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EARNINGS MANAGEMENT AND COMPANY CHARACTERISTICS: EMPIRICAL EVIDENCE FROM ALGERIAN COMPANIES

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ABSTRACT

This paper attempts to analyze the impact of some Algerian companies' characteristics (size, activity sector, property, listing, and nature of financial statements) on the level of earnings management. The research employed 117 observations for 26 Algerian companies from 2016 to 2020 and used a multiple linear regression model and discretionary accounting accruals to measure earnings management. According to the findings, earnings management in Algeria is explained by the companies' sizes, activity sectors, and stock market listing. However, the nature of financial statements and the ownership of the companies do not affect earnings management. These results are beneficial for regulators and auditors since they provide empirical evidence about the characteristics of companies that manipulate earnings. Consequently, they can enable them to take appropriate actions to enhance the quality of financial reports, whether when developing and reviewing accounting standards by regulators or when examining financial information by auditors.

KEYWORDS:

Earnings management, discretionary accruals, company characteristics, Algerian companies

1. Introduction

The main purpose of financial accounting is to meet the users' needs for information that helps them assess the management's stewardship of the company's economic resources (International Accounting Standards Board [IASB], 2018). Fulfilling that objective can enable managers to make decisions and assess the extent to which companies can meet their commitments and achieve different expectations (Kimouche, 2021a, 2021d). Therefore, managers select and apply accounting policies and set judgments as presumed by accounting standards to measure the financial position and performance of the company. Although accounting practices have derived from conceptual frameworks and the selection and application of accounting policies are based on accounting standards, managers still rely on accounting flexibility to control the process of preparing and presenting financial reports as a tool for concurring

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with the users' expectations or other perspectives.

Earnings management is among the practices that managers widely use to manipulate financial information, whether intentionally or unintentionally, as a tool to adapt the content of financial reports and their form and disclose the target levels of performance. According to Schipper (1989), earnings management is a purposeful intervention by the company's managers in the process of preparing and presenting financial reports for stakeholders to obtain specific benefits. In addition to the opportunistic view reflected in the definition of Schipper (1989), earnings management can correspond to an informational view as a means to report the private information of managers (Kimouche, 2021b).

Degeorge, Patel and Zeckhauser (1999) stated that earnings management expresses the use of flexibility available for managers to affect disclosed results. The source of that flexibility can be found in accounting or economic decisions, so earnings management relies on a set of methods and techniques through controlling some items and transactions to achieve specific objectives or respond to certain incentives (Kimouche, 2021c, 2021d).

Previous studies have indicated that earnings management is explained by several determinants, leading to different levels of earnings management among companies, especially that relate to the characteristics of companies (Smith, 1976; Kammoun & Bouazizi, 2011; Burghleh & Al-Okdeh, 2020; El Mokrani & Alami, 2021). Studying the determinants of earnings management is beneficial for accounting standards setters and other related parties since it can help them to enhance financial reports quality by enhancing accounting standards quality and strengthening the control mechanisms.

Studying factors affecting earnings management in Algeria did not receive enough attention from the literature; we found few studies that focused on financial determinants, such as leverage and capital cost (Kimouche & Cherroun, 2020a; Kimouche, 2021c). Therefore, this paper attempts to analyze factors affecting earnings management in Algeria, using some characteristics of companies that are rarely employed in the literature, such as listing and nature of financial statements, in addition to the commonly used characteristics, like company size and activity sector.

2. Literature review

The first studies about factors affecting earnings management were conducted in the USA; the most important is the study of Smith (1976), who found that companies with a separation between management and ownership are more tend to manipulate earnings compared to companies managed by owners. Belkaoui and Picur (1984) recorded differences between companies regarding earnings management according to their activity sectors. Zmijewski and Hagerman (1981), Moses (1987), Ashari, Koh, Tan and Wong (1994) showed that company size, profitability, activity sector, and company nationality have impacts on earnings manipulation.

Jeanjean (2001) analyzed factors determining earnings management in France, employing 745 listed companies from 1995 to 1999. According to the results, the assumptions of the positive accounting theory are not valid due to the institutional differences between France and the USA. Mard (2004) studied the relationship between earnings management and some characteristics of French listed companies. Using 264 companies from 1994 to 1998, he confirmed that earnings management is determined by the size of the company and its activity sector. Aman, Takiah, Pourjalali, and Teruya (2006) found that earnings management in Malaysian listed companies is explained by the structure of ownership and company size.

Kammoun and Bouazizi (2011) explored the effect of the structure of ownership on earnings quality expressed by accruals and the ability of earnings to explain market returns. The study was based on 14 non-financial Tunisian companies from 1999 to 2006 and indicated a positive impact of managerial ownership and a negative effect of institutional ownership on earnings management. However, there is no impact of company size has been recorded on earnings management.

Braam, Nandy, Weitzel and Lodh (2015) investigated whether the trade-off between accounting and real earnings management strategies in companies with political connections differs from companies without political connections. Based on 5,493 firm-year observations of listed companies that belong to 30 economies during the period 1997-2001, the study demonstrated that real earnings management is more practicing by politically connected companies comparing accounting earnings management.

Nagar and Sen (2016) explored whether operating accounting items are used to manage earnings by Indian listed companies based on 14,386 firm-years during the period 2006-2011. The study found that managers of Indian companies focus on operating profit to manage accounting earnings by transferring and reclassifying operating income and expenses to increase operating profits, with some differences between companies according to their characteristics, especially the financial position.

Burghleh and Al-Okdeh (2020) investigated the impact of the board of directors' characteristics (size, financial experience, meetings) on earnings management in Jordan. Employing 41 industrial companies from 2013 to 2017, the results showed that the financial experience and size of the board of directors impact earnings management in Jordanian companies. However, the board meetings did not affect earnings management. Moreover, the study found that family ownership affects the association of earnings management with the board of directors' characteristics.

El Mokrani and Alami (2021) examined the role of governance mechanisms in constraining earnings management practices in the companies listed on Casablanca. Using 27 companies during the period 2016-2018, they found that audit committee independence, the board size, and gender diversity contribute effectively in constraining earnings management. Furthermore, they showed positive relationships between earnings management and family ownership, institutional ownership, and chief executive officer duality.

In Algeria, there is little literature about factors affecting earnings management, especially those that relate to the characteristics of companies. In this context, we can cite Kimouche and Cherroun (2020a), who explored whether financial leverage affects earnings management in Algeria, employing 14 Algerian companies during the period 2006-2018. According to the findings, financial leverage has no effect on earnings management in Algeria, with a positive effect of debt cost on earnings management.

Kimouche (2021c) investigated the impact of financial characteristics of companies (short-term and long-term debts, capital cost) on earnings management, using 193 firm-years for 25 Algerian companies from 2007 to 2019. He found that debts, whether they are short-term or long-term, do not impact earnings management in Algeria, with a positive effect of capital cost on earnings management.

Kimouche and Cherroun (2020b) analyzed whether the level and cost of debts affect real earnings management, employing 119 observations that concern 17 Algerian companies from 2012 to 2018. They showed that neither debt nor their costs affect real earnings management, arguing that their

findings can be explained by the specificities of the institutional and economic environment in Algeria, where debt covenants are prepared differently comparing developed economies.

Kimouche (2021b) studied the effect of the listing on the stock market on real earnings management in Algeria during the period 2010-2019. He suggested that the listing on the Algiers Stock Exchange affects real earnings management negatively because of the scrutiny of auditors and regulators, which reduces the ability of managers to depend on real earnings management consistent with the informational or opportunistic view.

Kimouche and Charchafa (2021) explored the relationship between accounting accruals and real earnings management in Algeria, using 100 firm-year observations for 20 companies from 2015 to 2019. Employing a leaner regression model, they found that accounting accruals as a proxy for accounting earnings management affect real earnings management negatively.

Compared to the literature, this paper explored the factors that determine earnings management in Algeria since the literature does not provide enough empirical evidence in this regard. The study attempts to test the relationship of earnings management with some companies' characteristics that were not used previously, such as the stock exchange listing and nature of financial statements.

3. Method and Materials

3.1. Data collection

This study included 117 firm-year observations for 26 Algerian companies from 2016 to 2020. The companies have been randomly selected based on the accessibility to their financial reports that have been directly collected through visiting the companies' headquarters. It should be noted that we have 13 missing observations due to the non-availability of financial statements in some years for some companies.

3.2. Model

As shown in Equation (1), this study relies on a model under the form of multiple linear regression, linking earnings management as a dependent variable with some characteristics of Algerian companies as explanatory variables, including company size, activity sector, property, listing, and nature of financial statements.

$$EM_{it} = \alpha_0 + \alpha_1 SIZE_{it} + \alpha_2 SEC_{it} + \\ + \alpha_3 PRO_{it} + \alpha_4 LIST_{it} + \alpha_5 NFS_{it} + e_{it} \quad (1)$$

Where: EM_{it} is the level of earnings management during the fiscal year; $SIZE_{it}$ is the size of the company; SEC_{it} is the company activity sector; PRO_{it} is the company property; $LIST_{it}$ is the company market listing; NFS_{it} is the nature of financial statement; α_0 is the intercept; α_1, α_2, α_3, α_4, and α_5 are regression coefficients; e_{it} is the error term.

3.3. Measurement of earnings management

Accounting earnings management is the most practiced by managers as it is based on accounting accruals, so it is easy to execute with lower costs. Accruals in accounting include all figures that enable managers the passage from treasury-based to accrual-based accounting; they represent the actions that change the scheme of accounting results over time, allowing the transfer of earnings among reporting periods. Healy (1985) defined accruals as the total accounting adjustments on cash flows from operations allowed by the bodies of accounting standards setting. The literature distinguishes between discretionary and non-discretionary accounting accruals; the discretionary accruals result from accounting flexibility, so they are the favorite proxy for measuring earnings management. However, the non-discretionary accruals are considered normal following the company strategy, performance level, and industry agreements. As shown in Equation (2), this study relied on discretionary accounting

accruals that were estimated using Kothari, Leone and Wasley (2005).

$$TAC_{it}/A_{it-1} = \beta_1(1/A_{it-1}) + \\ + \beta_2[(\Delta RV_{it} - \Delta RC_{it})/A_{it-1}] + \\ +\beta_3(PP_{it}/A_{it-1}) + \beta_4 ROA_{it} + \xi_{it} \qquad (2)$$

where: TAC_{it} is the total accounting accruals for the fiscal year; A_{it-1} is the total assets; RV_{it} is the total sales; ΔRC_{it} is the receivable accounts; PP_{it} is the total of property, plant and equipment; ROA_{it} is the return on equity; β_1, β_2, β_3 and β_4 are parameters; ξ_{it} is the error term or discretionary accounting accruals that measures earnings management.

3.4. Measurement of independent variables

3.4.1. Company size

Starting from the quartiles of total assets, we divided the observations into four equal categories numbered from 1 to 4 and comprised the quarter of the data.

3.4.2. Company activity sector

We employed a nominal scale that divides companies into five activity sectors numbered from 1 to 5.

3.4.3. Company property

We can distinguish two prominent forms of companies' ownership in Algeria with significant differences in the governance system. Therefore, we measured the company property as a dummy variable, taking 0 if the company is public, otherwise 1.

3.4.4. Company market listing

This variable was also measured using a dummy variable; if the company is quoted on the Algiers Stock Exchange during the fiscal year, the variable takes 1, otherwise 0.

3.4.5. Nature of financial statement

As a result of the remarkable differences between companies, due to the presence of consolidated and separate financial statements, we added this factor as a control variable measured by a dummy variable, taking 0 in the case of separate financial statements and 1 in the case of consolidated financial statements.

4. Results and discussion

4.1. Descriptive statistics

We measured earnings management through discretionary accruals as the residuals of Model (2) estimated depending on Pooled Regression Model, using the data of all studied companies. Table no. 1 shows the descriptive statistics of earnings management, indicating that discretionary accruals in Algerian companies reached 7.59 % of total assets, on average, with a high dispersion as the standard deviation reached 0.1341 with a range of 1.4399, indicating an important level of earnings management in Algerian companies.

Table no. 1

Descriptive statistics of earnings management

	Observations	Mean	Median	Standard Deviation	Minimum	Maximum
EM	117	0.0759	0.0397	0.1341	0.0015	1.4414

EM: Earnings management (dependent variable)

Table no. 2 presents the distribution of companies among categories of sizes, suggesting that most observations belong to the first and second categories that contain the smaller companies compared to the third and fourth categories that contain big-size companies.

Table no. 2

Descriptive statistics of companies' size

Quartiles (Algerian dinar)		Categories	Categories' codes	Observations
Quartile 1 (Q_1)	7,989,093	$A_{it} =< Q_1$	1	29
Quartile 2 (Q_3)	27,704,548	$Q_1 < A_{it} =< Q_2$	2	41
Quartile 3 (Q_3)	111,936,089	$Q_2 < A_{it} =< Q_3$	3	31
–	–	$A_{it} > Q_3$	4	16

A_{it}: Total assets

Table no. 3 presents the distribution of companies among the five activity sectors, showing that service and hydrocarbon industries include the most observations (40 and 30, respectively), while construction, food, and pharmaceutical industries include only 14, 18, and 15, respectively, as a result of the unbalance of economic activity in Algeria.

Table no. 3

Descriptive statistics of companies' activity sector

Activity sectors	Services	Hydrocarbon	Construction	Food	Pharmaceutical
Observations	40	30	14	18	15
Codes for analysis	1	2	3	4	5

Concerning the other variables, we bilaterally distributed the observations. As summarized in Table no. 4, we recorded 47 observations for private companies against 70 for public companies. We also recorded 61 observations for non-quoted companies against 56 for quoted companies; and 69 observations for separate financial statements versus 48 for consolidated financial statements.

Table no. 4

Descriptive statistics of companies' property, companies' market listing, and nature of financial statement

Codes for analysis	Company property	Observations	Market Listing	Observations	Financial statement	Observations
0	Public	70	Not listed	61	Separate	69
1	private	47	Listed	56	Consolidated	48

4.2. Correlation analysis

The correlation results between different variables are summarized in Table no. 5, indicating that the correlation between earnings management and the nature of financial statements is insignificant. However, the correlation between market listing and earnings management is significant at 5 % level, suggesting a weak relationship between the two variables. The results also indicate a weak relationship between earnings management and company sector, a medium relationship between earnings management and company property, and a strong relationship between earnings management and company size; the three relationships are significant at 1 % level. Finally, the correlations between independent variables either are not statistically significant or not strong, which excludes the existence of collinearity between independent variables.

Table no. 5

The correlation results

	SIZE	SEC	PRO	LIST	NFS
EM	0.764**	–0.247**	–0.356**	–0.224*	0.150
SIZE	1	–0.188*	–0.418**	–0.096	0.326**
SEC		1	0.355**	–0.137	–0.020
PRO			1	–0.262**	–0.471**
LIST				1	0.439**

* Significant at 5 % (two-tailed) ** Significant at 1 % (two -tailed)

– Dependent variable: Earnings management (EM)

– Independent variables: Company size (SIZE), Activity sector (SEC), Company property (PRO), Company market listing (LIST), Nature of financial statement (NFS)

4.3. Model (1) estimation results

The study data is panel data, so we carried out the F-restricted test to determine whether the Pooled Regression or Fixed Effects Model is valid to estimate Model (1). Then, we carried out the Hausman test to determine whether the Fixed Effects of Random Effects Model is valid to estimate Model (1); the selection suggested that the Fixed Effects Model is valid. Table no. 6 summarizes the estimation results, using the data of all studied companies, showing that the model is significant at 1 % level with high explanatory power since independent variables together explain 60.80 % of changes in earnings management.

The parameters' values suggest that the explanatory power is due to the company size, then market listing and activity sector, respectively. The parameter of company size indicates a positive and significant at 1 % impact of company size on earnings management, and thus big-size companies are more practitioners of earnings management than smaller size. However, the parameters of market listing and activity sector are significant at 1 % level, suggesting significant impacts of two variables on earnings management.

As market listing is a dummy variable, its negative coefficient suggests that non-listed companies have a higher level of accounting earnings management comparing listed companies. However, the activity sector is a nominal measure, so the negative sign of its coefficient does not add supplementary information. The other parameters are not significant, thus company property and consolidation of financial statements do not impact earnings management, which means that there are no differences between public and private companies and between companies with consolidated financial statements and companies with separate financial statements regarding earnings management level.

Table no. 6

Model (1) estimation results

	Coefficients	T- Statistic	VIF	F- Statistic	Adjusted R^2	Durbin-Watson
Intercept	0.003	20.215**	–	36.737**	0.608	2.115
SIZE	0.746	9.752**	1.437			
SEC	–0.130	–2.348*	1.222			
PRO	–0.144	–0.773	1.652			
LIST	–0.315	–1.864*	1.409			
NFS	0.150	0.806	1.713			

* Significant at 5 % ** Significant at 1 %

– VIF: Variance Inflation Factor – Dependent variable: Earnings management (EM)

– Independent variables: Company size (SIZE), Activity sector (SEC), Company property (PRO), Company market listing (LIST), Nature of financial statement (NFS)

Regarding Model (1) validity, it appears from Table no. 6 that the Variance Inflation Factors (VIF) are very weak and do not exceed 1.713, which confirms the correlation results about the absence of collinearity between independent variables. As shown in Table no. 6, the Durbin-Watson statistic is confined between 2.353 (2.353 = 4 – dU) and 2, where dU (= 1.647) is the upper critical value from the table of Durbin-Watson at 1% level and degree of freedom 5, so the residuals resulting from Model (1) are not autocorrelated. Finally, Table no. 7 indicates that Kolmogorov-Smirnov and Shapiro-Wilk are not significant; hence the residuals resulting from Model (1) take a normal distribution.

Table no. 7

The results of normality test for the residuals resulting from Model (1)

	Shapiro-Wilk			Kolmogorov-Smirnov		
	Statistic	Degree of Freedom	Probability	Statistic	Degree of freedom	Probability
Standardized Residuals	0.993	116	0.844	0.046	116	0.199

4.4. Discussion

The results provide evidence that big-size companies have higher levels of earnings management when compared to small companies, which confirms the political costs hypothesis. In this regard, big-size companies are more visible to the public and need to harmony with the regulatory clauses; they also need to avoid the reaction of the government against any monopolist action and the claims of the trade unions due to the increase in earnings of companies. Also, earnings management levels differ between companies according to their activity sectors due to the different accounting practices between industries, which provide different levels of flexibility for managers to manipulate earnings, as argued by many previous studies (Zmijewski & Hagerman, 1981; Belkaoui & Picur, 1984; Moses, 1987; Mard, 2004; Aman et al., 2006; Braam et al., 2015).

Consistent with the findings of Kimouche (2021b), the results suggest that non-listed companies have higher levels of earnings management when compared to listed companies. This is because of the control mechanisms of the COSOB (Stock Exchange Supervision and Organization Commission) and the disclosure requirements for listed companies. According to the results, earnings management levels do not differ between companies, whether with separate or consolidated financial statements. Therefore, consolidation procedures do not provide more accounting flexibility for managers, so no opportunities for earnings management. Additionally, there are no differences between public and private companies regarding earnings management levels since they apply the same accounting reference, providing similar opportunities for managers to manipulate earnings, which is different from the findings of Smith (1976).

5. Conclusion

Earnings management is a known practice that exists in most companies due to the available flexibility in accounting practices. It reflects the trade-off between accounting alternatives and accounting estimates issued by managers when selecting and applying accounting policies to prepare and present financial statements. Literature has recorded many factors that motivate managers to adopt earnings management practices, including those that relate to contractual, regulatory, informational, and signalling incentives.

Although the common use of earnings management in accounting, their levels differ between companies as it is determined by many factors. Therefore, this paper examined the impact of some Algerian companies' characteristics (size, activity sector, property, listing, and nature of financial statements) on earnings management. The study employed a multiple linear regression, where earnings management was measured based on discretionary accruals.

Employing 26 Algerian companies from 2016 to 2020, which represents 117 observations, the findings indicate that earnings management in Algeria is determined by the companies' sizes, their activity sectors, and their listing on the Algiers Stock Exchange. However, the company property and the nature of financial statements do not affect earnings management levels in Algeria.

These results are consistent with the political costs hypothesis since big-size companies rely on earnings management to avoid the pressure of regulators and trade unions, especially when earnings increase. Also, the diversity of accounting practices between industries provides different levels of accounting flexibility, hence different levels of earnings management. Finally, listed companies are subject to high levels of control and more disclosure requirements, so their ability to manage earnings is limited.

This study contributes to the literature by providing empirical evidence about factors affecting earnings management in Algeria, where few studies have been carried out, and their results are not conclusive. This study employs some companies' characteristics as earnings management's explanatory factors that were not used previously, such as the stock exchange listing and nature of financial statements.

The results of this study are beneficial for regulators and auditors since it provides evidence about the characteristics of companies that manipulate earnings. Thence, it can enable different parties to take appropriate actions to enhance the quality of financial reports, whether when developing and reviewing accounting standards for regulators or when examining the financial information for auditors. However, future studies are required to extend the sample, employ additional explaining characteristics and use other proxies for earnings management and accounting quality.

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