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The Effect of Stock Market Listing on Real Earnings Management: Evidence From Algerian Companies

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Abstract

This paper aims to explore the effect of the Algiers Stock Exchange listing on real earnings management. The study included 14 non-financial non-listed companies during the period 2015-2019 and six non-financial listed companies during the period 2010-2019. Due to the small number of companies listed on the Algiers Stock Exchange, the period of study was extended in the case of listed companies to provide enough observations. The measurement of real earnings management is based on the model of abnormal cash flows from operations (Roychowdhury, 2006), while the hypothesis testing is based on a model of multiple linear regression. The results indicate that the company size and the nature of financial statement (consolidation) do not have any effect on real earnings management in Algerian companies. The results are not consistent with the author's hypothesis about the positive effect of stock market listing on real earnings management. The empirical evidence suggests that the Algiers Stock Exchange listing has had a negative effect on real earnings management in Algerian companies. This might be due to the scrutiny of auditors and regulators as the number of companies is easy to control, which decreases the opportunity for Algerian companies to rely on real earnings management in accordance with the opportunistic or informational view.

Keywords: real earnings management, stock market listing, company size, consolidation, Algerian companies

Introduction

The main objective of accounting practice is to provide useful information for the users of financial statements to make decisions and allocate resources (IASB, 2018). To this end, conceptual framework and accounting policies and rules are developed carefully by standard-setting bodies to guide managers towards improving the quality of accounting. However, that objective may not correspond with the objectives of managers and their interests as suggested by the agency theory (Jensen & Meckling, 1976). As a result, managers can engage in some practices to affect the financial statements in accordance with their specific objectives or to reassure users about their interests or provide signals to users about private information.

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Real earnings management is a widely used practice to manipulate financial statements, especially since implementation of the Sarbanes Oxley-Act in 2002 (Graham et al., 2005), and the reinforcement of internal control systems and transparency by institutional bodies and companies. Real earnings management is usually used whether for opportunistic or informational objectives to change the form and content of financial statements, thus affecting users' perceptions of the company and their decisions.

Previous studies have looked into numerous aspects of real earnings management, including the determinant factors, suggesting that earnings management is determined by many factors, such as the financial and economic characteristics of companies. Stock market listing is a characteristic that can be useful to classify companies in terms of real earnings management or explain the differences between companies in this regard. Investigation of stock market listing as a potential determinant of real earnings management can be justified by the many differences between listed and non-listed companies in terms of governance, financing resources, capital structure, ownership, consolidation of financial statements, institutional control and supervision, disclosure and transparency requirements, size, and users of financial statements.

Since the 1990s Algeria has been undergoing a long transition period to shift from socialism to capitalism and integrate into the international economy. This shift has been accompanied by deep economic and institutional reforms to keep up with the new economic reality. These reforms imposed an accounting reform to satisfy the needs of users who require different attributes of accounting quality within the new environment. As is the case in other countries, managers of Algerian companies have a wide range of incentives to manipulate earnings based on operational decisions, especially under the Financial Accounting System, which was adopted in 2010.

Algeria has a young stock market that currently only includes six companies, because the majority of companies in Algeria are family and SMEs. The Algiers Stock Exchange is less active and less efficient compared to developed countries; however, it provides a complete database of market information and financial reports of companies. To date, no studies have been done to explore the effect of Algiers Stock Exchange listing on accounting practices in Algerian companies. Therefore, this study relates to the effect of stock market listing on real earnings management in Algerian companies through asking the following question:

Has the Algiers Stock Exchange listing had an impact on real earnings management in Algerian companies?

The purpose of this study is to explore whether the managers of Algerian companies employ real earnings management to manipulate financial statements and the extent to which real earnings management is employed. This study also aims to examine whether the Algiers Stock Exchange listing had an influence on the extent of real earnings management.

The results indicate that the stock market listing has had a negative effect on real earnings management in Algerian companies, which reflects the reality of the Algerian institutional and economic environment, where the preparation of financial statements is primarily intended to meet the legal requirements rather than serving investors. The results also reflect the predominance of the scrutiny of auditors and regulators as the number of companies is easy to control, which decreases the opportunity for Algerian companies to rely on real earnings management in accordance with an opportunistic or informational view.

This paper contributes to the empirical research on real earnings management in several ways. On the one hand, it interested in the stock market listing as a determinant of real earnings management, to which not enough attention has been paid in previous studies, and also provides supplementary empirical evidence about real earnings management determinants. The study was conducted in Algeria, which is a developing country, providing additional evidence about earnings management practices in different environments.

The remainder of this paper is structured as follows. Section 2 is a literature review, Section 3 clarifies the method and materials used, Section 4 summarises the results and discussion, and Section 5 contains the conclusion.

Literature Review and Hypotheses

Previous studies

Studies about earnings management determinants is a common research stream in accounting (Fakhfakh & Nasfi, 2012; Charfeddine, Riahi & Omri, 2013; Sousa Paiva & Costa Lourenço, 2016; Priharta & Rahayu, 2019; Abdullahi et al., 2020; Saleh, Abu Afifa & Haniah, 2020; Tran & Duong, 2020; Ghaleb, Kamardin & Tabash, 2020), which allows fluctuations in earnings management levels to be understood as well as managers' behaviour in terms of earnings management. In this regard, many variables have been used as determinants, such as indebtedness, company size, performance, ownership structure, dividend policy, leverage, performance, audit quality, etc. Even though the literature uses many determinants from the financial market (prices, returns, volume, etc), few studies were found that investigate stock market listing as a determinant of earnings management. As a result, through this literature the author tried to include studies that touch on any dimensions of this study.

Burgstahler, Hail & Leuz (2006) examined whether capital market pressures and institutional factors motivate companies to report earnings that reflect economic performance, using the level of earnings management as a dimension of accounting quality. The study included 378,122 firm-year observations from private and public, non-financial companies, across 13 countries of the European Union, during the period 1997-2003. The results revealed that private companies present higher levels of earnings management, and the strong legal systems are associated with lesser earnings management in private and public companies. They also suggested that private and public companies respond differently to institutional factors (book-tax alignment, outside investor protection, capital market structure).

Lopes, Tukamoto & Galdi (2007) investigated the impact of cross-listing and adjustments towards the US GAAP on earnings management practices in Brazilian companies. Employing 1,026 firm-year observations during the period 1996-2003, and using five proxies of earnings management, they found evidence that neither cross-listing nor adjustments towards the US GAAP have impacted earnings management in Brazilian companies.

Eng & Lin (2012) examined the quality of financial reporting of Chinese companies cross-listed in the United States and Hong Kong comparing the non-cross-listed Chinese companies, based on earnings management, timely loss recognition, and price-earnings association as measures of financial reporting quality. They indicated that both cross-listed and non-cross-listed companies showed significant earnings smoothing and earnings management, while they did not record any evidence about timely loss recognition practices. They concluded that the market considers the earnings and book value data of cross-listed companies to be more informative than those of non-cross-listed companies in the event of good news.

Cornanic & Novak (2015) studied earnings management as a means of avoiding delisting from a stock market, using a sample of 47,599 firm-year observations for 2,532 companies during the period 1998-2011. The results showed that companies in danger of being delisted from a stock market (NASDAQ) report higher performance-adjusted discretionary accruals, and the inflated accruals are associated with an increased likelihood of maintained listing.

Mellado-Cid, Jory & Ngo (2017) analysed real earnings management by companies prior to their debt issuances and how they affect the bond yield spreads. The sample size employed consists of 5,608 firm-quarter observations, which is equivalent to 1,578 companies, during the period 1980-2012. According to the results, bond-issuing companies increased their real earnings management practices in the five quarters leading up to bond issuance. Additionally, an inverse association between the yield spread and pre-issue real activities manipulation was observed.

Nuanpradit (2018) tried to explore the relationship between information asymmetry and sales activities-based real earnings management, and the effect of CEO-Chairman duality on that relationship in Thailand. The study included 3,582 firm-year observations from the Stock Exchange of Thailand during the period 2001-2015. The findings revealed that information asymmetry increases real earnings management and that CEO-Chairman duality leads to real earnings management in companies without information asymmetry problems.

Dang, Hoang & Tran (2018) investigated the factors that impact accrual-based earnings management (AEM) and real earnings management (REM) in Vietnam. The study included 260 companies listed on the Vietnam Stock Exchange during 2012-2016. The results showed that consolidation of financial statements, financial performance, financial leverage, and stock issuance have positive impacts on AEM, while audit has a negative impact on AEM. In contrast, financial performance and financial leverage have a positive impact on REM.

Haga, Höglund & Sundvik (2018) analysed real earnings management among privately-owned versus publicly listed companies in the UK, using 90,594 private firm-year observations and 3,688 public firm-year observations for the years 2006 to 2014. The findings suggested that public companies engage in more earnings management through operating activities. According to the explanations, capital market pressure and ownership characteristics drive the results.

Alawag (2021) explored the real earnings management behavior in the context of a parent-subsidiary relationship, by comparing between business groups and companies without any controlled subsidiaries. The study used the random-effects generalised least squares (GLS) estimation, including 8,501 parent and nonparent companies from 73 countries, during the period 215-2019. The results showed that ultimate parent companies have lower abnormal production costs and abnormal discretionary expenses than nonparent companies. In contrast, parent companies have higher abnormal operating cash flow than non-parent companies.

In Algeria, and within the limits of this literature review, there is no study directly in relation to the subject of the present study, other than a few studies that looked into some of the determinants of accounting and real earnings management. Kimouche & Cherroun (2020) were interested in the effect of financial leverage on accounting earnings management in

Algerian companies. They employed the financial statements of 14 Algerian companies during the period 2006-2018, using a multiple linear regression model and panel data to test the hypotheses. According to the results, financial leverage does not have any effect on accounting earnings management in Algerian companies. However, the debt cost has a significant and positive impact on accounting earnings management.

Kimouche & Charchafa (2020) examined whether financial performance and activity level have an effect on real earnings management in Algerian companies. The study included 82 firm-year observations for 17 Algerian companies during 2015-2019, using a multiple linear regression model that relates real earnings management, measured as the abnormal operating cash flows, with the financial performance and activity level. The results suggested that the effect of financial performance on real earnings management is not significant. However, they suggested a negative and significant effect of the activity level on real earnings management in Algerian companies.

Kimouche & Cherroun (2020) analysed the impact of debts and their cost on real earnings management in Algerian companies. The study used the model of Roychowdhury (2006) to measure real earnings management, and a multiple linear regression model to test the hypotheses, and included 119 firm-year observations for 17 Algerian companies during the period 2012-2018. According to the results, debts and the cost of debts do not have any impact on real earnings management in Algerian companies, which contradicts most studies, due to the specificities of the economic and institutional Algerian environment.

Kimouche & Charchafa (2021) explored the effect of accounting accruals on real earnings management in Algerian companies, starting from the view that there is a negative relationship between accounting earnings management and real earnings management. The study included 100 observations relating to 20 companies from 2015 to 2019. The test of the hypothesis was based on a model under the form of linear regression that relates real earnings management proxy to accounting accruals. The results confirmed the assumption, suggesting a negative and statistically significant effect of accounting accruals on real earnings management in Algerian companies.

It is foreseen that this study will be useful both for literature and in practice. On the one hand, it relates to the stock market listing as a determinant of real earnings management, which has not received enough attention in studies to date. The stock market listing is a prominent variable that can substantially affect the governance system in companies and their relationships with the external environment and also their obligations in terms of disclosure and transparency. On the other hand, this study was carried out in Algeria, which is a developing country, providing additional evidence about earnings management practices in different environments.

Real earnings management concepts

Earnings management is an accounting practice that is widely used by managers, whether intentionally or not, in order to affect the form and content of financial statements, which can affect their quality, thus changing the views of users towards the company and their assessments for its future perspectives. Schipper (1989) defined earnings management as a “purposeful intervention in the external financial reporting process with the intent of obtaining some private gain”.

Watts & Zimmerman (1990) used an opportunistic view to describe earnings management as the use by managers of different methods and interpretations in financial accounting to achieve certain objectives, instead of having a faithful presentation of the company's financial position. According to Abad et al. (2018), earnings management can be achieved through managerial discretion in the application of accounting standards or by changing the timing or structuring of real transactions.

Healy & Wahlen (1999) also focused on the opportunistic view considering that 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.

Since the mid-1980s, studies have traced an explosive growth in accounting earnings management practices by managers (Beneish, 2001). These practices are accrual-based, so they are easy to execute since accruals are the main product of GAAP and the result of accounting decisions related to the accounting policies and estimations. Accounting earnings management includes some techniques that are conducted in accordance with the accounting rules and principles, through the selection of appropriate accounting policies, and the use of estimations and judgments in the application of those accounting policies, in order to control the level of earnings, which affects the performance of the company and its financial position in terms of form and content (Kimouche & Cherroun, 2020).

Following the implementation of the Sarbanes Oxley-Act in 2002, which was introduced to increase transparency and support internal control, Cohen, Dey & Lys (2008) stated that the use of accounting earnings management significantly declined. Consequently, real earnings management has become an alternative, as it is difficult for auditors and regulators to discover because it can be identified as a legal response to the economic conditions (Cohen, Dey & Lys, 2008; Cohen & Zarowin, 2010; Kothari, Mizik & Roychowdhury, 2012; Abad et al., 2018). The increasing trend towards real earnings management is confirmed by Graham, Harvey, and Rajgopal (2005), who provide evidence that the financial officers of US public firms recognise that most earnings management actions are carried out via real actions.

Roychowdhury (2006) described real earnings management as departures from the normal operational practices of a company, which are motivated by the desire of managers to mislead all or some stakeholders that the financial reporting objectives have been met. According to Cooper, Downes & Rao (2017), real earnings management refers to the action of managers to change a company's real activities by their operating, investment, and financing decisions to affect the financial position of a company and its financial performance.

Real earnings management is distinct from accounting earnings management because accrual-based earnings management involves discretionary accounting choices allowed within accounting regulation with no direct cash flow effects. On the contrary, real earnings management comprises real business activities that have a direct influence on cash flows from operations. The impact of real earnings management on performance derives from cash flows, not from accruals as is the case for accounting earnings management (Janin, 2000).

Real earnings management can be achieved through many managerial decisions related to the operation, such as sales manipulation (price discounts, flexible credit terms for customers), overproduction to report a lower cost of sales, and discretionary expenditure (general and administrative, selling, and advertising expenditures). Managerial decisions for real earnings management also contain the investment decisions such as the sales of fixed assets and a reduction in research and development expenditure, as well as financing decisions such as stock options, stock repurchases, hedges, debt-equity swaps, and securitisation.

Existing literature has usually used two perspectives to explain earnings management motivations, the 'Opportunistic view' and the 'Informational view'. The first assumes that managers employ earnings management to achieve self-benefits through misleading users or disclosing information consistent with their expectations about the performance and financial position of the company. The second assumes that earnings management is a means to reduce information asymmetry by providing relevant information for users and provide a signal for the financial market about the company's future perspectives, in order to improve its valuation.

Based on the 'Positive Accounting Theory' of Watts & Zimmerman (1978) and the works about the 'Value Relevance' of accounting information (Lev, 1989; Amir, Harris & Venuti, 1993; Francis & Schipper, 1999; Barth, Beaver & Landsman, 2001), earnings management motivations can be classified into three groups:

- Contractual motivations: where contracts between a company and stakeholders depend on financial statements, thus managers seek to provide accounting information consistent with contractual clauses to increase their incentives, improve their reputation or comply with debt covenants.

- Financial market motivations: where managers tend to affect stock prices, especially in the lead-up to IPOs and stock offerings, and disclose earnings consistent with analysts' forecasts or management estimates, to prevent any significant volatility in stock prices in the short term.

- Institutional motivations: that result from the expected relationship between accounting information and governmental decisions leading managers to manipulate earnings to reduce income tax payments or avoid any potential legislation (antitrust, environment protection, consumer and employee rights, etc.), thus reducing political costs.

Hypotheses development

The explanations for the effect of stock market listing on real earnings management can be found in the financial market motivations of earnings management that correspond with the informational view. In this regard, earnings management can be useful, as it can potentially improve the informativeness of earnings by conveying private information on the future prospects of the company, which is beneficial to investors (Dechow & Skinner, 2000; Jiraporn et al., 2008; Siregar & Utama, 2008; Scott, 2011). Earnings management is also a means for managers to signal their expectations about the company's future performance and its cash flows.

Compared to non-listed companies, listed companies have more motivations to employ earnings management. The main explanation for this is to reduce the conflict of interest between shareholders, creditors, and managers (Mitchell, Agle & Wood, 1997). According to Ambrose & Bian (2010), the information contained in stock price volatility leads managers to avoid regulatory costs through earnings management. The adjustment of earnings figures through earnings management is also expected to reassure users of financial statements on the continuity and profitability of business operations, thus increasing the company's stock liquidity (Hieu et al., 2019).

Earnings management may allow managers to maintain a good reputation with stakeholders, as it can affect positively stock prices and company value (Change & Warfield, 2005; Chen et al., 2006; Charfeddine, Riahi & Omri, 2013; Chen, Cheng & Wang, 2015). For these reasons, it can be expected that managers of listed companies have more tendencies to manage earnings; hence this study starts from the following hypothesis:

Hypothesis: The Algiers Stock Exchange listing has had a positive effect on real earnings management in Algerian companies.

Method and Materials

Data collection

This study covered 14 non-financial non-listed companies during the period 2015-2019 and six non-financial listed companies during the period 2010-2019. Due to the small number of companies listed on the Algiers Stock Exchange, the period of study in the case of listed companies was extended to provide enough observations for the model estimation. The only criterion used in the selection of the studied companies was the availability and accessibility of their financial statements, due to the secrecy and caution that characterise corporate governance in Algerian companies. The financial statements were collected through direct contact with the chief financial officers of companies.

Model for hypotheses testing

The model used in this study takes the form of a linear regression that relates real earnings management (REM_{it}) with the stock market listing (COT_{it}), the nature of financial statements (NFS_{it}), and company size ($SIZE_{it}$) as shown in Equation (1). NFS_{it} and $SIZE_{it}$ were added as control variables, because the consolidation procedures can affect the accounting practices of a company, whether in the separate or consolidated financial statements, while accounting practices differ according to company size.

$$REM_{it} = \alpha_0 + \alpha_1 COT_{it} + \alpha_2 NFS_{it} + \alpha_3 SIZE_{it} + \xi_{it} \quad (1)$$

Where REM_{it} is the extent of real earnings management; COT_{it} is the listing on the Algiers Stock Exchange; it takes 1 if the company is listed on the Algiers Stock Exchange in the fiscal year, otherwise 0. NFS_{it} is the nature of financial statements; it takes 1 if the company presents consolidated financial statements for the fiscal year, otherwise 0. $SIZE_{it}$ is the company size at the end of the period calculated as the logarithm of total assets divided by ten. α_0, α_1, α_2 are the regressions coefficients; ξ_{it} is the error term.

Measurement of real earnings management

The measure of real earnings management is based on the abnormal cash flows from operations (Roychowdhury, 2006) as shown in Equation (2).

$$\frac{CFO_{it}}{A_{it-1}} = \beta_0 + \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{S_{it}}{A_{it-1}} NFS_{it} + \beta_3 \frac{\Delta S_{it}}{A_{it-1}} NFS_{it} + \delta_{it} \quad (2)$$

Where CFO_{it} is the net cash flows from operations for the period; A_{it-1} is the total assets at the end of the period; S_{it} is the sales for the period; β_0, β_1, β_2, and β_3 are parameters; δ_{it} is the error term, which represents the abnormal cash flows and is used as a proxy for real earnings management (cash-based earnings management).

Results and Discussion

Descriptive statistics

Table 1 presents the descriptive statistics for 124 firm-year observations of different variables. The table shows that the data includes 52 firm-year observations for listed companies versus 72 for non-listed companies, and 48 firm-year observations for companies with consolidated financial statements versus 76 for companies with separate financial statements. For SIZE, a comparison between the mean and the median suggests that the data are normally distributed, unlike REM where the mean is more than the median, indicating that real earnings management practices measured by abnormal cash flows represent an average of 7.83% of the total assets. According to the standard deviations, even though SIZE is more dispersed than REM, the dispersion of data is acceptable.

Correlation analysis

The results of correlation between different variables are summarised in Table 2, which indicates a negative medium and statistically significant relationship at 1% level between the Algiers Stock Exchange listing and real earnings management, which means that Algerian listed companies practice less real earnings management than non-listed companies. In contrast, the relationships of the nature of financial statements and company size with real earnings management are not statistically significant. The relationships between different independent variables are not statistically significant, except that between the nature of financial statements and the Algiers Stock Exchange listing, which is positive medium and statistically significant at a level of 1%.

Table 1. Descriptive statistics for the variables

	REM	COT		NFS		SIZE
		1	0	1	0	
Observations	124	52	72	48	76	124
Mean	0.0783	-	-	-	-	0.7556
Median	0.0594	-	-	-	-	0.7441
Std. Deviation	0.0642					0.0964
Minimum	0.0015	0		0		0.6126
Maximum	0.2761	1		1		0.9959

Source: Depending on SPSS.

Table 2. Correlation results

		REM	COT	NFS	SIZE
REM	Pearson Correlation	1	-0.376*	-0.013	-0.071
	Sig. (2-tailed)		0.002	0.884	0.431
COT	Pearson Correlation		1	0.353*	-0.019
	Sig. (2-tailed)			0.000	0.830
NFS	Pearson Correlation			1	0.012
	Sig. (2-tailed)				0.896
Observations		124	124	124	124

*. The correlation is significant at 0.01 (2-tailed).
Source: Depending on SPSS.

Univariate analysis

The univariate analysis was based on a test, in terms of real earnings management, of the differences between the listed and non-listed companies on the one hand, and the companies with consolidated financial statements and companies with separate financial statements on the other hand. The Mann-Whitney test was employed, which is used to make comparisons between independent groups when data distribution is not normal. The results shown in Table 3 indicate that the mean of real earnings management for listed companies (0.057) is less than those for non-listed companies (0.093) and that the difference is statistically significant at a level of 1% according to the Mann-Whitney test (Sig. = 0.000). The results also indicate that the mean of real earnings management for companies with consolidated financial statements (0.077) is less than those for companies with separate financial statements (0.079) and that the difference is not statistically significant according to the Mann-Whitney test (Sig. = 0.954).

Table 3. Mann-Whitney test results

	REM(COT)[a]	REM(NFS)[b]
Mean(0)	0.093	0.079
Mean(1)	0.057	0.077
U de Mann-Whitney	1154	1870
W de Wilcoxon	2429	3301
Z	-3.545	-0.058
Sig. asymptotic (2-tailed)	0.000	0.954

a. Grouping variable: COT. b. Grouping variable: NFS.
Source: Depending on SPSS.

Regression model estimation results

Table 4 summarises the results of the Model (1) estimation, which shows that the model of study is statistically significant at a level of 1% (Sig. = 0.010), as the calculated F statistic (3.965) is more than the F critical value in the table. As a result, the Adjusted R-squared is medium and reached 0.339, thus the independent variables in Model (1) explain 33.90% of the changes in real earnings management, and consequently, the remainder of the changes in real earnings management (66.10%) can be explained by errors and other variables.

In terms of the regression coefficients, it appears that the coefficient related to the company size (SIZE) is not statistically significant (Sig. = 0.369), suggesting that company size does not affect real earnings management, or in other word, there is no difference between big and small companies in terms of real earnings management. The coefficient related to the nature of financial statements (NFS) is also not statistically significant (Sig. = 0.097), therefore, the consolidation process does not have any effect on real earnings management, thus, in terms of real earnings management, there are no differences between companies with consolidated financial statements and those with separate financial statements.

The results indicate that the coefficient related to the Algiers Stock Exchange listing is statistically significant at a level of 1%, where the calculated T statistic (3.347) is more than the T critical value from the table. The coefficient reached 0.041 with a negative sign, suggesting that the Algiers Stock

Exchange listing has had a negative effect on real earnings management. Thereby, Algerian listed companies practice less real earnings management than non-listed companies, which contradicts the hypothesis of the study.

Table 4. Factor analysis results of structural capital

	Model[a]	Coefficient value	T	Sig.	VIF	Adjusted R squared	F	Sig.	Durbin-Watson
1	(Constant)	0.129	2.889	0.005	-	0.339	3.965	0.010	1.889
	COT	-0.041	-3.347	0.001	1.143				
	NFS	0.020	1.679	0.097	1.143				
	SIZE	-0.052	-0.902	0.369	1.001				

a. Dependent variable: REM.
Source: Depending on SPSS.

Finally, the author tested the validity of Model (1) through the Ordinary Least Squares (OLS) assumptions. As illustrated in Table 4, the Variance Inflation Factors (VIF) are very low for all variables, which is consistent with the results of correlation about the absence of any significant and strong correlation between the independent variables, thus the criterion of multicollinearity is met. Table 4 also shows that the calculated Durbin-Watson value reached 1.889 and is situated between 2 and the upper critical value (dU = 1.774). This means that the criterion of no autocorrelation (no linear dependence) between residuals is met. Table 5 shows the results of the normality test for the residuals, indicating that the Kolmogorov-Smirnov test and Shapiro-Wilk test are not statistically significant, neither at a level of 1% nor at 5%. Therefore, the residuals of Model (1) are normally distributed.

Table 5. Normality test results for the residuals

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardised Residual	0.103	124	0.200	0.773	124	0.063

a. Lilliefors Significance Correction.
Source: Depending on SPSS.

Table 6. Homoscedasticity test results for the residuals

Breusch-Pagan and Koenker test statistics and sig-values		
	LM	Sig.
BP	8.024	0.056
Koenker	6.311	0.097

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

Source: Depending on SPSS.

In terms of Table 6, which shows the results of the homoscedasticity test for the residuals, it appears that the Breusch-Pagan test and Koenker test are not statistically significant, neither at a level of 1% nor at 5%. Therefore, the residuals of Model (1) are homoscedastic. According to these results, the OLS assumptions are met; hence the validity of Model (1) is confirmed.

According to the results of this study, company size does not have any effect on real earnings management, which is not the case for most of the previous studies that suggest differences between companies in terms of real earnings management according to their size. This can be due to the structure of the Algerian economy, where the majority of companies are SMEs or family firms, and therefore their managers are subject to the same motivations of real earnings management.

In terms of the nature of financial statements, it is supposed that accounting for consolidation provides managers with more flexibility to manipulate earnings. However, this is not the case in Algerian companies, where the results of study revealed no effect of consolidation on real earnings management. This can be explained by the objectives of consolidated financial statements that tend to serve investors, while in Algeria the preparation of financial statements – whether consolidated or separated – is primarily aimed at meeting the legal requirements.

Finally, this study indicates that stock market listing has a negative effect on real earnings management, This finding differs from the results of Lopes, Tukamoto, and Galdi (2007) and Eng and Lin (2012), who found that cross-listing did not have an effect on earnings management, and Cornanic and Novak (2015), Mellado-Cid, Jory, and Ngo (2017), Dang, Hoang, and Tran (2018), and Nuanpradit (2018), who found that stock market listing had a positive effect on real earnings management. The positive effect is due to the opportunistic motivation to maintain the listing or to achieve the expectations of managers or analysts, or to the informational motivation to reduce information asymmetry, providing relevant information for users, and signal the stock market about the future perspectives of a company.

In Algeria, the explanations are different, where the negative effect of listing on real earnings management might be due to the scrutiny of auditors and regulators as the number of companies is easily controllable. Additionally, the listed companies are large and have clearly defined rules of governance including the board of directors, internal audit and audit committee, which limit the practices of real earnings management. Moreover, the users of financial statements of listed companies are conscious of, and have the ability to analyse information or consult financial analysts, and they can also obtain information from other sources.

Conclusion

The determinant(s) of earnings management is a common research field in accounting for the purpose of explaining fluctuations of earnings management and understanding managers' behaviour in terms of earnings management. In this regard, this paper relates to stock market listing as a determinant of real earnings management due to the importance of stock market listing in the explanation of the behaviour of managers and their choices and explains the disparity between companies in terms of numerous characteristics. Stock market listing is a prominent attribute because listed companies are exposed to different conditions than non-listed companies, such as institutional control, supervision by market committees, reporting and transparency requirements, control of analysts and investors.

Due to the importance of stock market listing, this paper explored the effect of the Algiers Stock Exchange listing on real earnings management. The study included 14 non-financial non-listed companies during the period 2015-2019 and six non-financial listed companies during the period 2010-2019. Due to the small number of companies listed on the Algiers Stock Exchange, the period of study in the case of listed companies was extended to provide enough observations for the model estimation. The study was based on the model of abnormal cash flows from operations (Roychowdhury 2006) to measure real earnings management, and used the nature of financial statements (consolidated or separate) and the company size as control variables. The data analysis employed descriptive statistics, correlation, the Mann-Whitney nonparametric test, and multiple linear regressions.

The results indicate that company size and the nature of financial statements (consolidation) do not have an effect on real earnings management in Algerian companies, which contradicts the results of most previous studies. This can be explained by the particularities of the Algerian economy, which is mostly composed of SMEs and family firms. These results can also be assigned to the accounting culture in Algeria, where the preparation of financial statements – whether consolidated or separated – is primarily intended to meet the legal requirements rather than serving investors.

The results are not consistent with the hypothesis of this study on the positive effect of the Algiers Stock Exchange listing on real earnings management. The empirical evidence of this study suggests that stock market listing has a negative effect on real earnings management in Algerian companies. This is due to the scrutiny of auditors and regulators as the number of companies is easy to control, which decreases the opportunity for Algerian companies to rely on real earnings management in accordance with the opportunistic or informational view.

Despite the importance of this study, it is limited in terms of its methodology due to the small sample size and the use of only one indicator of real earnings management (abnormal cash flows), where existing literature has distinguished between many practices of real earnings management including production costs and discretionary expenses that cannot be reflected by abnormal cash flows. Consequently, future studies must extend the sample size and use other indicators of real earnings management and other explanatory or control variables such as industry, ownership structure, governance, and debt. Auditors of Algerian companies must pay more attention to real earnings management practices through the valuation of the internal control system, especially for non-listed companies, in order to enhance the quality of financial statements. Algerian regulators must put in place mechanisms of control for non-listed companies to reduce earnings management practices.

References

Abad, M. D., Cutillas-Gomariz, F., Sánchez-Ballesta, J. P., & Yagüe, J. (2018). Real Earnings Management and Information Asymmetry in the Equity Market. *European Accounting Review, 27*(2), 209-235. https://doi.org/10.1080/09638180.2016.1261720.

Abdullahi, B. A., Norfadzilah, R., Umar, A. M., & Lateef, S. A. (2020). The financial determinants of earnings management and the profitability of listed companies in Nigeria. *Journal of Critical Reviews, 7*(9), 31-36. https://doi.org/10.31838/jcr.07.09.06.

Alawag, G. (2020). Business Group Opportunism: The Difference in Real Earnings Management between Parent Firms and Nonparent Firms. *Asian Journal of Accounting Research, 6*(2), 246-261. https://doi.org/10.1108/AJAR-07-2020-0046.

Ambrose, B., & Bian, X. (2010). Stock Market Information and REIT Earnings Management. *The Journal of Real Estate Research, 32*(1), 101-138. https://doi.org/10.1080/10835547.2010.12091271

Amir, E., Harris, T. S., & Venuti, E. K. (1993). A Comparison of the Value-Relevance of U.S. Versus Non-U.S. GAAP Accounting Measures Using Form 20-F Reconciliations. *Journal of Accounting Research, 31*, 230-264. https://doi.org/10.2307/2491172

Barth, M. E., Beaver, W. H., & Landsman, W. R. (2001). The Relevance of the Value Relevance Literature for Financial Accounting Standard Setting: Another View. *Journal of Accounting and Economics, 31*(1-3), 77-104. https://doi.org/10.1016/S0165-4101(01)00019-2.

Beneish, M. D. (2001). Earnings Management: A Perspective. *Managerial Finance, 27*(12), 3-17. https://doi.org/10.1108/03074350110767411.

Burgstahler, D., Hail, L., & Leuz, C. (2006). The Importance of Reporting Incentives: Earnings Management in European Private and Public Firms. *The Accounting Review, 81*(5), 983-1016. https://doi.org/10.2308/accr.2006.81.5.983

Charfeddine, L., Riahi, R., & Omri, A. (2013). The Determinants of Earnings Management in Developing Countries: A Study in the Tunisian Context. *IUP Journal of Corporate Governance, 12*(1), 35-49.

Chen, G., Firth, M., Gao, D. N., & Rui, O. M. (2006). Ownership Structure, Corporate Governance, and Fraud: Evidence from China. *Journal of Corporate Finance, 12*, 424-448. https://doi.org/10.1016/j.jcorpfin.2005.09.002.

Chen, X., Cheng, Q., & Wang, X. (2015). Does Increased Board Independence Reduce Earnings Management? Evidence from Recent Regulatory Reforms. *Review of Accounting Studies, 20*, 899-933. https://doi.org/10.1007/s11142-015-9316-0.

Cheng, Q., & Warfield, T. D. (2005). Equity Incentives and Earnings Management. *The Accounting Review, 80*(2), 441-476. https://doi.org/10.2308/accr.2005.80.2.441

Cohen, D. A., Dey, A., & Lys, T. Z. (2008). Real and Accrual-Based Earnings Management in the Pre- and Post-Sarbanes-Oxley Periods. *The Accounting Review, 83*(3), 757-787. https://doi.org/10.2308/accr.2008.83.3.757.

Cohen, D. A., & Zarowin, P. (2010). Accrual-Based and Real Earnings Management Activities Around Seasoned Equity Offerings. *Journal of Accounting and Economics, 50*(1), 2-19. https://doi.org/10.1016/j.jacceco.2010.01.002.

Cooper, L. A., Downes, J. F., & Rao, R. P. (2017). Short Term Real Earnings Management Prior to Stock Repurchases. *Review of Quantitative Finance and Accounting, 50*, 95-128. https://doi.org/10.1007/s11156-017-0624-2.

Cornanic, A., & Novak, J. (2015). Earnings Management to Avoid Delisting from a Stock Market, *Working Papers IES 2015/22*, Charles University Prague, Faculty of Social Sciences, Institute of Economic Studies. https://doi.org/10.2139/ssrn.2557623

Dang, N. H., Hoang, T. V. H., & Tran, M. D. (2018). Factors Affecting Earnings Management: The Case of Listed Firms in Vietnam. *International Journal of Economic Research, 14*(20), 117-134.

Dechow, P. M., & Skinner, D. J. (2000). Earnings Management: Reconciling the Views of Accounting Academics, Practitioners, and Regulators. *Accounting Horizons, 14*(2), 235-250. https://doi.org/10.2308/acch.2000.14.2.235.

Eng, L. L., & Lin, Y. C. (2012). Accounting Quality, Earnings Management and Cross-Listings: Evidence from China, *Review of Pacific Basin Financial Markets and Policies (RPBFMP), 15*(02), 1-25. https://doi.org/10.1142/S0219091512500099.

Fakhfakh, H., & Nasfi, F. (2012). The Determinants of Earnings Management by the Acquiring Firms. *Journal of Business Studies Quarterly, 3*(4), 43-57.

Francis, J., & Schipper, K. (1999). Have Financial Statements Lost their Relevance?. *Journal of Accounting Research, 37*(2), 319-352. https://doi.org/10.2307/2491412

Ghaleb, B. A. A., Kamardin, H., & Tabash, M. I. (2020). Family Ownership Concentration and Real Earnings Management: Empirical Evidence from an Emerging Market. *Cogent Economics & Finance, 8*(1), 1751488. https://doi.org/10.1080/23322039.2020.1751488.

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The Economic Implications of Corporate Financial Reporting. *Journal of Accounting and Economics, 40*(1-3), 3-73. https://doi.org/10.1016/j.jacceco.2005.01.002.

Haga, J., Höglund, H., & Sundvik, D. (2018). Stock Market Listing Status and Real Earnings Management. *Journal of Accounting and Public Policy, 37*(5), 420-435, https://doi.org/10.1016/j.jaccpubpol.2018.09.002.

Healy, P., & Wahlen, J. (1999). A Review of the Earnings Management Literature and its Implication for Standard Setting. *Accounting Horizons, 13*(4), 365-383. https://doi.org/10.2308/acch.1999.13.4.365.

Hieu, P. D., Hai, L. T., Thuy, L. T., Lam, N. T., & Ngoc, H. (2019). Earnings Management of Listed Companies in Vietnam Stock Market: An Exploratory Study and Identification of Influencing Factors. *Academy of Accounting and Financial Studies Journal, 23*(4), 1.

IASB (2018). *The Conceptual Framework for Financial Reporting*. London: IFRS Foundation.

Janin, R. (2000). Accruals-Based Models for Detecting Earnings Management and the French Case. *23rd EAA Annual Congress,* 29-31 March, University Munich, Germany.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics, 3*(4), 305-360. https://doi.org/10.1016/0304-405X(76)90026-X.

Jiraporn, P., Miller, G. A., Yoon, S. S., & Kim, Y. S. (2008). Is Earnings Management Opportunistic or Beneficial? An Agency Theory Perspective. *International Review of Financial Analysis, 17*(3), 622-634. https://doi.org/10.1016/j.irfa.2006.10.005.

Kimouche, B., & Charchafa, I. (2021). The Effect of Accounting Accruals on Real Earnings Management: Evidence from the Algerian Companies. *International Journal of Accounting, Finance and Education, 2*(1), 1-9. https://doi.org/10.53378/345958

Kimouche, B., & Cherroun, A. (2020). The Effect of Leverage on Earnings Management in the Algerian Companies. *Economic and Management Research Journal, 14*(3), 483-502. https://www.asjp.cerist.dz/en/article/122144.

Kimouche, B., & Cherroun, A. (2020). Empirical Evidence about the Impact of Debts and Their Cost on Real Earnings Management in Algeria. *Revue Algérienne d'Economie et gestion, 14*(2), 443-464. https://www.asjp.cerist.dz/en/article/141498.

Kimouche, B., & Charchafa, I. (2020). The Impact of Financial Performance and Activity Level on Real Earnings Management: Evidence from Algeria. *Proceedings of the 5th international black sea coastline countries symposium*, (ed.) Bulent Haner and Zhuldyz Sakhi: Turkey, 63-70.

Kothari, S. P., Mizik, N., & Roychowdhury, S. (2012). Managing for the Moment: The Role of Earnings Management via Real Activities versus Accruals in SEO Valuation. *The Accounting Review, 91*(2), 559-586. https://doi.org/10.2308/accr-51153.

Lev, B. (1989). On the Usefulness of Earnings and Earnings Research: Lessons and Directions from Two Decades of Empirical Research. *Journal Accounting Research, 27*, 153-192. https://doi.org/10.2307/2491070.

Lopes, A. B., Tukamoto, Y., & Galdi, F., C. (2007). Earnings Management and Cross Listing in Brazil. In: *Congresso da associação nacional dos programas de pós-graduação em ciências contábeis*, Gramado-RS.

Mellado-Cid, C., Jory, S. R., & Ngo, T. (2017). Real Earnings Management Activities Prior to Bond Issuance. *BRQ Business Research Quarterly*, *20*(3), 164-177, https://doi.org/10.1016/j.brq.2017.04.004.

Mitchell, R., Agle, B., & Wood, D. (1997). Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of who and what Really Counts. *The Academy of Management Review*, *22*(4), 853-886. https://doi.org/10.2307/259247.

Nuanpradit, S. (2018). The Relationship between Information Asymmetry and Real Earnings Management: The Role of CEO Duality in Thailand. *JBA Business Administration Journal*, *41*(158), 48-69. https://doi.org/10.14456 / jba.2018.8.

Priharta, A., & Rahayu, D. P. (2019). Determinants of Earnings Management and its Implications on the Integrity of the Financial Statements. *In KnE Social Sciences, 3*(26), 974-995. https://doi.org/10.18502/kss.v3i26.5425.

Roychowdhury, S. (2006). Earnings Management through Real Activities Manipulation. *Journal of Accounting and Economics, 42*(3), 335-370. https://doi.org/10.1016/j.jacceco.2006.01.002.

Saleh, I., Abu Afifa, M., & Haniah, F. (2020). Financial Factors Affecting Earnings Management and Earnings Quality: New Evidence from an Emerging Market, *ACRN Journal of Finance and Risk Perspectives, 9*(1), 198-216. https://doi.org/10.35944/jofrp.2020.9.1.014.

Schipper, K. (1989). Commentary on Earnings Management. *Accounting Horizons, 3*(4), 91-102.

Scott, W. (2011). *Financial Accounting Theory, 6th Edition*. Prentice Hall.

Siregar, S. V. & Utama, S. (2008). Type of Earnings Management and the Effect of Ownership Structure, Firm Size, and Corporate Governance Practices: Evidence from Indonesia. *The International Journal of Accounting, 43*(1), 1-27. https://doi.org/10.1016/j.intacc.2008.01.001.

Sousa Paiva, I., & Costa Lourenço, I. (2016). Determinants of Earnings Management in the Hotel Industry: An International Perspective. *Corporate Ownership & Control, 14*(1-3), 449-457. https://doi.org/10.22495/cocv14i1c3p5.

Tran, K. H., & Duong, N. H. (2020). Earnings Management to Avoid Earnings decreases and Losses: Evidence from Vietnamese Listed Companies. *Cogent Economics & Finance, 8*(1), 1849980. https://doi.org/10.1080/23322039.2020.1849980.

Watts, R. L., & Zimmerman, J. L. (1978). Towards a Positive Theory of the Determination of Accounting Standards, *The Accounting Review, 53*(1), 112-134.

Učinek kotacije na borzi na upravljanje realnih dohodkov: dokazi iz alžirskih podjetij

Izvleček

Namen tega članka je raziskati učinek kotacije na borzi v Alžiru na upravljanje realnih dohodkov. V študijo je bilo vključenih 14 nefinančnih podjetij, ki niso kotirala na borzi v obdobju med letoma 2015 in 2019, in 6 nefinančnih podjetij, ki so kotirala na borzi v obdobju med letoma 2010 in 2019. Zaradi majhnega števila podjetij, ki kotirajo na borzi v Alžiru, smo za podjetja, ki so kotirala na borzi, podaljšali obdobje študije, da smo lahko prišli do zadostnega števila spoznanj. Merjenje upravljanja realnih dohodkov temelji na modelu nenormalnih denarnih tokov iz poslovanja (Roychowdhury, 2006), medtem ko preverjanje hipoteze temelji na modelu večkratne linearne regresije. Rezultati kažejo, da velikost podjetja in narava računovodskega izkaza (konsolidacija) ne vplivata na upravljanje realnih dohodkov v alžirskih podjetjih. Rezultati niso skladni z našo hipotezo o pozitivnem učinku kotacije na borzi na upravljanje realnih dohodkov. Empirični dokazi kažejo, da kotacija na borzi v Alžiru negativno vpliva na upravljanje realnih dohodkov v alžirskih podjetjih. To je lahko posledica nadzora s strani revizorjev in regulatorjev, saj je število podjetij enostavno nadzorovati, kar zmanjšuje možnost za alžirska podjetja, da se zanesejo na upravljanje realnih dohodkov v skladu z oportunističnim ali informacijskim pogledom.

Ključne besede: upravljanje realnih dohodkov, kotacija na borzi, velikost podjetja, konsolidacija, alžirska podjetja