THE IMPACT OF FINANCIAL PERFORMANCE AND ACTIVITY LEVEL ON REAL EARNINGS MANAGEMENT: EVIDENCE FROM ALGERIA

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Abstract

The last decade has known a widespread interest in real earnings management by the literature, as a determinant of financial reporting quality. The interest of many studies has tended toward the investigation of the real earnings management determinants, so the aim of this study falls within this stream, by examining whether the financial performance and activity level have impacts on real earnings management in the Algerian companies. The study included a sample of 82 firm-year observations that concern 17 Algerian companies during the 5 years from 2015 to 2019. To test our hypotheses, we based on a multiple linear regression model that links the real earnings management, measured as the abnormal cash flows from operations, with the financial performance (Net income) and activity level (Sales). That model was estimated depending on the pooled regression method, after testing their validity.

The results indicate that the impact of the financial performance level of the Algerian companies on their real earnings management level is not statistically significant. However, the results indicate a negative and statistically significant impact of the activity level of the Algerian companies on their real earnings management level. Therefore, the activity level can only explain the real earnings management level in the Algerian companies, the explanatory power of our model reaches more than 60%. These results are useful for users and auditors in Algeria, as they provide empirical evidence about the determinants of real earnings management in Algeria, which represents a determinant of financial reporting quality.

Keywords: Real earnings management, Financial reporting quality, Financial performance, Activity level, Algerian companies

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INTRODUCTION

The objective of financial reporting for general purposes is to provide useful financial information for users (IASB, 2018). The usefulness of financial information is determined by its quality, which became the focus of interest in the conceptual framework for financial reporting. For that, the different components of the conceptual framework have been oriented to reach that objective (Kimouche and Charchafa, 2020, pp. 407-408). Financial information quality is also the focus interest of managers, auditors, and different parties related to the reporting entity (Kimouche, 2019).

The financial information quality can be measured by many indicators that developed in the accounting literature, where real earnings management is among the widely used as a proxy of financial reporting quality (Stolowy and Breton, 2003; Kimouche and Cherroun, 2020). Real earnings management reflects real decisions of managers in terms of resource allocation that relates to the

operating, financing, and investment activities. It includes all actions of managers leading to deviate from the normal business practices of the company to meet target earnings (Roychowdhury, 2006).

Janin (2000) stated that real earnings management involves real business activities that have a direct impact on operating cash flows. For that, the impact of real earnings management on performance drives from cash flows, not from accruals as is the case for accounting earnings management. Real earnings management is purposeful actions to alter disclosed earnings in a particular direction, by changing the timing or structuring of the operating, investment, or financing transactions (Zang, 2012, p. 676). Real earnings management occurs when managers intentionally select operating decisions that have actual cash flow effects with the objective of changing the earnings (Elkalla, 2017, p. 28).

Many studies were interested in the factors affecting real earnings management and explaining the disparity between companies in terms of real earnings management level and the tendency of managers toward different strategies of real earnings management (Octavia et al., 2015; Mellado-Cid, 2017; Abad et al., 2018; Hung et al., 2018; Prayitno, 2020). The results revealed that managers widely use real earnings management and that real earnings management is affected by many factors, especially those related to the characteristics of companies and their governance.

The present study can be included in that stream by exploring whether the financial performance and activity level have impacts on the real earnings management in the Algerian companies. The rest of this section contains the problem statement and hypothesis and presents also the importance and motivations. However, the remainder of this paper is structured as follows: Section 2 presents the materials and methods, while the results are described and discussed in Sections 3 and 4, and finally, Section 5 summarizes the conclusion.

Problem statement

Algeria is a transition economy that has known deep reforms since the early of the 90s in order to shift from socialism to capitalism and integrate into the international economy as a response to economic and financial globalization. These reforms were imposed an accounting reform to satisfy the needs of users, which requires different attributes of financial reporting quality under the new environment. These accounting reforms have become a necessity also as a result of the international accounting standardization initiated by the IASC (International Accounting Standards Committee) since 1973 and reinforced by IASB (International Accounting Standards Board) since 2001. Like other countries, managers of the Algerian companies can manage earnings based on real decisions (operation, investment, and financing), especially under the Financial Accounting System (SCF) that was adopted in 2010. Therefore, our study asks the question about the impact of financial performance level and activity level on real earnings management in the Algerian companies.

Hypotheses

To answer the main question of this study, we tested the following hypotheses at the 5% level:

Hypothesis1: Financial performance level has a negative impact on the real earnings management level in the Algerian companies.

Hypothesis2: The activity level has a negative impact on the real earnings management level in the Algerian companies.

Importance and motivations

The topic of our study is very beneficial for theoretical or practical purposes, considering that the last decades have known a widespread use of real earnings management practices in the companies, which can distort the financial information, and thus, affect the view of users toward the financial positions of companies and their performances. Consequently, the understanding of different factors affecting the level of real earnings management is useful for stakeholders and other related parties including standards setters, users, and auditors. The carrying out of this study in Algeria is an opportunity to

explore whether the companies in a developing country like Algeria have the same characteristics in terms of real earnings management determinants.

MATERIALS AND METHODS

Model specification

Our model contains an equation in the form of multiple linear regression, linking the real earnings management (REM_{it}) with financial performance level (NI_{it}) and activity level (ACT_{it}), as shown in Equation (1).

$$REM_{it} = \alpha + \beta\, NI_{it} + \gamma\, ACT_{it} + \xi_{it} \qquad (1)$$

Where:

REM_{it}: is the real earnings management for the company i during the period t.

NI_{it}: is the financial performance level for the company i during the period t.

ACT_{it}: is the financial performance level for the company i during the period t.

α: is a constant.

β and γ: are the regression coefficients.

ξ_{it}: is the error term.

Data collection

The study included a sample of 82 firm-year observations take the form of an unbalanced panel data that concern 17 Algerian companies during the 5 years from 2015 to 2019. The selection of companies was based on the availability of their financial information, where the corporate governance in the Algerian companies is characterized by secrecy and caution.

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Real earnings management measurement

The measure of real earnings management is based on Roychowdhury (2006), using the model of abnormal operating cash flows, following Dechow et al. (1998). As shown in Equation (2), the model expresses the operating cash flows as a function of sales and change in sales.

$$CFO_{it}/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(S_{it}/A_{t-1}) + \beta_2(\Delta S_{it}/A_{t-1}) + \delta_{it} \qquad (2)$$

Where:

CFO_{it}: is the net cash flows from operations for the company i during the period t.

A_{t-1}: is the total assets for the company i at the end of period t-1.

S_{it}: is the sales for the company i during the period t.

α_0, α_1, β_1, and β_2: are the regression coefficients.

δ_{it}: is the residuals.

The residuals of Equation (2) represent the abnormal cash flows from operations. Cash-based (real) earnings management is the actual cash flows from operations minus the normal cash flows from operations calculated using the estimated coefficients (α_0, α_1, β_1, and β_2).

Independent variables measurement

The financial performance level was measured by the profit or loss for the period (net income), while the activity level was measured by the sales of the period. The two measures were weighted using the total assets to avoid the dispersion between the companies in terms of size.

RESULTS

Descriptive statistics

Table 1 summarizes the results of descriptive statistics for the data of 82 firm-year observations that concern 17 Algerian companies during the period 2015-2019. According to the mean, real earnings management represents 15.4% of total assets on average with a negative sign, while the total accounting accruals represents 52.6% of total assets on average. However, the net income represents a very low value, as it did not exceed 0.2% of total assets on average with a negative sign. The standard deviation shows that the total accounting accruals are the most dispersal, then the net income. However, real earnings management is low dispersal. Finally, the minimum and maximum values indicate that the three variables contain positive and negative values.

Table 1. Descriptive statistics results.

		REM	NI	ACT
N	Valid	82	82	82
	Missing	0	0	0
Mean		-0.154	-0.002	0.526
Median		-0.119	0.013	0.352
Mode		-0.541	-1.173	-0.674
Std. Deviation		0.159	0.186	0.504
Minimum		-0.541	-1.173	-0.674
Maximum		0.275	0.486	2.274

Correlation analysis

According to Table 2, which presents the results of correlation between the variables of Model (1), all correlations between variables are not statistically significant, except the correlation between the real earnings management and the total accounting accruals, which is statistically significant at 1% level, and it is negative and very strong. The no significance of the correlation between financial performance and the total accounting accruals suggests the absence of any multicollinearity between the two independent variables.

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Table 2. Correlation results.

		REM	NI	ACT
REM	Pearson Correlation	1	0.181	-0.779
	Sig. (2-tailed)		0.104	0.000
NI	Pearson Correlation		1	-0.109
	Sig. (2-tailed)			0.331
ACT	Pearson Correlation			1
	Sig. (2-tailed)			
N		82	82	82

Normality test

The normality distribution of residuals is required to obtain a valid and adequate model when estimate it using ordinary least squares (OLS). Concerning the residuals of Model (1), the results summarized in Table 3 indicate that the Kolmogorov-Smirnov test is not statistically significant, neither at 5% nor at 1% level, so the residuals from Model (1) are normally distributed.

Table 3. Normality test results.

Kolmogorov-Smirnov[a]		
Statistic	df	Sig.

Standardized Residual	0.095	82	0.066

a. Lilliefors Significance Correction

Homoskedasticity test

The validity and adequacy of any model estimated using ordinary least squares (OLS) requires also the homoskedasticity of residuals. In this context, we based on Breusch-Pagan and Koenker as shown in Table 4, which indicates that the two tests are not statistically significant, neither at 5% nor at 1% level, therefore the residuals of Model (1) are homoskedastic, so the heteroskedasticity is absent.

Table 4. Homoskedasticity test results.

------- Breusch-Pagan and Koenker test statistics and sig-values -------		
	LM	**Sig**
BP	5.916	0.052
Koenker	3.973	0.137

Null hypothesis: heteroskedasticity not present (homoskedasticity)
if sig-value less than 0.05, reject the null hypothesis

Model estimation

Table 5 shows the summary of Model (1) and summarizes the ANOVA results, suggesting that Model (1) is statistically significant at 1% level, as the calculated F value is very high and it is more than the F value from Fisher table at freedom degrees 2 and 79 and 1% level of significance. The determination coefficient is very high and indicates that the independent variables explain 60.70% of the changes in real earnings management during the period. Finally, the calculated Durbin-Watson value is situated between 1.5 and 2, so there is no autocorrelation in the residuals of Model (1), knowing that the absence of autocorrelation is preferred when estimating a linear regression depending on ordinary least squares (OLS).

Table 5. Model Summary and ANOVA results.

Model[a]	Sum of Squares	df	Mean Square	F	Sig.	Adj. R Square	Std. Error of the Estimate	Durbin-Watson
Regression	1.261	2	0.631	63.601	0.000[b]	0.607[b]	0.010	1.519
1 **Residual**	0.783	79	0.010					
Total	2.045	81						

a. Dependent Variable: REM
b. Predictors: (Constant), ACT, NI

Model coefficients

Table 6 presents the coefficients estimation results for Model (1), which shows that both the constant and the regression coefficient of financial performance are not statistically significant, where the calculated T values were less than T values from the Student table. For that, the *Hypothesis1* must be rejected, so financial performance level has not any impact on the real earnings management level in the Algerian companies. Contrarily, the regression coefficient of activity level is statistically significant, where the calculated T value was more than the T value from the Student table. The coefficient suggests a negative and strong impact of activity level on real earnings management. Therefore, *Hypothesis2* must be accepted, and thus, the activity level has a negative impact on the real earnings management level in the Algerian companies. Finally, the variance inflation factor reveals no multicollinearity has been found between the independent variables in Model (1), which confirms the validity and adequacy of Model (1).

Table 6. Coefficients estimation results.

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Modelᵃ	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-0.026	0.016		-1.634	0.106		
1 NI	0.083	0.060	0.097	1.386	0.169	0.988	1.012
ACT	-0.243	0.022	-0.769	-10.976	0.000	0.988	1.012

a. Dependent Variable: REM

DISCUSSION

The results suggest that the activity level has a negative impact on the real earnings management level in the Algerian companies. As a result, when activity level is decreased, managers manipulate financial statements through real earnings management depending on cash flows from operations, in order to enhance the financial performance of their companies. The results suggest also that financial performance level has not any impact on the real earnings management level in the Algerian companies. Therefore, managers do not base on financial performance to make decisions about real earnings management.

CONCLUSION

Real earnings management is widely used as a proxy of financial reporting quality, so the last decade has known a widespread interest in real earnings management by the literature, as a determinant of financial reporting quality. The prominent research stream about real earnings management revolves around the determinants of real earnings management, which is highly related to the topic of our study. Therefore, this study aims to examine whether the financial performance and activity level have impacts on real earnings management in the Algerian companies.

The study included a sample of 82 firm-year observations that concern 17 Algerian companies during the 5 years from 2015 to 2019. The test of hypotheses was based on a multiple linear regression model that links the real earnings management, measured as the abnormal cash flows from operations, with the financial performance and activity level. That model was estimated depending on the pooled regression method, after testing their validity in terms of the ordinary least squares method (OLS).

The results indicate that the financial performance level of the Algerian companies has not any impact on their real earnings management level. However, the results indicate a negative and statistically significant impact of the activity level of the Algerian companies on their real earnings management level. Therefore, the activity level can only explain the real earnings management level in the Algerian companies, the explanatory power of our model reaches more than 60%.

The results of this study are useful for users and auditors in Algeria, as they provide empirical evidence about the determinants of real earnings management in the Algerian companies, which represents a determinant of financial reporting quality. Future studies must use different approaches to measure real earnings management, and examine the impact of other factors on real earnings management, especially the characteristics of governance and the characteristics of companies, after extending the sample.

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