

The Effect of Audit Quality and Auditor's Opinion on Earnings Management: Evidence from Jordan

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ABSTRACT

This study examines the effect of audit process quality and auditor's opinion on earnings management in industrial companies listed in Amman Stock Exchange (ASE) in Jordan, during the period from 2006 to 2015. Three measurements were used to indicate the effect of audit process quality on earnings management (tenure, audit firm size and auditor specialization). The final sample included 57 industrial companies listed in ASE with 547 observations. This study utilized panel secondary data derived from financial statements. Correlations and multiple regression analysis were used to test the effect of audit process quality and auditor's opinion on earnings management.

The results revealed that tenure has a statistically negative relation with earnings management. In addition, auditor specialization measured by client firm size plays a critical role in reducing earnings management. On the other hand, an insignificant effect of audit firm size on earnings management is observed. Furthermore, the results showed that when we move from unqualified opinion to disclaimer opinion, the extent of earnings management increases.

Based on these results, it is recommended to reconsider mandatory audit firm rotation by regulators and standards' setters.

Keywords: Earnings management, Audit quality, Tenure, Audit firm size, Auditor specialization, Auditor's opinion.

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تأثير جودة التدقيق ورأي المدقق على إدارة الأرباح: دليل من الأردن

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ملخص

تناولت هذه الدراسة اختبار تأثير جودة عملية التدقيق ونوع تقرير المدقق على إدارة الأرباح في الشركات الصناعية المدرجة في سوق عمان المالي في الأردن للفترة (2006-2015). لتحقيق أهداف الدراسة، تم اختبار تأثير جودة عملية التدقيق على إدارة الأرباح باستخدام ثلاثة مقاييس؛ طول فترة التدقيق، وحجم شركة التدقيق، وتخصص المدقق. تضمنت العينة النهائية للدراسة 57 شركة مدرجة في سوق عمان المالي بما مجموعه 547 مشاهدة. وتم الحصول على البيانات اللازمة للدراسة من واقع القوائم المالية وتقرير المدقق الخارجي. أجري تحليل البيانات واختبار مدى وجود تأثير لجودة عملية التدقيق ونوع تقرير المدقق على إدارة الأرباح من خلال استخدام اختبار الارتباط والانحدار المتعدد.

توصلت الدراسة إلى أن طول مدة التدقيق لها تأثير سلبي ذو دلالة إحصائية على إدارة الأرباح؛ بمعنى أن ممارسات إدارة الأرباح نقل كلما زادت مدة التدقيق. إضافة إلى ذلك، توصل الباحثان إلى أن تخصص المدقق في قطاع الصناعة له دور مهم في تقليل ممارسات إدارة الأرباح. وتوصلت الدراسة أيضاً إلى أن حجم شركة التدقيق ليس له تأثير ذو دلالة إحصائية على ممارسات إدارة الأرباح. كذلك أوضحت النتائج أن إدارة الأرباح نقل بالنسبة للشركات التي يكون رأي المدقق فيها نظيفاً، وتزداد إدارة الأرباح كلما كان رأي المدقق متحفظاً أو معاكساً أو امتنع عن إبداء الرأي.

وبناءً على النتائج، فإن أهم التوصيات التي خرجت بها الدراسة تتمثل في إعادة النظر في الإلزام القانوني للشركات بتدوير مدققي الحسابات.

الكلمات الدالة: إدارة الأرباح، نوعية التدقيق، طول فترة التدقيق، حجم شركة التدقيق، تخصص المدقق، رأي المدقق.

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INTRODUCTION

The primary role of financial reporting is to provide high-quality and useful information for business and economic decision-making. However; in some cases, this role can be challenged by managers' motivations to improve their positions and enhance their incentives. Such motivation leads to the emergence of the so-called earnings management (DeAngelo, 1986).

Earnings management practices were introduced in recent years, as a number of serious scandals occurred in some financial firms, like the collapse of Enron Company that had been audited by Arthur Andersen, who overstated profits to trick investors and users.

Healy and Wahlen (1999) stated that earnings management occurs when insiders; namely, managers, use judgment in structuring transactions to alter financial statements to either mislead outsiders; namely, some stakeholders and creditors, about the underlying economic positions and performance of the firm or to influence contractual outcomes that depend on financial statements. Former argument emphasizes the negative impact of earnings management. By relying on such an argument, some practitioners and regulators believe that earnings management is unacceptable (Taylan, 2017). On the other hand, Dechow et al. (1995) emphasized that earnings management can be used to communicate insider information to external users of financial statements; it therefore enhances the informativeness of the accounting numbers.

External auditors play a fundamental role in constraining earnings management and enhancing financial statements quality, since they perform a task concerning financial statements' credibility and reliability. This role is very important to external users to gain assurance that the audited financial statements are relevant and unbiased for their decisions (Al-Khaddash et al., 2013). There is a huge body of literature documenting that high audit quality limits

earnings management practices, in contrast to lower audit quality (Jordan et al., 2010; Hamdan and Abu-Ajeela, 2012; Hegazy et al., 2015).

Another factor that may affect earnings management is the external auditor's opinion. The issuance of a qualified or adverse audit opinion puts pressure on firms' managers to comply with generally accepted accounting principles to avoid such opinion, thereby reducing earnings management (Jabbarzadeh et al., 2013).

Therefore, the aim of this study is to examine the effect of audit quality and auditor's opinion on earnings management using a sample of industrial companies listed in ASE.

Study Objectives

The main objective of this study is to examine the effect of audit process quality and auditor's opinion on earnings management using a sample of Jordanian industrial companies. This study aims to achieve the following objectives:

- A- Examining the effect of audit firm size on earnings management.
- B- Examining the effect of auditor tenure on earnings management.
- C- Examining the effect of auditor industry specialization, measured by auditor's within-industry market share, on earnings management.
- D- Examining the effect of auditor industry specialization, measured by the number of auditor's clients at the industry level, on earnings management.
- E- Examining the effect of auditor opinion on earnings management.

Importance of the Study

The primary purpose of external audit is to provide

users of financial statements with an opinion whether the financial statements are prepared in conformity with international financial reporting standards (IFRS). Managers have motivations to manage earnings and to use earnings management discretions on assets, liabilities, expenses, revenues... etc. So, the auditor enhances the level of confidence external users can place in financial statements by providing reasonable assurance of fair presentation of these statements and whether the financial statements are free from material misstatements whether due to fraud or error.

This study gets its importance from the fact that the quality of the audit procedures can to some extent eliminate earnings management. Examining the effect of audit quality and auditor's opinion on earnings management is expected to be important for external users and regulators of accounting information in Jordan in determining whether companies in Jordan are managing earnings or not, as well as emphasizing the role of external auditors in reducing earnings management.

Theoretical Framework and Previous Studies

Earnings Management Definitions

There are several definitions of earnings management that are used in academic literature, each of which reflects a certain point of view and hypotheses to explain the phenomenon, as well as the motivations standing behind each definition (Taylan, 2017).

Ronen and Yaari (2008) argued that earnings management can be defined as the alteration of the firm's reported earnings by managers to either mislead external users of financial statements or to influence contractual outcomes.

Other studies focused on the flexibility in accounting standards in defining earnings management, Scott (2003: 369) argued that managing earnings is "the choice by a manager of accounting policies so as to achieve a specific objective". Managing earnings can also be defined as "the

process of taking deliberate steps within the constraints of generally accepted accounting principles to bring a desired level of reported earnings." (Davidson, Stickney and Weil, 1987, cited in Schipper, 1989: 92).

Earnings Management Methods

The most successful and commonly used methods to manage earnings can be presented as follows:

1- "Cookie Jar Reserve" Technique

The flexibility in accounting standards makes it easy for managers to smooth earnings, by putting them in a jar, using cookie jar reserve. When firms are away above their targeted profits, they may have incentives to manage earnings by reducing current-period income and saving it for the future when it may be of higher value.

2- "Big Bath" Techniques

Big bath techniques are used on the base that, if you have bad news that must be reported, report them all at once to have their effect on the market place at one time, as investors, lenders and others will focus on the future earnings (Rankin et al. 2012).

3- Shrink-up the Ship

Sometimes, companies decide to repurchase their outstanding shares (buyback shares), in which no gains or losses need to be reported in the financial statements, as required by IFRS. But, if we look at this transaction from another side, we can find that it's a creative way for managers to affect earnings per share and thus create good reputation with capital markets (Rajgopal, 2015), so as to positively influence stock prices and create market in their shares.

Audit Process Quality and Auditor's Opinion

Knechel and Salterio (2017) defined auditing as the process of providing assurance about the reliability of

financial information contained in the reports prepared by the management in accordance with International Financial Reporting Standards (IFRS). In addition, auditing requires examining, searching for evidences for any misrepresentations and evaluation of these evidences to get an opinion about the credibility and faithful representation of financial information provided.

The auditor must plan and perform audit procedures to obtain sufficient appropriate audit evidence.

IASB (2017) pointed out that the audit quality is likely to be achieved when the auditor's opinion on the financial statements can be relied on and the auditor must obtain sufficient appropriate audit evidence by an engagement team with appropriate values, ethics and attitudes, which is sufficiently knowledgeable and experienced to perform the audit work. De Angelo (1981) defined audit quality as the joint probability of detecting and reporting material financial errors, which will depend on the auditor's independence. Davidson and Neu (1993) argued that audit quality is the auditor ability to identify and rectify misstatements in companies' reported earnings.

The major proposition of this study is that earnings management is influenced by audit quality.

Audit Quality

An effective accounting system must produce reliable, accurate and fair financial reports. A strong auditing system is needed to evaluate the effectiveness of a company's internal controls in order to achieve the company's business objectives and help detecting and preventing fraud or any other deception cases. From this perspective and in order to insure that the auditor will issue an objective report about the financial information, the importance of a high-quality audit process appears. Three variables were used to measure the quality of the auditing process:

1- Auditor Tenure

Auditor tenure is the length of client- auditor relation; it

is indicated here as the number of working years between the parties involved. The literature on the effect of audit firm tenure on earnings management offers two competing views. On the one hand, long auditor-client relationship increases the likelihood of the auditor to compromise his/her independence and thus decrease the audit quality. Advocates of this argument suggest a mandatory rotation every certain number of years (Ruiz-Barb et al., 2009). On the other hand, auditors gain more client-specific knowledge over time, which leads to a more impartial judgment of the auditor and therefore improves audit quality and reduces earnings management (Okolie, A (1), 2014).

2- Audit Firm Size

It is generally accepted that big 4 audit firms provide higher quality audits than others. This is due to the superior human skills, greater financial resources along with a stronger desire to protect their reputation (Affes and Smii, 2016).

Krishnan (2003) clarified that big 4 audit firms are greater at detecting client earnings management compared to non-big 4 audit firms. Sawan and Alsaqq (2013) supported that big -4 firms are better auditing firms as; they provide accurate, credible and high-quality information.

3- Auditor Specialization

Audit quality, as an independent variable, can be measured by indicating how specialized the auditor is in auditing financial statements and whether he/she is able to detect any earnings management. Auditor specialization is measured in the current study by two variables as follows:

- 1- *CLSize*; auditors are supposed to be specialists if they supply their services to a large number of clients in the industry; based on the assumption that

industry expertise is built by repetition in similar settings and therefore a large volume of business in an industry (Balsam et al., 2003). This variable is measured as the client firm's total assets as a percentage of the industry total assets for each year per audit firm.

2- *NumClients*: auditor specialization is also measured by the total number of clients as a percentage of the total number of clients in the industry for each year per audit firm (Balsam et al., 2003).

Auditor's Opinion

Auditor's report is the means of communication by which the auditor expresses his/her opinion about financial information: therefore, it is vital to examine the association between auditor's opinion and earnings management in a situation where the propensity to manage earnings may be high (Tsipouridou and Spathis, 2014).

Previous Studies

Several studies have been conducted to tackle the issue of earnings management and audit process quality in the academic area.

Abu Ijela and Hamdan (2010) investigated the impact of auditing quality on earnings management in Jordanian companies for the years 2001 to 2006. The results of the study showed that the Jordanian companies practiced earnings management and there was a significant effect of audit quality on earnings management.

Al-Mousawi and Thuneibat (2011) investigated the effect of audit quality on earnings management in companies listed in ASE for the period from 2002 to 2006. The audit quality was measured by the average clients' size of the auditing firm and earnings management was measured by discretionary accruals. Their study used two moderating variables, which were the client importance and the auditor's name. The findings showed that audit quality has a relatively weak negative influence on earnings management. The

moderating variable (client importance) has no significant effect on the relationship between audit quality and earnings management.

Al-Sartawi et al. (2013) examined the effect of audit committees on reducing earnings management in Jordan during (2001-2006). Their study found that in industrial public companies, the audit committee size, the financial experience of audit committee members and the number of meetings do not affect reducing earnings management, while the percentage of shares that audit committee members own in the company has a significant effect on increasing earnings management.

Kanakriyah et al. (2017) examined the impact of earnings management practice on the quality of accounting information in Jordan. The study used a questionnaire to measure the users' attitudes about earnings management practice and how this practice affects the quality of accounting information in Jordan. The results of their study showed that users of accounting information believed that the earnings management practice is used by some companies in Jordan and this practice affected the quality of accounting information and has an impact on users' decisions. In addition, the results revealed several reasons for using earnings management; e.g., to meet shareholders' and financial analysts' expectations for the company's performance and to increase management's rewards.

Alzoubi (2018) investigated the relationship among audit quality, debt financing and earnings management in Jordan using a sample of industrial companies during the period from 2006 to 2012. His study used the modified Jones model, in which discretionary accruals were used as a proxy for earnings management. The results showed that audit quality measured by auditor tenure, size and specialization and

debt financing diminish the potential of earnings management risk and, in turn, enhances financial reporting quality.

Yasser and Soliman (2018) examined the impact of audit quality on earnings management using Egyptian firms during the period (2012-2016). Audit quality was measured by audit firm size, auditor industry specialization and auditor tenure. Using regression analysis, the results revealed that auditor tenure has a significant positive impact on earnings management, while audit firm size and auditor industry specialization have no significant impact on earnings management.

Türel et al. (2017) examined the association between audit tenure, the quality of auditing process and earnings management in Turkey. The results suggested that there is an increase in audit quality given the length of audit firm tenure. The examination of multiple proxies of audit quality provides greater confidence in the relationship between audit quality and audit firm tenure.

Khansalar and Moazedi (2016) investigated the association between earnings management (accruals-based and real) and auditor's opinion during the period 2008-2013. Results revealed that earnings management (accruals-based) has a negative significant effect on auditor's opinion, in addition to a negative significant effect of abnormal cash flow from operations on auditor's opinion.

Hegazy et al. (2015) focused on the effect of auditor specialization on audit quality. Results showed that specialist auditors appeared to have a greater experience than auditors in different industries, which is gained by deepening client's relations.

Moreover, Okolie (1) (2014) investigated earnings management from the perspective of auditor's quality in Nigeria using auditor tenure and auditor independence. The results revealed that audit tenure and auditor independence had a significant effect on the amount of discretionary accruals. The effect of audit fees on the level of discretionary

accruals was also positive and significant.

Kramer et al. (2011) aimed to contribute to the debate around the effect of mandating audit firm rotation on earnings management. Study results showed that the levels of conservatism in reported earnings are higher for short audit tenure than they are for long audit tenure. The study contributed to the existing literature by suggesting that mandating audit firm rotation has a positive effect on the asymmetric timeliness of loss recognition (i.e., conservatism).

Bouqalieh and Zalloum (2019) examined the impact of audit quality on the cost of equity capital of industrial and service companies listed in ASE for the period (2010-2015). The results of the study showed that there is an impact of audit quality on reducing the cost of equity capital of shareholding industrial and service companies.

Atwa and Abed (2019) investigated the role of audit quality and corporate governance in reducing earnings management practices in the Jordanian industrial and service companies listed in ASE during the period (2011-2014).

The results indicated that there is a statistical significant negative effect for the auditor size-big 4 and auditor opinion on reducing earnings management practices. In addition, their study found that there is a statistical significant negative effect related to the percentage of managerial ownership and concentration ratio on earnings management practices.

Data and Methodology

Study Population

The population of the study consisted of all the industrial companies listed in ASE during the period (2006-2015), totaling 63 companies.

Study Sample

The study sample consisted of all industrial companies listed in ASE during the period (2006-2015). Six companies were excluded from the study, because their data was not available for at least 4 years. The final sample included 57 companies with 547 observations.

Study Period

The study covers the period from 2006 to 2015. Data for 2005 was needed to compute some of the variables. Since the 2016 financial statements had not been published by the time we conducted our research, it was excluded and therefore this study is limited to 2015.

Study Hypotheses

In order to analyze the effect of the quality of audit process and auditor's opinion on earnings management of industrial companies listed in ASE, the following main hypothesis was formed:

H_{0,1}: There is no statistically significant effect of the audit process quality on earnings management.

Within this broad theme, the study has the following specific sub-hypotheses:

H_{0,1,1}: There is no statistically significant effect of the audit firm size on earnings management.

H_{0,1,2}: There is no statistically significant effect of the auditor tenure on earnings management.

H_{0,1,3}: There is no statistically significant effect of the auditor's industry specialization measured by the size of the audit firm on earnings management.

H_{0,1,4}: There is no statistically significant effect of the auditor's industry specialization measured by the number of clients on earnings management.

Study Model

In order to achieve the study objectives in analyzing the effect of audit process quality and auditor's opinion on

earnings management, the following regression model is designed and analyzed to test the null hypotheses of the study.

$$DAC = \alpha_1 + \alpha_2 TENURE + \alpha_3 AUDSIZE + \alpha_4 CLSize + \alpha_5 NumClients + \alpha_6 Aud\ opinion + \alpha_7 ROA + \alpha_8 TobQ + \alpha_9 LEVERAGE + e_2$$

where;

DAC is the dependent variable measured by discretionary accruals for firm *i* in year *t*.

This study used the modified Jones' model (Jones, 1991; Dechow et al., 1995) to measure earnings management based on discretionary accruals as follows:

First Equation: we calculated the total accruals for each year for each firm using cash flow method; as the difference between net income and operating cash flow:

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

where:

TAC_{it} = total accruals for company *i* in year *t*.

NI_{it} = net income for company *i* in year *t*.

OCF_{it} = operating cash flow for company *i* in year *t*.

Second Equation: is the calculation of non-discretionary accruals for each year for each firm as follows:

$$NDAC_{it} / TA_{it-1} = \hat{a}_1 (1 / TA_{it-1}) + \hat{a}_2 [(\Delta REV_{it} - \Delta REC_{it}) / TA_{it-1}] + \hat{a}_3 (PPE_{it} / TA_{it-1}) \dots \dots \dots (2)$$

where:

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

TA_{it-1} = previous year's total assets.

ΔREV_{it} = change in operating revenues for company *i* in year *t* (difference between current and

previous year revenues).

ΔREC_{it} = change in receivables for company i in year t (difference between current and previous year receivables).

PPE_{it} = property of plants and equipment for company i in year t .

$\hat{\alpha}_1 - \hat{\alpha}_3$ = regression parameters.

Third Equation: Discretionary accruals can be derived as the difference between total accruals; Equation (1) and non-discretionary accruals; Equation (2), as follows:

$$DAC_{it} = TAC_{it} - NDAC_{it} \dots \dots \dots (3)$$

where:

DAC_{it} = discretionary accruals for company i in year t .

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

TAC_{it} = total accruals for company i in year t .

The Independent Variables

1- Audit Process Quality

Audit process quality variable is measured using three different indicators, including:

- A- *AUDSIZE* is the audit firm size, measured by a dummy variable which equals 1 for the big four companies and 0 for non-big four companies. In Jordan, the big four auditing firms include; EY (Earnest and Young), PWC (PricewaterhouseCoopers), Deloitte and KPMG.
- B- *TENURE* is the audit tenure which is measured by the number of working years between the two parties. This study follows the tenure categorization of Johnson et al. (2002) and Kramer et al. (2011). Table (1) reports the tenure categorization method used to indicate tenure variable.

Table 1. Tenure categorization table

Number of years	Category	Code
1-3	Short	1
4-8	Medium	2
Over 8 years	Long	3

- C- Auditor specialization: Auditor specialization not only improved financial reporting quality, but also enhanced financial and quality benefits to the audit firms.

2- Auditor Specialization

Research in industry specialization provided evidence that auditors who have knowledge in a particular industry possess a detailed and comprehensive understanding of their clients' business, characteristics and market conditions. This will result in enhancing the auditors' ability to uncover earnings management and errors, thus improving and enhancing financial reporting quality. Two proxies are used to measure industry specialization.

- 1- *CLSize*: auditors are considered specialists if they supply their services to a large number of clients in the industry; based on the assumption that industry expertise is built by repetition in similar settings and therefore by a large volume of business in an industry (Balsam et al., 2003). This variable is measured as the client firm total assets as a percentage of the industry total assets for each year per audit firm.
- 2- *NumClients*: auditor specialization can also be indicated based on the auditor dominance in the industry. Thus, this variable is measured by the total number of clients as a percentage of the total number of clients in the industry for each year per audit firm (Balsam et al., 2003).

3- Auditor's Opinion

In this study, the auditor's opinion is measured by a dummy variable which ranges from 1 to 4. To differentiate between the four types of auditor's opinion, each type takes a value from 1 to 4 as follows:

- A- Value of 1 stands for unqualified opinion.
- B- Value of 2 stands for qualified opinion.
- C- Value of 3 stands for adverse opinion.
- D- Value of 4 stands for disclaimer opinion.

Control Variables

Control variables used in this study are associated with accruals and audit opinion type and include profitability ratio, Tobin's Q ratio and leverage ratio (Bartov et al., 2001).

- A- ROA: return on assets ratio is a profitability ratio that measures a company's profitability relative to its assets, calculated by dividing net income by the average total assets.
- B- Tobin's Q Ratio: the formula for Tobin's Q ratio takes the total market value of the firm plus the total liabilities divided by the total assets, to determine whether a firm is undervalued or overvalued, by comparing the market value to the book value. If the ratio is low, ranging between 0 and 1, the firm is undervalued. Conversely, a high ratio (more than one) indicates an overvalued case.
- C- Leverage: it is a financial measure that indicates the percentage of assets financed by debts and examines a company's ability to meet its obligations on the long run when they mature. Several ratios can be used to measure leverage; in the current study, leverage was measured by the total liabilities relative to the total assets.

Empirical Results

This section presents and discusses the empirical results of the study. First: descriptive analysis is presented to calculate the values of mean, maximum, minimum and standard deviation for all variables. Second: the Pearson test is used in order to examine the correlations among dependent, independent and control variables. Third: in testing the hypotheses of the study, multiple regression analysis is used.

Descriptive Statistics

Table (2) presents the descriptive statistics for all variables investigated in this paper. Results revealed that the mean value of earnings management is -0.35, indicating that most of the sampled firms use income-decreasing adjustments. In other words, managers tend to use income-decreasing techniques to manage earnings. Furthermore, the auditor tenure was observed to have a minimum value of 1 (short tenure) and a maximum value of 3 (long tenure), with 1.6 mean value. Based on the mean value, it can be said that the majority of the study sample firms a medium relationship with their auditors. Table (2) also showed that client size variable has a minimum value of 0.2% and a maximum value of 54%. The mean value was 14%, indicating that most of the audit firms in the study sample provide audit services to clients with 14% assets percentage from the whole industry assets on average. In addition, auditor's opinion variable has a mean value of 1.08, which might initially indicate that most of the auditor reports include unqualified opinions without qualifications.

Table 2. Descriptive analysis for dependent, independent and control variables for 57 Jordanian industrial companies

Dependent variable	Obs.	Minimum	Maximum	Mean	Std. Deviation
DAC	534	-1.24	1.98	-0.35	0.30
Independent variables					
AudSize	534	0.00	1.00	0.30	0.45
Tenure	531	1.00	3.00	1.66	0.65
NumClients	535	1.00	13.00	6.21	3.51
CLSize	535	0.002	0.54	0.14	0.18
Aud opinion	596	1.00	4.00	1.08	0.28
Control variables					
TobQ	532	0.04	6.10	1.3	0.84
ROA	532	-0.63	0.55	0.01	0.10
Leverage	532	-0.02	2.28	0.33	0.24
DAC: earnings management, AudSize: audit firm size, Tenure: length of client-auditor relation, NumClients: number of clients, CLSize: client firm size, Aud opinion: auditor's opinion, TobQ: Tobin's Q ratio, ROA: return on assets ratio, Leverage: leverage ratio.					

Furthermore, Tobin's Q ratio has a mean value of 1.3, which reveals that market values of companies included in the study worth more than their book values. Moreover, leverage ratio has a mean value of 33%, which indicates that having a low debt percentage implied lower financial risks faced by companies as most of the sampled firms tend to finance their assets from shareholders rather than being engaged in debt covenants. Furthermore, the ROA ratio, which represents how efficient firms are in utilizing assets for generating revenues, ranges from -0.63 to 0.55 with an average of 0.01, indicating that industrial firms might suffer from low profits on average. A low return on assets indicates that the majority of industrial companies in the sample had a low level of performance, which is because management might not employ assets successfully to make a profit and therefore, considerable decisions must be taken to prevent companies from expected losses.

Correlation Analysis

Table (3) presents the correlations between the study

variables. According to the results, the correlation between earnings management and audit firm size is negative and significant. This result indicates that earnings management decreases in the presence of big 4 audit firms. One explanation for this expected result is that the big 4 audit firms have the ability to effectively detect financial distortions and misrepresentations. Furthermore, based on Table (3), auditor specialization indicator (client firm size) has a significant negative correlation with earnings management. Auditors who used to engage with larger clients are considered specialist auditors. Therefore, specialist auditors have a better ability to detect mistakes, misrepresentations and earnings management in the financial statements, which might reduce the practice of earnings management.

In addition, auditor's opinion is found to have a positive significant effect on earnings management, since decreased earnings management coincides with the likelihood of issuing more qualified audit reports.

Table 3. The correlations between dependent, independent and control variables

		DAC	Tenure	AudSize	ClSize	NumClients	Aud. opinion	ROA	Tob. Q	Leverage
DAC	Pearson Correlation	1								
	Sig. (2-tailed)									
	N	534								
Tenure	Pearson Correlation	-0.073	1							
	Sig. (2-tailed)	0.097								
	N	523	531							
AudSize	Pearson Correlation	-0.257**	-0.010	1						
	Sig. (2-tailed)	0.000	0.823							
	N	525	531	534						
ClSize	Pearson Correlation	-0.244**	-0.038	0.818**	1					
	Sig. (2-tailed)	0.000	0.377	0.000						
	N	526	531	534	535					
NumClients	Pearson Correlation	0.028	0.002	0.365**	0.663**	1				
	Sig. (2-tailed)	0.521	0.960	0.000	0.000					
	N	526	531	534	535	535				
Aud. opinion	Pearson Correlation	0.103*	-0.039	-0.075	-0.045	0.029	1			
	Sig. (2-tailed)	0.017	0.373	0.087	0.304	0.504				
	N	529	526	529	530	524	596			
ROA	Pearson Correlation	-0.069	-0.064	0.072	0.060	-0.012	-0.015	1		
	Sig. (2-tailed)	0.114	0.134	0.095	0.166	0.781	0.739			
	N	523	531	532	532	532	527	532		
TobQ	Pearson Correlation	-0.127**	-0.099*	0.248**	0.091*	-0.017	-0.103*	0.149**	1	
	Sig. (2-tailed)	0.004	0.022	0.000	0.035	0.701	0.018	0.001		
	N	523	531	532	532	532	527	532	524	
Leverage	Pearson Correlation	-0.063	0.064	0.043	0.077	0.058	0.004	-0.400**	0.018	1
	Sig. (2-tailed)	0.149	0.143	0.318	0.075	0.180	0.926	0.000	0.677	
	N	523	531	532	532	532	527	532	532	532

On the other hand, the results showed that there is no significant relationship between the auditor specialization and earnings management. In addition, the relationship between the length of client-auditor relation (tenure) and earnings management was found to be insignificant.

Table 3 presents the results of testing the first model.

Analysis of the Hypotheses

The main hypothesis of this study has been tested using multiple regression analysis. The hypothesis of the study was designed to examine the effect of all independent variables, including, audit quality tenure, audit firm size, auditor specialization and auditor's opinion, on earnings management, controlled by ROA, Leverage and Tobin's Q ratio.

The following model is used to test the hypothesis:

$$DAC = \alpha_1 + \alpha_2 TENUR6E + \alpha_3 AUDSIZE + \alpha_4 CLSIZE + \alpha_5 NumClients + \alpha_6 AUDopinion + \alpha_7 ROA + \alpha_8 TobQ + \alpha_9 LEVERAGE + e_2$$

Table (4) presents the results of testing the first hypothesis. The results demonstrate that the value of the adjusted R^2 was 14%, indicating that the independent variable and controlling variables explained 14% from the total variation in the dependent variable (earnings management). The results also reveal that the model significantly explains the variation in the earnings management at less than a 0.05 level of significance with F value = 11.6, indicating that the first proposed model of the study is appropriate and has explanatory power. In other words, audit process quality and auditor's opinion significantly explain the variation in earnings management.

For the relationship between tenure and earnings management, the results showed that tenure has a negative ($B = -0.04$) significant effect on earnings management at less than 0.05 level of significance. This result suggests that longer tenure plays a critical role in improving auditor's expertise and in obtaining a better understanding of entities' internal and external environments, thus reducing earnings management by companies.

On the other hand, there is no significant relationship between the audit firm size and earnings management, which means that the big 4 audit firms in Jordan could not constrain earnings management by companies. However, this unexpected result could be justified on the ground that 70% of the whole observations (the majority) were audited by non-big 4 audit firms, whereas 30% follow one of the big 4 audit firms, which could prevent having a clear and logical result about the effect of audit firm size on earnings management. This is an unexpected result, since other researchers found a significant effect of audit firm size on earnings management (Okolie (2), 2014).

Furthermore, client firm size has a negative effect on earnings management ($\beta = -0.97$) and it's statistically significant (sig. = 0.000), suggesting that as specialist auditors used to engage with larger clients, they contribute to reducing earnings management. This can be explained by the fact that specialist auditors are able to provide higher audit quality and more efficient services to their clients. Furthermore, specialized auditors tend to place greater restrictions and controls on management decisions in reporting of financial performance.

Table 4. Analyzing the joint effect of all independent and control variables on the dependent variable (earnings management)

R square	0.15				
Adjusted R ²	0.14				
F- value	11.6				
Significance of F	0.000				
Independent variables	Obs.	Beta	T	Sig.	VIF
Constant		-0.41	-5.55	0.00	
Tenure	531	-0.04	-1.98	0.04**	1.0
AudSize	534	0.05	0.961	0.33	3.9
CLSize	535	-0.97	-5.40	0.00**	5.8
NumClients	535	0.03	5.98	0.00**	2.1
AUDopinion	596	0.08	1.95	0.05**	1.2
Control variables					
ROA	532	-0.19	-1.33	0.18	1.2
TobQ	532	-0.03	-1.88	0.06	1.1
Leverage	532	-0.08	-1.35	0.17	1.2
Tenure: length of client-auditor relation, AudSize: audit firm size, CLSize: client firm size, NumClients: number of clients, Aud opinion: auditor's opinion, TobQ: Tobin's Q ratio, ROA: return on assets ratio, Leverage: leverage ratio.					

Regarding the relationship between the number of clients variable and earnings management, it was found that the number of clients has a significant positive relationship with earnings management at (0.000) level of significance. This result indicates that as the number of audit firm clients increases, earnings management increases. This suggests that the number of clients has a negative impact on improving auditor specialization.

Auditor's opinion has a positive (B=0.08) significant (sig.=0.05) effect on earnings management. The results support the argument that when we move from unqualified opinion to disclaimer opinion, the extent of earnings management increases, implying that companies with unqualified audit reports will be less susceptible to manage earnings.

Finally, controlling variables: ROA, leverage ratio and Tobin's Q ratios, have insignificant effects on earnings management. The coefficient signs of all control variables are negative but insignificant.

Conclusion

Over the past three decades, many researchers have examined the problem of earnings management and the managerial incentives to manage earnings. This study has investigated the relationship between earnings management and the audit process quality and the auditor's opinion. Earnings management was measured by discretionary accruals using the modified Jones model. Audit process quality is measured by using three proxies; tenure, audit firm size and auditor specialization. This study has mainly focused on the industrial companies listed in ASE during the period from 2006 to 2015.

The results of this study showed that audit process quality proxy; tenure, has a negative significant effect on the extent of earnings management.

This result suggests that the long audit firm tenure would play a critical role in improving auditor's expertise and in obtaining a better understanding of the

entity's internal and external environments, thus reducing earnings management by companies. This result is consistent with the finding by Augustine (2014) and Ebrahim (2001) and is justified on the base that auditors with long tenure would be more informative about the firm resources, understand companies' operations, the accounting cycle and the methods used in the preparation of the financial figures.

Moreover, the results revealed that the big 4 audit firms did not have an effect on earnings management, which means that audit firm size could not constrain earnings management by companies. This is inconsistent with Rajgopal et al. (2015) and Gajevszky (2014) who found a negative significant effect of audit firm size on earnings management.

Furthermore, the results concluded that auditor specialization is associated with a lower earnings management, as also suggested by Hegazy (2015), who posits that industry specialization contributes to constraining earnings management. Auditor specialization in industry is improved as the auditor is engaged with larger clients, where minimal earnings management is observed. This result is supported by Balsam et al. (2003) who argued that a specialist auditor has a better ability to detect irregularities and misrepresentations and provide higher audit quality.

In addition, we found that the number of clients has a significant positive relationship with earnings management. Balsam et al. (2003) who argued that some specialization measures (number of clients) may not capture specialization accurately, since some audit firms may have local and

international clients compared with local audit firms.

Finally, the auditor's opinion has a statistically significant positive relationship with earnings management. Thus, companies receiving unqualified opinions have lower earnings management compared to firms receiving qualified, adverse or disclaimer opinions. This result is consistent with Gajevszky (2014), who found that the issuance of unqualified opinions is related to lower earnings management. Khansalar and Moazedi (2016), also found a positive relationship between the audit's opinion and earnings management. However, Tsipouridou and Spathis (2014) found that the audit opinions are not related to earnings management

Recommendations

In light of the study's results, the following recommendations are suggested:

1. Since our results showed that higher length of audit firm tenure is associated with less earnings management, regulators and standards' setters should reconsider mandatory audit firm rotation.
2. Improving the performance of audit firms in order to enhance audit quality and thus reduce earnings management.
3. Since there have been limited studies on the effect of audit quality on earnings management for banking and insurance companies in Jordan, future studies on these sectors are recommended.

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