



# CEO Narcissism and Stock Market Reactions: An Empirical Analysis

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## Abstract

This bachelor thesis examines how stock markets react to CEO turnover events involving narcissistic leaders. CEO signature size is utilized as an unobtrusive, archival proxy for narcissism, and data from 341 NASDAQ-listed firms over the period 2004–2024 is analyzed. An event study methodology is applied, with cumulative abnormal returns (CAR) calculated over a (-2, +2) day window surrounding CEO appointment announcements. Regression analyses with robust standard errors are conducted to assess the relationship between CEO narcissism and stock market reactions. The results indicate that no significant relationship exists between CEO narcissism and stock price reactions at the time of appointment. However, CEO duality—where the newly appointed CEO also serves as board chair, signifying concentrated power—is found to be a significant predictor of negative market reactions. These findings suggest that investors prioritize governance structures over individual personality traits when assessing CEO appointments. It is concluded that corporate governance considerations play a more decisive role than CEO characteristics in shaping shareholder sentiment during turnover events. Since shareholders, through general meetings or proxy statements, vote on the appointment and removal of directors who select the CEO, the thesis researches whether investor preferences influence the demand for narcissistic leadership by analyzing stock market reactions to CEO appointments.

**Keywords:** ceo narcissism; ceo turnover; shareholder value; upper echelons theory

*“If I am a narcissist (which might be true), at least I am a useful one.”*

(Musk, 2018)

## 1 Introduction

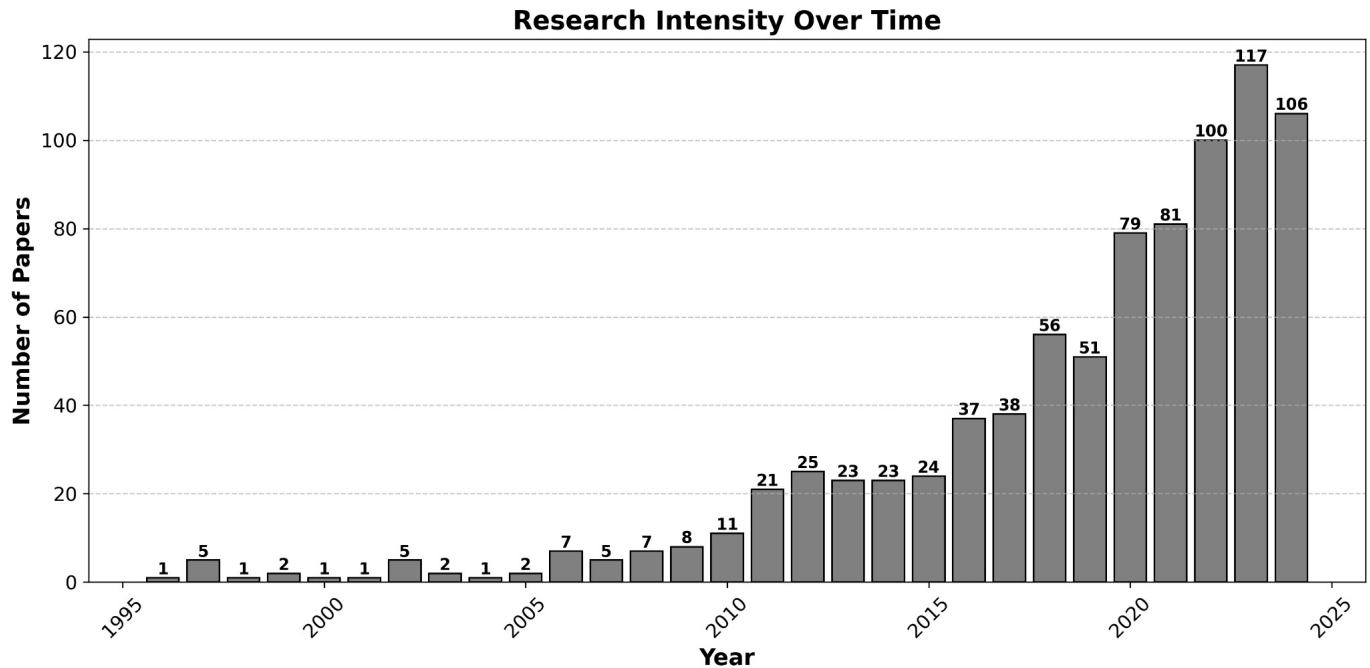
Upper Echelons Theory, proposed by Hambrick and Mason (1984, pp. 193-195), posits that the attributes of an organization’s top management team (TMT) play a crucial role in shaping its strategic decisions and organizational outcomes. Given the vast amount of information accessible within an<sup>1</sup> organizational framework, the theory contends that the personal histories and experiences of top executives significantly influence their cognitive biases and value systems. These factors subsequently impact how they interpret information and engage in decision-making processes. As a result, the organization often reflects the characteristics of its top managers. A particular personality trait that has garnered considerable academic attention in recent years is narcissism (Cragun et al., 2019, p. 909).

Narcissism is defined by traits including an inflated sense of self-importance, a sense of entitlement, a lack of empathy, and a persistent craving for admiration and validation from

others (American Psychiatric Association, 2013). While both the concept and real-world manifestations of narcissism had captured the attention of scientific scholars, media and the public cultural domain (Miller and Campbell, 2010, p. 180; Silove et al., 2016, p. 115; Miller et al., 2021, p. 519), it wasn’t until Chatterjee and Hambrick (2007, pp. 351-353) established an unobtrusive, archival measure for narcissism levels in CEOs that a growing body of leadership and management research has shown a wide array of consequences of CEO narcissism on corporate strategy decisions and organizational outcomes (Cragun et al., 2019, p. 909). For example, narcissistic CEOs are more likely to intensify mergers and acquisitions (M&A) activities (e.g. Chatterjee and Hambrick, 2007, p. 351), as well as command higher external audit fees (Judd et al., 2017, p. 34) and influence corporate social responsibility (CSR) measures (Petrenko et al., 2015, p. 263).

While there is a growing body of literature examining the effects of narcissism on various corporate strategies and outcomes (see Fig. 1), scholarly attention has been relatively sparse regarding how shareholders react to the appointment of a narcissistic CEO. Previous research has explored the implications of related personality traits and biases among CEOs, demonstrating that executive greed can adversely impact shareholder wealth (Haynes et al., 2016, pp. 36-38) and that overconfident CEOs may trigger negative market responses during merger announcements

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**Figure 1:** CEO Narcissism research intensity (own illustration)

(Malmendier & Tate, 2008, p. 21). Studies focusing on stock market reactions to CEO narcissism have largely centered on corporate events involving shareholders, such as earnings (Marquez-Illescas et al., 2018) and M&A announcements (Aktas et al., 2016).

Nonetheless, there persists a notable gap in literature regarding the effects of narcissism in the context of CEO turnover events and the associated stock market responses. This gap is particularly noteworthy for two reasons: first, narcissistic CEOs frequently make significant strategic decisions, for instance those related to internationalization efforts (Oesterle et al., 2016, p. 1), which can result in increased volatility in shareholder value (Jensen & Meckling, 1976); second, there is a growing consensus that the financial and legal risks linked to narcissistic behavior in CEOs present considerable drawbacks to this personality trait among top executives (O'Reilly et al., 2018, p. 367; Reina et al., 2014, p. 968).

This Bachelor thesis adopts signature size as a proxy for measuring narcissism (Ham et al., 2017, pp. 3-8) and analyzes financial data and historic stock prices from 341 NASDAQ-listed companies in the United States to investigate the relationships between CEO turnover events and the corresponding stock market reactions in the context of CEO narcissism using linear regression models.

The results of this empirical investigation contribute to the fields of management and leadership by evaluating capital market expectations regarding narcissism as a personality trait in CEOs at the time of their appointment, prior to the manifestation of subsequent effects resulting from narcissistic behaviors and decisions within the organization. This

empirical framework offers valuable insights into the prior expectations and assessments of narcissistic CEOs by shareholders. In accordance with the suggestions of Cragun et al. (2019, p. 920), this Bachelor thesis aims to enhance the demand-side perspective on CEO narcissism by examining whether capital markets, which reflect investor sentiment, favor narcissistic CEOs.

This analysis has the potential to contribute a small part towards the reconciliation of findings in existing literature that underscore negative firm outcomes with the limited, yet strategically important advantages associated with narcissistic leadership (Rosenthal & Pittinsky, 2006, p. 617).

## 2 Theory and Hypothesis Development

This chapter explores the extant literature regarding the origins that precede narcissism research in contemporary management and leadership contexts. It lays out the definitions of narcissism that have been applied in research, as well as the definition of narcissism adopted for the empirical study in this Bachelor thesis. Relevant theoretical constructs that the research is embedded in are explored and detailed. Extant findings regarding the organizational outcomes of narcissistic CEO leadership and their downstream effects on firm performance are reviewed and evaluated. The chapter concludes with the offering of a hypothesis regarding the results of the empirical analysis. The hypothesis is grounded in the findings of extant research and literature.

### 2.1 Conceptual Origin and Definition

The tale of Narcissus, rooted in Greek mythology, was initially documented in Ovid's (2004) *Metamorphoses*: Narcis-

sus, a remarkably handsome youth, was foretold by the seer Tiresias to have a long life, as long as he never recognized his own reflection. He rejected all romantic advances, including those from Echo, a nymph condemned to only echo the words of others, showcasing profound levels of self-love and emotional detachment. As a result of divine retribution, Nemesis guided Narcissus to a pool of water, where he became entranced by his own reflection, unable to look away. This unattainable self-love ultimately led to his downfall, resulting in his death by either starvation or drowning, and his transformation into the narcissus flower. The myth serves as a cautionary tale about the dangers of excessive self-absorption outweighing the love of others and was an influence on the contemporary conceptualization of narcissism beginning at the turn of the 20th century (Grenyer, 2013).

Ellis (1898) was the first scholar to introduce the concept of narcissism into psychological literature using the Narcissus tale, linking it to autoeroticism, meaning a sexualized fixation on one's own mind and body, describing narcissism as a psychological condition where a person becomes increasingly preoccupied with their own body and image (Gerstner et al., 2013; Yakeley, 2018).

Freud (1914, 1957) broadened this concept, making it central to psychoanalytic theory and personality development. He distinguished between narcissism as a normal stage in childhood development and a secondary form which manifests later in life and is defined by the withdrawal of emotional attachment to others and redirecting it toward the self. In contrast to the primary form, which was seen as a normal stage in infancy, the secondary form appearing in adults was labeled as a pathological condition that impedes relationships and, as Freud suggested, could lead to mental disorders such as paranoia or depression.

It was not until the 1970s that the theory of narcissism was further studied and refined (Judge et al., 2006, p. 762), with scholars criticizing Freud's conception of narcissism, claiming a lack of distinguishability between healthy levels of self-esteem and pathological grandiosity as well as between narcissism and other mental disorders. Crucial in its refinement are the works of Kernberg (1975) and Spitzer (1980), which highlight the limitations of Freud's conceptualization and would make significant contributions to the formalized adoption of narcissism into the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III), authored by the American Psychiatric Association (APA, 1980), by making the disorder clinically distinct and empirically measurable. The definition was last updated in the DSM-5 in 2013 and entails a guideline to clinically assess narcissism as a binary (categorical) condition that is either present in an individual or not, highlighting distinct narcissistic tendencies: a "grandiose sense of self-importance", the belief that one is special and more important than others; "fantasies of unlimited success, power, [or] brilliance"; poor receptions of criticism; a "sense of entitlement"; the tendency to exploit others; a "lack of empathy"; and a constant and continuous need for "excessive admiration" (APA, 2013, pp. 669-671). This formal adoption provided the first

standardized framework for the diagnosis of pathological narcissism by clinicians. The diagnosis was considered part of the so-called Cluster B disorders, which contain related diagnoses such as antisocial personality disorder (ASPD) or borderline personality disorder (BPD; APA, 1980).

In contrast, recognizing the potential for narcissistic traits to manifest in subclinical forms within the broader population, researchers sought to develop instruments that could measure these characteristics on a continuous spectrum instead of the binary classification used for clinical patients (Chatterjee & Hambrick, 2007). In line with those efforts, an alternative measure was conceived that would measure the severities of the different symptoms in the clinical definition of narcissism and make the scale applicable to non-pathological individuals: the Narcissistic Personality Inventory (NPI), first proposed by R. N. Raskin and Hall (1979), is a psychometric tool relying on self-reported questionnaire answers to gauge narcissism levels in otherwise healthy individuals.

While the original NPI contained up to 220 items (i.e. 220 questions), the index was rather quickly reduced and validated to an inventory of 40 items (R. Raskin & Terry, 1988) in an effort to improve usability by shortening the time needed for participants to answer all questions and avoid fatigue in respondents. In the same vein, the inventory of the NPI was later reduced to only 16 items and validated against earlier models (Ames et al., 2006).

Derived from the clinical definition, the NPI was designed to measure narcissistic traits on a continuum, reflecting the degree to which individuals embody these characteristics, rather than serving as a diagnostic tool for narcissistic personality disorder (NPD; Junge et al., 2024, p. 4).

An exploratory factor analysis (EFA) has determined four underlying structures of narcissism: "Leadership/Authority", meaning the confidence in one's decisions and superiority as well as a strong desire to be in a position of leadership; "Superiority/Arrogance", meaning a belief in one's naturally exceptional capabilities combined with looking down on others; "Self-Absorption/Self-Admiration", meaning a preoccupation with one's own abilities or bodily attractiveness; and "Exploitativeness/Entitlement", describing the willingness to manipulate others and the feeling of deserving special treatment (Emmons, 1987, p. 11). In addition to this four-factor model, R. Raskin and Terry (1988, p. 890) used principal components analysis (PCA) to identify three additional dimensions of narcissism, bringing the total to seven: "Self-Sufficiency", meaning the belief in one's independence and self-reliance; "Exhibitionism", meaning the urge to constantly be the recipient of praise and attention, putting one in the 'spotlight'; and "Vanity", describing the over-the-top, excessive concern with one's own personal appearance.

Management research literature has adopted these core traits as the basis for defining narcissism as a subclinical characteristic that is at the basis of a leader's actions and behaviors, specifically in the context of organizations (Cragun et al., 2019, p. 909).

Therefore, in this Bachelor thesis, a definition of narcissism is chosen that closely resembles the characteristics outlined in the DSM and NPI, positing that narcissism is a continuum of traits rather than a disorder, which expresses itself through a multitude of overt motives: 1) *Grandiosity* – a highly inflated sense of self-importance and an exaggerated belief in one's superiority over others, talents, and achievements; 2) *Admiration* – a constant desire for attention, validation, and praise from others in order to maintain one's self-esteem and social dominance, with narcissists enjoying the spotlight and being celebrated; 3) *Entitlement* – the belief that one is inherently deserving of special treatment, privileges, or rewards - regardless of merit - and leading to frustration and interpersonal conflicts when those expectations are not met; 4) *Empathy* – the difficulty in recognizing, understanding or caring about others' emotions, perspectives, and needs, resulting in interpersonal relationships that are founded in transactionality rather than a mutual understanding of each other; 5) *Manipulation* – the weaponization of a lack of empathy causing behavior that manipulates others for personal gain. This conceptualization captures a narcissist's motivations and cognitive base.

## 2.2 Manifestation of Behavior

While the definition of narcissism provides insights into its core traits, it does not explain how these traits translate into real-world behaviors. Therefore, a theoretical framework must be applied to fully understand how narcissists regulate their behavior atop their cognitive base and maintain the positive self-image that is innate to them.

With that challenge in mind, R. Raskin et al. (1991) proposed that self-esteem regulation is central to narcissists and developed a *self-regulation model* of narcissism, arguing that narcissistic individuals are driven by their desire for grandiosity and use that desire as a primary strategy for bolstering and maintaining their self-esteem. This puts grandiosity as not just a personality trait but as the basis of an enduring strategy for self-enhancement that narcissists use to maintain their positive view of themselves. The authors further argue that this strategy for self-regulation is independent from social validation – meaning that instead of trying to fit in or gain approval from others, narcissists will simply create their own sense of superiority that they project onto others. This results in behaviors like bragging, seeking admiration for accomplishments, or downplaying their failures in order to avoid self-doubt and insecurity (R. Raskin et al., 1991, pp. 19-22). While the conceptualization of narcissism as a self-esteem strategy was a pivotal cornerstone in the development of a regulatory framework, the *self-regulation model* does not address how a narcissist sustains their grandiosity through interpersonal relationships – instead, the authors posit that narcissists do not need others for validation and that their self-esteem is constant regardless of situational context.

Morf and Rhodewalt (2001) build upon and significantly expand this model with the inception of the *dynamic self-regulatory processing model*. While they share the core premise that narcissism is a self-regulatory system aiming

to enhance their inflated sense of self-esteem, they reject the notion that narcissists uphold their sense of self-esteem independently from others, introducing an interpersonal dimension into the self-regulatory system. This means that narcissism is considered an ongoing, dynamic process in which narcissists do not simply possess grandiosity; rather, they must constantly work to sustain it through social feedback. Another aspect of this interpersonal dimension is a narcissist's response to failures or threats: Morf and Rhodewalt suggest that narcissists are highly reactive to feedback, criticism, rejection or threats and will handle it by responding with aggression, shifting blame or retaliating against those who they perceive to have wronged them. Paradoxically, their constant need for admiration leads to self-defeating manifestations of behavior (e.g. exploitation, entitlement), which pushes people away and ultimately undermines their efforts to regulate their self-esteem (Morf & Rhodewalt, 2001, pp. 177-180). This model demonstrates how narcissistic leaders manipulate their social environment to gain external validation and sustain their self-image.

In a third iteration of this framework's theoretical progression, Campbell and Foster (2007) propose a systemic and dynamic view aimed at explaining how narcissists sustain and regulate their grandiosity by creating the *extended agency model of narcissism*, consisting of three components that interact with and reinforce each other: "*Interpersonal Skills*" entail the social abilities that narcissists leverage to attract admiration and maintain their grandiosity, such as charisma, confidence and assertiveness; "*Intrapsychic Strategies*" refers to a narcissist's internal cognitive mechanisms that drive them to sustain their self-esteem such as grandiose fantasies or selective memory recall, with these strategies allowing them to interpret reality in a way that reinforces their feeling of superiority by exaggerating own successes and downplaying or externalizing failures and rejecting criticisms, thereby ensuring that they stay shielded from self-doubt or insecurity; "*Interpersonal Strategies*" which are behaviors employed by narcissists to manipulate social interactions by outwardly promoting themselves and their successes or grandiose visions, ultimately serving to extract validation (Campbell & Foster, 2007, p. 123).

The systemic aspect of this framework stems from the postulation that these three components are interdependent, meaning that they get activated and deactivated together and reinforce each other. For instance, interpersonal skills such as charm or confidence help narcissists attain admiration and leadership positions. The subsequent social validation reinforces their grandiose self-image and strengthens their fantasies of superiority, which in turn increases their sense of entitlement and dominance, leading to more aggressive self-promotion and manipulation; this in turn secures further admiration, thereby restarting the cycle. These interconnected elements can also activate and deactivate together if they pass or fall below certain thresholds. For instance, in a situational context that offers opportunities for admiration, validation and recognition, the narcissistic system is activated. The same is true for competitive environments, which leads

the system to fully activate all three components in order to escalate their self-promotion and gain dominance. In contrast, if narcissists lose status or social validation, they may temporarily deactivate this system and decrease their sense of grandiosity until new sources of validation emerge (Campbell & Foster, 2007, pp. 122, 124).

Further, the *extended agency model of narcissism* framework introduces “narcissistic esteem” (Campbell & Foster, 2007, p. 121) as a concept that characterizes a narcissist’s self-esteem differently from traditional self-esteem in non-narcissists. Narcissistic esteem is primarily tied to dominance, pride, and addictive qualities. This *narcissistic esteem* is the final result of the interconnected components working as intended, making the narcissist feel good. In a yet again cyclical nature, higher *narcissistic esteem* leads the system to perform better and prevent a shutdown. Lastly, the authors propose that there is no one overarching goal of narcissism and that it is simply a dynamic system that is self-reinforcing and can be activated and deactivated depending on external, situational factors (Campbell & Foster, 2007, p. 122).

Using this framework helps to understand how the core values, traits and needs that are innate to narcissists translate into real-world behaviors, shaping the outcomes of CEO narcissism in the organizations they lead and providing the necessary foundation to analyze and interpret the corresponding findings in the extant literature that are laid out and discussed in the following chapters as well as the empirical results of the study that follows.

## 2.3 CEO Narcissism Outcomes

The following chapter presents findings in the management and leadership literature regarding the outcomes of narcissistic CEO behavior on the firms they lead. It is important to note that contemporary research in leadership and management in the context of CEO narcissism has been significantly influenced by the seminal study by Chatterjee and Hambrick (2007), which has been acknowledged as such by other scholars (e.g. Buyl et al., 2017, p. 1383; Li et al., 2022, p. 3) due to their contribution of an archival, unobtrusive measurement for narcissism in CEOs (Chatterjee & Hambrick, 2007, p. 352), based on five observables that reflect narcissistic tendencies: 1) The size and placement of the CEO’s *photograph* in the company’s annual reports, reflecting the desire to be showcased; 2) The *frequency* with which the CEO’s *name* is mentioned in company press releases, indicating desires of visibility; 3) The ratio between *first-person singular pronoun* (FSP) and plural pronoun usage by CEOs during interviews to gauge self-centeredness; 4) The CEO’s *salary* compared to those of the second-highest-paid executive in the firm as a reflection of entitlement and superiority; 5) The CEO’s non-cash compensation packages compared to those of the second-highest-paid executive (Chatterjee & Hambrick, 2007, pp. 363-365). Figure 1 captures this research trend beginning around 2007.

Because of the wide variety of firm outcomes that have been explored in the extant literature, the respective primary

domains in which the CEO behavior manifests have been attempted to be categorized. However, while categorically distinct, they are not independent from each other. More specifically, strategic, ethical, and cultural outcomes interact with each other and have corresponding downstream effects on firm performance, as shown in Figure 2.

### 2.3.1 Strategic Outcomes

Narcissistic CEOs are more likely to initiate takeovers and lead negotiations faster than non-narcissistic CEOs (Aktas et al., 2016, p. 113). When firms led by narcissistic CEOs are the target of a takeover, they receive higher bid premiums (Aktas et al., 2016, p. 119). Similarly, Chatterjee and Hambrick (2011) showed that narcissist CEOs overpay for acquisitions (p. 202). To add, Zhu and Chen (2014b) found that narcissistic CEOs prefer appointing narcissists to the board in order to have their own proclivity towards risk-taking behavior reinforced (p. 2078).

Similarly, Narcissistic CEOs are more likely to both acquire and overpay for well-known, high-awareness brands to gain greater public visibility (Cao & Xu, 2022, p. 777). Similarly, Chatterjee and Hambrick (2007) found that narcissistic CEOs engage in more and larger acquisitions (p. 351), which was confirmed by Ham et al. (2018), who added that this relationship is more pronounced the higher the financial slack (i.e. high cash reserves and low debt) of the company (p. 235, p. 259). However, findings by Aabo et al. (2023) contradict this, showing no relationship between CEO narcissism and intensified corporate acquisition activities (p. 94). This might be due to sample differences: Aabo et al. (2023) relied solely on FSP as measurement for narcissism (p. 91), potentially not fully capturing CEO narcissism.

Narcissistic CEOs are more likely to announce repurchasing of shares in greater amounts but less likely to follow through. Weak governance structures exacerbate these tendencies (Boamah & Banerjee, 2024, p. 717).

In financial disclosures, narcissist CEOs use a more optimistic tone than what is justified by the firm fundamentals. They are then also more likely to invest heavily in research and development (R&D; Buchholz et al., 2018, p. 531).

In an empirical analysis of 92 U.S. commercial banks between 2006 and 2014, Buyl et al. (2017) found that CEO narcissism leads to riskier bank policies, with stock-based incentives exacerbating this effect (p. 1395). Similarly, narcissistic CEOs engage in significantly more risky strategic investments such as (R&D) and acquisitions - for which they overpay - and financial success or failure does not alter their risk-taking profile: conversely, positive media coverage emboldens them in their risk-seeking tendencies (Chatterjee & Hambrick, 2011, p. 202).

CEO narcissism predicts strategic dynamism, in which resources are frequently reallocated, corporate strategy experiences major shifts, and focus is set on high-risk decisions that promise a high reward instead of incremental changes (Chatterjee & Hambrick, 2007, p. 372). Kashmiri et al. (2017) provide similar evidence for radical product innovations and add

a link between CEO narcissism and the likelihood of product-harm crises, caused by insufficient long-term product safety investments (p. 633). Similarly, in a survey of 132 Chinese firms, You et al. (2022) found CEO narcissism to negatively influence innovation ambidexterity, i.e. a balanced approach to innovation strategy, focusing on both new and existing domains, with narcissistic CEOs showing a proclivity to focus on either of the two, leading to either over-innovation or stagnation (p. 189).

Research conducted by Gerstner et al. (2013) examined pharmaceutical companies' reactions to the emergence of biotechnology, finding that CEO narcissism predicted a more aggressive adoption strategy of disruptive technologies while disregarding uncertainty behind them, with audience engagement (e.g. media and industry) strengthening this link (p. 257).

CEO narcissists are more likely to expand firms internationally in order to enhance their status rather than out of economic considerations (Oesterle et al., 2016, p. 1114).

Curiously, the combination of narcissism and humility was shown to significantly improve product innovation in a sample of Chinese firms by balancing self-confidence with a willingness to learn, encouraging risk-taking while maintaining team cohesion, and displaying their charisma to inspire and unite their employees behind a shared vision (Zhang et al., 2017, p. 585, pp. 593-599). Crucially, the authors note that this balance between the two examined traits is potentially more prevalent in cultures more closely linked to Confucian principles, indicating that this combination of traits is less prevalent in the Western world context (Zhang et al., 2017, pp. 590-591).

In summary, extant research literature shows that narcissistic CEOs tend to be more aggressive in strategic decisions, quickly pursuing acquisitions and often overpaying for trendy brands to boost visibility. They attract high takeover offers, engage in risky investments like R&D, and frequently change corporate strategies. Their inclination to hire similar board members promotes risk-taking, and inadequate governance supports this behavior. They also issue overly optimistic earnings reports, pursue internationalization for status rather than economic reasons, and gain confidence from positive news. Their risk-taking continues regardless of economic outcomes.

### 2.3.2 Ethical Outcomes

Narcissistic CEOs engage in earnings management outside the Generally Accepted Accounting Principles (GAAP; Capalbo et al., 2017, p. 210). An analysis of 923 CEOs at 716 firms found narcissism to be positively linked to the frequency and size of expense exclusions from non-GAAP earnings, and negatively linked to reporting quality (i.e. excluding recurring expenses; Abdel-Meguid et al., 2020, p. 3). These findings are confirmed by Buchholz et al. (2019), who found narcissistic CEOs to engage in Accrual-Based Earnings Management (ABEM; i.e. delaying of expenses or early recognition of revenue; p. 663). However, they also found

evidence for income-decreasing earnings management, indicating that narcissistic CEOs are not only driven by short-term success motivations; rather, they will at times strategically overstate expenses or understate revenues to create a reserve of hidden earnings that can be used in the future to smooth performance (Buchholz et al., 2019, pp. 667-668). Further, research has linked CEO narcissism to tax avoidance and tax sheltering (García-Meca et al., 2021, p. 223; Olsen and Stekelberg, 2016, p. 1). In support of these results, narcissism in CEOs has been found to increase audit fees due to internal control weaknesses, thus highlighting the importance of audit oversight (Judd et al., 2017, p. 33). In experimental settings, Majors (2015) found that range disclosures reduce aggressive financial reporting in narcissistic managers, suggesting that regulatory oversight can mitigate opportunistic reporting (pp. 973, 989). Findings by Mutschmann et al. (2022) conclude that narcissistic CEOs not only engage in earnings management, but outright fraud, extending the findings of Capalbo et al. (2017) and Buchholz et al. (2019). However, in contrast to the conclusions of García-Meca et al. (2021), they showed that mitigating these tendencies necessitates outsourced audit teams that are outside of the narcissistic CEO's sphere of influence and power (Mutschmann et al., 2022, p. 763). Findings by O'Reilly et al. (2018) support the notion of increased fraud as a result of CEO narcissism, concluding that a narcissistic CEO will be more likely to involve his firm in lawsuits and less likely to settle said lawsuits as their grandiosity and arrogance prohibits them from admitting defeat (p. 365). Findings by Rijsenbilt and Commandeur (2012) confirm ties between CEO narcissism and corporate fraud, most frequently in the form of earnings manipulation, motivated by overconfidence to get away with it (pp. 422-423).

Narcissistic CEOs use environmental, social, and governance (ESG) disclosures, particularly social and governance reporting (e.g. workplace diversity, board transparency), to generate media attention and improve their image (Dabbebi et al., 2022, pp. 3147-3148). Similarly, B. Kim et al. (2018) found that narcissistic CEOs engage in CSR measures even if their firms are based in countries with high levels of uncertainty avoidance (UA; i.e. a cultural preference for risk averse, long-term focus), suggesting that narcissistic CEOs use CSR initiatives as a personal branding tool regardless of cultural norms that would generally discourage their implementation (p. 203). This assumption is supported by Petrenko et al. (2015), who found that CSR initiatives implemented by narcissistic CEOs do not improve firm performance and suggested that it is rather a tool they use to enhance their personal image (p. 262). The effect of CEO narcissism on CSR initiatives is distinct from CEO hubris (Tang et al., 2018, p. 1370).

To summarize, narcissistic CEOs have been found to engage in earnings manipulation, tax avoidance, corporate fraud, and excessive litigation, often driven by overconfidence and a need for self-enhancement. They inflate earnings, exploit tax shelters, and manipulate financial reports, increasing audit fees and regulatory scrutiny. Their

resistance to legal settlements prolongs lawsuits, while their use of ESG and CSR initiatives serves as self-promotion rather than genuine corporate responsibility. These behaviors undermine ethical business practices and call attention to the need for stronger governance and external oversight to mitigate the ethical risks associated with narcissistic leadership.

### 2.3.3 Cultural Outcomes

CEO personality traits shape the culture of the organizations they lead, which subsequently impacts the company's performance outcomes (Berson et al., 2007, pp. 626-628). Indeed, in a study of 173 CEOs and corresponding firm performance data, Wales et al. (2013) identified organizational culture as a partially mediating factor between CEO narcissism and the variance in firm performance, suggesting that narcissistic CEOs drive their organizations toward high-risk strategic behavior with volatile long-term performance outcomes; more specifically, the authors find that narcissistic CEOs promote a strong entrepreneurial orientation (EO), characterized by a focus on innovation (p. 1041). Their extreme overconfidence leads them to endorse high-risk, high-reward corporate strategies, effectively forcing their own tendencies and biases onto the organization through firm culture (Wales et al., 2013, p. 1045). This is in line with findings from Kashmiri et al. (2017) which demonstrate that narcissistic CEOs favor radical innovation in product management activities and foster an aggressive organizational culture aimed at outpacing competitors (p. 633). The potential self-selection of narcissists to firms already orientated towards high-risk, high-reward strategies (Young et al., 2016, p. 49) and findings suggesting that organizations drive demand for narcissists in times of uncertainty (Nevicka et al., 2013, p. 370) raise the question of reverse causality.

In an empirical analysis of 641 CEOs from 399 U.S. firms in the time period between 2007-2017, a U-shaped relationship between CEO narcissism and TMT age was discovered, suggesting that CEOs lower in narcissism tend to appoint younger TMT members in an effort to exert dominance and position themselves as the most accomplished person in the room in order to protect their self-view, while CEOs on the upper end of the narcissism spectrum tend to appoint older TMT members, who they perceive to be high in status due to their age, in order to extract admiration and validation from them (see also Chatterjee and Pollock, 2017, p. 703). TMT members appointed by narcissistic CEOs were also found to have shorter tenures, suggesting a dysfunctional relationship in which CEO narcissists may dispose of TMT members that defy them or in which TMT members leave their roles voluntarily as a result of difficulties in cooperating with the narcissistic CEO (Bredlich et al., 2021).

Additionally, in a sample of 145 Spanish publicly listed firms, CEO narcissism was found to negatively influence the amount of female TMT members. This effect was more pronounced the more power the CEO yields (i.e. longer tenure, CEO-chair duality). Curiously, female narcissistic CEOs ex-

hibit an even stronger aversion to the appointment of female TMT members. The findings suggest that narcissistic CEOs prefer TMT compositions that reinforce their self-view, and that they might perceive women in leadership roles as a threat to their dominance (Martínez-Ferrero et al., 2023).

Junge et al. (2024), employing a novel, unobtrusive measure for executive narcissism by examining social media profiles on the platform LinkedIn, found CEO narcissism to be positively associated with TMT turnover, confirming the findings of Bredlich et al. (2021). Further, the authors found that this association is moderated by TMT narcissism, suggesting that narcissistic TMT members may clash with a narcissistic CEO more frequently, leading to even higher turnover (Junge et al., 2024, p. 25). Paradoxical on the surface, the authors also found that narcissistic CEOs prefer to hire narcissistic executives to their TMT in the first place (Junge et al., 2024, p. 21), suggesting that they prefer to hire narcissists to their leadership teams but are unable to work with them. The finding confirms prior research by Bachrach et al. (2023, p. 1).

In summary, CEO narcissism shapes organizational culture by developing high-risk, high-return approaches, with a priority for innovation, and for an assertive competitive stance. The TMT composition is impacted by narcissistic CEOs with the tendency to hire older members for admiration or young members to dominate, leading to higher turnover through poor working relationships. They are also resistant to female leaders, with female narcissistic CEOs being more averse. While narcissistic CEOs prefer the hiring of narcissistic executives, it becomes challenging for them to work with them, leading to TMT instability.

### 2.3.4 Firm Performance Outcomes

While firms led by narcissistic CEOs experience greater fluctuations in performance outcomes as measured by return on assets (ROA), the average firm performance remains comparable to that of companies led by non-narcissistic CEOs, the seminal study by Chatterjee and Hambrick (2007) found, analyzing 111 CEOs from 105 unique U.S. firms in the computer hardware and software industries (pp. 372-373).

Hou et al. (2024) found that CEO narcissism is associated with lower credit ratings, confirming their hypothesis derived from observed manipulative tendencies and propensity for risk-taking in narcissistic CEOs, leading to higher leverage and increased earnings manipulation activities in the firm, causing external agents such as credit rating agencies (CRA) to significantly lower their ratings in adjustment to narcissistic CEO behavior outcomes. This effect was moderated by several factors such as the financial constraints of the firm, which causes CEO narcissists to act more conservatively in the face of limited cash reserves or external funding, the degree of industry competitiveness, suggesting that narcissistic CEOs recognize market pressures and lower their affinity for excessive risk accordingly, and the degree of institutional ownership, suggesting that large investors (e.g. funds) - who monitor CEO activity more closely and rigorously - lead to restrained behavior in said activities (Hou et al., 2024, p. 39, pp. 57-58).

CEO narcissism is tied to increased debt financing costs, meaning companies with narcissistic CEOs have higher bond yield spreads, which is the difference between corporate bond yields and safer U.S. Treasury bonds. This is because narcissistic CEOs undertake riskier financial actions such as excessive leverage, risky takeovers, and earnings management, which makes the companies more likely to encounter financial issues since if narcissist CEOs are provided with more money, they tend to invest it into high-risk endeavors. Bondholders, being the principals in loan agreements, are aware of the self-serving actions and propensity for risk of narcissistic CEOs (agents) and thus demand higher yields in order to compensate for the increased agency costs. The research also finds that the effect persists when control mechanisms such as strong boards and institutional ownership are in place, which contradicts the findings by Hou et al. (2024) in regard to the interactions between CEO narcissism, internal control mechanisms, and external stakeholders/agents (J. H. J. Kim & Anderson, 2024, pp. 1-2, p. 7, p. 14).

Findings by Olsen et al. (2013) suggest that CEO narcissism is positively linked to higher earnings per share (EPS) and stock prices (p. 243). Narcissistic CEOs inflate reported EPS by overproducing goods to reduce cost per unit, offering excessive sales discounts and lenient credit terms in order to boost short-term revenue, and by cutting back on discretionary expenditures (e.g. R&D and advertising) to enhance short-term profitability (Olsen et al., 2013, p. 260-261). This suggests a short-term orientation in narcissistic CEOs to immediately attain attention and praise by increasing EPS and eliciting a positive market response in the form of higher stock prices, at the cost of potential future operational inefficiencies. Notably, these practices lead narcissistic CEOs to beat analysts' forecasts, further resulting in surging stock prices and fueling their *narcissistic esteem*, yet also highlighting that analysts may be ill-equipped to accurately predict CEO narcissism behavior: reliant on historical performance data to foresee short-term changes in earnings management activities, unable to directly observe the decision-making of the narcissistic CEO inside the company, and possibly being influenced by *CEO impression management* (i.e. self-promotion through optimistic language, grandiose claims, or media presence), analysts apparently struggle to anticipate the impact of narcissistic CEOs on earnings forecasts (Olsen et al., 2013, pp. 254-265).

In a study by Peterson et al. (2012), organizational identification, i.e. the degree to which a CEO emotionally identifies with the company, was found to mediate the relationship between CEOs and servant leadership, suggesting that CEOs who identify strongly with their organization are more likely to display servant leadership, which was found to positively affect ROA. Notably, narcissistic CEOs are less likely to identify with their organization and thus display servant leadership behavior (Peterson et al., 2012, p. 565, pp. 585-591). However, narcissistic CEOs that *do* identify with their firm were found to positively influence TMT behavioral integration (i.e. the degree to which TMT members act col-

laboratively, exchanging information and jointly make decisions), leading to better firm performance (Reina et al., 2014, p. 958, pp. 967-969). Reina et al. (2014) also support the findings of Peterson et al. (2012) by showing that narcissistic CEOs with low organizational identification negatively impact ROA through poorer TMT behavioral integration outcomes (p. 966).

Using signature size as a novel proxy to measure narcissism but not overconfidence, Ham et al. (2018) found that - as a result of overinvestment in R&D and M&A activities - narcissistic CEOs are linked to lower profitability and operating cash flow (OCF) but, curiously, increased compensation for the narcissistic CEO (Ham et al., 2018, p. 234).

Furthermore, Narcissistic CEOs have been found to cause their firms to suffer more losses during economic downturns, but also to recover faster in the subsequent recovery phase, suggesting that they ignore potential risks while focusing on desirable outcomes, which affects firms differently depending on their financial health (Patel & Cooper, 2013, p. 1528, p. 1537). These results highlight the potential double-edged nature of CEO narcissism and its impacts on firm performance, emphasizing the different situational factors and contexts in which CEO narcissism could be either useful or detrimental.

In conclusion, firm performance outcomes of narcissistic CEO behavior are characterized by higher volatility, greater financial risk, and short-term profits at the expense of long-term stability. While firms experience higher volatility in their profitability, the evidence on average ROA is mixed. As narcissistic CEOs are more prone to manipulating earnings, undertake risky strategic decisions, and excessively engage in M&A and R&D activities, credit ratings suffer. Due to their self-serving nature, measures aimed at improving short-term performance also increases short-term stock performance, which poses questions about the long-term alignment of interests between the CEO (agent) and shareholders (principal). The degree to which narcissistic CEOs identify with their organizations appears to determine whether narcissistic CEOs will exert dysfunctional, centralized decision-making or increase TMT behavioral integration. Similarly, the manifestations of CEO narcissism may depend on situational and environmental factors that determine success or failure. These findings provide the backdrop against which the following chapter examining stock market reactions to narcissistic CEO behavior outcomes is elaborated upon.

### 2.3.5 Stock Market Reactions

Haynes et al. (2016) found executive greed, defined as the excessive pursuit of material wealth, to negatively impact shareholder returns (p. 555), measured as total shareholder return (TSR, i.e. the change in stock price plus dividends over one year). The concept of greed is closely related to that of narcissism, in that narcissistic individuals will exhibit greedy behaviors (Kernberg, 1980, p. 136) in order to amass personal material wealth, reinforcing their own perception of superiority and attracting praise and admiration. This results in a misalignment between CEO and shareholder prior-

ities, increasing agency costs and thus reducing shareholder value (Haynes et al., 2016, pp. 569-570). The effect of CEO greed on shareholder returns was moderated by tenure (i.e. as greedy CEOs age and gain status through experience, they tend to engage in less self-serving behavior), governance (i.e. powerful, independent boards), and oversight (e.g. disclosure requirements; Haynes et al., 2016, p. 555).

Similarly, research by Malmendier and Tate (2008) linked CEO overconfidence to negative cumulative abnormal returns (CAR) in the 3-day window of merger announcements (p. 20, p. 34). Overconfidence is the individual's false belief to judge potential outcomes more accurately than they actually do, which is rooted in an attribution bias of control over the situation (Haynes et al., 2016, p. 567). Seeing as narcissism involves the belief in one's intellectual superiority, the findings by Malmendier and Tate (2008) lend itself to the derivation of a connection between overconfidence and narcissism. Additionally, Boamah and Banerjee (2024) show that the market reaction to repurchase announcements is lower for narcissistic CEOs, suggesting that investors anticipate a low follow-through rate because narcissists view their firms as undervalued even when they are not, and using announcements as a tool in an attempt to signal market confidence (p. 717, pp. 719, 750). Supporting these findings, in examining 146 M&A deals from 2002 to 2006, Aktas et al. (2016) show that acquirer shareholders react more negatively to deals involving target CEOs with higher levels of narcissism (p. 113). This could suggest that investors expect aggressive negotiations with the target CEO, anticipating the acquiring firm to overpay, the deal to collapse, or the target firm's leadership to integrate poorly into the acquiring firm due to refusal by the acquiring CEO to relinquish part of his power and influence. Similarly, narcissism in CEOs - by virtue of overvaluing brand assets - induces negative stock market reactions when acquiring brands, as investors suspect the CEO to overvalue the asset they are trying to acquire, thereby inflating the price of the deal. Conversely, stock prices of the selling firm increase (Cao & Xu, 2022, p. 777, pp. 794-797).

Investors appear to be able to recognize and adjust to the positive tone biases employed by narcissistic CEOs in earnings disclosures (Marquez-Illescas et al., 2018, p. 401). Similarly, CEO narcissists voluntarily provide a higher amount of financial information - such as earnings guidance (Marquez-Illescas & Zhou, 2023, p. 221) - in an effort to seek attention and gain validation (Olsen et al., 2013, p. 264), allowing analysts to more accurately forecast earnings of companies led by narcissistic CEOs (Marquez-Illescas & Zhou, 2023, p. 236). Similarly, CEO Narcissism has been linked to lower stock recommendations from analysts, suggesting that analysts perceive narcissistic CEOs as self-serving and thus misaligned with shareholder priorities (Turner et al., 2024, pp. 1-3, pp. 14-16).

Investors and analysts are potentially misled by a CEO narcissist's earnings management activities, particularly in the domain of opportunistically excluding recurring items from non-GAAP earnings - which is at the discretion of the

CEO - as suggested by Abdel-Meguid et al. (2020, p. 11).

In summary, stock markets tend to react negatively to performance outcomes of CEO narcissism, particularly in financial decision-making, M&A, and earnings management. Investors anticipate misaligned priorities, overconfidence, and self-serving behaviors, leading to weaker stock reactions to repurchase announcements, negative CARs following acquisitions, and lower analyst stock recommendations. Narcissistic CEOs frequently overvalue acquisitions, manipulate earnings through non-GAAP exclusions, and use financial disclosures as tools for self-promotion rather than transparency. While they provide more financial information, investors and analysts adjust for their biases, recognizing patterns of exaggeration and opportunism. Although narcissistic CEOs drive aggressive expansion and market visibility, their decision-making increases volatility, raises agency costs, and heightens long-term risk, reinforcing a generally cautious stance from investors.

## 2.4 Hypothesis

Narcissistic CEOs possess a strong, persistent need for admiration and approval, born of their inherently fragile self-esteem. This need drives them to short-term strategic decisions for immediate exposure rather than longer-term firm success. Empirical findings consistently demonstrate that narcissistic CEOs actively pursue high-risk investments, such as extravagant acquisitions, excessive R&D spending, and aggressive foreign expansion, often in the pursuit of personal aggrandizement rather than the interest of increased firm success. Their tendency to manage earnings reports and financial disclosures further fuels investor concerns by increasing agency costs and obscuring genuine corporate performance.

Narcissistic CEOs also tend to shape organizational culture to be permissive of their behavior, either by installing compliant or like-mindedly narcissistic board members, which diminishes critical oversight and increases organizational instability. Market participants recognize these behavioral proclivities and price their assessments accordingly, anticipating greater financial volatility, strategic misalignment, and ethical transgressions. This recognition is manifested as investor skepticism and negatively impacts stock valuations, especially when CEOs publicly announce strategic plans or leadership succession.

With investors' sensitivity to these destructive proclivities and their long-term implications on firm stability and profitability, market reactions at the time of CEO appointment announcements are assumed to be cautious, adjusting for anticipated agency misalignment through self-interested behavior. It is therefore hypothesized that during CEO turnover events:

*H1: CEO narcissism is negatively related to stock price at the time of their announcement.*

### 3 Data and Methodology

The empirical study examines 341 CEO turnover events from 341 unique NASDAQ-listed firms, covering the time period from 2004 to 2024. The dataset is cross-sectional, meaning each firm appears only once, and captures a snapshot of market reactions at the time of a CEO turnover event rather than tracking firms over multiple years.

Financial data is gathered using the database service Datastream/EIKON, accessed through institutional resources, while public documents filed with the United States Securities and Exchange Commission (SEC) provided CEO-level data, such as signature size and duality status (i.e. CEO and Chairman role), and was used to compute data that was inaccessible in Datastream/EIKON. To ensure reliability of the analyses, narcissism measures are winsorized and log-transformed to adjust for skewness and maintain statistical robustness (see Chapter 4: Results).

To test the relationship between CEO Narcissism and CAR, OLS regression models are used. Additionally, the sample is then split into categorized low- and high-narcissism groups to explore non-linearity affects on CAR through subgroup analysis.

#### 3.1 Independent Variable

Levels of narcissism on the subclinical spectrum are measured using signature size, a novel archival and unobtrusive instrument that has been used to measure CEO narcissism in prior research (e.g. Boamah and Banerjee, 2024, p. 719; Hou et al., 2024, p. 42), and validated as a tool to measure underlying narcissism levels (Ham et al., 2018, p. 234, p. 241; Junge et al., 2024, p. 16).

CEO signatures are extracted from DEF 14A proxy statements filed annually with the SEC. Proxy statements are searched stepwise, beginning with the first filing following the CEO announcement and continuing until either a signature is found, or the CEO's tenure comes to an end. The total signature area is determined by calculating the rectangular bounding box enclosing the CEO's handwritten signature as formulated in Equation (1):

$$A_{signature} = H \times W \quad (1)$$

Where:

$A_{signature}$  total enclosed area of the CEO's signature  
 $H$  height of the signature bounding box  
 $W$  width of the signature bounding box

To account for variation in CEO name length, a normalized signature size is calculated in (2):

$$A_{normalized} = \frac{A_{signature}}{N_{letters}} \quad (2)$$

Where:

$A_{normalized}$  signature size adjusted for length of name  
 $N_{letters}$  number of characters in the CEO's full name

Since signature sizes tend to exhibit skewness, winsorization is applied according to Equation (3): Outliers at the 1st and 99th percentiles are replaced with predefined percentile values. Extreme observations have their influence reduced while the distribution's overall structure is preserved. It is computed as:

$$A_{winsorized,i} = \begin{cases} P_{\alpha} & \text{if } A_{normalized,i} < P_{\alpha} \\ A_{normalized,i} & \text{if } P_{\alpha} \leq A_{normalized,i} \leq P_{1-\alpha} \\ P_{1-\alpha} & \text{if } A_{normalized,i} > P_{1-\alpha} \end{cases} \quad (3)$$

Where:

$A_{winsorized,i}$  winsorized signature size for CEO  $i$   
 $A_{normalized,i}$  signature size per letter for CEO  $i$ , before winsorization  
 $P_{\alpha}$  lower percentile threshold (1st percentile)  
 $P_{1-\alpha}$  upper percentile threshold (99th percentile)  
 $\alpha$  winsorization level (1%)

#### 3.2 Dependent Variable

Cumulative Abnormal Returns (CAR) have been widely used in CEO narcissism research as a performance measure of stock price around corporate event studies (e.g. Aktas et al., 2016; Malhotra et al., 2017; Marquez-Illescas et al., 2018). In order to assess market reactions surrounding CEO turnover events, Cumulative Abnormal Returns are computed using the market-adjusted model. The event window was set at (-2, +2) days and an estimation window of (-180, -30) days relative to the turnover event was chosen. Daily stock returns are computed using arithmetic returns, defined in (4) as:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}} \quad (4)$$

Where:

$R_{it}$  return for firm  $i$  on day  $t$   
 $P_{it}$  closing stock price of firm  $i$  on day  $t$   
 $P_{it-1}$  closing stock price of firm  $i$  on day  $t - 1$

In Equation (5), using the market-adjusted model, expected returns are calculated against the S&P500 index as a broad market benchmark. Therefore, expected returns for the firm at day  $t$  are derived from the S&P500 returns on day  $t$ :

$$E(R_{it}) = R_{mt} = \frac{M_t - M_{t-1}}{M_{(t-1)}} \quad (5)$$

Where:

$M_t$  closing price of S&P500 on day  $t$   
 $M_{t-1}$  closing price of S&P500 on day  $t - 1$   
 $E(R_{it})$  expected return for firm  $i$  on day  $t$   
 $R_{mt}$  return of the S&P500 on day  $t$

The abnormal return (AR) for each day within the event window is calculated in (6) by subtracting  $E(R_{it})$  from  $R_{it}$ . Summing the abnormal returns over the event window results in the value for CAR:

$$CAR_i = \sum_{t=-2}^{t=+2} AR_{it} \quad (6)$$

where  $CAR_i$  is the cumulative, (i.e. total) abnormal (i.e. not captured by S&P during time  $t$ ) return for firm  $i$ . Stock market data is extracted from the Datastream/EIKON database.

### 3.3 Controls

*CEO duality* is frequently used as a control measure of how much power and influence the CEO possesses within the company, particularly in terms of corporate governance, strategic decision making and power centralization (e.g. Buyl et al., 2017; Dabbebi et al., 2022; Zhu and Chen, 2014a), affecting market perceptions. DEF 14A proxy statements entail this information with very little exceptions. CEO duality is encoded as a dummy variable (i.e. 1 if the CEO is also the chairman, and 0 otherwise).

*Earnings per share (EPS)*, a firm level profitability metric for publicly listed companies, is calculated in Equation (7):

$$EPS = \frac{\text{Net Income}}{\text{Weighted Average Number of Common Shares Outstanding}} \quad (7)$$

Where *Net Income* describes the total earnings of the company after taxes and expenses, and *Weighted Average Number of Common Shares outstanding* refers to the number of shares outstanding adjusted (weighted) over the reporting period. EPS is closely watched by market observers, business media, and investors (Olsen et al., 2013, p. 247). It is directly reported in and extracted from the last filed annual report (10-K) that the company released before the CEO turnover event. As annual reports typically contain further historical data on EPS, the EPS figures from the past three fiscal years before the CEO turnover event are collected and averaged out, combining to paint a broader picture of the company's profitability prior to the announcement of a new CEO.

*Total Assets*, i.e. the summed of a company's – material as well as intangible – assets, is an accounting item that is frequently used in business research to control for firm size using the natural logarithm transformation (e.g. Cao and Xu, 2022; Dabbebi et al., 2022; García-Meca et al., 2021; J. H. J. Kim and Anderson, 2024; Yook and Lee, 2020). Its value is extracted from 10-K annual reports from the last year before the CEO turnover event and logarithmized in Equation (8) in accordance with prior research to stabilize variance and reduce skewness:

$$\ln(\text{TotalAssets}_i) = \log_e(\text{TotalAssets}_i) \quad (8)$$

Where:

$\ln(\text{TotalAssets}_i)$  natural logarithm of total assets for firm  $i$

$\log_e$  natural logarithm function with base  $e$

*Industry* is introduced as a category to control for in order to prevent industry-specific trends from biasing the results, such as the competitive environment, regulatory guidelines, innovation rates, and resulting market expectations. The 2-digit Standard Industrial Classification (SIC) numbers are used to encode all nine industry types in categorical dummies numbered 0-8 in order to account for industry fixed effects in the regression model analysis. Companies' industry codes are retrieved from the SEC database.

The *Year* of the CEO turnover event is extracted from every observation and encoded as dummy variables similar to *industry* in order to account for broad market trends that are not captured by the market-model of CAR. Macroeconomic trends, such as economic cycles, financial crises, interest rates, or major policy shifts are accounted for by running regressions using fixed year effects.

*External hire* is a binary control variable that indicates whether the newly appointed CEO was hired from outside the organization or promoted internally. External hires can influence investor perceptions as they represent a shift in corporate strategy and are coded as 0 if the appointed CEO's name appears in 10-K, 10-Q or DEF 14A filings in the year prior to the CEO turnover event, and as 1 otherwise.

The *Earnings* dummy variable captures whether an annual (10-K) or quarterly (10-Q) earnings announcement took place within the event window of the CEO turnover announcement, which could obscure the isolated impact on CAR and is controlled for by coding 1 for coincidental earnings announcements, and 0 otherwise.

### 3.4 Regression

Ordinary Least Squares (OLS) regression is the most widely used statistical method for estimating relationships between a dependent variable and one or more independent variables. It minimizes the sum of squared residuals to provide the best linear fit, making it both easy to interpret and computationally straightforward. Due to its robustness and transparency, OLS is employed as a regression model to detect linear dependencies in the observed data. Two data models are used: first, a baseline approach in (9), regressing CAR as the dependent variable on CEO Narcissism as the independent variable:

$$CAR_i = \beta_0 + \beta_1 \text{CEONarcissism}_i + \epsilon_i \quad (9)$$

Where:

$\beta_0$  intercept term (expected value of  $CAR_i$  when CEO Narcissism is zero)

$\beta_1$  regression coefficient (change in  $CAR_i$  for one-unit increase in CEO Narcissism)

$\text{CEONarcissism}_i$  log-transformed and winsorized mea-

sure of CEO Narcissism of the CEO for firm  $i$

$\epsilon_i$  error term (residual)

Subsequently, a second regression is performed in (10), adding controls and fixed effects to enhance the model's explanatory power (*Full Model*):

$$\begin{aligned} CAR_i = & \beta_0 + \beta_1 CEONarcissism_i + \beta_2 ExternalHire_i \\ & + \beta_3 Earnings_i + \beta_4 CEODuality_i + \beta_5 EPS_i \\ & + \beta_6 \ln(TotalAssets_i) \\ & + \sum_{j=1}^8 \gamma_j Industry_{ij} + \sum_t \delta_t Year_{it} + \epsilon_i \end{aligned} \quad (10)$$

The raw distribution of CEO Narcissism values exhibits characteristics that suggest the need for a transformation along the logarithmic scale. Values of CEO Narcissism are heavily right-skewed (see Fig. 4), with a small number of extreme values reaching far beyond the majority of observations (see Fig. 3). This “tail” can also be observed in the heavy departures from normality in the Q-Q plot (see Fig. 4). This suggests that the assumption of normally distributed residuals may not hold, resulting in distorted linear relationships captured in OLS regression. Log transforming using Equation (11) extends the distance between smaller values and reduces it for outliers on the right tail of the distribution, making it more symmetrical:

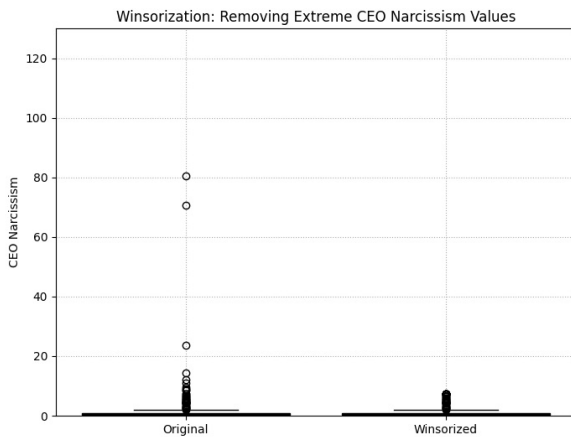


Figure 2: Winsorization of independent variable (own illustration)

## 4 Results

$$CEO'_{Narcissism} = \log(1 + CEO_{narcissism}) \quad (11)$$

The log transformation reduced skewness and improved the normality of the distribution while preserving relative dif-

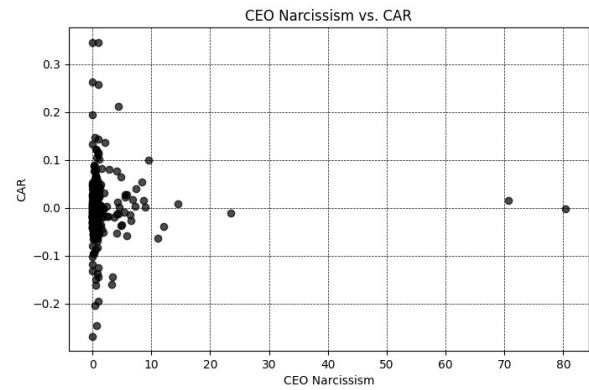


Figure 3: IV/DV scatter plot (own illustration)

ferences. Figure 5 shows a more evenly spread range of CEO Narcissism values.

Following these adjustments, descriptive statistics (Table 1) of key continuous variables was computed, showing that firms in the sample experienced an average of 6.5% abnormal stock price deviation during the event window while containing both very high (34.6%) and low (-26.8%) observations at the extremes. CAR skewness (0.86) and kurtosis (7.43) confirm pooling of values around the mean as well as few but stark outliers.

Table 1: Descriptive Statistics (own illustration)

|                | count | mean   | std   | min     | 25%    | 50%    | 75%    | max    |
|----------------|-------|--------|-------|---------|--------|--------|--------|--------|
| CEO Narcissism | 341   | 0.516  | 0.528 | 0.005   | 0.143  | 0.397  | 0.630  | 2.122  |
| CAR            | 341   | 0.000  | 0.065 | -0.268  | -0.028 | -0.003 | 0.024  | 0.346  |
| EPS            | 341   | 0.870  | 2.738 | -18.000 | -0.350 | 0.780  | 2.160  | 11.900 |
| Total Assets   | 341   | 21.042 | 2.385 | 11.608  | 19.659 | 21.045 | 22.738 | 27.777 |

A Pearson matrix was generated to examine preliminary relationships between key continuous variables. CEO Narcissism showed moderate correlations with key financial variables, including EPS and Total Assets, but no evidence of multicollinearity is apparent (see Table 2).

Table 2: Correlation Matrix (own illustration)

|                | CEO Narcissism | CAR    | EPS    | Total Assets |
|----------------|----------------|--------|--------|--------------|
| CEO Narcissism | 1.000          | 0.037  | -0.006 | -0.030       |
| CAR            | 0.037          | 1.000  | -0.058 | -0.107       |
| EPS            | -0.006         | -0.058 | 1.000  | 0.340        |
| Total Assets   | -0.030         | -0.107 | 0.340  | 1.000        |

To further assess multicollinearity possibilities, Variance Inflation Factor (VIF) analysis shows values well below accepted thresholds ( $<10$ ,  $<5$ ), confirming that multicollinearity is of no concern in the model (see Table 3).

Residual diagnostics reveal signs of heteroskedasticity in the residual plot (Fig. 6), violating the OLS assumption of constant variance in error terms. Specifically, residual variance increases at certain fitted values, suggesting potential bias in traditional OLS standard errors. To address this, the

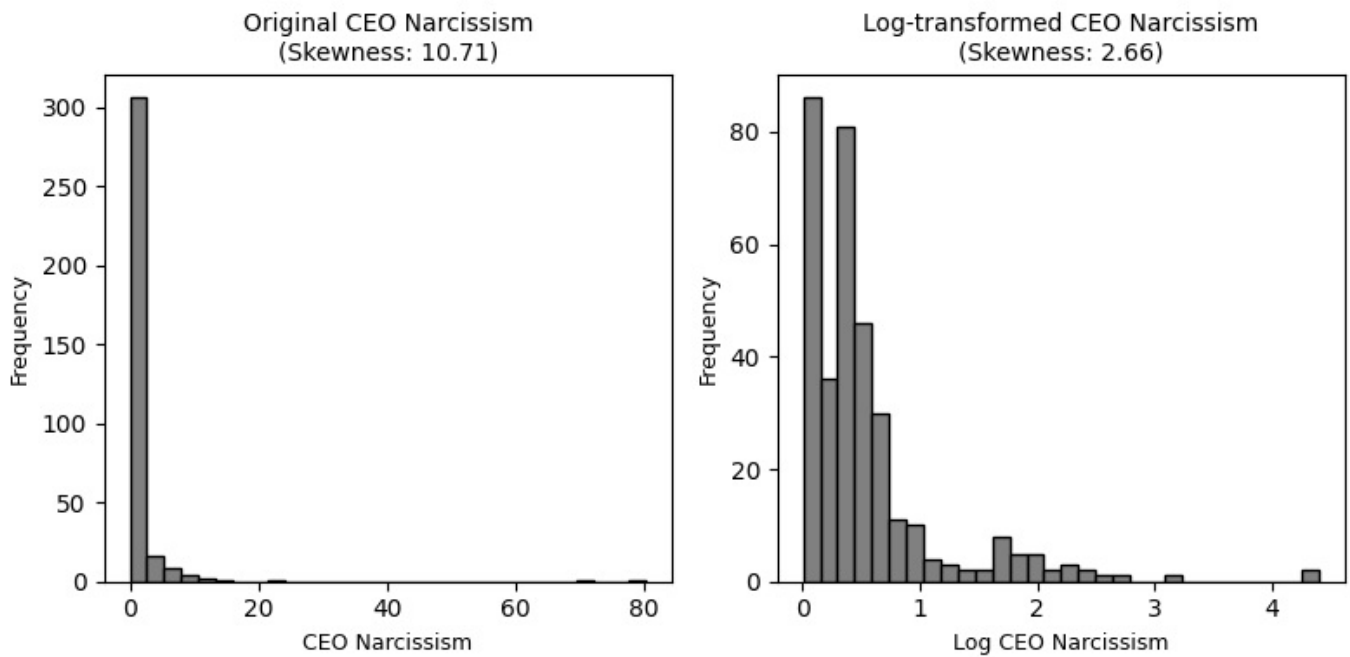


Figure 4: Histogram differences after transformation (own illustration)

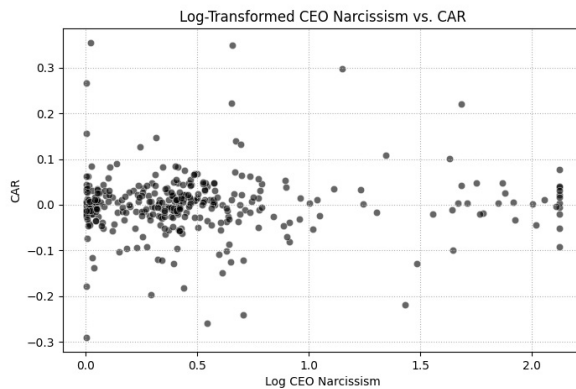


Figure 5: Scatter plot after transformation (own illustration)

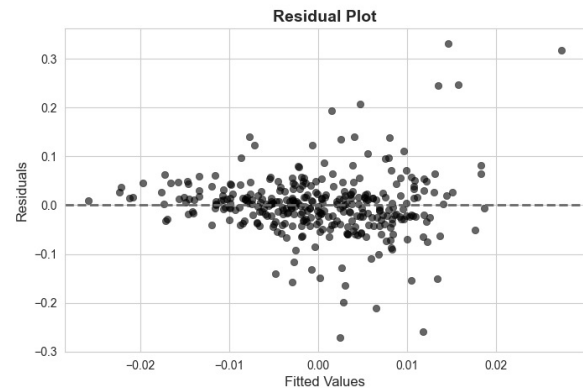


Figure 6: Residual plot (own illustration)

Table 3: VIF Analysis (own illustration)

| Variable       | VIF      |
|----------------|----------|
| CEO Narcissism | 1.931000 |
| CAR            | 1.005000 |
| EPS            | 1.133000 |
| Total Assets   | 2.082000 |

model was estimated using HC1 heteroskedasticity-robust standard errors (White-corrected errors). This adjustment corrects the variance-covariance matrix, ensuring that standard errors remain valid, and significance levels accurately reflect the presence of heteroskedasticity in the data. Thus, to ensure statistical validity given heteroskedasticity, all

standard errors reported in Table 4 are HC1 robust standard errors.

Table 4 presents the results of the Ordinary Least Squares (OLS) regression estimating Cumulative Abnormal Returns (CAR) as a function of CEO Narcissism and control variables, while incorporating industry and year fixed effects (not included in the table for brevity).

The primary independent variable, CEO Narcissism, does not exhibit a statistically significant relationship with CAR in the full model ( $\beta = 0.0097$ ,  $SE = 0.0065$ ,  $p = 0.151$ ). The 95% confidence interval  $(-0.003, 0.022)$  includes zero, confirming that the effect is indistinguishable from no impact. Among control variables, CEO Duality is the only statistically significant predictor ( $\beta = -0.0166$ ,  $SE = 0.0081$ ,  $p < 0.05$ ), indicating that firms where the CEO also serves as board chair

**Table 4:** Regression Results (own illustration)Standard errors in parentheses. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ 

|                        | Dependent variable: CAR |                       |
|------------------------|-------------------------|-----------------------|
|                        | Baseline Model          | Full Model            |
| CEO Narcissism         | 0.0045<br>(0.0061)      | 0.0097<br>(0.0065)    |
| CEO Duality            |                         | -0.0166**<br>(0.0081) |
| EPS                    |                         | -0.0005<br>(0.0017)   |
| Total Assets           |                         | -0.0012<br>(0.0023)   |
| External Hire          |                         | -0.0142<br>(0.0108)   |
| Earnings               |                         | -0.0189<br>(0.0096)   |
| Year Fixed Effects     |                         | Yes                   |
| Industry Fixed Effects |                         | Yes                   |
| R-squared              | 0.0014                  | 0.1286                |
| Adj. R-squared         |                         | 0.0381                |
| F-Statistic            | 0.5566 (df=1; 339)      | 10.68*** (df=32; 308) |
| Observations           | 341                     | 341                   |
| Residual Std. Error    | 0.0646                  | 0.0633                |

experience significantly lower CAR. The confidence interval for CEO Duality (-0.034, -0.002) does not include zero, reinforcing its significance. Earnings, EPS, External Hire, and Total Assets remain insignificant, with confidence intervals spanning zero, suggesting they lack explanatory power for CAR in this context. The model fit improves substantially with the inclusion of industry and year fixed effects. The  $R^2$  increases from 0.0014 (Baseline) to 0.1286 (Full Model), indicating that fixed effects explain a notable portion of the variance in CAR. However, the Adjusted  $R^2$  (0.0381) remains relatively low, suggesting that the model accounts for only a limited fraction of CAR variation. The F-statistic (10.68,  $p < 0.01$ ) confirms that the model as a whole is statistically significant, even though individual predictors remain weak.

## 5 Discussion

This empirical study examines whether CEO Narcissism has a significant impact on Cumulative Abnormal Returns following firm announcements of CEO turnover events. Contrary to expectations, the results suggest that CEO Narcissism does not have a statistically significant effect on CAR. Hence, Hypothesis 1 is rejected. This indicates that investor reactions may not be systematically influenced by narcissism as a personality trait in CEOs at the time of their employment announcement. Instead, results show that CEO Duality, a measure of CEO power, emerges as a significant predictor, with firms experiencing lower returns when the CEO successor also serves as the chairman of the board. The findings challenge prior assumptions that narcissistic leadership directly shapes market reactions, instead suggesting that shareholders may be prioritizing governance factors over CEO per-

sonality traits in their assessments of CEO turnover events. In discussing the emergent results, findings are attempted to be contextualized and reconciled with those in the extant literature, exploring potential explanations for the observed results and outlining the implications and limitations of the methodology that was chosen.

### 5.1 Analysis

Stock markets may not price in narcissistic traits upon a CEO's appointment as such personality trait information is not easily observable or quantifiable at the time of the announcement, which typically highlights the CEO's experience and accomplishments rather than psychological profiles, meaning investors lack concrete data on narcissism to evaluate and trade on. In efficient markets, readily available public information gets absorbed quickly and is reflected in moving stock prices - if a CEO's narcissism is not explicitly disclosed or overtly visible, shareholders and investors have little to no basis to price it in. Unless the CEO has a notorious public persona or a prior track record that strongly hints at narcissistic behaviors, the underlying trait could remain hidden until after the announcement of a CEO turnover event.

Similarly, even if information on narcissistic traits were available to the stock market during the announcement, it is not necessarily always rational to price it in immediately: while extant literature has linked CEO narcissism to negative outcomes on firm performance, it's the narcissists behavioral manifestations that are affecting these results (e.g. by way of altering a company's strategic approach or cultural positioning), not the trait alone. Investors and analysts might only start evaluating a new CEO once they start employing strategy shifts or communicate with stakeholders directly through interviews, corporate filings or announcements early into their tenure - but not based on initial impressions at the time of the CEO turnover announcement. At the appointment stage, personality traits like narcissism may not be getting priced in as the market awaits behavioral confirmation (or disconfirmation) of whether the new CEO's leadership is a) genuinely influenced by narcissistic manifestations of behavior and b) helpful or detrimental to the firm. As prior empirical findings suggest, narcissistic CEOs reshape the strategic, cultural and ethical directions of their firms. Assuming these processes unfold over time rather than overnight, the immediate risk of these potential outcomes might not yet be apparent to shareholders at the time of the CEO succession announcement.

Alternatively, non-significant findings could be explained by cognitive biases that lead to stock market inaction during CEO turnover events: as investors are presented with new information, they are slow to update their prior beliefs (conservatism) and initially underreact to the true detrimental risk of narcissistic CEOs, adjusting their sentiment over time instead of immediately following the announcement (Barberis et al., 1998, pp. 314-316). For example, if investors exhibit neutral optimism towards a new CEO *a priori*, they could be underweighting intangible traits like narcissism and focus on hard information (e.g. past performance, current financial

shape of the company) out of cautious optimism or simply uncertainty. Only once the CEO narcissist's actions provide a signal – for instance, a first earnings call that is absurdly optimistic in tone or the rushed initiation of a large acquisition process – do investors update their evaluation on narcissism as a leadership trait and adjust their risk perception of increased agency costs in narcissistic CEOs, forcing a negative stock market reaction (e.g. Buchholz et al., 2018; Marquez-Illasca et al., 2018).

CEO Duality negatively influences stock prices during CEO succession announcements. As occupying both the position of CEO and chairman of the board grants the CEO more centralized and unchecked power, suggests weak governance mechanisms, and harms shareholders if that power is wielded in the CEO's self-interest as opposed to the best interests of shareholders, leading to increased agency costs – this effect would then be more pronounced if the CEO possesses narcissistic tendencies, as those can confidently assumed to be self-serving by investors (Lassoued & Khanchel, 2022). During CEO turnover announcements, duality of top executive positions is explicitly disclosed in a straightforward and direct manner (hard information), which makes it easy for stock markets to digest and react to. Conversely, personality dimensions like narcissism are harder to gauge, especially if the successor CEO has not been in the spotlight prior to the turnover event. The market may absorb concrete, publicly available information – like duality – more swiftly, while more nebulous cues about the CEO's personality are slower to be priced in. The immediate announcement window is too short to capture the market's collective judgement on narcissism as opposed to duality, leading to the observed results.

In their initial assessment of narcissistic characteristics in a CEO successor, stock markets may conflate narcissism with related but distinct personality traits: overconfidence, i.e. the tendency to have excessive confidence in one's own judgement, is a trait overtly similar to narcissism (Campbell et al., 2004). Both overconfident and narcissistic CEOs are linked to more positive tone in disclosures and announcements (Schrand & Zechman, 2012, p. 311). However, mere overconfidence, unlike narcissism, is not linked to increased agency costs for shareholders due to a misalignment of interests. Similarly, extraversion helps narcissists emerge as leaders (Grijalva et al., 2014, p. 1), although it represents only a small part of the broad spectrum of traits that are inherent to narcissism. Perhaps as part of their neutral optimism, investors conflate a narcissist's assertive communication and self-assuredness and with overconfidence, extraversion, or simple charisma and charm. The short event window around CEO succession announcements may not be sufficiently suited to capture more than investors' initial assessment of CEO characteristics, making it difficult to properly distinguish narcissism and its self-serving features from a bold or optimistic CEO who is in alignment with shareholder interests.

## 5.2 Limitations

The study comes with several limitations. First, CEO signature size serves as a practical yet potentially limited proxy for narcissism: its one-dimensional nature may capture only some facets of the broader, multidimensional narcissism spectrum such as grandiosity, ego, hubris, or dominance (Cragun et al., 2019, p. 915). Further, signature size may be reflective of unrelated factors like physical traits, handwriting habits/instructions, or cultural norms rather than narcissism alone (Hou et al., 2024, p. 58). These factors may introduce measurement noise, raising validity concerns. Indeed, Abdel-Meguid et al. (2020) confirmed their hypotheses linking CEO narcissism to increased earnings engagement using a composite narcissism measure which included relative cash compensation, relative noncash compensation, and CEO picture size and prominence in 10-K annual reports; however, none of their hypotheses could be confirmed using signature size as a singular measure (p. 39). While practical, signature size's indirectness, susceptibility to unrelated influences, and difficulty distinguishing between narcissism from related traits highlight its methodological limitations.

Several further methodological limitations must be acknowledged when interpreting the results of the study. A potential key variable that was not controlled for is the type of CEO turnover in the context of a forced vs. voluntary departure: stock markets may react differently to CEO turnover events depending on whether the incumbent CEO departed the firm in a planned measure or was forced to leave due to internal board pressures as a result of poor performance. In forced turnovers, stock reactions may be positive, signaling relief or optimism in anticipation of a turnaround in performance, or negative, indicating that the CEO departure is merely a symptom of larger problems rooted more deeply within the organization. In voluntary turnovers, no such problems might be apparent since the departure is planned and not a broader signal of distress within the company, leading to more muted market reactions. By not controlling for this, the model runs the risk of conflating the effects of successor CEO personality traits with the nature of the departure. For example, if highly narcissistic CEOs tend to be hired when a company is in crisis due to the need for a strategic turnaround and the alignment of risk profiles between the narcissistic CEO and a firm experiencing financial distress (Kliger & Tsur, 2011, p. 29), the resulting positive CAR could be mistakenly misattributed to narcissism by the model. Conversely, if a long-tenured and successful CEO retires and is succeeded by a narcissistic CEO outside hire, the market may react negatively due to fear of digression from the established and successful company strategy, again confounding the trait effect with turnover type. As such, the omission of a forced-turnover indicator presents a methodological gap that could introduce omitted variable bias, meaning the coefficient of CEO narcissism would partly reflect unobserved turnover circumstances. External hire dummies have been included in the model, which may be able to partially capture forced turnovers (as those are more likely to be accompanied by an outsider CEO getting hired), but ultimately only serving as

an imperfect proxy for the latter.

Further, while the average three-year EPS is included as a profitability measure in the model, this variable may not fully capture recent performance trajectory. For instance, a firm could have a declining performance trend even if the three-year average is positive. In addition, the omission of further performance metrics narrows the view of firm performance and makes it more difficult to capture the overall financial state the company is in at the time of a CEO turnover event. For instance, Tobin's Q is a forward-looking indicator that reflects investor expectations of future growth, while return on assets (ROA) captures operational efficiency. Both variables are frequently used in existing research. Furthermore, leverage and liquidity ratios signal financial risk and stability; by not including these metrics as variables, the applied model may miss important cues about firm conditions and investor expectations, resulting in a less comprehensive understanding of firm health and profitability, which stock markets use to adjust their evaluations of a company.

Since the sample includes strictly NASDAQ-listed corporations, the findings are limited to companies that are large, U.S. based, and public. Smaller or privately held firms may have different governance structures and stakeholder constellations, resulting in different CEO turnover dynamics. Firms outside the U.S. might operate under distinct conditions in the regulatory or cultural context. As such, the findings lack external validity and are outside the scope of mid-sized companies or geographically different markets.

By using industry fixed effects rather than examining specific industrial sectors, the model assumes that the impact of CEO narcissism is uniform across industries. However, the regulatory and competitive conditions inherent to certain industries may influence the effect of CEO narcissism on firm outcomes (and, by extension, investor sentiment). For instance, some industries may amplify a narcissistic leader's impact – high-tech or entertainment sectors may value bold visions and risky, grandiose strategy impulses differently than the real estate and construction industry. As a result, this study may be overlooking the variance of CEO narcissism effects on different industry conditions.

Finally, this study is limited in that it does not account for the possibility that narcissistic CEOs either self-select or are deliberately selected into certain types of firms or firm contexts, raising concerns about endogeneity and reverse causality. Boards might deliberately seek overconfident, narcissistic leaders within specific circumstances (e.g. underperformance or emerging industries dependent on innovation). If such CEOs are disproportionately found in certain environments, the observed market reaction might be reflecting the underlying firm characteristics or conditions rather than the CEO's personality traits alone: firms that attract narcissistic CEOs could inherently have trajectories or issues that determine investor reactions. Limited insight on self-selection biases makes causal inference of observed correlations difficult.

### 5.3 Future Research

Extant research on CEO narcissism has primarily focused on downstream effects of narcissistic CEO behavioral outcomes on the firms they lead. However, it is still unclear under which specific conditions demand for narcissism as a personality trait in leaders emerges. While this study was not able to provide evidence for shareholders driving demand for appointments of narcissistic CEOs through the board of directors, it is crucial to understand why boards might opt to prefer narcissism as a character trait to advance company success (or avoid failure) – as such, the situational contexts in which narcissism may thrive have to be better understood. Boards may view narcissism as a helpful tool to advance transformational efforts within a struggling company, signal decisiveness to stakeholders, or more aggressively pursue growth and expansion strategies to secure market dominance. Yet, boards may overestimate the short-term benefits of narcissistic leadership (e.g. charisma, media attention, or anticipated shareholder optimism) while greatly underestimating the long-term risks that previous research has highlighted. Future research should consider the economic environments as a potential driving force behind demand for narcissism: for instance, highly regulated industries should perceive the narcissistic propensity for rule-breaking and excessive risk-taking differently than highly competitive industries, where disruption and innovation are critical (e.g. finance, biotech).

Moreover, it is critical to advance measurement techniques that reliably predict narcissism. Archival proxies, such as signature size or first-person pronoun use, remain widely used but face validity concerns (Van Scotter, 2019, p. 631). With the advancement of computational capabilities and the emergence of large language models (LLM), machine learning and sentiment analysis could provide a promising approach to developing novel narcissism measures by analyzing earnings call transcripts, CEO interviews, or shareholder letters. Expanding measurement to social media activity (e.g. LinkedIn; Junge et al., 2024, pp. 11-13) could provide a richer understanding of narcissistic self-promotion not only in CEOs but also in the TMT members they assemble.

## 6 Conclusion

This thesis set out to examine whether capital markets react systemically to the appointment of narcissistic CEOs by analyzing cumulative abnormal returns surrounding CEO turnover events. Drawing on Upper Echelons Theory and employing signature size as a measurement proxy for narcissism, the study investigated whether shareholders adjust their expectations in anticipation of the behavioral manifestations and strategic implications associated with narcissistic leadership.

The results provide no statistically significant evidence that successor CEO narcissism influences stock markets reactions at the time of a CEO turnover event. Though prior literature has demonstrated that narcissistic CEOs drive

their firms toward more aggressive strategies, risk-taking, and volatility in performance, the findings suggest that stock markets do not immediately factor these characteristics into their assessments upon CEO appointments. CEO duality – meaning the incoming CEO also assumes the role of chairman of the board – was instead found to negatively affect stock prices, highlighting the importance of governance structures and distributed power at the top executive level.

The findings contribute to the growing body of research on CEO personality, specifically narcissism, by offering a demand-side exploration on how markets perceive and evaluate narcissistic leadership at  $t = 0$  of the CEO's tenure. Contrary to expectations that investors would preemptively discount companies that appoint narcissistic CEOs due to their documented risk profiles and negative downstream effects on firm performance, the results indicate that markets might instead prefer to focus on tangible, hard information (e.g. CEO duality as a corporate governance signal) rather than speculative assessments of personality traits.

While the study conducted in this bachelor thesis provides valuable insights, it is limited in its methodological approach. The use of signature size as an indirect, one-dimensional measure of narcissism, while validated in prior research, may not fully capture the complexity of narcissism as a personality trait. In addition, the event study methodology inherently captures short-term market reactions and does not account for the gradual nature in which personality traits translate and transform into real, tangible actions and behaviors that markets can more reliably assess. Future research could explore alternative measures of CEO narcissism, investigate long-term shareholder wealth effects, or more deeply examine the environmental factors that may drive demand for the appointment of narcissistic CEOs.

This research enhances the understanding of the interplay between executive personality traits and shareholder expectations. While narcissistic CEOs have been linked to strategic, cultural, and ethical risks, their appointment alone does not appear to trigger immediate market reactions. Rather, the findings suggest corporate governance structures to be the primary focus for investors when evaluating executive leadership transitions.

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