

Forensic Accounting Methods and Reducing Creative Accounting Practices: Evidence from Jordan

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ABSTRACT

This study aims to investigate the role of forensic accounting methods in reducing creative accounting practices in Jordan as a developing country. The targeted population consisted of 357 respondents from auditing accounting working in auditing offices in Amman. A self-administrated questionnaire was used as an instrument for data collection and multiple-regression analysis was employed for data analysis.

The study findings indicated that three factors could be extracted from forensic accounting methods; namely, investigation operations, procedures and evaluation processes. These factors (methods) showed to have a positive relationship with reducing creativity accounting practices from auditors' perspective in Jordan. The most crucial forensic accounting method (factor) that proved to be highly associated with reducing creativity accounting practices was the "procedures" method.

Keywords: Forensic accounting methods, Creative accounting, Auditors.

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أساليب المحاسبة الجنائية والحد من الممارسات المحاسبية الإبداعية: دليل من الأردن

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ملخص

تهدف هذه الدراسة إلى البحث في دور أساليب المحاسبة الجنائية في الحد من الممارسات المحاسبية الإبداعية في الأردن كدولة نامية. ويتألف مجتمع الدراسة من 357 من العاملين في مكاتب مدققي الحسابات في مدينة عمان. واستخدمت استبانة ذاتية الإدارة كأداة لجمع البيانات، واستخدم تحليل الانحدار المتعدد لتحليل البيانات. تظهر نتائج الدراسة إمكانية استخلاص ثلاثة عوامل من أساليب المحاسبة الجنائية، وهي: عمليات التحقيق، والإجراءات، وعمليات التقييم. وقد أظهرت هذه العوامل (الأساليب) وجود علاقة إيجابية مع الحد من ممارسات المحاسبة الإبداعية من وجهة نظر مراجعي الحسابات في الأردن. وقد وجد أن أسلوب "الإجراءات" هو أهم طريقة (عامل) للمحاسبة الجنائية له علاقة قوية بالحد من الممارسة المحاسبية الإبداعية.

الكلمات الدالة: المحاسبة الجنائية، الممارسات الإبداعية، مدققي الحسابات.

1 جامعة البلقاء التطبيقية، السلط، الأردن.

2 جامعة عمان الأهلية، عمان، الأردن.

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INTRODUCTION

The last decades have witnessed major events after the collapse of some well-known companies, such as WorldCom and Enron. Many interested and concerned parties consider Arthur Anderson responsible for such collapse, since it was the company that performed auditing of the companies' accounts. They argue that Arthur Anderson bears a part of the companies' collapse responsibility. They accuse Arthur Anderson of manipulating the companies' accounting data, taking advantage of some accounting treatments and policies that do not show the accounting data in its correct form. This is due to the prevailing conditions in the business world and the resort of many corporate managements to beautify their financial statements in order to improve their financial situation, whether in terms of profitability or financial position with the aim to achieve personal goals. Such managements resort to using creative accounting methods, taking advantage of the diversity of accounting alternatives (IAS/IFRS) in preparing financial statements, which negatively affects these statements' credibility (Ozili,2020). This drives the emergence of the so-called "forensic accounting", which became the center of attention and had been focused on by accountants and auditors working in the field of law eliminating the limit whether or not all the beneficiaries and those dealing with the accounting data are included in the company's financial statements.

Various economic and financial problems in the business world and economic activities require special accounting treatments in order to assist the parties concerned in obtaining financial facts. Courts and judges require more information upon examining accounting issues and financial disputes. Based on relevant research, forensic accounting can reduce creative accounting practices in order to obtain the required credibility of financial statements. Therefore, the current research aims

mainly to answer the following questions:

- Do forensic accounting methods (investigation, procedures and evaluation) have any significant relationship with reducing creative accounting practices?
- What are the leading forensic accounting methods that are highly associated with reducing creative accounting practices?

Literature Review and Development of Research Hypotheses

Forensic Accounting Concept

Forensic accounting has emerged as an important discipline in accounting, which can be of great importance for business organizations. Such a technique is deemed a new practice in Jordan to some extent. Forensic accounting concept varies according to different views of researchers. The most important view is that forensic accounting uses professional knowledge and skills in civil or criminal cases, intending to present objective evidence to courts and parties interested in the issue or dispute under investigation. Forensic accounting is a specialized field that describes undertakings resulting from actual or anticipated disputes and litigations. The term "forensic accounting" means employing accounting for use in courts, where this is the primary standard that must be taken into consideration by forensic accountants (Grubor et al., 2013: 8). Forensic accounting is also defined as "the result of the process of integration between accounting and auditing skills and legal investigation skills" (Blessing, 2015: 21). According to Popoola, Ahmad, Samsudin and Yussof (2013), forensic accounting is defined as the integration of specialized accounting knowledge and enhanced skills to solve complex business issues in any court of law or public domain. Forensic

accounting is “a method of investigating financial transactions and business situations to obtain the truth and develop an expert opinion regarding possible fraudulent activities” (Singh, 2012). Popoola et al. (2016) consider forensic accounting as “a process of using accounting skills and knowledge to investigate fraud or misappropriation of fund and to analyze the financial information for use in legal proceedings”.

Forensic accounting includes the process of auditing accounting records for the purposes of searching for evidence of fraud, gathering non-financial information upon interviewing all parties involved in fraud, then writing a report to the administration or the court and working as an expert witness and support litigator. Forensic accounting is a field of accounting knowledge specialized in clarifying obligations that result from actual or anticipated disputes between the parties in conflicts with the court. The term "forensic" refers to the mechanism of using accounting in courts, where forensic accountants are also called forensic auditors, judicial reviewers or investigators. However, there is a difference within this term. What is important here is that the judicial accountant ultimately highlights his/her main task in giving his/her testimony before the court based on his/her scientific and practical experience in the case under investigation (Abd Al-Rahman, 2016; Sharif and Abu Nassar, 2021). Popoola et al. (2016) consider forensic accounting as “a process of using accounting skills and knowledge to investigate fraud or misappropriation of fund and to analyze financial information for use in legal proceedings”. In most corporate organizations, forensic accounting investigation is widely believed as a mechanism that provides more comprehensive details of information concerning financial fraud (Believer & Emmanuel, 2015; Effuse & Kingsley, 2016). This indicates that forensic accounting investigation deals with applying and using accounting knowledge and skills to determine financial facts and evidence in terms of legal issues.

Creative Accounting Concept

Creative accounting is an accounting practice that may or may not follow accounting standards and principles. Furthermore, it deviates from the primary goal of such standards and principles to show or submit the desired business picture. Creative accounting is not considered illegal, but it is unethical, because it does not meet the main financial reporting objective, which is presenting a fair and business- objective picture. Creative accounting includes various practices, such as overestimating assets, elevating stocks, decreasing expenses, changing in depreciation methods or presenting provisions as assets. Creative accounting techniques include changes in accounting standards, which are being modified to reduce financial information manipulation. The changes made in accounting standards lead to having new opportunities for accounting manipulation (Branka et al., 2018, Tahat et al., 2021). There are various definitions of creative accounting. Bhasin (2016) describes creative accounting as an accounting practice that may (or may not) adhere to accounting principles and standards, but deviates from what those principles and standards intended to achieve to present the desired business image. In other words, creative accounting is transforming accounting information from what it actually is to what the company wants it to be, using benefits in the existing rules or ignoring a part of these rules. Creative accounting used in financial reporting can be considered as playing with the elements of financial statements.

Such practice may lead to overestimation of assets' value, high inventory levels, reduction in expenditures, changes in depreciation methods or showing provisions as assets (Shahid and Ali, 2016; Redha et al., 2012). The techniques of creative

accounting follow the changes in accounting standards modified to reduce accounting manipulation. However, well-intended changes in accounting standards often result in opening up new opportunities for accounting manipulation. Although companies apply accounting standards, at the same time, they use "loopholes" to enhance their key indicators (Karim et al., 2016).

Forensic Accounting and Creative Accounting Practices

Alina and Dan (2013) aimed to discuss creative accounting limitation through ethical developments, focusing on features, such as measurement and behavior. The study findings indicated that ethics as a solution used for limiting opportunistic behavior in accounting can have unlimited potential as a long-term solution. Khaled (2013) aimed to find out the role of forensic accounting in reducing financial fraud. The study concluded that forensic accounting is an application of auditing skills in light of legal issues' knowledge. The forensic accountant must have the scientific and practical qualification and should have different skills from those possessed by the accountant who prepares the financial statements. Al-Khalidi (2014) examined forensic accounting's role in facing creative accounting practices and reducing their effects on financial statements. The study concluded that fraud scandal of global companies (such as Enron and WorldCom) and the resulting judicial lawsuits have created a tremendous demand for forensic accounting, because it plays a role in the investigation of financial scandals suspected of fraud and theft. Activities carried out by forensic accounting are about supervision and control of the application of international accounting standards correctly and control of financial reports. Control and evaluation of internal examination systems have significant roles in limiting the practice of creative accounting.

Hassan (2015) discussed forensic accounting's role in limiting creative accounting methods. The study aimed to

analyze and evaluate the commercial process and investigate fraud by developing a strategy, taking into account the internal control weaknesses and the areas of forensic accounting that include supporting and directing judicial advice, providing expertise in financial issues and proving fraud cases. The study proved that the investigation process carried out by forensic accountants limits the creative accounting process. Enofe, et al. (2015) aimed to examine forensic accounting and corporate crime mitigation in Nigeria. The study used descriptive statistics and percentage analysis to analyze the respondents' responses. The study concluded that forensic accounting could play a role in strengthening corporate governance and curbing the menace of corporate crime in Nigeria. Branka et al. (2018) aimed to investigate the main motives behind financial information manipulation, in addition to the most common techniques and measures that should be taken to minimize creative accounting practices.

Lau and Ooi (2016) concluded that the most commonly used creative accounting method was the overestimation of revenues. Mindak et al. (2016) investigated whether companies use creative accounting techniques to meet the analysts' forecasts and exceed last year's earnings and whether the market rewards or punishes such manipulations. The research concluded that companies that have managed to beat the targets have used creative accounting methods to increase earnings artificially and have been rewarded by the market. In contrast, companies that have managed earnings to reduce them (by increasing reserves, for example) so that they barely meet the set goals were not rewarded. Shaban (2016) revealed a demand for forensic accountants in Gaza with the availability of scientific and practical training for financial accountants to carry out these tasks after

developing their knowledge of the necessary legal aspects. Abdulrahman (2019) found that a significant favourable influence exists between forensic accounting techniques and fraud prevention. Kadhem and Kariem (2017) concluded the need to develop the market for users' securities accounting culture, the negative aspects of creative accounting and their effects on users. Sule et al. (2019) revealed that forensic accounting has a significant effect on detecting financial fraud. The study also concluded that forensic accounting investigation is considered a step for discovering financial fraud and other fraudulent exercises in Nigeria. Effuse and Kingsley (2016) concluded that forensic accounting has a significant effect on reducing financial fraud in corporate organizations. Furthermore, a study by Nwaiwu and Aaron (2018) have also documented empirical evidence about the impact of a forensic accounting investigation. The authors found that forensic accounting is the best mechanism for fraud detection and prevention in an organization. Also, the findings of the study showed that forensic accounting service improves the company overall performance. In a similar vain, Ozcan (2019) also investigated the effect of forensic accounting on detection of financial information manipulation. The dynamics of forensic accounting are explained. The methods used by forensic accountants to detect financial information manipulation are discussed. The findings of empirical analysis are expected to substantially contribute to the forensic accounting investigation. Additionally, Akhidime (2018) has also found that forensic accounting service produces appropriate outcomes in terms of fraud prevention and detection capability. The study indicated that forensic accounting

provides a more desirable process in understanding that fraud has occurred. These studies highlighted the needs of forensic accounting investigation towards uncovering fraud issues. Accordingly, the following main hypothesis was formulated in the Jordanian business environment context:

- Ho- Forensic accounting methods (investigation, procedures and evaluation) will not have any significant relationship with the level of reducing creative accounting practices, whether being taken together or separately This main hypothesis can be divided into three sub-hypotheses based on these three methods as follows:
- Ho- Forensic accounting investigation method will not have any significant relationship with the level of reducing creative accounting practices.
- Hob- Forensic accounting procedures method will not have any significant relationship with the level of reducing creative accounting practices
- Hoc- Forensic accounting evaluation method will not have any significant relationship with the level of reducing creative accounting practices.

Research Methodology

The study population consists of all accountants and auditors who are working in audit offices in Amman. A random sample of 500 individuals of the population was selected. The number of usable returned questionnaire forms was 357, with a response rate of (70.4%). Table (1) summarizes the respondents' profile.

Table (1)
Respondents' profile descriptions

Feature	Option	Frequency	Percentage (%)
Age	Less than 30 years	24	6.9
	30 to less than 40 years	75	21.4
	40 to less than 50 years	126	36.0
	50+ years	125	35.7
Educational Level	Bachelor degree	14	4.0
	Master degree	232	66.3
	PhD degree	104	29.7
Specialization	Accounting	279	79.7
	Business administration	71	20.3
Experience	Less than 5 years	20	5.7
	5 to less than 10 years	43	12.3
	10 to less than 15 years	134	38.3
	15+ years	153	43.7
Professional Certificate	JCPA	131	37.4
	CPA	59	16.9
	CMA	190	54.3

In this survey, some variables are factual (the respondents' demographic variables: age, education...etc.), whereas others are perceptual (i.e., forensic accounting factors and creative accounting practice). The scale of measurement of forensic accounting was derived from prior validated scales, such as Blessing, I. (2015), Bhasin, M. L. (2016), Ibidunn et al. (2018) and Abou-Zeid et al. (2020). The creativity accounting practices were derived from scales used by Karim et al. (2016), Bhasin (2016) and Branka et al. (2018) using a five-point Likert scale with degrees ranging from (1)"strongly disagree" to (5)"strongly agree". A self-administrated questionnaire was used as a research instrument to collect the required data. For validity virification, the study questionnaire was assessed and evaluated before distribution to respondents by several critical specialists and professionals in accounting.

Descriptive Analysis

Means, standard deviations, normality and reliability tests were used to measure the degree of approval of sample responses on the aspects of the research questions. Descriptive statistics presented in Table 2 pointed to a positive disposition towards the items measured. It is also noted that there is a high degree of approval for forensic accounting practices in general, as the general mean average is 4.06 (i.e., 80.12%) and the standard deviation is about 0.75. Furthermore, after careful assessment using skewness and kurtosis, the data was found to be normally distributed. Indeed, skewness and kurtosis showed normally distributed data, since most of the values were inside the acceptable range for normality (i.e., -1.0 to +1.0) for skewness and less than 10 for kurtosis (Hair et al., 2017). Finally, Cronbach's alpha value was

calculated for each aspect. Each coefficient greater than 0.60 was adopted and 0.70 for the existing scales was considered the reliability indicator (Hair et al., 2010). Reliability

analysis was carried out for each construct (green marketing practices and organizational performance). The resulting scores ranged from 0.82 to 0.86.

Table (2)
Means and standard deviations of the independent variables

Factors	Mean	S.D.	Skewness	Kurtosis	Cronbach's Alpha
Forensic Accounting Procedures	3.92	0.77073	0.072	0.833	0.82
Forensic Accounting Investigation Process	4.25	0.55888	0.580	0.072	0.86
Forensic Accounting Evaluation Process	4.02	0.74521	0.096	1.0966	0.84
Average	4.06	0.75432			0.88

Factor Analysis Results

The primary purpose of using exploratory factor analysis (EFA) techniques is to reduce the large number of variables that underlie forensic accounting methods into orthogonal indices for further analysis by stepwise regression analysis and hypothesis testing. Furthermore, by employing exploratory component analysis (ECA) techniques, exploring the patterns of factors that underlie the independent variables is possible. It was considered an

appropriate method to overcome multicollinearity's potential problems among the variables that pertain to each construct. A pre-analysis was conducted to examine the appropriateness of the data for exploratory factor analysis. The analysis results were examined using multiple criteria, including eigenvalues, interpretability and internal consistency.

Table (3)
KMO and Bartlett's tests

KMO and Bartlett's Tests		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.752
Bartlett's Test of Sphericity	Approx. Chi-square	8584.906
	Df	190
	Sig.	0.0000

Table (4)
Total variance explained

Component/ Factor	Rotation Sums of Squared Loadings		
	Eigenvalue	% of Variance	Cumulative %
1	48.809	33.782	33.782
2	16.850	21.181	54.963
3	7.401	18.098	73.061

Therefore, items determined to have eigenvalues with more significance than one and factor loadings less than 0.50 had little or no relationship with one another; hence, they were discarded (Hair et al., 2010). An inspection of the correlation matrix indicated that the correlations were all above the acceptable level of 0.50. The subsequent KMO

and Bartlett's tests resulted in a significance level of probability ($P > 0.000$) and a high KMO statistic of (0.75), indicating that factor analysis is interpreting a percentage of (75.0%) of the variance in the data.

Table (5)
Main factors underlying forensic accounting methods

Code	Items (variables)	Loadings	Communality
Factor (1): Investigation Operations			
IO5	Investigating illegal and suspicious activities	0.913	0.86
IO2	Following the administration in implementing observations directed to it by the internal auditor	0.883	0.84
IO6	Discussing management when changing applied accounting principles, standards and policies	0.861	0.82
IO1	Investigating wrong practices committed in the accounting records	0.823	0.76
IO3	Investigating any negative change in accounting policies	0.815	0.75
IO4	Investigating fictitious changes in capital	0.785	0.33
IO7	Investigating any wrong classifications in the cash-flow statement	0.703	0.71
Factor (2): Forensic Accounting Procedures			
FP5	Forensic accounting establishes appropriate accounting policies for financial reporting	0.861	0.78
FB4	Ensuring that the applied accounting policies are consistent with the professional issues	0.792	0.83
FB2	Ensuring that the company keeps abreast of developments in applied accounting principles and standards	0.714	0.81
FB1	Ensuring that the financial reports are appropriate for the users	0.701	0.77
FB6	Ensuring the adequacy of disclosure and transparency in the reports	0.642	0.78
FB7	Ensuring the continuity of the appropriate application of international accounting principles and standards	0.613	0.76
FB3	Examining and reviewing the report of the Board of Directors to ensure that the information contained therein matches the financial reports	0.541	0.70

Factor (3): Evaluation Process			
EP2	Evaluation of internal control systems	0.755	0.71
EP4	Evaluation of creditors' rights in case of liquidation	0.711	0.76
EP1	Evaluation of applied accounting policies and principles	0.703	0.69
EP5	Evaluation of correct returns to investors	0.692	0.70
EP3	Evaluation of tax provisions correctly	0.592	0.63

The results of the principal component analysis (PCA) indicated that three factors could be extracted from forensic accounting methods. These three factors are as follows: The first factor, which accounts for (33.782%) of the variance with loadings ranging from 0.731 to 0.91, can be identified as the “**investigation operations**” factor. The second factor, which explains 21.181% of the variance with loadings ranging from 0.54 to 0.86, can be labeled as the “**procedures**” factor, while the third one, which accounts for (18.098%) of the variance, can be named as “**evaluation processes**” factor. The combination of these factors accounts for (73.061%) of the questionnaire data's total variance, as shown in Table 4. Based on the preliminary analysis, the evaluation of the data by factor analysis and reliability estimates indicated that all scale items were appropriate and valid for further statistical analysis.

Hypothesis Testing Results

To test the hypotheses developed for this study, multiple regression analysis was used.

Ho. Forensic accounting methods (investigation, procedures and evaluation) will not have any significant relationship with the level of reducing creative accounting practices, whether being taken together or separately.

Table 6 summarizes the results of multiple regression analysis based on the F-ratio test for the above hypothesis and its sub-hypotheses. The results indicate a significant and positive relationship between forensic accounting methods (factors) and reducing creative accounting practices, whether being taken together or separately.

Table (6)
The results of multiple regression analysis for the research hypothesis

	R	R-square	Adjusted R-square	Std. Error of the Estimate	F	Sig.
Forensic Accounting	0.684 ^a	0.468	0.464	0.54436	101.540	0.000 ^b

The R-square result indicated that the extent of forensic accounting methods could predict 46.8% of the variation in reducing creative accounting practices. The hypothesis (Ho) is thus rejected. Furthermore, the alternative hypothesis is accepted, which states that forensic accounting methods have a significant impact on reducing

creative accounting practices. The determination coefficient, which is (0.468), indicates that about 47% of the changes in the dependent variable result from changes in the independent variable. Table 7 shows an estimation of beta for each independent factor. It gives a measure of the contribution of each factor to

the model. Clearly, a significant value shows that a unit change in the independent variable significantly affects the dependent variable. The “forensic accounting procedures” factor had the highest beta value, which was 0.334. Therefore, the “forensic accounting procedures” factor has the highest contribution to the research model. The second part of Table 7 demonstrated T- and Sig.- values, which give a rough indication of the relationship of each

independent variable with the dependent variable. For instance, a big absolute (T) value and a small (p) value indicate that a predictor variable significantly affects the criterion variable. All the proposed forensic accounting methods (factors) have been found significantly associated with reducing creativity accounting practices when taken separately.

Table (7)
Coefficients for forensic accounting methods (factors)

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)		0.692	0.243	2.853	0.05
	Procedures	0.322	0.060	0.334	5.389	0.000
	Investigation	0.216	0.084	0.162	2.585	0.010
	Evaluation	0.276	0.085	0.277	3.248	0.001
a. Dependent Variable: Reducing creativity accounting practices.						

Results' Discussion, Conclusions and Implications

The study's main findings have fulfilled answering the main study questions as follows: It was indicated that three main factors can be derived from forensic accounting methods; these factors were: (procedures, investigation operations and evaluation processes). Multiple-regression analysis results indicated that these three forensic accounting methods have a positive and moderate relationship with reducing creative accounting practices, whether being taken together or separately. The research concluded that forensic accounting procedures (as a method) were found highly associated with reducing creative accounting practices compared to the other methods. The current research results agreed with the results of previous studies, such as (Blessing, 2015;

Ibidunni et al., 2018; Abdulrahman, 2019; Abou-Zeid et al., 2020). They reported strong evidence on the use of forensic accounting procedures in reducing creative accounting practices. There is also evidence that the manifestation of forensic accounting led to regain confidence in the reliability and transparency of reports issued by corporate firms. Also, this study concluded that forensic accounting investigation processes play an important role in reducing creative accounting practices. This result is in consistency with the results of Ogutu & Ngahu (2016), who found that forensic accounting investigation method should be inquisitive and skeptical, where forensic accountants and must have auditing skills, investigative skills, as well as legal knowledge. Sule

et al. (2019) reported that in many of the corporate organizations, forensic accounting investigation is widely believed as a mechanism that provides more comprehensive detailed information concerning financial fraud. This indicates that forensic accounting investigation deals with the application and use of accounting knowledge and skills to determine financial facts and evidence to legal problems.

In conclusion, this research acknowledges that forensic accounting practicing (procedures, investigation operations and evaluation processes) is, in fact, an excellent strategy that could reduce creative accounting practices and fraud from the auditors' perspective. Nevertheless, policy makers need to recognize that reducing creative accounting practices is due to forensic accounting methods and techniques. Implementing forensic accounting methods could help dramatically in curbing creative accounting practices and manipulation in financial statements.

Thus, the findings of this study have several contributions and practical implications. The research was built on relevant published work and empirical surveys in order to investigate the role of forensic accounting methods in curbing creative accounting practices. Reviewing

existing literature revealed that similar studies had not previously been undertaken in Jordan as a developing country. Decision-makers should be fully aware of the importance of adopting forensic accounting as a new profession in the accounting domain and establishing a local institute that organizes it, issues licenses and standards, as well as regulations relative to the profession. Also, the relevant parties should work together and perform various steps to ensure fraud prevention and reduce creative accounting practices through the application of different forensic accounting techniques. Teaching institutions and professional organizations are recommended to ensure that professional education includes forensic accounting as a new discipline and explain creative accounting practices and methods used. The study also recommended that government policy makers should enforce and impose the use of forensic accounting and auditing in companies and institutions and other agencies to prevent corruption in all sectors of the economy.

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