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How CEO narcissism affects earnings management behaviors

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Abstract

This study examined whether chief executive officers' (CEOs) with narcissistic tendencies are more likely to execute earnings management behavior because of pressure to fulfill earnings thresholds. The results revealed that a CEO who exhibits high narcissism is more likely to be involved in earnings management to compensate for her/his performance. Our findings suggest that CEO narcissism directly influences financial decisions. Considering the earnings thresholds, firms with a more narcissistic CEO experience a regulatory effect on real earnings management behavior. Studies have indicated that CEOs manipulate earnings to satisfy three primary earnings thresholds: prior year's reported earnings, zero earnings, and analysts' forecasts. Our empirical results provide further evidence that CEOs engage in earnings management to fulfill positive earnings thresholds and analysts' forecasts. We infer that CEOs use the abnormal production cost method as an underlying mechanism to increase reported earnings. Our findings help clarify the relationship between CEO personality traits and earnings manipulation to assist investors with decision-making.

Keywords: CEO narcissism; Earnings thresholds; Earnings manipulation.

1. Introduction

Corporate earnings management (EM) is usually conducted through net operating profit or deferred income tax (Cazier, Rego, Tian, & Wilson, 2015). The literature has indicated that managers can make managerial decisions to enhance present profits (Haga, Ittonen, Tronnes, & Wong, 2018). Moreover, managers can use accounting or real economic actions to manage short-term performance and, consequently, serve self-interests, such as by triggering earnings-based performance compensation (Cheng, Lee, & Shevlin, 2015).

Researches have indicated the effect of narcissistic tendencies of chief executive officers' (CEOs) on corporate decision-making (Habib & Hasan, 2017). Due to seek social identity and praise (Buyl, Boone, & Wade, 2019), these results reveal that narcissistic CEOs self-admiration and sense of superiority are the drivers for them to avoid unfavorable potential outcomes (Olsen, Dworkis, & Young, 2013). A CEO makes decisions that have major consequences not only for the individuals who interact directly with them but for broader sets of stakeholders (Chatterjee & Hambrick, 2007). However, few studies have investigated CEOs' incentives to manage earnings from a narcissistic-based perspective. The purpose of this study was to examine whether narcissism affects the decision of a CEO to manipulate earnings on financial thresholds. This study investigated whether a CEO with narcissistic tendencies would execute EM behavior to achieve recognition through the form of external adulation and admiration.

Research on EM is prevalent (Petrenko, Aime, Ridge, & Hill, 2016) and has yielded empirical evidence suggesting that investors use earnings to assess firms' expected performance (Abdelsalam, Dimitropoulos, Elnahass, & Leventis, 2016). Earnings can be manipulated by managers to implement such EM strategies (Francis, Hasan, & Li, 2016). Burgstahler and Dichev (1997) used an alternative methodology to study EM. They investigated discontinuities in the distribution of reported earnings around three thresholds: analysts' forecasts, prior year's reported earnings, and zero earnings. Mindak, Sen, and Stephan (2016) examined the firm-specific level to determine whether firms manage earnings up or down to barely miss, fulfill, or exceed three common earnings threshold targets. They predicted the behavior of earnings in narrow intervals around these thresholds. Because the innate characteristics of an individual CEO can play an essential role in an organization's operational performance, researchers and practitioners share a strong incentive to examine narcissism research in the leadership literature (Buyl et al., 2019). These articles are thought to influence both the researcher and the research subject.

This study focused on the CEO because an organization's operational performance is significantly influenced by the actions of top executives (Petrenko et al., 2016) in areas such as the marginal value of cash (Gan & Park, 2017), corporate risk-taking, and investor sentiment (Habib & Hasan, 2017). Buyl et al. (2019) indicated that the personality trait associated with the greatest risk-taking reflected in bank policy is CEO narcissism.

Researchers have examined the positive and negative effects of CEO narcissism on organizational performance. Narcissistic CEOs tend to be more inspiring and successful when the organization needs firm innovation (Zhang, Ou, Tsui, & Wang, 2017). However, narcissistic CEOs can create severe problems for their organizations (Buyl et al., 2019). O'Reilly III et al. (2017) indicated that when a company faces a challenge, a narcissistic CEO may exhibit a propensity to become hostile and competitive, subjecting the organizations to undue legal risk. A more narcissistic CEO is more likely to be prosecuted, and the ensuant lawsuits require more time to reach a settlement.

Individual leaders' characteristics influence their leadership styles, and the effects of such styles cascade through the management to the entire firm, affecting organizational and strategic outcomes. Asia's unique sociocultural contexts and philosophies create indigenous leadership styles, but context-specific research on leader characteristics and leadership styles in Asia has been sparse (Koo & Park, 2017). Researchers have argued that Asia embodies a unique culture that emphasizes paternalism-based hierarchy. Therefore, leaders are expected to play an authoritarian role, and followers are expected to respect their decisions. The high power distance between leaders and followers often endows the former with more control over the business (Liden, 2012).

Given the different cultures in Asia, certain indigenous leadership styles and characteristics may manifest in a region. Taiwan occupies a unique position in Asia in this context. First, Taiwan has had a long-term economically symbiotic relationship with the United States and China. Second, Taiwan, together with China, Japan, and South Korea, is a part of the East Asian global supply chain. Third, the high-tech industry in Taiwan has a solid developmental foundation and is characterized by complete and dense industrial clusters. All these aspects help Taiwan play a significant role. The CEO of a company must achieve excellent results in a company's market capitalization, shareholder return, and other financial indicators and must be recognized by capital markets (Petrenko et al., 2016). Notably, whether a CEO's decisions on operations or accounting EM has a stronger effect on organizational management remains unclear.

This study made theoretical and empirical contributions to the literature in the following three dimensions. First, this study investigated whether CEOs manipulate profits to fulfill earnings thresholds. Our study contributes to narcissism research because we examined the influence of executives' personality traits on corporate strategic decisions. We acquired a logistic regression model intended to extend the earnings thresholds literature by exploring the incentives to manipulate earnings around earnings thresholds. Our research is closely related to studies on the effect of organizational (Aktas, De Bodt, Bollaert, & Roll, 2016; Gerstner, König, Enders, & Hambrick, 2013) and environmental (Cupertino, Martinez, & da Costa, 2015; Halaoua, Hamdi, & Mejri, 2017) factors on strategic outcomes. We identified empirical evidence that these factors matter for narcissism-influenced decisions concerning corporate earnings.

Second, our study filled a research gap by exploring the innate characteristics of individual of CEOs EM decisions. We considered the implications of the results to improve theories on narcissistic CEOs and the earning threshold effect on corporate EM. Furthermore, this study argued that CEO narcissism could significantly increase the effect of earnings thresholds. Thus, we employed several measurements of CEO narcissism, including the prominence of the CEO's photograph, the CEO's signatures, and financial compensation.

Regarding the management literature, we provided evidence consistent with the upper echelons theory that describes the prediction of the effect of practical managerial experience on corporate strategic choices. Because of the relationship between self-serving managerial behavior and reputation, narcissistic CEOs have more significant incentives to pursue a superior reputation (upwards EM).

This paper is organized as follows. Section 2 examines theories on narcissism and earnings thresholds and establishes testable hypotheses. Section 3 explains the sample used and presents our narcissism measurement method and research models. Section 4 discusses the empirical results and analysis. Section 5 presents our conclusions and suggests policy implications. Finally, Section 6 presents the limitations of the study.

2. Literature review

2.1 CEO narcissism and earnings thresholds

Recent studies have focused on the effect of narcissistic tendencies of CEOs on corporate decision-making (Chatterjee & Pollock, 2017). Studies have demonstrated that a CEO's narcissistic tendencies can affect the acquisition process, that is, negotiations proceed faster when the CEO of the to-be acquired company has narcissistic tendencies (Aktas et al., 2016). A CEO's narcissistic tendencies can be used to predict the strategic trends of the company. Although CEOs with narcissistic tendencies differ in their reactions to success, they all seek social identity and praise (Buyl et al., 2019).

Related studies have determined that the narcissistic tendencies of CEOs are positively associated with key financial indicators such as performance and acquisition intensity (Chatterjee & Hambrick, 2011). Other studies have suggested that narcissistic tendencies can lead a CEO to use accounting figures to enhance a firm's financial performance, improving her or his image (Aktas et al., 2016). An investigation of the relationship between CEO tenure and EM behavior determined that CEOs tend to overstate earnings in the early years of their tenure to bolster their reputations (Buyl et al., 2019). Studies have highlighted the significant effect of CEO's personality on accounting choices. Organizations led by narcissistic CEOs who overidentify themselves are willing to make great efforts to achieve a goal even if immoral behavior is required (Capalbo, Frino, Lim, Mollica, & Palumbo, 2018). With signature size used as a standard for measuring narcissism, narcissism was found to have a significant positive correlation with misreporting (Ham, Lang, Seybert, & Wang, 2017). Furthermore, studies have found that when contracts or regulations are based on accounting figures, managers may have an incentive to engage in EM (Ali & Zhang, 2015) or impair accounting quality (Dimitropoulos, Leventis, & Dedoulis, 2016).

A CEO may be motivated to engage in EM to achieve specific targets, including a positive earnings threshold, a prior year's reported earnings threshold, and analysts' earnings forecasts. Studies have identified a hierarchical relationship between the three earnings thresholds in which the positive earnings threshold is the most important, followed by, in order, the prior year's reported earnings threshold and analysts' earnings forecasts (Francis et al., 2016). Considering the costs of EM and returns from future manipulation of earnings, companies are likely to engage in EM only when they encounter specific events.

External users of financial statements must be able to identify which events may prompt management to manipulate earnings. The drivers of the accounting choices of highly narcissistic CEOs are self-serving behavior rather than the intention to provide the market with additional information (Buchholz, Lopatta, & Maas, 2019). CEO narcissism would have a negative effect on the performance of state-owned companies as the CEO's tenure increases, and narcissistic CEOs may address the company's poor performance by means of EM (Kim, 2018). EM behavior has been significantly affected by changes to the IFRS, supporting the view that limiting accounting discretion could deter opportunistic behavior by managers (Leventis, Dimitropoulos, & Anandarajan, 2011).

Such events may lead a narcissistic CEO to use various EM strategies to achieve an earnings threshold. Studies have identified a belief among management that tracking earnings target achievements can help maintain the value of a company. Therefore, the management considers meeting or exceeding the earnings threshold a major part of their work. The literature has examined the tendency of management to manipulate earnings to fulfill analysts' earnings forecasts, earnings of the previous year, and other thresholds (Erickson, Hewitt, & Maines, 2016; Francis et al., 2016). However, studies have not investigated whether these events originate from the CEO's personality traits.

2.2 Hypotheses development

We argued that CEOs' narcissistic tendencies create a strong desire to gain social attention and applause to reaffirm their positive social image; thus, they constantly pursue opportunities for public attention. Motivated by this desire for praise and recognition, narcissistic CEOs engage in EM behavior (Olsen et al., 2013). In this study, we measured the degree of narcissism among CEOs to understand the underlying mechanism through which narcissistic CEOs affect a company's EM behavior.

A narcissistic CEO may increase the riskiness of banking operations, particularly when the dividend mechanism encourages managers to pursue risks to maximize shareholders' rights and interests (Aktas et al., 2016). Therefore, this study examined whether CEOs' narcissistic tendencies led them to engage in EM behavior to fulfill an earnings threshold. Gunny (2010) measured four real EM (REM) variables—research and development (R&D) expenses; selling, general, and administrative expenses; disposal of assets; and production costs—and examined their correlation with the earnings threshold. The results suggested that managers may adopt real REM behavior when they are affected by psychological factors related to the earnings threshold. In addition, an earnings threshold affected by future performance forecasts caused managers to engage in EM behavior to fulfill shareholders' demands (Mindak et al., 2016).

For information users and corporate managers, concerns regarding these thresholds may stem from the psychological aspects of human decision-making (Halaoua et al., 2017). Studies have determined that managers with high narcissistic tendencies may inflate the numbers in public financial reports to obtain a positive social image (McManus, 2016) and gain praise and affirmation (Tang, Mack, & Chen, 2018). In addition to examining how the psychological aspects of a CEO's personality traits can affect the EM of companies, this study further investigated whether this behavior is caused by a need to fulfill the earnings threshold.

Hypothesis 1: CEO narcissism is associated with the propensity to fulfill earnings thresholds.

Studies have demonstrated that companies engage in REM behavior through certain projects, although the focus of most projects is primarily sales manipulation (Cupertino et al., 2015). Examples of such activities include abnormal promotion at the end of a term and loosening of credit terms (Roychowdhury, 2006), cost manipulation (e.g., reducing R&D expenditure, advertisement costs, and maintenance and repair expenditure; Kothari, Mizik, & Roychowdhury, 2015), production manipulation (overproduction to reduce the unit cost of products and increase the company's gross profit; Cupertino et al., 2015), and the sale and purchase of fixed assets and bond investments or share repurchase to increase the earnings per share (Graham & Harvey, 2005).

Studies have found that although accrual-based EM can affect the final figures in a financial report (Commerford, Hermanson, Houston, & Peters, 2016), it can be easily discovered by regulatory authorities or auditors. By contrast, REM can circumvent this discovery; however, it must be executed at an earlier point in time and thus affects real economic activities and the actual value of the company. Because of the limitations of each individual type of EM behavior, leadership may simultaneously engage in various EM behaviors to achieve their targets (Cupertino et al., 2015; Francis et al., 2016; Halaoua et al., 2017).

Studies on EM have concluded that companies adopt either real or accrual-based strategies when they engage in EM. However, the inconsistent viewpoints on each strategy imply a research gap and an opportunity for our study to contribute through the examination of whether other strategies exist apart from earnings threshold and EM.

Studies have indicated that the larger the pay gap between the CEO and other senior executives of a company, the more likely the company will be to engage in REM to manipulate earnings. In this study, we classified EM as accrual-based EM and REM to conduct our empirical analysis. We investigated whether a CEO with narcissistic tendencies would execute EM behavior because of the effects of the earnings threshold. By doing so, we attempted to understand a company's mentality and its operational methods and whether it tends to select accrual-based EM in consideration of the costs or REM that will harm the actual interests of the company. Specifically, we examined which EM method would be preferred by CEOs with narcissistic tendencies.

***Hypothesis 2:* Firms with a more narcissistic CEO engage in EM to fulfill earnings thresholds more often than firms with a less narcissistic CEO.**

3. Data and methods

The relevant literature has examined whether company leadership manipulates earnings to conform to analysts' earnings forecasts, earnings of the previous year, or other thresholds (Erickson et al., 2016; Francis et al., 2016). However, whether these events originate from the CEO's personality traits has not been addressed. This study examined all electronics industry firms to test the EM. The sample comprised over 450 publicly traded companies in Taiwan. We focus on the electronic industry because the trading volume of electronic stocks in Taiwan is typically been approximately 70% of total market turnover over the past two decades. The relevant literature has indicated that the differences among cumulative abnormal returns in the electronics industry are more significant than in the non-electronic industries (Liu & Chi, 2014).

Relevant data were sourced from the *Taiwan Economic Journal* databases from 2015 to 2017 because our rating system incorporated CEOs that appear in photographs in annual and corporate social responsibility (CSR) reports. We posited that CEOs whose photographs appear in CSR reports may be more likely to perceive themselves as important, have a sense of entitlement, exhibit a superior attitude, and demand more on attention and higher status. Thus, the period examined corresponds to complete data, whereby the CSR report is voluntary information disclosure.

3.1 Real EM

By following the literature (Erickson et al., 2016; Francis et al., 2016), this study adopted three real EM behavioral models: cash flow from operating activities, discretionary expenditures, and production costs.

(1) Cash flow from operating activities

Roychowdhury (2006) found that corporate managers often rely on preferential prices or discounts on occasions such as year-end sales or preloading to enable sales that should occur in the following year to occur in the present year (Ge & Kim, 2014). Kothari et al. (2015) presented the opportunistic reduction of expenditures on R&D and selling activities. However, as soon as preferential prices and discounts are withdrawn, increases in sales immediately disappear, resulting in a totally different sales performance than that of the previous year. Although this practice increases sales, the discounts offered lower the unit gross profit, and thus the gross profit margin decreases, which is detrimental to firms in the long run. The phenomenon has generally been supported by existing empirical evidence (Cupertino et al., 2015).

$$CFO_t / A_{(t-1)} = \alpha_0 + \alpha_1 1 / A_{(t-1)} + \alpha_2 S_t / A_{(t-1)} + \alpha_3 \Delta S_t / A_{(t-1)} + \varepsilon_t^{CFO} \tag{1}$$

Where CFO_t means the firm's cash flows from the operations of year t. A_{t-1} means the asset of year $t-1$. ΔS means the firm's revenues in year t less revenues in year $t-1$.

(2) Discretionary expenditures

Corporate managers who focus on myopic corporate goals may resort to cutting R&D or advertisement expenses to boost short-term earnings (Gupta et al., 2010). However, such a boost is often achieved at the expense of a firm's long-term profits. Kothari et al. (2015) posited that the reduction of discretionary expenses is often measured based on R&D and advertisement expenses. When a firm's management is unable to report satisfactory earnings, managers often cut R&D and advertisement expenses to reach their desired amount of earnings (Kothari et al., 2015). Gunny (2010) found that firms lower sales and general and administrative expenses to achieve earnings thresholds. Similarly, the firms cut advertisement expenses for real EM. However, because such expenses may be unable to yield immediate income and profit, when a firm's management finds that the firm has not achieved its annual earning objectives, the firm's discretionary expenses may still be reduced even if sales have remained steady (Johnson, 2016).

$$DIS_t / A_{(t-1)} = \alpha_0 + \alpha_1 1 / A_{(t-1)} + \alpha_2 S_t / A_{(t-1)} + \varepsilon_t^{DIS} \quad (2)$$

Where DIS_t means the sum of a firm's advertising expenses, R&D expenses of year t. A_{t-1} means the asset of year $t-1$. S mean the firm's revenues in year t.

(3) Real EM through overproduction:

Because overproduction entails a higher production level with fixed production costs shared by increased throughput, the cost per unit product and cost of sales decrease (Ge & Kim, 2014), which improves the corporate gross profit margin and reduces the ratio of sales to cost. Studies have reported a significant and positive correlation between overproduction and firms' attempts to reach earnings thresholds (Gunny, 2010; Roychowdhury, 2006). However, Gupta et al. (2010) found that higher fixed costs and overproduction can opportunistically increase their returns on assets, but they would face increased stock prices and decreased gross profit margins that damage their subsequent accounting performance.

$$PROD_t / A_{(t-1)} = \alpha_0 + \alpha_1 1 / A_{(t-1)} + \alpha_2 S_t / A_{(t-1)} + \alpha_3 \Delta S_t / A_{(t-1)} + \alpha 4 \Delta S_{(t-1)} / A_{(t-1)} + \varepsilon_t^{PROD}$$

(3)

Where $PROD_t$ means the sum of the firm's cost of goods sold and change in inventory of year t. A_{t-1} means the asset of year $t-1$. S means the firm's revenues in year t. ΔS means the firm's revenues in year t less revenues in year $t-1$.

The aforementioned individual measures are the residuals from the corresponding estimation model. Higher abnormal *PROD*, lower abnormal *CFO*, and lower abnormal *DIS* are consistent with income-increasing real EM. REM comprises the sum of abnormal *CFO* (multiplied by −1), abnormal *DIS* (multiplied by −1), and abnormal *PROD*.

3.2 Earnings threshold

Where EH_{it} is the dummy variable indicating the presence of three earnings thresholds, including prior year's reported earnings, zero, and analysts' forecasts.
In the threshold of zero earnings, EH_{it} equals 1 if a firm's earnings belong to the interval of $0 \leqq V_{it} < 0.0025$, and 0 otherwise. Where V_{it} is the firm's annual earnings of the year t. In the threshold of prior year's reported earnings, EH_{it} equals 1 if a firm's value belongs to the interval of $0 \leqq G_{it} < 0.0025$, and 0 otherwise. Where G_{it} is the change between a firm's annual earnings of the year t and $t-1$. In the threshold of analysts' forecasts earnings, EH_{it} equals 1 if a firm's earnings surprise belongs to the interval of $0 \leqq A_{it} < 0.0025$, and 0 otherwise. Where A_{it} is the value when real firm's annual earnings of the year t is more than analysts' earnings expectations.

3.3 CEO narcissism

This study examined whether CEOs' narcissistic tendencies prompt them to manipulate earnings to achieve the earnings threshold. Based on the literature (Marquez-Illescas, Zebedee, & Zhou, 2018; Olsen et al., 2013), this study used a four-item index to construct the rating system for CEO narcissism (NAR_{it}): (a) the prominence of the CEO's photograph in annual reports, (b) the prominence of the CEO's photograph in CSR reports, (c) the CEO's cash compensation, and (d) the noncash compensation of the CEO relative to other top executives at the same company. Based on the four items related to observable CEO narcissistic tendencies, we computed the CEO narcissism measured by taking the mean of each indicator after standardization (Zhu & Chen, 2015).

Our rating system incorporated CEOs that appear in photographs in annual and CSR reports. CSR reports follow widely adopted global guidelines set by the Global Reporting Initiative for the transparent disclosure of corporate values and performances, whereby the CSR report constitutes voluntary information disclosure (Krishnamurti, Shams, & Velayutham, 2018). CEO narcissism exhibits a positive effect on organizational CSR, perhaps as a response to leaders' personal needs for attention and image reinforcement (Petrenko et al., 2016). Thus, we posited that CEOs whose photographs appear in CSR reports may be more likely to perceive themselves as important, have a sense of entitlement, exhibit a superior attitude, and demand more attention and higher status.

This study proposes a logistic regression model to estimate the likelihood of the narcissist CEO manipulating earnings to conform to analysts' earnings forecasts, earnings of the previous year, and other thresholds. According to Hypothesis 1, we have the following regression formula:

$$\begin{aligned} EH_{it} = \beta_0 + \beta_1 NAR_{it} + \beta_2 SIZE_{it} + \beta_3 DBR_{it} + \beta_4 ROA_{it} \\ + \beta_5 MTB_{it} + Yeardummy_{it} + Industrydummy_{it} + \varepsilon_{it} \end{aligned} \tag{4}$$

Apart from CEO narcissism, the remaining independent variables are commonly used in estimates of earnings thresholds in the aforementioned literature. Specifically, by following the literature (Capalbo et al., 2018; Huang & Sun, 2017; Kim, 2018; Leventis et al., 2011), we use current year *ROA* to control for current firm performance (Huang & Sun, 2017), log of total assets (*SIZE*) to control for size effect (Leventis et al., 2011), market to book ratio (*MTB*) to control for growth opportunities (Capalbo et al., 2018), and the ratio of total liabilities to total assets (*DBR*) to control for the financial health of the firm (Kim, 2018). Finally, we include a 0–1 dummy to control for the impact of the year 2015 to 2017. Industry and year effects are also included to control for the effect at the industry and time levels. The drivers of the accounting choices of highly narcissistic CEOs are self-serving behavior rather than the intention to provide the market with additional information (Buchholz et al., 2019); thus, we do not predict any sign for the control variable ROA, SIZE, MTB, and DBR. According to Hypothesis 2, we have the following regression formula:

$$\begin{aligned} EH_{it} = \beta_0 + \beta_1 NAR_{it} + \beta_2 REM_{it} + \beta_3 NAR_{it} * REM_{it} + \beta_4 SIZE_{it} + \beta_5 DBR_{it} + \beta_6 ROA_{it} \\ + \beta_7 MTB_{it} + Yeardummy_{it} + Industrydummy_{it} + \varepsilon_{it} \end{aligned} \tag{5}$$

A higher REM score is consistent with income-increasing real EM, we expect a positive association between REM and earnings threshold. We assume that firms with a more narcissistic CEO engage in EM to fulfill earnings thresholds more often than firms with a less narcissistic CEO. Based on the concept, we expect a positive association between CEO narcissism and earnings threshold. In the face of the earnings threshold, firms with a more narcissistic CEO experience a regulatory effect on REM behavior, but we do not predict any sign for REM*NAR because a CEO could exhibit different reactions upward or downward REM.

Descriptive statistics for the full sample of firms are shown in Table 1. The descriptive statistics for our sample indicated that the average score of CEO narcissism was approximately 3.001 over the target years of this study. The mean of the individual real EM proxies (RM) was close to zero. The proportions of firms with all three earnings thresholds, namely, zero earnings, prior year's reported earnings, and analysts' forecasts, were approximately 5%, 15%, and 12%, respectively. The results revealed that compared with the zero earnings threshold, these companies focused more on prior year's reported earnings and analysts' forecasts. Table 2 presents the correlation matrix of the variables.

Table 1. Descriptive statistics related to the variables

	Min.	Max.	Mean	SD
NAR	.091	16.391	3.001	1.923
RM	-12.822	23.580	.005	2.214
CFO	-11.850	3.730	.000	.999
DIS	-8.710	4.301	.000	.999
PROD	-5.586	6.143	.000	.999
Zero earnings	0	1	.050	.226
Prior year's reported earnings	0	1	.150	.357
Analysts' forecasts	0	1	.120	.330
Size	12.522	21.949	15.444	1.426
ROA	-13.120	35.270	7.525	6.545
DBR	1.270	81.730	38.436	15.727
MTB	12.296	22.506	15.239	1.383

Note: CFO means cash flow from operations. DIS means discretionary expenditures. PROD means the cost of production.

Table 2. Correlation matrix.

	Size	MV	ROA	DBR	Zero earnings	Prior year's reported earnings	Analysts' forecasts	NAR
MTB	.888**							
	.000							
ROA	.011	.331**						
	.676	.000						
DBR	.402**	.181**	-.155**					
	.000	.000	.000					
Zero earnings	.012	-.089**	-.198**	.067**				
	.654	.001	.000	.009				
Prior year's reported earnings	.090**	.061*	.017	.112**	-.051*			

	.000	.018	.502	.000	.050			
Analysts' forecasts	.159**	.105**	-.036	.107**	-.031	.100**		
	.000	.000	.215	.000	.273	.000		
NAR	.515**	.490**	.013	.106**	.048	.076**	.131**	
	.000	.000	.621	.000	.063	.003	.000	
RM	.065*	-.188**	-.510**	.199**	.170**	-.010	.041	-.012
	.012	.000	.000	.000	.000	.711	.149	.653

4. Illustration of self-serving managerial behavior and reputation of CEOs in Taiwan

According to the trading statistics segmented by industrial groups from the Taiwan Stock Exchange Corporation, the trading volume of electronic stocks in Taiwan has typically been approximately 70% of total market turnover in the past two decades. The differences among cumulative abnormal returns in the electronics industry are more significant than in the non-electronic industries because of the assumptions behind the models that investors expect a better future outlook for a firm's performance (Liu & Chi, 2014). Moreover, the CEO of a company may be an insider, promoted internally, or someone hired from outside the company. The results of a comparison show that the proportion of CEOs in Taiwan who have been promoted internally far exceeds that of other countries. A study of global companies by the Harvard Business Review found an average internal promotion rate of CEOs of 84%. The rates for Turkey and South Korea, which conducted performance-ranking surveys of their local CEOs for the first time in 2018, are 75% and 84%, respectively. By contrast, the rate for Taiwan is 94%.

If a company is not performing well, an externally hired CEO is the more likely of the two to break through the limitations imposed by internal stakeholders and the corporate culture, finding new ways to improve the company. However, when a company is performing well, the widely held belief is that an internally promoted CEO will have greater opportunities for long-term achievements, because she/he has a better understanding of the corporate culture and the industry to which the company belongs than an outsider would. Corporate leaders must have preeminent achievements in terms of market capitalization, total shareholder return, and other financial indicators and must be recognized by the capital market. In addition, corporate leaders' performance in terms of nonfinancial indicators (e.g., CSR and environmental sustainability) must be outstanding. Thus, based on the relationship between self-serving managerial behavior and reputation of CEO, this study provides evidence on the effect of practical managerial experience on corporate strategic choices in Taiwan.

5. Empirical results

5.1 CEO narcissism and three earnings thresholds

Table 3 displays the logistic regression results. The positive values of the logistic regression coefficient imply that CEO narcissism increases the probability of fulfilling the earnings thresholds. A Wald test was employed to assess the statistical significance of the coefficients (β) representing individual variables. Wald statistical values increase with the significance of β coefficients.

As evident in Column 1, the coefficient on NAR is positive and significant at more than 10%, indicating that CEO narcissism increases the probability of fulfilling the earnings thresholds of prior year's reported earnings. CEOs with narcissistic tendencies seek social identity and praise (Buyl et al., 2019). Notably, CEOs' need for attention and image reinforcement manifest as earnings manipulation behaviors undertaken to help to embellish the CEO's reputation. Thus, narcissistic CEOs exhibit a willingness to engage in EM to fulfill or beat various earnings threshold targets.

Furthermore, Column 2 shows a coefficient of 0.157 and a Wald value of 5.546 for NAR in the zero earnings threshold. This result suggests that organizations controlled by narcissistic CEOs engage in more earnings manipulation. Given the potential damage of EM, it is essential to recognize the relationship between narcissistic CEOs and their willingness to engage in EM to satisfy or beat various earnings threshold targets.

Column 3 of Table 3 shows that CEO narcissism positively and significantly increases the probability of fulfilling the earnings threshold of analysts' forecasts, with a coefficient of 0.114 and a Wald value of 5.573. These results demonstrate that managers with high narcissistic tendencies may inflate the numbers in public financial reports to obtain a positive social image and gain praise and affirmation (Tang et al., 2018). In addition, the earnings threshold is affected by future performance forecasts, which cause managers to engage in EM behavior to fulfill shareholders' demands (Mindak et al., 2016).

Table 3. Relationship between the CEO's narcissism and three earnings thresholds.

Earnings thresholds	Model 1 prior year's reported earnings	Model 2 zero earnings	Model 3 analysts' forecasts
INTERCEPT	-3.067***	1.609	-23.786
	(6.883)	(0.749)	(0.001)
Nar	**0.075***	**0.157****	**0.114****
	(3.164)	**(5.546)**	**(5.573)**
SIZE	0.328*	1.718***	0.715***
	(3.180)	(26.028)	(10.112)
DBR	0.014**	-0.004	0.001
	(5.154)	(0.196)	(0.023)
ROA	0.042***	-.051***	0.032
	(5.702)	(17.973)	(1.998)
MTB	-0.292	-1.986***	-0.623***
	(2.414)	(31.261)	(7.101)
Year Effect	Controlled	Controlled	Controlled
Industry effect	Controlled	Controlled	Controlled
Nagelkerke-R^2	0.051	0.258	0.096
N	1502	1502	1207

Notes: Brackets are Wald values; *P<0.1, **P<0.05, ***P<0.01.

The degree of narcissism of a company's CEO may affect the extent of its EM and the behaviors it uses to fulfill earnings thresholds. This phenomenon could explain why company leadership may be motivated to manage earnings to fulfill a specific earnings threshold. The measurement behind various earnings thresholds (i.e., positive earnings, pre-earnings, and analysts' forecasted thresholds) can result in changes in a company's REM. Through understanding a company's achievement of earnings targets through its financial statements, we can evaluate and measure the effect of CEO narcissism on the company's EM behavior.

This section examines the effect of CEO narcissism on REM and three earnings thresholds. The empirical results are shown in Table 4. Model 4 is based on the positive earnings threshold as the test criterion. The results show that the estimated coefficient of (REM*NAR) is 0.080 ($p<0.1$) which is positive and significant, indicating that narcissistic CEOs will undervalue earnings when engaging in real EM in the face of a positive earnings threshold. Model 5 is based on the pre-earnings threshold as the test criterion. The results show that the estimated coefficient of (REM*NAR) is -0.019 ($p<0.1$), which is negative and not significant, indicating that narcissistic CEOs will not overvalue earnings when engaging in real EM in the face of a pre-earnings threshold.

Model 6 is based on the earnings thresholds of analysts' forecasts as the test criterion. The results show that the estimated coefficient of (REM*NAR) is -0.037($p<0.05$), which is negative and significant, indicating that narcissistic CEOs enhance the company's actions to overvalue earnings through real EM and engage in upward EM in the face of the earnings thresholds of analysts' forecasts. These results suggest that narcissistic CEOs exhibit different reactions to various earnings thresholds. Faced with analysts' forecasts, narcissistic CEOs will enhance their upward REM to achieve or beat forecasts. Conversely, narcissistic CEOs will engage in downward REM when facing a positive earnings threshold. However, when faced with a pre-earnings threshold, the variable "CEO narcissism" does not have a significant regulatory effect on the company's EM behavior. The results of this study confirmed hypothesis H2: In the face of the earnings threshold, firms with a more narcissistic CEO experience a regulatory effect on REM behavior.

Table 4. Relationship between CEO narcissism, REM, and earnings thresholds.

	Exp. Sign	Model 4 prior year's reported earnings	Model 5 zero earnings	Model 6 analysts' forecasts
INTERCEPT	?	1.068 (.322)	-3.060*** (6.793)	-23.742 (-.002)
REM	+	**.119*** **(3.145)**	**-.034** **(-.681)**	**-.051** **(-.777)**
NAR	+	**.068** **(.564)**	**.071*** **(2.772)**	**.107**** **(4.769)**
REM*NAR	**?**	**.080*** **(3.168)**	**-.019** **(-1.218)**	**-.037*** **(-3.686)**
SIZE	?	1.693*** (24.257)	.388** (4.044)	.837*** (12.097)
DBR	?	-.008 (-.600)	.014** (5.169)	.001 (.027)
ROA	?	-.113*** (13.722)	.040** (4.876)	.027 (1.394)
MTB	?	-1.942*** (28.327)	-.348* (3.178)	-.734*** (8.855)
Year effect		Controlled	Controlled	Controlled

Industry effect	Controlled	Controlled	Controlled
Adj-R^2	0.171	0.126	0.103
N	1502	1502	1207

Notes: Brackets are Wald values; *P<0.1, **P<0.05, ***P<0.01.

The aforementioned results show that under the influence of the variable "CEO narcissism," firms with narcissistic CEOs are more likely to engage in EM behavior through changes in real EM than their less narcissistic peers. This section further examined the relevance of CEO narcissism to the breakdown of coefficients of real EM—(RM_CFO), (RM_PROD), and (RM_DISX)—and their relationships to the positive earnings threshold. The empirical results are shown in Table 5. Model 7 is based on the positive earnings threshold model as the test criterion. The results show that the estimated coefficient of (NAR*Abnormal CFO) is 0.077(p>0.1), which is negative but did not reach a significant level. This represents that firms with a more narcissistic CEO will not overvalue earnings through abnormal operating cash flow in the face of a positive earnings threshold.

The results of Model 8 show that the estimated coefficient of (NAR*Abnormal Production) is 0.224(p<0.05), which is positive and significant. This finding indicates that firms with a more narcissistic CEO will engage in undervaluing earnings through abnormal production costs in the face of a positive earnings threshold, thereby engaging in EM. The results of Model 9 show that the estimated coefficient of (NAR*Abnormal Discexp) is -0.256(p<0.1), which is negative and significant. This finding indicates that with the addition of "CEO narcissism" as the regulatory variable, firms with a more narcissistic CEO are less likely to engage in EM using abnormal discretionary costs to fulfill a positive earnings threshold. Based on the results in Table 5, we confirm that firms with narcissistic CEOs are likely to use the abnormal production cost method to engage in EM to fulfill a positive earnings threshold.

Table 5. Relationship between CEO narcissism, EM behavioral models, and prior year's reported earnings thresholds.

Variable	Model 7	Model 8	Model 9
Intercept	1.156 (.371)	1.738 (.856)	1.682 (.850)
Abnormal CFO (-1)	**.195*** **(2.739)**		
Abnormal Production		**.141** **(.632)**	
Abnormal Discexp (-1)			**.308*** **(2.974)**
NAR	**.188**** **(6.718)**	**.037** **(.161)**	**.085** **(.996)**

NAR*Abnormal CFO (-1)	**.077 (1.055)**		
NAR*Abnormal Production		**.224**** **(5.028)**	
NAR*Abnormal Discexp (-1)			**-.256**** **(5.090)**
SIZE	1.722*** (26.222)	1.725*** (24.827)	1.725*** (25.211)
DBR	-.006 (.388)	-.007 (.485)	-.007 (.513)
ROA	-.110*** (-12.568)	-.117*** (13.779)	-.129*** (18.408.)
MTB	-1.970*** (30.797)	-2.012*** (29.752)	-2.004*** (30.249)
Year Effect	Controlled	Controlled	Controlled
Industry Effect	Controlled	Controlled	Controlled
Adj-R^2	0.134	0.112	0.128
N		1502	

Notes: Brackets are Wald values; *P<0.1, **P<0.05, ***P<0.01.

This section further examined the relevance of CEO narcissism with the breakdown of coefficients of real EM—(RM_CFO), (RM_PROD), and (RM_DISX)—and their relationships to the analysts' earnings forecasts threshold. The empirical results are shown in Table 6. Model 10 is based on the analysts' earnings forecasts threshold model as the test criterion. The results illustrate that the estimated coefficient of (NAR*Abnormal CFO) is -0.038(p>0.1), which is negative and did not reach a significant level, indicating that firms with a more narcissistic CEO will not overvalue earnings through abnormal operating cash flow in the face of an analysts' earnings forecasts threshold. The results of Model 11 show that the estimated coefficient of (NAR*Abnormal Production) is -0.084(p<0.1), which is negative and significant. This finding indicates that firms with a more narcissistic CEO will engage in undervaluing earnings through abnormal production costs in the face of an analysts' earnings forecasts threshold, thereby engaging in EM. Notably, the estimated coefficient of (NAR*Abnormal Production) is negative in Table 6, but the same coefficient is positive in Table 5. The results implied that narcissistic CEOs would use abnormal production as a means to manipulate different earnings thresholds despite their different EM strategies. Therefore, the behavior and preferences of narcissistic CEOs regarding EM can be understood from the results.

Further examination of the results depicted in Table 6 demonstrated that firms with a more narcissistic CEO are likely to use the abnormal production cost method to engage in upward REM to fulfill analysts' forecasts. Because of the difference in premiums when earnings fulfill or exceed the analysts' earnings forecasts, most investors prefer companies that exceed the brokerage forecast. To exceed forecasted earnings indicates that a company's leadership posted operating results exceeding the forecasts of brokerage firms. This outcome results in the positive image and attention that narcissistic CEOs seek, explaining why the variable "CEO narcissism" exhibits a regulatory effect on the analyst forecasted earnings threshold.

Table 6. Relationship between CEO narcissism, EM behavioral models, and analyst forecasted earnings threshold.

Variable	Model 10	Model 11	Model 12
Intercept	-23.494 (.001)	-23.833 (.001)	-23.954 (.001)
Abnormal CFO (-1)	**-.092 (.503)**		
Abnormal Production		**-.067 (.243)**	
Abnormal Discexp (-1)			**-.038 (.095)**
NAR	**.113** (.371)**	**.112** (5.319)**	**.108** (4.836)**
NAR*Abnormal CFO (-1)	**-.038 (-.730)**		
NAR*Abnormal Production		**-.084* (3.372)**	
NAR*Abnormal Discexp (-1)			**-.061 (2.177)**
SIZE	-.721*** (10.210)	.826*** (11.340)	.773*** (10.731)
DBR	.002 (.050)	.001 (.025)	.001 (.022)
ROA	.023 (.877)	.030 (1.730)	.034 (2.256)
MTB	-.642*** (7.426)	-.721*** (8.385)	-.662*** (7.484)
Year Effect	Controlled	Controlled	Controlled
Industry Effect	Controlled	Controlled	Controlled
N		1207	

Notes: Brackets are Wald values; *P<0.1, **P<0.05, ***P<0.01.

This finding provides further evidence that CEOs exhibit actions engaging in EM to fulfill positive earnings and analysts' forecasts. The empirical results suggest that the abnormal production cost method is an underlying mechanism through which narcissistic CEOs may increase their reported earnings.

5.2 Additional analysis

The common method adopted in EM is the manipulation of discretionary accruals (*DA*) because it is easy to implement in practice (Cohen & Zarowin, 2010; Enomoto, Kimura, & Yamaguchi, 2015), low cost, and not easily discernible. This section examines the effect of CEO narcissism on DA and three earnings thresholds. The *DA* are estimated consistent with Capalbo et al. (2018) as follows:

$$TAC_t / A_{(t-1)} = \alpha_0 + \alpha_1 1/A_{(t-1)} + \alpha_2 \left(\Delta S_t - \Delta REC_t\right)/A_{(t-1)} + \alpha_3 PPE_t / A_{(t-1)} + \varepsilon_t^{TAC} \quad (6)$$

Where TAC_t means the total accruals for firm in year t, and A_{t-1} means the asset of year $t-1$. ΔS means the firm's revenues in year t less revenues in year $t-1$. ΔREC means the firm's accounts receivable in year t less revenues in year $t-1$. PPE means the gross value of property, plants, and equipment in year t. Next, we estimate non-discretionary accruals (NDA_t) using $\hat{\alpha}_1$ to $\hat{\alpha}_3$ in equation (7) as follows:

$$NDA_t = \hat{\alpha}_0 + \hat{\alpha}_1 1/A_{(t-1)} + \hat{\alpha}_2 \left(\Delta S_t - \Delta REC_t\right)/A_{(t-1)} + \hat{\alpha}_3 PPE_t / A_{(t-1)} \quad (7)$$

The calculation is to substitute the coefficient obtained by the formula (6) into (7), calculate the NDA_t, and then use the formula (4) to calculate the DA_t by subtracting the NDA_t from the TAC_t.

$$DA_t = TAC_t / A_{(t-1)} - NDA_t \quad (8)$$

The empirical results are shown in Table 7. Model 13 is based on the positive earnings threshold as the test criterion. The results show that the estimated coefficient of (DA*NAR) is -0.022 (p>0.1), which is negative and did not reach a significant level, indicating that narcissistic CEOs will not undervalue earnings when engaging in accrual-based EM in the face of a positive earnings threshold. Model 14 is based on the pre-earnings threshold as the test criterion. The results show that the estimated coefficient of (DA*NAR) is -0.014 (p>0.1), which is negative and not significant. Model 15 is based on the earnings thresholds of analysts' forecasts as the test criterion.

The results show that the estimated coefficient of (DA*NAR) is 0.038(p>0.1), which is positive and still not significant. These results in Table 7 suggest that narcissistic CEOs will not employ accrual-based management strategies to manipulate the earning results in the face of earnings threshold. The literature has indicated the gradual development of measurement models for *DA* makes discovering such manipulations increasingly easy (Graham, Harvey, & Rajgopal, 2005). Therefore, many companies have already abandoned the use of *DA* in their approach to EM (Enomoto et al., 2015; Roychowdhury, 2006). Gunny (2010) also asserted that managers have a stronger willingness to manage earnings through REM than through accruals. This assertion is corroborated by growing evidence demonstrating that manipulating *DA* is no longer the main method employed in EM (Chen & Tsai, 2010).

Table 7. Relationship between CEO narcissism, DA, and earnings thresholds.

	Model 13 prior year's reported earnings	Model 14 zero earnings	Model 15 analysts' forecasts
INTERCEPT	2.747	-3.578**	-23.375
	(1.375)	(4.863)	(.001)
DA	**.082**	**.039**	**-.167**
	(.071)	**(.054)**	**(.847)**
NAR	**.236*****	**.050**	**.169*****
	(9.330)	**(.953)**	**(8.937)**
DA*NAR	**-.022**	**-.014**	**.038**
	(.136)	**(.233)**	**(1.176)**
SIZE	1.821***	.394	.900***
	(16.252)	(2.610)	(8.846)
DBR	.004	.013*	.003
	(.078)	(2.918)	(.126)
ROA	-.123***	.046*	.055*
	(9.818)	(3.569)	(3.066)
MTB	-2.176***	-.338	-.865***
	(21.018)	(1.865)	(7.611)
Year effect	Controlled	Controlled	Controlled
Industry effect	Controlled	Controlled	Controlled
Adj-R^2	0.095	0.056	0.063
N	1502	1502	1207

Notes: Brackets are Wald values; *P<0.1, **P<0.05, ***P<0.01.

5.3 Sensitivity analysis

As aforementioned, our rating of CEO narcissism considered the size of their photographs in annual reports and CSR reports. The CSR report, a type of voluntary information disclosure, was designed in accordance with the global guidelines adopted by the Global Reporting Initiative to improve transparency in the disclosure of company values and performance (Krishnamurti et al., 2018). CEO narcissism exerts positive effects on organizational CSR because it is a response to a leader's personal needs for attention and image reinforcement (Petrenko et al., 2016). Hence, we hypothesized that CEOs whose photographs appear in CSR reports are more likely to believe in their own importance, feel a sense of entitlement, exhibit attitudes of superiority, and demand more attention and a higher status. To test whether the components of CEO narcissism would affect our research results, we conducted a sensitivity analysis on CEO narcissism. Specifically, we performed a pairwise merging of the three components in CEO narcissism to construct new measures of CEO narcissism (NAR1, NAR2, NAR3). Our findings in Table 8 indicate that most new measures of CEO narcissism still show a significant positive relationship.

Table 8. Sensitivity analysis of CEO narcissism.

CEO narcissism		NAR1			NAR2			NAR3	
Earnings thresholds	1 PYE	2 ZE	3 AFE	4 PYE	5 ZE	6 AFE	7 PYE	8 ZE	9 AFE
INTERCEPT	-2.107 (1.164)	-2.426** (4.136)	-24.017 (0.001)	-3.582 (0.100)	-4.129*** (12.449)	-23. 867 (0.001)	-3.629*** (6.883)	-3.577*** (10.979)	-24.651 (0.001)
Nar	**0.201**** **(5.492)**	**0.145***** **(8.098)**	**0.115**** **(3.589)**	**0.089** **(0.918)**	**0.010** **(0.027)**	**0.133**** **(4.136)**	**0.209***** **(6.660)**	**0.081*** **(2.698)**	**0.112**** **(3.819)**
Firm-level control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Nagelkerke-R^2	0.088	0.040	0.050	0.085	0.042	0.050	0.089	0.048	0.096
N	1502	1502	1207	1502	1502	1207	1502	1502	1207

Notes: Brackets are Wald values; *P<0.1, **P<0.05, ***P<0.01.

NAR1 was measured by taking the mean of each indicator: (a) the prominence of the CEO's photograph in annual reports, and (b) the prominence of the CEO's photograph in CSR reports. NAR2 is measured by taking the mean of each indicator: (a) the prominence of the CEO's photograph in CSR reports, (b) the CEO's cash compensation, and (c) the noncash compensation of the CEO relative to other top executives at the same company. NAR3 is measured by taking the mean of each indicator: (a) the prominence of the CEO's photograph in annual reports, (b) the CEO's cash compensation, and (c) the noncash compensation of the CEO relative to other top executives at the same company.

PYE means "prior year's reported earning." ZE means "prior year's reported earning." AFE means "analysts' forecasts earning."

6. Discussion and conclusion

Discussion of findings and contributions

The purpose of this study was to examine whether narcissistic CEOs are more likely to use EM to achieve firms' performance targets. This study contributes to the literature by demonstrating which EM strategies are influenced by CEO narcissism. We also explored how narcissistic CEOs' behaviors could affect EM. This paper attempted to clarify the relationship between the mechanisms of supervision and the theory of contradiction to assist investors in making decisions. According to the literature, most companies that exhibit EM intend to fulfill their positive earnings threshold, pre-earnings threshold, or analysts' forecast threshold.

Although the effects of some CEO personality traits on financial choices have been investigated, the effects of narcissism had not. Despite CEOs' high potential contribution to their decision-making process, their need for attention and image reinforcement have been mostly absent from earnings manipulation research. According to our review of the literature, the effect of CEO narcissism on EM to fulfill earnings thresholds has remained unexplored. To investigate the potential effect on EM, this study measured whether narcissistic CEOs demonstrate increased willingness to engage in EM to fulfill or exceed various earnings targets threshold. This study analyzed the source of motivation to engage in EM. The literature has suggested that when policies affect certain EM methods, companies may switch to other EM methods with higher cost–benefit ratios to fulfill their earnings goals. Consequently, the policies become ineffective at suppressing EM; by contrast, these policies may harm the company's interests because of the use of inefficient EM behavior. In addition, EM may decrease market liquidity and increase information asymmetry.

Practical implications

Studies have identified a hierarchical relationship between earnings thresholds in which the positive earnings threshold is the most important, followed by the pre-earnings threshold, and finally the analysts' forecast. In this study, we examined whether the earnings thresholds could be changed based on the CEO's degree of narcissism. Our findings suggest that CEO narcissism impels leadership to influence financial decisions more directly. CEOs manipulate earnings to satisfy all three earnings thresholds. This study sought to clarify the relationship between CEO personality and earnings manipulation to assist investors with decision-making.

We suggest that CEO narcissism is a crucial factor for financial decisions when the organization faces pressure to fulfill an earnings threshold. In such circumstances, the personality traits and the desire for control motivate narcissistic CEOs to manipulate earnings. Our evidence suggests that motivation alone is insufficient to prompt an organization to engage EM behaviors. An external driver is required that enables a firm with a more narcissistic CEO to conform to analysts' earnings forecasts, unlike in a firm with a less narcissistic CEO. Finally, our findings are valuable to stakeholders assessing firms' operations because they reveal that CEO narcissism drives company leadership to influence financial decisions more directly. This suggests that stakeholders should carefully consider the managerial personnel and psychological characteristics as well as the organizational characteristics of a firm. These findings are also of interest to practitioners and provide useful evidence to advance the knowledge of company decision-making. Our findings inform the process of CEO search, selection, and development.

Our statistical tests identified significant relationships between our variables of interest, but this study has limitations. First, we were constrained in making causal inferences regarding the relationship between CEO narcissism and our performance measures because of the archival nature of the data. Second, our sample comprised firms in the Taiwan Stock Exchange database, which limited our ability to generalize to private firms. Finally, we used an indirect, unobtrusive measure of narcissism. This measure has been used and validated in other research, but the administration of well-known personality instruments such as the Narcissistic Personality Inventory (Raskin & Terry, 1979, 1988) could provide a more direct measurement of narcissism.

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