

NARCISSISM AND STOCK RETURNS:
AN ASSET PRICING TEST

by

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Dalhousie University is located in Mi'kma'ki, the
ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

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I dedicate this work to all those who courageously gave their lives in the pursuit of freedom in Iran.

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Abstract

This study looks at how CEO narcissism, measured by pronoun use in earnings call transcripts, relates to abnormal stock returns. Previous research connects narcissism to company outcomes, but it is still unclear how financial markets respond to it. We use data from U.S. firms in COMPUSTAT and CRSP to build monthly strategies based on CEO narcissism and test their performance with standard asset pricing models, such as CAPM, and the Fama-French factor models. We find that companies with highly narcissistic CEOs have meaningful higher returns than those with non-narcissistic CEOs, with a monthly spread return of about 0.29%. However, the return differentials driven by narcissistic CEOs is not statistically significant -at the standard 5% level- after controlling for different factors. Since the abnormal return is positive and marginally economically significant, investors can benefit from the strategy where they long firms managed by highly narcissistic CEOs and short those managed by non-narcissistic ones.

Keywords: narcissism, CEO, stock return, pronoun

List of Abbreviations and Symbols Used

variable	definition
RET	monthly return
CEO_NARCISSISM	narcissism score of CEO
FSP	narcissism score based on first-person singular pronoun
Q4MZ	fourth quartile in narcissism ranking minus non-narcissistic
Q4MQ1	fourth quartile in narcissism ranking minus first quartile
REM	market risk premium
SMB	size (small minus large)
HML	value (high minus low)
UMD	momentum (up minus down)
RMW	profitability (robust minus weak)
CMA	investment (conservative minus aggressive)

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Grammarly has been used in order to edit the manuscript.

Chapter 1: Introduction

Individuals have a level of narcissism trait which cannot be categorized as a pure dark or bright trait (Carey et al, 2015). American Psychiatric Association (APA, 2024¹) refers to grandiose sense of self, admiration seeking, and a lack of empathy for others as characteristics of a narcissist. These individuals are known as visionary charismatic leaders (Brunell et al., 2008). Narcissistic individuals can be recognized by a need for admiration and by their tendency to display their superiority over peers (Chatterjee & Hambrick, 2007). These people focus on their authority, accomplishments, and knowledge superiority in their conversations (Iivonen & Moisander, 2015). Anglin et al. (2018) define narcissistic rhetoric as a linguistic style characterized by the emphasis of one's accomplishments and authority, as well as justifications for entitlement. According to the Upper Echelon theory, the collective characteristics of the top management team (TMT) provide a more accurate explanatory framework for organizational outcomes than focusing on individual leaders. Since this theory indicates that the personal values, experiences, and personalities of top executives have an impact on their decisions, the firm's strategy is linked to the CEO's biases and perspectives (Hambrick & Mason, 1984).

Scholars have been studying the impact of top executive narcissism in different areas. In management studies, leadership is among the earliest fields (De Vries & Miller, 1985; Khoo & Burch, 2008; Hogan & Kaiser, 2005; and Chatterjee & Hambrick, 2007). Corporate social responsibility (CSR) has been in the spotlight recently (Dabbebi et al., 2022; Lassoued & Khanchel, 2023; Martínez-Ferrero et al., 2024; and Awuah et al., 2024).

¹ American Psychiatric Association (APA): <https://www.psychiatry.org/news-room/apa-blogs/what-is-narcissistic-personality-disorder>

Firm performance is also one of the major areas that is shown to be correlated with CEO narcissism (Shirokova et al., 2024; Wales et al., 2013; Aabo & Ronnow, 2024; Lin et al., 2022; Chatterjee & Hambrick, 2007; Reina et al., 2014; and Olsen et al., 2014). Accounting is another area where scholars have tried to reveal a link to narcissism. Narcissistic CEOs have been shown to be engaged in earnings management (Abdel-Meguid et al., 2021; Gracia-Meca et al., 2021; Capalbo et al., 2018; Cruz et al., 2024; Olsen & Stekelberg, 2016; Kalbuana et al., 2023; Kalbuana et al., 2023; Azevedo et al., 2024; Hayes & Reckers, 2020; and Putra & Setiawan, 2024). CEOs with narcissistic characteristics have been studied by finance scholars, where they have shown to be taking forms of risks such as growing internationally, mergers and acquisitions, and opportunistic insider trading (Nie et al., 2022; Oesterle et al., 2016; Buyl et al., 2019; Bajo et al., 2022; Jiang et al., 2025; Zhang et al., 2017; Wales et al., 2013; Engelen et al., 2016; Huang et al., 2020; and Yang et al., 2023). There are studies indicating no significant correlation between top executive narcissism and the firms' outcomes (Aabo et al., 2024). Although, some say that narcissistic CEOs impose some costs on the firms, such as higher chance of facing legal actions (Rijsenbilt & Commandeur, 2013), others believe that such narcissistic characteristics in CEOs can benefit the firm in various forms, as Oesterle et al. (2016) shows the positive association of CEO narcissism with the expansion of a firm's international sales.

Even though many studies are linking narcissism to the firm outcomes, there is no direct evidence -to the best of my knowledge- on the link of narcissism and expected returns. Expected stock returns remain a primary objective of investors and play a central role in the evaluation of investment opportunities (Attig & Sy, 2023). In this study, we investigate

whether firms with different levels of CEO narcissism demonstrate abnormal returns. We use the pronoun usage as our approach to measure CEO narcissism. By collecting earnings calls transcripts from Refinitiv, annual firm data from COMPUSTAT, and monthly returns from CRSP, we demonstrate that there is an abnormal return in firms managed by narcissistic CEOs. However, the significance of abnormal return is lower after controlling for different factors.

Chapter 2: Literature review and hypothesis development

Narcissism definition

The term narcissism was first used in psychology by Ellis (1898). The title derives from Narcissus, a young man in Greek mythology who died after falling in love with his own reflection in a pool. Half a century later, Freud (1957) described various traits of narcissism, including self-admiration, self-aggrandizement, and seeing other people not as individuals, but as part of one's own identity. According to Raskin and Terry (1988), narcissism has received considerable interest from scholars. They published over 1,000 articles and books by 1980, mainly focusing on the clinical aspects. During this time, the narcissism literature entered a new phase after the introduction of a personality dimension in which each individual receives a score based on the narcissism measurement (Emmons, 1987; Raskin & Terry, 1988).

The American Psychiatric Association (APA, 2024²) defines narcissistic personality disorder as grandiosity, admiration-seeking, and a lack of empathy. Scholars subcategorize narcissism into grandiose and vulnerable types (Wink, 1991; Pincus & Lukowitsky, 2010). Despite their differences, both share core characteristics such as entitlement, antagonism, and a lack of agreeableness (Miller et al., 2011; 2018)

Raskin and Terry (1988) define grandiose narcissism with aggression, self-assuredness, self-enhancement, dominance, and exhibitionism. On the other hand, individuals with vulnerable narcissism typically exhibit low self-esteem, along with pervasive feelings of

² American Psychiatric Association (APA): <https://www.psychiatry.org/news-room/apa-blogs/what-is-narcissistic-personality-disorder>

inadequacy and incompetence (Miller et al., 2011). The complexity of the relationship between grandiose narcissism and self-esteem is considerable (Zeigler-Hill et al., 2008). The difference between grandiose and vulnerable narcissism originates from internal motivations. Grandiose narcissism drives the attention-seeking and arrogance (De Vries and Miller, 1985) as well as dominance in an individual's personality (Miller & Campbell, 2008).

It is crucial to differentiate executive narcissism from other concepts involving positive self-regard, such as self-esteem, core self-evaluation, and hubris. Scholars define self-esteem as an individual's self-acceptance and self-respect (Harter, 1990; Baumeister et al., 1996). This trait and the self-admiration aspect of narcissism have a tight relationship (Emmons, 1987). Researchers should note that even though narcissists have high self-esteem, their personality is fragile and highly sensitive to feedback (Raskin et al., 1991). Kernis and Sun (1994) highlight this as the continuous need for inflated self-image reinforcement. Scholars consider narcissism to be a typical personality trait that every individual carries a level of it, and it should not be treated as entirely healthy or unhealthy (Campbell & Foster, 2007).

The importance of top management roles in the firms' achievements cannot be neglected (Hambrick & Mason, 1984). The authors introduce two main ideas in the upper echelons theory, which have served as the basis for many organizational studies. First, the characteristics of the top management team (TMT) are a more powerful tool for explaining organizational outcomes than those of top managers alone. Leading an organization is not a simple task. This activity cannot result in a desirable outcome without the collective capabilities and interactions among the TMT (Hambrick & Mason, 1984). Second, scholars

can use the executives' characteristics as a valid proxy for their mindset, but one should note the incompleteness and imprecision.

Narcissism measurement

There are various methods introduced in the literature to measure narcissism. Raskin and Hall (1979) designed the Narcissistic Personality Inventory (NPI), which consists of a 40-item, forced-choice questionnaire to measure the differences in individuals' narcissistic personality traits. This measure refers to the Diagnostic and Statistical Manual (DSM-III) as the source of the narcissistic personality disorder. According to the DSM-III, (i) a sense of self-importance, (ii) a cognitive preoccupation with fantasies involving themes of boundless success, absolute power, aesthetic perfection, or idealized love, (iii) attention-seeking, (iv) entitlement, and (v) interpersonal exploitiveness (APA³, 1980). By studying the NPI, Emmons (1987) introduced four factors: Exploitiveness/Entitlement, Leadership/Authority, Superiority/Arrogance, and Self-Absorption/Self-Admiration.

According to Cychota and Harrison (2006), top executives, and specifically CEOs, show little interest in participating in survey research. This low response rate and biased answers to questions about personal traits are inevitable. Despite being psychometrically robust, it is criticized for its lengthy nature. To address this issue, Ames et al. (2006) introduced a shorter version of NPI-40. This 16-item measure (NPI-16) includes 16 paired statements, and the attendee must choose one of the choices. Wales et al. (2013) utilized the NPI-16 to survey the CEOs of high-technology manufacturing firms. Reina et al. (2014)

³ American Psychiatric Association

chose the computer software and hardware industry in the U.S. and collected data from 97 CEOs and their CFOs from NPI-16 during three conferences. Some scholars validate their innovation in this field by this method. Ham et al. (2017) and Holtzman et al. (2010) validated their study results by recruiting volunteers.

As discussed by Cychota and Harrison (2006), convincing top managers to complete a self-report questionnaire is no easy task. Oh et al. (2011) showed that third-party ratings are proven to exhibit higher validity in personality traits in comparison to self-reports. Since third-party raters observe the targets' personality traits through "clearer lenses" (Connelly and Hulsheger, 2012), the results are less inflated than self-reports (Van Iddekinge et al., 2005). Resick et al. (2009) identified eight adjectives ("Arrogant", "Assertive", "Boastful", "Conceited", "Egotistical", "Self-centered", "Show-off", and "Temperamental") to measure narcissism and asked third-party raters to assess the CEOs based on their biographies with the help of these adjectives. Petrenko et al. (2016) constructed a video-based measurement of CEO characteristics. They used public videos of CEOs and recruited PhD candidates in psychology with relevant experience in personality assessment to rate the CEOs. Cragun et al. (2020) highlight the low chances of this approach being adopted widely by scholars since accessing a group of qualified raters is challenging.

Collecting validated self-report data from CEOs has been a challenge, dissuading scholars from studying organizational topics. This constraint has prompted the development of alternative methods like unobtrusive narcissism indices (Chatterjee & Hambrick, 2007). In their seminal work, Webb et al. (1966) proposed unobtrusive measures as a robust methodological alternative for investigating psychological constructs.

By examining physical traces, documentary sources, and observational data, researchers can circumvent the biases introduced by reactivity and researcher expectations. Unobtrusive measures bypass the methodological limitations of reactivity, demand characteristics, and researcher expectancy, which frequently undermine the validity of more intrusive research approaches. The application of these measures is guided by two fundamental tenets: first, the researcher must refrain from dismissing any data, and second, analytical priority should be given to the examination of variance over the calculation of central tendency (Webb & Weick, 1979). Among the unobtrusive measurements, Chatterjee and Hambrick (2007) pioneered in designing a well-cited index. Two principal criteria define the narcissism indicators. First, the indicators have to be under the direct power of the CEOs, ensuring they reflect their personal agency rather than being predominantly determined by institutional or external pressures. Second, each indicator is expected to correspond to at least one of the dimensions of narcissistic personality. They established their work on four facets of narcissistic personality identified by Emmons (1987). The five indicators that Chatterjee & Hambrick, (2007) used to construct their CEO narcissism index are as follows: (1) the prominence of the CEO's photo in the firm's annual report; (2) the CEO's prominence in the company's press releases; (3) the use of first-person singular pronouns in the CEO's interviews; (4) the CEO's cash compensation relative to the second-highest paid executive in the company; and (5) the CEO's non-cash compensation relative to the second-highest paid executive in the company. Some studies using this methodology include: Buyl et al. (2019) studied 92 U.S. commercial banks between 2006 and 2014, Engelen et al. (2016) chose the high-tech SIC code list as they are not strictly restricted by regulations and measured the CEO narcissism, and Patel and Cooper (2014)

took a sample of 392 CEOs from U.S. manufacturing firms. Tosi et al. (2000) reveal that firm size could explain as much as 40% of the CEO pay. Therefore, CEO compensation, which constructs two of the components of this index, is not under the direct power of the CEO. Some scholars have tried to introduce different variations of this index by adding more factors. While such factors may have added to the accuracy of the index, the limitations in accessing the data prevent others from exploiting this method (Cragun et al., 2020). Rijssenbilt and Commandeur (2013) introduced a 15-proxy index based on Emmons' (1987) four narcissism subcategories: (1) CEO compensation; (2) CEO exposure; (3) CEO power; and (4) CEO acquisition behavior.

Raskin and Shaw's (1988) study shows that first-person singular pronouns are used more and first-person plural pronouns are used less in individuals with higher narcissism scores. They tested their hypothesis on spontaneous speech, rather than written scripts. In their study, Raskin and Shaw (1988) claim that using the first-person pronoun is a useful proxy to measure narcissism since pronouns are a valuable means of communication. Individuals use pronouns to distinguish themselves from others. Therefore, narcissists use first-person singular pronouns to satisfy their attention-seeking need. Furthermore, they provide the robustness of their findings against various factors. First, the correlation between first-person pronoun usage and scores from NPI is robust to gender, age, and the speech content. Second, the correlation is still significant after controlling for other personality traits such as extraversion, neuroticism, psychoticism, and loss of control. Finally, the correlation between NPI scores and personal pronoun usage is found only in first-person pronoun usage and not in second- or third-person pronoun usage (Raskin & Shaw, 1988). Campbell et al. (2004) define narcissism as "the degree to which an individual has an inflated sense

of self and is preoccupied with having that self-view continuously reinforced". By analyzing the use of first-person singular pronouns, scholars can obtain information on the way narcissists communicate with others and also how such individuals draw attention to themselves (DeWall et al., 2011). Earnings conference call transcripts are publicly available. During such conference calls, after the presentation, the Q&A session begins, where the CEO or CFO answers the analysts' questions. Malhotra et al. (2018) argue that since this session is not scripted, there is a higher probability of true personality being revealed. Therefore, these transcripts are a proper representation of how top managers behave and talk. Top managers try to interact heavily with participants and analysts during these calls (Ham et al., 2025).

Aktas et al. (2016) measured the narcissism of acquiring and the target company's CEO by taking a sample of 1,782 interviews of 146 M&A deals. In a series of narcissism studies, Aabo et al. (2021) focused on U.K. firms, while Aabo and Ronnow (2024), Aabo et al. (2024), and Aabo et al. (2022) used non-financial and non-utility S&P 1500 firms in the U.S. and measured CEO narcissism by analyzing the Q&A sessions of quarterly conference calls. In another study, Kim and Anderson (2024) took data from the S&P 1500 with publicly traded debt. Jiang et al. (2025) studied CEOs' insider trading records and measured their narcissism via pronoun usage through the earnings calls transcripts. In a different field, Yang et al. (2018) measured narcissism through announcements of environmental policies in the U.S. and Australia over the period 1989–2015. Capalbo et al. (2018) applied this method using the Bloomberg distributed transcripts of earnings releases. O'Reilly et al. (2014) used this methodology as a supplement to their main narcissism measurement. By collecting CEO's letters to shareholders and quarterly

earnings calls transcripts, they realized that the results from CEO narcissism ratings as their main measurement approach are significantly correlated with the pronoun usage results.

Psychologists have shown the link between larger signatures and the narcissistic characteristics of an individual since the 1970s (Snyder & Fromkin, 1977). Ham et al (2017) and Ham et al (2018) exploited this finding and introduced the signature size - specifically, the area-per-letter of a notarized signature- as the narcissism measurement proxy. Ham et al (2017) validated this hypothesis using a laboratory experiment and confirmed the link between larger signatures and Higher scores in NPI-40. Scholars have exploited this approach, where the area (or pixel) per letter is defined as a proxy to measure narcissism (Xiang & Song, 2021; Hou et al., 2025; Li et al., 2025). Illegibility of signatures affects the data size, which makes this method less appropriate.

Junge et al. (2025) focused on the gap where most organizational narcissism literature discusses the CEOs (Chatterjee & Hambrick, 2007); Petrenko et al., 2016) and CFOs (Ham et al., 2017; Ham et al., 2018), but other top management team (TMT) members have been neglected. The prevailing unobtrusive methods are not suitable for TMT members due to a lack of publicly available data (Junge et al., 2025). Therefore, they posit that because narcissists are driven to demonstrate their superiority publicly, these tendencies will manifest in their use of social media. Focusing on the professional network LinkedIn, they constructed a narcissism index for TMT members derived from five profile elements: the quantity of personal pictures, the word quantity of the "About" section, and the counts of listed professional experiences, skills, and credentials (including publications, patents, awards, and certificates).

Executive narcissism and its effect on firms

According to the upper echelons theory (Hambrick & Mason, 1984), many studies have examined CEO narcissism and its impact on various aspects of the firm. Therefore, the most important studies are discussed in this chapter.

Firm performance

Even though many studies have focused on narcissism and firm performance, the existing literature has produced mixed results. Studies by Chatterjee and Hambrick (2007), Reina et al. (2014), Olsen et al. (2014), and Lin et al (2022) found that CEO narcissism is positively linked to performance measured by return on assets (ROA). Wales et al. (2013) also showed the positive correlation between narcissism and firm performance variance. By studying small businesses, Shirokova et al. (2024) found a positive relation between narcissism and new venture performance. Patel and Cooper (2014) focused on the firm performance in different economic conditions and found the amplified effect of such narcissistic CEOs in both poor and booming economies. Even though such CEOs cause a steeper decline in performance during an economic crisis, they can create stronger recoveries through bold, aggressive strategic actions when the economy is growing. Lin et al. (2022) compared the financial benefits of corporate social performance and realized that a CEO's hubris is more powerful than narcissism. Based on the meta-analysis (Cragun et al., 2019), the overall relationship between CEO narcissism and a broad aggregation of firm performance measures (including operating profit, total shareholder returns, and

earnings per share) is positive. However, this relationship is small and inconsistent, indicating the presence of other influencing factors.

Despite most studies linking CEO narcissism to firm performance, Aabo et al. (2024) found that such a link doesn't exist, but the benefits of this CEO trait could be observed under high uncertainty. In another similar study, Aabo and Ronnow (2024) highlighted the positive moderating role of gender in the relationship between CEO narcissism and firm performance. In both studies, they use ROA and Tobin's Q as firm performance representatives.

The studies are not limited to U.S. firms. By studying companies listed on the growth enterprise market (GEM) from 2012 to 2020, Shan et al. (2023) showed a positive correlation between CEO narcissism and firm performance measured by ROE. Guedes (2017) collected 968 responses from Portuguese firms and noticed the positive correlation between managers with high levels of narcissism measured by NPI-16 and self-reported performance. Wu et al. (2022) studied Chinese firms using Guedes' (2017) approach and realized that narcissistic admiration and rivalry have opposite effects on firm performance.

On the other hand, Ham et al. (2018) show a negative correlation between CEO narcissism and firm performance. They highlight that narcissistic CEOs face lower profitability and cash flows due to overinvestment in high-profile areas like R&D and acquisitions. Despite this poorer performance, they receive higher compensation than their peers, and these findings hold even after controlling for CEO overconfidence. Zaher and Marquez-Illescas (2024) studied the effect of CEO narcissism in the U.S. on a firm's cash conversion cycle and highlighted the negative correlation. Kim and Anderson (2024) show that CEO narcissism leads to higher corporate borrowing costs by increasing bond yield

premiums. Park et al. (2025) revealed the positive correlation between CEOs' narcissism and a higher amount of dividend payment.

Earnings management

CEO traits are believed to affect firms. Therefore, scholars have dedicated a considerable portion of their work to earnings management. Ham et al (2017) reveal that narcissistic CFOs are linked to increased earnings manipulation, delayed loss reporting, deficient internal controls, and a greater frequency of financial restatements.

A study by Abdel-Meguid et al. (2021) shows a higher possibility of excluding recurring expenses from non-GAAP reports by narcissistic CEOs in order to present a higher and more persistent profit, which would result in boosting their own image and the firm's perceived performance.

In a study run by Capalbo et al. (2018), it is highlighted that CEO characteristics affect the accounting methodology preferences. To be more specific, CEO narcissism has a positive impact on the engagement in accruals management to present a more favorable financial picture. In a study of Brazilian firms, Cruz et al. (2024) reveal that narcissistic CEOs are more likely to manage earnings and manipulate accounting figures to satisfy their need for admiration.

Tax management has been among the methods that executives may exploit to manipulate net income. Gracia-Meca et al. (2021) found that narcissistic CEOs are more likely to engage in tax avoidance to boost short-term results and their own image, but this effect is reduced by larger and gender-diverse audit committees that provide better oversight. Olsen and Stekelberg (2016) showed that CEO narcissism positively affects tax

sheltering, leading to more aggressive tax evasion policies. García-Meca et al. (2021) showed that CEO narcissism positively affects tax avoidance, leading to more aggressive tax evasion policies. On the contrary, Kalbuana et al. (2023) studied firms in Indonesia and proved that narcissistic CEOs engage in less tax avoidance. They attribute this finding to the fact that these CEOs are more concerned about their public image than short-term financial gains.

Azevedo et al. (2024) discussed the positive effect of CEO narcissism on the accrual and real earnings management measured through abnormal cash flows, costs, and expenses. Hayes and Reckers (2020) conclude that the supervisor's narcissism positively affects accounting estimates. Putra and Setiawan (2024) showed that CEO narcissism positively affects accrual and real earnings management. The findings suggest that CEOs with narcissistic traits are more prone to engage in accrual and real earnings management. Those CEOs with financial or accounting backgrounds are more likely to engage in accrual-based earnings management over real earnings management. Buchholz et al. (2020) study shows that CEO narcissism positively affects income-increasing earnings management, but negatively affects income-decreasing earnings management. On the other hand, Olsen et al. (2014) realized that the CEO narcissism does not affect accrual earnings management or financial restatement. They discussed that the CEO narcissism positively affects real earnings management measured through abnormal cash flows and abnormal costs, but not through abnormal expenses. Marquez-Illescas et al. (2019) showed that the disclosures made by narcissistic CEOs are biased upward, but CEO's age has a moderating role on this bias. Interestingly, they realized that the market presents a lower level of sensitivity to the tone of earnings announcements by narcissistic CEOs. Lin et al. (2020)

showed a higher chance of earnings management by narcissistic CEOs to fulfill positive earnings thresholds and analysts' forecasts. Martibez-Ferrero et al (2024) showed that stakeholders' positive opinion and reputation prevent CEOs from engaging in irresponsible environmental, social, and governance (ESG) activities.

Agnihotri and Bhattacharya (2021) focused on the positive correlation between CEO narcissism and short-term managerial decision-making. This influence is partially mediated through a reduction in market orientation, meaning narcissistic CEOs tend to lower market-oriented practices, which in turn fosters myopic management. By collecting the product recall data in the consumer-packaged goods industry, Byun and Al-Shammari (2021) find that a CEO's narcissism influences product recalls, but this effect is contingent on their age and type of power. Specifically, younger narcissistic CEOs are more likely to have product recalls than older ones.

Risk-taking and growth

Narcissistic CEOs show more interest in taking advantage of the market. Results from Bajo et al.'s (2022) study show a more selective hedging practice by narcissistic CEOs. These CEOs scale back this practice more aggressively in the case of a sharp industry collapse. Jiang et al. (2025) indicate that CEOs with higher levels of narcissism are more prone to engaging in opportunistic insider trading. Nie et al. (2022) find that CEO narcissism has a direct negative correlation with exploitative innovation (incremental improvements). Oesterle et al. (2016) find that CEO narcissism is positively associated with the expansion of a firm's international sales. Zhang et al. (2017) suggest that when a CEO's humility is tempered with narcissism, it creates a socially charismatic leader capable

of building an innovative culture and achieving tangible innovative outcomes. A study by Wales et al (2013) shows that firms with narcissistic CEOs are more entrepreneurial. Buyl et al (2019) showed that CEO narcissism increases corporate risk-taking in U.S. commercial banks, especially when incentivized by stock options, but strong board oversight can eliminate this effect. Research on small, young tech firms executed by Wales et al. (2013) reveals that narcissistic CEOs have a "bright" side: they foster a more entrepreneurial company culture. However, this has a "dark" side, as this entrepreneurial drive is a key reason their companies experience more extreme performance ups and downs. Engelen et al. (2016) found that CEO narcissism negatively moderates the relationship between entrepreneurial orientation and firm performance, but the direction of CEO narcissism's moderation depends on the level of market concentration. Huang et al. (2020) concluded that CEO narcissism positively affects the growth of the degree of internationalization. Yang et al. (2023) found that CEO narcissism positively affects cross-border growth and cross-functional growth.

Aabo et al. (2021) studied mergers and acquisitions and realized that the mergers and acquisitions expenditures and the size of the deal are positively correlated with CEO narcissism, while the frequency of the deal is negatively correlated. It is worth noting that the market shows less interest in the deals announced by firms with narcissistic CEOs. In their study, Aktas et al. (2016) show that more narcissistic acquirer CEOs are more likely to initiate deals and complete the private takeover phase faster. However, acquirer announcement returns are lower when the target CEO is more narcissistic.

Leadership

The focus on leadership and narcissism has a long history. Freud (1957) is among the first studies to show this link between leadership and narcissism. De Vries and Miller (1985) suggested that most leaders have a narcissistic trait. The narcissistic leaders live in a paradox where “they cannot reliably depend on anyone’s love or loyalty” and need others to confirm their sense of “power and superiority”. The study further highlighted that narcissists are characterized by a tendency to exploit others. The narcissists are usually admired for their passion and innovation, but they have been blamed for their lack of empathy and dislike of criticism (Hogan & Kaiser, 2005). Charisma and social skills are bold in narcissistic leaders (Khoo & Burch, 2008), they are willing to take risks to achieve their goals (Chatterjee & Hambrick, 2007), and they are capable of exploiting others in pursuing their ambitions (Khoo & Burch, 2008).

Legal actions

Studies have shown that narcissistic CEOs show different behavior towards activities that could raise the possibility of facing legal actions compared to other executives. Rijsenbilt and Commandeur (2013) show that a CEO's narcissistic need for constant admiration leads them to pursue high-profile, bold strategies that risk severe damage to the company. O’Reilly et al. (2018) demonstrated that due to overconfidence in winning lawsuits, the narcissistic CEOs expose their firms to higher legal risks and show lower sensitivity to litigation costs.

Corporate Social Responsibility (CSR)

The studies focusing on the CSR relation with CEO narcissism have led to mixed results. As an example, Dabbebi et al. (2022) and Lassoued and Khanchel (2023) demonstrate the positive effect of CEO narcissism on both social and governance disclosures. Lassoued and Khanchel (2023) also addressed the positive effect of CEO narcissism on ESG disclosures. There are amplifying factors such as CEO duality (Lassoued & Khanchel, 2023; Martínez-Ferrero et al., 2024) and the diversity in board gender (Lassoued & Khanchel, 2023), while this effect is weakened by CEO age (Awuah et al., 2024). In contrast, Kind et al. (2023) found no such significant effect.

Hypothesis development

Even though many studies, as mentioned above, have focused on the impact of a narcissistic CEO on the firm in different aspects such as performance, leadership, earnings management, CSR, legal actions, and risk-taking and growth, no published study (to the knowledge of the author) has focused on the perception of investors of CEO narcissism. While stock returns have been extensively examined, the impact of narcissistic CEOs on the generation of abnormal returns remains underexplored.

Origins of expected returns and introducing systematic factors that could be linked to cross-sectional differences in asset performance have always been at the center of any investor's attention. To be more specific, market participants (analysts, investors, executives, etc.) can exploit risk exposures in decision-making, which could provide a benchmark for evaluating asset pricing models.

Traditional asset pricing frameworks, such as the Capital Asset Pricing Model (CAPM) (Sharpe, 1964; Lintner, 1965) and multifactor specifications like the Fama–French three- and five- factor models (Fama & French, 1993, 2015), introduce observable firm characteristics including market, size, value, investment, and profitability as the sources of risk that drive expected returns. However, substantial empirical evidence demonstrates that these models do not fully explain cross-sectional return variation (Chen & Zhang, 2011; Hou et al., 2015).

Considering the inability of asset pricing models to fully define the stock returns and witnessing the emerging literature emphasizing the role of intangible assets (Gu & Lev, 2017) and psychological traits in shaping expected returns, we are motivated to pursue narcissism in this area.

Research in behavioral finance demonstrates that managerial personality traits significantly influence firm decisions, market perceptions, and subsequent outcomes (Hambrick & Mason, 1984). The collective attributes of the top management team (TMT) offer a more comprehensive explanatory framework for organizational outcomes than analyses centered on individual leaders. This theoretical perspective suggests that the personal values, experiences, and personalities of top executives shape their decision-making characteristics, thereby linking firm strategy to the CEO’s biases and perspectives. Consequently, scholars have systematically measured these characteristics and their effects on firm outcomes (Hambrick & Mason, 1984).

H1: There is no relationship between narcissism and abnormal return.

Chapter 3: Methodology

Narcissism measurement

Top managers try to interact heavily with participants and analysts during earnings conference calls (Ham et al., 2025). It is assumed that the CEO, CFO, and the investor relations officer are present during these calls. After the presentation, the Q&A session begins, where the CEO or CFO answer the analysts' questions. The focus of this study is on the CEO narcissism. As a result, the speech of the CEO during the Q&A session would be the source of data.

To measure the narcissism score, we calculated the frequency of first-person singular pronouns (I, my, me, mine, myself) and divided by that of all other pronouns (we, us, our, ours, ourselves, you, your, yours, yourself, yourselves, they, them, their, theirs, themselves, he, him, his, she, her, hers, it, its, and itself) that a CEO used in his speech during the Q&A section of the earnings conference calls (Eq(1)).

$$FSP = \frac{\sum \text{first - person singular pronouns (I, me, my, mine, myself)}}{\sum \text{all pronouns excluding first - person singular pronouns}} \quad Eq(1)$$

Kim and Anderson (2024) used the first-person singular pronouns divided by all first-person pronouns extracted from Q&A, presentation, and total conference calls transcripts and didn't report a meaningful difference among results, as all three methods produced a significant outcome. On the other hand, Park et al. (2025) and Leventis et al. (2025) used the Q&A and the entire session to measure narcissism. Their study shows that using the entire transcript to measure narcissism via pronoun usage resulted in a slightly smaller and

less significant coefficient. Considering the mixed results outlined by these three studies and following the argument by Malhotra et al. (2018) that the Q&A session is not scripted and is a more valuable source of the CEO's personality traits, we use the Q&A sessions.

People who use comparative amounts of "I" pronouns versus "we" and other plural ones, according to Raskin and Shaw (1988), happen to score higher on the Narcissistic Personality Inventory (NPI). It is important to note that this variable is a continuous variable ranging from 0 (extremely non-narcissistic) to 1 (extremely narcissistic), per construction.

Park et al. (2025). Aabo et al (2022) and Aabo et al (2024) mimic Green et al. (2019) and Harrison et al. (2019) and restricted observations to CEOs who participated in at least three conference calls and spoke a minimum of 1000 words per call. In line with Chatterjee and Hambrick (2007), Leventis et al. (2025) require that a CEO speak on at least two conference calls for the firm to guarantee measurement reliability. Kim and Anderson (2024) and Aabo and Ronnow (2024) also needed CEOs who speak a minimum of 1000 words per call and hold the position for the whole year. Some scholars have used all available transcripts (Aktas et al, 2016). Bajo et al. (2022) used the same approach since the combined requirement of earnings call transcripts and data on compensation would have dramatically reduced by 50% the size of their sample. This study focuses quarterly earnings calls; therefore, we use all available earnings conference calls related to the 10-Q SEC filing where the CEO is present and speaks during the Q&A session.

Data

We construct our sample by integrating several comprehensive data sources. First, we collected the quarterly earnings calls (EC) transcripts of all U.S. publicly listed firms from Refinitiv (formerly Thomson Reuters), which provides detailed transcripts of management–analyst interactions during those sessions. The data include quarterly earnings calls. These transcripts constitute the primary textual data for our analysis.

Figure 1 presents the number of firms with available earnings calls. Even though we had access to this data from late 2001, we employed the transcripts starting in 2003 because coverage improves and the sample size increases substantially from 2002 to 2003.

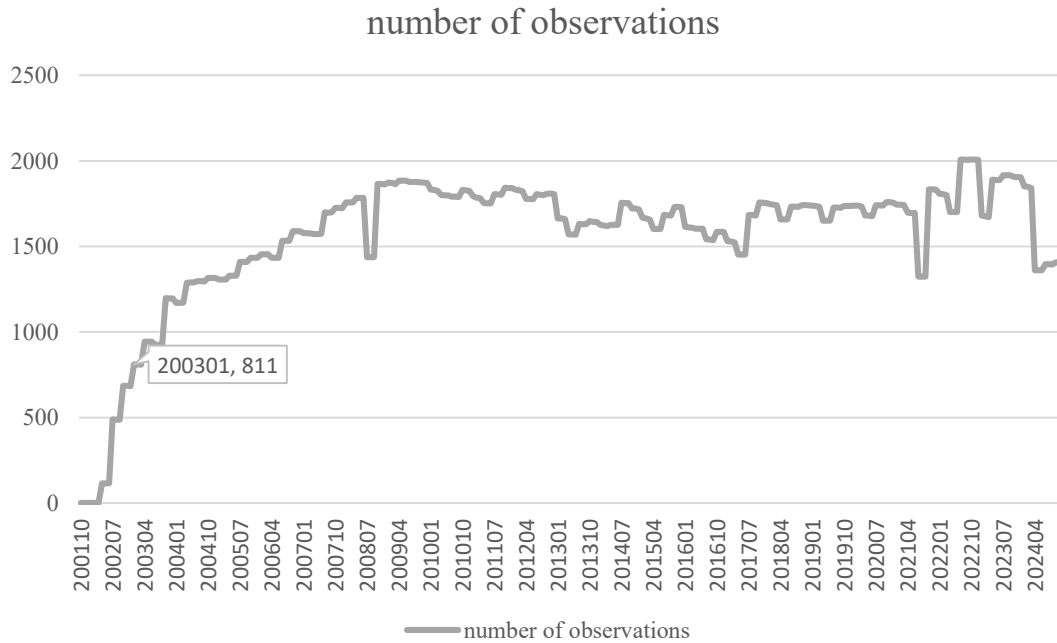


Figure 1- number of observations

Our primary construct—executive narcissism—is measured using linguistic features extracted from earnings call transcripts. Consistent with a well-established literature in psychology and increasingly in finance and accounting, we proxy narcissism using first-person singular pronoun usage, which captures self-focus, self-enhancement, and dominance in communication (e.g., Pennebaker et al., 2003; Raskin & Shaw, 1988; Chatterjee & Hambrick, 2007; Craig & Amernic, 2011; Jiang et al., 2025; Aktas et al., 2016; Aabo et al., 2024; Kim & Anderson, 2024; Aabo & Ronnow, 2024; Capalbo et al., 2018).

Our analysis focuses on the Question-and-Answer (Q&A) section of earnings calls. Unlike prepared remarks, which are scripted and often subject to legal and investor-relations oversight, the Q&A segment is largely unscripted and interactive (Malhotra et al., 2018). Executives must respond spontaneously to analyst questions, limiting the use of boilerplate language and reducing the scope for extensive impression management. As a result, the Q&A setting is particularly well-suited for identifying stable personality traits, such as narcissism, that manifest through natural language use. CFOs play a remarkable role in conveying financial forecasts and performance measures to analysts during these sessions (Lu et al., 2023) and the CFOs are the most likely executives to have private interactions with market analysts (Brown et al., 2015). However, our data shows that CFOs talk less than CEOs, and therefore, limits the transcripts as the basis for the narcissism measurement.

For each earnings call, we identify executive speakers (CEO and CFO) using Refinitiv’s speaker tags. We then compute the frequency of first-person singular pronouns (e.g., I, me, my, mine) used by each executive during the Q&A section. To account for variation in

verbosity across executives and calls, we scale pronoun counts by the total number of other pronouns spoken by the executive. This normalization yields a proportion-based measure of self-referential language that is comparable across firm-years and individuals. In the next step, we extract the SMB, HML, RMW, CMA, and UMD⁴ factors from Kenneth French website.

We merge the EC data with COMPUSTAT and apply standard sample-selection filters to enhance comparability across firms. Specifically, we exclude firms classified as financial institutions (SIC codes 6000–6999), utilities (SIC codes 4900–4999), and non-operating entities (SIC codes 9000–9999), as these firms operate under distinct regulatory regimes and exhibit fundamentally different financial structures. The firms with negative book-to-market ratio and firms with extreme returns (2500% and -95%) are also excluded from sample. Consistent with prior literature (e.g., Jensen et al., 2023), we retain only common equity securities identified by COMPUSTAT (annual file) as the firm’s primary security. Next, we retain firms with available monthly stock return data from CRSP and for which Fama–French generated factor returns are available from previous step

Table 1 provides the descriptive statistics of the merged data including the monthly return and narcissism scores.

⁴ SMB (small minus big), HML (high minus low book to market ratio), RMW (robust minus weak profitability), CMA (conservative minus aggressive investment), and UMD (momentum)

Table 1-Descriptive statistics for the variables used winsorized at 1% and 99%

Variable	Number of observations	Mean	Std Dev	t-Value	Minimum	1st percentile	Lower Quartile	Median	Upper Quartile	99th Percentile	Maximum
RET	431,454	0.916***	14.236	42.260	-74.444	-34.565	-6.561	0.550	7.631	43.499	148.659
CEO_NARCISSISM	413,972	0.010***	0.015	419.080	0.000	0.000	0.000	0.003	0.014	0.071	0.111

RET: monthly return from CRSP, CEO_NARCISSISM: CEO narcissism score,
Significance of values: * p< 0.10, ** p< 0.05, and *** p< 0.01

Results

After having the data prepared, we have firms divided into two groups: zero narcissism group and the rest with non-zero narcissism scores. The latter is also categorized into four quartiles. Table 2 presents the descriptive information of these portfolios monthly return.

Table 2- Monthly return of the portfolios generated based on CEO narcissism score

Variable	Number of observations	Mean	t-Value	Median	Minimum	Maximum
RET (non-narcissistic CEOs)	264	1.006***	3.5	1.293	-19.575	15.721
RET (first quartile of CEO narcissism score)	264	1.153***	3.98	1.301	-18.683	16.047
RET (second quartile of CEO narcissism score)	264	0.888***	2.86	1.162	-19.634	19.8
RET (third quartile of CEO narcissism score)	264	0.973***	3.07	1.453	-20.29	17.075
RET (fourth quartile of CEO narcissism score)	264	1.293***	3.86	1.464	-22.948	20.091

Significance of values: * p< 0.10, ** p< 0.05, and *** p< 0.01

Next, we define two investment strategies: Q4MZ and Q4MQ1. Q4MZ strategy is essentially constructed by buying firms subcategorized as most narcissistic executives (those in the fourth quartile) and shorting those that are managed by executives with zero-narcissism. Q4MQ1 stands for the strategy of buying firms in the last narcissism quartile portfolio and selling those in the first quartile. Q4MZRET demonstrates the strategy monthly return. Table 3 presents the descriptive statistics of the two strategies. The t-value of the Q4MZRET is significant at 5% significance level while the Q4MQ1RET is not. This result demonstrates that narcissistic CEOs outperform non-narcissistic CEOs in terms of monthly return.

Table 3- Descriptive statistics of strategies (Q4MZ and Q4MQ1)

Variable	Number of observations	Mean	t-Value	Median	Minimum	Maximum
Q4MZRET	264	0.286**	1.980	0.400	-10.180	7.681
Q4MQ1RET	264	0.139	0.870	0.101	-10.298	9.367

Significance of values: * p< 0.10, ** p< 0.05, and *** p< 0.01

Proceeding to the next step, we test CAPM (Sharpe, 1964; Lintner, 1965) and Fama-French models (Fama & French, 1993, 2015, 2018) and the 4 factor model by Carhart (1997) in order to investigate the abnormal return in the Q4MZ strategy. Since the Q4MZ strategy is the only one that proved to have a return significantly difference from zero, the asset pricing tests are run on this portfolio. The regression model in CAPM is formulated as *Eq(2)*:

$$Q4MZRET_t = \alpha + \beta_1 REM_t + \varepsilon_t \quad Eq(2)$$

Adding the market risk premium reduces the t-value to 1.4 which means that the abnormal return is marginally significant. The alpha is still positive. Market coefficient is positive and significant. In the Fama-French model (Fama & French, 1993) size and value are the added factors to the CAPM. SMB (small minus big) is a factor that represents the excess return of small stocks over large stocks ranked by their market capitalization. The value factor stands for the excess return of high book-to-market firms, known as value firms, over low book-to-market firms, described as growth firms (Fama & French, 1993). The regression model is as below:

$$Q4MZRET_t = \alpha + \beta_1 REM_t + \beta_2 SMB_t + \beta_3 HML_t + \varepsilon_t \quad Eq(3)$$

Even though the intercept is still positive, the t-value is lower than that of CAPM. Market factor is positively correlated with $Q4MZRET_t$ and on the other hand, value factor is negatively correlated, demonstrating that a wider spread in $Q4MZRET_t$ portfolio is correlated with buying growth firms and shorting value ones.

Moving on to the four factor by adding momentum, the regression model is modified as $Eq(4)$.

$$Q4MZRET_t = \alpha + \beta_1 REM_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \varepsilon_t \quad Eq(4)$$

UMD captures the recent performance trend of stocks measured by geometric mean of lagged monthly returns (t-12 to t-2) and captures the difference between upward and downward past trends of stock performance. By adding this factor, the significance of the intercept improves compared to the three-factor model. The market, size, and value factors present similar significance as the three-factor model. The negative momentum coefficient behaves like a past loser strategy performs better rather than a momentum-following one.

Fama and French (2015) added two factors to their previous model. These factors are defined as profitability and investment. The profitability factor is presented as RMW, which captures the difference in returns of companies with robust and weak operating profits. The investment factor is used to measure the difference in returns of firms that invest conservatively and aggressively. The regression model is presented in *Eq(5)*:

$$Q4MZRET_t = \alpha + \beta_1 REM_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 RMW_t + \beta_5 CMA_t + \varepsilon_t \quad Eq(5)$$

The results from this regression model show that both the intercept and its significance improve. By adding the profitability and investment factors, value factor loses significance. The negative investment coefficient suggests that firms managed by CEO with high narcissism tend to invest more aggressively than those managed by CEOs with low narcissism.

The last model is the six-factor model by Fama and French (2018), where the momentum factor is added to the five-factor model.

$$ZMQ4RET_t = \alpha + \beta_1 REM_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 UMD_t + \beta_5 RMW_t + \beta_6 UMD_t + \varepsilon_t \quad Eq(6)$$

Like the five-factor model, the results show an improvement and the intercept is significant at 10% significance level. Market, momentum, and investment have loadings similar to four- and five-factor models.

Table 4- Abnormal return in asset pricing models

Variable	Estimate	Error	t-value	Pr> t
CAPM				
Intercept	0.20293	0.14517	1.4	0.1633
REM	0.09498***	0.03275	2.9	0.004
Fama-French three-factor model				
Intercept	0.18165	0.14344	1.27	0.2065
REM	0.11298***	0.03492	3.24	0.0014
SMB	-0.01351	0.05989	-0.23	0.8217
HML	-0.13714***	0.04804	-2.85	0.0047
Carhart four-factor model				
Intercept	0.2068	0.14266	1.45	0.1484
REM	0.08748**	0.03633	2.41	0.0167
SMB	-0.0247	0.05959	-0.41	0.6788
HML	-0.16603***	0.04924	-3.37	0.0009
UMD	-0.08363**	0.03604	-2.32	0.0211
Fama-French five-factor model				
Intercept	0.22264	0.14409	1.55	0.1235
REM	0.08879**	0.03521	2.52	0.0123
SMB	-0.02874	0.0638	-0.45	0.6527
HML	-0.01487	0.05987	-0.25	0.804
RMW	-0.00713	0.0792	-0.09	0.9283
CMA	-0.32022***	0.09392	-3.41	0.0008
Fama-French six-factor model				
Intercept	0.23861*	0.14366	1.66	0.0979
REM	0.07048*	0.03639	1.94	0.0539
SMB	-0.03576	0.06361	-0.56	0.5745
HML	-0.04828	0.06223	-0.78	0.4385
UMD	-0.06691*	0.03593	-1.86	0.0637
RMW	-0.00431	0.07884	-0.05	0.9564
CMA	-0.29377***	0.09455	-3.11	0.0021

Significance of values: * p< 0.10, ** p< 0.05, and *** p< 0.01

Robustness test

We compute pronoun-based narcissism measures for CEOs and CFOs, as top-management-team communication dynamics. CEOs and CFOs play different strategic and informational roles during earnings calls and may exhibit systematically different linguistic styles. It is worth mentioning that the share of each executive in the transcript (as the number of words) differs across firms and quarters depending on the executive participation in earnings conference calls.

Prior studies have focused mainly on CEO narcissism. Some studies have used compensation as one of the factors related to narcissism (Chatterjee & Hambrick, 2007), while such information about CFOs is not as available as it is for CEOs. The data that we used for narcissism measurement proves that CFOs are not as involved as CEOs in the earnings calls. This is not limited to the earnings calls. They are generally less visible in public corporate communications than CEOs. For instance, the availability of CFOs' photographs in annual reports compared to CEOs is considerably lower. They do not typically issue a dedicated letter to shareholders. Moreover, firms often delegate external communication and disclosure oversight to specialized committees—such as disclosure committees and investor relations consultants—which shape the content of annual reports and press releases. Similarly, compensation structures are frequently determined by independent compensation committees, further limiting the CFO's direct influence over publicly observable personal or professional portrayal (Ham et al., (2017)).

Therefore, we measure the narcissism score of the TMT (CEO and CFO) to study whether the narcissistic TMT generate significantly different returns. Table 5 shows that the TMT narcissism results are consistent with the CEO narcissism (t-value=3.63).

Table 5- Portfolios sorted by TMT (CEO and CFO) narcissism scores

Variable	Number of observations	Mean	t-Value	Median	Minimum	Maximum
RET	264	1.026***	3.630	1.383	-18.651	16.491

Significance of values: * p< 0.10, ** p< 0.05, and *** p< 0.01

Chapter 4: Conclusion

We explored the role of CEO narcissism in the stock return over the 2003-2024 period. Measuring the narcissism score with the pronoun usage extracted from quarterly earnings calls, monthly returns from CRSP, and using Fama and French factors shows that highly narcissistic CEOs outperform non-narcissistic ones in terms of stock return. However, the return differentials driven by narcissistic CEOs is not statistically significant -at the standard 5% level- after controlling for different factors. Since the abnormal return is positive and marginally economically significant (around 2% per year), investors can benefit from the strategy where they long firms managed by highly narcissistic CEOs and short those managed by non-narcissistic ones.

In order to present some ideas for further research, we suggest considering more personal-related characteristics. For instance, age and gender might affect the decision-making ability of the CEO. Their experience in the field and their former positions could also have impact on the investors' perspective of the expected returns.

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