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Corporate Tax Sheltering and Firm Value: Does CEO Narcissism Matter in Egyptian Setting?

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ABSTRACT

This study aims at examining the effect of the chief executive officer's (CEO) narcissism on the corporate tax sheltering and firm value. It uses a dataset of 267 firm-years observations with a time frame from 2014 until 2019. Ordinary Least Squared (OLS) regression and Feasible Generalized Least Square (FGLS) regression are used to test the hypotheses. Contrary to expectations, the results reveal that there is insignificant negative relationship between CEO narcissism and corporate tax sheltering and consistent with expectations, the results show that CEO narcissism is positively affecting the firm value. The findings contribute to the literature on the corporate tax sheltering and CEOs' personality characteristics which may affect corporate tax policies and strategies. However, the findings indicated that there is no significant association between CEO narcissism and measures of corporate tax sheltering, CETR, and GETR. This indicates that narcissistic CEOs at Egyptian firms have no impact on the corporate tax strategies. This study contributes to the social and accounting literature by providing empirical evidence on how CEO narcissism can influence the corporate tax sheltering and firm value in the Egyptian settings.

1. INTRODUCTION

Tax avoidance and tax sheltering are terms that are widely used in the accounting literature. Corporate tax avoidance is defined as a legal practice to reduce the taxable income (Tresch, 2014; Brown, 2011; Hanlon & Heitzman, 2010). In addition, tax avoidance can be defined as the reduction in a firm's explicit tax liabilities (Dyreng *et al.*, 2008); where it includes legal activities and more aggressive activities of tax planning strategies. Bankman (2004) defines a corporate tax shelter as a transaction that is

unrelated to the firm's normal business operations. Other scholars define tax shelters as transactions whose main goal is to exploit discontinuities in the tax law (U.S. Department of the Treasury 1999), or transactions that aim at evading taxes (Lisowsky 2010). Accordingly, tax sheltering represents an aggressive form of corporate tax avoidance.

Corporate tax sheltering is a legal action that has been taken by companies to achieve a better financial position in recent years. Throughout the literature, it is found that a firm's individual executives can play a significant role in determining the firms' tax strategies. The CEO is the most powerful executive in the organization with a significant impact on setting strategies, decision-making, firm's outcomes and determining the firm's tax strategy as well. According to the upper echelon theory of Hambrick and Mason (1984), the personal traits of CEO, and other executives, including personality, values and cognitive bias influence the organizational strategy and outcomes. Many personality traits affecting firm outcomes have been examined in the literature. Particularly, narcissism is considered as a major CEO trait, which is associated with overconfidence, self-interest, and taking high risks. As narcissistic CEOs feel the need for excessive praise and recognition by others, they tend to avoid the firm's unfavorable outcomes. Thus, they are more likely to engage in tax avoidance practices to achieve better firm results (Ernst & Young, 2004).

According to the literature, narcissism is seen as a threat for companies because narcissists are often cared about their own interests and have more confidence in their own tasks (Chatterjee & Hambrick, 2007). Therefore, CEO narcissism is associated with self-interest, overconfidence, and willingness to take risks (Ham *et al.*, 2017). Prior studies found that CEOs can affect their firms' tax strategies either through involvement in setting corporate tax strategies or by setting the ''tone at the top'' within their organizations (Olsen & Stekelberg, 2016). A growing stream of research examined the effect of CEO narcissism on the abilities to avoid corporate taxes and found mixed results. Therefore, this paper examines more narcissistic CEOs are likely to engage in aggressive tax avoidance despite the potential negative effects of adopting such policies. The paper hypothesizes that there is a positive association between CEO narcissism and corporate tax sheltering using a number of firms- and CEO-level control variables. Moreover, this paper examines the effect of CEO narcissism on firm value. This paper contributes to prior research on the personality traits of CEOs by providing implications for researchers and regulators to carry out more in-depth research on the CEO personality characteristics which may have an impact on the firm tax strategies. In addition, investors in

Egyptian firms can use the findings of this study to control for narcissistic CEOs and to monitor their potentially damaging actions which may be harmful to the firm value.

The rest of the paper proceeds as follows. Section 2 provides the theoretical framework, Section 3 reviews prior literature and hypotheses development. Section 4 describes the research design. Section 5 presents the discussion of the results. Section 6 concludes and provides suggestions for further research.

2. THE THEORETICAL FRAMEWORK

2.1. The Unique Role of the CEO in the Top Executive Team

Executives have a major role in shaping the organizational strategic choices and outcomes (Crossland & Hambrick, 2007; Bertrand & Schoar, 2003). The impact of the personal characteristics of executives on the organizational strategy and performance is included in the upper echelon theory of Hambrick and Mason (Hambrick & Mason, 1984). The upper echelon theory shapes the perceptions, values of executives which help them in the decision-making process. According to the upper echelon theory, the executives make their decisions based on the personal interpretations of the situations they face, which are based on the executives' experiences, personalities and values (Rijsenbilt, 2011). Top executives make decisions based on past experiences and they focus on managerial self-interest, but also on personal ambition (Hayward & Hambrick, 1997).

The upper echelon theory considers the CEO as an average member of the top management team, while literature considers that the CEO has a dominating influence on the top management team. Some research shows that the CEO has a unique role in the company. Daily and Johnson (1997) consider the CEO to be the corporate leader who affects organizational performance. Vancil and McDonald (1987) concluded that the CEO is the most powerful and influential member of the top management team. Rijsenbilt (2011) stated that the distribution of power in the top management team is a critical point, some teams the power may be distributed among the team members and in other teams, the power may reside within one key member, mostly the CEO.

Other research focused on investigating the personal characteristics of CEOs, for example, Hambrick (2007) found that the CEO's personal traits influence strategic actions and Peterson *et al.* (2003) found that the personal characteristics of CEOs influence organizational performance. In addition,

Nohria *et al.* (2003) find that 14% of the performance' variance is due to CEOs. Therefore, the CEO personality is a major determinant affecting the upper echelon which ultimately affects organizational outcomes. Moreover, prior studies confirm that the CEO plays a major role within the top executive team, in shaping the organizational strategy and determining the organizational performance (Rijsenbilt, 2011). Accordingly, this study focuses on one of the CEO personality traits, which is narcissism, due to its inherent leadership capabilities (Lubit, 2002; Maccoby, 2003). In addition, this study examines its effect on corporate tax sheltering and firm value.

2.2. The Concept of Narcissism

The concept of narcissism originates from the young man in Greek mythology, Narcissus, the story of the man who fell in love with his own reflection in a pool (Freud, 1914; Ellis, 1898). Narcissism is a psychological issue when an individual is self-loved and ignores other people's emotions. The British physician and psychologist Havelock Ellis was the first person to write about self-love in 1898 (Ellis, 1898). Freud (1914) extended the work of Ellis and argued that narcissism is an essential part of the healthy development of all children. He defined 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 the past, the concept of narcissism was described as a clinical disorder (Kernberg, 1967). After the mid-1980s, researchers described narcissism as a personality dimension on which individuals can be ranked from low to high (Rijsenbilt & Commandeur, 2013). According to the literature, there are different definitions of narcissism. Narcissism is defined as a stable personality trait that can be measured with personality assessment tools (Ham *et al.*, 2018). Also, Rijsenbilt (2011) defined narcissism as a personality trait that includes a set of character traits like vanity, hubris, selfishness, self-esteem, self-confidence, egoism, dominance, ambition and lack of empathy. In addition, Campbell *et al.*, (2011) defined narcissism as a multidimensional and multi-contextual concept that is identiûed as a personality disorder in psychiatry and as a personality characteristic that varies across individuals. Moreover, Kets de Vries (2004) indicated that narcissism lies at the heart of leadership which makes it essential to reach the top of an organization. This paper views narcissism as the degree to which any person has excessive self-love, superiority, need for engaging in high-risk areas to fulfill self-benefits, need for getting more praises to satisfy their narcissistic needs, and a lack of empathy.

2.3. CEO Narcissism

Narcissism is an important personal characteristic in terms of leadership because of its inherent capabilities to exercise power (Lubit, 2002). Kets de Vries (2004) argued that the needs to achieve higher success and to reach the top of an organization, require relatively high levels of narcissism since the narcissism personality trait can be the key to successful leadership (Kets de Vries, 2004). The literature shows that narcissistic people are more likely to fulfill leading positions due to their dominance and desire for leadership (Brouwer, 2018).

Previous research has suggested that narcissistic CEO characterized by dominance, self-confidence, a sense of entitlement, grandiosity, and low empathy can both positively and negatively influence organizations. Further, narcissism has often been described as a dark side of the personality, because narcissists are often characterized by arrogance, boastfulness, and self-importance (Resick *et al.*, 2009; Paulhus & Williams 2002). Moreover, Kets de Vries (2004) argued that the power that narcissistic leaders have, can have a destructive impact on their organization. Despite their dark-side traits, narcissists also have positive traits such as being achievement-driven and charismatic (Campbell & Campbell 2009; Rosenthal & Pittinsky 2006).

In the recent literature, there are multiple measures of narcissism. Rasking and Hall (1979) were the first researchers to develop a measure for narcissism. They developed the Narcissistic Personality Inventory (NPI), the most widely used measure of narcissism which is based on the diagnostic and statistical manual of mental disorders. Emmons (1987) conducted a prominent study on the NPI and used factor analysis of the scale and reduced the 54 items of NPI to 4 robust narcissism components include four factors of narcissism and labeled them (1) Self-admiration, (2) Entitlement, (3) Authority/leadership and (4) Superiority/arrogance.

2.4. Motivation for Corporate Tax Sheltering

The Joint Committee on Taxation (1999) defined a corporate tax shelter as a plan that is used to avoid or evade federal income tax without exposure to economic loss. According to the U.S. Department of the Treasury Report (1999), corporate tax sheltering is the most aggressive form of tax avoidance and is different from corporate tax avoidance, where the main goal of tax sheltering is to lower tax liabilities by exploiting discontinuities in the tax law. In addition, Bankman (2004) defined a corporate tax shelter as a tax-motivated transaction that is unrelated to a taxpayer's normal business operations. Others have defined tax shelters as transactions that the sole reason for entering into the transaction is to evade taxes (Lisowsky, 2010).

Hanlon and Heitzman (2010) identified in the literature two alternative perspectives on the motivations for tax avoidance or sheltering. The first perspective's objective is to transfer wealth from the state to the shareholders through avoiding paying some amount of taxes. Then, the researcher views that shareholders would be interested in that practice and encourage their representatives to engage in that practice to achieve more gains from avoiding taxes. Armstrong *et al.* (2012), for instance, found that the compensation paid to tax directors in these companies that engage in these practices is negatively related to the firm's effective tax rate.

The second perspective is related to the agency costs caused by the conflicts of interests between managers and shareholders as discussed by Desai, *et al.* (2007) and Desai and Dharmapala (2006), where self-interested managers would be willing to engage in tax avoidance activities only to take advantage of excessive discretion, and thus to divert rent for their own benefit. Thus, shareholders would be forced to accept these practices to avoid tax authorities' penalties. Accordingly, it can be concluded that the motivations for and consequences of engaging in corporate tax avoidance or sheltering are still questionable and imply conflicts of interest which raise the need for further investigation about corporate tax sheltering and its effects on the different aspects of the organization.

2.5. Firm Value

Tobin's Q is a widely-used measure for firm valuation is, which is a ratio developed by James Tobin (Tobin 1978, 1969; Tobin & Brainard, 1968) as a predictor of a firm's future investments. The literature suggests Tobin's Q as a more suitable and reliable metric than traditional performance measures as return on investment (ROI) and return on assets (ROA), since those measures are based on historical accounting data (Chen & Lee, 1995). The main advantage of using Tobin's Q, is that it reflects 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 (Aliabadi *et al.*, 2013).

Tobin's Q also measures the quality of a firm's management (Shepherd, 1986). As the market value of a firm is identified by supply and demand in the capital market, it can be highly over- or undervalued due to a company's reputation. A ratio above (1) indicates overvaluation of stocks. A ratio below (1) indicates that the cost to replace a firm's assets is greater than the value of its stock and that the company is undervalued (Brouwer, 2018).

3. PRIOR LITERATURE AND HYPOTHESES DEVELOPMENT

3.1. CEO Narcissism and Corporate Tax Sheltering

Throughout the literature, there is much research in accounting and ûnance that has focused on CEO narcissism, and overconfidence and their effect on accounting decisions, executive compensation and corporate tax sheltering. As narcissistic CEOs live in a fantasy world and think they are superior, they think that they can make a difference within the organization (Swagerman, 2018). In addition, CEO narcissism is associated with overconfidence, self-interest, and willingness to take risks (Ham *et al.*, 2017).

Therefore, this paper argues that narcissism, as a personal trait of a CEO, may affect corporate tax sheltering. Prior studies like, García-Meca *et al.* (2021) indicated that narcissism is considered a personality trait that causes CEOs to engage in tax avoidance strategies. This paper focuses on examining whether corporate tax sheltering can be influenced by one of the CEO characters; CEO narcissism. Corporate tax sheltering is becoming more of a common practice conducted by many multinational companies nowadays. Even well-known companies such as Starbucks, Coca-Cola, and Google engage in corporate tax avoidance strategies (Hamamura & Kurita, 2021).

Many types of researches in management, finance, and accounting have focused on the effect of personal traits of executives on firms' policies (e.g., Graham *et al.*, 2013; Bertrand & Schoar, 2003). For example, prior studies have examined the effect of CEO reputation on earnings quality (Demerjian *et al.*, 2013; Francis *et al.*, 2008), and the effect of CEO overconfidence on financial misreporting (Kubick & Lockhart, 2017; Schrand & Zechman, 2012).

Another strand of research focused on the CEO narcissism effect on the financial performance measures, accounting decisions, and executive compensation (e.g., Swagerman, 2018; Olsen & Stekelberg 2016; Gaertner, 2014). Prior studies related to examining the effect of CEO compensation and narcissism on corporate tax sheltering revealed mixed results. For example, on one hand, Phillips (2003) empirically investigated the association between compensation and corporate tax avoidance and found that there is no significant association between CEO incentive and corporate tax avoidance. Phillips's (2003) findings are supported by Armstrong *et al.* (2012). On the other hand, both Rego and Wilson (2012) and Gaertner (2014) provided consistent evidence suggesting that CEO compensation has a significant effect on corporate tax behavior. From another point of view, and in contrast to previous studies, Desai and Daharmapala (2006) analyzed how high-powered incentive compensation influenced corporate tax

sheltering and found that there is a negative association between high-powered incentive compensation and corporate tax sheltering.

In the same way, Dyreng *et al.* (2010) study are consistent with the study of Olsen and Stekelberg (2016) who examined the effect of CEO narcissism on corporate tax shelters. They proposed that CEOs can inûuence their ûrms' tax policies either through direct involvement in setting or evaluating corporate tax strategies or indirectly by setting the ''tone at the top'' within their organizations. Therefore, they predicted that relative to other CEOs, more narcissistic CEOs are likely to pursue more aggressive tax avoidance despite the potential negative outcomes from adopting such policies. The results indicated evidence of a positive association between CEO narcissism and a ûrm's probability of participating in a corporate tax shelter.

In contrast to the results reported by Dyreng *et al.* (2010) and Olsen and Stekelberg (2016), Swagerman (2018) examined the relationship between CEO narcissism and corporate tax avoidance and investigated whether CEO duality moderates this relationship. The results indicated that no significant relationship is found between CEO narcissism and corporate tax avoidance in general, but they found that when CEO duality moderates this relationship, the effect becomes significant and positive.

Other studies focused on investigating the effect of CEO overconfidence on the corporate tax shelters since overconfidence is an important executive characteristic. For example, Chyz *et al.* (2019) is consistent with Kubick and Lockhart (2017) where they investigated whether firms with overconfident CEOs engage in corporate tax sheltering and found evidence that firms with overconfident CEOs are more likely to engage in tax shelters. These results are consistent also with those of Hsieh *et al.* (2018).

Based on the above discussion, this study expects that narcissistic CEOs are more likely to engage in corporate tax sheltering to lower the firm's tax burden despite the potential costs related to this practice, such as the tax authority's penalties and reputational damage effects which may cause damaging of firm value. Therefore, we hypothesize that CEO narcissism has a positive effect on corporate tax shelters, and hence the first hypothesis is formulated as follows:

H1: There is a positive relationship between CEO narcissism and corporate tax sheltering.

3.2. CEO Narcissism and Firm value

Despite the fact that prior research has discussed how executives' characteristics affect organizational outcomes, the relationship between

CEO narcissism and firm value is still questionable. Prior studies indicated mixed results, where the literature suggests that different personality traits of executives can have different effects on organizational performance (Peterson *et al.*, 2003). From one hand, some studies find that CEO narcissism has potential negative effects on firms, such as a higher degree of earnings management and inflated performance, weaker internal controls, and higher compensation (Ham *et al.* 2017; Frino *et al.* 2015; O'Reilly et al, 2014). In contrast, Olsen *et al.* (2014) find that firms with narcissistic CEOs have higher earnings per share (EPS) than those with non-narcissistic CEOs.

The literature primarily investigated how CEO narcissism affects firms' ROA and other key performance indicators (KPIs) to determine the overall firm performance. Instead of firm performance, this paper focuses on the relationship between CEO narcissism and firm valuation. Upon the literature, despite some prior research find that narcissistic CEOs have a positive inûuence on organizational performance (e.g., Maccoby, 2007; Patel & Cooper, 2014), in contrast, other research finds evidence that organizations led by narcissistic CEOs can create serious problems, including evidence of increased risk taking, overpaying for acquisitions, manipulating accounting data and damage to firm value (e.g., Capalbo *et al.* 2018; Ham *et al.*, 2018; O'Reilly *et al.*, 2018).

Some previous studies have found negative effects of CEO narcissism on firms including a higher degree of earnings management, damaging firm value, poor firm performance, and higher absolute and relative compensation (Chatterjee and Hambrick, 2007; Ham *et al.*2017; O'Reilly *et al*.2014;Rijsenbilt, 2011). For instance, Chatterjee and Hambrick (2007) examined the effect of CEO narcissism on company strategy and performance and the results showed that there is no relationship between CEO narcissism and firm performance, instead, they found that CEO narcissism is associated with extreme performance in terms of big wins and big losses. In addition, Wales *et al.* (2013) extended Chatterjee and Hambrick (2007)' ûndings by examining whether CEO partially mediates the relationship between CEO narcissism and ûrm performance and found that the CEO narcissism related to greater performance variability, partially explained by their entrepreneurial orientation.

From another point of view. Rijsenbilt (2011) examined the impact of CEO narcissism on organizational outcomes, such as the financial performance based on both the market and accounting measures of firm performance. The results revealed that both very low and very high levels of CEO narcissism result in the lower financial performance of a firm, however, middle levels of CEO narcissism result in the relatively higher

financial performance of a firm. This result supports the view that some level of narcissism is required for effective leadership, however, high levels of narcissism can destroy the firm. In addition, Ham *et al.*, (2018) found that (i) CEO narcissism is positively related to over investment which in turn destroys the firm value through reduced sales growth and revenues, and (ii) CEO narcissism is negatively related to the firm financial performance. The results of O'Reilly *et al.* (2018) are consistent with those of Ham *et al.* (2018), where CEO narcissism can damage a firm's value as they found that firms led by narcissistic CEOs are more likely to be involved in litigation.

In contrast, Olsen *et al.*, (2014) investigated the relationship between CEO narcissism and the firm financial performance and find that firms with narcissistic CEOs have higher EPS than those with non-narcissistic CEOs. Moreover, Brouwer (2018) investigated the relationship between CEO narcissism and firm value. The results reported a positive relationship between CEO narcissism and firm value.

Based on the above discussion, it is clear that the effect of CEO narcissism on firm value represents a significant gap in the literature as there is still limited evidence on whether CEO narcissism would enhance the firm value or destroy it. This paper expects that CEO narcissism has a positive effect on the firm value. Therefore, the second hypothesis is to be formulated as follows:

H2: There is a positive relationship between CEO narcissism and the firm value.

4. RESEARCH DESIGN

4.1. Sample selection and data collection

The population of this study is the Egyptian listed companies (EGX100), where banks, and financial services companies are excluded from the sample, since, their capital structures differ significantly from the other industries, and they have their own characteristics, regulations and specific disclosure requirements. Also, the observations that have net losses are excluded from the sample. The final sample consists of 48 nonfinancial firms in different industries with 267 year–end observations covering the years from 2014 to 2019. The data required to empirically test the hypotheses are collected using three sources are as follows: (i) Thomson Reuter – Eikon Database to collect annual financial statements and financial key metric ratios, (ii) Mubasher Corporation Database to obtain the stock price, and (iii) The Egyptian Stock Exchange website to obtain annual board of director's reports.

4.2. Variable Measurements

The study include three main variables; the dependent, independent and control variables to empirically test the effects of CEO narcissism on corporate tax sheltering and the firm value.

The Dependent Variables

This paper considers two variables as dependent variables; corporate tax sheltering, and firm value. The accounting literature depends on various measures to measure the corporate tax sheltering, as the GAAP effective tax rate (GETR) and the current effective tax rate (CETR).

The GERT is calculated by dividing the total income tax expenses (current and deferred tax expenses) for the current year by the pre-tax accounting income (Lee *et al.* 2014). This measure is used in the literature as it reflects aggressive tax planning (Chen *et al.* 2010). For example, this measure is used by Armstrong *et al.* (2012); Chen *et al.* (2010); and Dyerng *et al.* (2010).

The CETR is calculated by dividing the current income tax expense for the current year on pre-tax accounting income (Chen *et al.* 2012); where current tax expenses are the total tax expenses minus the deferred tax expenses. This measure is used in many studies to measure tax avoidance and tax aggressiveness (Chen *et al.*, 2012; Cheng *et al.*, 2013; Hope *et al.*, 2013).

With respect to the second dependent variable; the firm value, a widely used proxy for firm valuation is Tobin's Q, which is calculated by dividing the market value of assets by the book value of the firm's assets (llaboya *et al.*, 2016) as follows:

$$Tobin's\ Q = Market\ Value\ of\ Assets / Book\ Value\ of\ Assets$$

Where:

$$Market\ Value\ of\ Assets = Market\ Value\ of\ Equity + Book\ Value\ of\ Liabilities$$

If the ratio is more than one, this means that the market value of the assets is greater than its book value which indicates the efficient use of the scarce resources and the high performance and profitability of the firm (llaboya *et al.*, 2016).

The Independent Variable

This paper considers CEO narcissism as the independent variable. The natural logarithm of a signature size is used to measure the CEO narcissism,

due to the availability of signatures of many CEOs in the published annual reports in Egypt which make the signature size readily an observable measure.

The Control Variables

There is a need to control for several firms and CEO-level characteristics that may affect the association between CEO narcissism and corporate tax sheltering or firm value. This paper employs two sets of control variables; firm-level control variables (leverage, ROA, and firm size) and CEO-level control variables (CEO duality, CEO overconfidence, and the gender diversity. Table (1) summarizes the definitions of the variables and related proxies.

4.3. Research Models

To test the research hypotheses, 2 models of Multiple Regression are employed using STATA package (version 14.2) as follows:

Table 1
Variables Definitions

Variables	*Proxies*	*Definition*
Dependent variables		
Corporate Tax Sheltering	GTER	The total income tax expenses (current and deferred tax expenses) for the current year/ the pre-tax accounting income
	CTER	The current income tax expense for the current year/pre-tax accounting income
Firm Value	Tobin's Q	Market value of assets/book value of assets
Independent Variables		
CEO narcissism	LNSIGN	The natural logarithm of CEO signature size
Control Variables		
Firm-level control variables	Leverage (LEV)	The total liabilities scaled by the total assets.
	ROA	Pretax net income on Total assets
	Firm Size	The natural logarithm of total assets
CEO-level control variables	CEO Duality	It is a binary variable, which is 1 if the CEO is also the chairperson of the board of directors and 0 otherwise
	CEO Over-confidence	Over-investment measured by residuals of a regression of total asset growth on sales growth. The positive value of residuals refers to CEO-overconfidence
	Gender Diversity	The percentage of female directors serving on a firm's board of directors

The First Model

The first multiple regression model is formulated to investigate the impact of CEO narcissism on corporate tax sheltering. Therefore, the first regression model is established as follows:

$$\text{CURRENT ETR}_{it} = \beta 0 + \beta 1\text{LNSIGN}_{it} + \beta 2\text{LEV}_{it} + \beta 3\text{ROA}_{it} + \beta 4\text{SIZE}_{it} + \beta 5\text{DUALITY}_{it} + \beta 6\text{OC}_{it} + \beta 7\ \%\text{WOMEN}_{it} + \varepsilon_{it}$$

$$\text{GETR}_{it} = \beta 0 + \beta 1\text{LNSIGN}_{it} + \beta 2\text{LEV}_{it} + \beta 3\text{ROA}_{it} + \beta 4\text{SIZE}_{it} + \beta 5\text{DUALITY}_{it} + \beta 6\text{OC}_{it} + \beta 7\ \%\text{WOMEN}_{it} + \varepsilon_{it}$$

The Second Model

The second multiple regression model is established to test the impact of CEO narcissism on firm value. Therefore, the second regression model is formulated as follows:

$$\text{TOBINQ}_{it} = \beta 0 + \beta 1\text{LNSIGN}_{it} + \beta 2\text{LEV}_{it} + \beta 3\text{ROA}_{it} + \beta 4\text{SIZE}_{it} + \beta 5\text{DUALITY}_{it} + \beta 6\text{OC}_{it} + \beta 7\ \%\text{WOMEN}_{it} + \varepsilon_{it}$$

5. DATA ANALYSIS AND DISCUSSION OF RESULTS

5.1. Descriptive Statistics

The descriptive statistics of each variable included in the study models describe the characteristics of the data. This study comprises 48 firms listed on the EGX (100) covering a period from 2014 to 2019; with a total 267 of observations. Table (2) presents the descriptive statistics of mean, standard deviation, minimum and maximum for the dependent, independent, and control variables used in regression models. The sample (N) is 267 for each variable.

The first dependent variable (corporate tax sheltering) is measured by two indicators: CURRENT ETR and GETR. According to Table (2), the mean of the CURRENT ETR is 0.157, with a standard deviation of 0.108, The minimum 0, and the maximum is 0.314. On average, the current effective tax rate represents 16% for the sample firms, while the mean of the GETR is 0.202, with a standard deviation of 0.107, the minimum is 0 and the maximum is 0.361. On average, GAAP effective tax rate represents 20% for the sample firms. The difference between CURRENT ETR and GETR is due to the difference between firms in earned profit. Concerning the firm value, the mean of the TOBINQ is 1.788, with a standard deviation of 1.125, the minimum is 0.647 and the maximum is 4.5. On average, the sample firms maintain high values due to the exceeding of the market value over the book value of the total assets.

Table 2
Descriptive Statistic

Variables	*Obs.*	*Mean*	*Std. Dev.*	*Min*	*Max*
CURRENT ETR	267	.157	.108	0	.314
GETR	267	.202	.107	0	.361
TOBINQ	267	1.788	1.125	.647	4.5
LNSIGN	267	1.319	.326	.833	1.825
SIZE	267	14.898	1.239	13.016	17.021
LEV	267	.489	.215	.06	.933
ROA	267	.1	.076	.018	.245
OC	267	-.004	.23	-.338	.418
%WOMEN	267	.091	.117	0	.357

Regarding the independent variable, CEO narcissism, the mean of LNSIGN is 1.319, with a standard deviation of 0.326, the minimum and maximum values are 0.833 and 1.825 respectively which indicates significant variation in narcissism among CEOs in the sample.

Concerning the firm-level control variables, the mean of the LEV is 0.489, with a standard deviation of 0.215, the minimum is 0.06 and the maximum is 0.933. The high variance between the minimum and maximum values is due to the variations of the credit and financing terms among the sample firms. The mean of the SIZE is 14.898, which means that the size of the sample firms is characterized by the high size. The standard deviation of the size is 1.239, the minimum and the maximum are 13.016 and 17.021 respectively. The low variance between the minimum and maximum values is due to taking the natural logarithm of total assets. The mean of the ROA is 0.10, with a standard deviation of 0.076, the minimum (maximum) is 0.018 (0.245) and as shown there is a high variance between the minimum and maximum values of ROA which refers to the high deviation in the performance and profitability of the companies included in the sample of the study.

With regard to the CEO-level control variables, the mean of CEO overconfidence (OC) is -0.004, with a standard deviation of 0.23, the minimum and the maximum are -0.338 and 0.418 respectively indicating significant variation in overconfidence among CEOs in the sample firms. The mean of the % of WOMEN is 0.091, with a standard deviation of 0.117, the minimum (maximum) is 0 (0.357). Concerning the CEO duality, the results report that in about 71% of the firm-year observations, the CEOs are acting as the CEO and Chairman of the board of directors.

5.2. Correlation Analysis

The Pearson's correlation is used to investigate whether there are relationships between the dependent, independent, and control variables. Furthermore, it is used to test the collinearity among independent variables (multicollinearity may be a problem, for example, Emory (1985) indicated that it can be more problematic if the correlation exceeds 0.8.). Table (3) summarizes Pearson's correlation coefficients between the study variables.

Table (3) shows the following relationships between the study variables: (i) Independent variables and corporate tax sheltering, (ii) Independent variables and firm value, and (iii) control variables with each other. Concerning independent variables and corporate tax sheltering, we find that there is no relationship between CEO narcissism (measured by LNSIGN) and corporate tax sheltering (CURRENT ETR and GETR) as the relationship is insignificant. Regarding the control variables with corporate tax sheltering, the results suggest that there is a positive relationship between SIZE and %WOMEN with corporate tax sheltering (CURRENT ETR and GETR), and there is a negative relationship between leverage, ROA, OC, and duality with corporate tax sheltering (CURRENT ETR and GETR). Additionally, Table (4) summarizes the relationship between independent variables and firm value, where there is a positive relationship between LNSIGN and TOBINQ. Regarding the relationship of the control variables with firm value, Table (4) shows that there is a positive relationship between LEV, ROA, OC, DUALITY, and %WOMEN with firm value (TOBINQ). On the other side, there is a negative relationship between SIZE and TOBINQ. Furthermore, testing the relationships between the control variables reveal that the correlation coefficient between ROA and SIZE is -0.247, the correlation coefficient between ROA and LEV is 0.376 and the correlation coefficient between SIZE and LEV is -0.394. This means that there is no multicollinearity problem because the highest coefficient of correlation is 39.4 which is lower than 80%.

5.3. Testing of the OLS assumptions

This paper employs the Ordinary Least Square method (OLS) to test the hypotheses. Before using the OLS method, certain assumptions should be verified; otherwise, the output results would mislead (Brooks, 2008). These assumptions are multicollinearity, autocorrelation, and homoscedasticity. Table (4) shows the results of the verification of the OLS assumptions.

Table 3
Pearson's Correlation Matrix

Variables	*TOBINQ*	*CETR*	*GETR*	*LNSIGN*	*SIZE*	*LEV*	*ROA*	*OC*	*DUAILTY*	*%WOMEN*
1. TOBINQ	1.000									
2. CETR	-0.146	1.000								
	(0.017)									
3. GETR	-0.140	0.660	1.000							
	(0.022)	(0.000)								
4. LNSIGN	0.138	-0.002	0.007	1.000						
	(0.024)	(0.978)	(0.907)							
5. SIZE	-0.248	0.244	0.101	-0.066	1.000					
	(0.000)	(0.000)	(0.099)	(0.282)						
6. LEV	0.122	-0.379	-0.325	-0.005	-0.394	1.000				
	(0.047)	(0.000)	(0.000)	(0.939)	(0.000)					
7. ROA	0.593	-0.122	-0.138	0.028	-0.247	0.376	1.000			
	(0.000)	(0.046)	(0.024)	(0.649)	(0.000)	(0.000)				
8. OC	0.074	-0.063	-0.027	0.015	0.027	-0.016	0.110	1.000		
	(0.228)	(0.302)	(0.665)	(0.810)	(0.662)	(0.788)	(0.074)			
9. DUAILTY	0.175	-0.142	-0.117	-0.088	-0.073	0.146	0.189	-0.038	1.000	
	(0.004)	(0.020)	(0.056)	(0.153)	(0.237)	(0.017)	(0.002)	(0.539)		
10. %WOMEN	0.057	0.004	0.002	-0.057	-0.136	0.068	0.073	-0.018	0.153	1.000
	(0.350)	(0.954)	(0.975)	(0.356)	(0.026)	(0.267)	(0.232)	(0.768)	(0.012)	

Table 4
OLS assumptions

Models	*Dependent Variable*	*Multicollinearity*	*Autocorrelation*	*Homoscedasticity*
		Mean VIF	*Durbin Watson (DW)*	*Breusch-Pagan/ Cook-Weisberg*
Model 1	CETR	1.134	0.959	Prob.>chi2= 0.003
	GETR	1.134	1.124	Prob.>chi2= 0.022
Model 2	TOBINQ	1.134	0.841	Prob.>chi2= 0.000

The multicollinearity assumption where there should be no linear relationship between the independent variables. Statistically, multicollinearity can be tested through the Variance Inflation Factor (VIF) to determine the degree of correlation between independent variables in the study models. Gujarati (2003) indicated that the multicollinearity problem between independent variables occurs when the value of VIF is greater than 10. Autocorrelation assumption assumes that the errors are not independent across time periods. The Durbin Watson test was used to detect the problem of autocorrelation, which means that residuals are not independent of each other. According to Brooks (2008), there is no autocorrelation problem between residuals if the value of Durbin Watson is close to 2, but if the value of Durbin Watson is less than or greater than 2, autocorrelation problem can arise between residuals. Furthermore, Homoskedasticity should be checked that error disturbances have an equal spread (scatter) in the linear regression model. However, if the error variances are nonconstant and variances change for each different observation; unequal spread, thus, a heteroskedasticity problem is existed (Asteriou and Hall, 2011). The Breusch-Pagan / Cook-Weisberg test was used to verify constant variance between residuals. The null hypothesis of this test assumes that the residuals are homoscedasticity, whereas the alternative hypothesis is that the residuals are heteroscedasticity. A null hypothesis is accepted if the probability calculated by the Breusch-Pagan / Cook-Weisberg test is greater than 5%, while the alternative hypothesis is accepted if the probability of the Breusch-Pagan / Cook-Weisberg test is less than 5% (Gujarati, 2003).

The results in Table (4) show that in the model (1), the multicollinearity assumption related to CURRENT ETR is verified as VIF is less than 10 (1.134), the autocorrelation assumption is not verified with a value out of the range of 1.5 to 2.5 (0.959) and homoscedasticity assumption also is not verified because Breusch-Pagan/Cook-Weisberg probability is less than 5%

(0.0031). Therefore, the OLS regression will provide biased results for this model. Additionally, the multicollinearity assumption is verified for GETR, where the VIF is less than 10 (1.134), the autocorrelation assumption is not verified with a value out of the range of 1.5 to 2.5 (0.841) and homoscedasticity assumption also is not verified because of Breusch-Pagan/ Cook-Weisberg probability less than 5% (0.022). Therefore, the OLS regression provides biased results for this model.

Regarding model (2), the multicollinearity assumption is verified for TOBINQ, where the VIF is less than 10 (1.134), the autocorrelation assumption is not verified with a value out of the range of 1.5 to 2.5 (0.841) and homoscedasticity assumption also is not verified because of Breusch-Pagan/Cook-Weisberg probability less than 5% (0.000). Therefore, the OLS regression provides biased results for this model.

The results of the previous two models will be biased if the testing of the hypotheses depends on the OLS method due to violating the autocorrelation and homoscedasticity assumptions. Therefore, this paper will employ Feasible Generalized Least Square (FGLS), this technique is known as Panel Corrected Standard Errors (PCSE) which corrects heteroskedasticity, cross sectional dependence, and autocorrelation.

5.4. Regression Analysis

Multiple regression analysis is employed to test the hypotheses based on OLS and FGLS approaches. Model (1) is used to test the first hypothesis stated that "*There is a positive relationship between CEO narcissism and corporate tax sheltering*". The first model includes LNSIGN as an independent variable and CURRENT ETR and GETR as dependent variables in addition to using LEV, ROA, SIZE, DUALITY, OC, and %WOMEN as control variables. Table (5) presents OLS and FGLS regression analysis to test the first empirical model.

The results in Table (5) show that the FGLS coefficient of the main independent variable CEO narcissism (LN SIGN) is negatively associated with CURRENT ETR (-0.000589) and GETR (-0.000146) and is statistically insignificant. This implies that there is no impact of CEO narcissism on corporate tax sheltering (CURRENT ETR and GETR). Thus, the first hypothesis (H1) is rejected. These results are consistent with Swagerman (2018) who found that there is no significant relationship between CEO narcissism and corporate tax avoidance in general. This might be due to the nature of the Egyptian capital market, which is believed to be underdeveloped, and the nature of the Egyptian tax systems which could be different from other countries. In addition, another possible reason could

Table 5
OLS and FGLS regression results of the first model.

Variables	*CURRENT ETR*		*GETR*	
	OLS	*FGLS*	*OLS*	*FGLS*
LNSIGN	-0.000589	-0.000589	-0.000146	-0.000146
	(-0.03)	(-0.03)	(-0.01)	(-0.01)
SIZE	0.0110*	0.0110*	-0.00253	-0.00253
	(2.02)	(2.05)	(-0.45)	(-0.46)
LEV	-0.172***	-0.172***	-0.162***	-0.162***
	(-5.26)	(-5.34)	(-4.83)	(-4.91)
ROA	0.0897	0.0897	-0.0111	-0.0111
	(1.00)	(1.02)	(-0.12)	(-0.12)
OC	-0.0387	-0.0387	-0.0152	-0.0152
	(-1.44)	(-1.46)	(-0.55)	(-0.56)
DUAILTY	-0.0254	-0.0254	-0.0180	-0.0180
	(-1.82)	(-1.85)	(-1.26)	(-1.28)
%WOMEN	0.0502	0.0502	0.0291	0.0291
	(0.94)	(0.95)	(0.53)	(0.54)
_cons	0.0823	0.0823	0.331***	0.331***
	(0.87)	(0.88)	(3.39)	(3.44)
N	267	267	267	267
R^2	0.173	-	0.114	-
Probability F test	0.000	-	0.000	-
Probability Wald Ch^2	-	0.000	-	0.000

t statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

be that CEO narcissism does not only predict corporate tax sheltering directly, but also indirectly through various relationships.

Regarding the control variables, the results of the FGLS regression analysis revealed that both SIZE, ROA, and %WOMEN are positively related to CURRENT ETR. But these relations are insignificant except for the relationship between SIZE and CURRENT ETR at 5%. It is also found that LEV, OC, and DUALITY are related negatively to CURRENT ETR. But these relations are insignificant except for the relationship between LEV and CURRENT ETR significant at 0.001.

Also, the results of the FGLS regression analysis revealed that %WOMEN are related positively and insignificantly to GETR. It is also found that SIZE, LEV, ROA, OC, and DUALITY are related negatively to GETR. But these relations are insignificant except for the relationship between LEV and GETR significant at 0.001.

Moreover, the probability of the F-test and wald chi-square is lower than 0.05 (0.000). This reveals that this model is significant as F-test and wald chi-square reflect the overall significance of the model. This indicates that there is an effect of the independent variables on the dependent variable (CURRENT ETR and GETR). The value of R^2 is 0.173 and 0.114 respectively, which indicates that the independent variable CEO narcissism (LNSIGN) and control variables (SIZE, LEV, ROA, OC, DUALITY, %WOMEN) explain about 17% and 11% of the changes in CURRENT ETR and GETR respectively. The other 83%, 89% can back to either random error in the regression model or other independent variables which need to be included in the model.

With regard to the second hypothesis that states that "T*here is a positive relationship between CEO narcissism and firm value*". Model (2) of multiple regression is used to test this hypothesis. The second model includes CEO narcissism (LNSIGN) as an independent variable and TOBINQ as a dependent variable in addition to using LEV, ROA, SIZE, DUALITY, OC, and %WOMEN as the control variables. Table (6) presents OLS and FGLS regression analysis to test the second empirical model.

Consistent with expectations, Table (6) shows that the FGLS coefficient of the main independent variable (LN SIGN) is positively associated with TOBINQ (0.407) and is statistically significant at the 5 % level. This implies that there is a positive significant relationship between CEO narcissism and firm valuation. Thus, the second hypothesis (H2) is accepted. This result is consistent with some prior studies (e.g., Brouwer, 2018; Olsen *et al.*, 2014). However, this result means that investors are aware of the risks related to CEO narcissism and perceive CEO narcissism as a signal for future firm value or growth perspectives.

Regarding the control variables, the results of the FGLS regression analysis revealed that ROA, OC, and DUAILTY are positively related to TOBINQ. But these relations are insignificant except for the relationship between ROA and TOBINQ at 0.001 level. It is also found that SIZE, LEV, and %WOMEN are negatively related to TOBINQ. But these relationships are significant at the 1 % level except for the relationship between %WOMEN and TOBINQ; which is insignificant.

Table 6
OLS and FGLS regression results of the second model

Variables	*TOBINQ*	
	OLS	*FGLS*
LNSIGN	0.407*	0.407*
	(2.44)	(2.47)
SIZE	-0.142**	-0.142**
	(-2.94)	(-2.99)
LEV	-0.923**	-0.923**
	(-3.20)	(-3.25)
ROA	8.912***	8.912***
	(11.27)	(11.44)
OC	0.0542	0.0542
	(0.23)	(0.23)
DUAILTY	0.217	0.217
	(1.76)	(1.79)
%WOMEN	-0.0221	-0.0221
	(-0.05)	(-0.05)
_cons	2.775**	2.775***
	(3.30)	(3.36)
N	267	267
R^2	0.405	-
Probability F test	0.000	-
Probability Wald chi2	-	0.000

t statistics in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Moreover, the probability of the F-test and Wald chi-square is lower than 0.05 (0.000). This reveals that this model is significant as F-test and Wald chi-square reflect the overall significance of the model. This indicates that there is an effect of the independent variables on the dependent variable (TOBINQ). The value of R^2 is 0.405 which indicates that the independent variable (LNSIGN) and control variables (SIZE, LEV, ROA, OC, DUALITY, %WOMEN) explain about 40% of the changes in TOBINQ. The other 60% can back to either random error in the regression model or other independent variables which need to be included in the model.

6. ROBUSTNESS TESTS

6.1. Alternative Measure of CEO Narcissism

This paper retests the hypotheses using an alternative measure of CEO narcissism by measuring it based on a dummy variable; where a value of (1) is to be assigned if the CEO signature size exceeds the median size of

CEOs' signatures, and (0) otherwise. Table (7) shows the results of a retesting of the two hypotheses using the alternative measure of CEO narcissism.

Table 7
Results of retesting the study hypotheses using the dummy variable

Relationships	*Hypothesis*	*Coefficient*	*Significant*	*Technique*
CEO narcissism (DUMMYSIGN) and corporate tax sheltering (CETR)	H1	-0.005	0.686	FGLS
CEO narcissism (DUMMYSIGN) and firm value (TOBINQ)	H2	0.337	0.001	FGLS

The results in Table (7) reveal that there is no impact of CEO narcissism (DUMMYSIGN) on corporate tax sheltering (CETR), this is consistent with the results of the previous measure of CEO narcissism discussed before. Moreover, there is a significant positive impact of CEO narcissism (DUMMYSIGN) on firm value (TOBINQ), this is consistent with the results of the previous measures of CEO narcissism.

7. CONCLUSIONS, LIMITATIONS, AND SUGGESTIONS FOR FURTHER RESEARCH

This paper examines the impact of CEO narcissism on corporate tax shelters, which is classified in the literature as an aggressive form of corporate tax avoidance. Narcissistic CEOs are characterized by senses of superiority, feelings of entitlement and self-love. Narcissistic individuals feel that they are above the law, and they can take more risks to achieve the rewards. Prior studies reported mixed results of the effect of CEO narcissism on corporate tax shelters. Consistent with Swagerman (2018), we find that CEO narcissism has no impact on corporate tax sheltering in Egyptian firms.

In addition, this paper investigates the impact of CEO narcissism on firm value. Some prior studies found that CEO narcissism increases the firm value, while, others found that CEO narcissism can destroy the firm value (i.e. negatively associated with the firm value). Supporting the first point of view, we find that CEO narcissism has a positive impact on firm value.

These findings contribute to the literature on corporate tax sheltering and CEOs' personality characteristics which can significantly affect corporate tax policies and strategies. However, the findings indicated that there is no significant association between CEO narcissism and measures of corporate tax sheltering, CETR, and GETR. This indicates that Narcissistic CEOs in Egyptian firms have no impact on corporate tax strategies.

Contrary to previous studies that revealed a negative or no relationship between CEO narcissism and firm value, this paper finds a positive significant relationship between CEO narcissism and the firm valuation. Whereas most of the previous research focused only on the technology or computer industry, this study takes into consideration a wide spectrum of industries that would affect the findings. Prior studies indicated that CEO narcissism may lead to overvalued stock and can cause stock crush risk in the future; hence, the current paper views that CEO narcissism is a pathological character that should be treated seriously by the firm's managers and investors.

However, this paper has some limitations. First, the sample size which was collected from the EGX (100) constrains inferences to these large, publicly traded companies and limits the generalizability of the results to smaller publicly traded firms. Second, this paper used an unobtrusive measure of CEO narcissism (the signature size) due to the availability of data, which while is used by literature, does not have the depth and precision that validated psychological instruments, such as the narcissistic personality inventory (Raskin & Terry, 1988), could provide.

There is an opportunity to carry out further research to explore other CEOs' characteristics as CEO tenure, CEO stock ownership and outside directors, that can affect the relationship between CEO narcissism and corporate tax sheltering. Additionally, it will be interesting to examine whether the findings could be affected by industry type. Finally, future research should investigate the association between CEO narcissism, corporate tax sheltering, and firm value by using other statistical methods.

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CONFLICT OF INTEREST

There is no conflict of interest in the publication of this research.

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