

Ownership Structure and Real Earnings Management: Jordanian Evidence

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Abstract

This paper examines the relationship between ownership structure and real earnings management (REM). This paper uses data from 101 listed firms at Amman Stock Exchange (ASE) from 2011 to 2015. Using the random-effect generalized least square (GLS) regression model, the findings reveal that managerial and institutional ownership negatively influences REM, while foreign ownership has a positive association with REM. Further, both family and concentrated ownership did not have a direct effect on REM in Jordan. These outcomes suggest institutional and managerial ownership should be encouraged in listed companies as that it can replace for the weakness of other corporate governance (CG) mechanisms in reducing real earnings management. The outcomes of the current study should be of great interest to regulators and policy-makers; thereby study recommends to removal of lawful obstacles to greater involvement in CG by institutional investors.

Keywords: real earnings management, managerial ownership, institutional ownership

1. Introduction

Earnings management takes place when the management manipulates its judgment in the financial statements and rearranges the transactions to change accounting reports to either misguide the stakeholders about the underlying financial position of the firm or impact the contractual results that rely on the accounting outcomes significantly (Healy & Wahlen, 1999). Earnings management is a widespread phenomenon which has attracted the interest of several studies focusing mainly on the earnings management practices (e.g. Schipper, 1989; Parfet, 2000; Roychowdhury, 2006; Cohen, Dey & Lys, 2008; Cohen & Zarowin, 2010). These studies have shown how earnings management results in misrepresenting the financial reports offered to stakeholders, thus inversely impacting the decision-making process (e.g. Healy & Wahlen, 1999; Cohen et al., 2008; Zang, 2012) and negatively affecting the firm value (Graham, Harvey & Rajgopal, 2005). It has been observed that the earnings manipulation was at the core of the financial crisis in 2000 globally, and these scandals have reduced the investor's trust and confidence in the financial reports (Saleem, Alifiah & Tahir, 2016). The majority of the studies have attributed the persistent occurrence of earnings management activities to the manager's strong tendency to employ REM instead of Accrual-based Earnings Management (AEM) (e.g. Graham et al., 2005; Cohen et al., 2008; Cohen & Zarowin, 2010; Ferentinou & Anagnostopoulou, 2016). Hence, due to scarcely related studies, further studies are required to re-investigate such issue, particularly in the Jordanian context as suggested by several studies (Ramadan, 2015; Abbadi, Hijazi & Al-Rahahleh, 2016; Maswadeh, 2018).

Several empirical studies that the listed companies in Jordan, specifically non-financial firms, have been obviously involved in earnings management activities (Alhadab & Nguyen, 2018; Idris, Siam & Nassar, 2018; Whittington & Al-Haddad, 2018).

In Jordanian firms, there are some cases of financial fraud and opportunistic behaviour, such as the Shamayleh Gate crisis in 2003, Beit Al-Mal Saving & Investment for Housing in 2012, Jordan Phosphate Mines in 2013 and Jordanian Company for Reconstruction Holding Public Share in 2017. These opportunistic practices attribute to the weakness of CG and also due to the insufficiency of the accounting legislation, for example (Alhajaya & Aldebaee, 2011; Almomani, 2016; Alhadab, 2018; Alhadab & Nguyen, 2018; Maswadeh, 2018; Idris, Siam & Nassar, 2018). Further, Whittington and Al-Haddad (2018) assert that some managements utilize both AEM and REM together to gain the greatest impact of earnings reporting in the Jordanian firms.

Ownership structure has become a subject for organisations, accounting profession's regulators, several researchers and existing authorities around the world (Filatotchev, Jackson & Nakajima, 2013). The monitoring strength acquired from the ownership structure results in a type of control applied to the firm, specifically the high management team (González & García-Meca, 2014). As a result, the ownership structure is a core determinant of the agency cost (Habbash, Xiao, Salama & Dixon, 2014). Many empirical studies have confirmed the effective role of ownership structure in monitoring the firm's actions, for instance, Siregar and Utama (2008) argue that ownership structure influences the monitoring mechanisms used by the firm. Further Alshetwi (2016) and Ramadan (2015) find that top stockholders have less influence on earnings management, and can decrease the level of management opportunism. The Jordanian firms are attributed by high ownership concentration (Ghazalat, Islam & Noor, 2017). Specifically, family ownership (Al-Najjar, 2010), and managerial ownership is the biggest ownership category among Jordanian firms (Almasarwah, 2015).

Previous studies on the relationship between ownership structure and earnings management provide mixed results. For instance, Dechow and Sloan (1991) find that managerial ownership reduces practices of earnings management by decreasing R&D expenditures. Likewise, Francis, Hasan and Li (2016a) find that managerial ownership has a negative relationship with REM. Whilst, Liu & Tsai (2015) find a positive relationship between managerial ownership and REM. As for institutional ownership, Roychowdhury (2006) and Lin and Chien (2016) find a negative relationship between REM and institutional ownership. However, Li, (2010) found that institutional ownership pressurizes the managers to report higher earnings. Moreover, Chen, Gu, Kubota and Takehara (2015) find that family ownership reduces the degree of REM. While, Almeida-Santos, Dani, Machado and Krespi (2013) find that family ownership increases the probability to manage their earnings. Additionally, Ferreira and Matos (2008) find out that institutional foreign shareholders are positively related to higher company evaluations. However, Ali, Salleh and Hassan (2008) empirically found that earnings management is not affected by foreign ownership. Even more, González and García-Meca (2014) find a negative association between ownership concentration and earnings management. While, Park and Shin (2004) indicate that controlling shareholders could have high motives for earnings management, to expropriate wealth from the corporations they control at the account of minority stockholders. Therefore, Thus, there is a need to fill the above results gaps, and this study aims to fill that's gap in previous studies.

The aim of this paper is to examine the relationship between ownership structure and REM, while this study expects that managerial, institutional, family foreign and concentrated ownership have a negative association with REM. The current study uses the random-effect GLS regression of analysing the data. The sample of this study is composed of 505 firm-year observations from firms listed on ASE between 2011 and 2015. The findings reveal that managerial and institutional ownership has a negative relationship with REM. However, a positive association is reported between foreign ownership and REM. This paper adds to the existing literature on the CG monitoring aspects of managerial and institutional investors and shows that managerial and institutional ownership play an active role in restricting REM for firms listed in Jordan.

The rest of the current paper is organized as follows. Next section presents the concept of earnings management. Section three provides a literature review and hypotheses development. Section four provides an overview of the method being used. Section five illustrates the empirical results of this study and related explanations. Finally, the discussion and conclusions were included.

2. The Concept of Real Earnings Management

For some personal purposes, business managers can mislead the users of financial information through AEM and REM because of some financial benefits (Schipper, 1989; Healy & Wahlen, 1999; Roychowdhury, 2006; Cohen et al., 2008). Besides, it is also noticed that business managers are more likely towards the usage of REM, comparatively to AEM. However, the usage of REM is found to be highly costly.

In addition, with the approval of Sarbanes-Oxley Act Of 2002 (SOX) in USA, managers tend to engage themselves in REM comparatively to the false AEM, because REM gets a low level of scrutiny from the regulators and auditors (Cohen, et al., 2008; Francis, Hasan, & Li, 2016b).

Ewert and Wagenhofer (2005) defined REM as a changing in the timing or restructuring of transactions related to financial events. REM may, therefore, mean that the manager deviates from an otherwise ideal scheme of actions merely to influence earnings resulting in the imposition of actual costs to the company. Moreover, Cohen and Zarowin (2010) defined REM as the managerial procedures that deviate from normal transaction activities. However, the best definition of REM is presented by Roychowdhury (2006) who calls it as such “management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings”. In addition, Roychowdhury (2006) also documents that REM may also mean the violation of normal operational activities, aim to misguide stakeholders and seek the approval of certain financial reporting objectives. Depending on this definition certain techniques can be used to manipulate earnings by real activities, for instance, discretionary expenditures reductions and announcing a major percentage of discounts on sales optimally under certain economic circumstances. By practising REM activities, managers realize that they must sacrifice future cash flows to fulfil short-lived benchmarks. However, because REM involves managerial decisions related to operational strategies and investments, REM becomes more difficult to detect and avoid its impacts on cash flows (Kothari, Mizik, & Roychowdhury, 2012). Previous research indicates that non-fraudulent AEM is less harmful to current stockholders than REM because it does not weaken a company's cash flows (Roychowdhury, 2006; Cohen & Zarowin, 2010; Kothari et al., 2012).

3. Literature Review and Hypothesis

3.1 Managerial Ownership and Real Earnings Management

Agency theory suggests that shareholdings run by managers assist to bring coordination between managers' interests and that of shareholders (Jensen & Meckling, 1976). The incentive alignment effect is predicted to have more active as managerial ownership increases, indicating that as managerial ownership increase, the corporate performance also increases, and opportunistic managerial attitude is decreasing (Teshima, 2008). Warfield, Wild & Wild (1995) explore the relationship between managerial ownership and earnings management in the US market. The author's findings emphasised the incentive alignment effect view and found a negative relationship between the magnitude of discretionary accruals and managerial ownership. Concerning the relationship between REM and managerial ownership, Dechow and Sloan (1991) find that managerial ownership reduces practices of manage earnings by decreasing the R&D expenditures. In Jordan setting, Ramadan (2015) and Alqatamin (2016) find a negative significant association between managerial ownership and AEM. Additionally, Whittington and Al-Haddad (2018) conclude that management ownership deters both AEM and REM. In accordance with agency theory, and based on evidence from previous empirical studies that support the standpoint of incentive alignment effect, this study formulates the first hypothesis as:

H₁: There is a negative relationship between managerial ownership and real earnings management in non-financial Jordanian companies.

3.2 Institutional Ownership and Real Earnings Management

According to Farooqi, Jory and Ngo (2017), the presence of institutional owners supports the effective monitoring of corporate and enhances the value and performance of different firms. Vast body of empirical studies have emphasized the monitoring contribution of institutional owners in mitigate earnings management (e.g. Rajgopal, 1999; Chung, Firth & Kim, 2002; Siregar & Utama, 2008; Hadani, Goranova & Khan, 2011; Aygun, Ic & Sayim, 2014; Ramadan, 2015; Nekhili, Ben-Amar, Chtioui & Lakhali, 2016; Azibi, Azibi & Tondeur, 2017). Moreover, a few empirical studies have examined the effect of institutional ownership on REM techniques. For instance, Bushee (1998) concludes that managers are less likely to reduce R&D expenditure when institutional ownership is big. Similarly, Roychowdhury (2006) finds a negative relationship between REM and institutional ownership. Zang (2012), Liu and Tsai (2015) and Lin and Chien (2016) have found that REM practices are restricted by institutional shareholders. In Jordan, Whittington and Al-Haddad (2018) found that institutional ownership curbs both AEM and REM. Based on the above analysis from previous studies and agency theory perspective, the current study proposes the following hypothesis:

H₂: There is a negative relationship between institutional ownership and real earnings management in non-financial Jordanian companies.

3.4 Family Ownership and Real Earnings Management

The alignment effect argues that a family shareholder has a long-dated interest in the company, which will restrict the ability of management to manage earnings. In this regard, Tosi and Gomez-mejia (1989) report that concentrated ownership can lessen agency problems. Wang (2006) provides evidence that family ownership is associated with higher earnings informativeness, lower abnormal accruals, and low persistence of temporary loss components in earnings. Likewise, Siregar and Utama (2008) find that family ownership has a significant impact on the level of earnings management practices. Chen et al. (2015) find that family shareholding reduces the degree of REM activities. Consequently, based on alignment effect and in accordance with agency theory, and based on the findings of prior studies discussed above, which argued that family ownership restricts the ability of management to manage earnings; the following hypothesis is formulated:

H₃: There is a negative relationship between family ownership and real earnings management in non-financial Jordanian companies.

2.5 Foreign Ownership and Real Earnings Management

Foreign shareholders play a key part in the ownership structure of firms particularly in developing countries (Randoy & Goel, 2003; Douma, George & Kabir, 2006). As a result, foreign shareholders decreases the information asymmetry and increases the reliability and credibility of financial reporting (Jiang & Kim, 2004). Furthermore, previous empirical evidence indicates that the presence of foreign ownership leads to lessening agency cost (Abor & Biekpe, 2007; Guo & Zhou, 2015). Some empirical research concludes that foreign ownership is effective in deterring accrual-based earnings management practices (Farooq & El-Jai, 2012; Lel, 2018) and real earnings management practices (Guo & Zhou, 2015). However, in Jordanian setting, Zeitun (2009) and Al-Thuneibat (2018) conclude that foreign ownership negatively influences on firm' performance. Almasarwah (2015) find that foreign stockholders have a positive association with accrual-based earnings management. Further, in China, Guo and Ma (2015) find that earnings management increase, with a firm that has more foreign ownership. Affan and Purwanti (2017) provide evidence that foreign ownership has a positive association with REM. Moreover, Abdelsalam, Dimitropoulos, Elnahass and Leventis (2016) and Gill-de-Albornoz and Rusanescu (2018) also find that earnings management is positively associated with foreign ownership in Spanish firms and the Middle East and North Africa countries respectively. Consequently, the next hypothesis proposed as follows:

H₄: There is a negative relationship between foreign ownership and real earnings management in non-financial Jordanian companies.

3.5 Ownership Concentration and Real Earnings Management

Agency theory suppose that ownership concentration could either decrease or increase agency problems. Agency conflicts may increase because concentrated ownership may give big power and (entrenchment effects) which harm minority shareholders (e.g. Morck, Shleifer & Vishny, 1988). On the contrary, concentrated ownership might induce managers to keep their interests with stockholders, whereby alleviating agency problems (alignment effect) (e.g., Rosenstein & Wyatt, 1997). Several empirical studies support the argument of the monitoring effect (alignment effect) of concentrated ownership. These studies found a negative association between ownership concentration and earnings management (e.g. Bushee, 1998; Bozec, 2008; Alves, 2011; González & García-Meca, 2014; Ramadan, 2015). While other studies found that ownership concentration positively associated with earnings management which supports the entrenchment effects. In this regard, Park and Shin (2004) suggest that majority shareholder could have high incentives to manage earnings to expropriate wealth from the companies they dominance at the expense of minority shareholder. Likewise, studies by Kim and Yoon (2008) and Bhutta, Knif and Sheik (2016) found that concentrated ownership induces earnings management. Based on the above discussion, the next hypothesis is formulated as follows:

H₅: There is a negative relationship between ownership concentration and real earnings management in non-financial Jordanian companies.

Control Variables

Several control variables based on the literature were included to isolate the effects of this study's test variables on REM. In this regard, the current study also considered the effect of three control variables, namely, firm size, growth and profitability. Most research conducted on earnings management has used firm size as a control variable.

The size of a firm is a good indicator to determine whether a firm must engage in earnings management activities. Watts and Zimmerman, (1978) have emphasised the fall in systematic risk in a large firm and have asserted that as government interference costs (political costs) increase, the large firms grab the attention of all internal and external related parties. Many prior studies utilize firm size as a control variable (Kim & Sohn, 2013; Francis et al., 2016b).

The growth of the company and its value choice equals the current value of all its actual choices to create future investments (Myers, 1977). Besides, Roychowdhury (2006) pointed out that REM systematically differs with growth chances various studies have indicated the fact the negative growth trends can be avoided through the proper level of earnings management in the business. Therefore, growth was used as a control variable in the current study. The current study also utilizes profitability as a control variable. In this regard, Singh, Aggarwal and Anand (2017) indicate that there are several factors that might impact earnings management choices, and they recommended using profitability in this setting. In addition, the current study follows the existing literature (e.g. Iatridis & Kadorinis, 2009; Givoly, Hayn & Katz, 2010; Farooq & Abdel-Bari, 2015).

4. Methodology

4.1 Population and Sampling

The current study used data from all non-financial companies in Jordan which are listed on the ASE during the period from 2011 to 2015. The number of all non-financial companies at the end of 2015 was 113 companies, which included 64 industrial sector companies and 49 services sector companies. Note that the companies which were delisted from ASE during the study period were excluded; also, the companies that were newly listed on ASE during the study period were excluded. Thus, the final number of the sample was 101 companies (505 observations), including 57 industrial companies and 44 service sector companies.

4.2 Data Collection

The secondary data is collected from the annual reports of selected firms. The annual reports were downloaded from the website of ASE and from the private websites of firms, over the period of 2011 to 2015. The main reason behind the selection of this period for this study was to take into consideration the new Jordanian corporate governance code that has been issued, effective since 2010.

4.3 Model Specification and Multiple Regressions

As per the view of Roychowdhury (2006), the concept of real earnings management can be explained as a “management actions that deviate from normal real business practices, undertaken with the primary objective of meeting certain earnings”. The regression model used to test the relationship between the independent variables (i.e. managerial, institutional, family, foreign and concentrated ownership) and real earnings management, is as follows:

$$REM = \beta_0 + \beta_1 MANGOWN + \beta_2 INSTOWN + \beta_3 FAMOWN + \beta_4 FOROWN + \beta_5 OWNCON + \beta_6 FSIZE + \beta_7 GROWTH + \beta_8 PROFIT + e.$$

Where REM = real earnings management, MANGOWN = managerial ownership, INSTOWN: institutional ownership, FAMOWN: family ownership, FOROWN: foreign ownership, OWNCON: ownership concentration, FSIZE= firm size, GROWTH: growth opportunities, PROFIT = profitability, e = error term.

Random-effect GLS regression estimator is employed as it more efficient than Ordinary Least-Squares OLS (Beck & Katz, 1995). In this regard, Petersen (2009) suggested that scholars can enhance the efficiency of their assessments by using the GLS technique and might also utilize these techniques to verify whether or not their study model is correctly specified.

4.4 Variable Measurements

Measurements of Dependent Variable

This study uses Cohen et al. (2008) model which contains composite three proxies for real earnings management, namely: (1) abnormal discretionary expenditures, (2) abnormal production costs, and (3) abnormal cash flows from operations. Hence, abnormal cash flows from operations are supposed to interpret real earnings management practices regarding sales manipulation. Especially, such variable is also used to extract the acceleration of the timing of sales, or the creation of unusual sales by using the lenient credit terms or price discounts.

Furthermore, abnormal production costs are inserted in the model to illustrate the overstate in production or overproduction by management, to allocate the fixed costs over more units, thereby to reduce the COGS for the present year. Besides, the abnormal discretionary expenditures are purposed to reflect real earnings management practices related to the decrease in selling, general & administrative expense (SG&A), advertising and research and development expenses (R&D). The reason behind this variable is that management would decrease these expenditures, as it does not directly generate the revenues.

Every measure is captured by using an independent cross-sectional regression, it calculates as follows:

$$DISEXP_t / TAt-1 = a_0 + (1/ TAt-1) + a_1(SALES_{t-1} / TAt-1) + \xi_t \dots\dots\dots (1)$$

$$PRODt / TAt-1 = a_0 + (1/ TAt-1) + a_1(SALES_t / TAt-1) + a_2 (\Delta SALES_t / TAt-1) + a_3(\Delta SALES_{t-1}/TAt-1) + \xi_t \dots\dots\dots (2)$$

$$CFO_t/TAt-1 = a_0 + (1/ TAt-1) + a_1(SALES_t / TAt-1) + a_2 (\Delta SALES_t / TAt-1) + \xi_t \dots\dots\dots (3)$$

Note that all of these equations are to calculate normal PROD, CFO and DISEXP, where: CFO_t: current cash flow from the operation, PROD_t: the cost of production, and DISEXP: discretionary expenses including advertising expenditure, research and development expenses (R&D) and selling, general & administrative expense (SG&A) which are generally expensed in the same period in which it emerged. SALES_t: the sales in year t. ΔSALES_t: (SALES_t - SALES_{t-1}) change in current sales from t-1 to t. SALES_{t-1}: sales in year t-1. ΔSALES_{t-1}: change in sales, TAt-1: is the total assets by the end of the year as expressed through t-1.

Abnormal levels of production cost (REM PROD_t) is measured as the residuals of equation (2) whereas the abnormal level of expenditures in the business (REMDIXE_{Pt}) and abnormal level of operating cash flows for the business (REMCFO_t) are measured under the title of equations (1) and (3) multiplied by -1. Hence, real earnings management measured as a score involve composite of all three proxies (Cohen et al., 2008; Cohen and Zarowin, 2010; Chi et al., 2011; Ferentinou & Anagnostopoulou, 2016; Gao et al., 2017). Accordingly, REM is the sum of REMPROD_t, REMDIXE_{Pt} and REM CFO_t, consequently, equation 4 illustrates how to calculate the final value of REM, as follows:

$$REM = REM_{CFO}*(-1) + REM_{DISEXP}*(-1) + REM_{PROD} \dots\dots\dots (4)$$

The measurement of independent and control variables is shown in the table below.

Table 1: *Measurement of the key variables of the study*

NO	VARIABLES	OPERATIONALISATION	REFERENCES
Independent Variables			
1	Managerial Ownership	The proportion of total shares possessed by the directors of the company	(McConnell & Servaes, 1990; Mustapha & Ahmad, 2011)
2	Institutional Ownership	The proportion of shares possessed by institutions divided by gross shares numbers.	(Bushee, 1998; Jafarinejad, Jory & Ngo, 2015; Sakaki, Jackson & Jory, 2017)
3	Family Ownership	The proportion of shares held by families to the total number of the firm's shares.	(Chau & Leung, 2006; Hasnan, Rahman & Mahenthiran, 2013; González & García-Meca, 2014)
4	Foreign Ownership	The proportion of shares possessed by foreigners (non-Jordanian) to gross company's shares numbers	(Ahmadjian & Robbins, 2005; Yoo & Koh, 2014; Guo & Zhou, 2015)
5	Ownership Concentration	The proportion of shares owned by the largest five shareholders owning more than 5% of the total shares.	(Klassen, 1997; Velury & Jenkins, 2006; Jaafar & El-Shawa, 2009)
Control Variables			
6	Firm size	The natural logarithm of market capitalization	(Osma, 2008; Francis et al., 2016b)
7	Firm Growth	The ratio of the market value of equity to book value of equity.	(Wild, 1996; Cornett, McNutt & Tehranian 2009; Li & Kuo, 2017).
8	Profitability	The ratio of earnings before interest and tax (EBIT) to total assets (ROA).	(Iatridis & Kadorinis, 2009; Givoly et al., 2010)

5. Empirical Results

5.1 Descriptive Statistics

Table 2 presents the descriptive statistics of the study variable. Table 2 shows the mean values of REM, and ownership structure (managerial, institutional, family, foreign and ownership concentration) in addition to firm size, growth and profitability. These results indicate that the ownership in Jordanian firms characterized by high concentration. Meanwhile, average firm size is measured as a natural logarithm of market capitalization, it has a mean score of 7.173 with the deviation from the mean score of 0.65.

Table 2

Descriptive findings of the study

Variable	Mean	Median	SD	Min	Max	Skewness	Kurtosis
REM	-1.58E-09	0.023	0.223	-1.19	0.760	-0.995	5.857
MANGOWN	0.499	0.487	0.275	0.000	0.979	-0.067	1.994
INSTOWN	0.108	0.028	0.162	0.000	0.665	1.928	6.181
FAMOWN	0.190	0.067	0.25	0.000	0.982	1.479	4.435
FOROWN	0.152	0.001	0.242	0.000	0.987	1.840	5.627
OWNCON	0.617	0.651	0.227	0.000	0.987	-0.555	2.574
FSIZE	7.173	7.143	0.646	5.908	9.14	0.600	3.444
GROWTH	1.358	0.997	1.045	0.168	5.295	1.751	6.127
PROFT	0.024	0.032	0.088	-0.278	0.293	-0.292	5.146

Where: REM: real earnings management, MANGOWN: managerial ownership, INSTOWN: institutional ownership, FAMOWN: family ownership FOROWN: foreign ownership, OWNCON: ownership concentration FSIZE: firm size, GROWTH: growth opportunities, PROFT: profitability measured as return on assets.

5.2 Correlation Analysis

The pairwise correlation test was performed and presented in Table 3. Such test indicates the level of association between variables through the correlation matrix, which explains the problem of multicollinearity (high correlation) between them. As per the findings of Gujarati (2015), the problem of higher interdependency between variables exists if the value is greater than 0.80. In Table 3, it is observed that there is no issue of a high correlation between the variables is below 0.80 where the highest correlation is 0.539 between managerial ownership and ownership concentration.

Table 3

Correlation Matrix Results

Variable	REM	MANGO WN	INSTO WN	FAMO WN	FOROW N	OWNCO N	FSIZE	GROWT H	PROF T
REM	1								
MANGOW N	-0.018	1							
INSTOWN	-0.187	-0.065	1						
FAMOWN	0.01	0.308	-0.292	1					
FOROWN	0.091	0.158	-0.110	-0.215	1				
OWNCON	-0.053	0.539	0.006	0.249	0.300	1			
FSIZE	-0.224	-0.020	0.162	-0.066	0.117	0.241	1		
GROWTH	-0.310	0.092	0.031	0.044	-0.159	0.270	0.437	1	
PROFT	-0.364	0.071	0.031	0.063	-0.041	0.074	0.445	0.130	1

5.3 Multicollinearity Test

The multicollinearity test was done to ensure that no multicollinearity problematic exit. This study considers the value of VIF to check either there is a problem of correlation or not. Table 4 shows the result of multicollinearity test, the mean VIF is less than 5 demonstrating that there is no problem of multicollinearity between variables.

Table 4

Multicollinearity Test

Variable	VIF	1/VIF
FSIZE	2.54	0.393
OWNCON	2.18	0.459
FOROWN	1.88	0.531
MANGOWN	1.85	0.539
PROFT	1.53	0.653
GROWTH	1.52	0.656
FAMOWN	1.5	0.666
INSTOWN	1.4	0.712
Mean VIF	1.54	

5.4 Normality Test

In order to consider the normality of the data set, Kurtosis and Skewness values have been examined. As per the findings of Leys, Ley, Klein, Bernard, and Licata (2013), the normality of the variables can be reviewed if the value of Skewness statistics is in the interval of 3.0 either positive or negative. Table 2 exhibits that no variable is found to deviate from the normal data point as Skewness values are in the range. Meanwhile, Kurtosis values are also in the range which indicates a normal data set (Kline, 2011).

5.5 Regression Analysis Results

This study employed the GLS (random-effects) regression across the five-year test period. The current study conducted regression analysis utilizing Stata version 14 for the study model, which investigated the predictive power of each independent variable towards the dependent variable.

Specifically, the current study examined the effect of ownership structure characteristics as the independent variables; and firm size, growth and profitability as a control variable, on REM as the dependent variable.

Wald Chi-square test can reject or accept the null hypotheses, assuming that the model has no explanatory power on the dependent variable. The Wald Chi-Square is used to assess the overall goodness of fit model for the GLS random-effects regression model (Nair, Nicolae & Narasimhan, 2013; Saeed, Javed & Noreen, 2018). Further, the Wald chi-square test is more suitable than the adjusted R-square, as the GLS does not break down the total sum of squares into the sum of the model sum of squares, and the residual sum of squares in the same way as the OLS does (Gebreselasie, 2008).

As for GLS regression model, the findings are presented in Table 5. The p-value for the model is very significant (p-value 0.000), showing that the model is fit and valid. The test shows that the explanatory variables are significant in the model ($\chi^2 = 210.520$, $p = 0.000$). Hence, the current study's model is highly significant, thereby rejecting the null hypothesis that no significant relationship exists between ownership structure characteristics and REM. The alternative hypothesis that postulates a significant relationship is therefore accepted. This finding is consistent with previous empirical findings that have used the GLS regression model (e.g., Emmerik, Lambooy & Sanders 2002; Nair et al., 2013; Wu & Salomon, 2016).

Table 5
GLS Regression Results

REM	Coef.	St.Err	t-value	p-value
MANGOWN	-0.058	0.035	-1.65	0.098*
INSTOWN	-0.107	0.057	-1.87	0.062*
FAMOWN	0.033	0.031	1.06	0.290
FOROWN	0.168	0.039	4.35	0.000***
OWNCON	0.048	0.045	1.07	0.285
FSIZE	0.014	0.017	0.79	0.431
GROWTH	-0.049	0.009	-5.23	0.000***
PROFT	-0.727	0.089	-8.12	0.000***
_cons	0.092	0.114	0.81	0.418
Mean of DV	-0.000	SD of DV		0.224
Number of obs				505
Wald Chi-square				210.520
Prob > chi2				0.000***

Where: ***significant at 0.01 level; *significant at 0.10 level. REM: real earnings management, MANGOWN: managerial ownership, INSTOWN: institutional ownership, FAMOWN: family ownership, FOROWN: foreign ownership, OWNCON: ownership concentration, FSIZE: firm size, GROWTH: growth opportunities, PROFT: profitability.

5.6 Findings and Discussion

The objective of the study is to examine the relationship between key factors of ownership structure (managerial, institutional, family, foreign and ownership concentration), and REM of the Jordan listed non-financial companies during 2011-2015. The findings under regression analysis are displayed in Table 5. Specifically, managerial ownership has a significant and negative influence on REM ($t = -1.65$, $p < 0.10$). This result is in line with the first hypothesis that the negative relationship exists between managerial ownership and REM. Such result affirms the view of alignment effect related to managerial (insider) ownership, which indicates that as managerial ownership increases, the corporate performance also increases, whereas the opportunistic managerial attitude decreases (Teshima, 2008). Similarly, several studies such as (Teshima, 2008; Wang & Yung, 2011; Pramithasari & Yasa, 2016) have reported a negative relationship between managerial ownership earnings management.

As for institutional ownership, the results report a significant and negative relationship between institutional ownership REM ($t = -1.87$, $p < 0.10$), this result, therefore, supports hypothesis two. In this regard, Farooqi et al. (2017), concluded that the presence of institutional owners supports the effective monitoring of the corporate and enhances value in the performance of different firms.

This finding is consistent with Bushee (1998), who concluded that managers are less likely to cut R&D to reverse an earnings decline when institutional ownership is big. Likewise, Roychowdhury (2006) and Sakaki et al. (2017) who found that the institutional owners are negatively associated with REM. Interestingly, foreign ownership has a significant and positive association with REM, showing that the third hypothesis is rejected. Which implies that as foreign ownership increase, the practices of REM increase. This result is in line with Guo and Ma (2015) Affan and Purwanti (2017). This result could be justified because of the foreign shareholders' focus on the current earnings performance and neglecting the interests of the home country. In addition, there is more pressure on companies that have foreign shareholders to reveal results that satisfy their requirements. In this regard, Ahmadjian and Robbins (2005) indicated that foreign investors are more concerned with investment returns than with long-term relationships.

The findings report an insignificant relationship between family shareholders and REM ($t = 1.06$), therefore the fourth hypothesis is rejected. This finding in line with González and García-Meca (2014), Affan and Purwanti (2015) and Kuka, Amidu, and Abor (2016). Table 5 exhibits that ownership concentration has no relationship with REM, thus, Hypothesis 5 is not supported. This result is consistent with Al-Fayoumi, Abuzayed and Alexander (2010) and Almasarwah (2015).

Concerning control variables, firm size is not associated with REM. This result is supported by Garven (2015) and Alexander (2017). In addition, growth has a negative and significant effect on REM ($t = -5.23$, $p > 0.05$). This result is in line with Gunny (2010), who found that companies with high growth average are less inclined to engage in real earnings management activities. With respect to profitability, the results illustrate that profitability is negatively and strongly associated with REM, which indicates that when the profitability of companies increases, the earnings management practices are less likely to occur. This result is consistent with Ramadan (2015), Abbadi et al. (2016) and Bataineh et al. (2018) in the Jordanian market. The finding is also supported by Anagnostopoulou and Tsekrekos (2017).

6. Conclusion

The purpose of this research is to investigate the effect of ownership structure on real earnings management in Jordan. To fulfil this aim 101 Jordanian service and industrial firms listed at Amman Stock Exchange for the period 2011-2015 were chosen resulting in 505 firm-year observations. By using random-effect GLS regression model; the findings indicate that the real earnings management practices are affected by its ownership structure. Specifically, the outcomes reveal that managerial and institutional ownership negatively associated with real earnings management activity. However, foreign ownership has a positive relationship with real earnings management. In addition, there is no relationship between family and concentrated ownership and real earnings management. The outcomes of the current study should be of great interest to regulators and policy-makers, thus this paper recommends to removal of lawful obstacles to greater involvement in corporate governance by institutional investors. This study concluded that firms with higher foreign ownership increase real earnings management practices, implying that the foreign investors in Jordan only focus on short-term interests, thereby colluding with the management to obtain quick returns from their investment. This calls for more attention by regulators, ASE, and other related parties, in order to develop the code of corporate governance. Thereby deter the practices of earnings management. Consequently, such results perhaps alert the firms' audit committees and the Jordanian securities commission (JSC), to verify the reasons that make foreign ownership engage in REM activities. In addition, the result of this study could provide a notify to JSC to developing the Jordanian corporate governance code and tightening the penalties of companies that do not comply with the requirements of such code.

However, this research is limited to the region of Jordan with a little size of the sample. Future research should test the arguments and conclusions of this study in different contexts as knowledge of the interactions of the effects of different ownership structure remains limited. Better research along with improved literature is much needed for the effects of various metrics about ownership on earnings management, especially in emerging markets.

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