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## **EXTERNAL AUDITOR'S ANALYTICAL PROCEDURES AND THEIR IMPACT ON DISCOVERING MATERIAL MISSTATEMENTS – AN EMPIRICAL STUDY ON JORDANIAN COMMERCIAL BANKS**

*This study aims to identify the impact of the external auditor's analytical procedures on the financial statements and reports for the detection of material misstatements of the Jordanian commercial banks. The impact of independent variables (profitability, liquidity, capital solvency and the employment of funds ratios) on the dependent variable (the detection of material misstatements) was measured. The dependent variable is represented by the earnings management, which is measured by the discretionary accruals. The quantitative standard method was used to analyse the financial statements and analytical procedures; moreover, the Jones Model was used to measure earnings management. Additionally, the multivariate linear regression model was used to test the hypothesis of the study, and to indicate the relationships between the variables. The study population consisted of five Jordanian commercial banks. The data was collected from 2011 to 2017. This study concluded that there is no statistically significant impact of the analytical procedures relating to the ratios of liquidity, profitability, solvency, and employment of funds that the external auditor could undertake to discover material misstatement of the financial statements of Jordanian commercial*

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*banks. Finally, the study recommended that auditors should be highly competent and deeply knowledgeable in using the analytical procedures to judge the fairness of financial data and be free of material misstatements.*

**Keywords:** *Analytical Procedures, Material Misstatements, Commercial Banks, External Auditor, Financial Statements.*

## 1. Introduction

The issue of detecting material misstatements; accounting and financial fraud in the financial reports and audited financial statements is one of the most controversial issues that the auditing encounters in most countries around the world. It is also considered one of the most important factors causing lack of financial statements credibility. Accounting and financial fraud are deemed the most important threat faced by companies currently. The auditor may perform many procedures to collect enough and appropriate audit evidence that enables him to express his opinion on the fairness of the financial statements. Such procedures include the analytical procedures using the financial ratios that may enable the auditor to detect the accounting and financial fraud in the financial statement, because of their ability to identify the abnormal correlation between the elements of the audited financial statements. This study aimed to identify the impact of external auditor's analytical procedures on the detection of material misstatements in the financial statements of the Jordanian commercial banks.

## 2. Literature review

### 2.1 *Earnings management and fraud*

Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports either to mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Ramírez-Orellana *et al.*, 2017). Dechow *et al.* (2012) pointed out that earnings management is an essential issue for academics and practitioners in the field of accounting. Scott (2009) defines earnings management as an act of selecting accounting policies from a set of accepted accounting rules to get favourable results.

Earnings management can also be defined as a method of selecting or violating accounting standards to affect financial events. According to Joshua and Varda (2008), earning management techniques could take two forms or techniques; the first is accounting choices, and the second is the accruals choices: which are divided into two types:

- A. Normal accruals. This type arises from transactions made in the current period that are normal for the firm, given its performance level and business strategy, industry conventions, and macro-economic events.
- B. Abnormal accruals. These arise from transactions made or accounting treatments chosen to manage earnings. The main area of the problem is to identify the discretionary component of accruals to assess earnings management activities. It needs to examine how managing discretionary accruals could affect the earnings. Furthermore, how managers also develop operational and non-operational activities to manipulate earnings.

Earnings management is used to increase or decrease earnings to attain the required purposes of such action. In other words, earnings are manipulated positively or negatively to achieve the planned targets (Cohen and Zarowin, 2010). Any kind of earnings management would last for a short time, and in the subsequent period, the earnings will go down, which cause a negative effect to the shareholders (Joshua and Varda, 2008). Earnings management may lead either to reducing earnings to decrease taxes or to rising earnings to increase the remuneration of board members. It may also lead to levelling earnings by lowering it, if it is high or inflating the same if it was low to lower the extremes of earnings to stabilize share prices (Jibril and Al-Thuneibat, 2016). The management of these earnings may start with narrow-scale or inappropriate adjustments to the assumptions made by the management in accounting policies. Such situation may emerge when the management, due to pressures to meet market expectations or the desire to increase performance-based compensation, takes certain attitudes intended to prepare fraudulent financial reports through the deviation of the financial statements (IAS, 240).

Xu *et al.*, (2007) reported three different motives for earnings management: capital market expectations and valuations, contracts written in terms of accounting numbers and antitrust or other government regulation. Besides, Stice and Stice (2010) mentioned another factor that drives managers to engage in earnings management is to meet external expectations, which come from a wide variety of external stakeholders.

Burgstahler and Eames, (2003) found evidence that firms engage in earnings management to avoid small losses and earnings decreases, to help to identify those firms that might engage in earnings management to avoid negative earnings

surprises. Each of them has specific interests in the financial performance of the company. 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. (Ahmad and Masoumeh, 2016).

Under accrual-based earnings management, earnings management incurs from judgments toward accounting policies that managers can estimate when preparing financial statements (Luong, 2015). Knowing more about the role of accruals in financial accounting in general, and more specifically about the role of accruals for the quality of earnings and earnings management is therefore essential to increase the usefulness of financial statements (Bissessur, 2008). Researchers often employ discretionary accruals (also known as abnormal accruals) models to test the presence of earnings management.

Thus, empirical evidence on the ability of the discretionary accruals models to detect earnings management, particularly fraudulent financial reporting is of fundamental interest to regulators, auditors, researchers, Jones *et al.*, (2008), described four categories of measures on earnings management which are identified as (I) accruals, (II) earnings smoothing, (III) earnings predictability and, (IV) earnings conservatism; however, Badertscher (2011), has distinguished between non-discretionary accruals because in the absence of manipulation companies can generate a certain degree of accruals, and discretionary accruals, that added to make up to the total accruals practised by the company.

The cooperation between the internal and external auditor is very important to reducing the financial statements risk and detecting the essential errors and misstatements (Al-Chahadah et al., 2018). Detecting material misstatements enables bank management to avoid crisis which could lead to bankruptcy; the auditor must practice specific methods that help him to detect fraud and cheatings in the financial statements (Ja'ara, 2012). The forms and types of material misstatement of the accounts and their classifications vary according to the vision of those who studied this phenomenon. The outstanding researchers who studied this phenomenon are Mulford and Comiskey. Methods of creative accounting and their forms are as follows (Mulford and Comiskey, 2002):

- 1. Aggressive Accounting:** It is to insist on selecting and applying specific accounting methods to achieve desired objectives, including the achievement of high profits, whether the accounting practices used based on the accepted accounting principles or not.
- 2. Earnings Management:** It is the manipulation of income to reach a pre-determined target by management or predicted by the financial analyst.

3. **Income Smoothing:** It is a form of income manipulation. It is the shifting of revenues/income among different reporting periods or reducing revenues/income in good-income years to low earnings years. This is a form of manipulation based on reducing the increasing income and retain them in the form of allowances for low earnings periods.
4. **Fraudulent Financial Reporting:** It is the intentional misrepresentation, deleting or concealing specific values of the financial statements to mislead users of financial statements. Such type of fraudulent violates the law and well-known accounting principles.
5. **Creative Accounting Techniques Practices:** Creative accounting consists of the use of a loophole in accounting standards and creative accounting practices to obtain false portray of the firm by manipulating expense and revenue values.

## 2.2 Analytical Procedures

Although analytical procedures are one of the modern methods in the audit process, their use and application are still limited among auditors, as their application requires specialized technical staff and a longer time to perform this function, which in this case is not economical and worthless (Arab Society of Certified Accountants and the International Federation of Accountants, 2001). Analytical procedures in auditing include analytical auditing, analytical procedures, analytical review, analytical evidence, and analytical review procedures. All analytical procedures comprise analysis of significant ratios and trends that includes the investigation of the inconsistent fluctuations and relationships with other relevant information and with that deviate from expectations (Koskivaara, 2006).

Imoniana *et al.*, (2012) defined analytical procedures as “methods or techniques used by the auditor to assess and collect data, relevant materials, and sufficient evidence”. The Analytical Procedures according to the International Standard on Audit No. 520 “mean the analysis of significant ratios and indicators and the investigation of identified fluctuations and relationships that are inconsistent with other relevant information or deviate significantly from predicted amounts. The analytical audit also includes the study of the relationships among financial information elements and relevant non-financial information. Arens *et al.* (2012) defined analytical procedures as the assessment of financial information by examining financial statements by comparing the values recorded in financial books. In other words, analytical procedures involve comparing different financial and operational information of different timeframes, and it should be consistent over

time and in case if not consistent, it may be due to errors or fraudulent reporting activities (Abu Sneidah, 2015); also analytical procedures should make audit less time-consuming, less expensive and more effective in detecting errors and omissions (Qrait, 2009).

According to AICPA, auditing standards define analytical procedures as the evaluation of financial information accomplished through analyzing financial and non-financial data. An analytical procedure uses analytical tests to identify fluctuations or inconsistent significant values or information from expected values through trend, ratio, and regression analysis (Al-Hind, 2016). It was mentioned that analytical procedures could be performed at the following phases: (Koskivaara, 2006)

- In client acceptance/retention phase to settle the audit fee.
- In the planning phase to identify potential problem areas.
- In testing phase to get evidence on account balances or transactions.
- In overall review phase to gather evidence on the reliability of the financial statements.

There are many studies focused on the feasibility of using analytical procedures in the stages of the audit process and obtaining audit evidence.

A study of Mubako and O'Donnell (2018) examines whether auditors who learn that fraud risks differ among various accounts could become less sceptical toward evidence that could indicate financial misstatement in low-fraud-risk accounts. The study of (Noor and Awawdeh, 2017) aimed to test the extent to which Jordanian companies practice earnings management, as well as to determine the impact of earnings management practices on the disclosed earnings quality. The results of the study showed a decline in the quality of earnings of Jordanian industrial companies in general. The results also showed the practice of Jordanian industrial companies of earnings management to reduce profits.

The aim of a study conducted by (Hasan and Thamer 2016) was to identify the role of the auditor in detecting fraud indicators through the study and analysis of the management report. After reviewing the content of analytical procedures in the previous studies, it is clear of the importance of the use of analytical procedures by the auditor can lead to the possibility of discovering the potential material misstatements in the financial statements. Thus, increasing the confidence in the financial reports and relying on them in the industry and decision making for those interested in the economics of Jordanian commercial banks. Also, al-Hind, (2016) concluded that auditors consider that their commitment to analytical procedures detects the creative accounting practices in the financial statements to a high degree by detecting the manipulation of financial statements items.

Additionally, Halbouni (2015) investigated external auditor perceptions regarding their responsibilities related to preventing, detecting, and reporting fraud.

Moreover, the study explores the procedures that external auditors follow to detect fraud during an audit. The results demonstrate that the procedures followed by external auditors are slightly more rigorous than those followed by internal auditors. The results provide empirical support for the notion that external auditors should increase the degree to which they seek to detect and report incidents of fraud as well. The study of Abu Snehidah, (2015) concluded that analytical procedures play an important role in narrowing the expectation gap by verifying the validity of evidence obtained by the auditor at all stages of the audit.

The study of Abu Sardana *et al.*, (2013) measured the ability of public shareholding companies to prevent and detect fraud. The study found that the companies under study do not implement the regulatory system to prevent and detect fraud in full, but partially, and within a clear strategic plan. There is also no statistically significant correlation between the fraud prevention and detection indicator and the independent variables used in the study. The study of Albrecht *et al.* (2008) discussed the role of auditors in detecting fraud and if they were questioned about the reasons for non-disclosure fraudulent financial data.

Koskivaara (2006) discussed the audit environment in terms of audit phases. It was addressed different characteristics of analytical procedures quantitative techniques to compare the previous year's value and the mean of the previous years' values to form expectations for monthly sales values. O'Neil (2007) developed a model describing the process by which employees are implicated in financial frauds. Kathleen *et al.* (2004) explored financial ratios of fraudulent companies identified by SEC Accounting, and Auditing Enforcement Releases issued between 1982 and 1999. The study explored 21 ratios using discriminant analysis and found that misclassifications of fraud ranged from 58% to 98%. The empirical evidence of this study concluded that financial ratios are limited to detect and predict fraudulent financial reporting.

Carol and Michael (2001) report the results of an experiment that examined the effects of audit experience and explicit fraud risk assessment instructions on the effectiveness of analytical procedures in detecting financial statement fraud. The results of this study suggest that audit managers are more effective than audit seniors in assessing the risk of fraud with analytical procedures. Additionally, explicit fraud risk assessment instructions resulted in more valid assessments of the presence of fraud. These results have implications for the assignment of auditors to tasks and the structuring of these tasks.

The summary of the analytical procedures' literature adopted by the external auditors to detect potential fraud in the financial statements by using ratio analysis are numerous, and the subsequent studies can summarize it.

The study of Abdullah (2017) demonstrated the ability of the external auditor's analytical procedures to detect financial and accounting fraud in the Jordanian industrial companies. The study concluded that the use of analytical procedures by the external auditor regarding liquidity ratios, financial leverage ratios and activity ratios enables the external auditor to detect fraud embedded in the financial statement. However, it could not reveal any evidence regarding the profitability ratio.

Numerous of studies adopted financial leverage, profitability, asset composition, liquidity, and capital turnover ratio in detecting fraudulent financial reporting (FFR). The sample firms that engage in fraudulent reporting concluded that the financial leverage, asset composition, profitability and capital turnover ratios were significant predictors of FFR. (Zainudin and Hashim, 2016; Kanapickienė and Grundienė, 2015; Dalnial *et al.*, 2014)

Also, Alade and Emmanuel (2014) investigated two accounting ratios; investment and liquidity ratios in detection fraud. The findings revealed that investment and liquidity ratios were significant predictors of financial misstatement.

Literature review related to earnings management, or what is known by the misrepresentation or masking of actual economic performance, has been the focus of many papers. The bulk of this literature has focused on two general earnings management tools: accrual management and the manipulation of real economic activities. Also, Ramírez-Orellana *et al.* (2017) estimated the probability of fraud and earnings management for a specific Spanish family business called Pescanova. The researchers used the manipulation index and the probability of manipulation as an indicator of fraud and earnings management. They also used the Beneish model as a detector of fraudulent behaviour. Results show that Pescanova did aggressive accounting practices, through the manipulation of day's sales in receivables index and total accruals to total assets.

Later, Izadi and Darjezi, (2016), focused on earnings quality by examining the working-capital accruals quality using the method of Dechow and Dichev (2002). The result of their paper showed that accrual quality is related to the absolute magnitude of accruals negatively. Also, the standard deviation of accruals, cash flows, sales and earnings is positively related to firm size. The result demonstrated and suggested that these observable firm characteristics can be used as instruments for measuring accrual quality. The researchers expected that the larger unsigned abnormal accrual measure, the lower the earnings quality.

Arkan, (2015), in his empirical study conducted, examined, and detected the extent of practising earning management (EM) in Kuwaiti manufacturing companies. Arkan also tried to discover the relationship and effects of using earning management practices declared in the financial statements. The results of his



study showed that the Kuwaiti firms are involved in earning management practices as they negatively exercised the discretionary accruals. The tests also showed the negative effect of net income and cash flow that was created from EM practice on the stock price.

In the far east, Abdul Aris *et al.* (2015) assessed the possibility of fraudulent financial statement in a small-medium automotive company in Malaysia using three statistical analyses namely the Beneish model, Altman Z-Score and Financial Ratio. Their findings showed that there are riskier zones that need to be further investigated by the management. They suggested for the company to establish an internal audit unit to provide assurance on the company's operations, financial reporting accuracy and adherence to the regulations. In another research in the far east, and in a research paper conducted by Hamid *et al.* (2012) aiming to identify the motivation of earnings management in Malaysia, the researchers used a set of questionnaires that were distributed to the auditors to gather data regarding the motivation of earnings management, and the results of their study showed that the primary motive for auditors to be involved in earnings management is derived from the pressure of affiliated parties.

Furthermore, Dechow *et al.* (2012) provided a new approach to test for accrual-based earnings management. They used the exploits approach which inherent property of accrual accounting that any accrual-based earnings management in one period must reverse in another period. The results of their research paper indicated that tests incorporating reversals increase test power by around 40% and provide a robust solution for mitigating model misspecification arising from correlated omitted variables. In the same context Badertscher, (2011), also examined how the degree and duration of overvaluation affect management's use of alternative within-GAAP earnings management, restrictions on further exploitation of within-GAAP accruals management, and subsequent non-GAAP earnings management. Badertscher examined how one type of earnings management segues into another type as overvaluation persists. The results showed that managers engaged in accruals management in the early stages of overvaluation before moving to real transactions management to sustain their overvalued equity.

Perols and Lougee (2011) provided new evidence on the characteristics of firms that commit financial statement fraud. They examined how previous earnings management impacts the likelihood that a firm will commit financial statement fraud and in doing so, the researchers developed three new fraud predictors. They used a sample of 54 fraud and 54 non-fraud firms, and they found that fraud firms are more likely to meet or beat analyst forecasts and inflate revenue than non-fraud firms are even when there is no evidence of prior earnings management.

Later, Iatridis and Kadorinis, (2009), investigated the motives and the characteristics of UK firms that engage in earnings management activities. Their study also examined the earnings management inclination of firms that seek to meet or exceed financial analysts' forecasts. The findings of their study indicated that firms with low profitability and high leverage measures are likely to use earnings management, and firms tend to use earnings management to improve their financial numbers.

Also, Jones *et al.* (2008), have examined the association between the existence and the magnitude of a fraudulent event, no fraudulent restatements of financial statements, and accrual estimation errors. They conclude that accrual estimation errors and M-score have explanatory power for fraud beyond total accruals; they also found that commonly used measures of discretionary accruals, accrual estimation errors, and the M-score are associated with the magnitude of the fraud, and only the accrual estimation errors are associated with non-fraud restatements.

McVay (2006), examined the classification of items within the income statement as an earnings management tool. The findings evidence was consistent with managers opportunistically shifting expenses from core expenses (cost of goods sold and selling, general, and administrative expenses) to special items. The vertical movement of expenses does not change bottom-line earnings but overstates "core" earnings. Besides, it appears that managers used this earnings management tool to meet the analyst forecast earnings benchmark, as special items tend to be excluded from both pro forma and analyst earnings definitions.

Finally, Dechow and Dichev, (2002), suggested a novel measure of one aspect of the quality of working capital accruals and earnings. One role of accruals is to shift or adjust the recognition of cash flows over time so that the adjusted numbers (earnings) better measure firm performance. However, accruals require assumptions and estimates of future cash flows. They argued that the quality of accruals and earnings is decreasing in the magnitude of estimation error in accruals.

### **3. Objectives of the study**

Based on research hypotheses, this study aims to identify the impact of using the appropriate financial analysis procedures by the External Auditor on the discovery of material misstatement in the financial statements of Jordanian commercial banks and to find out the effect of the optional accruals on the material misstatements in the financial statements of the Jordanian commercial banks.

#### 4. Study Problem and Hypotheses

The auditing profession is confronted with crises of confidence and credibility, where wrongful auditing procedures will endanger the existence of the auditing profession (Guan-jun and Lin, 2009). Due to the existence of significant fraud and distortions in the financial statements, there has been an increase in lawsuits against auditors; especially after the failure of many large international companies, which the largest audit firms have audited their financial statements. In order to overcome those pressures, the auditor is required to use multiple procedures to discover manipulation cases in the financial statements (Abdul Karim *et al.*, 2014). Fraudulent financial reporting is a matter of economic concerns; the Treadway Commission recommended that the Auditing Standards Board require the use of analytical procedures to improve the detection of fraudulent financial reporting (Kathleen *et al.* 2004). The problem of the study can be summed up by raising the following main hypothesis: *There is a statistically significant impact of the analytical procedures adopted by the External Auditor on detecting material misstatements in the financial statements of Jordanian commercial banks.*

*This hypothesis is divided into the following sub-hypotheses:*

1. There is a statistically significant impact of the analytical procedures adopted by the External Auditors by using profitability ratios on detecting material misstatement of the financial statements of Jordanian commercial banks.
2. There is a statistically significant impact of the analytical procedures adopted by the External Auditors by using liquidity ratios on detecting material misstatement of the financial statements of Jordanian commercial banks.
3. There is a statistically significant impact of the analytical procedures adopted by the External Auditor using capital solvency ratios on detecting material misstatement of the financial statements of Jordanian commercial banks.
4. There is a statistically significant impact of the analytical procedures adopted by the External Auditor using the investment of capital ratios on detecting material misstatement of the financial statements of Jordanian commercial banks.

## 5. The Method

The researchers used the applied method based on the financial statements of the Jordanian Commercial Banks, the sample of the study throughout (2011-2017). They also used the appropriate financial analysis procedures in testing hypothesis and got the answer to the questions raised. The methodology of this study is based on testing the influential relationship among the analytical procedures practised by the Auditor and detection of martial misstatements. The material misstatements in the financial statements are judged by the extent of the commercial bank's practice of earnings management.

Figure (1) illustrates the essence of the study and its variables. It is represent- ed in the extent of the impact of the analytical procedures on the Auditor to detect the earnings management practices based on the overall and unusual accruals. Thus, judging the existence of material misstatements in the financial statements and reports of the Jordanian commercial banks.

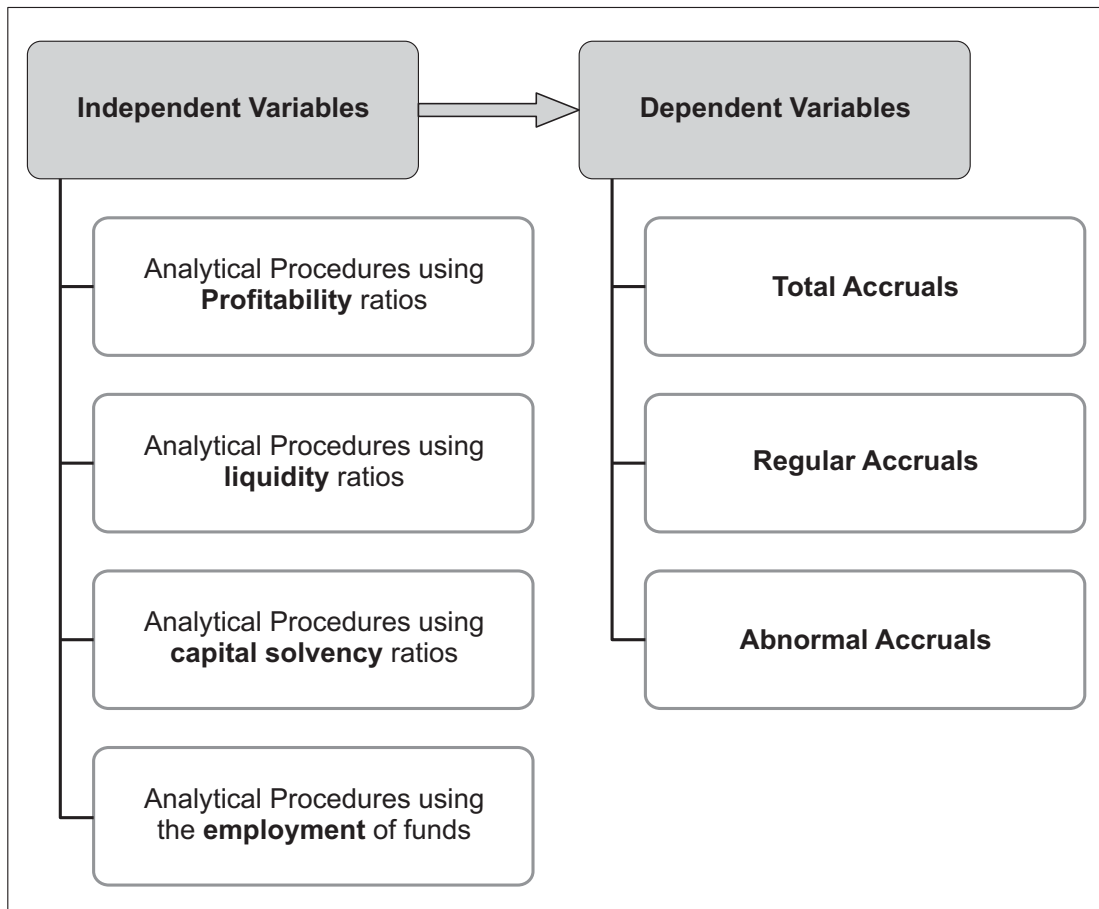


Figure (1) illustrates the study variables (Source: Hamdan and Abu Ajeila, 2012; Noor and Awawdeh, 2017; Richardson *et al.*, 2005; Jones *et al.*, 2008; Dechow and Dichev 2002).

Several studies (Bellovary *et al.*, 2005; Francis *et al.*, 2002; Teets, 2002; Sharif and Abu Ajeila, 2009) concluded that the increase of unusual accruals is an indicator of the existence of earnings management practices, while the decrease in total receivables may indicate to an increase in earnings quality; therefore, the financial statements are free of material misstatement. The modified model by Dechow *et al.*, 1995, and Dechow and Dichev, 2002 is the strongest model used in the detection of receivables. This model relies on the earnings management practices on the accruals of the Bank, which is the difference between net profit and cash flow from operation as a ratio of total assets. The higher the ratio of the estimated accruals, it indicates the higher the difference between the accounting bank's earnings and the cash flows, and thus the increase of earnings management practices methods.

The Model of (Dechow *et al.*, 1995 and Dechow and Dichev 2002) calculates the total and abnormal accruals as the following steps:

1. Total Accruals Calculation: it is the difference between net income and cash flow from operations during the study years of the sample of selected commercial banks. The following equation calculates it:

$$TACC_{i,t} = NI_{i,t} - OCF_{i,t} \quad (1)$$

Whereas: **TACC**: the total accruals of the bank i of the year t; **OCF**: the cash flow from operation for the year t; **NI<sub>i,t</sub>**: the net profits of the bank i for the year t.

2. Calculation of the coefficient estimate: ( $\beta_1, \beta_2, \beta_3$ ) in the regression model of the total banks represents the sample of the study according to the modified Jones Model as follows: (Dechow *et al.*, 1995, 108).

$$\frac{TACC_{i,t}}{Ai_{i,t-1}} = \alpha + \beta_1 \left( \frac{1}{Ai_{i,t-1}} \right) + \beta_2 \left( \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{Ai_{i,t-1}} \right) + \beta_3 \left( \frac{PPE_{i,t}}{Ai_{i,t-1}} \right) + E_{i,t} \quad (2)$$

Whereas: **TACC<sub>i,T</sub>**: Total accruals of the bank i in the year T; **Ai<sub>i,t-1</sub>**: Total assets of the bank I in t-1 year; **ΔREV<sub>i,T</sub>**: Change in the revenues of the bank i between the two years t and T-1; **ΔREC<sub>i,T</sub>**: Change in Accounts under collection for the bank i between the two years t and t-1; **PPE<sub>i,T</sub>**: The size of real estate, equipment, and property of the bank i in the year t; **E<sub>i,t</sub>**: Random error.

3. Calculation of normal accruals using  $(\beta_1)$ ,  $(\beta_2)$  and  $(\beta_3)$  expected for each bank separately extracted from the above equation as follows:

$$NACC_{i,t} = \beta_1 \left( \frac{1}{Ai_{i,t-1}} \right) + \beta_2 (\Delta REV_{i,t} - \Delta REC_{i,t}) + \beta_3 (PPE_{i,t}) \quad (3)$$

Whereas:  $NACC_{i,t}$ : Normal optional accruals.

4. The calculation of the Abnormal Accruals which represent the difference between the total accruals and normal accruals during a specific period resulting from the bank's exercising earnings management practices that indicate the existence of material misstatement in the financial statements of the sample of the study. It is represented in the following equation:

$$ANACC_{i,t} = TACC_{i,t} - NACC_{i,t} \quad (4)$$

Whereas:  $ANACC_{i,t}$ : Abnormal optional accruals of the bank  $i$ , in the year  $t$ .

Decision-making base on the extent to which the study sample practices earnings management. The increase of abnormal accruals is an indicator of the bank's practice of earnings management, while the decrease of total accruals may indicate the lack of practising earnings management. The code (1) represents the banks practising earnings management and code (0) for the banks that do not practice earnings management.

### 5.1 Data Presentation

The following steps have performed a hypothesis testing of this study:

#### ***I. Formulating the analytical procedures for the Jordanian commercial banks that represent the sample of this study throughout 2011 – 2017.***

The financial indicators are considered as a prominent basis for the evaluation of the performance of Commercial Banks; the success of the process depends mainly on the accuracy and suitability of the properly selected financial indicators, the Central Bank of Jordan has classified the financial ratios to be applied by the Jordanian commercial banks in the annual financial reports into four groups. The first group is related to the profitability ratios, and liquidity ratios represent

the second, the third relates to capital solvency ratios, and the fourth relates to the employment of funds (Alaa and Eman, 2011). Also, Kumbirai and Webb (2010) pointed out that the indicators of profitability, liquidity and solvency remain to constitute the framework considering the performance indicators of the banking system are determined.

This was done by performing the descriptive financial analysis for the financial ratios, as shown in Table (1). The external auditor could perform it to infer indications of abnormal correlations between the items of the financial statements and thus the existence of indicators that the bank exercises earnings management. The data contained in tables 1 – 8 have been prepared by the researchers and are based on the financial statements of the study sample banks and the results of the statistics program (SPSS).

*Table (1)*

MEANS OF BANK'S FINANCIAL RATIOS (2011-2017)

<b>Bank name</b>	<b>PRO Mean</b>	<b>LIQ Mean</b>	<b>CSR Mean</b>	<b>EFR Mean</b>
Jordan Ahli Bank	3.08	20.25	10.76	25.32
Bank of Jordan	4.61	23.01	30.26	27.59
Cairo Amman Bank	5.33	22.36	35.38	24.71
The Housing Bank	4.84	68.33	68.33	26.87
Bank al-Etihad	3.50	22.96	27.78	24.92
PRO: Profitability, LIQ: Liquidity, CSR: Capital solvency ratio, EFR: Employment of funds ratio				

Table (1) shows that the studied Jordanian commercial banks achieved proper profitability ratios according to the arithmetic means throughout the study years. Amman Cairo Bank ranked first among the selected sample banks. The banks achieved good liquidity ratios, and the Housing Bank has been ranked first in this area. The Housing Bank was also ranked first in capital solvency.

## II. Calculation of total and optional normal accruals and abnormal accruals of the study sample banks.

The following table shows the Earning Management of Jordan commercial banks based on the calculation of the total accruals, abnormal accruals, and normal Accruals.

Table (2)

### EARNINGS MANAGEMENT IN JORDANIAN BANKS (2011-2017)

Bank	EM	Year	Total Accruals	Abnormal Accruals	Normal Accruals
Jordan Ahli Bank	0	2011	60900000	-	-
	0	2012	103000000	99000000	4000000
	1	2013	94000000	94600000	(600000)
	1	2014	126000000	129000000	(3000000)
	1	2015	213000000	216000000	(3000000)
	1	2016	55700000	60100000	(4400000)
	0	2017	175000000	172000000	3000000
Bank of Jordan	0	2011	63000000	-	-
	0	2012	141000000	13100000	127900000
	1	2013	111000000	129000000	(18000000)
	1	2014	37200000	45400000	(8200000)
	0	2015	149000000	61200000	87800000
	0	2016	116000000	96000000	20000000
	1	2017	40100000	64400000	(24300000)
Cairo Amman Bank	0	2011	51100000	-	-
	0	2012	52800000	52700000	100000
	1	2013	3000278	5840101	(2839823)
	0	2014	159000000	158000000	1000000
	0	2015	145000000	144597184	402816
	0	2016	77700000	74100000	3600000
	1	2017	29700000	32700000	(3000000)



<b>Bank</b>	<b>EM</b>	<b>Year</b>	<b>Total Accruals</b>	<b>Abnormal Accruals</b>	<b>Normal Accruals</b>
<b>The Housing Bank</b>	0	2011	130000000	-	-
	0	2012	266000000	261000000	5000000
	1	2013	407000000	411000000	(4000000)
	1	2014	364000000	370000000	(6000000)
	0	2015	459000000	450000000	9000000
	0	2016	618000000	609000000	9000000
	0	2017	199000000	122000000	77000000
<b>Bank al-Etihad</b>	0	2011	468000000		
	1	2012	506000000	511000000	(500000)
	1	2013	470000000	482000000	(1200000)
	1	2014	884000000	909000000	(2500000)
	1	2015	762000000	767000000	(500000)
	1	2016	470000000	489000000	(1900000)
	0	2017	609000000	464000000	145000000

It is noticed in Table (2) that all the banks studied have exercised earnings management. Al-Etihad Bank was ranked first among the selected banks, and Jordan Ahli Bank was ranked second, while the Housing Bank and Cairo Amman were ranked them last in practising earnings management throughout the study years.

**III. Extraction of the frequency of practising the earnings management at the selected banks level, which represents the sample of the study.**

Table (3)

**DESCRIPTIVE STATISTICS OF EARNINGS MANAGEMENT  
IN JORDANIAN BANKS (2011-2017)**

Mean = 0.49, Std. Deviation = 0.507			Earning Management		Total
			NO	YES	
Year	2011	Count	5	0	5
		% within Year	100.0%	0.0%	100.0%
		% of Total	14.3%	0.0%	14.3%
	2012	Count	4	1	5
		% within Year	80.0%	20.0%	100.0%
		% of Total	11.4%	2.9%	14.3%
	2013	Count	0	5	5
		% within Year	0.0%	100.0%	100.0%
		% of Total	0.0%	14.3%	14.3%
	2014	Count	1	4	5
		% within Year	20.0%	80.0%	100.0%
		% of Total	2.9%	11.4%	14.3%
	2015	Count	3	2	5
		% within Year	60.0%	40.0%	100.0%
		% of Total	8.6%	5.7%	14.3%
	2016	Count	3	2	5
		% within Year	60.0%	40.0%	100.0%
		% of Total	8.6%	5.7%	14.3%
	2017	Count	3	2	5
		% within Year	40.0%	60.0%	100.0%
		% of Total	5.7%	8.6%	14.3%
Total	Count	19	16	35	
	% within Year	54.3%	45.7%	100.0%	
	% of Total	54.3%	45.7%	100.0%	

We notice in Table (3) above that there is a disparity in practising earnings management among the studied commercial banks during the years of this study. On average, the frequency per cent of practising earnings management by the selected banks during the years of the study was 45.7%. The frequency per cent of

non-practising earnings management by the selected banks was 54.3% during the years of the study.

### 5.2 Hypotheses testing

**HA:** *There is a statistically significant impact of the analytical procedures adopted by the External Auditor on detecting the material misstatements in the financial statement of the Jordanian commercial banks.*

Logistic Regression has been used to test the hypothesis, where step (0) was given to the banks that have not practised earnings management, step (1) was given to the banks that have practised earnings management. The results of the test are shown in Table (4) herein below:

Table (4)

#### LOGISTIC REGRESSION OF ANALYTICAL PROCEDURES AND EARNINGS MANAGEMENT

		<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Chi-square (step)</b>	<b>df</b>	<b>Sig.</b>
Step 0	Constant	-0.057	0.338	0.029	1	0.866			
Step 1a	PRO	-1.354	0.994	1.857	1	0.173	3.058	4	0.548
	LIQ	-0.061	0.085	0.516	1	0.473			
	CSR	0.081	0.101	0.646	1	0.421			
	EFR	0.039	0.354	0.012	1	0.912			
	Constant	3.815	8.732	0.191	1	0.662			
a. Variable(s) entered on step 1: PRO (profitability), LIQ (liquidity), CSR (Capital solvency ratio), and EFR (Employment of funds ratio).									

The results in Table (4) pointed out that there is no statistically significant relationship between the analytical procedures (profitability, liquidity, capital solvency ratio, and employment of funds ratio) on earnings management. In the absence of profit management (step 0), there is no statistically significant relationship between analytical procedures and earnings management (B= -0.057, Wald = 0.029,

Sig. > 0.05, Chi-square = 3.058, Sig. > 0.05). In step 1, the results highlighted that none of the analytical procedures has a significant relationship with earnings management; profitability (B = -1.354, Wald = 1.857, Sig. > 0.05), liquidity (B = -0.061, Wald = 0.516, Sig. > 0.05), capital solvency ratio (B = 0.081, Wald = 0.646, Sig. > 0.05), employment of funds ratio (B = 0.039, Wald = 0.012, Sig. > 0.05). The overall Chi-square of the step = 3.058 with Sig. > 0.05. From the previous results, we reject the alternative hypothesis (HA) and accept the null hypothesis that states that there is no statistically significant impact of the analytical procedures adopted by the external auditor on the detecting of material misstatement in the financial statements of the Jordanian commercial banks.

1. ***Ha<sub>1</sub>***: *There is a statistically significant impact of the analytical procedures adopted by the External Auditors by using profitability ratios on detecting material misstatement of the financial statements of Jordanian commercial banks.*

Table (5) hereinbelow displays the results of testing the hypothesis of the banks that practice earnings management and the banks that do not practice earnings management during the years of the study.

Table (5)

LOGISTIC REGRESSION OF ANALYTICAL PROCEDURES  
(PROFITABILITY) AND EARNINGS MANAGEMENT

		<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Chi-square (step)</b>	<b>df</b>	<b>Sig.</b>
Step 0	Constant	-0.057	0.338	0.029	1	0.866			
Step 1a	PRO	-0.625	0.419	2.225	1	0.136	2.336	1	0.126
	Constant	2.613	1.825	2.049	1	0.152			
a. Variable(s) entered on step 1: PRO (Profitability)									

The results in Table (5) above indicate that there is no statistically significant correlation between the analytical procedures (profitability) and earnings management (B = -0.625, Wald = 2.225, Sig. > 0.05, Chi-square = 2.336, Sig. > 0.05). From the previous results, we reject the alternative hypothesis (HA) and accept

the zero hypothesis (H<sub>0</sub>) stating that there is no statistically significant impact of the analytical procedures using the profitability ratios by the external auditor on detecting the material misstatements in the financial statements of the Jordanian commercial banks.

2. *H<sub>a2</sub>: There is a statistically significant impact of the analytical procedures adopted by the External Auditors by using liquidity ratios on detecting material misstatement of the financial statements of Jordanian commercial banks.*

Table (6) hereinbelow displays the results of testing this hypothesis for the banks practised earnings management and the banks that did not practice earnings management during the years of the study.

Table (6)

**LOGISTIC REGRESSION OF ANALYTICAL PROCEDURES  
 (LIQUIDITY) AND EARNINGS MANAGEMENT**

		<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Chi-square (step)</b>	<b>df</b>	<b>Sig.</b>
Step 0	Constant	-0.057	0.338	0.029	1	0.866			
Step 1a	LIQ	-0.006	0.018	0.120	1	0.729	0.121	1	0.728
	Constant	0.143	0.668	0.046	1	0.831			
a. Variable(s) entered on step 1: LIQ (liquidity)									

The results in Table (6) showed that there is no statistically significant relationship between the analytical procedures (liquidity) and earnings management (B = -0.006, Wald = 0.120, Sig. > 0.05, Chi-square = 0.121, Sig. > 0.05). From the previous results, we reject the alternative hypothesis (H<sub>A</sub>) and accept zero hypothesis (H<sub>0</sub>) stating that there is no statistically significant impact of the analytical procedures using the liquidity ratios by the external auditor on detecting the material misstatement of the financial statements of the Jordanian commercial banks.

3. ***Ha<sub>3</sub>***: *There is a statistically significant impact of the analytical procedures adopted by the External Auditor by using capital solvency ratios on detecting material misstatement of the financial statements of Jordanian commercial banks.*

Table (7) hereinbelow shows the results of this hypothesis test for the banks that practised earnings management and the banks that did not exercise earnings management during the years of study.

Table (7)

LOGISTIC REGRESSION OF ANALYTICAL PROCEDURES  
(CAPITAL SOLVENCY RATIO) AND EARNINGS MANAGEMENT

		<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Chi-square (step)</b>	<b>df</b>	<b>Sig.</b>
Step 0	Constant	-0.057	0.338	0.029	1	0.866			
Step 1a	CSR	-0.012	0.018	0.462	1	0.497	0.471	1	0.492
	Constant	0.371	0.713	0.271	1	0.603			
a. Variable(s) entered on step 1: CSR (Capital solvency ratio)									

The results in Table (7) illustrated that there is no statistically significant relationship between the analytical procedures (capital solvency ratio) and earnings management (B = -0.012, Wald = 0.462, Sig. > 0.05, Chi-square = 0.471, Sig. > 0.05). From the previous results, we reject the alternative hypothesis (HA) and accept the Zero hypothesis (H0) stating that there is no statistically significant impact of the analytical procedures using the capital solvency ratios by the external auditor on detecting material misstatements in the financial statements of the Jordanian commercial banks.

4. ***H<sub>a4</sub>***: *There is a statistically significant impact of the analytical procedures adopted by the External Auditor by using the investment of capital ratios on detecting material misstatement of the financial statements of Jordanian commercial banks.*

Table (8) hereinbelow shows the results of this hypothesis test for banks that practised earnings management and the banks that did not practice earnings management during the years of study.

Table (8)

LOGISTIC REGRESSION OF ANALYTICAL PROCEDURES  
 (EMPLOYMENT OF FUNDS RATIOS) AND EARNINGS MANAGEMENT

		<b>B</b>	<b>S.E.</b>	<b>Wald</b>	<b>df</b>	<b>Sig.</b>	<b>Chi-square (step)</b>	<b>df</b>	<b>Sig.</b>
Step 0	Constant	-0.057	0.338	0.029	1	0.866			
Step 1a	EFR	-0.116	0.297	0.152	1	0.696	0.153	1	0.696
	Constant	2.949	7.705	0.146	1	0.702			
a. Variable(s) entered on step 1: EFR (employment of funds ratio)									

The results in table (8) illustrated that there is no statistically significant relationship between the analytical procedures (Employment of funds ratio) and earnings management (B = -0.116, Wald = 0.152, Sig. > 0.05, Chi-square = 0.153, Sig. > 0.05). From the previous results, we reject the alternative hypothesis (H<sub>A</sub>) and accept the zero hypothesis (H<sub>0</sub>) stating that there is no statistically significant effect of the analytical procedures using employment of funds ratios by the external auditor on detecting the material misstatement in the financial statements of the Jordanian commercial banks.

## 6. Results Discussion

After data collection and analysis, the researchers reached the following key results:

1. There is no statistically significant impact of the analytical procedures using the profitability ratios by the external auditor on detecting the material misstatement in the financial statement of the Jordanian commercial banks. The results of this study are consistent with the study conducted by Abu Sardana et al. (2013) that confirmed that there is no relationship between the using of profitability ratios and detecting the misstatement in the financial statements.
2. There is no statistically significant impact of analytical procedures using the liquidity ratios by the external auditor on detecting material misstatement in the financial statements of Jordanian commercial banks. This result was in contravention of the results of the study of (Ja'ara, 2012), (Hamdan and Abu Ajeila, 2012) and (Al-Hind, 2016) who confirmed that the use of liquidity ratios by the external auditor in testing the liquidity ratios gives the auditor indications on the existence of abnormal processes and relationships in the audited financial statements.
3. There is no statistically significant impact of analytical procedures using the capital solvency ratios by the external auditor on detecting material misstatement in the financial statements of Jordanian commercial banks. This result contradicts with another study (Ja'ara, 2012), which confirmed the ability of financial ratios on detecting the abnormal relations and methods of fraud used in preparing the financial statements when used by the external auditor.
4. There is no statistically significant impact of the analytical procedures using the funds' employment by the external auditor on detecting the material misstatements in the financial statements of Jordanian commercial banks. This result is consistent with the study of (Kathleen *et al.* 2004), which confirmed the limited ability of the financial ratios to detect and/or predict fraud in the financial statements.



## 7. Recommendations

Based on the conclusions of this study, the researchers recommend the followings:

1. The statistical results of the study indicate that there are real difficulties that external auditors encounter in using the analytical procedures to detect areas of risk in data being audited. Therefore, auditors should be highly competent and deeply knowledgeable in using the analytical procedures to judge the fairness of financial data and freeness of material misstatements.
2. Based on the results of the study, the researchers recommend conducting future research on other economic sectors (other than banks sector) that considers the uniqueness of financial ratios of those sectors. Moreover, future research should be conducted by using different models and opinions for calculating accruals in all their forms to determine the capability of the analytical procedures in assisting auditors to detect material misstatements of audited financial data.

## 8. References

1. Abdul Karim Abdul Rahim, Jalil Saleh, Nahla Ghalib, (2014). Measurement of Audit Level for Southern District Audit Offices (Field study of Basra Office–Maysan -Dhi Qar), *Dhi-Qar University Journal*, 9 (1).
2. Abdullah Abu-Nahleh, (2017). The ability of the analytical procedures for the external auditor to disclose financial accounting and accounting fraud (a case study), *unpublished thesis, Al-Zaytoonah University of Jordan*, Faculty of Business, Amman.
3. Abu Sardana Jamal, Atma Muhannad, Al-Hawi Ibrahim, (2013). The Ability of Public Shareholding Companies to Prevent Fraud and its detection. An analytical study of the services sector in Jordan, *Jordanian Journal of Business Administration*, Deanship of Scientific Research, University of Jordan, 9 (1).
4. Abu Sneidah Nadia, (2015). The Role of Analytical Review in Reducing the Gap of Expectation in Audit Environment from the Viewpoint of Certified Public Accountant in Gaza Strip, *unpublished thesis, Islamic University*, Faculty of Commerce, Gaza.
5. Ahmad Ahmadpour, Masoumeh Shahsavari, (2016). Earnings management and the effect of earnings quality in relation to bankruptcy level (Firms listed

- at the Tehran Stock Exchange), *Iranian Journal of Management Studies*, 9 (1), 77-99.
6. Alaa Talib, Eman Mashhadani, (2011). Corporate Governance and Strategic Financial Performance of Banks, *Dar Safa for Printing, Publishing and Distribution*, Amman, Jordan.
  7. Alade Sule Omoye, and Emmanuel Eragbhe (2014), Accounting Ratio and false financial statement detection, evidence from Nigerian, *International Journal of Business and Social Science*. 5 (7).
  8. Albrecht, W. S., Albrecht, C., and Albrecht, C. C. (2008). Current trends in fraud and its detection. *Information Security Journal: A Global Perspective*, 17 (1), 2-12. <https://doi.org/10.1080/19393550801934331>
  9. Al-Chahadah, A. R., Soda, M. Z., Al Omari R. (2018), The Impact of the Internal Audit on the Quality of Accounting Information in the Jordanian Commercial Banks, *International Journal of Economics and Finance*, 10 (9). <https://doi.10.5539/ijef.v10n9p157>
  10. Al-Hind, Saifuddin, (2016). Evaluate Extent of Using Auditors of Certified Public Accountants of Analytical. Procedures in the Discovery of Practices Creative Accounting an Empirical Study of the Gaza Strip, *Unpublished Master Thesis*, Islamic University, Faculty of Commerce, Gaza.
  11. Arab Society of Certified Accountants and the International Federation of Accountants, (2001). Measuring Competence and Activeness, 13 (1) 318 – 320.
  12. Arens, A. A., Elder, R. J., and Mark, B. (2012). Auditing and assurance services: an integrated approach. Boston: Prentice Hall. <https://lib.hpu.edu.vn/handle/123456789/22033>
  13. Aris, N. A., Arif, S. M. M., Othman, R., and Zain, M. M. (2015). Fraudulent financial statement detection using statistical techniques: The case of small medium automotive enterprise. *Journal of Applied Business Research (JABR)*, 31 (4), 1469-1478. <https://doi.org/10.19030/jabr.v31i4.9330>
  14. Arkan, T. (2015). The effects of earning management techniques, net income and cash flow on stock price. *Zeszyty Naukowe Uniwersytetu Szczecińskiego. Finanse, Rynki Finansowe, Ubezpieczenia*, (74 T. 2 Mierzenie i ocena wyników przedsiębiorstw), 245-258. <http://dx.doi.org/10.18276/frfu.2015.74/2-22>
  15. Badertscher, B. A. (2011). Overvaluation and the choice of alternative earnings management mechanisms. *The Accounting Review*, 86 (5), 1491-1518. <https://doi.org/10.2308/accr-10092>
  16. Bellovary J., Don E., and Michael, D, (2005). Earnings Quality: It's Time to Measure and Report, *the CPA Journal*, November, pp 32- 37.

17. Bissessur, S.W, (2008). Earnings quality and earnings management: the role of accounting accruals, *PhD thesis, publisher, Amsterdam; Rotterdam: Thela Thesis*.
18. Burgstahler, D.C and Eames, M.J, (2003). Earnings Management to Avoid Losses and Earnings Decreases: Are Analysts Fooled? *Contemporary Accounting Research* ,20(2),253-294.
19. Carol A.Knappa, Michael C.Knappb, (2001). The effects of experience and explicit fraud risk assessment in detecting fraud with analytical procedures. *Accounting, Organizations and Society*, 26 (1), Pages 25-37,
20. Cohen, D.A. and Zarowin, P. (2010) Accrual-Based and Real Earnings Management Activities Around Seasoned Equity Offerings. *Journal of Accounting and Economics*, 50, 2-19. <http://dx.doi.org/10.1016/j.jacceco.2010.01.002>
21. Dalnial, H., Kamaluddin, A., Sanusi, Z. M., and Khairuddin, K. S. (2014). Accountability in financial reporting: detecting fraudulent firms, *Procedia – Social and Behavioral Sciences*, 145, P. 61-69 <https://doi.org/10.1016/j.sbspro.2014.06.011>
22. Dechow P., Sloan R., and Sweeney, A, (1995). Detecting Earnings Management, *The Accounting Review*, 70 (2): 193 -225 [www.jstor.org/stable/248303](http://www.jstor.org/stable/248303)
23. Dechow, P. M., and Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The accounting review*, 77 (s-1), 35-59. <https://doi.org/10.2308/accr.2002.77.s-1.35>
24. Dechow, P. M., Hutton, A. P., Kim, J. H., and Sloan, R. G, (2012). Detecting earnings management: A new approach. *Journal of Accounting Research*, 50 (2), 275-334. <https://doi.org/10.1111/j.1475-679X.2012.00449.x>
25. Francis J., LaFond R., Olsson P., and Schippe, K, (2002). The Market Pricing of Earnings Quality. <http://dx.doi.org/10.2139/ssrn.414140>
26. Guan-jun, Z., and Lin, Z. (2009). An analysis on dealing with audit failure. *Journal of modern accounting and auditing*, 5 (7).
27. Halbouni, S. S. (2015). The Role of Auditors in Preventing, Detecting, and Reporting Fraud: The Case of the United Arab Emirates (UAE). *International Journal of Auditing*, 19 (2), 117-130. <https://doi.org/10.1111/ijau.12040>
28. Hamdan Allam, Abu Ajeila Emad, (2012). Quality of Auditing in Jordan and its Impact on Management and Quality of Profits, *Arab Journal of Accounting*, University of Bahrain, Bahrain 15(1), p. 158-184.
29. Hamid, F., Hashim, H. A., and Salleh, Z. (2012). Motivation for earnings management among auditors in Malaysia. *Procedia-Social and Behavioral Sciences*, 65 (3), 239-246. <https://doi.org/10.1016/j.sbspro.2012.11.117Get>
30. Hasan Salloum and Thamer Al-Redha, (2016). The role of the Controller in the detection of fraud indicators through the discussion and analysis of the

- management report (comparative study), *The Journal of Administration and Economics*, Mustansiriya University, 107, Iraq.
31. Iatridis, G., and Kadorinis, G. (2009). Earnings management and firm financial motives: A financial investigation of UK listed firms. *International Review of Financial Analysis*, 18 (4), 164-173. <https://doi.org/10.1016/j.irfa.2009.06.001>
  32. Imoniana, J. O., Antunes, M. T. P., Mattos, S. M., and Maciel, E. (2012). The analytical review procedures in audit: An exploratory study. *Advances in Scientific and Applied Accounting*, 5 (2), 282-303. <http://asaa.anpcont.org.br/index.php/asaa/article/view/104/68>
  33. Izadi Zadeh, Darjezi, Javad, (2016). The role of accrual estimation errors to determine accrual and earnings quality. *International Journal of Accounting and Information Management*, 24 (2). pp. 98-115 <https://doi.org/10.1108/IJAIM-04-2015-0022>
  34. Ja'ara Omar, (2012). External Auditor Methods in the Detection of Fraud in the financial statements of the Public Shareholding Companies. A survey study in the External Audit Offices in Jordan. *Journal of Administrative Sciences Studies*, Deanship of Scientific Research, University of Jordan, 39 (2).
  35. Jibril, A. and Al-Thuneibat A. (2016). The Effect of Internal Audit on Limiting Earnings Management of Industrial Companies Listed in the Amman Stock, *Jordanian Journal of Business Administration*, 12 (4).
  36. Jones, J. (1991). Earnings Management During Import Relief Investigations. *Journal of Accounting Research*, 29 (2), 193-228. <https://doi.org/10.2307/2491047>
  37. Jones, K. L, Krishnan, G. V., and Melendrez, K. D, (2008). Do models of discretionary accruals detect actual cases of fraudulent and restated earnings? An empirical analysis. *Contemporary Accounting Research*, 25 (2), 499-531. <https://doi.org/10.1506/car.25.2.8>
  38. Joshua, R. and Varda, Y. (2008). Earning management: emerging insights in theory, practice, and research, *springer publisher. book series* (KLAS, volume 3)
  39. Kanapickienė, R., and Grundienė, Ž. (2015). The model of fraud detection in financial statements by means of financial ratios. *Procedia: social and behavioral sciences*, 213, 321-327. <https://doi.org/10.1016/j.sbspro.2015.11.545>
  40. Kathleen A. Kaminski, T. Sterling Wetzel, Liming Guan, (2004). Can financial ratios detect fraudulent financial reporting?, *Managerial Auditing Journal*, 19 (1), pp.15-28 <https://doi.org/10.1108/02686900410509802>

41. Koskivaara, E. (2006). Integrating analytical procedures into the continuous audit environment. *JISTEM-Journal of Information Systems and Technology Management*, 3 (3), 331-346. <http://dx.doi.org/10.4301/S1807-17752006000300005>
42. Kumbirai, M., and Webb, R. (2010). A financial ratio analysis of commercial bank performance in South Africa. *African Review of Economics and Finance*, 2 (1), 30-53. <https://www.ajol.info/index.php/aref/article/view/86945>
43. Luong, Lua (2015). Earnings management through accrual-based analysis: Case study: Stockmann Oy Abp 2005-2014.
44. McVay, S.E, (2006). Earnings management using classification shifting: an examination of core earnings and special items. *The Accounting Review*, 81 (3), 501-531 <https://doi.org/10.2308/accr.2006.81.3.501>
45. Mubako, G., and O'Donnell, E. (2018). Effect of fraud risk assessments on auditor skepticism: Unintended consequences on evidence evaluation. *International Journal of Auditing*, 22 (1), 55-64. <https://doi.org/10.1111/ijau.12104>
46. Mulford, C. E. and Comiskey, (2002). The financial numbers game: detecting accounting practices”, new york: *John Wiley and Sons Inc.*
47. Noor Abdel-Nasser and Al-Awawdeh Hanan, (2017). Earnings management and its impact on the quality of accounting profits: *A Test Study on Jordanian Industrial Public Shareholding Companies*, 13 (2). 161-179.
48. O'Neil, M, (2007). Financial fraud: the how and why, official publication of CENS schools, *European Business Forum*, 29.
49. Perols, J. L., and Lougee, B. A. (2011). The relation between earnings management and financial statement fraud. *Advances in Accounting*, 27 (1), 39-53. <https://doi.org/10.1016/j.adiac.2010.10.004>
50. Qrait Essam, (2009). The extent of using analytical review procedures in the syria, Damascus University, *Journal of Economic Sciences*, 25 (1).
51. Ramírez-Orellana, A., Martínez-Romero, M. J., and Mariño-Garrido, T. (2017). Measuring fraud and earnings management by a case of study: Evidence from an international family business. *European Journal of Family Business*, 7 (1-2), 41-53. <https://doi.org/10.1016/j.ejfb.2017.10.001>
52. Richardson, S. A., Sloan, R. G., Soliman, M. T., and Tuna, I. (2005). Accrual reliability, earnings persistence and stock prices. *Journal of accounting and economics*, 39 (3), 437-485. <https://doi.org/10.1016/j.jacceco.2005.04.005>
53. Scott, W.R, (2009). *Financial Accounting Theory*. 5th ed. Toronto, Ontario: Prentice Hall Canada.
54. Sharif Iqbal and Abu Ajeila Emad, (2009). The Relationship between the Quality of Profits and the Institutional Governance, a research presented to

the 7th International Scientific Conference of the College of Business Administration; *The Implications of the Global Economic Crisis on Business Organizations*, Zarqa University, Amman.

55. Stice, E. K., and Stice, J. D. (2010). *Intermediate Financial Accounting*. International Edition, USA
56. Teets, State W, (2002). Quality of Earnings: An Introduction to the Issues in Accounting Education Special Issue, *Issues in Accounting Education*, 17 (4): 1 -32. <https://doi.org/10.2308/iace.2002.17.4.335>
57. Xu, R. Z., Taylor, G. K., and Dugan, M. T. (2007). Review of real earnings management literature. *Journal of Accounting Literature*, 26, 195-228.
58. Zainudin, E.F. and Hashim, H.A. (2016), "Detecting fraudulent financial reporting using financial ratio", *Journal of Financial Reporting and Accounting*, 14 (2), pp. 266-278. <https://doi.org/10.1108/JFRA-05-2015-0053>

ANALITIČKI POSTUPCI VANJSKOG REVIZORA I NJIHOV UTJECAJ  
NA OTKRIVANJE MATERIJALNIH POGREŠNIH IZVJEŠTAJA –  
EMPIRIJSKA STUDIJA KOMERCIJALNIH BANAKA U JORDANU

Sažetak

U ovom radu se želi identificirati utjecaj analitičkih postupaka vanjskog revizora na financijske izvještaje i izvješća za otkrivanje značajnih pogrešnih izvještaja jordanskih komercijalnih banaka. Izmjeren je utjecaj neovisnih varijabli (profitabilnost, likvidnost, solventnost kapitala i omjer zapošljavanja sredstava) na ovisnu varijablu (otkrivanje značajnih pogrešnih izvještaja). Ovisna varijabla je predstavljena upravljanjem zarade koja se mjeri diskrecijskim obračunom. Za analizu financijskih izvještaja i analitičkih postupaka korištena je kvantitativna standardna metoda te Jonesov model za mjerenje upravljanja zaradom. Također, multivarijantni model linearne regresije upotrijebljen je za testiranje hipoteze istraživanja i navođenje odnosa između varijabli. Uzorak u istraživanju sastoji se od pet jordanskih poslovnih banaka. Podaci su prikupljeni od 2011. do 2017. godine. U ovom istraživanju se zaključuje da ne postoji statistički značajan utjecaj analitičkih postupaka koji se odnose na omjere likvidnosti, profitabilnosti, solventnosti i zapošljavanja novčanih sredstava koje bi vanjski revizor mogao poduzeti kako bi otkrio značajne pogrešne prikaze financijski izvještaji jordanskih poslovnih banaka. Konačno, u istraživanju se iznose preporuke da revizori trebaju biti visoko kompetentni i duboko osposobljeni za korištenje analitičkih postupaka kako bi procijenili poštenost financijskih podataka i slobodu materijalnih pogrešnih iskaza.

Ključne riječi: Analitički postupci, materijalne pogreške, komercijalne banke, vanjski revizor, financijska izvješća.