



## Article

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# The effect of the CEO's characteristics on EM: Evidence from Jordan

## 1. Introduction

Earnings Management (EM) is an accounting process that managers adopt to manipulate the earnings of the company through accounting choices and discretionary accruals. Over the last two decades, a large number of studies have examined the nuances of how managers manage earnings. In most cases, EM occurs when managers have the flexibility to choose the accounting methods, such as revenue recognition, depreciating expenses and employing discretion in financial reporting, to estimate accruals and to alter financial reports (Healy and Wahlen, 1999). EM behaviour can be classified as: (1) misreporting EM, involving the discretionary accounting of decisions and outcomes already realized; and (2) direct or real EM, involving the strategic timing of investment, sales, expenditure and financing decisions (Degeorge et al., 1999). A considered view suggests that EM involves either aggressive or conservative accounting procedures, used within the GAAP framework to bring about a desired level of reported earnings that often mislead the users of financial information (Davidson III et al., 2007, p. 369). Most previous studies on the relationship between EM and CEOs' individual characteristics (such as gender, age and overconfidence) focus on developed countries (e.g. Davidson III et al., 2007; Hribar and Yang, 2010; Peni and Vähämaa, 2010; Elzahar and Hussainey, 2012; Bozanic et al., 2013). Considering this bias, we examine the relationship between EM practices and CEOs' characteristics in the context of the Middle East and particularly in Jordan.

In Jordan, many studies have examined how corporate governance factors may play a crucial role in monitoring EM practices (e.g. Al-Fayoumi et al., 2010; Abed et al., 2012; Alzoubi and Selamat, 2012; Alzoubi and Liu, 2016). Most found that corporate governance factors have a positive effect on monitoring the practices. Other studies empirically examined the practice of EM in Jordan. For example, Al-Momani (2006) found that most managers who engage in EM by take advantage of the flexibility available in the accounting standards. Hamad and Abu-Nassar (2013) examined the income-smoothing effect of EM on the market return among Jordanian service and industrial companies, and identified the effect of EM practice on market returns. The key research question is: What is the influence of the CEO's personal characteristics on EM practices among non-financial companies listed on the ASE?

Our study examines the impact of CEOs' personal characteristics on EM, unlike earlier research which attempted to explain the relationship between EM practices and a variety of different factors. For example, Ji et al. (2015) investigated the effect of corporate governance and ownership reforms on earnings quality in China. Hu et al. (2015) examined the impact of

managerial tenure on EM among Chinese companies. Alzoubi and Liu (2016) studied the relationship between ownership structure and EM among Jordanian companies. Thus, we contribute to the literature by providing another piece of evidence that personal managerial attributes influence EM practices.

The results of our empirical study indicate that CEO overconfidence affects EM practices. We used a sample of 201 non-financial Jordanian companies with 1,206 company-year observations, running different panel regressions of EM on a set of CEO characteristics and company-specific control variables. Our findings suggest that overconfident CEOs tend to engage in a high level of EM practices; this may be because they are less under the influence of stakeholders and regulators' attempts to mitigate EM practices (Hsieh et al., 2014). The findings are consistent with the notion that overconfidence encourages managers to make more optimistic forecasts about the future of the company. Our results are broadly consistent with the previous findings (Hribar and Yang, 2010; Schrand and Zechman, 2012; Hsieh et al., 2014). However, we found no association between the CEO's gender and EM practices, consistent with the findings of (Peni and Vähämaa, 2010).

Shedding light on the relationship between CEOs' characteristics and EM practices, ours is the first such study on the Jordanian market. We expect the findings to be valuable to users of financial information and policy makers who are interested in increasing the reliability of financial reporting. This paper is divided into several sections. Section 2 a discussion of theoretical frameworks and reviews of the literature, which lead to hypothesis development. Section 3 explains the study model. Section 4 provides details of the data and research methods. Section 5 presents the findings, followed by conclusions.

## **2. Theoretical framework and the development of a hypothesis**

A conflict of interest between agents and principals exists when agents (managers) undertake opportunistic actions to achieve their goals (Jensen and Meckling, 1976). Information asymmetry arises from this conflict of interests and motivates managers to engage in EM (Davidson et al., 2004; Jiraporn et al., 2008). Moreover, authors such as Trueman and Titman (1988) and Richardson (2000) have found a positive relationship between EM and asymmetric information, which indicates that the higher the level of asymmetry, the greater the possibility of EM activity. Similarly, Christie and Zimmerman (1994) reported that EM through accounting accruals is a sign of a conflict of interest in a manager's decision making. In short, EM is considered as a by-product of the conflict of interest between ownership and managers that is ultimately disadvantageous to the company.

Liu and O'Farrell (2011) examined the impact of IFRS on EM among Chinese companies. Their findings indicate that EM has decreased in China since 2007 under the new set of standards. Waresul Karim et al. (2013) examined the link between three corporate governance characteristics (CEO-Chair duality, foreign equity participation and board ownership) and the audit quality choice made by IPO firms in Bangladesh. Their findings show that CEO-Chair duality and the degree of foreign equity participation are significant determinants of auditor choice, but that board ownership is not.

The last decade has seen a growth in research on the topic of managerial characteristics. According to Shefrin (2001), the physiological and sociological characteristics of managers may have an effect on various management decisions. Other studies show that CEOs' personal

characteristics influence different decisions, for example the CEO's gender and risk-taking attitude (e.g. Byrnes et al., 1999), the CEO's age and investment decisions (e.g. Li et al., 2011; Serfling, 2012), the CEO's age and voluntary financial disclosure choices (Bamber et al., 2010), the CEO's overconfidence and corporate acquisitions (e.g. Brown and Sarma, 2007), the CEO's overconfidence and capital structure decisions (Tomak, 2013), the CEO's overconfidence and earnings forecast (Schrand and Zechman, 2012), and the CEO's overconfidence and voluntary disclosure (e.g. Hirshleifer et al., 2012; Andriosopoulos et al., 2013). Nevertheless, the relationship between a CEO's personal characteristics and EM practices remains ambiguous and controversial. As such, the focus of the present study is to acquire an understanding of whether specific characteristics, namely gender, age and overconfidence, influence EM practices.

Previous studies claim that gender is likely to have an influence on a company's decisions (Peni and Vähämaa, 2010; Abdul Hameed and Counsell, 2012). Several feminist economists argue that women are more inclined to be neutral in moral judgments and behaviour than are men (Nelson, 1996; Collins, 2000), while Barber and Odean (2001) and Nelson (2012) find them, on average, more inclined to be risk-averse than men in decision making. Hansemark (2003) provides evidence of a difference between men and women when taking decisions regarding starting a new business; Barber and Odean (2001) report that males tend to be more overconfident than females; and Dowling and Aribi (2013) find that women appear to be less overconfident in their decision-making regarding the level of acquisitiveness of a company.

By the same token, a number of studies examine the effect of CEOs' characteristics on EM practices (Geiger and North, 2006; Jiang et al., 2008; Matsunaga and Yeung, 2008; Peni and Vähämaa, 2010). For instance, Peni and Vähämaa (2010) studied the association between the gender of company executives and EM among US S&P 500 firms, their results showing that companies with female CFOs are related to income-decreasing discretionary accruals. Nonetheless, Peni and Vähämaa (2010) found no connection between CEOs' gender and EM. Conversely, Gaviious et al. (2012) found a negative relationship between the presence of females on the board and EM practices, and that EM is lower in companies with a female CEO/CFO. Srinidhi et al. (2011) provide evidence that the presence of women on the board of directors improves earnings quality. Similarly, Krishnan and Parsons (2008) found that companies with a higher percentage of females in top management are more likely to improve the quality of reported earnings than those with a lower percentage of female executives. Thus, female CEOs may have higher moral standards and be more trustworthy than male CEOs, and therefore be less likely to engage in EM or to manipulate corporate financial disclosures (Heminway, 2007). In addition, organizational theory indicates that females in business are associated with better organizational performance, as they make more rational decisions (Gul et al., 2011). The ethical behaviour in the workplace of both women and men has been widely examined, proposing that females and males display distinct differences in values and interests and in their tendency to become involved in unethical business activities (Gilligan, 1982; Betz and Boreiko, 1989). Males are more concerned with financial benefits and a successful profession, and are more likely to bend the rules or even break the law to attain competitive success, while females lean more towards appropriate relationships and helping people, and are less likely to engage in unethical issues (Betz and Boreiko, 1989; Mason and Mudrack,

1996). Therefore, from the perspective of organizational theory and the findings of the studies mentioned above, the first hypothesis developed for this study is as follows:

*H1: There is a positive relationship between male CEOs and EM practices.*

Some studies have attempted to explain the relationship between a CEO's age and decision-making processes. For example, Serfling (2012) assumes that older CEOs invest less than younger ones because the latter are more prone to take risks: experience grows with age. Serfling (2012) also argues that CEOs' age has a significant impact on corporate financial decisions because younger CEOs do not have a previous record related to accomplishments. Similarly, Prendergast and Stole (1996) and Li et al. (2011) reported that younger CEOs are likely to make more investment decisions than older ones because they want to demonstrate their capability to stakeholders. Miller and Shamsie (2001), however, find that older CEOs tend to take more decision investments than younger CEOs. There is also evidence that the CEO's age has a significant effect on mergers and acquisitions (Yim (2013). Lin et al. (2014) found a significant negative relationship between CEOs' age and internal control quality. On the other hand, Bamber et al. (2010) reported that managers born before World War II are more likely to have developed conservative communication styles than managers born after the war.

Davidson III et al. (2007) investigated whether CEOs' age and career horizon affect EM practices. Their findings indicate that companies with older CEOs, those nearing retirement, are associated with EM practices, as they are more interested in their current company's performance and less concerned about the future, aiming to maximize their own wealth or pension. In addition, the upper echelons theory suggests that specific personal characteristics of top management affect the decision-making process. Based on this fundamental theory, we expect a relationship between the CEO's age and EM practices.

Building on the above discussion, we propose our second hypothesis as:

*H2: There is a positive relationship between a CEO's age and EM practices.*

According to the upper echelons theory, the senior manager's personal characteristics affect judgment and decision making, and among these characteristics is overconfidence (Hambrick and Mason, 1984). Overconfidence is the tendency of individuals to consider themselves above average (Alicke, 1985; Kruger, 1999). Weinstein (1980) and Alicke (1985) reported that overconfidence is often seen in managers. The influence of CEOs' overconfidence on corporate decisions has received significant attention in the academic literature; for example, Malmendier and Tate (2008) and Frank and Goyal (2009) documented that CEO overconfidence might have a significant influence on the variation in leverage across companies. Similarly, Malmendier et al. (2011) found that CEO overconfidence influences investment decisions. Ahmed and Duellman (2013) suggested that overconfident managers are more likely to be over-optimistic about their firm's future performance and overestimate their own capacity to maximize future earnings.

Schrand and Zechman (2012) found a positive relationship between CEOs' overconfidence and financial reporting fraud, arguing that overconfident managers are more likely to engage in fraudulent practices. Hribar and Yang (2010) indicated that there is a positive relationship between overconfidence and the likelihood of greater EM. Based on the studies of the effect of managers' overconfidence on decision-making processes in general, and EM in particular, and

consistent with the idea that overconfident managers are considered risk takers (Malmendier and Tate, 2005a) who are more likely to disclose overestimated information and to underestimate risks, this study is motivated to examine whether CEO overconfidence influences EM practices. We expect a positive association between CEOs' overconfidence and EM practices:

*H3: There is a positive relationship between CEOs' overconfidence and EM practices.*

### **3. The model**

This study employs panel regression models (Haniffa and Cooke, 2005; Yip et al., 2011; Wang and Hussainey, 2013) rather than pooled regression, for several reasons. For example, the major problem of pooled regression is that it does not distinguish between various companies and times, unlike panel data which offers appropriate models for time-series studies. To examine the relationship between CEOs' characteristics and EM practices, we use the random effect model:

$$EM_{it} = \beta_0 + \beta_1 CGEN_{it} + \beta_2 CAGE_{it} + \beta_3 COVER_{it} + \beta_4 FSIZE_{it} + \beta_5 FPROF_{it} + \beta_6 FINDU_{it} + \beta_7 FDIVID_{it} + \beta_8 FLEVER_{it} + \varepsilon_{it}$$

Where

$EM_{it}$  = earnings management of company  $i$  in year  $t$ , expressed as a percentage.

$\beta$  = the constant.

$CGEN$  = CEO's gender, taking the value one if CEO is male, and zero if female.

$CAGE$  = CEO's age, measured by the difference between the CEO's date of birth and the year of the study period.

$COVER$  = CEO overconfidence, the proportion of CEO share ownership, options, and stock exercise.

$FSIZE$  = company size, the natural log of the company's total assets.

$FPROF$  = profitability, measured by ROI (net income before tax divided by total assets).

$FINDU$  = industry type, a dummy variable that takes the value one if the company is operating in industrial sectors and 0 otherwise.

$FDIVID$  = dividends ratio (measured as cash dividends divided by net income for the same period).

$FLEVER$  = leverage ratio (measured as a total debt divided by total assets).

$E$  = residual error.

### **4. Research Method**

#### *4.1. Sample and data selection*

The ASE lists 270 financial and non-financial companies divided into three main sectors: financial, industrial and service. Following previous studies, all financial companies (42 companies) are excluded from the initial sample as they are subject to specific laws and regulations which might affect the results (e.g. Abed et al., 2011; Mathuva, 2012; Akhtaruddin, 2005). In addition, companies with missing data have been removed from the initial sample. Thus, the final sample consists of 201 ASE listed companies. The study covers the fiscal years 2008-2013, with 1,206 firm-year observations. Jordanian companies were selected as Jordan offers an appropriate as well as an attractive setting because of its characteristic financial reporting system and socio-economic environment. Also, the Jordanian capital market, as in

other developing countries, consists of a relatively large proportion of family-controlled companies. In Jordan, the practice of corporate governance began in 2007; the Jordanian corporate governance code number 15 requires that all listed companies are required to increase the credibility and transparency of financial reporting, by adopting the IFRS. Data have been collected from the companies' annual financial reports available on their websites. Tables I and II report the distribution of sample companies by sector.

### **Insert Table I**

### **Insert Table II**

#### *4.2. Dependent variable – EM*

The literature suggests that managers tend to manage earnings through accruals, since it is easier to manipulate them and harder to be observed by outsiders (Jones, 1991; Dechow et al., 1995; Kothari et al., 2005). In this study, we use the Jones Model (1991) and the Modified Jones Model (1995) as the main proxies to detect EM; as a robustness check, we also employ the model of Kothari et al. (2005). The study uses the absolute value of discretionary accruals, rather than signed discretionary accruals, as we are interested in capturing the extent of EM, and using signed discretionary accruals rather than absolute value does not alter the outcomes from the analysis (Raman and Shahrur, 2008).

The following regression equations are applied to measure current accrual:

The cross-sectional Jones Model (1991):

$$TAC_{it} = \alpha (1 / TA_{it-1}) + \beta_1 (\Delta REV_{it} / TA_{it-1}) + \beta_2 (PPE_{it} / TA_{it-1}) + \varepsilon_{it}$$

The cross-sectional Modified Jones Model (1995):

$$TAC_{it} / A_{it-1} = \alpha (1 / TA_{it-1}) + \beta_1 (\Delta REV_{it} - \Delta REC_{it}) / A_{it-1} + \beta_2 (PPE_{it} / A_{it-1}) + \varepsilon_{it}$$

Where:

TAC<sub>it</sub> = total accruals

TA<sub>it-1</sub> = the book value of total assets of company i at the end of year t-1

$\Delta REV_{it} / TA_{it-1}$  = sales revenues of company i in year t deducted revenues in year t-1 scaled by TA<sub>it-1</sub>

$\Delta REC_{it}$  = change in accounts receivables

$PPE_{it} / TA_{it-1}$  = gross property, plant and equipment of company i at the end of year t scaled by TA<sub>it-1</sub>

$\alpha, \beta_1, \beta_2$  = estimated parameters

$\varepsilon_{it}$  = the residual.

#### *4.3. Independent variables – CEO's characteristics*

The first characteristic is gender, which is a dummy variable with the value of one if the CEO is male and zero otherwise (e.g. Nalikka, 2009; Andriosopoulos et al., 2013). Age is measured by the difference between the CEO's date of birth and the year of the study period (Prendergast and Stole, 1996; Serfling, 2014). For the CEO's overconfidence, several authors have built up various kinds of proxy. For example, Oliver (2005) estimated it using a consumer sentiment index, based on a monthly telephone survey to gather information regarding consumer perceptions about overall economic conditions; it considered opinions about both current

economic conditions (40% of the index), and future perceptions (60%). Baker and Wurgler (2011) used an investors index as a proxy for overconfidence, but limited data made this proxy unsuitable to determine CEO overconfidence in the current study.

Other researchers argue that an overconfident CEO can significantly influence their debt/equity choice, and he/she will choose to issue more debt than their rational peers do (e.g. Ben-David et al., 2007; Hackbarth, 2008). This occurs because the biased CEO believes that the firm is less likely to experience financial distress than it actually does (Hackbarth, 2008). In Fairchild's (2005) asymmetric information model, overconfidence leads to excessive use of debt (Oliver and Mefteh, 2010). In the same vein, Malmendier et al. (2007) indicate that overconfident managers use a higher level of debt than rational managers. Thus, they will underestimate the expected cost of bankruptcy and will take on more debt to exploit its tax benefits. This method has its weaknesses as many factors determine the capital structure of a company (Doukas and Petmezas, 2007). Also, some researchers used the entrepreneurial status of a manager to indicate the degree of overconfidence, arguing that people who are entrepreneurs have a greater tendency towards overconfident behaviour (Barros and Silveira, 2009). Campbell et al. (2011) and Andriosopoulos et al. (2013) estimated CEO overconfidence by a late option exercise, which is a dummy variable that takes the value one for those CEOs who have held an option at any time during the sample period until its expiry, otherwise zero.

Malmendier and Tate (2005a, 2005b) developed four different types of overconfidence measurement: i) Long Holder, ii) Holder 67%, iii) Net Buyer, and, iv) Press assessment of CEOs. The first three of these measurements (Malmendier & Tate, 2005a) were based on the personal portfolio decisions of CEOs. Long Holder and Holder 67% use the timing of the option exercises to identify the CEO's overconfidence, while Net Buyer uses the habitual acquisition of stock and options of the company. The Long Holder and Holder 67% measures both require comprehensive information about the CEO's personal portfolio transactions in the firm's stock and options (e.g. time, investment period of each CEO option package and exercise price). The Net Buyer measure was based upon the acquisition of the stock and options of the company. Malmendier and Tate (2005a) used the tendency of CEOs to purchase additional company stock, even if already exposed to company risk; if, during the sampling period, a CEO is a net purchaser of the stock and options of their own company, then the Net Buyer dummy variable is one; otherwise it is zero. The fourth measurement (Malmendier & Tate, 2005b) is based on the press assessment of CEOs, with a CEO being classed more overconfident if described by a greater number of adjectives such as confident or optimistic than those implying a conservative nature, such as reliable, cautious, practical, frugal and steady. The shortcoming of this approach is that the data can be very limited, as every article needs to be verified. The current study will therefore judge overconfidence by using the Net Buyer method, based on whether they were net buyers of the stock of their own companies in the initial six years of the sample. Overconfidence is defined here as being overconfident for all the relevant years. A dummy variable was established with one representing overconfidence and zero otherwise.

#### *4.4. Control variables – Company characteristics*



Following earlier work (Kent and Ung, 2003; Luo et al., 2006; Lim et al., 2007), this study adds several control variables to the analysis model: company size, measured by the natural logarithm of the company's total assets; and profitability measured as return on assets (net income divided by total assets) (Campbell and Mínguez-Vera, 2008). Company types are a dummy variable that takes the value one if the company is operating in the industrial sector and 0 otherwise (Peni and Vähämaa, 2010). The dividends ratio is measured as cash dividends divided by net income for the same period, and the leverage ratio as total debt divided by total assets.

## **5. Results**

### *5.1 Descriptive analysis*

Table III shows the descriptive analysis; the minimum EM, according to the modified Jones model, Jones model, and Kothari model is 0.001, 0.000 and 0.008 respectively, and the maximum values are 0.925, 0.870 and 0.826, indicating a considerable dispersion in the rates; the mean values are 0.097, 0.098 and 0.110. In addition, the median values are 0.060, 0.061 and 0.059 with a standard deviation of 0.112, 0.114 and 0.110. This study employed the median value as a benchmark to classify high and low levels of EM. In addition, the table shows that 95 per cent of the sample companies are managed by male CEOs, leaving only 5 per cent managed by females; this is an interesting finding which is close to the percentages obtained in the United States and United Kingdom (females both 6 per cent) and in Ireland, New Zealand and United Arab Emirates (5 per cent) (Grant Thornton International Business Report 2012). However, this is not surprising since the majority of Jordanian companies are owned by families. In terms of the CEO's age, the mean value is 51.041 with minimum and maximum 26 and 84 respectively, and a median value of 51; this study uses median age as the cut-off point between older and younger CEOs.

The results further reveal that 41 per cent of CEOs were overconfident about their companies' future performance. Regarding the control variables, company size determined as the natural logarithm of total assets has a mean of 1,801,419, minimum 1,293,032 and maximum 28,802,374, indicating a wide range of company size. Profitability varies between a minimum value of -86 per cent (Loss) and maximum 95 per cent (Profit), with standard deviation 12 per cent. The mean value of industry type is 39 per cent which indicates that 39 per cent of the sample companies operate in the industrial sector. Dividend ratio has a mean value of 18.8 per cent, ranging from 0 to 97.5 per cent; the median value is 0 with standard deviation 30.7 per cent. Table III also shows that the mean value of leverage ratio is 29.5 per cent, minimum and maximum values are 0.0002 and 0.9780 respectively; correspondingly the median value is 24 per cent with a standard deviation of 23.2 per cent.

### **Insert Table III**

Before conducting the regression analysis, we tested whether there was an econometric problem in the model used to examine the impact of CEOs' characteristics on EM practices.

As a first step, the multicollinearity problem was tested by using correlation matrices. Table IV shows that the highest correlation is between the dividend ratio and company's profitability, with a coefficient of 37 per cent. According to Gujarati (2008) a coefficient of  $\pm 80$  per cent is considered as the point at which serious multicollinearity problems might exist and harm the results of the regression analysis. Therefore, this problem does not exist among the data set used in this model. The variances inflation factors (VIF) results presented in Table V confirm that there is no multicollinearity problem.

**Insert Table IV**

**Insert Table V**

## *5.2. Panel Regression results*

### *5.2.1. Full sample regression analysis*

The relationship between CEOs' personal characteristics and EM practices is examined with cross-sectional panel regressions, following previous studies (Campbell and Mínguez-Vera, 2008; Peni and Vähämaa, 2010). Panel data is considered an appropriate model for time-series studies because it distinguishes between companies and varies over time, allowing us to remove any unobservable heterogeneity among our sample (Himmelberg et al., 1999). However, some econometric issues needed to be addressed, relating to panel data. First, Breusch and Pagan's LM test was used to evaluate the fit of the data panel and pooled models. The result of the test is highly significant at the 1 per cent level, and panel data is more appropriate (Gujarati, 2008). However, panel data models can be specified as fixed or random effects that help to capture the impact of companies and time-specific heterogeneities. To decide between them, we performed the Housman test. The outcome was not significant ( $P = 0.718$ ), and hence we could not reject the null result of random effects. Consequently, we use the random effects model.

Again, the Pesaran CD test was employed to check whether this model has serial correlation. The test result was not statistically significant ( $P = 0.383$ ) meaning that there is no serial correlation across entities. The Modified Wald test outcome ( $P = 0.621$ ) indicated no heteroscedasticity in our model. The results of our random-effects panel regression analysis are presented in Table VI. The estimates are presented in three panels: Panel A reports the results of the regressions where the discretionary accruals are determined by the Modified Jones Model (1995), Panel B by the Jones Model (1991), and Panel C by the Kothari et al. (2005) Model. Regression analysis reveals that the values of  $R^2$  overall for the three models are relatively small: 0.21, 0.18 and 0.11 respectively. This indicates that the combination of the independent variables demonstrates 0.21, 0.18 and 0.11 of variation of the dependent variable. Nevertheless, it should be noted that low  $R^2$  values are typical in this type of accruals regression (e.g. Davidson III et al., 2007; Jenkins and Velury, 2008; Peni and Vähämaa, 2010). Table VI also shows that the models are highly significant at the 0.015, 0.013 and 0.005 levels in the

three panels, implying that these models are highly significant and thus have a good explanatory power of disclosure.

The results of the regression coefficients are presented in the same Table VI, showing the impact of CEO characteristics on EM practices. No relationship is observed between gender and EM practices, as the estimated coefficient for gender appears statistically insignificant; this result is consistent with previous studies (Rose, 2007; Peni and Vähämaa, 2010). Nonetheless, the lack of a significant relationship may simply be a result of the extremely small number of female CEOs in Jordanian companies. Thus, H1 is rejected. Similarly, the estimation results of regression analysis indicate no relationship between age and EM practice. This result does not support our hypothesis H2; hence, the formulated H2 must be rejected. However, the regression results indicate that overconfidence is positively significant with EM at levels ( $P = 0.024$ ) and ( $P = 0.057$ ) based on the Modified Jones and Jones Models, while the Kothari Model shows overconfidence is positively significant with EM at level ( $P = 0.089$ ). This finding is consistent with previous literature (e.g. Hribar and Yang, 2010; Schrand and Zechman, 2012), suggesting that CEOs' overconfidence is more likely to result in EM, and that overconfident CEOs are more likely to be risk takers (Malmendier and Tate, 2005a). This result supports H3, of a positive significant relationship between CEO overconfidence and EM practices. Hence, H3 is accepted.

Our analysis includes some control variables. For example, the regression results indicate that company size has a significant negative association with EM practices. Small firms are subject to less pressure from authority, and consequently, managers have more incentive to engage in EM practices. This finding is also consistent with many studies (e.g. Haniffa and Cooke, 2005; Celik et al., 2006; Lim et al., 2007; Kelton and Yang, 2008). Conversely, profitability, industry type, dividend ratio and leverage ratio are found to have an insignificant influence on EM practices. Regression results disprove any relationship between these variables and EM practices.

## **Insert Table VI**

### *5.2.2. Family and non-family sample*

According to the literature, discretionary accruals are higher in family companies than in non-family firms (Wang, 2006), since the family-controlled companies are more likely to have higher profits than non-family companies (Ali et al., 2007; Jaggi et al., 2009; Almeida-Santos et al., 2013). However, the literature shows that most of these studies were conducted in developed countries, and no single study has been conducted in the Middle East region. This study is therefore motivated to examine the role of CEO characteristics in EM practices in family-controlled companies, a central issue in Jordan since a large proportion of companies are family-controlled. To this end, further analyses were performed, with the sample divided into two groups, family and non-family companies, using the Companies Control Department classification, 73 (36 per cent) non-family companies and 128 (64 per cent) family companies were listed on the ASE over the period 2008-2013. The estimation results of our random-effects

panel regression analysis are presented in Table VII, revealing insignificant relationships between CEOs' personal characteristics and EM practices among the non-family group. Conversely, Table VIII shows a high positive relationship between CEOs' overconfidence and EM practices among family companies, consistent with the findings of Fan and Wong (2002). This relationship might be due to a weak monitoring process among family companies. In most family companies, managers are either members of the controlling family or closely related to it; this close association may direct managers to manage earnings to achieve the goals of the controlling family at the expense of the wealth of minority shareholders. Table 8 also shows a significant negative relationship between EM practices and company size.

**Insert Table VII**

**Insert Table VIII**

## **6. Conclusions**

In this paper, our objective was to investigate the effect of CEOs' personal characteristics on EM practices. We used a sample of 201 non-financial Jordanian listed companies for the fiscal years 2008 to 2013, totalling 1,206 company-year observations. We focused on the CEO's gender, age and degree of overconfidence as personal characteristics, employing random-effects panel data regressions. The empirical tests indicate that CEO overconfidence has a positive and significant association with EM practices. These results are consistent with upper echelons theory. A possible explanation for these findings is that overconfident managers are more likely to issue further optimistic management forecasts, which will put them in a risky position in meeting forecasts for the future. Nevertheless, the results of our empirical analysis indicated no relationship between CEOs' gender, age and EM practices among Jordanian companies.

This study contributes to the literature by investigating the effect of CEOs' personal characteristics on EM practices. Furthermore, it introduces new empirical evidence that managers in family companies are more likely to engage in EM practices than are managers of non-family companies. Our empirical results illustrate which of the CEOs' characteristics affect their decision-making process and consequently the financial reporting process. The reported earnings numbers should closely reflect the reality of a company's financial activity during the reporting period, so our findings could be valuable for a number of users of financial information, such as regulators, investors, auditors and lenders, assisting them to make the right decisions about the firm's future performance. For regulators, consideration of these characteristics could be relevant to the on-going improvement of corporate governance and financial reporting. Our findings are also important for board directors when considering the benefits and costs of managers, because their characteristics affect not only the company's performance but also influence financial reporting decisions. The findings may have implications for other emerging markets, and also for financial companies. Future studies could examine in depth the reasons why managers of family companies are more likely to engage in EM practices.

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**Table I.** Sample Selection procedure for the study period

Description	2008	2009	2010	2011	2012	2013	Pooled
Initial Sample	270	270	270	270	270	270	1620
Excluded:							
Financial industries	42	42	42	42	42	42	(252)
	228	228	228	228	228	228	1326
Sectors with six or fewer firms							
Health Care	4	4	4	4	4	4	24
Technology and Communication	1	1	1	1	1	1	6
Media	2	2	2	2	2	2	12
Paper and Cardboard	3	3	3	3	3	3	18
Utilities and Energy	3	3	3	3	3	3	18
Printing and Packaging	1	1	1	1	1	1	6
Tobacco and Cigarettes	2	2	2	2	2	2	12
Glass and Ceramic Industries	1	1	1	1	1	1	6
(102)							
Firms with unavailable data	10	10	10	10	10	10	(60)
Final Sample	201	201	201	201	201	201	1206

**Table II.** Final distribution of the sample by type

Description	Number	Percentage
Educational services	26	12.93%
Hotels and Tourism	38	18.90%
Transportation	23	11.44%
Commercial Services	41	20.39%
Pharmaceutical and Medical industries	12	5.97%
Chemical industries	15	7.46%
Food and Beverages	17	8.45%
Mining and Extraction industries	14	6.96%
Engineering and Construction	6	2.98%
Textiles, leather, and clothing	9	4.47%
Total	201	100%

**Table III.** Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Median	Std. Deviation
EM modified	1206	0.001	0.925	0.097	0.060	0.112
EM Jones	1206	0.000	0.870	0.098	0.061	0.114
EM Kothari	1206	0.008	0.826	0.110	0.059	0.110
CGEN	1206	0	1	0.951	1	0.214
CAGE	1206	26	84	51.041	51	11.266
COVER	1206	0	1	0.405	0	0.491
FSIZE	1206	1293032	28802374	1801419	601.5	345.8517
FPROF	1206	-85.90%	95%	0.0012	0.11	0.1217
FINDU	1206	0	1	0.388	0	0.4875
FDIVID	1206	0	0.9751	0.1882	0	0.3077
FLEVER	1206	.0002	0.9780	0.2950	0.240	0.2320

*Notes:* Where: *EM modified* = the absolute value of discretionary accruals as a measure of the degree of EM using the modified Jones model. *EM Jones* = the absolute value of discretionary accruals as a measure of the degree of EM using the original Jones model. *EM Kothari* = the absolute value of discretionary accruals as a measure of the degree of EM using the Kothari model. *CAGE* = CEO's age. *CGEN* = CEO's gender, 1 if male, and 0 if female. *COVER* = CEO overconfidence, the proportion of CEO share ownership, options, and stock exercise. *FLEVER* = leverage ratio used as another proxy for CEO overconfidence. *FSIZE* = firm size, the natural log of a firm's total assets. *FPROF* = profitability, measured by ROA, return on assets (net income before tax divided by total assets). *FINDU* = industry type, a dummy variable, 1 if the company is operating in the industrial sector and 0 otherwise. *FDIVID* = dividends ratio (measured as cash dividends divided by net income for the same period). *FLEVER* = leverage ratio (measured as total debt divided by total assets)

**Table IV.** Correlation Matrix

Variables	CGEND	CAGE	COVER	FSIZE	FPROF	FINDU	FDIVID	FLEVER
CGEND	1.0000							
CAGE	0.0479*	1.0000						
COVER	-0.0748**	-0.1483**	1.0000					
FSIZE	-0.0332	-0.0180	0.0148**	1.0000				
FPROF	-0.0446	0.0167	-0.0079	0.0199	1.0000			
FINDU	-0.1073**	-0.0126**	0.0078	-0.0347**	-0.0055*	1.0000		
FDIVID	-0.0213	0.0927**	0.1170**	0.0688**	0.3714**	0.0034	1.0000	
FLEVER	0.0668*	-0.1524**	0.2061**	0.0326	-0.1563**	-0.0246	0.0347	1.0000

**Notes:** \*\*. Correlation is significant at the 0.01, \*. Correlation is significant at the 0.05

**Table V.** VIF results

Variables	VIF	1/VIF
FDIVID	1.21	0.826216
FPROF	1.20	0.830191
FLEVER	1.11	0.903875
COVER	1.09	0.921649
CAGE	1.06	0.944271
CGEND	1.03	0.968654
FINDU	1.02	0.981246
FSIZE	1.01	0.989800
Mean VIF	1.09	

**Table VI. Regression Results for EM and CEO's characteristics full sample**

Panel A. modified Jones1995					Panel B. Jones1991			
Variables	Pred.sign	Coefficient	t	Prob.	Pred.sign.	Coefficient	t	Prop.
CGEN	+	.0084	0.50	0.616	+	.0125	0.73	0.466
CAGE	-	.0001	0.58	0.561	-	.0002	0.08	0.938
COVER	+	.0161	2.26	0.024**	+	.0138	1.90	0.057*
FSIZE	-	-5.372	-2.17	0.030**	-	-5.611	-2.21	0.027**
FPROF	-	-.0181	-0.63	0.528	-	-.0145	-0.50	0.618
FINDU	?	.0001	0.02	0.986	?	.0009	0.10	0.921
FDIVID	-	.0039	0.34	0.734	-	.0083	0.71	0.475
FLEVER	+	-.0039	-0.26	0.795	+	-.0028	-0.18	0.854
Cons		.0238	3.22	0.001		.02434	3.38	0.001
Adjusted $R^2$	0.21				Adjusted $R^2$		0.18	
$F$ Value	12.998				$F$ Value		11.041	

  

Panel C. Kothari et al. (2005) Model				
Variables	Pred.sign	Coefficient	t	Prob.
CGEN	+	.0110	0.67	0.504
CAGE	-	.0003	0.11	0.911
COVER	+	.0119	1.70	0.089*
FSIZE	-	-4.561	-1.89	-0.059*
FPROF	-	-.0123	-0.44	0.663
FINDU	?	.0044	0.50	0.615
FDIVID	-	.0016	0.15	0.884
FLEVER	+	-.0002	-0.00	0.999
Cons		.0233	3.38	0.001
Adjusted $R^2$	0.11			
$F$ Value	8,134			

**Table VII.** Regression Results for EM and CEO's characteristics among non-family companies

Panel A. modified Jones1995					Panel B. Jones1991			
Variables	Pred.sign	Coefficient	t	Prob.	Pred.sign.	Coefficient	t	Prop.
CGEN	+	.02194	0.94	0.345	+	.01835	0.77	0.439
CAGE	-	.0013	0.33	0.741	-	-.0007	-0.18	0.856
COVER	+	.0144	1.48	0.138	+	.0111	1.12	0.262
FSIZE	-	-2.6911	-1.26	-0.206	-	-2.7911	-1.28	-0.201
FPROF	-	-.0224	-0.59	0.556	-	-.0278	-0.72	-0.474
FINDU	?	.01229	0.78	0.433	?	.0098	0.78	0.437
FDIVID	-	-.0040	-0.28	0.783	-	.0008	0.06	0.952
FLEVER	+	-0.1424	-0.64	0.521	+	-.0181	-0.80	-0.425
Cons		.0334	1.44	0.150		.0342	1.90	0.057
Adjusted $R^2$		0.16			Adjusted $R^2$		0.11	
$F$ Value		5,360			$F$ Value		6.201	

  

Panel C. Kothari et al. (2005) Model				
Variables	Pred.sign	Coefficient	t	Prob.
CGEN	+	.0143	0.63	0.528
CAGE	-	.0048	0.12	0.906
COVER	+	.0056	0.59	0.557
FSIZE	-	-2.2811	-1.07	-0.286
FPROF	-	-.0191	-0.52	-0.605
FINDU	?	.0122	0.95	0.340
FDIVID	-	-.0016	-0.12	-0.907
FLEVER	+	-.0121	-0.55	-0.580
Cons		.0333	1.84	0.066
Adjusted $R^2$	0.13			
$F$ Value	8,113			



**Table VIII.** Regression Results for EM and CEO's characteristics among family companies

Panel A. modified Jones1995					Panel B. Jones1991			
Variables	Pred.sign	Coefficient	t	Prob.	Pred.sign.	Coefficient	t	Prop.
CGEN	+	-.0010	-0.05	0.962	+	.01835	0.77	0.439
CAGE	-	.0001	0.32	0.749	-	-.0007	-0.18	0.856
COVER	+	.1144	1.48	0.038*	+	.0111	1.12	0.042*
FSIZE	-	-2.6911	-1.26	-0.056*	-	-2.7911	-1.28	-0.05*
FPROF	-	-.0224	-0.59	0.556	-	-.0278	-0.72	-0.474
FINDU	?	.01229	0.78	0.433	?	.0098	0.78	0.437
FDIVID	-	-.0040	-0.28	0.783	-	.0008	0.06	0.952
FLEVER	+	-0.1424	-0.64	0.521	+	-.0181	-0.80	-0.425
Cons		.0334	1.44	0.150		.0342	1.90	0.057
Adjusted $R^2$		0.20			Adjusted $R^2$		0.20	
$F$ Value		8,364			$F$ Value		8.201	
Panel C. Kothari et al. (2005) Model								
Variables	Pred.sign	Coefficient.	t	Prob.				
CGEN	+	.0228	1.07	0.727				
CAGE	-	-.0002	-0.08	-0.945				
COVER	+	.01726	2.03	0.042*				
FSIZE	-	-1.221	-2.90	-0.004**				
FPROF	-	.0202	0.58	0.565				
FINDU	?	-.0067	-0.65	-0.963				
FDIVID	-	.0039	0.28	0.579				
FLEVER	+	.0102	0.41	0.934				
Cons		.0319	3.12	0.002				
Adjusted $R^2$	0.16							
$F$ Value	8,134							