

# Executive Narcissism and Firm Performance

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## Preface

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## Abstract

This thesis researches the effect of executive narcissism on firm performance. By focusing on the effect of both CEO narcissism and executive team narcissism on the firm performance measures Return on Assets (ROA) and Tobin's Q, the research question "What is the effect of executive narcissism on firm performance" is answered. Despite the destructive view on narcissism and the significant negative effect of executive narcissism on firm performance that is found in the prior literature, this thesis finds no support for this significant negative relationship with firm performance for both CEO narcissism and executive team narcissism. This thesis finds significant evidence that CEOs with a high degree of narcissism perform worse compared to CEOs with a medium degree of narcissism regarding the firm performance measure ROA. An interesting result obtained for the firm performance measure Tobin's Q is that, on average, executive teams with a high degree of narcissism perform significantly better than executive teams with a moderate degree of narcissism in the firm fixed effects model. This has important implications for further research, remuneration boards and investors as it might be due to the market-based structure of the firm performance measure Tobin's Q.

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## 1. Introduction

During the past decade, there has been an ongoing debate about the role of executive managers such as Chief Executive Officers (CEOs). During and after the financial crisis this discussion heated up to a new level and managerial discretion and remuneration policies were actively criticized and, as a result, drastically changed (Erkens et al., 2003, Kirkpatrick, 2009 and Schapiro, 2009). As executive managers have the highest ranks within a firm they actively determine the corporate strategy of the firm and by that directly affect the financial performance of the firm. Therefore, it is of major importance to the shareholders to have a good match between the firm and its executive managers, vice versa.

To understand what kind of executive would match with a certain firm and within an industry, it is important to notice that every executive has its own way of corporate decision making. Their decisions are greatly affected by their psychological characteristics and for this reason researchers in the field of corporate governance and behavioral economics have been actively studying this relation. Previous empirical research suggests that the psychological characteristics of executive managers matter; there are findings on managerial fixed effects (Bertand and Schoar, 2003), on managerial overconfidence that relates to firm behavior (Malmendier and Tate 2005, Malmendier and Tate 2008, Malmendier et al., 2011) and on personal characteristics of CEO candidates that are involved in buyout and venture capital transactions affecting corporate performance (Kaplan, Klebanov and Sorensen, 2012). From this research, it becomes clear that many of the psychological characteristics are essential for executive managers to be successful at their job. However, at the downside, some psychological characteristics can be value destroying and can, as a result, be detrimental to the performance of a firm.

The field of behavioral corporate finance studies these personality traits of executive managers. In this process, the traditional efficient market hypothesis, which states that it is impossible to beat the market because share prices reflect and incorporate all relevant information directly (Malkiel, 2003), is relaxed. Behavioral corporate finance predicts that trading behavior is influenced by behavioral biases, which implies that irrational behavior of executive managers, due to cognitive biases, can create both long-term and short-term market inefficiencies.

A concept that is closely related to the behavioral bias overconfidence is narcissism. However, narcissism has distinctive features from overconfidence. Narcissism is the degree to which an individual has an inflated sense of self and who must continuously take actions that reinforce that self-view (Campbell, Goodie, and Foster, 2004). Narcissists are manipulative and lack empathy (American Psychiatric Association 1994) and on top of this, narcissists favour grand and high-risk strategies to attract the

attention of important individuals on which narcissists thrive on (Wallance and Baumeister, 2002, Chatterjee and Hambrick, 2007). By doing this the payoff of such an action, such as a risky investment by the executive, will not only be the possible economic return of the investment, but also the attention that the executive manager gets from others by making the risky investment. Consequently, by implementing these risky strategies, executives can perform exceptionally well but also miss big and by that destroy shareholder value.

Existing literature in the field of behavioral corporate finance points out the relevance of CEO narcissism by showing how it affects the performance and decision making within a firm (Aktas, De Bodt, Bollaert and Roll, 2012; Chatterjee and Hambrick, 2007; Rijsenbilt, 2011). Besides the relevance of the research on CEO narcissism, another advantage of this approach is that it is a personality trait that is widely discussed and accepted in psychology. Researchers in this field have developed multiple theoretically backed unobtrusive measures that can be used to capture narcissism relatively time-efficient in large samples of individuals (Aktas et al., 2012; Chatterjee and Hambrick, 2007; Rijsenbilt, 2011).

However, to the best of my knowledge, the previous literature on executive narcissism does not focus on narcissism affecting the executive team as a whole. This thesis will therefore add to the behavioral corporate finance literature by not only focusing on the effect of CEO narcissism on firm performance, but also by looking at the effect of executive team narcissism on firm performance. By using transcripts of quarterly earnings conference calls the narcissism scores of both the CEO and the executive team of S&P 500 companies between 2012 and 2013 are calculated. The narcissism score variable is constructed by using the approach of Aktas et al. (2012) in which the authors construct a narcissism score by dividing the amount of singular personal pronouns used by an individual by the amount of plural personal pronouns used by the individual. This method is based on the work of Chatterjee and Hambrick (2007) and is backed by the work of Raskin and Shaw (1988) in which the authors show that the proportion of first person singular pronouns to first person plural pronouns that are used in speech is significantly correlated with the narcissistic personality inventory (NPI) scores.

By taking a closer look at the effect of the personal characteristics of CEOs and executive teams at firm performance, this thesis will focus on the effect of CEO narcissism and executive team narcissism on firm performance. The research question of this thesis therefore states:

What is the effect of executive narcissism on firm performance?

This thesis proceeds as following: First a literature review is provided in which the existing literature on the concepts used in this paper is described after which the empirical predictions are presented. Second, the data and methodology are discussed. Third, the results of this thesis are presented and finally the thesis will be concluded and the results will be discussed.



## 2. Literature Review

*This section will describe the relevant concepts that are used in this thesis and will give a general overview of the prior literature on the used concepts to gain a better understanding of the research problem. The first subsection will briefly define the research field of this thesis; Behavioral corporate finance. The second subsection will define the narcissism concept and its distinction from other related constructs. The third subsection will define the concept of executive narcissism in the form of CEO narcissism and executive team narcissism. The fourth subsection will discuss some of the measurements of executive narcissism that were used in previous empirical research. The fifth subsection introduces the main testable empirical predictions of this paper.*

### 2.1 Behavioral corporate finance

Behavioral corporate finance originates from traditional corporate finance which focusses on the relationship between financial contracts and real investment behavior that comes from the interaction between managers and investors. Traditional corporate finance is based on three concepts; (1) Rational Behavior, (2) the capital asset pricing model (CAPM) and (3) efficient markets (Shefrin, 1999). The main goal of decision making in traditional corporate finance is to maximize shareholder value (Damodaran, 1996). It predicts that it is impossible to beat the market because share prices reflect the fundamental value and any new relevant information is incorporated in share prices immediately (Malkiel, 2003).

Behavioral corporate finance, also known as behavioral finance, became popular during the rise and fall of internet stocks in the 1990s and the internet bubble of 2000-2001 (Baker and Wurgler, 2013). During this period traditional corporate finance models could not properly explain the mispricing's (also referred to as bubbles) that were present (Baker and Wurgler, 2013). Behavioral corporate finance replaces the approach of these traditional concepts with behavioral foundations that are more evidence-driven (Baker and Wurgler, 2013).

The literature in the field of behavioral corporate finance is divided into two distinctive approaches. The first approach considers the effect on the market and corporations due to the behavior of less than fully rational investors and the second approach considers the effect on the market and corporations due to the behavior of less than fully rational managers which is referred to as "managerial biases" (Baker and Wurgler, 2013). This thesis is in line with the second approach.

There are numerous reasons to expect that behavioral biases of executive managers affect a broad range of firm decisions and strategies and by that firm performance. Previous empirical research suggests that

the psychological characteristics of executive managers matter; there are findings on managerial fixed effects (Bertand and Schoar, 2003), on managerial overconfidence that relates to firm behavior (Malmendier and Tate 2005, Malmendier and Tate 2008, Malmendier et al., 2011) and on personal characteristics of CEO candidates that are involved in buyout and venture capital transactions affecting corporate performance (Kaplan et al., 2012). From this research, it becomes clear that many of the psychological characteristics are essential for executive managers to be successful at their job. However, at the downside, some psychological characteristics can be value destroying and can therefore be detrimental to a firm's performance.

## 2.2 Narcissism

The origin of narcissism is a story from ancient Greek mythology about a young beautiful, proud and foremost emotionally detached young man named Narcissus. The man Narcissus refuses the love of all, including a nymph named Echo that is desperately in love with Narcissus. Consequently, the goddess of love Aphrodite punishes Narcissus by cursing him that he can only love himself. The man then falls in love with his reflection in still water, in which he eventually drowns.

Over the past century the term narcissism became widely used and by the year 1980 already over 1,000 books and articles had been written on the concept of narcissism, which illustrates the broad interest in this concept and its relevance (Raskin & Terry, 1988). The first known person to write about the clinical condition of perverse self-love is the British physician and psychologist Havelock Ellis in 1898 (Ellis, 1898). The work of Ellis inspired and influenced the work of Sigmund Freud when he published his essay *On Narcissism: An Introduction* in 1914 (Freud, 1914). In this essay Freud argues that, to some degree, narcissism is an essential part of the healthy development of all children. He specifies narcissism as the tendency to see others as an extension of one's self and as "a complement to the egoism of the instinct for self-preservation" (Freud, 1914, p.37). In 1967, Kernberg created a clinical description of the narcissistic personality structure (Kernberg, 1967). He describes patients with a narcissistic personality as having excessive features such as self-absorption, grandiose fantasies, acclaim, overdependence and they are in a constant search for power, beauty and brilliance.

In the early days of narcissism, the concept was merely described as a clinical disorder such as was described by Kernberg in 1967. Narcissism was mostly seen as a categorical phenomenon, where individuals were assigned to either the normal (absence of narcissism) or the abnormal (presence of narcissism) category (Rijsenbilt & Commandeur, 2013). Over the years this view slowly changed and after

the mid-1980s researchers showed that narcissism can also be seen as a personality dimension on which individuals can score from low to high (Rijsenbilt & Commandeur, 2013).

In more recent literature narcissism is defined as a personality trait that reflects an inflated sense of self, grandiosity, a desire for recognition by others, fragile self-esteem and hostility (Wallance & Baumeister, 2002; Chatterjee & Hambrick, 2007; Rosenthal & Pittinsky, 2006). It is found that narcissists blame their failures on others and as a result they do not excel at teamwork (Campbell, Reeder, Sedikides & Elliot, 2000). Narcissists take more than others and deliberately make competitive choices in commons dilemmas games (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004). Narcissists also have a high need for achievement and autonomy (Mullins & Kopelman, 1988) and assume places of power and influence (Kernberg, 1975). Another important implication of narcissism is that it is continuous; narcissists have a craving for everlasting attention and admiration (Chatterjee and Hambrick, 2007). To achieve this, they must continuously undertake actions that are challenging and visible for important individuals on which narcissists thrive on (Wallance and Baumeister, 2002; Chatterjee and Hambrick, 2007).

In the previous literature on narcissism, there are multiple measures of narcissism available. However, the most widely used scale in the literature on narcissism is the Narcissistic Personality Inventory (Campbell & Miller, 2011). The Narcissistic Personality Inventory (NPI) was developed by Raskin and Hall in 1979 and is based on the Diagnostic and Statistical Manual of Mental Disorders (Raskin & Hall, 1979). The creation of the NPI made empirical research on narcissism possible and, as a result, this was the beginning of a vast amount of empirical literature on the concept. The NPI consists out of more than 220-items, with each item containing a narcissistic and a non-narcissistic statement to determine the degree to which a person has a narcissistic tendency. The NPI measures narcissism as a continuous variable and there is no specific score from which a person would be considered a clinical narcissist (Foster & Campbell, 2007).

The years after the creation of the NPI, validity tests of the measure performed by researchers (Emmons 1987; Raskin and Terry 1988; ) backed the measure and showed that narcissism can also be seen as a personality dimension on which individuals can score from low to high (Rijsenbilt & Commandeur, 2013). Additionally, in this process, the NPI instrument was reduced to fewer items which provided a basis for even more extensive empirical research (Chatterjee and Hambrick, 2007). A prominent study on the NPI is a factor analysis that was performed by Emmons (1984, 1987). Emmons identified four factors of narcissism and labeled them (1) Leadership/Authority (I like to be the center of attention), (2) Self-Absorption/Self-Admiration (I am preoccupied with how extraordinary and special I am), (3)

Superiority/Arrogance (I am better than others) and (4) Exploitativeness/Entitlement (I demand respect due to me).

### 2.3 Distinction from other behavioral biases

Narcissism has a lot in common with other behavioral biases that have been researched in the behavioral corporate finance literature such as overconfidence and hubris. However, narcissism has distinctive features from them. Narcissism is the degree to which an individual has an inflated sense of self and who must continuously take actions that reinforce that self-view (Campbell, Goodie, and Foster, 2004). Narcissists are manipulative and lack empathy (American Psychiatric Association 1994) and on top of this narcissists favor grandiose and high-risk strategies to attract the attention of important individuals on which narcissists thrive on (Wallance and Baumeister, 2002; Chatterjee and Hambrick, 2007). By doing this the payoff of an action, such as a risky investment by the executive, will be not only the possible economic return of the investment but also the attention that the executive manager gets from others by making the risky investment.

Narcissism thus predicts the relationship of individuals with others, an important feature that is not discussed and observed by other managerial biases in the behavioral corporate finance literature. Also, another very important distinction is that a behavioral bias like overconfidence is only related to the perception of reality, while narcissism is a complete personality trait that has both cognitive and behavioral dimensions (Aktas et al., 2012). Narcissism is the more fundamental, ingrained trait, whereas the other biases are more psychological states that are brought on by a combination of external factors (Chatterjee and Hambrick, 2007).

### 2.4 Executive Narcissism

There has been extensive research in the field of corporate governance and (behavioral) corporate finance that focuses on the attributes that effective leaders should possess (Offermann, Kennedy and Wirtz, 1994; Zaccaro, Kemp and Bader, 2004; Hoffman, Woehr, Magdalenyounghjohn and Lyons, 2011). This research focuses on whether an individual fits the prototype of an effective leader, which includes dimensions such as; charismatic influence, self-confidence, dominance, energy, attractiveness and strength. As many of these characteristics are associated with narcissism, it can be argued that narcissists encompass many of the attributes that are described in empirical research and that are deemed necessary to be an effective leader (O'Reilly, Doerr, Caldwell and Chatman, 2013).

Kernberg (1975) argued that it is narcissism that pushes people to engage in positions of power and influence. Other, more recent, research performed by Brunell, Gentry, Campbell, Hoffman, Kuhnert and DeMarree (2008) shows that narcissistic individuals are more likely to emerge as leaders than their counterparts. It is evident that for this reason narcissistic personalities can be expected to hold leadership positions in firms.

Raskin, Novacek and Hogan (1991) argue that it is the self-esteem that is associated with narcissism that helps narcissistic individuals progress in their careers and take up leadership positions in firms. Also, other characteristics of narcissistic individuals such as the high need for achievement, autonomy and their craving for admiration and attention of others also supports this view.

Despite extensive research on the concept and even though the literature seems to advocate that there is a significant presence of narcissistic individuals in the executive teams of firms, it remains unclear how and in what way narcissistic executives affect firm decisions and by that the performance of the firms in which they operate. Prior research suggests that narcissistic executives can both benefit and hurt the firm by taking excessive risks with potentially higher returns (Campbell, Goodie and Foster, 2004). However, the negative effect of narcissism predominates and is researched most intensively because some of these risky decisions are likely to result in very destructive outcomes for a firm. This contradictory relationship can be expected as narcissism is a personality trait that has a complex nature with both positive and negative characteristics. In the literature, this is referred to as the "productive" and "destructive" sides of narcissism (O'Reilly et al., 2013; Rijsenbilt & Commandeur, 2013; Maccoby, 2000).

On the productive side, narcissistic executives are seen as inspirational, creative and up for challenges (O'Reilly et al., 2013). Narcissistic executives have compelling and gripping visions for the companies in which they operate and they have the ability to attract followers (Maccoby, 2000). The energy, charismatic influence and the confidence exerted by the narcissistic executives inspires their followers and gives them the opportunity to progress to the higher ranks within a firm.

However, on the destructive side, it is found that narcissistic executives blame their failures on others and as a result they do not excel at teamwork (Campbell, Reeder, Sedikides & Elliot, 2000). Narcissists take more than others and deliberately make competitive choices in commons dilemmas games (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004) and on top of this narcissistic executives have a personality that reflects a fragile self-esteem and hostility (Wallance & Baumeister, 2002; Chatteree & Hambrick, 2007; Rosenthal & Pittinsky, 2006).

It becomes clear that the charismatic influence, energy and self-confidence of the narcissistic executives inspires their followers but can also have a corrosive effect; as executives have more past successes they will listen less to advice and words of caution since they are convinced that they were always right before, when others had their doubts, and therefore they will be right again (Maccoby, 2000). This leads to excessive risk taking by executives which can potentially result in destructive outcomes for the firm.

## 2.5 CEO Narcissism

Most of the researchers in the prior behavioral corporate finance literature that focuses on narcissistic executives limit their research to the effect of CEO narcissism on firm decisions and firm performance. It is argued that the CEO has the most power and influence within a firm and therefore has a very important role to fulfil in the decision-making process of the corporation (Finkelstein, Hambrick and Canella, 2009). In this section, some of the prior research on CEO narcissism and its effect on firm performance will be discussed.

Chatterjee and Hambrick (2007) found that CEO narcissism is related to extreme performance in terms of big wins and big losses. They also found a strong indication that CEO narcissism was related to significant annual fluctuations in returns since large absolute differences were found in the firm's total shareholder returns (TSR) and Return on Assets (ROA) (Chatterjee and Hambrick, 2007). However, Chatterjee & Hambrick (2007) could not find proof for the direction of the relationship between firm performance and CEO narcissism. The sample of narcissistic CEOs that they investigated did not significantly perform better or worse than the less narcissistic CEOs that were observed.

Ham, Seybert and Wang (2013) use CEO signature size to determine the degree of narcissism in CEOs. They find that CEO narcissism is positively related to various indicators of overinvestment and that these overinvestments performed by narcissistic CEOs are destroying firm value through reduced sales growth and revenues (Ham et al., 2013). They find that CEO narcissism is negatively related to firm financial performance which they measure by using the Return on Assets (ROA) accounting firm performance measure.

Rijsenbilt (2011) studied the relationship between CEO narcissism and its impact on organizational outcomes such as the financial performance of a firm. In the research of Rijsenbilt (2011), several CEO narcissism measures are used which are constructed by using multiple unobtrusive methods which are then used as explanatory variables to research the relation between CEO narcissism and firm performance. This is done for both market and accounting based measures of firm performance, which are the Return

on Assets (ROA) and the Tobin's Q respectively. The main finding of the research of Rijsenbilt (2011) is a curvilinear relation between CEO narcissism and the financial accounting performance measures that are used in her research. Both very low and very high levels of CEO narcissism result in lower financial performance of a firm, however mediocre levels of CEO narcissism result in relatively higher financial performance of a firm. This empirical research confirms both the productive and destructive view on narcissism; some level of narcissism is required for effective leadership, however high levels of narcissism can result in destructive behavior by CEOs affecting both firm decisions and firm performance.

## 2.6 Executive Team Narcissism

Although it is argued that the CEO has the most power and influence within a firm, it is of major importance to note that the characteristics of the other top management team members also matter for important firm decisions and as a direct result; firm performance. A study on the narcissistic tendencies of an entire executive team, instead of merely the CEO, potentially sheds new lights on the research on executive narcissism affecting firm decisions and by that firm performance. As the CEO shares some of his tasks and power with other management team members this can have important implications (Hambrick and Mason, 1984).

Executive team narcissism is based on the concept of collective narcissism. Collective narcissism is similar to individual narcissism, however, instead of idealizing an individual self, it is the inflated view of an in-group to which individuals belong (de Zavala, Cichocka, Eidelson and Jayawickreme, (2009).

Chatterjee and Hambrick (2007) argue that the collective responsibility of the top management team limits the "narcissism" of individual top managers. However, other research on narcissism also highlights that narcissists are attracted to others who have a similar personality (Campbell, 1999). This implies that CEOs are likely to favor new members to the executive team who are similar to them in narcissistic tendency. Possibly, individuals with narcissistic tendencies are more likely to be hired and existing executive team members with narcissistic tendencies are less likely to get fired by the narcissistic CEO. This is also supported by the fact that likeminded individuals are likely to reinforce their opinions, values and beliefs; something on which narcissists thrive on.

To conclude, from the literature discussed above it becomes clear that a certain degree of narcissism is a necessary personality trait for effective leadership. However, excessive executive narcissism can also be value destroying for a firm. In the literature, it is found that executive narcissism influences firm decisions and firm performance and is relevant at both the CEO and the executive team level.

## 2.7 Narcissism measurement used in prior literature

There are multiple measurements of narcissism available that were used in the prior literature on the concept. As stated before, the NPI measure, which was constructed in 1979 by Raskin and Hall, is the most commonly known and widely used measure for narcissism and was described earlier in this thesis. However, due to its extended form (over 220 items), it is not a very practical measure for empirical research. Especially not since the top executives that are surveyed have only limited time available and are likely to be reluctant to answer questions of surveys with very sensitive topics such as executive narcissism (Cycyota and Harrison, 2006). An additional problem of this kind of surveys is that the top executives might give socially acceptable and desirable answers (Chatterjee and Hambrick, 2007).

To make the use of the NPI measure more attractive and easier, researchers attempted to reduce the number of items that it covers (Prifitera and Ryan, 1984; Ramanaiah, Detwiler, and Byravan, 1994; Raskin and Hall, 1988). However, this did not solve the social desirability bias which results from the sensitivity of the topic as mentioned before. To overcome this problem, Chatterjee and Hambrick (2007) suggest using unobtrusive indicators of narcissistic tendencies in CEOs which were also used by other scholars and researchers in the behavioral corporate finance literature (Aktas et al., 2012; Chatterjee and Hambrick, 2007; Rijssenbilt, 2011).

Webb, Campbell, Schwartz and Sechrest (1966) show the relevance of this method and give examples of unobtrusive indicators to learn about preferences, perceptions and personalities of individuals that were not obtained through interviews or questionnaires. Examples of these unobtrusive indicators include; the physical traces individuals leave behind in their environment and the written and spoken words of individuals (Chatterjee and Hambrick, 2007; Webb et al., 1966).

Chatterjee and Hambrick (2007) state that the selection of their unobtrusive indicators of CEO narcissism has to be based on two main criteria; First, each indicator needs to reflect the CEO's volition; it has to be mainly under the control of the CEO. Second, each indicator that they use in their research has to reflect one or more aspects of the narcissism factors that were identified by Emmons (1987). As mentioned earlier these are; (1) Leadership/Authority (I like to be the center of attention), (2) Self-Absorption/Self-Admiration (I am preoccupied with how extraordinary and special I am), (3) Superiority/Arrogance (I am better than others) and (4) Exploitativeness/Entitlement (I demand respect due to me). The unobtrusive indicators of CEO narcissism that they eventually use in their research comprise the following: (1) the prominence of the CEO's photograph in the company's annual report; (2) the CEO's prominence in the companies press releases; (3) the CEO's use of first-person singular pronouns in interviews; (4) the CEO's cash compensation



divided by that of the second-highest paid executive in the firm; and (5) the CEO's non-cash compensation divided by that of the second-highest paid executive in the firm.

Other researchers that use unobtrusive indicators of narcissism are Ham et al. (2013) and Aktas et al. (2012). Ham et al. (2013) use CEO signature size to determine the degree of narcissism in CEOs and they validate this approach by finding a correlation between signature size and narcissism. The narcissism measure that Aktas et al. (2012) use is also used in the research of Chatterjee and Hambrick (2007) and involves the identification of the proportion of first person singular pronouns and first person plural pronouns that are used in transcripts of CEO speech. Research performed by Raskin and Shaw (1988) supports this measure in which the authors show that the proportion of first person singular pronouns to first person plural pronouns that are used in speech is correlated with the narcissistic personality inventory (NPI) scores. Individuals that use more first person singular pronouns than first person plural pronouns tend to score higher on the NPI measure than their counterparts (Raskin and Shaw, 1988). Raskin and Shaw (1988) also find no relationship between the use of first person singular and first person plural pronouns and topic choice, which further supports this unobtrusive indicator as a measure for executive narcissism by using written and spoken words of CEOs retrieved from transcripts of CEO speech.

## 2.8 Firm performance, CEO narcissism and Executive team narcissism; Empirical predictions

As stated before, the CEO has the most power and influence within a firm and therefore the CEO has a very important role to fulfil in the decision-making process of a corporation (Finkelstein, Hambrick and Canella, 2009). From previous literature, it becomes clear that the psychological characteristics of executives matter (Malmendier and Tate, 2005; Malmendier and Tate, 2008; Malmendier et al., 2011; Kaplan et al., 2012; Chatterjee and Hambrick, 2007; Rijsenbilt, 2011; Aktas et al., 2012). It is evident that there are numerous reasons to expect that the personal characteristics of CEOs affect a broad range of firm decisions and strategies and as a direct result; firm performance.

However, as the CEO shares his/her tasks and power with other members of the executive team, the personal characteristics of the other top executive team members should also matter for important firm decisions and as a direct result; firm performance (Hambrick and Mason, 1984). Because of this, a study on the degree of narcissism of an entire executive team, instead of merely the CEO, potentially sheds new lights on the research on executive narcissism affecting firm decisions and by that firm performance. In line with this approach, this section will formulate the empirical predictions of this thesis.

From the literature discussed earlier in this thesis, which mainly focusses on CEO narcissism, it becomes clear that previous empirical research on the effect of executive narcissism on firm performance yields very mixed results. As similar research performed by Rijsenbilt (2011) and Ham et al., (2013) finds a negative relation between CEO narcissism and firm performance the first empirical prediction of this thesis states:

- 1) CEO Narcissism has a negative effect on firm performance.

This is in line with the “destructive” view on narcissism that is described in the literature; the CEO takes risky and bold decisions that are value destroying for a firm and this overshadows the positive factors that are outlined in the “productive” view on narcissism.

The same effect can be expected for executive team narcissism which yields the second empirical prediction of this thesis:

- 2) Executive team Narcissism has a negative effect on firm performance.

On the productive side it is argued that a certain degree of narcissism is a necessary personality trait for effective leadership. However, supported by the destructive view on narcissism, an excessive degree of executive narcissism can also be value destroying for a firm and result in poor firm performance. Supported by the research of Rijsenbilt (2011) that researches these relationships on the CEO level, this forms the basis for the third, fourth, fifth and sixth empirical predictions of this thesis that focus on both the CEO and the executive team level and therefore state:

- 3) A **high** degree of CEO narcissism has a **negative** effect on firm performance compared to the reference group with a moderate degree of CEO narcissism.
- 4) A **low** degree of CEO narcissism has a **negative** effect on firm performance compared to the reference group with a moderate degree of CEO narcissism.
- 5) A **high** degree of executive team narcissism has a **negative** effect on firm performance compared to the reference group with a moderate degree of executive team narcissism.
- 6) A **low** degree of executive team narcissism has a **negative** effect on firm performance compared to the reference group with a moderate degree of executive team narcissism.

### 3. Data and Methodology

*To answer the main research question “What is the effect of executive narcissism on firm performance” and the corresponding empirical predictions that were described in section 3, this thesis will make use of both financial and linguistic data that is retrieved from multiple data sources. The combined panel data will then be used to perform statistical tests by using the STATA MP 14 statistical software. This section will describe the used sample and methodology of this thesis. In section 4.1 the used sample will be discussed and motivated. In section 4.2 the independent variables will be introduced and in section 4.3 the dependent variables measuring firm performance will be discussed. In section 4.4 the control variables are described and finally in section 4.5, the used methodology of this thesis will be described.*

#### 3.1 Sample

The used sample in this thesis consists out of the 2012-2013 S&P 500 index constituents and their corresponding CEOs and executive team members. This specific sample was chosen for multiple reasons; First, publicly listed companies in the United States of America (USA) were chosen as financial and executive information on these companies is widely available in the COMPUSTAT and EXECUCOMP database. Second, the USA is considered as one of the most individualistic countries in the world which is supported by the five cultural dimension of Hofstede (Hofstede, 1973). As a result, it can be expected that narcissistic tendencies play a large role in US firms. Research by Foster, Campbell and Twenge (2003) confirms this finding. In their research they contrasted five world regions with one another and they found that the USA displays significantly more narcissism than Asia or the Middle East, where the culture is much more focused on collectivism (Foster, Campbell and Twenge, 2003). Third, the time period was limited to two years (eight quarters) due to time constraints of this thesis as it is a very labor intensive job to collect all quarterly earnings conference call transcripts for all the firms that are included in the sample, this will be further described in the next subsection. Last, prior research on executive narcissism performed by Rijsenbilt (2011) uses a similar sample and the majority of other prior research focusses on a sample of US firms, such as the research of Chatterjee and Hambrick (2007) and Aktas et al. (2012), which allows the reader to compare some of their results with the findings in this thesis.

The data on the (quarterly) financials of these companies during the time period of 2012-2013 was collected from the COMPUSTAT database by using the GVKEY of each S&P 500 constituent in the years 2012 and 2013. The information on the CEOs such as their age and tenure is obtained from the EXECUCOMP database by matching the GVKEY and the corresponding executives. I look up any missing financial values, when available, by using the BLOOMBERG database and I eventually delete the companies

and their corresponding executives for which I cannot obtain the missing data. The panel dataset, with exception of the collected CEO and executive team narcissism scores which will be described in the next section, for the financial and CEO data consists out of 3816 individual observations for 477 S&P 500 firms over eight quarters during the years 2012-2013.

### 3.2 Independent Variables: CEO narcissism and Executive team narcissism

As became clear in the literature review of this thesis, identifying a degree of narcissism within individuals or executive teams is not an easy task to perform. Narcissism is mostly seen as a destructive personality trait and, as a result, surveys on this topic can be subject to severe social desirability bias. Unobtrusive measurements of narcissism can provide researchers with time-efficient methods to observe the degree of narcissism within individuals as they are not subject to these problems.

Therefore, by using an unobtrusive measurement method to determine the degree of narcissism within individuals, the narcissism scores for both the CEOs and the executive teams of the used sample of 477 US S&P 500 firms in this thesis can be obtained. The narcissism score is obtained by dividing the sum of the number of first-person singular pronouns (I, me, mine, my, myself) by the sum of first-person plural pronouns (we, us, our, ours, ourselves) that are used in speech by the CEOs and the executive teams. This is a similar approach of using unobtrusive measures of narcissism that is used in the research by Chatterjee and Hambrick (2007) and Aktas et al. (2012).

This unobtrusive measurement of narcissism is backed by the work of Raskin and Shaw (1988) in which the authors show that the proportion of first person singular pronouns to first person plural pronouns that are used in speech is significantly correlated with the narcissistic personality inventory (NPI) scores. No direct relations were found for the second and third personal pronouns and these are therefore left out of this thesis. Another important finding of the paper by Raskin and Shaw (1988) is that their narcissism measurement does not depend on the topic that is discussed, this means that the quarterly earnings conference call transcripts of the S&P 500 2012-2013 constituents can be used for this purpose.

In this thesis, the above-described method is applied to the eight quarterly earnings conference call transcripts for both of the years 2012 and 2013 which were obtained from the BLOOMBERG database by downloading them one by one. In these quarterly earnings conference call transcripts there is an introductory part where the executives introduce themselves after which they comment on the quarterly earnings realized. Analyst, interviewers and other interested parties can ask questions during these conference calls to which a member of the executive team answers.

Usually, the first part of the quarterly earnings conference call has been partly scripted, if not entirely. It can be expected that some parts of the conference calls are prepared beforehand as the quarterly earnings conference calls are a routine job for most of the present executives. Because of this reason, this thesis will only focus on the questions and answers (Q&A) part of the quarterly earnings conference calls which is not subject to this problem and can be expected to be more “personal”. Only the answers of the executives in the Q&A section, which are indicated by the sign “<A”, are used. The questions which are indicated by “<Q” are deleted. An example of a part of a quarterly earnings conference call transcript can be found in Appendix 1.

By using programming tools the first person pronouns used by the CEOs and executive teams in the Q&A section of these quarterly earnings conference call transcripts are identified after which the narcissism scores can be calculated. The program will first identify the specific executive team member when he or she answers to a question and then counts the amount of first person pronouns used. The proportion of the first person pronouns is then calculated by using Excel to obtain the final narcissism scores. The CEO and executive team narcissism scores will thus be the ratio of the sum of all first-person singular pronouns to the sum of all first-person plural pronouns that are used in the Q&A section of the quarterly earnings conference call transcripts. Due to the fact that during the conference calls there are often multiple executives present, the total executive team scores are averaged by the amount of executives present.

The narcissism scores are obtained for 238 CEOs as they are not always present during the quarterly earnings conference calls, or not at all. This accounts for a total of 1350 observations containing the CEO narcissism scores. There are 359 executive teams for which the executive team narcissism scores can be obtained as some of the formats of the conference call transcripts downloaded from the BLOOMBERG database could not be used by the program to calculate the executive narcissism scores. This is also the case for the CEO narcissism scores. There are 2306 observations for which the executive team narcissism scores can be obtained.

### 3.3 Dependent Variables: Firm performance

*This thesis uses both accounting-based and market-based indicators of firm performance. The accounting-based indicator of firm performance that is used in this thesis is the Return on Assets (ROA) and this measure is retrospective by nature. The market-based indicator of firm performance that is used in this thesis is the Tobin's Q and is a prospective measure by nature. The market-based indicator of firm performance, Tobin's Q, will be used as a robustness check of the results that are obtained by using the accounting-based indicator of firm performance; ROA.*

### 3.3.1 Return on Assets (ROA)

The accounting-based measure of financial firm performance that is used in this thesis is the Return on Assets (ROA). The ROA measure of financial firm performance is retrospective as it is based on historical costs which come from audited figures (Aliabadi, Dorestani and Balsara, 2013). The ROA takes the assets into account that are used to support the business activities of a firm. It shows whether a firm is able to generate an (acceptable) return on its assets.

There are many measurements available to measure financial firm performance. However, it can be argued that the ROA is the most commonly used accounting-based measure of a firm's financial performance in executive management research (Miller and Lee, 2001). In addition, as a measure of firm performance, the ROA is consistent with other recent empirical research on executive narcissism and its effect on firm performance (Chatterjee and Hambrick, 2007, Rijsenbilt (2011) and Ham et al., 2013).

Some of the major shortcomings of the ROA as a measure of financial firm performance are; (1) it is sensitive to earnings management, (2) it may be difficult to compare accounting measures across firms due to different accounting policies, (3) it does not take into account the cost of capital and (4) it has a short-term perspective (Aliabadi et al., 2013). However, despite the shortcomings of the ROA, Aliabadi et al. (2013) find that it is the most relevant accounting-based measure of financial firm performance in their used sample containing both US and non-US based firms. For the above-stated reasons the ROA measure of firm performance will be used in this thesis as the main dependent variable. The ROA is calculated by dividing the net income of a firm by the total assets of a firm.

In this thesis, the ROA will be the one quarter ahead ROA (lead variable  $ROA_{t+1}$ ). This is in line with Chatterjee and Hambrick (2007) whom argue that an executive's personality is reflected in a company's performance with a substantial lag. Chatterjee and Hambrick (2007) use 1 year lags and also perform their analyses for time-periods beyond one year. The one quarter lead variable of ROA applied in thesis can therefore be seen as relatively conservative.

### 3.3.2 Robustness Check; Tobin's Q

The market-based measure of financial firm performance that is used as a robustness check of the results in this thesis is the Tobin's Q. The main advantage of using market-based performance measures, like Tobin's Q, is that they reflect firm value given by share prices (Aliabadi et al., 2013). However, the downside of using the market-based measure Tobin's Q is that it is likely to reflect market expectations rather than the true financial performance of a firm and can therefore also proxy for the investment opportunities that are present for a firm (Aliabadi et al., 2013). Another problem that arises from using market-based

measures for firm performance is that any market imperfection can lead to an over- or under-valuation of share prices, i.e. during a bubble, which is not related to the actual financial performance of a firm (Aliabadi et al., 2013).

Despite the shortcomings of the Tobin's Q as a measure of financial firm performance, this thesis will use the measure to complement the accounting based-measure of financial firm performance to give a more complete picture on the effect of executive narcissism on firm performance, especially in a prospective light. Also, the degree of narcissism of an executive can have a major influence on market expectations and by that the share price; as charismatic personalities are likely to be able to "sell" their company to shareholders. Moreover, the use of the Tobin's Q as a firm performance measure is in accordance with the research of Rijsenbilt (2011).

In this thesis, the Tobin's Q is calculated by dividing a firm's market value of assets over its book value of assets. The market value of assets is calculated by adding the market value of common stock, which is the share price times the amount of outstanding shares respectively, to the book value of assets minus the book value of common stock. Similar to the firm performance measure ROA, the Tobin's Q will be the one quarter lead variable (Tobin's  $Q_{t+1}$ ).

### 3.4 Control Variables

This thesis will include several control variables in the used econometric models as they might have an important effect on the firm performance measures that are used. Including these control variables in the econometric models will add to the explanatory power and quality of the results in this thesis. There will be control variables on both the firm-specific level and on the executive-specific level.

#### 3.4.1 Firm-specific control variables

The first firm-specific control variable that is used in this thesis are the sales of a firm as a proxy for firm size. This control variable is consistent with other prior literature on executive narcissism (Rijsenbilt, 2011 and Chatterjee & Hambrick, 2007). Firm size does not only contribute to a firm's financial performance but might also affect the levels of narcissism of the executives; as a larger firm means more power which could possibly feed the narcissistic tendencies of executives. As argued by Rijsenbilt (2011), the sales of a firm are the preferred control variable above the total assets of a firm. This is due to two specific reasons: (1) the sales of a firm are a better indicator of firm size when human capital provides the turnover and assets are less used to create it, (2) as the dependent variable for the robustness check of this thesis, Tobin's Q,

already contains the book value of total assets, a mechanical relation arises when firm size in terms of total assets is used as a control variable.

The second firm-specific control variable that is used in this thesis is the leverage ratio which is the total debt of a firm divided by the total book value of assets of a firm. The leverage ratio proxies for firm risk and also the efficiency of a firm which both affect firm performance (Margaritis and Psillaki, 2008). It also influences the investment decisions of executives as higher debt levels put constraints on the managerial discretion of an executive due to debt covenants and the resulting reduced flexibility.

#### 3.4.2 Executive-specific control variables

The first executive-specific control variable that is added to the econometric models as a control variable is CEO age. The age of a CEO might affect the level of narcissism of the CEO due to past successes in his or her life. These past successes will add to the feelings of superiority as they were “always” right before, when others had their doubts, and therefore they will be right again (Maccoby, 2000). Also, more importantly, in prior literature in the field of behavioral corporate finance it is found that CEO age significantly affects risk-taking behavior and firm performance (Serfling, 2013). The CEO age is retrieved from the EXECUCOMP database.

The second executive-specific control variable that is used in this thesis is CEO tenure. As it can be argued that a longer CEO tenure will increase the power of the CEO due to its entanglement with the firm and by that increases the influence they have on the company. Miller (1991) finds that a longer CEO tenure will increase the risk-averseness of CEOs. In addition, Miller (1991) finds that CEOs with a longer tenure destroy firm value as longer-tenured CEOs fail to adapt the firm to changes in the external environment.

#### 3.4.3 Industry-specific control variables

The twelve Fama and French industry codes will be used as control variables in some of the used regression models as different industry groups have different performance standards. The firms included in the sample were divided over the twelve industry groups by using their corresponding SIC codes to determine in what industry a company is active in. In the used sample firms do not switch industries.



### 3.5 Methodology

*In this section the used methodology and the motivation for the used estimation models to obtain the regression results will be described.*

#### 3.5.1 Panel data

The panel data set that is used in this thesis has multiple advantages over using cross-sectional or time-series data. First, panel data models use combined cross-sectional and time-series data which enables researchers to estimate more accurate models (Hsiao, 2003). This usually results in a larger dataset as there are multiple observations over time for a particular firm and it allows for variation between firms. This information is reflected in the between-subject variation and within subject variation (over-time) which is shown in the panel data descriptive statistics. Second, another important advantage of panel data is that the use of specific regression models for panel data allows researchers to control for individual unobserved heterogeneity, which is also known as omitted variable bias (Hsiao, 2003). The three main regression approaches to analyze panel data are the pooled regression model, fixed effects (FE) regression model and the random effects (RE) regression model (Greene, 2011). The pooled regression model is arguable the most restrictive model and is not used very often by researchers in the corporate governance and corporate finance literature. This thesis will use Fixed and Random effect models to analyze the panel data set used in this thesis which is also backed by the F-test and the Breusch-Pagan Lagrange Multiplier test for choosing fixed and random effects over pooled regression models.

#### 3.5.2 Fixed effects model

As there are numerous factors that affect the financial performance of a firm, including all these factors in a regression model will be extremely difficult. Fixed effect models can control for time-constant unobserved heterogeneity (omitted variable bias) such as firm or industry attributes that are persistent and hard to control for (Greene, 2011). This enables the fixed effect models to control for a potential spurious relationship between the variables and these time-constant unobserved attributes, as the fixed effects model allows the unobserved individual effects to be correlated with the included variables in the regressions (Greene, 2011). For example; these time-constant unobserved attributes can be the culture within a firm, the geographical location of a firm, or industry standards. In combination with personality traits that are usually named as one of the prime suspects for time-invariant individual-specific heterogeneity (Schurer and Yong, 2012), this further justifies the use of FE models as they isolate the effect of executive narcissism of firm performance.

As the rationale behind the fixed effects (FE) models is simple and persuasive they are used most frequent in economic and social sciences research and are therefore seen as the “golden standard” (Schurer and Yong, 2012). Even though statistically they always give consistent results, it is important to note that the fixed effects models might not always be the most efficient models to use in empirical research (Princeton University Data and Statistical Services, 2007). Fixed effects models may be problematic as it is argued in prior studies that including fixed effects may be unsuitable when the executive characteristic of interest, executive narcissism in this thesis, has little variation over time within the same firm (Adams, Almeida and Ferreira, 2005). By including executive characteristics in the fixed effects models that have relatively little within-variation, the fixed effects models may fail to detect the significant effects of executive characteristics even though they might be present (Zhou, 2001). However, as the unobtrusive measurement of narcissism that is the relevant explanatory variable in this thesis allows for sufficient within variation for both the CEO and team narcissism scores, a fixed effects model can be used.

Nevertheless, it can still be problematic for some of the control variables that have relatively less within variation. For this reason the obtained results for these variables in the fixed effect models could possibly become insignificant due to small variation across time.

### 3.5.3 Random effects model

The random effect model is more efficient when the model is correct and complete as it uses both within- and between-individual variation from the panel data set (Schurer and Yong, 2012). Moreover, it provides estimates for time-invariant variables, something the fixed effect model fails to do. However, for the random effects model to be more efficient, the identifying assumption of no correlation between the unobserved heterogeneity in both the intercept and the slope of the regressors should hold (Schurer and Yong, 2012). The random effects model therefore has the unlikely assumption, that the omitted heterogeneity is uncorrelated with the regressors (Greene, 2011). Or at least the unobserved heterogeneity should be irrelevant as the omitted variable bias can distort the obtained regression results (Schurer and Yong, 2012).

To test whether the assumption of omitted heterogeneity is uncorrelated with the regressors is consistent, a series of Hausman specification tests (1978) are performed to see whether the obtained estimates from the fixed and random effects give significantly different coefficients (Hausman, 1978). When this is the case, and the Hausman test (1978) tends to reject the null hypothesis of no significant difference, the fixed effects model is the preferred model. In this thesis, the obtained results from the Hausman test reject the null hypothesis which indicates that the fixed effects model is the preferred model.

#### 3.5.4 Used estimation models

This thesis will mainly focus on the obtained results from the fixed effect models for the four main reasons that are discussed in the previous sections. First, the used variables are not time-invariant variables. Second, the regressions with firm performance as the dependent variable have a large potential omitted variable bias and the fixed effects model allows the unobserved individual effects to be correlated with the included variables and can control for time-constant unobserved heterogeneity. Third, the Hausman specification test (1978) indicates the fixed effects model as the more appropriate model. Fourth, the variables of interest have sufficient within variation to obtain consistent results from the fixed effect model.

However, to make sure that the issues described above do not drive the findings of this thesis, and for comparability of the results, the first three models that are estimated are random effect models that also allow for the analysis of between-variation and time-invariant variables. All the models will be estimated for the different hypotheses focusing on both CEO Narcissism and Executive team narcissism.

The first model will include only the explanatory variable(s) of interest; executive narcissism. The second model will contain the variable(s) of interest and the control variables. The third model will include the variable(s) of interest, the control variables and (quarterly) time dummies to control for time-specific effects.

As argued above, and despite the set of control variables, a potential issue with the analysis of this thesis is that unobserved and time-invariant firm-specific, industry-specific and time-specific fundamentals could be driving the findings of this thesis. It is because of this reason, that the fourth model will include industry-specific and quarterly (time) fixed effects to isolate the effect of CEO and executive team narcissism on firm performance. As a result, omitted variables bias is less likely as the fixed effect model can control for time-constant unobserved heterogeneity. Accordingly, the fifth model will include firm-specific and quarterly (time) fixed effects to isolate the effect of CEO and executive team narcissism on firm performance.

The five models that are described above are estimated for the six empirical predictions which can be found in section 2.8. To answer the third, fourth, fifth and sixth empirical predictions, dummy variables are created for the executive narcissism scores to obtain low, moderate and high executive narcissism scores. The dummies are created for equal shares of the distribution (in three quantiles) of both the CEO narcissism scores and executive team narcissism scores resulting in dummy variables that get value 1 when

the respective value belongs to either a low, medium or high category, and 0 when it does not belong in this specific category. By including the dummy variables for low and high narcissism scores in the regression models, the results obtained in the regression models allow this thesis to answer the corresponding empirical prediction with moderate narcissism scores as the reference category.

### 3.5.3 Clustering of standard errors by firm

In order to derive consistent estimators that are unbiased even in the presence of heteroscedasticity, serial correlation and the non-normality of the random error terms, the standard errors are clustered at the firm level (GVKEY) and Eicker Huber-White standard errors were used (Hoechle, 2007). Despite the loss of efficiency of the models, the substantial gain in consistency makes the Eicker Huber-White standard errors a widely used tool for panel data regression analysis.

### 3.5.4 Winsorizing, Curve Fitting and Multicollinearity

In order to make the dataset of this thesis suitable for obtaining the regression results the variables containing the CEO and executive team narcissism scores are winsorized at the 0.5% and 99.5% level. This is done to make sure that some extreme values that are obtained for the executive narcissism scores do not create unnecessary interference in the regression results and improves the normality of the distribution. These extreme values are likely to be due to computational errors of the software which was used to calculate the executive narcissism scores.

Curve fitting is used to find the best fitted line or curve for the variables with their respective relation to the dependent variables ROA and Tobin's Q. The variable firm size in terms of sales is transformed into a logarithmic variable as this improves the distribution of the variable and provides a better fit with relation to the dependent variables.

In order to check for the existence of multicollinearity this thesis performs VIF tests. When multicollinearity is present there is a strong correlation between two or more independent variables. This reduces the reliability of the coefficients of these independent variables and influences their significance (Field, Miles and Field, 2008). The obtained results from the VIF test, which can be found in the appendix 2, show that there is only minor multicollinearity which will not affect the regression results. This is also backed by the results found in the correlations matrix where there are only relatively small correlations between the independent variables.

## 4. Results

*In this section the obtained results for the regressions will be given and discussed. The first sub-section will describe the summary statistics. The second sub-section will describe the results obtained in the correlation matrix. The third sub-section will give the regression results and the fourth sub-section will perform robustness tests for the obtained results.*

### 4.1 Summary Statistics

Table 1 presents the summary statistics of the sample. The explanatory variables of interest; the CEO Narcissism Scores (CEO Narcissism Score) and the Executive team narcissism scores (Teamscore), have mean scores of 0.5115 and 0.5161 respectively. The mean scores that are found for the CEO narcissism scores are higher than those obtained by Aktas et al. (2010) and Chatterjee and Hambrick (2007). The differences in the obtained mean scores for the CEO narcissism scores can be explained due to the fact that this study uses a larger sample of executives, a different sample period, and focuses on the Q&A part of quarterly earnings conference calls. The range of the CEO narcissism scores and the executive team narcissism scores is wide and similar in relative terms to the range found by Aktas et al. (2010). From Table 1 it also becomes clear that both the CEO narcissism scores and the executive team narcissism scores vary almost as much within firms as between firms.

The dependent variable Return on Assets (ROA) has a mean of 1.6% and the dependent variable Tobin's Q has a mean of 2.01, which are similar to the mean ROA and Tobin's Q found by Rijsenbilt (2011). The maximum ROA is 26% and the minimum ROA is -20%. The maximum Tobin's Q is 12.13 and the minimum Tobin's Q is 0.62. Importantly, the ROA varies almost as much within firms as between firms. The Tobin's Q varies relatively less within firms than between firms. As argued in the methodology, the within variation of the main explanatory variables and the dependent variables is of major importance for obtaining consistent results by using the fixed effect models.

The mean CEO age is 55 with the minimum age of a CEO of 27 and the maximum age of a CEO of 85 which is similar to what Ham et al. (2013) and Rijsenbilt (2011) find. The age of the CEOs does not vary much within the company as there are few CEO changes and therefore most of the variation can be found between firms. This finding is also true for the tenure of a CEO. The mean CEO tenure is 7.5 years and this is comparable to the mean tenure of CEOs found by Rijsenbilt (2011) and Ham et al. (2013). The mean leverage ratio is 26% which is somewhat larger than the leverage ratio found by Aktas et al. (2010) who report a mean leverage ratio of 21%. As can be expected with a sample period of only two years, most of the variance of the leverage ratio is between firms and not within firms. The mean firm size in terms of log

of sales is 7.79 which is similar to the mean log of sales found by Ham et al. (2013). Again, firm size does not vary much within firms and most of the variance is between firms.

**Table 1: Summary Statistics**

Variable		Mean	Std, Dev,	Min	Max	Observations
CEO AGE	overall	55,87421	6,10291	27	85	N = 3816
	between		5,84372	27,5	84,5	n = 477
	within		1,777388	42,87421	68,87421	T = 8
CEO TENURE	overall	7,56499	6,093588	1	51	N = 3816
	between		5,903279	1	50,5	n = 477
	within		1,532009	-3,93501	19,06499	T = 8
Leverage Ratio	overall	0,2580347	0,17684	0	1,58491	N = 3816
	between		0,1744735	0	1,49835	n = 477
	within		0,0297986	0,0435457	0,53204	T = 8
LogSales	overall	7,789406	1,171503	4,569429	11,773030	N = 3816
	between		1,164569	5,354736	11,678090	n = 477
	within		0,1367011	6,548781	9,858741	T = 8
CEO Narcissism Score	overall	0,5115138	0,3034077	0,0851064	2,01471	N = 1350
	between		0,2394469	0,0851064	1,33463	n = 238
	within		0,1968915	-0,4231119	1,90934	T-bar = 5,67227
Teamscore	overall	0,5161135	0,279005	0,1256606	2,07908	N = 2306
	between		0,2098245	0,1726345	2,07908	n = 359
	within		0,2072457	-0,1002761	2,06186	T-bar = 6,4234
TobinsQ1	overall	2,014988	1,269457	0,6260832	12,13569	N = 3816
	between		1,239331	0,8029137	9,36835	n = 477
	within		0,2799968	-0,5549597	4,78233	T = 8
ROA1	overall	0,0167639	0,0211505	-0,2008082	0,2624749	N = 3816
	between		0,0151472	-0,0449165	0,0884313	n = 477
	within		0,0147759	-0,1545878	0,2360436	T = 8

## 4.2 Correlations Matrix

*In Table 2 the correlations matrix can be found where the correlations between the included variables in the models are given. The significance level is given in brackets directly below the coefficients.*

Considering the relationship between both measures of executive narcissism and firm performance, this thesis finds a significant negative correlation at the  $p < 0.05$  level between the CEO narcissism scores and firm performance for both ROA and Tobin's Q. The significant negative correlation between the CEO narcissism scores and firm performance is in line with the findings of Ham et al. (2013) and Rijssenbilt (2011) and reflects the destructive view on executive narcissism. For the executive team narcissism scores this significant negative relation only holds for Tobin's Q at the  $p < 0.05$  level. The negative correlation between ROA and the executive team narcissism scores is not significant at the  $p < 0.10$  level.

The correlations between the dummy variables of the executive narcissism scores and the firm performance measures ROA and Tobin's Q show multiple interesting results; First, a medium degree of CEO narcissism is positively correlated with ROA at the  $p < 0.05$  level which is supported by the productive view on executive narcissism and also found by Rijssenbilt (2011). The positive correlation between a medium degree of CEO narcissism and the Tobin's Q is not significant at the  $p < 0.10$  level. Second, a medium degree of executive team narcissism has a significant negative correlation with ROA at the  $p < 0.10$  level. The negative correlation between a medium degree of executive team narcissism and the Tobin's Q is not significant at the  $p < 0.10$  level. Third, the negative correlation between firm performance and a high degree of CEO narcissism is significant at the  $p < 0.05$  level for both ROA and Tobin's Q and is in line with the research of Rijssenbilt (2011) which finds that an excessive degree of narcissism is destructive for firm performance. The significant negative correlation between firm performance and a high degree of executive team narcissism can also be found for Tobin's Q at the  $p < 0.10$  level. However, this negative correlation is not significant at the  $p < 0.10$  level for ROA. Fourth, a low degree of executive team narcissism has a significant positive correlation with both ROA and Tobin's Q at the  $p < 0.05$  level. The positive correlation between a low CEO narcissism score is only found to be significant at the  $p < 0.10$  level for Tobin's Q and is not significant for ROA.

Next to these findings, it is also interesting to see how the CEO narcissism score has a significant positive correlation at the  $p < 0.10$  level with the log of sales as a proxy for firm size. This could imply that a larger firm means more power which might feed the narcissistic tendencies of a CEO. The leverage ratio has a significant negative correlation at the  $p < 0.05$  level with both the ROA and Tobin's Q. As a higher leverage ratio proxies for higher firm risk, reduced efficiency and reduced flexibility, this correlation is in line with

findings in the prior literature (Margaritis and Psillaki, 2008). Another interesting observation from the correlations matrix is the positive and significant correlation at the  $p < 0.05$  level between the tenure of a CEO and both the firm performance measures; ROA and Tobin's Q. A significant and negative correlation is found between the age of a CEO and the firm performance measure Tobin's Q.

It is important to state that these correlation analyses only address the relation between independent and dependent variables in a symmetrical way, and therefore they fail to show the significant influence of the regressors on the response variables. A correlation therefore does not indicate causation and regression models have to be run to get more accurate causal effects.



**Table 2: Correlations Matrix**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Teamscore	1.00													
2. CEONarcissismScore	0.58 (0.00)	1.00												
3. ROA1	-0.02 (0.29)	-0.06 (0.03)	1.00											
4. TobinsQ1	-0.07 (0.00)	-0.06 (0.03)	0.49 (0.00)	1.00										
5. CEOAGE	0.02 (0.27)	0.04 (0.15)	-0.01 (0.66)	-0.08 (0.00)	1.00									
6. CEOTENURE	0.01 (0.71)	0.03 (0.34)	0.07 (0.00)	0.15 (0.00)	0.39 (0.00)	1.00								
7. leverageratio	-0.02 (0.34)	-0.02 (0.56)	-0.07 (0.00)	-0.08 (0.00)	0.04 (0.01)	0.03 (0.05)	1.00							
8. logsales	0.04 (0.09)	-0.04 (0.15)	-0.04 (0.03)	-0.24 (0.00)	0.08 (0.00)	-0.09 (0.00)	-0.10 (0.00)	1.00						
9. lowteamnscore	-0.61 (0.00)	-0.49 (0.00)	0.05 (0.01)	0.07 (0.00)	-0.02 (0.31)	-0.03 (0.12)	0.03 (0.23)	-0.05 (0.03)	1.00					
10. mediumteamnscore	-0.14 (0.00)	-0.03 (0.23)	-0.03 (0.09)	-0.03 (0.11)	0.00 (0.89)	0.01 (0.79)	-0.02 (0.26)	0.04 (0.04)	-0.50 (0.00)	1.00				
11. highteamnscore	0.74 (0.00)	0.54 (0.00)	-0.02 (0.35)	-0.04 (0.08)	0.02 (0.37)	0.03 (0.19)	-0.00 (0.92)	0.00 (0.89)	-0.50 (0.00)	-0.50 (0.00)	1.00			
12. lowCEOnscore	-0.41 (0.00)	-0.64 (0.00)	0.03 (0.30)	0.05 (0.07)	-0.01 (0.69)	-0.02 (0.49)	0.01 (0.58)	0.05 (0.05)	0.50 (0.00)	-0.16 (0.00)	-0.36 (0.00)	1.00		
13. mediumCEOnscore	-0.05 (0.10)	-0.13 (0.00)	0.05 (0.05)	0.01 (0.78)	-0.02 (0.40)	-0.02 (0.43)	0.00 (0.96)	-0.01 (0.79)	-0.05 (0.05)	0.20 (0.00)	-0.14 (0.00)	-0.50 (0.00)	1.00	
14. highCEOnscore	0.46 (0.00)	0.78 (0.00)	-0.08 (0.00)	-0.06 (0.04)	0.03 (0.21)	0.04 (0.14)	-0.02 (0.54)	-0.05 (0.09)	-0.45 (0.00)	-0.04 (0.12)	0.50 (0.00)	-0.50 (0.00)	-0.50 (0.00)	1.00

### 4.3 Regression Results

*In this section the regression results to answer the research question and the corresponding empirical predictions can be found. The first sub-section contains the regression results to answer the first empirical prediction concerning the effect of (the continuous variable) CEO narcissism on firm performance. The second sub-section contains the regression results to answer the second empirical prediction concerning the effect of (the continuous variable) executive team narcissism on firm performance. The third sub-section contains the regression models concerning the effect of the dummy variables of CEO narcissism on firm performance and provides answers to the third and fourth empirical predictions. The fourth sub-section contains the regression models concerning the effect of the dummy variables of executive team narcissism on firm performance and answers the fifth and sixth empirical predictions.*

#### 4.3.1 CEO Narcissism and Firm Performance

In Table 3 the regression results for the relationship between the independent variable CEO Narcissism and the dependent variable for the firm performance measure ROA are given. The higher adjusted R-squared obtained for the fixed effects models indicates that a higher proportion of the variance is explained by the fixed effects models which means that unobserved and time-constant firm, industry and time fixed effects explain relatively large parts of the variance in firm performance.

It becomes clear from the second and third random effects models that after adding time dummies and the control variables, the negative relationship between CEO Narcissism is significant at the  $p < 0.10$  level. This is consistent with the findings of Rijsenbilt (2011) and Ham et al. (2013) who find that CEO Narcissism has a significant negative effect on firm performance. The magnitude of the coefficients obtained in the random effects models regarding the negative relationship between CEO narcissism and firm performance in terms of ROA are comparable to those obtained by Rijsenbilt (2011). However, in the fixed effects models the significance of this relationship disappears which implies that unobserved firm, industry and time fixed effects are more efficient at explaining firm performance other than CEO narcissism and were influencing the results that were obtained in the random effects models. Therefore, the first empirical prediction stating that CEO narcissism has a negative effect on firm performance is not supported.

Considering the relationship between the control variables and firm performance, the results shows that the age of a CEO has a significant positive relation with ROA when controlling for firm fixed effects and time fixed effects at the  $P < 0.10$  level. This significant positive relation between CEO age and firm performance is also found by Ham et al. (2013). However, the positive coefficient for the relationship between CEO age and firm performance found for all the random effects models and the fixed effects

model with industry fixed effects and time dummies is not significant. The negative coefficient for the relationship between the tenure of a CEO and ROA is not significant in all the estimated models. The coefficient for the relationship between the log of sales as a proxy for firm size and firm performance in terms of ROA is only found to be significantly negative for the fixed effects model with industry fixed effects at the  $p < 0.10$  level.

The leverage ratio is found to be significant and negatively related to firm performance in all the random effects models and the fixed effect model controlling for industry fixed effects and time fixed effects. Interestingly, this significant negative relationship becomes significantly positive in the fifth and final fixed effects model controlling for firm fixed effects and time fixed effects. A possible explanation for this remarkable sign switch is that the relationship between the leverage ratio and firm performance in terms of ROA is influenced by unobserved time-constant firm fixed effects that are controlled for in the last model. Therefore, after controlling for firm fixed effects, the coefficient drastically changes.

**Table 3: CEO Narcissism and Firm Performance**

This table contains the regression results for the relationship between the overall CEO narcissism (continuous) variable and the dependent variable for firm performance in terms of Return on Assets (ROA). The first model is a random effects model with no control variables. The second model is a random effects model with control variables. The third model is a random effects model with control variables and time dummies. The fourth model is a fixed effects model with time fixed effects, industry fixed effects and control variables. The fifth and final model is a fixed effects model with time fixed effects, firm fixed effects and control variables.

VARIABLES	(1) Random Effects	(2) Random effects	(3) Random Effects	(4) Fixed Effects	(5) Fixed Effects
CEOAGE		8.81e-05 (0.000137)	7.57e-05 (0.000139)	0.000200 (0.000135)	0.000586* (0.000329)
CEOTENURE		-4.42e-05 (0.000250)	-5.55e-05 (0.000245)	-4.83e-05 (0.000178)	-0.000936 (0.000651)
leverageratio		-0.00974* (0.00576)	-0.0101* (0.00573)	-0.0143** (0.00550)	0.0370** (0.0186)
logsales		-0.000874 (0.000787)	-0.000845 (0.000792)	-0.00133* (0.000737)	-0.00160 (0.00375)
CEONarcissismScore	-0.00293 (0.00187)	-0.00305* (0.00184)	-0.00323* (0.00184)	-0.00120 (0.00180)	-0.00213 (0.00210)
Constant	0.0168*** (0.00127)	0.0217** (0.0103)	0.0229** (0.0104)	0.0197** (0.00895)	-0.00622 (0.0317)
Observations	1,350	1,350	1,350	1,350	1,350
Time dummies	NO	NO	YES	YES	YES
Adjusted R-squared	0.0035	0.0220	0.0257	0.151	0.437
Industry FE	NO	NO	NO	YES	NO
Firm FE	NO	NO	NO	NO	YES

Robust standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

#### 4.3.2 Executive Team Narcissism and Firm Performance

From the regression results in Table 4 it can be seen that there exists no significant negative relation between executive team narcissism and firm performance in terms of ROA in any of the estimated regression models. The second empirical prediction which states that executive team narcissism has a negative effect on firm performance therefore has to be rejected as no significant relation can be found in any of the estimated regression models.

Despite the insignificant results, an interesting observation is that the obtained coefficients for executive team narcissism in the fixed effects models are positive. This suggests that an executive team with a higher overall narcissism score performs better at firm performance in terms of ROA which supports the productive side of narcissism. The productive side of narcissism therefore outweighs the destructive side of narcissism and, however found to be insignificant, it seems that certain narcissistic characteristics of executive teams such as their creativity, gripping visions, energy, confidence and charismatic influence have a positive effect on firm performance.

The leverage ratio is found to be significantly related to firm performance in terms of ROA in the fixed effects models at the  $p < 0.10$  level. However, this negative relation is not significant in the random effects models. Similarly to the results obtained for the regression with CEO Narcissism, the effect is found to be significant and negatively related to ROA in the fixed effects model with industry fixed effects and time fixed effects, and significant and positively related to ROA in the fixed effects model with firm fixed effects and time fixed effects.

Contrary to the regressions with the CEO narcissism variable, the significant positive relation between CEO age and ROA, and the significant negative relation for firm size in terms of log of sales and ROA disappears in the regressions including executive team narcissism. The reason for this is probably the much larger sample size, and unobserved firm fixed effects and industry fixed effects are therefore more accurate at explaining firm performance in terms of ROA.

**Table 4: Executive Team Narcissism and Firm Performance**

This table contains the regression results for the relationship between the overall Executive Team narcissism (continuous) variable and the dependent variable for firm performance in terms of Return on Assets (ROA). The first model is a random effects model with no control variables. The second model is a random effects model with control variables. The third model is a random effects model with control variables and time dummies. The fourth model is a fixed effects model with time fixed effects, industry fixed effects and control variables. The fifth and final model is a fixed effects model with time fixed effects, firm fixed effects and control variables.

VARIABLES	(1) Random Effects	(2) Random effects	(3) Random Effects	(4) Fixed Effects	(5) Fixed Effects
CEOAGE		-8.71e-05 (0.000104)	-9.26e-05 (0.000105)	3.63e-05 (0.000102)	0.000172 (0.000262)
CEOTENURE		0.000148 (0.000172)	0.000140 (0.000173)	0.000176 (0.000123)	-0.000558 (0.000530)
leverageratio		-0.00505 (0.00538)	-0.00503 (0.00541)	-0.0100* (0.00533)	0.0224* (0.0133)
logsales		-0.000831 (0.000685)	-0.000758 (0.000683)	-0.00102 (0.000675)	-0.00313 (0.00297)
teamscore	3.70e-05 (0.000985)	4.59e-05 (0.000989)	-4.57e-05 (0.000998)	0.00255 (0.00199)	0.000325 (0.00112)
Constant	0.0160*** (0.000984)	0.0275*** (0.00823)	0.0285*** (0.00822)	0.0233*** (0.00861)	0.0305 (0.0262)
Observations	2,306	2,306	2,306	2,306	2,306
Time Dummies	NO	NO	YES	YES	YES
Adjusted R-squared	0.0005	0.0152	0.0159	0.155	0.510
Industry FE	NO	NO	NO	YES	NO
Firm FE	NO	NO	NO	NO	YES

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

#### 4.3.3 Dummy variables of CEO Narcissism and Firm Performance

From the regressions in Table 5 it becomes clear that, on average, CEOs with a high degree of narcissism perform significantly worse than CEOs with a medium degree of narcissism in terms of ROA. This holds for all the regression models indicating that firm, industry and time fixed effects do not remove the significant negative relation between a higher degree of CEO narcissism and ROA. The third empirical prediction stating that a high degree of CEO narcissism has a negative effect on firm performance, compared to a medium degree of narcissism, is therefore supported by the obtained regression results.

From the obtained coefficients it also becomes clear that, on average, CEOs with a low degree of narcissism perform worse than CEOs with a medium degree of narcissism in terms of ROA. However, this relation is

not found to be significant in any of the models. Therefore, the fourth empirical prediction stating that a low degree of CEO narcissism has a negative effect on firm performance, compared to CEOs with medium degree of narcissism, has to be rejected.

The results that are obtained for the relationship between the control variables and the dependent variable ROA are similar to those obtained in the first sub-section which focuses on the relationship between (the continuous variable) CEO narcissism and firm performance in terms of ROA.

**Table 5: Dummy variables of CEO Narcissism and Firm Performance**

This table contains the regression results for the relationship between the dummy variables of CEO narcissism and the dependent variable for firm performance in terms of Return on Assets (ROA). The dummy variables for a low degree of CEO narcissism and a high degree of CEO narcissism are included in the regression and the medium degree of CEO narcissism is the reference category. The first model is a random effects model with no control variables. The second model is a random effects model with control variables. The third model is a random effects model with control variables and time dummies. The fourth model is a fixed effects model with time fixed effects, industry fixed effects and control variables. The fifth and final model is a fixed effects model with time fixed effects, firm fixed effects and control variables.

VARIABLES	(1) Random Effects	(2) Random effects	(3) Random Effects	(4) Fixed Effects	(5) Fixed Effects
CEOAGE		7.84e-05 (0.000137)	6.61e-05 (0.000139)	0.000204 (0.000135)	0.000555* (0.000314)
CEOTENURE		-4.10e-05 (0.000247)	-5.04e-05 (0.000243)	-4.52e-05 (0.000179)	-0.000927 (0.000631)
leverageratio		-0.00974* (0.00577)	-0.0101* (0.00575)	-0.0142** (0.00550)	0.0368** (0.0183)
logsales		-0.000853 (0.000790)	-0.000820 (0.000796)	-0.00133* (0.000735)	-0.00132 (0.00374)
lowCEOnscore	-0.00165 (0.00141)	-0.00157 (0.00142)	-0.00133 (0.00138)	-0.00147 (0.00133)	-0.00209 (0.00176)
highCEOnscore	-0.00320*** (0.00114)	-0.00324*** (0.00113)	-0.00317*** (0.00110)	-0.00243** (0.00116)	-0.00249** (0.00121)
Constant	0.0170*** (0.00113)	0.0221** (0.0101)	0.0232** (0.0102)	0.0203** (0.00888)	-0.00613 (0.0313)
Observations	1,350	1,350	1,350	1,350	1,350
Time dummies	NO	NO	YES	YES	YES
Adjusted R-squared	0.0059	0.0241	0.0279	0.152	0.439
Industry FE	NO	NO	NO	YES	NO
Firm FE	NO	NO	NO	NO	YES

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

#### 4.3.4 Dummy variables of Executive Team Narcissism and Firm Performance

In Table 6 the regression results for the relationship between the dummy variables of executive team narcissism and firm performance in terms of ROA can be found.

There is no statistical proof in any of the estimated regression models for the fifth empirical prediction which states that, on average, executive teams with a high degree of narcissism perform significantly worse than executive teams with a medium degree of narcissism in terms of ROA. Despite the insignificance and the insignificant negative sign of the coefficient in the firm fixed effects model with a relatively large standard error, the sign of the coefficient for a high degree of executive team narcissism is positive in the fixed effects model with industry fixed effects which further supports the suggestions for the productive view on executive team narcissism mentioned in section 4.3.2.

The results show that, on average, executive teams with a low degree of narcissism perform better than executive teams with a medium degree of narcissism in terms of ROA. This is the opposite direction of the relationship from what was predicted in the fourth empirical prediction however, it also has relatively large standard errors. This relation is not found to be significant in any of the models and the fourth empirical prediction stating that a low degree of executive team narcissism has a negative effect on firm performance, compared to executive teams with medium degree of narcissism, is not supported.

The results obtained for the relationship between the control variables and the dependent variable ROA are similar to those obtained in the second sub-section which focuses on the relationship between (the continuous variable) executive team narcissism and firm performance in terms of ROA.

**Table 3: Dummy variables of Executive Team Narcissism and Firm Performance**

This table contains the regression results for the relationship between the dummy variables of Executive Team narcissism and the dependent variable for firm performance in terms of Return on Assets (ROA). The dummy variables for a low degree of Executive Team narcissism and a high degree of Executive Team narcissism are included in the regression and the medium degree of Executive Team narcissism is the reference category. The first model is a random effects model with no control variables. The second model is a random effects model with control variables. The third model is a random effects model with control variables and time dummies. The fourth model is a fixed effects model with time fixed effects, industry fixed effects and control variables. The fifth and final model is a fixed effects model with time fixed effects, firm fixed effects and control variables.

VARIABLES	(1) Random Effects	(2) Random effects	(3) Random Effects	(4) Fixed Effects	(5) Fixed Effects
CEOAGE		-8.66e-05 (0.000104)	-9.21e-05 (0.000104)	3.76e-05 (0.000102)	0.000169 (0.000260)
CEOTENURE		0.000154 (0.000171)	0.000146 (0.000172)	0.000179 (0.000123)	-0.000548 (0.000530)
leverageratio		-0.00512 (0.00540)	-0.00511 (0.00543)	-0.0100* (0.00535)	0.0226* (0.0133)
logsales		-0.000817 (0.000684)	-0.000745 (0.000682)	-0.000973 (0.000677)	-0.00314 (0.00298)
lowteamnscore	0.000837 (0.000845)	0.000848 (0.000851)	0.000890 (0.000840)	0.000944 (0.00101)	0.000398 (0.000971)
highteamnscore	-0.000180 (0.000788)	-0.000192 (0.000791)	-0.000161 (0.000780)	0.00134 (0.00110)	-0.000268 (0.000856)
Constant	0.0158*** (0.000928)	0.0271*** (0.00812)	0.0281*** (0.00810)	0.0234*** (0.00846)	0.0307 (0.0259)
Observations	2,306	2,306	2,306	2,306	2,306
Time Dummies	NO	NO	YES	YES	YES
Adjusted R-squared	0.0027	0.0180	0.0185	0.154	0.510
Industry FE	NO	NO	NO	YES	NO
Firm FE	NO	NO	NO	NO	YES

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1



## 4.4 Robustness Tests

*As a robustness check on the results obtained for the effect of executive narcissism on the accounting-based performance measure ROA, the effect of executive narcissism on the market-based performance measure Tobin's Q is also estimated by using fixed effects regression models. This is in line with the research on executive narcissism conducted by Rijsenbilt (2011) which also uses Tobin's Q as a market-based performance measure.*

### 4.4.1 CEO Narcissism and Firm Performance

In Appendix 3 the results for the fixed effects models that were estimated for the relationship between CEO Narcissism and the firm performance measure Tobin's Q can be found.

It becomes clear that the results are consistent with the results that are obtained for the relationship between the firm performance measure ROA and CEO Narcissism. The negative relationship between CEO narcissism and the firm performance measure Tobin's Q is not significant and therefore there is no support for the first empirical prediction stating that CEO Narcissism has a negative effect on firm performance.

What is interesting to see is that the control variables CEO Age and the leverage ratio lose their significant effects on the Tobin's Q in the fixed effects model with firm fixed effects models and time fixed effects. This suggests that the Tobin's Q is affected by other unobserved time-constant firm-specific fundamentals, which is also suggested by the high R-squared obtained for the firm-fixed effects model. Moreover, the insignificant relation could be due to the relatively little within variation found in the Tobin's Q variable and the specific control variables in the dataset.

### 4.4.2 Executive Team Narcissism and Firm Performance

In Appendix 4 the results for the fixed effects models that were estimated for the relationship between executive team narcissism and the firm performance measure Tobin's Q can be found.

Again, the results are consistent with the results that were obtained concerning the relationship between ROA and (the continuous variable) executive team narcissism. There exists no significant relationship between executive team narcissism and firm performance in terms of Tobin's Q. Therefore, the second empirical prediction is also not supported by the robustness test.

The positive insignificant coefficients found for executive team narcissism in both fixed effects models with the dependent variable ROA are only found in the industry fixed effects model for the dependent variable

Tobin's Q. As the coefficients for executive team narcissism are both insignificant and both have large standard errors, the direction of the relationship with Tobin's Q remains inconclusive.

Other than the results obtained for the regressions on the relationship between executive team narcissism and firm performance in terms of ROA, in the fixed effects model with industry fixed effects and time fixed effects there exists a significant negative relation between Tobin's Q and the age of a CEO. However, this effect disappears when controlling for firm fixed effects and time fixed effects.

#### 4.4.3 Dummy variables of CEO Narcissism and Firm Performance

Appendix 5 contains the results for the fixed effects models that were estimated for the relationship between the dummy variables of CEO narcissism and firm performance in terms of Tobin's Q.

Other than the significant results found for CEOs with a high degree of narcissism performing worse compared to CEOs with a moderate degree of narcissism in terms of the firm performance measure ROA, the results obtained for the dependent variable Tobin's Q do not find this relationship. This obtained result could be due to the relatively little within variation in the dependent variable Tobin's Q and the fact that the Tobin's Q is a market-based performance measure which could be affected by other unobserved firm-specific and time specific fundamentals such as media coverage related to firm fundamentals and firm-specific investor sentiment. Therefore, this thesis still believes that there is sufficient support for the third empirical prediction that states that, on average, CEOs with a high degree of narcissism perform worse in terms of firm performance compared to CEOs with a moderate degree of narcissism.

In accordance with the results obtained for ROA, the results obtained in the regressions with the dependent variable Tobin's Q do not find statistical evidence for CEOs with a low degree of narcissism performing worse than CEOs with a moderate degree of narcissism.

Other than the obtained results for the fixed effects regressions with the dependent variable ROA, the control variables CEO Age and the leverage ratio lose their significant effects on firm performance in the fixed effects model with firm fixed effects and time fixed effects.

#### 4.4.4 Dummy variables of Executive Team Narcissism and Firm Performance

In appendix 6 the results for the fixed effects models that were estimated for the relationship between the dummy variables of executive team narcissism and firm performance in terms of Tobin's Q can be found. Again, the R-squared of the fixed effect model with firm fixed effects and time fixed effects is very high which indicates that this model explains a high degree of the variance in the Tobin's Q. However, it

must be noted that the within variance of Tobin's Q is relatively low compared to the between variance which could affect the obtained results.

A very interesting result in this robustness check is that in the fixed effects model with firm fixed effects and time fixed effects, executive teams with a high degree of narcissism perform significantly better than executive teams with a moderate degree of narcissism. The positive coefficients obtained for executive teams with a low degree of executive narcissism are not found to be significant, indicating that this group does not perform significantly better than executive teams with a moderate degree of narcissism.

The significant positive coefficient obtained for the executive teams with a high degree of narcissism is contradictory to the negative relation that was predicted in the sixth empirical prediction. Next to the suggestions that are in favor of the productive view on narcissism for executive teams described in section 4.3.2, this has important implications for further research as it might be due to the market-based structure of the firm performance measure Tobin's Q. As the executive team is highly narcissistic they might be able to present themselves in a very charismatic and convincing way to their (potential) investors. When investors cannot identify the underlying personality trait, and therefore fail to recognize that the executive team members are driven by irrationality (narcissism), this could drive the share price of the company upwards and result in a higher achieved Tobin's Q.

Similar to the results obtained for the relationship between Tobin's Q as a measure of firm performance and executive team narcissism, the control variable CEO age is significant and negatively related to Tobin's Q in the fixed effects model with industry fixed effects and time fixed effects. However, this significant effect disappears in the fixed effect model with firm fixed effects and time fixed effects.

## 5. Conclusion and Discussion

This thesis researches the effect of executive narcissism on the firm performance measures Return on Assets (ROA) and Tobin's Q. It is evident that the personal characteristics of CEO's affect a broad range of firm decisions and strategies and as a direct result; firm performance (Malmendier and Tate, 2005; Malmendier and Tate, 2008; Malmendier et al., 2011; Kaplan et al., 2012; Chatterjee and Hambrick, 2007; Rijsenbilt, 2011; Aktas et al., 2012; Ham et al., 2013). Instead of merely focusing on the CEO, this thesis will also focus on the degree of narcissism of an entire executive team and therefore potentially sheds new lights on the research on executive narcissism affecting firm decisions and by that firm performance.

In line with the findings of Rijsenbilt (2011) and Ham et al. (2013), who find a negative relationship between CEO narcissism and firm performance, this thesis predicts that the effect of both CEO narcissism and executive team narcissism on firm performance is negative. However, the prior literature on executive narcissism describes both the productive side and the destructive side of narcissism. On the productive side, it is argued that a certain degree of narcissism is a necessary personality trait for effective leadership. The opposing view, the destructive side of narcissism, states that an excessive degree of narcissism overshadows the positive factors of the productive side of narcissism. Therefore, in line with the findings of Rijsenbilt (2011), this thesis also predicts that the effect of CEO narcissism and executive team narcissism on firm performance is negative for executives with both a low and high degree of narcissism, compared to executives with a moderate degree of narcissism.

Contrary to the significant results found in the estimated random effects models for the firm performance measure ROA that support the first and second empirical predictions, this thesis finds that there is no significant negative relationship between firm performance, in terms of both ROA and Tobin's Q, for CEO narcissism and executive team narcissism in the estimated fixed effects models. Therefore, the first two empirical predictions that predict a negative relation between firm performance and CEO narcissism and executive team narcissism respectively, are not supported.

Despite the insignificant results, an interesting observation is that the obtained coefficients for executive team narcissism in the fixed effects models are positive for the firm performance measure ROA. This suggests that an executive team with a higher overall narcissism score performs better at firm performance in terms of ROA which supports the productive side of narcissism. The productive side of narcissism therefore outweighs the destructive side of narcissism and, however found to be insignificant, it seems that certain narcissistic characteristics of the executive team as a whole such as their creativity, gripping visions, energy, confidence and charismatic influence have a positive effect on firm performance.

This thesis finds that, on average, CEOs with a high degree of narcissism perform significantly worse compared to CEOs with a medium degree of narcissism with respect to the firm performance measure ROA. However, this result is not supported by the results for the firm performance measure Tobin's Q. Despite the insignificant result that is obtained for Tobin's Q, this thesis still believes that there is sufficient support for the third empirical prediction as the Tobin's Q is a market-based performance measure and could also be affected by other unobserved firm-specific and time specific fundamentals than the ROA firm performance measure.

The fourth empirical prediction stating that, on average, a low degree of CEO narcissism has a negative effect on firm performance compared to the reference group with a moderate degree of CEO narcissism, is not supported for both firm performance measures ROA and Tobin's Q.

A very interesting result that is obtained for the Tobin's Q is that, on average, executive teams with a high degree of narcissism perform significantly better than executive teams with a moderate degree of narcissism in the firm fixed effects model. The significant positive coefficient obtained for the executive teams with a high degree of narcissism is contradictory to the negative relation that was predicted in the sixth empirical prediction. This significant positive relation is not found in any of the models for the firm performance measure ROA. Even though the sixth empirical prediction is not supported, this has important implications for further research as it might be due to the market-based structure of the firm performance measure Tobin's Q. When the executive team is highly narcissistic they might be able to present themselves in a very charismatic and convincing way to their (potential) investors. When investors cannot identify the underlying personality trait, and therefore fail to recognize that the executive team members are driven by irrationality (narcissism), this could drive the share price of the company upwards and this results in a higher achieved Tobin's Q. This information sheds new lights on the research on the effect of executive narcissism on firm performance, and investors, remuneration boards and researchers might benefit from this to find the best match between a firm and its executives.

No support is found for the fifth empirical prediction that predicts that, on average, a low degree of executive narcissism has a negative effect on firm performance compared to the reference group with a moderate degree of CEO narcissism.

## 7. Limitations and Future Studies

The first important limitation of this thesis is that there are many missing observations for both the CEO narcissism scores and the executive team narcissism scores. The reason for the largest part of the missing observations for the CEO narcissism scores is that the CEO is not always present during the quarterly earning conference calls, or not at all. Also, some observations are missing as the program that is written to calculate the narcissism scores could not properly identify the CEO, and some of the formats of the conference call transcripts that were downloaded from the BLOOMBERG database could not be used by the program to calculate the executive narcissism scores. A problem that arises from using the conference call transcripts to calculate the narcissism scores for the executive teams of the S&P 500 firms is that the executive teams are not complete during the conference calls and therefore the narcissism scores obtained for the executive teams could be biased as this logically depends on the specific executives that are present. The results might improve when the degree of narcissism of the complete executive teams can be observed.

The unobtrusive measurement of narcissism used in this thesis might not be the best measure for executive narcissism. Despite the research performed by Raskin and Shaw (1988), that shows that the proportion of the first person singular pronouns to first person plural pronouns that are used in speech is correlated with the narcissistic personality inventory (NPI) scores, there might be better measurements available to determine the degree of narcissism. Future research could use multiple measurements for executive narcissism such as the relative pay of executives and the signature size to determine the narcissism scores for the executive teams and the CEO and this potentially gives more consistent results. Also, the used unobtrusive measure is very time consuming as the quarterly earnings conference call transcripts have to be hand collected from the BLOOMBERG database. By using other measurements of executive narcissism this might enable researchers to use a larger and wider sample size which could improve the significance of the obtained results.

As Chatterjee and Hambrick (2007) argue that an executive's personality is reflected in a company's performance with a substantial lag and the used dependent variables in this thesis are only the one quarter ahead ROA (lead variable  $ROA_{t+1}$ ) and the one quarter ahead Tobin's Q (lead variable Tobin's  $Q_{t+1}$ ), it could be interesting for further research to look at the effect of executive narcissism with an even larger lag. Chatterjee and Hambrick (2007) use substantially larger lags from over one year and therefore the results obtained in this thesis could improve when this method is applied.

Future studies could focus on the positive relationship found for executive team narcissism and the market-based performance measure Tobin's Q. As the robustness check on the relationship between executive team narcissism and firm performance finds a significant positive effect for a high degree of narcissism on firm performance compared to a medium degree of narcissism it is interesting for future researchers to focus on this and use more complete measurements of executive team narcissism to strengthen the found results. For executive teams it seems that the productive side of narcissism outweighs the destructive side of narcissism and, however found to be insignificant, it seems that certain narcissistic characteristics of executive teams such as their creativity, gripping visions, energy, confidence and charismatic influence have a positive effect on firm performance. Moreover, as the executive team is highly narcissistic, they might be able to present themselves in a very charismatic and convincing way to their (potential) investors. When investors cannot identify the underlying personality trait, and therefore fail to recognize that the executive team are driven by irrationality (narcissism), this could drive the share price of the company upwards and result in a higher achieved Tobin's Q. Further research and the confirmation of these findings could be an eye-opener for investors and open the road for interesting research on this topic.

## 8. References

- Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and Their Impact on Corporate Performance. *The Review of Financial Studies*, 18(4), 1403-1432. Retrieved from <http://rfs.oxfordjournals.org/content/18/4/1403.short>
- Aktas, N., De Bodt, E., Bollaert, H., & Roll, R. (2012). CEO Narcissism and the Takeover Process: From Private Initiation to Deal Completion (AFA 2012 Chicago Meetings Paper). Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1784322](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1784322)
- Aliabadi, S., Dorestani, A., & Balsara, N. (2013). The Most Value Relevant Accounting Performance Measure by Industry. Retrieved from [http://www.na-businesspress.com/JAF/DorestaniA\\_Web13\\_1\\_.pdf](http://www.na-businesspress.com/JAF/DorestaniA_Web13_1_.pdf)
- American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders (4th Edition)*. Retrieved from [https://books.google.co.uk/books/about/Diagnostic\\_and\\_Statistical\\_Manual\\_of\\_Men.html?id=3SQrtpnHb9MC](https://books.google.co.uk/books/about/Diagnostic_and_Statistical_Manual_of_Men.html?id=3SQrtpnHb9MC)
- Baker, M., & Wurgler, J. (2013). Behavioral Corporate Finance: An Updated Survey\*. Retrieved from <http://people.stern.nyu.edu/jwurgler/papers/bcfsurvey2v20.pdf>
- Betrand, M., & Schoar, A. (2003). Managing with Style: The Effect of Managers on Firm Policies\*. *The Quarterly Journal of Economics*, 118(4), 1169-1208. Retrieved from <http://qje.oxfordjournals.org/content/118/4/1169.short>
- Brunell, A. B., Gentry, W. A., Campbell, W. K., Hoffman, B. J., Kuhnert, K. W., & DeMarree, K. G. (2008). Leader Emergence: The Case of the Narcissistic Leader. Retrieved from <http://psp.sagepub.com/content/34/12/1663.full.pdf>
- Campbell, W., Goodie, A., & Foster, J. (2004). Narcissism, confidence, and risk attitude. *Journal of Behavioral decision making*, 17(4), 297-311. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/bdm.475/abstract>
- Campbell, W. K., & Miller, J. D. (2011). *THE HANDBOOK OF NARCISSISM AND NARCISSISTIC PERSONALITY DISORDER*. New Jersey, United States: John Wiley & Sons, Inc..
- Campbell, W. K. (1999). Narcissism and Romantic Attraction. *Journal of Personality and Social Psychology*, 77(6), 1254-1270. Retrieved from <http://www.sakkyndig.com/psychologi/artvit/campbell1999.pdf>
- Campbell, W. K., Bonacci, A. M., Shelton, J., Exline, J. J., & Bushman, B. J. (2004). Psychological Entitlement: Interpersonal Consequences and Validation of a Self-Report Measure. *Journal of Personality Assessment*, 83(1), 29-45. Retrieved from [http://www.tandfonline.com/doi/abs/10.1207/s15327752jpa8301\\_04](http://www.tandfonline.com/doi/abs/10.1207/s15327752jpa8301_04)
- Campbell, W. K., Reeder, G. D., Sedikides, C., & Elliot, A. J. (2000). Narcissism and Comparative Self-Enhancement Strategies. *Journal of Research in Personality*, 34(3), 329-347. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0092656600922827>
- Campbell, W. K., Reeder, G. D., Sedikides, C., & Elliot, A. J. (2000). Narcissism and Comparative Self-Enhancement Strategies. *Journal of Research in Personality*, 34, 329-347. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.376.5916&rep=rep1&type=pdf>



- Chatterjee, A., & Hambrick, D. (2007). It's All about Me: Narcissistic Chief Executive Officers and Their Effects on Company Strategy and Performance. <http://asq.sagepub.com/content/52/3/351.abstract>, 52(3), 351-386. Retrieved from <http://asq.sagepub.com/content/52/3/351.abstract>
- Cycyota, C. S., & Harrison, D. A. (2006). What (Not) to Expect When Surveying Executives: A Meta-Analysis of Top Manager Response Rates and Techniques Over Time. *Organizational Research Methods*, 9(2), 133-160. Retrieved from <http://orm.sagepub.com/content/9/2/133.full.pdf>
- Damadoran, A. (1996). CORPORATE FINANCE WHAT IS IT?. Retrieved from <http://people.stern.nyu.edu/adamodar/pdfiles/acf4E/webcastslides/session1.pdf>
- Ellis, H. (1898). A PrincipaAuto-eroticism: A psychological study-Components Analysis of the Narcissistic Personality Inventory and Further Evidence of Its Construct Validity. *Alienist and Neurologist*, 19(5), 260-299.
- Emmons, R. A. (1984). Factor Analysis and Construct Validity of the Narcissistic Personality Inventory. *Journal of Personality Assessment*, 48(3), 291-300. Retrieved from <http://web.a.ebscohost.com/ehost/detail/detail?sid=80132439-dfe9-4d46-8a11-2e52a129b4fc%40sessionmgr4002&vid=0&hid=4107&bdata=JnNpdGU9ZWhvc3QtbnGl2ZQ%3d%3d#AN=6385814&db=buh>
- Emmons, R. A. (1984). Narcissism: Theory and measurement. *Journal of Personality and Social Psychology*, 52, 11-17.
- Erkerns, D., Hung, M., & Matos, P. (2012). Corporate governance in the 2007–2008 financial crisis: Evidence from financial institutions worldwide. *Journal of Corporate Finance*, 18(2), 389-411. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0929119912000077#bbb0095>
- Field, A., Miles, J., & Field, Z. (2009). *Discovering statistics using R*. Los Angeles, United States of America: SAGE Publications.
- Finkelstein, S., Hambrick, D. C., & Cannella, A. A. (2009). *Strategic Leadership: Theory and Research on Executives, Top Management and Boards*. Oxford, United Kingdom: Oxford University Press.
- Foster, J. D., & Campbell, W. D. (2007). Are there such things as “Narcissists” in social psychology? A taxometric analysis of the Narcissistic Personality Inventory. *Personality and Individual Differences*, 43(1), 1321-1332. Retrieved from <http://www.joshuadfoster.com/fostercampbell2007paid.pdf>
- Freud, S. (2012). On narcissism: An introduction. Retrieved from <https://books.google.nl/books?hl=nl&lr=&id=8UQg1Xms3cUC&oi=fnd&pg=PR1&dq=frued+1914+On+narcissism+a+n+introduction&ots=zsurawDspO&sig=AYziqPPNGWDGfieB86DljGtTw2Q#v=onepage&q=egoism&f=false>
- Golec de Zavala, A., Cichocka, A., Eidelson, R., & Jayawickreme, N. (2009). Collective narcissism and its social consequences. *Journal of Personality and Social Psychology*, 97(6), 1074-1096. Retrieved from <http://psycnet.apa.org/journals/psp/97/6/1074/>
- Greene, W. H. (2011). *Econometric Analysis* (7th ed.). New Jersey, United States of America: Prentice Hall.
- Ham, C., Seybert, N., & Wang, S. (2013). NARCISSISM IS A BAD SIGN: CEO SIGNATURE SIZE, INVESTMENT, AND PERFORMANCE. Retrieved from <http://sudurnes.dv.is/media/attachments/SSRN-id2144419.pdf>

- Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. *The Academy of Management Review*, 9(2), 193-206. Retrieved from [http://www.jstor.org/stable/258434?seq=1#page\\_scan\\_tab\\_contents](http://www.jstor.org/stable/258434?seq=1#page_scan_tab_contents)
- Hausman, J. A. (1978). Specification Tests in Econometrics. *The Econometric Society*, 46(6), 1251-1271. Retrieved from [http://www.jstor.org/stable/1913827?seq=1#page\\_scan\\_tab\\_contents](http://www.jstor.org/stable/1913827?seq=1#page_scan_tab_contents)
- Hoechle, D. (2007). Robust standard errors for panel regressions with crosssectional dependence. *The Stata Journal*, 7(3), 281-312. Retrieved from [http://fmwww.bc.edu/repec/bocode/x/xtscc\\_paper.pdf](http://fmwww.bc.edu/repec/bocode/x/xtscc_paper.pdf)
- Hoffman, B. J., Woehr, D. J., Maldagen-Youngjohn, R., & Lyons, B. D. (2011). Great man or great myth? A quantitative review of the relationship between individual differences and leader effectiveness. *Journal of Occupational and Organizational Psychology*, 84, 347-381. Retrieved from <https://www.semanticscholar.org/paper/Great-Man-or-Great-Myth-a-Quantitative-Review-of-Hoffman-Woehr/d653c3afa3822838d5d11220a0dbffc30e1509ee/pdf>
- Hsiao, C. (2003). *Analysis of Panel Data* (2nd ed.). Cambridge, United Kingdom: Cambridge University Press.
- Kaplan, S. N., Klebanov, M. M., & Sorensen, M. (2012). Which CEO Characteristics and Abilities Matter? *Journal of Finance*, 67(3), 973-1007. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1540-6261.2012.01739.x/full>
- Kernberg, O. F. (1967). BORDERLINE PERSONALITY ORGANIZATION. Retrieved from <http://apa.sagepub.com/content/15/3/641.full.pdf>
- Kernberg, O. F. (1975). *Borderline conditions and pathological narcissism*. New York, United States: J. Aronson.
- Kirkpatrick, G. (2009). The corporate governance lessons from the financial crisis. *OECD Journal: Financial Market Trends*, 2009(1), 1-29. Retrieved from <http://www.oecd-ilibrary.org/docserver/download/2709011ec003.pdf?expires=1466153615&id=id&accname=ocid194328&checksum=33D81A650A4A7E434066D516FBD7D99E>
- Maccoby, M. (2000). Narcissistic Leaders: The Incredible Pros, the Inevitable Cons (*The Harvard Business Review*). Retrieved from <http://waysinternational.com/Maccoby-Narcism.pdf>
- Malkiel, B. (2003). The Efficient Market Hypothesis and Its Critics. *The Journal of Economic Perspectives*, 17(1), 59-82. Retrieved from [http://www.jstor.org/stable/3216840?seq=1#page\\_scan\\_tab\\_contents](http://www.jstor.org/stable/3216840?seq=1#page_scan_tab_contents)
- Malmendier, U., & Tate, G. (2005). CEO Overconfidence and Corporate Investment. *The Journal of Finance*, 60(6), 2661-2700. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1540-6261.2005.00813.x/full>
- Malmendier, U., & Tate, G. (2008). Who makes acquisitions? CEO overconfidence and the market's reaction ☆. *Journal of Financial Economics*, 89(1), 20-43. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0304405X08000251>
- Malmendier, U., Tate, G., & Yan, J. (2011). Overconfidence and Early-Life Experiences: The Effect of Managerial Traits on Corporate Financial Policies. *Journal of Financial Economics*, 66(5), 1687-1733. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1540-6261.2011.01685.x/full>

- Margaritis, D., & Psillaki, M. (2008). Capital structure, equity ownership and firm performance. *Journal of Banking & Finance*, 34(3), 621-632. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0378426609002258>
- Miller, D. (1991). Stale in the Saddle: CEO Tenure and the Match between Organization and Environment. *Management Science*, 37(1), 34-52. Retrieved from [http://www.jstor.org/stable/2632491?seq=1#page\\_scan\\_tab\\_contents](http://www.jstor.org/stable/2632491?seq=1#page_scan_tab_contents)
- Miller, D., & Lee, J. (2001). The people make the process: commitment to employees, decision making, and performance. *Journal of Management*, 27(2), 163-189. Retrieved from <http://jom.sagepub.com/content/27/2/163.short>
- Mullins, L. S., & Kopelman, R. E. (1988). Toward an Assessment of the Construct Validity of Four Measures of Narcissism. *Journal of Personality Assessment*, 52(4), 610-625. Retrieved from [http://www.tandfonline.com/doi/abs/10.1207/s15327752jpa5204\\_2](http://www.tandfonline.com/doi/abs/10.1207/s15327752jpa5204_2)
- O'Reilly, C. A., Doerr, B., Caldwell, D. F., & Chatman, J. A. (2013). Narcissistic CEOs and executive compensation. *The Leadership Quarterly*, 1, 1-14. Retrieved from <https://escholarship.org/uc/item/8m364215>
- Offermann, L. R., Kennedy, J. K., & Wirtz, P. W. (1994). Implicit leadership theories: Content, structure, and generalizability. *The Leadership Quarterly*, 5(1), 43-58. Retrieved from <http://www.sciencedirect.com/science/article/pii/1048984394900051>
- Prifitera, A., & Ryan, J. J. (1984). VALIDITY OF THE NARCISSISTIC PERSONALITY INVENTORY (NPI) IN A PSYCHIATRIC SAMPLE. Retrieved from [https://www.researchgate.net/profile/Joseph\\_Ryan/publication/16451918\\_VValidity\\_of\\_the\\_Narcissistic\\_Personality\\_Inventory\\_\(NPI\)\\_in\\_a\\_psychiatric\\_sample/links/558b1f1208ae48b7b56da924.pdf](https://www.researchgate.net/profile/Joseph_Ryan/publication/16451918_VValidity_of_the_Narcissistic_Personality_Inventory_(NPI)_in_a_psychiatric_sample/links/558b1f1208ae48b7b56da924.pdf)
- Princeton University Data and Statistical Services. (2007). Panel Data. Retrieved from [http://dss.princeton.edu/online\\_help/stats\\_packages/stata/panel.htm](http://dss.princeton.edu/online_help/stats_packages/stata/panel.htm)
- Ramanaiah, N. V., Detwiler, F. R. J., & Byravan, A. (1994). Revised Neo Personality Inventory Profiles of Narcissistic and Nonnarcissistic People. *Psychol Rep*, 75(1), 512-514. Retrieved from <http://prx.sagepub.com/content/75/1/512.short>
- Raskin, R., & Hall, C. S. (1979). A narcissistic personality inventory. (*Psychological Reports*, 45, 590). Retrieved from <http://psycnet.apa.org/psycinfo/1981-08131-001>
- Raskin, R., Novacek, J., & Hogan, R. (1991). Narcissistic Self-Esteem Management. *Journal of Personality and Social Psychology*, 60(6), 911-918. Retrieved from <http://www.sakkyndig.com/psykologi/artvit/raskin1991.pdf>
- Raskin, R., & Shaw, R. (1988). Narcissism and the Use of Personal Pronouns. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-6494.1988.tb00892.x/abstract>
- Raskin, R., & Terry, H. (1988). A Principal-Components Analysis of the Narcissistic Personality Inventory and Further Evidence of Its Construct Validity. *Journal of Personality and Social Psychology*, 54(5), 890-902. Retrieved from [https://www.envisiongloballeadership.com/sites/default/files/pdf/Principle%20Component%20Analysis%20of%20NPI\\_0.pdf](https://www.envisiongloballeadership.com/sites/default/files/pdf/Principle%20Component%20Analysis%20of%20NPI_0.pdf)
- Rijsenbilt, A., & Commandeur, H. (2013). Narcissus Enters the Courtroom: CEO Narcissism and Fraud. *Journal of Business Ethics*, 117(2), 413-429. Retrieved from <http://link.springer.com/article/10.1007/s10551-012-1528-7>

- Rijsenbilt, A. (2011). CEO NARCISSISM; MEASUREMENT AND IMPACT. Retrieved from <http://repub.eur.nl/pub/23554/>
- Rosenthal, S. A., & Pittinsky, T. L. (2006). Narcissistic leadership. *The Leadership Quarterly*, 17, 617-633. Retrieved from <https://thehrbluebook.com/wp-content/uploads/2011/12/Narcissistic-Leadership-Rosenthal.pdf>
- Schapiro, M. L. (2009). Speech by SEC Chairman: Address to Transatlantic Corporate Governance Dialogue 2009 Conference. [.]. Retrieved from .
- Schurer, S., & Yong, J. (2012). Personality, well-being and the marginal utility of income: What can we learn from random coefficient models? (SEF Working paper). Retrieved from <http://researcharchive.vuw.ac.nz/bitstream/handle/10063/2040/Working%20Paper%20.pdf?sequence=1>
- Serfling, M. (2013). CEO Age and the Riskiness of Corporate Policies. *Journal of Corporate Finance*, 1, 1-55. Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2158973](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2158973)
- Shefrin, H. (1999). Behavioral Corporate Finance. Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=288257](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=288257)
- Wallace, H. M., & Baumeister, R. F. (2002). The performance of narcissists rises and falls with perceived opportunity for glory. *Journal of Personality and Social Psychology*, 82(5), 819-834. Retrieved from <http://psycnet.apa.org/journals/psp/82/5/819/>
- Webb, E. J., Campbell, D. T., Schwartz, R. D., & Sechrest, L. (1966). *Unobtrusive Measures - Nonreactive Research In The Social Sciences*. Chicago, United States of America: Rand McNally and Co.
- Zaccaro, S., Kemp, C., & Bader, P. (2004). Leader Traits and Attributes ([http://s3.amazonaws.com/academia.edu.documents/37161158/Zaccaro\\_et\\_al\\_-\\_2004\\_-\\_Leader\\_traits\\_and\\_attributes.pdf?AWSAccessKeyId=AKIAJ56TQJRTWSMTNPEA&Expires=1467385182&Signature=vzaoiT1Xd%2BHXL31x8pdKQZsT6wY%3D&response-content-disposition=inline%3B%20filename%3DZaccaro\\_et\\_al\\_-\\_2004\\_-\\_Leader\\_traits\\_and.pdf](http://s3.amazonaws.com/academia.edu.documents/37161158/Zaccaro_et_al_-_2004_-_Leader_traits_and_attributes.pdf?AWSAccessKeyId=AKIAJ56TQJRTWSMTNPEA&Expires=1467385182&Signature=vzaoiT1Xd%2BHXL31x8pdKQZsT6wY%3D&response-content-disposition=inline%3B%20filename%3DZaccaro_et_al_-_2004_-_Leader_traits_and.pdf)). Retrieved from <http://psycnet.apa.org/psycinfo/1981-08131-001>
- Zhou, X. (2001). Understanding the determinants of managerial ownership and the link between ownership and performance: comment. *Journal of Financial Economics*, 62, 559-571. Retrieved from [https://www.sef.hku.hk/upload/faculty/42/JFE\\_print.pdf](https://www.sef.hku.hk/upload/faculty/42/JFE_print.pdf)

## 9. Appendices

### Appendix 1: Example of part of the Q&A section in a quarterly earnings conference call transcript

## Q&A

### Operator

Thank you. We will now be conducting a question-and-answer session. [Operator Instructions] Thank you. Our first question comes from the line of Greg Gordon with ISI Group. Please proceed with your question.

<Q - Greg Gordon>: Thanks, good morning guys. Congratulations on a great start to the year.

<A - Donald E. Brandt>: Good morning, Greg.

<Q - Greg Gordon>: So I'm just looking at slide 17 of your presentation, where you lay out the drivers for the medium term earnings outlook. And to me, there seems to be a modest but notable change there, in that your prior guidance presumed relatively flat retail electricity sales volume growth through 2013 to 2015, and now you're assuming that you will actually see some modest growth. So I just wanted to make sure I'm seeing that correctly that you have revised up your sort of net kilowatt hour sales growth assumptions?

<A - James R. Hatfield>: Yeah, Greg, that's exactly right. And we've seen now, for two quarters positive sales growth. And while we were assuming flat, in the shoulder quarters for us, which are the fourth quarter and first quarter, it's hard to read a long term pattern. But at this point, we do see very modest growth where we saw flat previously.

<Q - Greg Gordon>: Well, would you still – with your base case still assuming that you earn under your authorized ROE, wouldn't that give you the operating leverage to potentially close the gap towards the 10% growth aspiration?

<A - James R. Hatfield>: Absolutely.

<Q - Greg Gordon>: 10% ROE aspiration, sorry.

<A - James R. Hatfield>: Yes, absolutely.

<Q - Greg Gordon>: Yeah. The other thing that I'm wondering is whether you have any more refinancing opportunities that could further reduce your interest cost? You commented on the potential for lower interest rates later in the year causing you to further revise your outlook. Are you looking at opportunities for big maturities coming due that you could refinance lower?

<A - James R. Hatfield>: We don't have anything for the rest of the year other than what I talked about in my remarks, Greg. And I don't think we have another opportunity until 2014.

### Appendix 2: VIF test scores for Multicollinearity

Executive Teamscore			Grouped Executive Teamscore			CEO Narcissism Score			Grouped CEO Narcissism Score		
Variable	VIF	1/VIF	Variable	VIF	1/VIF	Variable	VIF	1/VIF	Variable	VIF	1/VIF
CEOAGE	1.17	0.856741	CEOAGE	1.17	0.856907	CEOAGE	1.12	0.889868	CEOAGE	1.12	0.890434
CEOTENURE	1.15	0.867288	CEOTENURE	1.15	0.866356	CEOTENURE	1.11	0.902468	CEOTENURE	1.11	0.901553
logsales	1.04	0.957593	logsales	1.05	0.956171	logsales	1.05	0.952751	logsales	1.05	0.950813
leverageratio	1.02	0.979924	leverageratio	1.02	0.979669	leverageratio	1.02	0.977292	leverageratio	1.02	0.977021
Teamscore	1.00	0.998129	lowteamscore	1.34	0.747320	CEO Narcissism Score	1.00	0.995546	highCEOnscore	1.33	0.749465
			highteamscore	1.33	0.749548				lowCEOnscore	1.33	0.750620
Mean VIF	1.08		Mean VIF	1.18		Mean VIF	1.06		Mean VIF	1.16	

**Appendix 3: CEO Narcissism and Firm Performance in terms of Tobin's Q**

VARIABLES	(1) Fixed Effects	(2) Fixed Effects
CEOAGE	-0.00528 (0.00942)	-0.000174 (0.00362)
CEOTENURE	0.0101 (0.0126)	0.00368 (0.00514)
leverageratio	-0.764* (0.406)	-0.161 (0.270)
logsales	-0.260*** (0.0522)	-0.0562 (0.0724)
CEONarcissismScore	-0.00386 (0.119)	-0.0178 (0.0273)
Constant	4.202*** (0.693)	2.268*** (0.625)
Observations	1,350	1,350
Adjusted R-squared	0.350	0.972
Industry FE	YES	NO
Time FE	YES	YES
Firm FE	NO	YES

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Appendix 4: Dummy variables of CEO Narcissism and Firm Performance in terms of Tobin's Q**

VARIABLES	(1) Fixed Effects	(2) Fixed Effects
CEOAGE	-0.00524 (0.00943)	-6.27e-05 (0.00358)
CEOTENURE	0.0102 (0.0126)	0.00353 (0.00512)
leverageratio	-0.764* (0.407)	-0.156 (0.272)
logsales	-0.260*** (0.0523)	-0.0580 (0.0725)
lowCEOscore	-0.00972 (0.0861)	0.0205 (0.0151)
highCEOscore	-0.0195 (0.0662)	0.0135 (0.0175)
Constant	4.209*** (0.677)	2.254*** (0.620)
Observations	1,350	1,350
Adjusted R-squared	0.350	0.972
Industry FE	YES	NO
Time FE	YES	YES
Firm FE	NO	YES

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Appendix 5: Executive Team Narcissism and Firm Performance in terms of Tobin's Q**

VARIABLES	(1) Fixed Effects	(2) Fixed Effects
CEOAGE	-0.0264** (0.0111)	-0.00298 (0.00908)
CEOTENURE	0.0350** (0.0138)	0.00189 (0.00741)
leverageratio	-0.842* (0.469)	-0.259 (0.491)
logsales	-0.294*** (0.0550)	-0.0412 (0.0645)
teamscore	0.0118 (0.128)	-0.0167 (0.0233)
Constant	5.613*** (0.882)	2.471*** (0.713)
Observations	2,306	2,306
Adjusted R-squared	0.329	0.963
Industry FE	YES	NO
Time FE	YES	YES
Firm FE	NO	YES

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Appendix 6: Dummy variables of Executive Team Narcissism and Firm Performance in terms of Tobin's Q**

VARIABLES	(1) Fixed Effects	(2) Fixed Effects
CEOAGE	-0.0264** (0.0111)	-0.00269 (0.00932)
CEOTENURE	0.0351** (0.0138)	0.00168 (0.00758)
leverageratio	-0.842* (0.468)	-0.266 (0.489)
logsales	-0.292*** (0.0550)	-0.0386 (0.0650)
lowteamscore	0.0499 (0.0810)	0.0183 (0.0201)
highteamnscore	0.0600 (0.0619)	0.0326* (0.0181)
Constant	5.568*** (0.868)	2.411*** (0.729)
Observations	2,306	2,306
Adjusted R-squared	0.329	0.963
Industry FE	YES	NO
Time FE	YES	YES
Firm FE	NO	YES

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1