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### Abstract

This paper investigates the effect of corporate governance quality on earnings management in Jordan. Using a panel data set of all industrial and service firms listed on Amman Stock Exchange (ASE) during the period 2009-2013; this paper provides evidence that earnings management is affected negatively by corporate governance quality. In particular; the results show that earnings management is affected negatively by overall categories of governance index represented by board of director, board meeting, Audit and nomination and compensation committee. Furthermore, results suggest that corporate governance quality has increased over time. Thus, its ability to constrain earnings management has also increased. It is recommended to industrial and service companies to boost their compliance with corporate governance code to improve the integrity and reliability of financial reports. This paper fills a gap in the literature by providing evidence about the effect of corporate governance quality on earnings management in Jordan as an emerging economy.

### Keywords

Corporate governance quality, earnings management, financial reporting



# Corporate Governance Quality and Earnings Management: Evidence from Jordan

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## Abstract

This paper investigates the effect of corporate governance quality on earnings management in Jordan. Using a panel data set of all industrial and service firms listed on Amman Stock Exchange (ASE) during the period 2009-2013; this paper provides evidence that earnings management is affected negatively by corporate governance quality. In particular; the results show that earnings management is affected negatively by overall categories of governance index represented by board of director, board meeting, Audit and nomination and compensation committee. Furthermore, results suggest that corporate governance quality has increased over time. Thus, its ability to constrain earnings management has also increased. It is recommended to industrial and service companies to boost their compliance with corporate governance code to improve the integrity and reliability of financial reports. This paper fills a gap in the literature by providing evidence about the effect of corporate governance quality on earnings management in Jordan as an emerging economy.

**JEL Classification:** M40

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## 1. Introduction

The purpose of this study is to investigate the effect of corporate governance quality on the practice of earnings management through discretionary accruals in Jordan. The motivation of this research comes from the global attention to corporate governance quality as well as Earnings Management.

Previous research reported that management may resort to accounting choices that increase income to conceal poor performance (Campello et al., 2011; Habib et al., 2013). Moreover, Management can take advantage of the flexibility of both IFRS (International Financial Reporting Standards) and GAAP (Generally Accepted Accounting Principles) in choosing among different accounting methods when computing earnings and other financial measures of performance, which could lead to reduce quality of financial reports (Makar et al., 2000).

Previous research (references for this?) conducted in Jordan has tackled the issues of Corporate Governance and Earnings Management. However, less attention has been paid to the linkage between corporate governance quality and earnings management. The current study fills this gap in the literature by providing evidence about the effect of corporate governance quality on earnings management in Jordan. Therefore, this research is driven by the role of corporate governance quality in maintaining financial statement users' confidence in the integrity of financial reports.

The remainder of our paper is organized as follows: in the next section we discuss the motivation of the anticipated relationship between corporate governance quality and earnings management. In section three we review the related literature. In section four we introduce the sample selection and research methodology. Section five reports the empirical results and conclusions of the study.

## 2. Theoretical Background

### 2.1. Corporate governance

Corporate governance is defined as the relationship among the corporation and all of its stakeholders (Arsoy & Crowther, 2008), and as "a set of mechanisms through which outside investors protect themselves against expropriation by the insiders", (La Porta et al. 1997). Corporate governance initially appeared to minimise conflict of interest between management and shareholders given the separation between ownership and control, (Baydoun, et al., 2012). The agency framework indicates that internal monitoring mechanisms assist to confirm that directors carry out policies that maximize shareholders' wealth where these mechanisms include the proportion of non-executive directors on the board, separation of the chairman and chief executive posts and the establishment of board subcommittees.

According to several authors (Cadbury, 1992; Dahya & Travlos, 2000; Weir & Laing, 2001) duality takes place when the chairman of the board and CEO roles are combined. The chairman of the board is responsible for managing the board. However, the CEO is responsible for day-to-day management of the firm, including the enforcement of board decisions. Therefore, firms that have duality may have a powerful individual who has the ability to make decisions that may not maximize shareholders' wealth. Consequently, the chairman and CEO roles should be separated. Moreover, stewardship theory considers that CEO duality could enhance a unified and strong

leadership instead of weakening the independence of the board from management as well its monitoring role (Sheikh, et al., 2013; Al-rahahleh, 2015).

The audit committee is responsible for the external auditing of the firm financial statements. Due to the existence of remuneration and audit committees monitor of board performance, it is expected that board will be motivated to improve performance, and investors will gain more confidence in the value of firm's financial statement (Laing & Weir, 1999). According to (Ruigrok, Peck et al. 2006) the presence of a nomination committee<sup>4</sup> is expected to improve the quality of financial statements through ensuring that each nominated director has the required skills and experience. Furthermore, Adams (2000) suggests that the frequency of board meetings is an important mechanism to ensure the effectiveness of board performance to their duties which includes overseeing the behavior of the managers.

## *2.2. Earnings management*

Healy and Wahlen (1999) provide a comprehensive definition: "Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers". Fischer and Rosensweig (1995) define earnings management as: "Actions by division managers which serve to increase (decrease) current reported earnings of a division without a corresponding increase (decrease) of the long-term economic profitability of the division." As such, this definition identifies two important components of earnings management: consequences and intent.

(Healy & Wahlen, 1999; Roychowdhury, 2006; Gajevszky, 2014) argued that the manipulation of accounting figures as an outcome of ordinary operational practices appears to arise from management's motivation to mislead shareholders to ensure that the organization's financial targets have been met in the course of business. Due to the information asymmetry which exists between the company's insiders and outsiders, individuals within an organization can rely on their control in financial reporting and their access to financial information within the company to overstate the income or to mask obtaining unfavorable results. From this viewpoint, management may use different methods such as hiding the changes in economic performance by creating reserves for future periods, hence reducing income volatility (Leuz et al., 2003; Hijazi & Al-Thuneibat, 2015).

Managers can opportunistically manipulate accounting reports by managing accruals. However, Kaplan (1985) state that "normal" accruals arising in the ordinary course of business are unlikely to reflect managerial opportunistic behavior. Any manipulation of accounting information will most likely be apparent in "abnormal" accruals.

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<sup>4</sup> The Nominations and Compensations Committee main tasks are:

1. Ensuring the independence of independent members on a continuous basis.
2. Setting the policy of compensations, privileges, incentives, and salaries and to review them on a yearly basis.
3. Defining the company's needs of qualifications at the upper executive management and employees levels, and the criteria for their selection.
4. Drawing the company's human resources and training policy, monitoring its implementation, and reviewing it on an annual basis

Dechow et al., (1995) examined various models to separate total accruals into normal and abnormal components. They conclude that the Modified Jones Model is the most effective in identifying abnormal accruals that likely reflect earnings management.

### *2.3. The relation between corporate governance and earnings management*

Board governance can directly affect managers' decisions and activities, and can influence choosing, hiring, and controlling external auditors and internal control mechanisms through the audit committee. Although, better board governance can use the internal control system to monitoring opportunistic earnings management (Brickley et al., 1994; Klein, 2002; Carcello et al., 2006). Prior literature has documented how board independence can constrain earnings management (Dechow & Dichev, 2002) due to independent directors do not seek self-interests such as executive compensation, the fraudulent of assets and delude investors to meet personal objectives.

Williamson (1981) debated that the independence of the board is necessary to oversight managerial activities to maintain the interest of investors. Roe (1991) points out that Board independence can prohibit managers' abuse of power. Similarly, Beasley (1996) observed that the inclusion of a large number of outside directors on the board could decrease the probability of manager's opportunistic behavior. Peasnell et al., (2005) supports this view by arguing that a higher percentage of outside directors in the UK can better prevent income-increasing discretionary accruals to avert earnings management. Likewise, Klein (2002) supports this view by arguing that a negative relationship between board independence and earnings management exists in the US. Correspondingly, Xie et al. (2003) find a negative relationship between board independence and the extent of earnings management.

Bedard et al (2004) also observed that audit committees with financial expertise in the US can prohibit earnings management. Further, Agrawal and Chadha (2005) point out that audit expertise can prevent fraud and manipulating earnings, which are measures that affect earnings management. Gaver and Gaver (1998) found a significant and positive association between cash compensation and earnings only if those earnings are positive. Baber et al. (1998) supports this view by arguing that firms with higher compensation function have more persistent components of earnings. Cheng (2004) depicted a significant positive relation between changes in option compensation and changes in R&D expenditures as the executive's terminal year approaches. Moreover, Huson et al (2012) and Man and Wong (2013) observed evidence that the compensation committee makes decisions related to discretionary expenditure in the executive's terminal year when setting cash compensation for executives, and intervenes to minimize payments when managers make up accruals.

### 3. Previous Research

Previous researchers have documented that the influence of the role of corporate governance on earnings management is noteworthy in the sense that a high quality of corporate governance limits earnings management practices. However, previous research has reported mixed results about the nature of this relationship. Klein (2002) found that firms with boards and/or audit committees composed of independent directors are less likely to have large abnormal accruals. The study also suggests that boards structured to be more independent of the CEO may be more effective in monitoring the corporate financial accounting process. Liu and Lu (2007) indicated that good corporate governance mitigates agency problems, especially agency conflicts between the largest shareholders and the minority shareholders. In other words, firms with higher corporate governance levels have lower levels of earnings management. Ali Shah et al., (2009) reported similar results i.e. there is a positive relationship between corporate governance and earnings management.

Epps and Ismail (2009) pointed out that firms with annually elected boards, small size boards, 100 percent independent nominating committees, and 100 percent independent compensation committees have more negative discretionary accruals. Ghosh et al., (2010) reported that earnings management does not vary with board composition and structure, or with audit committee composition, expertise, and ownership. In contrast, board size and audit committee size, activity, and tenure are associated with earnings management. Abed et al., (2012) found that the size of board of directors is the only variable among the existence of independence members within the board of directors, the size of the board of directors, the role duality (CEO/chairman), the percentage of insider ownership that has a significant relation with earnings management. Liu et al (2013) suggested that independence of audit committee, the frequency of meetings and the presence of nomination committee are negatively related to earnings management. However, the independence of the board and firm size are positively related to earnings management.

Swastika's (2013) results showed a significant and negative relationship between audit quality and firm size on one hand and earnings management on the other, a significant and positive relationship between board of director and earnings management. González and García-Meca (2014) reported that management ownership, ownership concentration, board activity and board size have a negative relationship with earnings management measured by discretionary accruals. However, they did not find any statistically significant relation between family ownership, institutional ownership, CEO duality, and the absolute value of discretionary accruals. Likewise, Irayaet al., (2015) found that earnings management is negatively related to ownership concentration, board size and board independence but positively related to board activity and CEO duality. Furthermore, Patrick et al., (2015) findings show that corporate governance practices such as the board size, firm size, board independence, and strength of the audit committee have significant influence on earnings management practices. Finally, Ramachandran et al., (2015) reported that the incentive of earnings management become higher when the nomination committee influence directly or indirectly the remuneration committee.

## 4. Research Design And Variables Measurement

### 4.1. Study sample

The study sample includes all industrial and service companies listed on the Amman Stock Exchange (ASE) for the period from 2009 to 2013. This selection takes into account the most recent data available, prior to publication. The total number of industrial and service companies listed in ASE in 2013 is 132 companies. Due to insufficient financial data, 11 companies were excluded from the analyses. The final number of companies included in the analyses is 121 companies and 558 firm-year observations after excluding the outliers to avoid the impact of the extreme values where outliers were considered top and bottom 1% of the observations on each of the study variables.

### 4.2. Variables Measurement

#### 4.2.1 Dependent variable: earnings management

This study uses the cross-sectional modified Jones' model (Jones, 1991; and Dechow et al., 1995) to obtain a proxy for discretionary accruals. Dechow et al. (1995) and Guay et al. (1996) argued that the modified Jones model is the most powerful model for estimating discretionary accruals among the existing models. Based on the above argument, discretionary accruals can be measured as follows:

**Equation 1:** Total accruals as previously mentioned is the difference between earnings and cash flows from operating activities

$$TACC_{it} = NI_{it} - OCF_{it} \dots \dots \dots (1)$$

**Equation 2:** equation below is estimated for each firm and fiscal year combination; thus the industry specific parameters of the Jones model are estimated as follows:

$$TACC_{it}/TA_{it-1} = \alpha_1 (1/TA_{it-1}) + \alpha_2 [(\Delta REV_{it})/TA_{it-1}] + \alpha_3 (PPE_{it}/TA_{it-1}) + \varepsilon_{it} \dots \dots (2)$$

**Equation 3:** Non-discretionary accruals are measured for each year and fiscal year combination using the equation as follows:

$$NDAC_{it} = \hat{\alpha}_1 (1/TA_{it-1}) + \hat{\alpha}_2 [(\Delta REV_{it} - \Delta REC_{it})/TA_{it-1}] + \hat{\alpha}_3 (PPE_{it}/TA_{it-1}) \dots \dots (3)$$

**Equation 4:** The Difference between total accruals and the non-discretionary components of accruals is considered as discretionary accruals (DACC) as stated in equation as follows:

$$DACC_{it} = TACC_{it} - NDAC_{it} \dots \dots \dots (4)$$

Where:

TACC<sub>it</sub> = total accruals for company i in year t

NI<sub>it</sub> = net income before extraordinary items for company i in year t

OCF<sub>it</sub> = operating cash flows for company i in year t.

TA<sub>it-1</sub> = Previous year's total assets

ΔREV<sub>it</sub> = change in operating revenues for company i in year t



$PPE_{it}$  = gross property, plant and equipment for company  $i$  in year  $t$ .

$NDAC_{it}$  = non-discretionary accruals for company  $i$  in year  $t$

$\Delta REC_{it}$  = change in net receivables for company  $i$  in year  $t$

$DACC_{it}$  = discretionary accruals for company  $i$  in year  $t$

$\alpha_1 - \alpha_3$  = regression parameters.

$\epsilon_{it}$  = error term for company  $i$  in year  $t$ .

We use the absolute value because either positive or negative discretionary accruals are considered as earnings management behavior (Wartfield et al., 1995; Gabrielsen et al., 2002; Wang, 2006; Chen et al., 2007; Barth et al. 2008).

#### 4.2.2. The independent variable: corporate governance quality

Corporate governance quality is measured based on governance index that used by (Sawicki, 2009; Prommin et al., 2012; Prommin et al., 2014) in measuring corporate governance quality. We modified it to be consistent with the rules that required by Corporate Governance Code for Shareholding Companies Listed on the Amman Stock Exchange where we award one point for each standard that is satisfied. The governance index is classified into four categories with a total of 10 standards. All the standards are required by corporate governance code for shareholding companies listed on the ASE under “compliance or explain” approach except standards 9 which is voluntarily adopted. Table 1 (see next page) presents the governance standards that range from 1 to 10 to indicate the degree of compliance with 10 governance standards.

Also, the table provides the rule on each standard that is required by corporate governance code for shareholding companies listed on the ASE.

#### 4.2.3. Control variables

Factors other than corporate governance characteristics may also contribute to earnings management which have been used in previous studies and have been associated with earnings management and corporate governance. We include the firm size measured by the natural logarithm of total assets at the end of year to control for the effects of firm size on accounting choice. It is expected that the control system of large firms are more sophisticated than small firms. Further, the accounting fraud is less possible in large companies due to the increased monitoring by analysts and investors to these companies comparing with small firms that have more opportunities to engage in earnings management practices (Richardson, 1990; Lee & Choi, 2002; Sánchez-Ballesta & García-Meca, 2007; Prior et al. 2008; González & García-Meca 2014). Furthermore, it is expected that small companies are more likely motivated to engage in earnings management practices to cover their higher marginal cost comparing with large companies that enjoy the benefit from economies of scale. Large companies due to their advantage from economies of scale are more able to save costs and thus enhance profitability (Lin et al. 2009).

We also include the leverage level variable measured as the ratio of total debt to total assets. It is expected that companies that have high leverage suffer from excessive risk. Consequently these companies are more likely manipulated their earning (Watts & Zimmerman, 1986; Dechow et al. 1995; Mohrman, 1996; Balsam et al. 2003)

Table 1. corporate governance quality index		
Category	Governance standard	Rule in Corporate governance Code
Board of directors	1) Member of board of directors are not less than five and not more than thirteen	“The administration of the Company is entrusted to a board of directors whose members shall be not less than five and not more than thirteen”
	2) One-third of the directors are independent directors	“at least one third of the board members are independent members.”
	3) Chairman and CEO positions are separated	“It is not allowed for one person to hold the positions of chairman of the board of directors and any executive position in the company at the same time”
Board meetings	4) Disclosure about number of the board meetings	“The board of directors shall meet at least once every two months, provided that the number of meetings in the fiscal year must not be less than six and the number of meetings shall be disclosed in the company’s annual report”
	5) The number of board meetings is not less than six	
Audit	6) Existence of Audit Committee	The board of directors shall form the following permanent committees: The Audit Committee that shall undertake the task of overseeing and monitoring accounting and internal control and auditing activities in the company
	7) Disclosure of frequency of Audit Committee meetings	The Committee shall meet regularly, not less than four times a year, and minutes of its meetings must be taken appropriately
	8) Expertise of Audit Committee	. All members of the Audit Committee must have knowledge and experience in finance and accounting, and at least one of them must have worked previously in accounting or finance fields, and that person must have an academic or professional certificate in accounting, finance or related fields
	9) Engagement of Big 4 auditors (PWC, KPMG, E&Y or Deloitte)	The company’s external auditor should: A. Possess a valid license to practice the profession. B. Be a member of the Jordan Association of Certified Public Accountants. C. Have practiced the profession on a full time basis for at least three consecutive years, after receiving his license to practice the auditing profession. D. Have in his firm at least one partner or employee who must also meet the above- mentioned requirements.
Nominations and Compensations	10) Existence of Nominations and Compensations Committee	The board of directors shall form the following permanent committees:  The Nominations and Compensations Committee, whose main tasks are: 1. Ensuring the independence of independent members on a continuous basis. 2. Setting the policy of compensations, privileges, incentives, and salaries and to review them on a yearly basis. 3. Defining the company's needs of qualifications at the upper executive management and employees levels, and the criteria for their selection. 4. Drawing the company’s human resources and training policy, monitoring its implementation, and reviewing it on an annual basis

Consistent with (Kothari et al. 2002; Francis & Wang 2004), we include two indicators of firm performance as a control variable, the sales growth and return on assets. Sales growth measured as the relation of the difference in sales volume and sales of the previous period. It is expected that companies that have high sales growth are less likely to be motivated to engage in earnings management practices due to their benefit from a strong market share where strong market share lead a company to achieve greater scale in its operations and enhances profitability. A company will be gaining market share as long as it maximize growth and maximizing growth is a way to maximize profit (Wernerfelt, 1986). Companies that have a higher growth rate are less likely to engage in earnings management practices (Bowen et al., 2003; Abdularahman& Ali, 2006). On the other hand, Matsumoto (2002) indicated that companies that have high growth rate are more likely used earnings management. Return on assets (ROA), calculated by dividing net income plus interest expense on the average total assets .This suggests that in order to make the firm more attractive; managers intend to increase the obtained profit, in other words, manipulate the earning upwardly (Kothari et al. 2005; Machuga&Teitel 2007).

### 4.3. Empirical model

In order to achieve the objective of the study to examine the effect of corporate governance quality on the level of earnings management, the empirical form of the model is set out below:

$$|DACC_{it}| = \beta_0 + \beta_1 Governance_{it} + \beta_2 Size_{it} + \beta_3 Leverage_{it} + \beta_4 SG_{it} + \beta_5 ROA_{it} + e_{it}$$

Where:

$\beta_0$ ; intercept;  $\beta_1, \beta_2, \beta_3, \beta_4$ , and  $\beta_5$ : represent the coefficients of regression model.

$|DACC_{it}|$ : the absolute value of discretionary accruals for company i in year t.

$Governance_{it}$ : corporate governance quality, which measured through the above governance index.

$Size_{it}$ : the firm size for company i in year t.

$Leverage_{it}$ : represents the financial leverage for company i in year t.

$SG_{it}$ : sales growth for company i in year t.

## 5. Analysis and Discussion

### 5.1. Descriptive statistics

Table (2) provides the results of the descriptive statistics for the study variables regarding 558 firm- year observations of 121 industrial and service companies listed on ASE during the period (2009-2013). As can be observed from Table 2, the governance index ranges from 2 to 10 with an average of 5.396 which indicates that the adoption of corporate governance rules by Jordanian companies is not ideal. On the other hand, the discretionary accruals ranges from 0.0001 to 0.689 with an average of 0.0966 which provided evidence that Jordanian companies manipulate their results, either by increasing profits to denote a better and higher profitability of the company or, on the contrary, reducing them as fiscal strategy aims to pay less taxes and contributions.

The rate of sales growth of these companies varies from -1 to 1.335 with an average of – 0.014 which indicates that companies within the sample face on average a decrease in sales volume

comparing with previous years. Furthermore, return on assets ranges from -43.798% to 36.02% with an average of 2.35%, which shows how efficient management is utilizing company's assets to making a profit. The natural logarithm of total assets of these companies varies from 13.06 to 21.292 with an average of 17.034, and the financial leverage of these companies which showed the proportion of company assets that are financed through debt ranges from 0.0002 to 1.029 with an average of 0.346.

**Table2: Descriptive statistics for the study variable.**

Variables	Minimum	Mean	Maximum	Std. Deviation
DACC	0.0001	0.0966	0.689	0.106
Governance	2	5.396	10	1.761
Size	13.06	17.034	21.292	1.413
Leverage	0.0002	0.346	1.029	0.234
ROA	-43.798	2.35	36.02	9.739
SG	-1	-0.014	1.335	0.307

Table 3 depicts the correlation coefficients between the study variables. As presented in table (3) there is a significant negative association between governance quality and earnings management. This implies that strong corporate governance quality is associated with lower earnings management. Control variables represented by size, sales growth and return on asset have a significant negative correlation coefficients. However, leverage has a significant positive correlation coefficient.

The Pearson correlation coefficients between explanatory variables are also shown in Table 3; which indicate that there are no signs for multicollinearity because correlation among the set of explanatory variables are mostly low (less than 0.4). According to (Filed, 2005; Tauringana & Arfifa, 2013) multicollinearity problem exists when correlation coefficient is more than .80 or .90

**Table3: Correlation Matrix.**

Variables	EM	Governance	Size	Leverage	ROA	SG
DACC	1					
Governance	-0.301**	1				
Size	-0.132**	0.133**	1			
Leverage	0.273**	-0.08	0.339**	1		
ROA	-0.268**	0.138**	0.314**	-0.239**	1	
SG	-0.141**	0.124**	0.156**	-0.044	0.305**	1

Notes:  
 \*\* Correlation is significant at the 0.01 level (2-tailed).  
 \* Correlation is significant at the 0.05 level (2-tailed).

5.2. Discussion

Table (4) reports the results of the study model, which aims to examine the effect of corporate governance quality on earnings management taking into consideration company size, financial leverage, sales growth and return on assets. The results, as summarized in the table, suggest that the 19.5% variation in the dependent variable can be explained by the explanatory variables. Moreover, this model is significant with F-statistic value of (28.061) and p=0.000, suggesting that the model is statistically valid.

**Table 4: Multiple Regression results for the whole sample (2009-2013).**

<b>Governance</b>	0.000** (-6.113)
<b>Size</b>	0.001** (3.423)
<b>Leverage</b>	0.000** (6.339)
<b>ROA</b>	0.018* (-2.366)
<b>SG</b>	0.287 (-1.066)
<b>Constant</b>	0.000 (6.043)
<b>Sig. of F</b>	0.000
<b>Adj-R<sup>2</sup></b>	0.195

The table provides OLS regression results for the main regression model of the study regarding 558 firm year observations after deleting outliers. The model is:  

$$|DACC_{it}| = \beta_0 + \beta_1 \text{Governance}_{it} + \beta_2 \text{Size}_{it} + \beta_3 \text{Leverage}_{it} + \beta_4 \text{SG}_{it} + \beta_5 \text{ROA}_{it} + e_{it}$$
DACC is the discretionary accruals which measured through modified Jones model, Governance is corporate governance quality which measured through governance index as shown in Table 1, Size is firm size which measured through Lin of total asset, Leverage is financial leverage which measured through proportion of total liabilities to total assets, ROA is return on assets ((net income<sub>it</sub>+ interest expense<sub>it</sub>)/ average assets<sub>it</sub>), SG is sales growth ((current year sales-previous year sales)/previous year sales)The numbers in parenthesis are t-value.  
\*\* Significant at the 0.01 level (2-tailed).  
\* Significant at the 0.05 level (2-tailed).

As can be observed from Table 4, earnings management is affected negatively by governance quality at a 1% level of significance, which mean that strong corporate governance prevent manipulation in earnings. This result is consistent with Liu and Lu (2007) where a negative impact of corporate governance on earnings management was observed. However, this finding is inconsistent with Ali Shah et al., (2009) who provided evidence that corporate governance has a positive impact on earnings management. On one hand, earnings management is also affected negatively by firm size at a 1% level of significance, which indicates that large companies are less likely to be engaged in earnings management practices. This is may possibly refer to their benefit from economies of scale compared with small companies that tend to manipulate earning to cover their high marginal cost.

On the other hand, earnings management is affected positively with financial leverage at 1% level of significance, which imply that companies suffer from high debt tend to manipulate earnings and distort their financial statements to maintain a margin of safety to the creditors and

to avoid debt covenant violation. This results is consistent with Becker et al. (1998) and with (Mohrman, 1996; Gu et al., 2005; Hijazi, 2015) who justified this relation by suggesting that these companies are more likely motivated to manipulate earnings to maintain their financial statements in accordance with their creditor’s requirements and to debt contractual agreements. The results also revealed that sales growth is insignificant related to earnings management. However, earnings management is affected negatively by return on asset at 5% level of significance. Consequently, it can be argued that companies have high return on assets are less likely manipulated their earnings. According to (Kothari et al. 2005; Machuga & Teitel 2007) managers intend to increase the obtained profit in other word manipulate the earning upwardly to make the firm more attractive.

5.3. Categories of governance index

One could argue that earnings management could be associated with only one or two category of governance index; to examine this argument and to gain more insights about which category of governance index has more impact on earnings management, regression results of each category of governance index are presented in table (5) below:

**Table 5: Multiple Regression results for categories of governance index.**

Variables	Board of directors	Board meetings	Audit	Nomination and compensation
<b>Governance</b>	0.001** (-3.486)	0.000** (-4.117)	0.000** (-4.644)	0.008** (-2.682)
<b>Size</b>	0.000** (-3.748)	0.000** (-4.553)	0.007** (-2.719)	0.000** (-3.797)
<b>Leverage</b>	0.000** (6.659)	0.000** (6.445)	0.000** (6.504)	0.000** (6.875)
<b>ROA</b>	0.003** (-2.949)	0.028* (-2.197)	0.023* (-2.276)	0.014* (-2.474)
<b>SG</b>	0.151 (-1.437)	0.218 (-1.232)	0.203 (-1.273)	0.141 (-1.474)
<b>Constant</b>	0.000 (6.102)	0.000 (6.012)	0.000 (4.513)	0.000 (5.045)
<b>Sig. of F</b>	0.000	0.000	0.000	0.000
<b>Adj-R<sup>2</sup></b>	0.159	0.167	0.173	0.152
The model is: $ DACC_{it}  = \beta_0 + \beta_1 Governance_{it} + \beta_2 Size_{it} + \beta_3 Leverage_{it} + \beta_4 SG_{it} + \beta_5 ROA_{it} + e_{it}$ The numbers in parenthesis are t-value. ** Significant at the 0.01 level (2-tailed). * Significant at the 0.05 level (2-tailed).				

The results pointed out that earnings management is affected negatively by the four governance categories, and the four categories is statistically significant at 1% level of significance, which imply that strong adoption to overall categories of governance index prevent earnings management practices in Jordan.

It can be observed from Table 5 that standards regarding audit and board meetings categories have higher coefficients comparing with the other categories, which suggest that strong adoption to audit standards prevents the distortion of financial statements. This outcome is consistent with the findings of several authors (Liu et al, 2013; Swastika, 2013; and Patrick et al., 2015) who agreed on the effectiveness of audit standards in constraining the manipulation of earnings. Furthermore, the results also indicate that a strong adoption of board meeting standards can also prevent earnings management practices. This is consistent with other findings (González & García-Meca, 2014).

The results also indicate that strong compliance with standards regarding board of directors category<sup>5</sup> play a role in preventing manipulation of earnings. This outcome agrees with the finding of other studies (Klein, 2002; Liu et al, 2013; Iraya et al., 2015; González & García-Meca, 2014; Patrick et al., 2015; Ghosh et al., 2010; Abed et al., 2012). However, this result contradicts the finding of other studies (Swastika, 2013) where a negative relationship was observed between the board of directors and earnings management

The existence of nomination and compensation committees also discourages earnings management practices. Thus, it can be argued that managers are less likely to manipulate earnings where there exists a particular committee that oversees their compensation. However, in case of the non-existence of nomination and compensation committees, managers are more motivated to manipulate earnings, especially when their compensations are associated with the amount of firm earnings. This supports the results of other studies (for example, Epps & Ismail, 2009; and Liu et al, 2013) in that nomination committees are negatively associated with earnings management.

#### *5.4. Corporate governance quality*

The awareness of corporate governance in Jordan has been increasing over time, and the compliance with the corporate governance code by Jordanian companies is also increasing over time. Thus, corporate governance quality increases over time. Thus, we assume that corporate governance quality in the latter part of the sample i.e. 2012-2013 is higher than in the earlier part of the sample i.e. 2009-2010 taking into consideration that there is no reason to assume that earnings management is decreasing over time. We exploit this fact to determine whether the increase in the governance quality has a direct impact on earnings management; we distinguish the earlier part of the sample from the latter part of the sample by partitioning the full sample into two subsamples represented by “Recent year subsample” and “Early year subsample”; these subsamples of the full sample is motivated by the results from previous studies which agreed that corporate governance quality increased over time (Sawicki 2009; Promminet, al. 2012; Prommin et, al. 2014).

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<sup>5</sup> Board of directors category governance standard entails the following:

- 1) Member of board of directors are not less than five and not more than thirteen
- 2) One-third of the directors are independent directors
- 3) Chairman and CEO positions are separated

Table 6 depicts the results of the benchmark model which aims to examine the effect of corporate governance quality on earnings management without taking into consideration any company characteristics, Table (6) also presents the results of the subsamples which distinguishes between recent year and early year

**Table 6: Multiple Regression results for the full sample and sub-samples based on year**

Variables	Benchmark model (EM)	Recent year 2012-2013	Early year 2009-2010
Governance	0.000** (-7.433)	0.000** (-5.431)	0.000** (-4.079)
Constant	0.000 (14.059)	0.000 (9.102)	0.000 (8.829)
F value	55.251	29.501	16.638
Sig. of F	0.000	0.000	0.000
Adj-R <sup>2</sup>	0.089	0.122	0.063

Based on the results summarized in table 6, the explanatory power across recent year subsample rose from 0.089 to 0.122 and fall across early year subsample to 0.063. The difference between the explanatory power across subsamples support our prior expectation in that corporate governance quality is increased over time and it ability to constrain earnings management is also increased.

### 5.5. Robustness tests

There are some fundamental assumptions to be fulfilled in order for the OLS regression model to be valid. Most important assumptions are (Hair et al., 2010): Multi-collinearity, Outliers and Normality

#### 5.5.1-collinearity (values of variance inflation and tolerance factor)

Despite the fact that the correlation matrix can be used to detect potential multicollinearity problems between explanatory variables, the nonexistence of high correlation does not always mean that there is no multicollinearity. To deal with this problem, the multicollinearity was tested by finding the variance inflation factor values for independent variables relevant to the model. The values of the tolerance factor closer to zero and variance inflation factor greater than 10 will show the presence of multicollinearity in the model (Gujarati, 2009).



**Table 7: The Collinearity Statistics for the independent and control variables**

Variables	Collinearity Statistics	
	Tolerance	VIF
Governance	0.955	1.047
Size	0.705	1.418
Leverage	0.744	1.344
ROA	0.716	1.397
SG	0.897	1.115

The tolerance factors (TF), as we can see from table (7), vary from (0.705) to (0.955). Similarly, the results of Variance inflation factor (VIF) ranges from 1.047 to 1.418, which shows no signs of multicollinearity in the model.

### 5.5.2 Outliers

An outlier is a data point distinct or deviant from the rest of the data. The presence of outliers can influence results significantly and thus must be considered for treatment (Gujarati, 2009). There are several ways to identify outliers. In this study, outliers were identified using Cook’s distance measures the difference between the regressions coefficient obtained from the full data and the regression coefficients of the sample after removing a case from the estimation process (Chatterjee & Hadi, 2006). Moreover, any case that has a value of Cook’s distance of more than 1.0 is considered as a possible outlier as Maindonald and Braun (2010) suggested. Table 8 reflects the outcome of Cook’s distance calculation. As can be seen from table 8, the maximum value for Cook’s distance for the observations is 0.164 according to Maindonald and Braun (2010), there are no outliers due to the notion that maximum value of Cook’s distance for the (558) firm-year observation is lower than benchmark 1.0.

**Table 8: Cook’s Distance.**

	Mean	Minimum	Maximum	St. deviation
<b>Cook's Distance</b>	0.003	0.000	0.164	0.012

### 5.5.3 Normality

Normality refers to the shape of data distributions for an individual quantitative data variable and its correspondence to the normal distribution. Since the current research examined data from a large sample, this condition may not distort the results as significant departure from non-normality may be negligible for a sample size of 200 or more (Hair et al., 2010).

## 6. Conclusion

This study examines the effect of corporate governance quality on earnings management controlling for the effect of firm size, financial leverage, sales growth and return on assets, of all industrial and service companies listed on ASE during the period (2009-2013). The findings of this study indicate that the level of earnings management, measured by discretionary accruals, is affected negatively by corporate governance quality. Regarding control variables, the results showed that large companies are less likely tend to engage earnings management practices which may possibly refer to their benefits from their economies of scale; companies that have high return on assets are less likely to use discretionary accruals; companies that have high leverage are more likely to be motivated to use discretionary accruals and restate their financial statements (which may possibly suggest that these companies are trying to show a margin of safety to their creditors and to avoid debt covenant violation). Sales growth showed a negative significant correlation coefficient at the 1% level of significance, however the overall regression results showed that sales growth is insignificant related to earnings management. Furthermore, the findings also showed that earnings management is affected negatively by overall categories of corporate governance index represented by board of directors, board meetings, Audit and Nomination and Compensation committees.

The results of descriptive statistics showed that corporate governance quality for companies within the sample ranges from 2 to 10, which indicate that some companies within the sample violate the rules of corporate governance code. So far Jordanian companies have not yet reached the phase of full compliance with the corporate governance code. This may mainly refer to the flexibility given to Jordanian companies through the “compliance or explain” approach rather than the “compliance or penalties” approach. However, the difference between subsamples from recent and early years indicates that the awareness of corporate governance is increasing over time and the compliance with the corporate governance code by Jordanian companies is also increasing. Consequently, the ability of corporate governance to constrain earnings management practices is also increased.

The results of the study have implicit recommendations for Jordanian companies listed on ASE. Due to the negative impact of corporate governance quality on earnings management (which reflects on the credibility of the financial statements); Jordanian companies should enhance their compliance with corporate governance standards related to boards of directors, board meetings, audit, nomination and compensation committees.

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