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## **Board of Directors' Structure and Real Earnings Management: Jordanian Evidence**

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### **Abstract**

This research investigated the relationship the board of directors' characteristics (involving board size, board independence, CEO duality and board meeting) have with REM in Jordanian listed firms. The data, which covered 721 firm-year observations for the period of 7 years (2011-2017), were sourced from the annual reports of the listed industrial and service sector companies on Amman Stock Exchange (ASE). The results from data analysis show a non-significant relationship between board independence and REM. However, a significant positive link between board size and REM and between CEO duality and REM were found. In the case of board meeting and REM, a significant but negative link was found between the two variables. In short, the findings of the current study indicate that board of directors' characteristics are a significant determinant of REM, and this could provide more policy insights and research implications for the policy and strategy formulation regarding the credibility of financial reports in Jordan. Yet, the directions of the relationship between board of directors' characteristics and REM could be determined by a contingent variable, which can be determined by the future research.

**Keywords:** Board of Directors' Characteristics, Board Meeting, Real Earnings Management (Rem), Board Size, Board Independence, Corporate Governance.

### **Introduction**

It has been recognized that effective corporate governance mechanisms have a substantial impact on curtailed opportunistic behaviors, improved professional performance, and enhanced business conduct. In order to protect the interests of the stakeholders from harmful consequences of opportunistic behaviors, the process of financial reporting of publicly-traded

companies should involve some deterrence mechanisms that will ensure financial reports quality (Rezaee, 2005). As part of these monitoring mechanisms, boards of directors assume a vital observing part to control the quality levels of financial reporting processes (Waweru & Riro, 2013).

The board is an important mechanism for the internal governance of corporations (see Ahmed Haji & Mohd Ghazali, 2013; Khodadadi, Khazami & Aflatooni, 2010). It is the apex of internal governance that controls top management, including the CEO. It hinges on internal governance of a firm and plays a vital role in resolving agency conflict. The effectiveness of the board of directors depends on board's characteristics.

Moreover, the heavy reliance on earnings by internal and external users creates an avenue for managers to use accounting discretion in arriving at earnings figures. The objective of this action is to meet earnings forecast and thresholds, analyst expectations, executive compensation, debt covenants and capital finance and to influence regulatory decisions (Bernard & Skinner, 1996; Healy & Palepu, 2001; Roychowdhury, 2006). The reason for involvement in EM activities by managers is to avoid reputation damage and strong negative share price reaction that may adversely damage the economy (Scott, 2015).

In the recent time, managers manipulate earnings via REM practices, because it is more difficult for auditors and supervisory bodies to trace REM practices compare to accrual-based manipulation (see Cohen & Zarowin, 2010; Ewert & Wagenhofer, 2005). Given the stringent measures that compel the ability of firms to involve in accrual earnings management practices (Chi, Lisic, & Pevzner, 2011), managers employ real activities manipulation and companies resort to REM. REM is carried out by adjusting the timing of operating, financing and investment activities, which could have a long-term consequence on the company (Badertscher, 2011).

In Jordanian firms, the level of REM activities is a cause for concern. According to Enomoto, Kimura, and Yamaguchi (2015), Jordan is ranked high among the 38 countries sampled for the ranking-based research. This signifies high rates of REM practices in Jordan. Moreover, it has also been identified by Enomoto, Kimura, and Yamaguchi (2015) that REM practices in the Jordanian companies are highly perpetuated, compared to accrual earnings management, signifying how crucial the issue of curbing REM practices is when it comes to enhancement of accurate disclosure earnings.

High level of REM practices in Jordan could give rise to collapse of companies, high rate of unemployment, loss of market, declining entrepreneurial growth and a recessive economy; in addition, investors' protection would become a critical problem. Hence, researchers should accord the rising level of earnings management practices in the Jordanian companies with adequate attention.

Going by the discussion above, we tested board of directors' characteristics' link with REM practices in Jordanian firms. Also, we tested if the level of REM is influenced by some company attributes, namely, firm size, leverage and profitability. In the current study, board size, board independence, CEO duality and board meeting constitute board characteristics.

## **Formulating Hypothesis Via Literature Review**

### **Board Size' Relationship with Earnings Management**

Board size is an important part of board characteristics which should not exceed eight or nine directors (Lipton & Lorsch, 1992). Given the coordination and process problems that characterizes such board size, which will weaken monitoring (Jensen, 1993). There has been a myriad of studies conducted on board size-earnings management relationship, but the findings are mixed. Board size has been found by some studies to have a negative effect on earnings management (see Amran, Ishak, & Abdul-Manaf, 2016; Obigbemi et al., 2016; Iraya et al., 2015; Patrick, Paulinus & Nympha, 2015), indicating that board size could curb the real activities in the companies. However, findings from some extant research (see González & García-Meca, 2014; Rahman & Ali, 2006) have indicated a positive relationship between board size and earnings management.

Given the postulation of the agency theory on the monitoring role of the boards in minimizing or mitigating agency problem, big boards would use their time and effort to carry out supervisory functions to mitigate agency problem, whereas small boards could fail to discover earnings management activities (Sun, Stewart & Pollard, 2011). Given this and underpinned by the agency theory, the current study therefore holds that the large board size would have better mechanism to mitigate earnings management practices. Thus, the hypothesis is postulated as below:

*H<sub>1</sub>: Board size has negative relationship with earnings management in the listed industrial and service firms in Jordan.*

### **Board Independence' Connection with Earnings Management**

There could be effective monitoring of the managers, when there are high numbers of outside directors on the board, because board independence responsiveness is connected with monitoring of managers. Consequently, there would be reduction in agency costs arising from the ownership and control separation in day-to-day management of the company (Brennan & McDermott, 2004; Fama, 1980; Fama & Jensen, 1983). Nevertheless, the findings of the existing literature with regards to board independence's relationship with REM are mixed. In the research by Amran, Ishak, and Abdul-Manaf (2016), board independence is found to be negatively related to earnings management, indicating the fact that board independence could curtail the real activities in the companies. Similarly, Iraya et al. (2015); Klein (2002); Uadiale (2012); and Kang and Kim (2012) found that the more the independent directors, the better the monitoring of the behavior of corporate managers. This position agrees with the agency theory perspective. Agency theory postulates that the independent directors' monitoring role is of importance. The primary aim of independent directors is to minimize or mitigate the agency problem which emanates from separation between ownership and management of the firm (Al-Rassas & Kamardin, 2015; Benkel, Mather & Ramsay, 2006). In addition, independent directors should build reputation as experts with experience and play a role in the detection and prevention of myopic behavior of corporate managers (Fama, 1980). However, the study by Hsu and Wen (2015) indicates board independence to be positively and significantly related to REM.

Owing to the above explication and going by the agency theory's postulation, monitoring function would be more effective and there would be more reliable financial statements when there are

numerous independent outside directors on the board. Thus, the current study postulates as below:

*H<sub>2</sub>: Board independence has negative relationship with earnings management in the listed industrial and service firms in Jordan.*

### **The Link between Chief Executive Officer (CEO) Duality and Earnings Management**

According to the Corporate Governance Code in Jordan, chairman's duties and CEO's responsibilities should be dissimilar, as this will prevent excessive power of the CEO in managing daily business operations (ASE, 2009). This is congruent with the postulation of the agency theory. A CEO with excessive power on the board could, without difficulty, indulge in earnings management. Dual office structure can facilitate effective information control, which could in turn, hinder efficient monitoring (Jensen, 1993).

With regards to CEO duality-earnings management relationship, the existing studies have reported mixed findings. While some studies (see Gulzar & Wang, 2011; Roodposhti & Chashmi, 2011; Chandren, Ahmad & Ali, 2015; Iraya et al., 2015) indicated a positive relationship between the CEO duality and earnings management, Habib and Hossain (2013) revealed that CEO duality decreases the credibility of financial reporting. In the Australian context, Liu (2012) documented that higher percentage of CEO duality reduces earnings management practices. Moreover, the findings from Visvanathan (2008) indicates that CEO duality has a non-significant link with REM. Similarly, Lin and Hwang (2010) found that individual separation of CEO and chairman positions is not significantly related to the level of earnings management.

Going by the supposition of the agency theory, having the role of chairman dissimilar from CEO's duties can enhance effective monitoring of the management function (Jensen, 1993). Besides, the agency cost connected with CEOs involved personal characteristics and behavioral biases (e.g., over-confidence), which could affect provision of information incentives and investment decisions (Goel & Thakor, 2008). This could be aggravated when CEO's functions are dissimilar from the chairman's responsibilities, because there will be lack of a force to monitor the behaviors.

If a single person combines both the positions of chairman and CEO, there could be a conflict of interest which could affect the interests of the shareholders negatively. It is therefore postulated by the agency theory that the positions of CEO and chairman should be separated, and both the CEO and the chairman report directly to board meetings. This will restrain the person occupying each position from acting in his or her own self-interest. A CEO with duality of roles becomes powerful and would normally deteriorate the oversight power held by the board. Invariably, the CEO with too much power on the board can likely be involved in earnings management practices. Thus, following hypothesis is postulated:

*H<sub>3</sub>: Chief executive officer's duality has positive relationship with earnings management in the listed industrial and service firms in Jordan.*

### **Board Meetings' Connection with Earnings Management**

Corporate board members who frequently meet may probably engage not in the management of earnings activities than board members with less meetings (Cornett, McNutt, & Tehranian,

2009; Jia & Tang, 2015). Comparatively, boards that meet less are prone to have less time to acknowledge and address such issues and may only spend their limited time on management (Abed, Al-Badainah, & Serdaneh, 2012).

However, the findings of the extant literature on the board meetings' relationship with earnings management are mixed. Some studies (see Xie, Davidson, & DaDalt, 2003; Ahmad, 2013) found that management of earnings is negatively related to the frequency of board meetings. Specifically, Ahmad (2013) found that earnings management practices can be mitigated via board meetings frequency. Conversely, the studies done by Olayemi (2013) and Daghsni, Zouhayer, and Mbarek's (2016) found a significant positive connection the board meeting has with earnings management practices, signifying that board meetings could influence managers in engaging in REM activities. In the study done by Daghsni, Zouhayer, and Mbarek's (2016), it is signified that board activity can increase the management of earnings, and more frequent meetings of the board often helps in the increment of the management of earnings. Also, Obigbemi et al. (2016) examined board meeting-earnings management relationship the results signify a significantly positive relationship between board activity and earnings manipulation activities.

Board meetings' frequency in a year predicts how effective the board is and their monitoring responsibilities determine the level of vigilance and diligence on the part of the board (Persons, 2006). Moreover, the agency theory assumes that frequent board meetings would strengthen corporate governance elements (Khanchel, 2007). In a firm where there are effectively-fixed and frequent board meetings, there would be economic growth. Also, the signaling theory suggests that frequency of board meeting is a signal of transparency in a company (Morris, 1987).

Based on above discussion and postulations from both theories (agency and signaling), it could be hypothesized that frequent meeting by active boards could enhance performance in accordance with the interests of the shareholders and monitoring of the financial reporting integrity. Thus, this study formulates the following hypothesis:

*H<sub>4</sub>: Board meeting frequency has negative relationship with earnings management in the listed industrial and service firms in Jordan.*

## **Methodology**

The data covering from year 2011 to 2017 were obtained from the annual reports of the listed industrial and service sector companies on Amman Stock Exchange (ASE). As at the end of 2017, there were 224 listed firms; 54 services sector firms (24.1%), 63 industrial sector firms (28.1%) and 107 financial sector firms (47.8%). The financial sector was not included among the sectors selected, because it has different regulations related to financial reports, issued by the Insurance Commission and the Jordan Central Bank. From the sample of this study, 14 firms were excluded due to unclear, incomplete data, or did not have annual financial reports for the years ended 2011 to 2017. The final sample represents 103 firms or 721 observations (from 2011 to 2017).

The data, which covered seven years ranging from 2011 to 2017, were analyzed using various statistical analysis techniques, comprising descriptive statistics, correlation analysis, and Ordinary Least Squares (OLS) regression technique in order to test the hypotheses of the study. The data analysis technique was chosen, given that it would provide more informative data, variables sufficiency since the variables will be multiple by time, additional degree of freedom and

efficiency with fewer collinearity among variables (Baltagi, 2008). Moreover, estimating for normal level of each of the proxies was derived by using the coefficient from the regression of each of the variables in each equation, consistent with prior studies (Kang & Kim, 2012; Hashemi & Rabiee, 2011; Cohen & Zarowin, 2010; Visvanathan, 2008; Roychowdhury, 2006). For the estimated CFO (ECFO), Model 1 was established as suggested by Roychowdhury (2006). The formula for cash flow from operation activities is as below:

$$CFO_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (S_t/A_{t-1}) + \beta_2 (\Delta S/A_{t-1}) + \varepsilon_t \quad (\text{Model 1})$$

Where:

$CFO_t$  = cash flow from operation activities of year  $t$

$A_{t-1}$  = Total assets at the beginning of year  $t$

$\alpha_0$  = Constant or Intercept

$S_t$  = Sales during year  $t$

$\Delta S$  = Change in sales from year  $t - 1$  to  $t$

$\varepsilon_t$  = Error term

The variance between actual cash flow from operations (ACFO) and estimated cash flow (ECFO) from operating activities is known as abnormal cash flow from operations (AbCFO) as stated below:

$$AbCFO = ACFO - ECFO$$

Where:

AbCFO = Abnormal cash flow from operations

ACFO = Actual cash flow from operations

ECFO = Estimated cash flow from operations

The second method proposed by Roychowdhury (2006) to detect EM in companies is using discretionary expenses as corporate managers may utilize expenses at discretion, bordering on selling, administrative and general expenses; advertising expenses; and R&D expenses, with the aim of attaining short-term reported earnings. Thus, the formula for actual discretionary expenses is as below:

$$ADC = R\&D + ADV + SAG$$

Where:

ADC = Actual discretionary expenses

R&D = Research and development

ADV = Advertising expenses

SAG = Selling, administrative and general expenses

The estimated discretionary expenses (EDC) is expressed in Model 2 as follows:

$$DC_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta (S_{t-1}/A_{t-1}) + \varepsilon_t \quad (\text{Model 2})$$

Where:

$DC_t$  = discretionary expenses in year  $t$

$A_{t-1}$  = Total Assets at the beginning of year  $t$

$S_t$  = Sales during year  $t$

$\varepsilon_t$  = Error term

The difference between actual discretionary expenses and estimated discretionary expenses is known as abnormal discretionary expenses. The formula is expressed as below:

$$AbDC = ADC - EDC$$

Where:

AbDC = Abnormal discretionary expenses

ADC = Actual discretionary expenses

EDC = Estimated discretionary expenses

The third model of REM is using production cost. For services institutions, the production cost is solely based on cost of goods sold. The corporate manager tends to use production cost to manage short-term reported earnings through cost suppressing-related activities or expenses to inflate revenues or decrease expenses, which can enhance present period earnings. Therefore:

$$ACOGS = REV - GP$$

Where:

ACOGS = actual cost of goods sold

REV = revenue

GP = gross profit

Estimated COGS (ECOGS) is calculated in Model 3 as:

$$ECOGS_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta (S_{t-1}/A_{t-1}) + \varepsilon_t \quad (\text{Model 3})$$

Where:

$ECOGS_t$  = estimated cost of goods sold in year  $t$

$A_{t-1}$  = Total Assets at the beginning of year  $t$

$S_t$  = Sales during year  $t$

$\varepsilon_t$  = Error term

The difference between ACOGS and ECOGS is known as abnormal cost of goods sold. The formula is expressed as below:

$$AbCOGS = ACOGS - ECOGS$$

Where:

AbCOGS = Abnormal cost of goods sold

ACOGS = Actual cost of goods sold



ECOGS = Estimated cost of goods sold

Therefore, REM formula is finally expressed as:

$$REM = AbCFO + AbDC + AbCOGS$$

Where:

REM = Real Earnings Management

AbCFO = Abnormal cash flow from operations

AbDC = Abnormal discretionary expenses

AbCOGS = Abnormal cost of goods sold

Given the findings of the prior studies, and to minimize the measurement errors while increasing validity of the interpretation, the likely effect of some company attributes (i.e., firm size, leverage and profitability) on the level of REM was examined by the current study. Prior studies have revealed that firm attributes could help in assessing possible corporate governance- earnings management connection. For instance, Alzoubi, (2016) and Park and Shin (2003) found significant link between firm size and earnings management, between firm's financial leverage and earnings management, and between profitability and earnings management.

Boards characteristics are proxied with CEO duality, board independence, board meeting and board size. In line with the literature review, board of directors' characteristics are made the independent variables of the current study (Hashemi & Rabiee, 2011; Kang & Kim, 2012), and basic characteristics of the board are used as measures of each respective construct. In the current research, board independence represents the proportion of non-executive directors in the overall number of directors at the end of year (Habbash, 2010; Abdelsalam & Street, 2007; Afify, 2009), but board size represents the total number of board members, as measured by Iraya et al. (2015). As for CEO duality measurement, it represents a score of one (1) is assigned if the same person occupies the position of the chairman and the CEO; and otherwise, a score of 0 (Afify, 2009). It also represents role duality which is a scenario where the CEO is also the chair of the board of directors. In addition, board meetings refer to a formal gathering of the board of directors that is held at specific schedules in a year to rehash policy issues and problems represent the concept of board meeting in the current study. The meeting is presided over by the chairman of the board or an appointee and it must meet the conditions, with the deliberations recorded in minutes. As regards board meeting, it represents the number of board meetings held in a year (Benjamin & Mat Zain, 2015; Habbash, 2010).

Regarding the measurement of the control variables, while profitability stands for the ratio of profit after tax to total asset of the company at the end of the financial year (Hashem Bahman, & Azam, 2012; Munisi & Randoy, 2013), firm size refers to the total assets at the end of the financial year (Afify, 2009; Akle, 2011). The ratio of total debt to total assets of the company at the end of the financial year constitutes firm leverage (Tsagem, Aripin, & Ishak, 2015; Liu & Tsai, 2015).

### *Research Models and Control Variables*

The regressions models, as presented below, were estimated to test Hypothesis H1-H4 of the study.

$$\text{REM} = \beta_0 + \beta_5\text{BSIZ}_{it} + \beta_6\text{BIND}_{it} + \beta_7\text{CEOD}_{it} + \beta_8\text{BMTG}_{it} + \beta_{13}\text{SFIRM}_{it} + \beta_{14}\text{FLEV}_{it} + \beta_{15}\text{PROFT}_{it} + \varepsilon_{it}$$

..... (Equation 1)

Where:

REM = Real Earnings Management

ACIND = Board Independence

ACSIZ = Board Size

CEOD = CEO Duality

ACMTG = Board Meeting

SFIRM = firm size

PROFT = profitability

FLEV = financial leverage

it = Panel indicator for  $i$ = Company,  $t$ =Time

$\varepsilon_{it}$  = Error term

## **Results and Discussion**

### **Descriptive Analysis**

The results of the descriptive analysis, as presented in Table 1, indicate REM, four characteristics of the board of directors and firm attributes. While the maximum value of REM is 3.320 and minimum value is -3.770, the average of REM in the listed industrial and services firms in Jordan is -0.033. As the minimum number of members of board in the Jordanian listed industrial and service firms is 4, the maximum number is 13. On average, therefore, the firms have an average board size of 8. This number is almost aligned with the provision of Jordanian code of governance for listed firms which requires firms to have members of board to range from 5 to 13, but some of the industrial and services firms have violated the minimum requirement of Jordanian corporate governance Code by having 4 members on the board of directors. This finding is very close to Al-Tahat (2010) and Marashdeh (2014) who found an average value of board size among Jordanian listed firms of 8 members.

Also, as indicated in Table 1, the firms have an average of 82.98% independent directors in the firms' board of director, signifying high percentage of non-executive directors in the board of directors, and it they outnumber the insiders. This signifies that Jordanian firms abide by the recommendations of the Jordan corporate governance code. This result is also in line with Al-Masarwah's (2016) finding which indicates that 82% of the boards members in Jordanian listed firms are non-executive directors. In addition, Table 1 indicates that a minimum of 2 meetings and a maximum of 17 meetings are held by the board. Normally, the firms should have a total number of 9 meetings as this would agree with the provision of Jordanian code of governance which requires a minimum of 6 meetings to be held in a year. It is also found, as indicated in Table 1, that boards of directors' meetings should be regular, because this will give an opportunity to address the important issues in their companies.

Moreover, as measured by natural log of the firm's total assets, the average company size is 7.546. This ratio is similar to Azzoz and Khamees (2016) who reported that the mean of the Jordanian firms' size is 7.67. Furthermore, it appears that the average leverage is 34.4%, with the minimum value of 0.1% and maximum value of 89.6%. The average leverage is similar to the ratio found by Aldaoud (2015), who reported that the mean of leverage in Jordanian listed companies is 34.3%. Table 1 also demonstrates that mean value of firm profitability is about 2% with minimum ratio of -73% and maximum ratio of 71%.

Table 1: Descriptive Statistics of Independent Variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation	As for the
REM	721	-3.770	3.320	-0.033	0.3646	
BSIZ	721	4	13	7.9919	2.2985	
BIND	721	0	1	0.8298	0.2065	
BMTG	721	2	17	8.7961	2.2764	
SFIRM (Log.)	721	2.504	9.853	7.5460	0.7616	
FLEV	721	0.001	0.896	0.3440	0.2282	
PROFT	721	-0.7299	0.7127	0.0171	0.1137	

**REM**= real earnings management, **BMTG**= Number of board meetings held during the financial year, **BSIZ**= Total number of board size, **BIND**= Board independence, **SFIRM(Log.)** = Natural logarithm of company size measured by total assets, **FLEV**= leverage ratio of total debts to total assets, and **PROFT**= ratio of total profit to total assets.

distribution of the CEO duality, Table 2 indicates that 580 company's year observations (80.4%) does not have a CEO Duality, but 141 company-year observations (19.6%) have a CEO Duality, signifying that some of management of Jordanian firms did not comply with the regulations of Jordan Securities Commission, which state that CEO's functions should be dissimilar from the chairman's functions in the company at the same time.

Table 2: Frequency Statistics

Presence of Duality (CEOD)	Frequency	Percentage
No (0)	580	80.4%
Yes (1)	141	19.6%
Total	721	100%

CEOD= Dummy variable, 1 if CEO-Chairman roles combined; 0 if separate.

### Correlation Analysis

The coefficients of Pearson correlation between the variables of the current study are presented in Table 3. For the purpose of detecting high correlation among independent variables, multicollinearity test was conducted via Pearson correlation technique. A correlation coefficient

of more than 0.90 signifies the problem of multicollinearity (see Hair, Black, Babin, & Anderson, 2010; Tabachnick & Fidell, 2007). In the case of this study no problem of multicollinearity among variables is detected, since the values of all correlation coefficients are below 0.90.

Table 3: Pearson correlation

	BSIZ	BIND	CEOD	BMTG	SFIRM	FLEVE	PROFT
BSIZ	1						
BIND	0.627	1					
CEOD	0.092	-0.318	1				
BMTG	-0.097	0.064	-0.039	1			
SFIRM	0.441	0.096	0.183	-0.311	1		
FLEVE	-0.041	-0.184	-0.030	-0.061	0.210	1	
PROFT	0.124	-0.015	0.084	-0.044	0.236	-0.061	1

Note: \*\*. 0.01 significance level of correlation (2-tailed). \*. 0.05 significance level of correlation (2-tailed). BIND= Board independence, CEOD= CEO duality, BSIZ= Total number of board size, BMTG= Number of board meetings held during the financial year, SFIRM(Log.) = Natural logarithm of company size measured by total assets, FLEV= leverage ratio of total debts to total assets, and PROFT= ratio of total profit to total assets.

### Regression Analysis and Hypotheses Testing

Table 4, which presents regression analysis results, indicates  $R^2$  value of the model to be 30.8%, signifying that board characteristics explain 31% of the variance in REM. Moreover, the model is significant (F-statistic = 22.192,  $p < 0.000$ ), indicating that the model significantly explains the difference in REM among Jordanian listed firms. The outcome of the statistical result indicates a significantly positive board size-REM relationship in the Jordanian listed industrial and services companies ( $\beta = 0.012$ ; t-value = 2.079, p-value  $< 0.05$ ) and thus one of the study's hypothesis is not supported. This points to the fact that some of the Jordanian firms have minimum of 4 and thus violated the minimum requirement of Jordanian corporate governance Code. The reason is that small boards may fail to discover earnings management practices in the firms (see Sun et al., 2011).

This finding corroborates the findings of some extant research which signifies a positive relationship between board size and earnings management (see González & García-Meca, 2014; Rahman & Ali, 2006). However, the result does not agree with the findings of some studies (see Amran, Ishak, & Abdul-Manaf, 2016; Obigbemi et al., 2016; Iraya et al., 2015; Patrick et al., 2015). For example, Amran, Ishak and Abdul-Manaf (2016) found that board size is negatively related to earnings management.

Likewise, with the result  $\beta = 0.019$ ; t-value = 0.260; p-value  $> 0.10$ , a non-significant relationship is found between board independence and REM and thus,  $H_2$  is not supported. This finding negates agency theory's supposition, which posits that in the developed economies, external members on the board can lessen the practice earnings management and improve corporate governance system by building up reputation, because they are experts with experience who have the skills to detect and prevent myopic behavior of corporate managers (Fama, 1980), but the extant

Jordanian evidence indicate the otherwise, given the influential individuals' and groups' influence on board decisions. Arising from this empirical finding, Jordanian companies' capability to mitigate earnings management practices is thus hampered. The findings of Azzoz and Khamees (2016) and Abed, Al-Attar, & Suwaidan (2012) support the result of this study. With this result, it can be claimed that there is a difference between developed and developing economies such as Jordan in respect of board independence.

Conversely, the result ( $\beta = 0.095$ ;  $t$ -value = 2.881,  $p$ -value  $< 0.05$ ) affirms Hypothesis 3 indicating CEO duality's significant positive relationship with REM in the Jordanian listed industrial and services companies. It is noteworthy that CEO duality is the most influential factor of board characteristics that determine REM, with highest  $t$ -value ( $t = 2.881$ ). The implication of this finding in the Jordan context is that separation between CEO/chairman roles tends to eliminate or mitigate earnings management. This finding corroborates the findings of Abaddi, Hijazi and Al-Rahahleh (2016), who found positive significant relationship between CEO duality and earnings management. The implication of this finding is that dissimilarity in the CEOs' and Chairmen's roles has positive impact of lessening REM practices in Jordanian listed firms.

This finding also agrees with the provisions of Jordanian Code of Corporate Governance which recommends dissimilarity in the CEOs' and Chairmen's roles, because it will mitigate excessive CEO power on the control and management of the company's operations. This is congruent with the postulation of the agency theory that a CEO with excessive power on the board could, without difficulty, indulge in earnings management. Dual office structure can facilitate effective information control, which could in turn, hinder efficient monitoring (Jensen, 1993).

In the same vein, the result contained in Table 4 signifies board meetings' significant and negative connection with REM in the Jordanian listed industrial and services companies ( $\beta = -0.013$ ;  $t$ -value = -2.100,  $p$ -value  $< 0.05$ ). This result indicates that Hypothesis 4 is supported and consistent with the findings of some extant studies (see Ahmad, 2013; Xie et al., 2003) and agency theory's supposition, which signifies that frequent board meetings would strengthen corporate governance elements in an organization. The empirical finding suggests that companies in Jordan should lay much emphasis on the frequency of board meeting in a bid to eliminate earnings management. The frequency of meeting determines how effective the members of the board are in the monitoring of management. It puts a check on the management and deters the management from any nefarious financial activities.

Regarding control variables, the outcomes in Table 4 reveal a very strong and negatively significant relationship between REM and firm size ( $\beta = -0.242$ ;  $t$ -value = -12.451;  $p$ -value = 0.000), signifying firm size' influence on the capability to manipulate financial records and financial reporting. In other words, smaller companies tend to engage more in REM than large firms to evade reporting losses and exiting from the market. However, the results reveal no significance between REM and firm leverage ( $\beta = 0.089$ ;  $t$ -value = 1.538;  $p$ -value  $> 0.10$ ). In other words, whether Jordanian firms have high or low debt proportion, it does not affect the earnings manipulation level. Furthermore, the result of the regression analysis indicates profitability's positive relationship with REM ( $\beta = 0.289$ ;  $t$  and  $p$  value= 2.582; 0.014, respectively). It implies that the more the profit of the firm, the greater the chances of REM.

Table 4: Summary of Regressions Analysis

Variables	Hypothesis No.	Beta	Std. Error	T	Sig.
(Constant)		2.201	0.160	13.782	0.000
BSIZE	H1	0.012	0.006	2.079	0.038**
BIND	H2	0.019	0.073	0.260	0.795
CEOD	H3	0.095	0.033	2.881	0.004***
BMTG	H4	-0.013	0.006	-2.100	0.036**
SFIRM		-0.242	0.019	-12.451	0.000***
FLEV		0.089	0.058	1.538	0.124
PROFT		0.289	0.112	2.582	0.010**
R Squared			30.8%		
Adj. R			29.4%		
F			22.192		
Sig			0.000		
D-W			1.605		

\*\*\*, \*\*, \* Significant at 1%, 5% and 10% respectively

## Conclusion

Against the backdrop that REM is of high level in Jordanian firms with some adverse effects, board of directors' characteristics' relationship with REM in Jordanian firms was examined by the current study. Using the data obtained based on 721 firm-year observations, which covered the years from 2011 to 2017 for each industrial and Services Company listed on the ASE, the results of the study indicate that the proposed H<sub>1</sub> is not supported as board size is found to be significantly and positively related to REM. Also, a non-significant relationship between board independence and REM is found and thus the proposed H<sub>2</sub> is not supported. However, a significantly positive link between CEO duality and REM which was found indicate support for the proposed H<sub>3</sub>; and board meetings' significant and negative link with REM supports H<sub>4</sub>.

In short, board of directors' characteristics, as signified by the overall results of this study, are a significant determinant of REM and this could provide more policy insights and research implications with regards to the policy and strategy formulation regarding reliability of financial reports in Jordan. Yet, the directions of the relationship between board of directors' characteristics and REM could be determined by a contingent variable, which could be determined by the future research. Therefore, future research direction could be designed to involve investigation of a moderating variable that can change or influence the relationship board of directors' characteristics has with REM.

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