

CEO Cultural Masculinity and Earnings Management

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Abstract

We evaluate how CEOs' cultural masculinity, which is the set of cultural norms and values associated with achievement and material wealth (Hofstede, 1980, 2001), impacts firms' earnings management practices. Arguably, masculine CEOs are more likely to engage in earnings management to meet their financial targets because they place a greater emphasis on short-term financial success and achievement than on ethical or long-term considerations. For a sample of S&P1,500 firms, we document a positive relationship between CEO cultural masculinity and the firm's earnings management. The results of the analysis around CEOs changes suggest a causal effect of CEO masculinity on earnings management practices. Masculine CEOs manage earnings more before initiating acquisitions and following a poor stock performance of their firms. Governance and monitoring mechanisms are effective in preventing earnings management by masculine CEOs.

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1. Introduction

Executives have incentives to manipulate reported earnings (known as earnings management) to boost their firm's financial performance and market valuation and their own compensation or job security (Burgstahler & Dichev, 1997; Dechow, Sloan, & Sweeney, 1996; Graham et al., 2005; Nekhili, Javed, & Nagati, 2022). Although earnings management can technically be legal, it can impede corporate transparency and fair competition and mislead investors and, therefore, can be unethical (Johnson, Fleischman, Valentine, & Walker, 2012; Nekhili et al., 2022). Misreporting corporate earnings may temporarily inflates stock prices, however, it can lead to a significant decline in shareholders' value once it is detected (e.g., Armstrong, Foster, & Taylor, 2016; Feroz, Park, & Pastena, 1991). Corporate scandals, such as Enron and Wirecard, are exemplification of the negative consequences of misreporting and such financial reporting malpractices underpin the necessity of understanding the determinants of corporate earnings management.

There is evidence in the literature that CEO traits and characteristics matter for their firm's accounting practices including earnings management, in line with the Upper Echelons Theory that postulates that personal traits and backgrounds of top executives affect their decision-making and, in turn, corporate policies and practices (Hambrick, 2007). A number of accounting and finance studies provide evidence on the effects of CEO characteristics on firms' earnings management behavior (e.g., Ali & Zhang, 2015; Cai, Kim, Li, & Pan, 2019; Dhole, Manchiraju, & Suk, 2016; Hilary, Huang, & Xu, 2017; Jia, Lent & Zeng, 2014; Kuang, Qin, & Wielhouwer, 2014) and agree that CEO, the executive who sets the tone at the top, has a significant impact on firms' accounting choices. Nonetheless, a question that remains unanswered is whether cultural origins of CEOs, which influence their drive for achievement and material success, have an impact on their firms' earnings management practices.

According to Byrne & Bradley (2007), cultural traits are likely to influence an individual's values, beliefs, and preferences. Several studies link aspects of CEO cultural heritage like uncertainty avoidance and individualism (Hofstede, 1980, 2001) to corporate policies and outcomes, including risk-taking activities and misconduct (e.g., Li et al. 2013; Pan et al. 2020; Pham, Pham & Truong, 2022; Zhang, 2021). Adding to the existing evidence, we focus on one aspect of CEO cultural heritage that received limited attention in the accounting and finance literature - masculinity, which is the set of cultural norms and values associated with "masculine" aspects of being performance-driven versus the "feminine" aspects of caring (Hofstede, 1980, 2001; Hofstede, Hofstede, & Minkov, 2005). Masculinity is associated with a strong emphasis on achievement, success, material wealth, and competition and, therefore, may be relevant for earnings management. Because masculine CEOs put more emphasis on achievement, financial success, and personal prestige, they may feel more pressured to meet earnings expectations of investors and analysts. Such perceived pressure to achieve, along with fear of failure, may prompt masculine CEOs to engage in earnings management as a means to boost the firm's financial results, stock prices, and their own compensation and professional standing. Assuming that for masculine CEOs the emphasis on short-term achievement and material wealth is more important than integrity and ethical considerations, firms led by more masculine CEOs should be more likely to engage in earnings management.

To empirically test the relationship between CEO cultural masculinity and the firm's earnings management, we use a sample of U.S. Standard & Poor's (S&P) 1,500 non-financial firms from 2004 to 2015. We construct our measure of CEO cultural masculinity based on the CEOs' ancestry derived from the CEO's last name, following Brochet et al. (2019), Dodd et al. (2022), Merkeley et al. (2020), and Pan et al. (2020). This approach assumes that last names, along with cultural norms and values, are passed through generations unchanged (Guiso et al., 2006). We use a CEO's country of ancestry to assign a masculinity culture score from Hofstede

(2001) to capture the CEO's drive for achievement and material wealth. To measure earnings management, we estimate the absolute values of the discretionary accruals from modified Jones' (1991) model and performance-adjusted discretionary accruals (Kothari, Leone, & Wasley, 2005).

We find that CEOs with higher cultural masculinity are indeed more likely to manage earnings. In terms of economic magnitude, for example, one-standard-deviation increase in CEO's masculinity score leads to a 2.6% increase in the absolute value of the discretionary accruals estimated using the modified Jones' (1991) model relative to its sample mean, all else equal. To address the concern of potential endogeneity of the relationship between CEO masculinity and earnings management, we conduct an analysis of the changes in earnings management around CEO changes. We find that the degree of earnings management increases when a firm replaces a CEO who has lower cultural masculinity with a new CEO who has higher cultural masculinity. This finding suggests a causal effect of CEO masculinity on the firm's earnings management practices.

We conduct several robustness tests. To show that the documented positive relationship between CEO masculinity and earnings management is not explained by omitted variables, we control for other aspects of CEO's cultural heritage (uncertainty avoidance, power distance, individualism, long-term orientation, and indulgence), CEO religion, and economic and institutional environment of CEO's country of ancestry (Kumar, Page, & Spalt, 2011; Pan, Siegel, & Wang, 2017; Pan et al., 2020; Xu & Ma, 2021) and find that the impact of CEOs' culturally transmitted masculinity on earnings management practices remains positive and significant. Moreover, CEO cultural masculinity continues to exhibit explanatory power on earnings management after controlling for male CEOs' facial masculinity that is linked to their testosterone levels and is measured by the facial width-to-height ratio (Jia, Lent, & Zeng, 2014).

Next, we evaluate the impact of CEO masculinity on earnings management practices when achieving superior firm performance is strategically important, for example, around mergers and acquisitions (M&A). We argue that, because masculine CEOs place more importance on achieving financial success (Hofstede et al., 2005), they are more likely to engage in earnings management to inflate their firms' stock prices in anticipation of upcoming M&As. Indeed, we find empirical evidence that masculine CEOs tend to manage earnings before their firms' acquisitions, which can be explained by cultural masculinity traits. We also find that the positive relationship between CEO masculinity and earnings management is mitigated by firm's past financial performance, measured with excess stock returns over the preceding three years. This finding supports the argument that, when confronted with poor financial performance, masculine CEOs, who typically prioritise achieving material success and financial goals, are inclined to engage in earnings management. Therefore, this finding suggests that the behavior of masculine CEOs is likely driven by their desire for achievement and material wealth.

Finally, we provide empirical evidence that the inclination of masculine CEOs to manipulate earnings can be constrained by strong governance and monitoring. Specifically, we show that intense monitoring by independent boards, auditors, blockholders, and dedicated institutional investors can prevent earnings management practices by masculine CEOs. These findings align with prior literature (e.g., Hadani et al., 2011) highlighting the crucial role of governance and monitoring in constraining earnings management.

Our study makes several important contributions to the accounting and corporate finance research. First, our findings add to the studies that evaluate the effects of CEO personal characteristics on the firm's financial reporting practices. The literature offers evidence on the following CEO characteristics in relation to earnings management: CEOs' religious beliefs (Cai, Kim, Li, & Pan, 2019), CEO's marital status (Hilary et al., 2017), CEO's facial width-to-

height ratio (Jia et al., 2014), CEO's narcissism (Capalbo, Frino, Lim, Mollica, & Palumbo, 2018; Lin, Lin, & Fang, 2020; Buchholz, Lopatta, & Maas, 2020); CEO's overconfidence (Hsieh, Bedard, & Johnstone, 2014), and CEO's tenure (Ali & Zhang, 2015). We contribute to this literature by discovering a novel CEO trait as a significant determinant of earnings management practices - CEO cultural masculinity (Hofstede, 1980, 2001).

Unlike Hofstede's uncertainty avoidance and individualism cultural dimensions that are frequently reported in the literature in relation to corporate policies and outcomes (Li et al. 2013; Pan et al. 2020; Pham et al., 2022; Zhang, 2021), masculinity has received significantly less attention. Several country-level studies (Doupnik, 2008; Han, Kang, Salter, & Yoo, 2010; Callen et al., 2011) have examined the effects of different aspects of national cultures on earnings management practices. These studies report that uncertainty avoidance and individualism are positively related to earnings management but are agnostic about the effect of masculinity on earnings management practices. In contrast to these cross-country studies that use national culture to explain cross-country variations in earnings management, we evaluate the effect of masculinity based on CEO's individual cultural heritage and shows that CEOs' masculinity can explain their firm's propensity to manage earnings. By using a sample on CEOs of the US publicly traded companies, we mitigate the concern of cross-country studies that the nation-level variations in the institutional and economic factors can affect both CEOs' cultural values and earnings management practices.

By focusing on CEO-level masculinity, our study also contributes to the growing literature on the impact of CEO's cultural heritage on corporate policies and outcomes. Different aspects of CEO's cultural heritage are reported to affect firm's policy choices and firm performance (Nguyen, Hagedorff, & Eshraghi, 2018), accounting fraud and financial misconduct (Liu, 2016), corporate risk culture and risk-taking behaviour (Pan et al., 2017), M&A activities (Pan et al., 2020), corporate disclosure narratives (Brochet, Miller, Naranjo, &

Yu, 2019), and the pricing of audit services (Pham et al., 2022). None of these studies focus on the masculinity aspect of CEO's cultural heritage. Our study extends this line of inquiries by investigating how CEOs' values and preferences towards the achievement of material success and wealth, passed down from ancestors, relate to corporate earnings management practices.

Lastly, our study contributes to the corporate governance literature (García-Meca & Sánchez-Ballesta, 2009; Garcia Osma, 2008; Hadani, Goranova, & Khan, 2011; Liu & Lu, 2007) by providing evidence that strong governance and monitoring can be effective in preventing earnings management by masculine CEOs.

The remainder of this paper is organised as follows. Section 2 reviews relevant literature and develops the main hypothesis. Section 3 details our data collection, sample, and variables construction. Section 4 discusses our research design and the empirical. Section 5 concludes.

2. Hypothesis development

2.1 The role of CEO in the firm's earnings management

The literature commonly assumes that CEOs oversee strategic corporate decisions including their firm's accounting practices such as earnings management (e.g., Jia et al., 2014; Hilary, Huang, & Xu, 2017; Ali & Zhang, 2015; Cai, Kim, Li, & Pan, 2019). Earnings management refers to the practice of using accounting techniques to manipulate a firm's financial statements to meet or exceed earnings targets. This can be done through a variety of means, including shifting expenses between periods via the use of accruals, manipulating revenue recognition, or changing accounting assumptions. While some methods used to manage earnings are technically legal, earnings management that impede corporate transparency and fair competition is unethical (Johnson et al., 2012; Nekhili et al., 2022).

CEOs may manage their firm's earnings for a variety of reasons, including meeting earnings expectations and targets set by analysts and investors, increasing the firm's stock price and market value, and obtaining financing or reducing borrowing costs (Dechow, Sloan, and Sweeney, 1996; Burgstahler and Dichev, 1997; Hasan, Park, & Wu, 2012). Ultimately, there are potential personal gains for CEOs to overstate earnings, such as enhancing the CEO's own job security and compensation and triggering bonuses or stock options (Graham et al., 2005). Kuang, Qin, and Wielhouwer (2014) and Ali & Zhang (2015) show that CEOs engage in more aggressive income-increasing earnings management in the early years of their tenure when they have a stronger motivation to showcase their competence.

Since CEO is the top executive who sets the firm's strategies and organizational culture, CEO characteristics should have a nontrivial impact on firms' accounting practices. This argument is in line with the Upper Echelons Theory (Hambrick, 2007; Hambrick & Mason, 1984) that states that characteristics of top executives, particularly CEOs, significantly shape the firm's strategic decisions. According to this theory, top executives are individuals whose personal traits, backgrounds, and experiences affect their decision-making process, which in turn, affects the firm's policies and practices (for a review, see Finkelstein, Hambrick, & Cannella, 2009).

Several studies provide empirical evidence on the effects of CEO traits and characteristics on the firm's earnings management practices. For example, the firm's earnings management practices and corporate transparency can be explained by the CEO's marital status (Hilary, Huang, & Xu, 2017) or the CEO's religiosity (Cai, Kim, Li, & Pan, 2019). Jia et al. (2014) find that CEOs with high facial width-to-height ratio are more likely to misreport. Capalbo, Frino, Lim, Mollica, & Palumbo (2018), Lin, Lin, & Fang (2020), and Buchholz, Lopatta, & Maas (2020) report that more narcissistic CEOs tend to manage earnings to inflate their firms', and innately their own, achievements. Hsieh, Bedard, & Johnstone (2014) document a positive

relationship between CEO overconfidence and earnings management before and after the adoption of the Sarbanes Oxley Act of 2002. Finally, Huang & Sun (2017) find a negative relationship between managerial ability and earnings management.

2.2 CEO's cultural heritage and firm's finance and accounting policies and outcomes

One CEO attribute that has recently received growing attention in the accounting and finance literature is the CEO's cultural heritage. One's culture is expressed through the values, beliefs, and practices that individuals consider significant and adhere to. Guiso, Sapienza, and Zingales (2006) define culture "as those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation." In line with on the Upper Echelons Theory (Hambrick, 2007), CEOs' cultural norms, values, and background influence their decision-making process, and, in turn, their firms' policies, practices, and outcomes.

Several studies provide empirical evidence of the relationship between CEO's cultural heritage and firm outcomes. For example, Nguyen, Hagedorff, & Eshraghi (2018) report that CEOs' cultural heritage (based on the CEO's ancestral country of origin) shapes their firm's policy choices and firm performance in competitive industries. Liu (2016) argue that corporate corruption culture, captured by the average corruption attitudes of corporate insiders based on their cultural background, can influence corporate accounting fraud and financial misconduct. Pan et al. (2017) show that the preferences towards risk and uncertainty shared by the firm's executives (based on their cultural heritage) play a key role in forming corporate risk culture, and, in turn, affect firms' risk-related choices and decisions. Pan et al. (2020) suggest that CEOs' cultural heritage influences their perception of uncertainty and show that CEO's uncertainty avoidance impacts the likelihood of pursuing corporate acquisitions as well as the

types of target companies they select. Brochet, Miller, Naranjo, & Yu (2019) find that managers from a cultural group that emphasises individualism use a more optimistic tone in their disclosure narratives. Finally, Pham et al. (2022) use the cultural heritage of CEOs as an indicator of their risk and uncertainty preferences and find that auditors take into account CEOs' cultural background when determining the pricing of their audit services.

2.3 CEO cultural masculinity and earnings management

An individual's cultural heritage encompasses different aspects or dimensions of culture. For example, Hofstede culture framework (Hofstede, 1980, 2001), the most widely used in academic research culture framework (Beugelsdijk, Kostova, & Roth, 2017; Zhou & Kwon, 2020), identifies six cultural dimensions: individualism, masculinity, power distance, uncertainty avoidance, long-term orientation, and indulgence. Uncertainty avoidance and individualism of CEOs are the two cultural dimensions frequently linked to corporate policies and outcomes (e.g., Li et al. 2013; Pan et al. 2020; Pham et al., 2022; Zhang, 2021). Other dimensions have received significantly less attention.

In this study, we focus on one aspect of CEO's cultural heritage – masculinity, that is the set of cultural norms and values that are traditionally associated with "masculine" aspects of being performance-driven versus the "feminine" aspects of caring, which received limited attention in the literature.¹ Hofstede (1980, 2001, 2005) identify a strong correlation between masculinity and societal values related to achievement and power. Countries scoring high on

¹ Several cross-country studies examine the effects of masculinity on the country's earnings management practices. Douppnik (2008) and Callen et al. (2011) examine whether cross-country differences in culture, including masculinity, can explain the cross-country differences in earnings management practices and find no significant relationship between the level of masculinity in a country and the level of earnings management. Also focusing on country-level heterogeneity, Han et al. (2010) report a positive relation between the masculinity score and the usage of earnings discretion in some of their models. We note that the relationship between masculinity and earnings management on the country level might be affected by the differences in institutional and economic environments across countries.

the masculinity dimension place a strong emphasis on achievement, success, and material wealth, and often have a competitive culture where people are expected to be self-reliant and competitive. On the other hand, countries scoring low on this dimension tend to place a greater value on cooperation, quality of life, and caring for others.

CEOs with higher levels of masculinity may be more likely to prioritise winning, financial success, and wealth accumulation over other values such as social impact, long-term stability, or ethical behavior. Striving to achieve higher economic growth, masculine CEOs may feel pressure to meet or exceed earnings expectations to maintain investor confidence and support the firm's expansion plans. In addition, masculine CEOs maybe more ego-oriented, more concerned with their own reputation and prestige, and view failure as a personal or professional disaster. Therefore, masculine CEOs may be inclined to engage in earnings management to inflate the firm's financial performance and stock price and their own compensation and professional standing. Alternatively, personal integrity and ethical considerations of masculine CEOs may impede their drive to achieve short-term financial success at all costs. CEOs may believe that the firm's long-term success and their own reputation are better served by transparency and integrity, not by manipulating earnings. Therefore, we test the following hypothesis:

H1: CEO cultural masculinity is positively associated with firm's earnings management.

3. Data sample and methodology

3.1 Sample construction

Our sample includes all U.S. Standard & Poor's (S&P) 1,500 non-financial firms over the period of 2004 and 2015. We extract financial and accounting information from Compustat Industrial files and stock return data from the Center for Research in Security Prices (CRSP).

We collect CEOs' names, gender, tenure, age, titles, and compensation from The Executive Compensation Database (*ExecuComp*), and it's further supplemented with data from the Osiris database of Bureau van Dijk, annual reports, and internet sources such as Bloomberg and LinkedIn. Data on board of directors for the S&P 1,500 firms is withdrawn from Institutional Shareholder Services (*ISS*) database. We obtain the information on analysts' earnings forecasts from the Institutional Brokers Estimate System (*I/B/E/S*) of Thomson Reuters and information on audit fees from *Audit Analytics*. Information about institutional ownership is downloaded from Thomson Reuters 13F. After combining available data from multiple data sources, we have a sample of 9,973 firm-year observations.

3.2 *Measuring CEO cultural masculinity*

We construct our measure of CEO cultural masculinity for each firm-year based on the CEOs' ancestry (derived from the CEO's last name), following Brochet et al. (2019), Dodd et al. (2022), Merkeley et al. (2020), and Pan et al. (2020). We assume that last names, along with culture, remain unchanged from generation to generation (Guiso et al., 2006).² We use the several libraries of last names to map the country of origin. First, we use historical census records of foreign-born U.S. residents from the Integrated Public Use Microdata Series (IPUMS).³ We also use a list of common Asian American last names of Lauderdale and Kestenbaum (2000) and the Oxford Dictionary of American Family Names. After we identify a country of ancestry for each CEO, we use national culture scores for masculinity from Hofstede (2001) to capture attributes associated with an individual's competitiveness, drive for achievement, and material wealth transmitted through the individual's cultural heritage.

² Using last names to identify CEO ancestry overlooks the fact that married female CEOs may use their husbands' last name. Female CEO are only 3% of our sample, with only a portion of them taking their husbands' last name. As a robustness test, we estimate our baseline model only for male CEOs and find that our results hold.

³ Minnesota Population Centre and Ancestry.com. IPUMS restricted Complete Count Data: Version 1.0 [Machine-readable database]. Minneapolis: University of Minnesota (2013). We use census records from 1850, 1880, 1900, 1910, 1920, 1930, and 1940.

Table 1 displays the distribution of country of origins for our CEO sample and its corresponding masculinity score. More than 20% of CEOs have last names of British origin. Countries with the largest masculinity index are Japan, Latvia, and Lithuania whereas countries with the smallest masculinity index are Norway and Sweden.

[Insert Table 1 around here]

3.3 Measuring earnings management

To measure earnings management, we apply two accrual-based models commonly used in accounting literature. A firm's earnings are comprised of two major components: cash flow and accruals (a result of accounting adjustment). Accruals can be further decomposed into nondiscretionary accruals and discretionary accruals, with the latter being more subjugated to management's manipulation. Bergstresser & Philippon (2006) and Cheng & Warfield (2005) assert that CEO equity incentives cause CEO to focus on boosting short-term stock prices, which lead to a great magnitude of discretionary accruals management. We hence use discretionary accruals to quantify earnings management and employ two models to estimate a firm's discretionary accruals.

Firstly, following prior literature (e.g. DeFond and Jiambalvo (1994); Defond and Subramanyam (1998); Dechow, Richardson, & Tuna (2003) and Armstrong, Larcker, Ormazabal, & Taylor, 2013), we employ the modified Jones' (1991) model. This model estimates discretionary accruals from cross-sectional regressions of total accruals on changes in sales minus accounts receivables and on property, plant, and equipment (PPE). The modified Jones' (1991) model is estimated for each 2-digit SIC code industry and year as follows:

$$TA = \beta_0 + \beta_1(\Delta Sales - \Delta REC) + \beta_2 PPE + e, \quad (1)$$

where TA denotes total accruals, which is the difference between income before extraordinary items (Compustat item ibc) and operating cash flows (Compustat item $oancf - xidoc$). $\Delta Sales$ is the change in sales (Compustat item $sales$) from year $t-1$ to year t . ΔREC is the change in accounts receivable (item $rect$) from year $t-1$ to year t , and PPE is the property, plant, and equipment (Compustat item $ppegt$) at year t . All variables are scaled by the average of total assets (Compustat item at). The discretionary accruals ($DACC$) are the residuals, e , in Equation (1).

Positive discretionary accruals are indicative of managers exercising income-increasing discretion, and negative discretionary accruals are indicative of income-decreasing discretion (Armstrong, Larcker, Ormazabal, and Taylor, 2013). Therefore, we follow prior literature (e.g., Bergstresser and Philippon, 2006; Jiang, Petroni and Wang, 2010; Armstrong, Larcker, Ormazabal, and Taylor, 2013) and use the absolute value of the discretionary accruals as our first measure of earnings management (denoted as $|DACC|$).

Secondly, Kothari, Leone, & Wasley (2005) advocate using performance-matched discretionary accruals to account for the impact of performance momentum or performance mean-reversion. Thus, we estimate our second measure of earnings management as performance-adjusted discretionary accruals, estimate after controlling for the influence of firm performance on estimated discretionary accruals. Specifically, in Equation (1), we include the lagged value of return on assets (ROA) as an additional control variable:

$$TA = \beta_0 + \beta_1(\Delta Sales - \Delta REC) + \beta_2 PPE + \beta_3 LagROA + e, \quad (2)$$

where, in addition to the variables defined in Equation (1), $LagROA$ is operating income before depreciation (Compustat item $oibdp$) scaled by total assets (Compustat item at) in year $t-1$. The absolute value of the residuals, e , from Equation (2) is our second measure of earnings management – the performance-adjusted discretionary accruals (denoted as $|DACC adj|$).

3.4 Empirical methodology

To evaluate the effects of CEO masculinity on earnings management, we estimate the following model:

$$EM_{it} = \alpha + \delta CEO\ MAS_{it} + \varphi X_{it} + \eta_i + \eta_t + \varepsilon_{it}, \quad (3)$$

where i , t represent firm and year, respectively. EM_{it} is one of the two measures of earnings management. X_{it} is a vector of firm- and CEO-level variables that may correlate with firm's earnings management practices. We control for firm size (*Firm_size*), firm age (*Firm age*), firm p financial performance (*Profitability*), book-to-market ratio (*BTM ratio*), and financial leverage (*Leverage*). We also account for the effects of a firm's dividend policy (*Dividends*) since He, Ng, Zaiats, & Zhang (2017) show that dividend payers manage earnings less than dividend non-payers. We control for the effects of corporate governance and monitoring by including institutional ownership (*Institutional ownership*) and analysts' coverage (*Analyst coverage*). For example, Chung, Firth, & Kim (2002) find that institutions with substantial holdings in a firm can put pressure on managers and inhibit them from engaging in opportunistic earnings management. Similarly, Yu (2008) argue that analysts can serve as external monitors for managers since they regularly track corporate financial statements and interact with managers. In addition, we control for CEO characteristics such as CEO age (*CEO age*), gender (*CEO female*), tenure (*CEO tenure*), and CEO duality (*CEO duality*) given that CEOs with more power have more discretions to manipulate earnings for their own private benefits (e.g., Nelson, 2005). We also account for CEO's equity ownership (*CEO equity*) since CEO's equity incentives can create short-term pressure to manage earnings to inflate stock prices (Armstrong, Jagolinzer, & Larcker, 2010; Cheng & Warfield, 2005). Appendix A provides definitions of all variables. In all regressions, we include industry fixed effects, η_p to

control for unobserved industry-specific heterogeneity and year dummies, η_i , to control for time trends. Robust standard errors for coefficient estimates are heteroskedasticity-consistent and adjusted for CEO-firm level clustering (Petersen, 2009).

3.5 Descriptive statistics

Table 2 presents descriptive statistics for all variables, including the number of observations, mean, standard deviation (SD), 25th, 50th, and 75th percentiles. The mean values of the two measures of earnings management, discretionary accruals, $|DACC|$, and performance-matched discretionary accruals, $|DACC adj|$, are 0.185 and 0.154; and the median values are 0.134 and 0.116, respectively. Our main explanatory variable CEO masculinity, $CEO MAS$, has a mean value of 0.591 and median value of 0.66, with a standard deviation of 0.156. The other variables have distributions similar to those reported in prior literature.

[Insert Table 2 around here]

4. Empirical results

4.1 Main results: CEO cultural masculinity and earnings management

To empirically examine the relationship between CEO masculinity and earnings management, we estimate Equation (3), using $|DACC|$ and $|DACC adj|$ as the dependent variables, our measures of earnings management. Table 3 reports the estimation results. In columns (1) and (2), explanatory variables include $CEO MAS$ and firm-level control variables - firm age ($Firm age$), size ($Firm size$), book-to-market ratio ($BTM ratio$), dividend payout ($Dividends$), financial performance ($Profitability$), leverage ($Leverage$), institutional ownership ($Institutional ownership$) and the number of analysts following ($Analyst coverage$). In columns

(3) and (4), in addition to the firm-level variables we control for CEO characteristics - CEO age (*CEO age*), gender (*CEO female*), tenure (*CEO tenure*), CEO duality (*CEO duality*) and equity ownership (*CEO equity*). Appendix A provides definitions of all variables. The reported *t*-values are based on standard errors clustered at the CEO-firm level.

Table 3 reports positive and significant at the 5% level coefficients on *CEO MAS* in all four columns, consistent with our hypothesis that CEOs with higher masculinity are more likely to manage earnings. The coefficient on *CEO MAS* in column (3) of Table 3 indicates that, all else equal, when CEO masculinity increases by one standard deviation, $|DACC|$ rises by 0.0036, which is equivalent to 2.6% ($=0.023 \times 0.156 / 0.154$) over the unconditional mean of $|DACC|$. As such, the impact of *CEO MAS* is both statistically and economically significant.

Regarding control variables, we find that $|DACC|$ is positively associated with *Profitability* and negatively associated with *Analyst coverage*. When we use the performance-adjusted earnings management metric $|DACC adj|$ as the dependent variable, *Profitability* is not significant anymore. Analyst coverage also becomes insignificant but *Firm size* is negative and significant determinant of $|DACC adj|$. For the other control variables, the results are insignificant or not stable across the four model specifications.

[Insert Table 3 around here]

4.2 Earnings management around CEO changes

So far, we have documented a positive association between CEO masculinity and the firm's earnings management. However, we cannot rule out the possibility that some unobservable factors, for example, a highly competitive corporate culture, may drive both the likelihood of hiring a masculine CEO and the tendency to manage earnings. To address this endogeneity concern, we conduct a difference-in-difference analysis to examine within-firm changes in earnings management practices around CEO replacements, which may bring

changes in CEO masculinity. For this change analysis, we identify a subsample of firms that had a CEO change during our sample period and have the data available for three years before and three years after the CEO change. Table 4 reports the results of the analysis. All regressions control for firm- and CEO-level characteristics, and firm and year fixed effects.

Columns (1) and (2) report the estimation result of the regressions of earnings management variables, $|DACC|$ and $|DACC\ adj|$, respectively, on CEO masculinity ($CEO\ MAS$) using a subsample of three years before and three years after each CEO change. The coefficients on $CEO\ MAS$ for both earning management measures are positive and significant at the five percent level, providing further support for our main hypothesis. In this setting, the coefficient estimates on $CEO\ MAS$ are larger than those in the main analysis (0.045 and 0.046 for $|DACC|$ and $|DACC\ adj|$, respectively, vs. 0.023 and 0.021 for $|DACC|$ and $|DACC\ adj|$, respectively, in Table 2).

Columns (3) and (4) report the estimation results of the change analysis. $CEO\ change$ is a dummy variable equal to zero for the three years prior to the CEO change and equal to one for the three years after the CEO change. $\Delta CEO\ MAS$ is defined as CEO masculinity after the CEO change less CEO masculinity before the CEO change. Thus, a higher $\Delta CEO\ MAS$ indicates that the firm switches to a more masculine CEO. We focus on the interaction term $CEO\ change \times \Delta CEO\ MAS$. We find that the coefficients on this interaction term load in the predicted direction (i.e., positively) in both regressions of earnings management. Therefore, the change analysis provides evidence that replacing a CEO who has a lower level of masculinity with one who has a higher level of masculinity leads to an increase in earnings management. These results point to the causal relationship of CEO masculinity on the firm's earnings management.

[Insert Table 4 around here]

4.3 CEO masculinity and earnings management: Alternative explanations

In this section, we explore other potential factors that could affect earnings management practices and might be correlated with CEO masculinity, to rule out potential alternative explanations of the documented positive relationship between CEO cultural masculinity and earnings management practices. We other aspects of CEO's cultural heritage (such as uncertainty avoidance, power distance, individualism, long-term orientation, and indulgence), CEO religion, economic and institutional environment of CEO's country of ancestry, and CEO's facial masculinity.

4.3.1 Other aspects of CEO's cultural heritage

In addition to masculinity, Hofstede's (2001) culture framework includes five dimensions that capture the differences among national cultures: uncertainty avoidance, power distance, individualism, long-term orientation, and indulgence. Uncertainty avoidance captures the extent to which people feel threatened by uncertainty and ambiguity. Power distance captures the extent to which people accept that power in institutions and organizations is distributed unequally. Individualism captures the extent to which people value independence and personal achievement. Long-term orientation captures the extent to which people value long-term goals and rewards. Indulgence captures the extent to which people allow for relatively free gratification of basic and natural human desires related to enjoying life and having fun.

Prior literature provides evidence that different cultural traits of CEOs impact the CEO's decision-making and corporate outcomes. For example, Pan et al. (2020) associate CEO's uncertainty avoidance (based on CEO's cultural heritage) with an important type of corporate investment decision - mergers and acquisitions. Pham et al. (2022) report the CEO's individualism and uncertainty avoidance (based on CEO's cultural heritage) are related with

audit fees and the quality of accounting reporting and conservatism. Zhang (2021) find that CEO individualism (based on CEO's birthplace) determines corporate innovation.

Regarding earnings management, CEO cultural traits like uncertainty avoidance and long-term orientation could mitigate the relationship between CEO masculinity and the firm's earnings management practices. For example, some masculine CEOs may be more risk-averse and less likely to involve themselves in earnings management, recognizing the legal and reputational risks associated with such practices. Similarly, some masculine CEOs may be more long-term oriented, focusing more on sustainable success rather than short-term wins.

Therefore, it is possible that different aspects of CEO's cultural heritage could affect the firm's earnings management behavior. In this analysis, we control for the other five dimensions of CEO's cultural heritage in our baseline regression to see if our results on masculinity still hold. Specifically, we control for CEO uncertainty avoidance (*CEO UAI*), CEO power distance (*CEO PDI*), CEO individualism (*CEO IDV*), CEO long-term orientation, and CEO indulgence (*CEO ING*), all based on the Hofstede (2001) culture scores for the CEO's country of ancestry.

Panel A of Table 5 reports the estimation results in Columns (1) and (2). After controlling for different aspects of CEO cultural heritage, *CEO MAS* continues to be positively related to earnings management variables, $|DACC|$ and $|DACC adj|$, and this relationship is statistically significant at the 1% level. Other CEO cultural traits are insignificant determinants of earnings management. This analysis shows that the relationship between CEO masculinity and earnings is not driven by other cultural dimensions.

[Insert Table 5 around here]

4.3.2 *CEO religion*

Prior studies suggest that CEO's religiosity influences firm's accounting practices (e.g., Cai et al., 2019). Therefore, it is possible firms with religious CEOs are less likely to manage

earnings due to their lower risk attitudes or traditional view on moral issues, and CEO religiosity may be correlated with CEO cultural masculinity. We control for the CEO's religion in our regressions to isolate its effect from the effect of CEO masculinity. To overcome the problem that data on CEO's religious beliefs are usually unavailable, we follow Pan et al. (2020) and use religion of the CEO's country of ancestry (based on CEO's last name) as a proxy for CEO's religious heritage. We extract information on the largest religious group for each country from World Religion Database.⁴ Religion associations included in our analysis are agnostic, Buddhist, Christian, Hindu, Jew, and Muslim, each measured with an indicator variable.

In columns (3) and (4) in Panel A of Table 5, we report the estimation results with additional CEO religion indicator variables as controls. The relationship between *CEO MAS* and accruals quality remains positive and statistically significant at the 5% level after controlling for CEO's religious heritage. Furthermore, CEO's religion has no significant impact on earnings management. Overall, the relationship between CEO masculinity and earnings is not driven by CEO religion.

4.3.3 Economic and institutional environment of CEO's country of ancestry

Cultural heritage is not independent of the country's economic development and the quality of institutions (Pan et al., 2020). To address the concern that variation in CEO masculinity may proxy for omitted differences in economic and institutional environment among CEOs' countries of ancestry, we follow Pan et al. (2020) and additionally control in our regressions for the effects of economic and institutional environment of a CEO's country of ancestry (based on CEO's last name). We obtain the data on country's GDP per capita (*GDP*), primary and secondary school enrollments (*School enrol*), life expectancy (*Life exp*) and

⁴ Data source: World Religion Database:
http://worldmap.harvard.edu/data/geonode:wrld_province_religion_qg0.

population growth (*Pop growth*) as of 1980 (approximately the year of the Hofstede survey data) from the World Development Indicator (WDI) database. We also include a world equity market segmentation measure (*Market seg*) from Bekaert, Harvey, Lundblad, & Siegel (2011) to capture the effects of stock market development as well as economic and institutional environment.

In Columns (5) and (6) in Panel A of Table 5, we report the results of estimations that control for the economic and institutional variables. The relationship between *CEO MAS* and earnings management remains positive and statistically significant at the 5% level after addressing the potential omitted economic and institutional variables issue.

4.3.4 *CEO's facial masculinity*

Jia et al. (2014) reports that male CEO's facial masculinity, arguably linked to the testosterone levels, is positively associated with firm's misreporting behavior. To rule out the concern that our results might be driven by facial masculinity rather than cultural masculinity, we conduct a robustness test controlling for the CEO's facial masculinity. Following Jia et al. (2014), we measure male CEO's facial masculinity by their facial width-to-height ratio (FWHR), estimated from CEO photos using Python's Face Recognition package (following Liao, Van Quaquebeke, & Dodd, 2023).⁵ *High FWHR* indicates that the CEO's FWHR is above the sample median. Panel B of Table 5 reports the estimation results of regressions that additionally include *High FWHR* as a control variable. We find that the effect of cultural masculinity, *CEO MAS*, remains positive and statistically significant for both of our earnings management measures after controlling for facial masculinity.

⁵ The facial masculinity measure FWHR is valid only for males given that it is determined by their levels of hormone testosterone (see, e.g., Ahmed, Sihvonen, & Vähämaa, 2019; Jia, 2018; Jia et al., 2014; Lu & Teo, 2021). Therefore, in this robustness test, the sample is limited to male CEOs.

In summary, the evidence on the positive association between CEO masculinity and earnings management is robust after ruling out possible alternative explanations that CEO's other aspects of cultural or religious heritage, the economic and institutional environment of their heritage country or their facial masculinity may drive the relationship between CEO's cultural masculinity and the firm's earnings management.

4.4 CEO masculinity and earnings management: Incentives effects

Masculinity emphasises challenge, achievement, recognition, and advancement (Hofstede et al., 2005). We, therefore, expect masculine CEOs are more likely to manage earnings when the firm's performance is a strategic factor, for example, before mergers and acquisitions. Furthermore, the incentives to manage earnings might vary depending on their firm's past performance.

4.4.1 CEO cultural masculinity and earnings management before acquisitions

In this section, we focus on earnings management around strategic events that require significant achievements from a CEO, such as, merger and acquisition (M&A) events. There is some evidence in the literature that acquiring firms tend to engage in *income-increasing* earnings management before the acquisition (e.g., Heron & Lie, 2002; Louis, 2004). We propose that CEO masculinity may have some explanatory power of earnings management before acquisitions. Since masculinity is linked to striving for achievement and success (Hofstede, 2001; Hofstede et al., 2005), we expect more masculine CEOs to be more driven to achieve a successful M&A. Following Vorst (2016), we use lead acquisition expenditures, $Acquisitions_{t+1}$, defined as acquisitions expenditures (Compustat item *acq*) divided by total assets, to capture the firm's M&A activities.⁶ The focus of our analysis is on the interaction

⁶ Our results are similar when we use the M&A data from Thomson Reuters SDC Platinum.

term between *CEO MAS* and *Acquisitions_{t+1}*. We predict that in the year before the acquisition, masculine CEOs are more likely to manage earnings to increase the likelihood of success and obtain recognition that they believe is important.

Panel A of Table 6 presents the estimation results. In line with our prediction, the interaction term, $CEO\ MAS \times Acquisitions_{t+1}$, is positively associated with both measures of earnings management and is statistically significant at the 5% level. The finding confirms that masculine CEOs manage earnings for the forthcoming M&As, consistent with the characteristics of cultural masculinity.

[Insert Table 6 around here]

4.4.2 CEO masculinity and earnings management: Mitigating role of past firm performance

Next, we examine whether past firm performance has a moderating effect on the relationship between CEO masculinity and earnings management. We argue that more masculine CEOs have less incentives in manage earnings when the firm has already achieved good performance.

To measure past firm performance, we use excess stock return, $Excess\ return_{t-1,t-3}$, measured as the average returns in excess of CRSP value-weighted returns adjusted for industry-year average in the previous three years. We focus on the interaction term between *CEO MAS* and $Excess\ return_{t-1,t-3}$ to investigate if the past firm performance can moderate masculine CEO's achievement incentives.

Panel B of Table 6 reports the results. We find that masculine CEOs tends to manage earnings as shown by the positive and significant at the 5% level coefficients on *CEO MAS*. The negative and significant coefficient for the interaction term, $CEO\ MAS \times Excess\ return_{t+1}$, suggests that strong past performance significantly reduces the incentives of masculine CEOs

to manage earnings. This finding indicates that the behavior of masculine CEO is likely driven by their desire for achievement and recognition.

4.5 Cross-sectional analysis: Mitigating role of governance and monitoring

We document a positive relation between CEO's cultural masculinity and earnings management. However, there is evidence in the literature that governance mechanisms can be effective in constraining managerial behavior and earnings management (e.g., García-Meca & Sánchez-Ballesta, 2009; Garcia Osma, 2008; Hadani, Goranova, & Khan, 2011; Liu & Lu, 2007). Therefore, we expect that strong governance through effective monitoring of the CEO can mitigate the positive relationship between CEO masculinity and earnings management.

To examine the mitigating role of governance and monitoring on the relationship between CEO masculinity and earnings management, we use four mechanisms, namely, board independence (Gupta & Fields, 2009), non-audit service fees (Zaman, Hudaib, & Haniffa, 2011), blockholder ownership (Kang, Luo & Na, 2018), and dedicated institutional ownership (Bushee, 1998; Borochoin & Yang, 2017). *Board independence* is the percentage of independent directors, and we classify firms with more than 75% independent directors as "High" board independence and the rest as "Low" board independence. *Non-audit service fees* is the share of non-audit service fees in the total of audit and non-audit service fees. *Blockholder ownership* is the number of shareholders with more than 5% institutional block ownership (e.g., McConnell & Servaes, 1990; Kang et al., 2018). *Dedicated institutional ownership* is the percentage of institutional investors that are categorised as "dedicated", that is institutional investors with long-term orientation due to their large and long-term holdings in a few firms, based on the definitions of Bushee (1998, 2001). For *Non-audit fees*, *Blockholder ownership*, and *Dedicated institutional ownership*, we assign firms with the variable values above the

yearly sample median as “High” and the rest as “Low”. Table 7 reports the estimation results of our baseline regression for the “High” and “Low” sub-samples.

[Insert Table 7 around here]

As expected, we find that the coefficients for the two measures of earnings management remain positive and significant for firms with low monitoring across all four governance mechanisms. On the contrary, intense monitoring by independent boards, auditors, blockholders, and dedicated institutional investors mitigate the relationship between CEO masculinity and earnings management. Specifically, the relationship between CEO masculinity and earnings management is insignificant in the sub-sample of firms with strong governance and monitoring. Overall, we find that strong governance and monitoring can prevent earnings management practices by masculine CEOs, which supports the role of governance in constraining earnings management documented by prior literature (e.g., Hadani et al., 2011).

4 Conclusion

This is the first study to show that CEOs’ cultural heritage is a significant determinant of their firms’ earnings management practices. We focus on one aspect of CEOs’ cultural heritage – Hofstede’s masculinity versus femininity cultural dimension. We find that CEOs with higher cultural masculinity are more likely to engage in earnings management, suggesting that their drive for achievement and material success influences their decision-making in financial reporting. This finding is consistent with the Upper Echelons Theory, which emphasises the impact of CEO traits and backgrounds on corporate policies and practices.

Our empirical analysis using a sample of U.S. S&P1,500 non-financial firms provides robust evidence supporting the positive relationship between CEO masculinity and earnings management. We also address potential endogeneity concerns by the changes in earnings

management practices around CEO changes and find that the degree of earnings management increases when a less masculine CEO is replaced by a more masculine CEO, suggesting a causal effect of CEO masculinity on earnings management.

We rule out several alternative explanations, including the impact of other aspects of CEO cultural heritage (Hofstede's uncertainty avoidance, power distance, individualism, long-term orientation, and indulgence), and male CEOs' facial masculinity linked to testosterone levels. We extend our analysis to explore the impact of CEO masculinity on earnings management practices in strategic situations, such as mergers and acquisitions. Our results indicate that masculine CEOs are more likely to engage in earnings management before acquisitions, likely driven by their emphasis on achieving financial success. Additionally, we find that firm's past financial performance is a mitigating factor, that is, masculine CEOs tend to resort to earnings management when their firms face poor financial results. These findings are consistent with the view that masculine CEOs engage in earnings management to achieve earnings expectations and win the recognition of their success.

Importantly, we document that strong governance and monitoring mechanisms can effectively constrain earnings management by masculine CEOs. The presence of independent boards, auditors, blockholders, and dedicated institutional investors acts as a deterrent to earnings management practices. This is an important finding because it suggests that firms can reduce the likelihood of earnings management by strengthening their governance and monitoring mechanisms.

Overall, our study contributes to the literature by identifying CEO cultural masculinity as a novel and significant determinant of earnings management practices. By focusing on the individual cultural heritage of CEOs, rather than national culture, we provide unique insights into the influence of masculinity on financial reporting decisions. Moreover, our study

contributes to the understanding of how CEO cultural heritage affects corporate policies and outcomes, while highlighting the role of governance and monitoring in mitigating earnings management practices.

These findings have important implications for corporate stakeholders, including investors, regulators, and governance professionals, as they emphasize the importance of considering CEO characteristics, specifically cultural masculinity, in assessing a firm's financial reporting practices and governance mechanisms. By understanding the underlying factors that drive earnings management, stakeholders can make more informed decisions and implement effective measures to promote transparency and fair competition in the corporate landscape.

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Appendix A. Variables Definition

DACC	Discretionary accruals are the absolute value of of the residuals from the modified Jones' (1991) model estimated for each 2-digit SIC code industry and year: $TA = \beta_0 + \beta_1(\Delta Sales - \Delta REC) + \beta_2 PPE + e$, where TA is total accruals, the difference between income before extraordinary items (Compustat item <i>ibc</i>) and operating cash flows (Compustat item <i>oancf - xidoc</i>); $\Delta Sales$ is the change in sales (item <i>sales</i>) from year $t-1$ to year t ; ΔREC is the change in accounts receivable (Compustat item <i>rect</i>) from year $t-1$ to year t ; and PPE is the property, plant, and equipment (Compustat item <i>ppegt</i>) at year t .
DACC adj	Performance-adjusted discretionary accruals are the absolute value of the residuals from the model estimated for each 2-digit SIC code industry and year: $TA = \beta_0 + \beta_1(\Delta Sales - \Delta REC) + \beta_2 PPE + \beta_3 LagROA + e$, where $LagROA$ is operating income before depreciation (Compustat item <i>oibdp</i>) scaled by total assets (Compustat item <i>at</i>) in year $t-1$.
CEO MAS	CEO masculinity is the Hofstede's Masculinity versus Femininity index assigned to a CEO based on the CEO's country of ancestry, identified from the CEO's last name.
Firm age	The age of a firm.
Firm size	The natural logarithm of a firm's total assets (Compustat item <i>at</i>).
BTM ratio	Book-to-market ratio is book value of total assets (Compustat item <i>at</i>) minus the book value of equity (Compustat item <i>ceq</i>) plus the market value of equity (Compustat item <i>prcc_f times csho</i>), all divided by the book value of total assets.
Dividends	A dummy variable equal to one if the firm reports nonzero total dividends (common dividends (Compustat item <i>dvc</i>) plus preferred dividends (Compustat item <i>dvp</i>)).
Profitability	Operating income before depreciation (Compustat item <i>oibdq</i>) divided by total assets (Compustat item <i>at</i>).
Leverage	Total debt (Compustat item <i>dltt</i> plus Compustat item <i>dlc</i>) scaled by total assets (Compustat item <i>at</i>).
Institutional ownership	The percentage of a firm's outstanding shares held by institutional investors from Thomson Reuters 13F files.
Analyst coverage	The natural logarithm of the number of analysts that issue annual earnings forecasts for the company from the Institutional Brokers Estimate System (I/B/E/S) of Thomson Reuters.
CEO age	The age of a CEO.
CEO female	A dummy variable equal to one if a CEO is a female.
CEO tenure	The tenure of a CEO is the number of years since they became a CEO.
CEO dual	A dummy variable equal to one if CEO also serves as the chairperson of the board and zero otherwise.
CEO equity	The percentage of the CEO's equity (stock plus option grants) ownership.
CEO UAI	CEO Uncertainty Avoidance is the Hofstede's Uncertainty Avoidance index assigned to a CEO based on the CEO's country of ancestry, identified from the CEO's last name.
CEO IDV	CEO Individualism is the Hofstede's Individualism versus Collectivism index assigned to a CEO based on the CEO's country of ancestry, identified from the CEO's last name.
CEO PDI	CEO Power Distance is the Hofstede's Power Distance index assigned to a CEO based on the CEO's country of ancestry, identified from the CEO's last name.

CEO LTO	CEO Long-term Orientation is the Hofstede's Long-term Orientation versus Short-term Orientation index assigned to a CEO based on the CEO's country of ancestry, identified from the CEO's last name.
CEO ING	CEO Indulgence is the Hofstede's Indulgence versus Restraint index assigned to a CEO based on the CEO's country of ancestry, identified from the CEO's last name.
CEO religion (agnostic, Buddhist, Christian, Jew, Hindu, Muslim)	an indicator variable for each of the religious groups that equals one when the CEO's religion is identified as the corresponding religion, and zero otherwise. CEO's religion is identified based on the religion of the CEO's country of ancestry identified from the CEO's last name. Religion of a country is based on the largest religious group of the country from World Religion Database http://worldmap.harvard.edu/data/geonode:wrp_province_religion_qg0 .
GDP	the log of country's GDP per capita as of 1980 (approximately the year of the Hofstede survey data) from the World Development Indicator (WDI) database.
School enrol	primary and secondary school enrollments as of 1980 (approximately the year of the Hofstede survey data) from the World Development Indicator (WDI) database.
Life exp	life expectancy as of 1980 (approximately the year of the Hofstede survey data) from the World Development Indicator (WDI) database.
Pop growth	population growth as of 1980 (approximately the year of the Hofstede survey data) from the World Development Indicator (WDI) database.
Market seg High FWHR	the world equity market segmentation measure from Bekaert et al. (2011). An indicator variable equal to one if CEO's facial width-to-height ratio (FWHR) is above the sample median, and zero otherwise. FWHR a measure of a CEO's facial masculinity (Jia et al., 2014), estimated from CEO photos using Python's <i>Face Recognition</i> package.
Acquisitions _{t+1}	Acquisition expenditures (Compustat item <i>acq</i>) scaled by total assets in year t+1.
Excess return	The three-year average excess returns (returns in excess of CRSP value-weighted returns) adjusted for industry-year average.

Table 1. Distribution of CEO Origins

This table reports the frequency and Hofstede's masculinity index for each country of ancestry for 2,239 CEOs in our sample.

Country	Percentage	Masculinity score
Arab countries	0.07	0.53
Austria	1.29	0.79
Belgium	0.23	0.54
British	20.29	0.49
Canada	8.15	0.49
China	1.11	0.28
Czech Rep	0.83	0.57
Denmark	0.70	0.16
France	0.68	0.43
Germany	18.26	0.66
Greece	0.87	0.57
Honduras	0.04	0.43
Hungary	0.39	0.88
India	1.10	0.08
Ireland	19.81	0.68
Israel	5.81	0.47
Italy	6.15	0.70
Japan	0.21	0.95
Latvia	0.01	0.95
Lithuania	0.09	0.95
Malta	0.05	0.50
Mexico	0.64	0.95
Netherlands	0.93	0.14
Norway	1.25	0.08
Philippines	0.07	0.64
Poland	1.58	0.64
Portugal	0.20	0.31
Russia	4.77	0.31
South Korea	0.02	0.48
Sweden	2.87	0.05
Switzerland	0.60	0.70
Syria	0.61	0.36
Turkey	0.07	0.45
Yugoslavia	0.27	0.36

Table 2. Summary statistics

The table reports the number of observations, mean, standard deviation (SD), 25th, 50th, and 75th percentile for the two measures of earnings management: the absolute value of discretionary accruals estimated using the modified Jones (1991) model ($|DACC|$) and the absolute value of performance-matched discretionary accruals estimated using the Kothari et al. (2005) model ($|DACC\ adj|$), CEO masculinity (CEO_MAS) and the control variables. All variables are defined in Appendix A.

Variable	Obs.	Mean	SD	p25	p50	p75
$ DACC $	9,973	0.185	0.180	0.056	0.134	0.250
$ DACC\ adj $	9,973	0.154	0.159	0.056	0.116	0.188
CEO MAS	9,973	0.591	0.156	0.520	0.660	0.680
Firm size	9,973	7.732	1.563	6.580	7.554	8.693
Firm age	9,973	25.392	6.041	21.000	28.000	30.000
BTM ratio	9,973	0.488	0.308	0.271	0.424	0.626
Dividends	9,973	0.594	0.491	0.000	1.000	1.000
Profitability	9,973	0.121	0.103	0.062	0.110	0.171
Leverage	9,973	0.203	0.164	0.047	0.197	0.314
Institutional ownership	9,973	0.768	0.156	0.668	0.783	0.886
Analyst coverage	9,973	2.294	0.658	1.833	2.343	2.803
CEO age	9,973	56.208	7.104	51.000	56.000	61.000
CEO female	9,973	0.030	0.172	0.000	0.000	0.000
CEO tenure	9,973	7.112	7.459	2.000	5.000	10.000
CEO duality	9,973	0.541	0.498	0.000	1.000	1.000
CEO equity	9,973	1.902	5.076	0.000	0.322	1.500
fWHR	9,729	2.099	0.173	1.980	2.093	2.210
CEO PDI	9,973	0.389	0.181	0.280	0.350	0.390
CEO IDV	9,973	0.699	0.151	0.670	0.700	0.800
CEO UAI	9,973	0.539	0.211	0.350	0.480	0.650
CEO LTO	9,973	0.519	0.214	0.360	0.510	0.740
CEO IDG	9,973	0.552	0.173	0.400	0.650	0.680
Acquisitions	9,480	0.030	0.064	0.000	0.001	0.026
Excess return	9,957	-0.006	0.221	-0.136	-0.031	0.081
Board independence	8,769	0.773	0.121	0.700	0.800	0.875
Non-audit fees	9,712	0.166	0.140	0.057	0.135	0.242
N blockholders	9,493	2.966	1.556	2.000	3.000	4.000
Dedicated institutional ownership	9,973	2.606	0.643	2.233	2.657	3.032

Table 3. CEO cultural masculinity and earnings management

The table reports the effect of CEO masculinity on accruals quality, measured with $|DACC|$ and $|DACC\ adj|$. Columns (1) and (2) include firm-level control variables and Columns (3) and (4) include both firm- and CEO-level control variables. Appendix A provides definitions of all variables. Robust standard errors are clustered at the CEO-firm level and the corresponding t statistics are reported in parentheses. All regressions include 3-digit SIC industry and year fixed effects. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	$ DACC $	$ DACC\ adj $	$ DACC $	$ DACC\ adj $
CEO MAS	0.023**	0.021**	0.026**	0.023**
	(2.01)	(2.00)	(2.22)	(2.25)
Firm age	0.000	0.000	0.000	0.000
	(1.19)	(0.92)	(1.21)	(0.75)
Firm size	0.001	-0.005*	0.001	-0.005*
	(0.44)	(-1.69)	(0.38)	(-1.75)
BTM ratio	0.004	0.006	0.004	0.005
	(0.59)	(0.91)	(0.60)	(0.78)
Dividends	0.002	-0.007	0.001	-0.009
	(0.38)	(-1.31)	(0.19)	(-1.59)
Profitability	0.040*	-0.018	0.039*	-0.021
	(1.87)	(-0.83)	(1.83)	(-0.96)
Leverage	-0.003	0.008	-0.002	0.009
	(-0.20)	(0.61)	(-0.11)	(0.68)
Institutional ownership	0.004	-0.000	0.006	0.002
	(0.29)	(-0.02)	(0.39)	(0.11)
Analyst coverage	-0.016***	-0.001	-0.016***	-0.001
	(-2.98)	(-0.12)	(-2.99)	(-0.10)
CEO age			0.000	0.001**
			(0.23)	(2.20)
CEO female			0.005	-0.010
			(0.35)	(-0.98)
CEO tenure			0.000	-0.000
			(0.72)	(-0.17)
CEO duality			0.010**	0.006
			(2.46)	(1.43)
CEO equity			-0.000	-0.000
			(-0.14)	(-0.11)
Constant	0.175***	0.171***	0.164***	0.134***
	(8.36)	(8.19)	(6.18)	(4.85)
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
N obs.	9,973	9,973	9,973	9,973
Adj. R-squared	0.441	0.249	0.441	0.250

Table 4. Earnings management around CEO changes

The table reports the estimation results of the effects of CEO cultural masculinity on within-firm variation of earnings management around CEO changes, focusing on a subsample of three years before and three years after CEO changes. In columns (1) and (2), earnings management variables are regressed on CEO masculinity using a subsample of three years before and after CEO changes. Columns (3) and (4) reports the change analysis results. *CEO change* is a dummy variable equal to zero for three years prior to the CEO change and equal to one for three years after the CEO change. $\Delta CEO MAS$ is defined as CEO masculinity after the CEO change minus CEO masculinity before the CEO change. Thus, a higher $\Delta CEO MAS$ means that the firm switches to a more masculine CEO. Firm age in Columns 3 and 4 are absorbed by firm fixed effects. All regressions include firm- and CEO-level controls and firm and year fixed effects. Appendix A provides definitions of all variables. Robust standard errors are clustered at the CEO-firm level and the corresponding *t* statistics are presented in the parenthesis. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	DACC	DACC adj	DACC	DACC adj
CEO MAS	0.045** (2.15)	0.046** (2.12)		
$\Delta CEO MAS$			0.017 (0.80)	-0.004 (-0.18)
CEO change			0.008 (1.08)	0.007 (0.92)
CEO change \times $\Delta CEO MAS$			0.056** (2.40)	0.060*** (2.70)
Firm age	0.011 (0.90)	-0.007 (-0.56)		
Firm size	-0.010 (-0.69)	-0.012 (-0.83)	0.012 (0.98)	-0.006 (-0.48)
BTM ratio	-0.010 (-0.76)	-0.011 (-0.75)	-0.009 (-0.69)	-0.007 (-0.46)
Dividends	0.030 (0.73)	-0.055 (-1.18)	-0.010 (-0.73)	-0.006 (-0.39)
Profitability	-0.007 (-0.20)	0.039 (1.24)	0.027 (0.66)	0.006 (0.13)
Leverage	0.047 (1.24)	0.047 (1.22)	-0.007 (-0.22)	0.024 (0.78)
Institutional ownership	0.001 (1.26)	0.002*** (2.98)	0.047 (1.25)	0.040 (1.03)
Analyst coverage	0.004 (0.31)	0.004 (0.33)	0.002 (0.21)	0.007 (0.65)
CEO age	-0.000 (-0.32)	-0.000 (-0.80)	0.001 (1.15)	0.001 (1.59)
CEO female	0.021 (0.22)	0.087 (0.84)	0.003 (0.19)	-0.003 (-0.27)
CEO tenure	0.008 (1.21)	0.007 (0.95)	-0.000 (-0.24)	-0.000 (-0.23)
CEO duality	-0.001 (-1.51)	0.000 (0.26)	0.009 (1.25)	0.006 (0.88)

CEO equity	0.003 (0.20)	-0.002 (-0.12)	-0.001 (-1.42)	-0.001 (-0.67)
Constant	0.004 (0.31)	0.004 (0.33)	0.019 (0.20)	0.092 (0.88)
Year fixed effects	Yes	Yes	Yes	Yes
Firm fixed effects	Yes	Yes	Yes	Yes
Obs.	3994	3994	3994	3994
Adj. R-squared	0.542	0.347	0.542	0.346

Table 5. CEO cultural masculinity and earnings management: Alternative explanations

The table reports the estimation results of the effects of CEO masculinity on earnings management controlling for the impact of other aspects of CEO cultural heritage (columns (1) and (2)), CEO religion (columns (3) and (4)), and the quality of economic and institutional environment of the CEO's country of ancestry (columns (5) and (6)). All regressions include industry and year fixed effects. Appendix A provides definitions of all variables. Robust standard errors are clustered at the CEO-firm level and the corresponding *t* statistics are presented in the parenthesis. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

<i>Panel A. Controlling for other aspects of CEO cultural heritage</i>						
	(1)	(2)	(3)	(4)	(5)	(6)
	DACC	DACC adj	DACC	DACC adj	DACC	DACC adj
CEO MAS	0.034*** (2.82)	0.039*** (3.23)	0.025** (2.10)	0.029*** (2.60)	0.028** (2.07)	0.035*** (2.73)
CEO PDI	0.004 (0.29)	0.017 (1.09)				
CEO IDV	-0.030 (-1.47)	-0.022 (-1.13)				
CEO UAI	-0.002 (-0.15)	-0.000 (-0.00)				
CEO LTO	0.017 (1.34)	0.013 (0.97)				
CEO ING	0.026 (1.37)	0.032 (1.44)				
CEO agnostic			0.032 (1.03)	0.022 (0.72)		
CEO Buddhist			0.022 (0.85)	0.008 (0.32)		
CEO Christian			0.007 (0.38)	0.003 (0.15)		
CEO Hindu			-0.001 (-0.05)	-0.004 (-0.15)		
CEO Jew			0.012 (0.58)	0.008 (0.35)		
CEO Muslim			-0.005 (-0.15)	0.011 (0.34)		
GDP					-0.009 (-1.25)	-0.007 (-1.08)
School enrol					0.0004** (2.31)	0.000 (1.59)
Life exp					0.002 (1.24)	0.006 (1.42)
Pop growth					0.004 (1.09)	0.002 (1.23)
Market seg					0.067 (0.21)	0.042 (0.13)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	9973	9973	9973	9973	5235	5235
Adj. R-squared	0.441	0.322	0.441	0.322	0.424	0.238
Panel B. Controlling for CEO's facial masculinity						
			(1)		(2)	
			DACC		DACC adj	
CEO MAS			0.021*		0.020*	
			(1.77)		(1.90)	
High fWHR			0.005		0.001	
			(1.12)		(0.16)	
Year fixed effects			Yes		Yes	
Industry fixed effects			Yes		Yes	
Obs.			9425		9425	
Adj. R-squared			0.442		0.251	

Table 6. CEO masculinity and earnings management incentives

The table reports the estimation results of the impact of incentives on the relationship between CEO cultural masculinity and earnings management (measured by $|DACC|$ and $|DACC\ adj|$). The incentives include merger and acquisition (M&A) activities (Panel A) and past firm performance (Panel B). We use lead acquisition expenditures, $Acquisitions_{t+1}$, to capture the firm's M&A activities. We use the average stock returns in excess of CRSP value-weighted returns adjusted for industry-year average in the previous three years to capture firm's past financial performance. Robust standard errors are clustered at the CEO-firm level and the corresponding t statistics are presented in the parenthesis. All regressions include 3-digit SIC industry and year fixed effects. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

<i>Panel A. CEO masculinity and earnings management: Pre-acquisition effects</i>		
	(1)	(2)
	$ DACC $	$ DACC\ adj $
CEO MAS \times Acquisitions _{t+1}	0.286** (2.20)	0.212* (1.72)
CEO MAS	0.015 (1.02)	0.018 (1.40)
Acquisitions _{t+1}	-0.217*** (-2.79)	-0.154** (-2.12)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Obs.	7933	7933
Adj. R-squared	0.434	0.250
<i>Panel B. CEO masculinity and earnings management: Past performance effects</i>		
	(1)	(2)
	$ DACC $	$ DACC\ adj $
CEO MAS \times Excess return _{t-1,t-3}	-0.082* (-1.71)	-0.086* (-1.78)
CEO MAS	0.022** (2.15)	0.025** (2.17)
Excess return _{t-1,t-3}	0.047 (1.58)	0.056* (1.87)
Controls	Yes	Yes
Year fixed effects	Yes	Yes
Industry fixed effects	Yes	Yes
Obs.	9957	9957
Adj. R-squared	0.251	0.442

Table 7. The effect of monitoring

The table reports the estimation results of the effects of CEO cultural masculinity on earnings management for sub-samples by monitoring intensity, our measures for the governance quality. *Board independence* is the percentage of independent directors; we classify firms with more than 75% independent directors as “High” and the rest as “Low” board independence. *Non-audit fees* is the share of non-audit service fees in the total of audit and non-audit service fees. *Blockholder ownership* is the number of institutional shareholders with more than 5% ownership. *Dedicated institutional ownership* is the percentage of institutional investors categorised as “dedicated” based on the definitions of Bushee (1998, 2001). For *Non-audit fees*, *Blockholder ownership* and *Dedicated institutional ownership*, firms with the variable values above the yearly sample median are classified as “High” and the rest as “Low”. Robust standard errors are clustered at the CEO-firm level and the corresponding *t* statistics are presented in the parenthesis. All regressions include 3-digit SIC industry and year fixed effects. ***, **, * denote significance at 1%, 5%, and 10% levels, respectively.

<i>Panel A. Board independence</i>				
	(1)	(2)	(3)	(4)
	DACC		DACC adj	
	High	Low	High	Low
CEO MAS	0.016	0.043***	0.013	0.040***
	(0.88)	(2.85)	(0.85)	(2.78)
Controls	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes
Obs.	5183	3570	5183	3570
Adj. R-squared	0.463	0.463	0.286	0.273
<i>Panel B. Non-audit fees</i>				
	(1)	(2)	(3)	(4)
	DACC		DACC adj	
	High	Low	High	Low
CEO MAS	0.034**	0.016	0.051***	0.005
	(2.34)	(1.07)	(3.35)	(0.34)
Controls	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes
Obs.	4854	4858	4854	4858
Adj. R-squared	0.294	0.218	0.484	0.404
<i>Panel C. Blockholder ownerships</i>				
	(1)	(2)	(3)	(4)
	DACC		DACC adj	
	High	Low	High	Low
CEO MAS	0.003	0.026*	0.006	0.038**
	(0.19)	(1.77)	(0.41)	(2.44)
Controls	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes
Obs.	4446	5031	4446	5031
Adj. R-squared	0.264	0.279	0.439	0.466

<i>Panel D. Dedicated institutional ownership</i>				
	(1)	(2)	(3)	(4)
	DACC		DACC adj	
	High	Low	High	Low
CEO MAS	0.008 (0.63)	0.031* (1.72)	0.009 (0.71)	0.028* (1.70)
Controls	Yes	Yes	Yes	Yes
Industry and Year FE	Yes	Yes	Yes	Yes
Obs.	4983	4972	4983	4972
Adj. R-squared	0.463	0.446	0.295	0.258