resulting in negative long-term outcomes (Vazire and Funder 2006; Giampetro-Meyer et al. 1998). This focus on reward is defined as "narcissistic myopia [which] is a state in which any interpersonal skills possessed by the narcissist are disabled while concurrently creating heightened desire for admiration" (Baumeister and Vohs 2001, p. 208). Accordingly, narcissistic myopia ought to promote the presentation of attractive financial numbers and cause increasing earnings through accounting choices. At second glance, our results add another implication to the common understanding of prior findings. Highly narcissistic CEOs' sense of superiority makes them believe that they will perform well (Gabriel et al. 1994; Hickman et al. 1996) and convinces them to stay longer in their position. Therefore, they will more likely build reserves for the future through earnings management to polish their individual track record over their entire tenure. Therefore, narcissistic CEOs are not only affected by

narcissistic myopia but also take long-term outcomes into account as long as they serve them.

The results of this study also provide insights for CG research. It has been argued that corporate codes of conduct are negatively affected by narcissism and are thus ineffective in ensuring a desirable level of ethical behavior inside the company (Roberts 2001). Narcissism is one trait that is seen to influence companies' financial or reputational outcomes negatively (Craig and Amernic 2011; Chen 2010). More severely, narcissism within firms is unlikely to be—or may not ever be—mitigated by organizational rules or monitoring actions (Duchon and Drake 2009; Lubit 2002). This corroborates the importance of ex-ante mechanisms, such as considering an applicant's personality when appointing a new CEO. It may also be reasonable to select a highly narcissistic CEO, especially if a company needs a visionary leader to manage organizational change (Maccoby 2004). Yet if companies take a sincere, honest, and trustworthy approach to enhancing the level of ethics within their corporation, selecting a highly narcissistic CEO can be harmful (Conger 1990).

The findings in this study are subject to limitations. Most notably, it is not possible to directly observe executives' levels of narcissism and so our archival measure is only a proxy of CEO narcissism. As Barnes et al. (2015) note, "Researchers should be cautious when considering [archival data], carefully evaluating whether the measures included in the database can be said to accurately represent a given construct" (p. 1466). Specifically, personality is multifactorial and the ability to accurately reflecting personality is limited when resorting to archival data. For example, the lack of direct measurements mitigates the ability to discriminate between related but yet different personality traits such as narcissism, hubris, or overconfidence. To overcome this issue, Barnes et al. (2015) point out the advantages of involving qualitative data such as content analysis into archival research. To name a sound example, Brennan and Conroy (2013) apply manual content analysis by analyzing the narrative content of the CEO letters to shareholders in order to reveal insights about the relationship between hubris and impression management. Given our reliance on archival data, we have made great effort to mitigate the influence of other factors that could be at work. For example, we conduct a convergent validation with an existing measure of CEO narcissism and include variables which proxy for another trait such as CEO optimism, or external boundaries such as corporate governance mechanisms.

Furthermore, the results may also be driven by a mechanical relationship that we mitigate by controlling for exaggerated compensation or the existence of acquisitions. In addition, the role of CFO narcissism may also affect results, although we control for CEO fixed effects. Measuring CFO narcissism using our model with its various indicators is subject to a limitation. CFOs are not as much in the public eye as CEOs and hence important indicators, such as a photograph in the annual report, are missing. In addition, we acknowledge that the requirements for the measurement of the applied CNS are high and that the results may not be fully transferable to other countries.

Finally, we present several potential reasons why highly narcissistic CEOs may decrease earnings. Although our results provide some evidence of income-decreasing earnings management when highly narcissistic CEOs taking the helm of a firm, we see a fruitful path for future research into whether specific external factors promote income-decreasing ABEM, such as in the case of a crisis inside the firm. For example, Haggard et al. (2015) may serve as a good example—which is part of the extensive literature surrounding "big bath accounting"—to analyze whether highly narcissistic CEOs exploit the accrual reversal effect for private purposes.

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