“The impact of financial performance and firm characteristics on earnings management: Case of Tunisian Companies”

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THE IMPACT OF FINANCIAL PERFORMANCE AND FIRM CHARACTERISTICS ON EARNINGS MANAGEMENT: CASE OF TUNISIAN COMPANIES

Abstract

The purpose of this study is to test the effect of financial performance on earnings management, with the presence of a firm's specific characteristics, in a non-credible financial information context such as Tunisia. A panel data approach, namely multiple regression analysis, was applied on a sample of 30 firms operating in different sectors and observed over the period 2012–2021. Two estimation methods, the fixed effects and random effects models, are used. To choose the best estimation method, the Breusch-Pagan and Hausman tests were used.

The results indicate, on the one hand, the financial performance measured by Tobin's Q and Marris' ratio, positively affects earnings management. On the other hand, the variables of firm characteristics, such as financial leverage, asset structure, growth rate and sectoral affiliation, decrease earnings manipulation, and firm size and managers' ownership have no effect on earnings management. This means that managers of Tunisian firms manipulate their results to improve the level of performance and their financial sate. This manipulation is driven by goals other than those observed in other contexts and related to the financial market. This finding contributes to the literature on the association between several features of earnings management and firm performance, with the effect of firm characteristics.

Keywords discretionary accruals, earnings management, financial performance, panel approach, Tunisia

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INTRODUCTION

The Tunisian Revolution has had a significant effect on corporate finance. The latter lost much of their financial value because of the crises that occurred after the 2011 uprising. As a result of these crises, managers have made recourses to a set of tactics and legal (and sometimes illegal) methods to achieve specific personal goals and hide poor performance. This is accounted for in the literature by earnings management tactics and positive accounting theory (Schipper, 1989). This latter theory focuses on the analysis of accounting choices taken by firms (Watts, 1986) and tries to determine how these choices affect the content of balance sheets and financial statements. At their discretion, managers use these instruments to provide information to other parties to serve their own interests and at the same time to protect their positions in the company (Kontesa et al., 2020).

In addition, firms need to disclose large revenues to attract investors at the expense of competitors. This allows managers to create a perfect image for the company (Tang et al., 2015). Earnings management is used then by managers to hide the poor performance of the company (Zohoori et al., 2019; Song et al., 2021).

Notably, the financial literature has paid a special attention to financial performance as a key internal manipulation mechanism, and to its effects on earnings management (Zang, 2012; Kothari et al., 2015; Jiang et al., 2018; Khraim, 2022; Garfatta et al., 2022; Pham, 2022). Few studies examined directly the relationship between earning management and performance in developing economies. Others have introduced other variables related to firms' specificity (Souza et al., 2013; Cynthia et al., 2022; Mangala & Dhandal, 2019). They affirm that the relationship between earnings management and performance varies depending on the quality of managers and specific characteristics of firms. These characteristics are fixed to a firm's demographics and management characteristics that are part of the firm's operating environment: firm size, leverage, revenue growth, asset growth, and turnover (Zou & Stan, 1998). The purpose of this study is to contribute to this stream of research examining earnings manipulation and financial performance in an African country with an instability of the financial market. Specifically, it aims to verify the link between performance and earnings management while taking into account the specific characteristics of firms (financial leverage, firm size and manager ownership).

The remainder of this paper is organized as follows. Firstly, a literature review is carried out, and secondly, the research methodology and the model to be tested are presented. Third, the findings are presented and discussed. Finally, the concluding remarks are put along with the study's implications, limitations, and future research.

1. LITERATURE REVIEW

The importance of financial performance in explaining earnings manipulation is recognized in empirical and theoretical literature. Some studies have examined the direct relationship between earnings management and financial performance (Kothari et al., 2005; Jiang et al., 2018). Other studies have extended this line of research by introducing firm characteristics' variables related to financial leverage, size and structure ownership (DeFond & Jiambalvo, 1994).

The link between performance and earning management was initially examined by Watts and Zimmerman (1986) under the positive accounting theory. The main assumption of this theory is that managers try to reach objectives and increase firm value by reducing the risk inherent in future cash flows. Moreover, many studies have pointed to a direct relationship between earnings management and firm performance, but their results differ from one country to another, as a function of their economic development rates (Jiang et al., 2018; Huynh & Nguyen, 2019).

Tang and Chang (2015) indicate that the practice of earnings management is mainly reflected in reporting positive profits and consistent firm profitability. Moreover, earnings management has a direct effect on managers' decisions and investments. Studying a sample of 20 listed firms observed during the 2002–2010 period, Tang and Chang (2015) found that earnings management increases short-term firm performance. This positive impact means that managers closely evaluate the expenses and benefits of earnings management to avoid harming future firm performance. Also, Dao and Ngo (2020) showed that the earnings management of the previous period increasing will lead to an increase in firm performance of the following better period. If earnings management could make the earnings look better, a firm will have good image in investors' eyes and could show a constant growth rate; therefore, demand for stock could increase, leading to a rise in stock price and a change in market value of the firm. In the end, firm performance will also increase (Chakroun & Ben Amar, 2022).

Other studies have found a negative and a significant link between earnings management and financial performance (De Jong et al., 2014; Kothari et al., 2015). Indeed, companies with unfavorable financial conditions are expected to engage in income-increasing management, while income-decreasing strategies are more common among companies with good economic performance (Zhang & Ayisi, 2020). Facing poor performance, managers may choose, alternatively, to record a maximum of losses ("big bath accounting"), or to manage earnings upward in order to safeguard their positions

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from losses to evade concealing negative performance, which is seen more among companies with huge accruals. In the Iranian context, firm performance is mainly evaluated based on corporate profitability. Iranian managers try to manage profits as much as possible to receive more rewards and not lose their jobs (Salehi et al., 2018a).

Hernawati et al. (2021) found that manipulating a firm's earnings reduces its value. This will affect its future performance. Notably, in the case of poor performance, firms tend to adopt earnings enhancement strategies, i.e., they manage their earnings upward in order to hide poor performance.

In this regard, several studies have shown that managing earnings upward implies poor performance; for example, Balsam et al. (1995) in the United States, Shabou and Taktak (2002) in Tunisia, and Suprianto and Setiawan (2020) in Indonesia.

As for the strategies used to manipulate earnings, many studies claim that management engages in earnings management through accruals and focus primarily on accounting methods (Schipper, 1989; Fields et al., 2001). Therefore, managers can manipulate earnings through the selection of accounting approaches i.e., assessing earnings management on an accrual basis (McNichols & Wilson, 1988). Companies that exceed expert forecasts using earnings management accounting methods have lower operational performance over the next three years than companies that do not predict, not analysts without earnings management. Thus, Tang and Chang (2015) showed that managers of weakly regulated companies have many incentives and possibilities to manipulate profits through earnings management using accounting methods when there is a drop in performance.

To better understand the role of financial performance in explaining earnings management, Souza et al. (2013) have introduced other variables such as control and moderator variables. Their finding proved that firm size, debt, and ownership structure only had a weak influence on earnings management in a sample of Brazilian delisting enterprises, but the other variables related to asset structure and sector affiliation have no effect on earning management. This result is shown in many studies. Cynthia et al. (2022) prove that firm size can moderate the relationship between performance and earnings manipulation. It has a positive effect on earnings management (Mangala & Dhandal, 2019). Nonetheless, discretionary accrual is often positive for small enterprises, which is associated with an active approach to earnings management. This is due to the fact that it is advantageous for them to appear more successful if they are looking for investors.

Medium-sized businesses use conservative earnings management to cut back on discretionary accruals, which supports the findings of Sanchez-Ballesta and Yagua (2022). This method is employed to receive the specific benefits and avoid paying taxes (Lucia et al., 2020a).

Large companies do not need to manage discretionary accruals. Huang and Kung (2010) showed that large firms are more sensitive to political cost pressure than small ones. As a result, their managers seek to avoid these pressures through lower reported earnings. Hence, they would have more incentives to manage earnings downward when firm size is large.

Previous works highlight that leverage affects earnings management activities. Same studies suggested that firms with high leverage are more interested in managing their earnings (Mangala & Dhandal, 2019). This type of financing encourages managers to manage profits upward to maintain good relationships with their shareholders and creditors (Bushee, 1998; Mangala & Dhandal, 2019; Xie et al., 2022). According to the political-contractual theory of accounting founded by Watts and Zimmerman (1986), there is a contractual relationship between managers, shareholders and creditors that strongly shapes the financial policy of a firm.

Mrad et al. (2020) extend prior studies by examining the effect of earnings management on debt level with a sample of STOXX Europe 600 Index over the 2006–2014 period. The study finds that firms with high earnings management activities, both discretionary accruals and real earnings management, are associated with less long-term debt. This negative link between earnings management and long-term debt is influenced by institutional environment.

Poretti et al. (2020) study the impact of indebtedness on profit management using a sample of companies in the "Hospitality" sector in 26 countries. The results show that in general, higher financial leverage leads to higher earnings quality, especially in countries with strong investor protection. Indebtedness would therefore act as a disciplinary mechanism on managers. However, this oversight is only effective if the risk of litigation between shareholders and managers is high.

For the interaction effect of ownership structure on the relationship between firm performance and earning management, many studies found mixed results in terms of the concentrated ownership and institutional ownership.

Concentrated ownership has a significant impact on the relationship between earning management and financial performance in prior research. There are studies that show that increased corporate ownership concentration correlates with lower earning management, while others believe it has a positive effect because it presses managers to focus on earning management.

Usman and Yero (2012) investigate the concentrated ownership and earnings management methods of publicly traded enterprises in Nigeria. The conclusions indicated a significant relationship between concentrated ownership and earning management, which has a moderating effect on both. This link is confirmed by Grimaldi and Muserra (2017). Their findings show that earning management is adversely connected to concentrated ownership. This concentration decreases earnings management and significantly improves a firm's financial performance. In underdeveloped countries, concentrated ownership has a significant benefit because individual rights are vaguely defined and not protected by the legal system (Shleifer & Vishny, 1997). Other research has discovered that concentration ownership did not affect discretionary accruals (Choi et al., 2018).

Ownership of institutional investors in firms led to reduced earnings management and limited management actions according to the level of ownership. Elyasiani et al. (2017) found that institutional shareholders are considered more competent investors than non-institutional investors, who use current knowledge to forecast future income. This category of investors focuses on profits generated in the near term rather than a company's long-term interest.

Bearing on the above proposals, this study aims to determine the impact of financial performance on earning manipulation in a context characterized by an absence of transparency, poor-quality financial information and family structure ownership. Specifically, it aims to verify the link between performance and earnings management while taking into account the specific characteristics of firms (financial leverage, firm size and manager ownership).

2. DATA AND METHODS

2.1. Data

The data are collected from the Datastream database and cover the 2012–2021 period. Listed companies have the advantage of offering more information than unlisted ones. After eliminating outliers, the final sample consists of 30 non-financial companies. Total of 300 firm-year observations are retained.

Given the specificity of this research problem, a panel data approach is adopted, specifically multiple regression analysis.

To specify the appropriate estimation method, the study performs the Breusch-Pagan and Hausman tests. The results show the insignificance of the Hausman test (Chi2 = 12.60; P = 0.1815), which means an estimation with random effects (Chi2 = 17.11 with a probability of 0.00) is selected. However, before specifying the estimation method, the individual nature of data is checked using the Fisher test (Fisher's statistic (F) = 12.56 significant at the 1% threshold).

2.2. Methods

Referring to previous research, the selected variables are as follows:

- The dependent variable (earnings management) is measured in the literature by discretionary

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accruals (Kothari, 2005) (eq (3)). In particular, total accruals are modeled by eq (1):

Total accruals:

$$\frac{TAC_{i,t}}{TA_{i,t-1}} = \alpha_i \frac{1}{TA_{i,t-1}} + \\ + \beta_{1i} \frac{\Delta REV_{i,t} - \Delta REC_{i,t-1}}{TA_{i,t-1}} + \beta_{2i} \frac{PPE_{i,t}}{TA_{i,t-1}} + \\ + \beta_{3i} ROA_{i,t} + \varepsilon_{i,t}. \quad (1)$$

Non-discretionary accruals:

$$\frac{AND_{i,t}}{TA_{i,t-1}} = \alpha_i \frac{1}{TA_{i,t-1}} + \\ + \beta_{1i} \frac{\Delta REV_{i,t} - \Delta REC_{i,t-1}}{TA_{i,t-1}} + \beta_{2i} \frac{PPE_{i,t}}{TA_{i,t-1}} + \\ + \beta_{3i} ROA_{i,t}. \quad (2)$$

Discretionary accruals:

$$AD_{i,t} = TAC_{i,t} - AND_{i,t} = \varepsilon_{i,t}, \quad (3)$$

where $TAC_{i,t}$ – total accruals of firm *i* in year *t* (Note: Total accruals = net income – free cash flow). $AND_{i,t}$ are non-discretionary accruals of firm *i* at date *t*. $AD_{i,t}$ are discretionary accruals of firm *i* at date *t*. $TA_{i,t-1}$ is the total assets of firm *i* at date *t*-1. $\Delta REV_{i,t}$ is Change in turnover of firm *i* in year (*t*) and (*t*-1). $\Delta REC_{i,t}$ is the Change in turnover of firm *i* in year (*t*). PPE is Gross Fixed Assets. ROA is Return on Assets of firm *i* in year *t*. Finally, $\varepsilon_{i,t}$ is the Residual Period of firm *i* in year *t*.

The independent variables are (eq (4)):

- Financial performance (FP): Tobin's Q and Marris' ratio.
- Firm size (S) is measured by the natural logarithm of total assets.
- Financial leverage (LEV) is total debt divided by total assets.
- Managerial Ownership (MO) is the percentage of capital held by a manager.
- Asset structure (AS) is the ratio of net fixed assets to total assets.
- Activity risk (R) is measured by the standard deviation of return on assets (ROA).
- Growth rate (G) is the change in a firm's sales from one year to the next.
- Industry (D) is the sectoral classification of firms by activity. It is a dummy variable: If a firm operates in the "Telecommunications" sector, it takes 1. If a firm operates in the "Consumer services" sector, it takes 2. If a firm operates in the "Health" sector, it takes 3. If a firm operates in the "Consumer goods" sector, it takes 4. If a firm operates in the "Industries" sector, it takes 5. If a firm operates in the "Basic Materials" sector, it takes 6. Finally, if a firm operates in the "Oil and Gas" sector, it takes 7.

All these variables are grouped in the following model (eq (4)):

$$DA_{i,t} = \beta_0 + \beta_{1i} FP_{i,t} + \beta_{2i} S_{i,t} + \beta_{3i} G_{i,t} + \\ + \beta_{4i} LEV_{i,t} + \beta_{5i} MO_{i,t} + \beta_{6i} SA_{i,t} + \\ + \beta_{7i} R_{i,t} + \beta_{8i} D_{i,t} + \varepsilon_{i,t}, \quad (4)$$

where $DA_{i,t}$ are discretionary accruals of firm *i* at date *t*. $FP_{i,t}$ is the performance of firm *i* at date *t*. $S_{i,t}$ is the size of firm *i* at date *t*. $G_{i,t}$ is the growth rate of firm *i* at date *t*. $LEV_{i,t}$ is the leverage of firm *i* at date *t*. $MO_{i,t}$ is managerial ownership share of firm *i* at date *t*. $SA_{i,t}$ is the asset structure of firm *i* at date *t*. $R_{i,t}$ is the business risk of firm *i* at date *t*. $D_{i,t}$ is a dummy variable representing the sector of activity of firm *i* at date *t*. $\varepsilon_{i,t}$ is the error term. Finally, β_0 is the model's constant, and $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ and β_8 are the coefficients to be estimated from the model.

3. RESULTS AND DISCUSSION

Table 1 reports descriptive statistics for different variables. Tunisian firms have low financial performance as measured by Tobin's Q and Marris' ratio (the mean is 13% and 0.8%, respectively).

Earnings management has a positive mean of (3%) and a standard deviation of 14%, which proves

that this variable has a relatively high volatility. This also implies that there is no difference in accounting adjustment practices across the firms of the sample.

Table 1. Descriptive statistics

	Mean	Std. Error	[95% Conf. Interval]	
TAC	0.030	0.008	0.014	0.047
TA	1.33e–08	7.07e–10	1.19e–08	1.47e–08
PPE	0.737	0.027	0.684	0.790
AND	0.774	0.029	0.716	0.832
AD	– 0.752	0.031	– 0.812	– 0.691
VAR REV	0.035	0 .010	0.0155	0.056
VAR REC	0.008	0.003	0.001	0.015
Tobin's Q	0.008	0.112	–0.022	0.213
Marris' ratio	0.0135	0.006	0.001	0.025
S	18.651	0.0618	18.53	18.77
LEV	0.136	0.007	0.1201	0.152
SA	0.697	0.027	0.646	0.750
R	0.223	0.014	0.198	0.251
D	3.966	0.0926	3.785	4.149

Spearman's correlation (Table 2) between the variables shows that there is a significant positive relationship at the 1% and 5% thresholds. These results are consistent with those of Hamza (2012), Tang and Chang (2015) and Jiang et al. (2018) who found a strongly significant positive relationship between earnings management and firm performance. Similar findings are reported for growth rate (G), share of managerial ownership (MO), asset structure (SA), and activity sector (D).

Therefore, the results show that the Fisher test is significant (F=12,56 with a probability 0.000). The data have a panel structure. We specify the estimation with random effects (Hausman test is 12,60 with a probability 0.181).

Table 3. Model estimation with random effects

	Coef.	Std. Err.	z	P>|z|
Tobin's Q	0.00907**	0.00461	1.97	0.050
Marris' ratio	0.38646***	0.08419	4.59	0.000
S	0.01920	0.01201	1.60	0.110
G	–0.0326***	0.01163	–2.81	0.005
LEV	–0.17568**	0.07512	–2.34	0.019
MO	–0.06015	0.06717	–0.90	0.370
SA	–0.09601**	0.04525	–2.12	0.035
R	0.37199**	0.19073	1.95	0.051
D	–0.01032*	0.00560	–1.84	0.066
R-sq between		0.5366		
Wald chi2(10)		48.82***		
Prob > chi2		0.000		

Note: * Significant at the 10% threshold; ** significant at the 5% threshold; *** significant at the 1% threshold.

Table 3 shows the regression results, including the overall significance tests. The model is significant at the 1% level. Adjusted R^2 is 0.5366, which shows that the model has a significant explanatory power and good fit quality.

Table 2. Spearman correlation

	TAC	AND	AD	ROE	ROA	S	G	LEV	MO	SA	R	D
TAC	1											
AND	–0.115 0.046**	1										
AD	0.29 0.00***	–0.977 0.000***	1									
Q de Tobin	0.008 0.888	0.375 0.000***	0.065 0.026**	1								
Marris ratios	–0.021 0.714	0.634 0.000***	0.153 0.007***	0.64 0.000***	1							
S	0.041 0.473	–0.061 0.284	0.070 0.224	–0.003 0.9542	–0.080 0.167	1						
G	0.136 0.018**	0.254 0.000***	–0.213 0.00***	0.185 0.001***	0.190 0.000***	0.135 0.019**	1					
LEV	–0.326 0.000***	–0.070 0.224	0.0056 0.922	–0.264 0.000***	–0.499 0.000***	0.449 0.000***	0.129 0.024**	1				
MO	–0.085 0.142	0.356 0.000***	–0.358 0.000***	–0.027 0.006**	–0.168 0.0034***	0.209 0.000***	–0.007 0.898	0.279 0.000***	1			
SA	–0.182 0.001***	0.922 0.000***	–0.917 0.000***	–0.036 0.527	–0.091 0.112	–0.131 0.023**	–0.003 0.954	–0.120 0.037**	0.343 0.000***	1		
R	0.086 0.036**	–0.464 0.000***	0.454 0.000***	0.013 0.811	0.044 0.447	0.038 0.503	0.025 0.663	0.066 0.251	–0.093 0.105	–0.53 0.00***	1	
D	–0.001 0.981	0.147 0.010**	–0.121 0.035**	0.028 0.006***	0.170 0.003***	–0.038 0.502	0.076 0.187	–0.010 0.861	–0.170 0.003***	0.147 0.010**	–0.24 0.000***	1

Note: * Significant at the 1% threshold; ** significant at the 5% threshold; *** significant at the 10% threshold.

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The results show that the performance indicators have a positive coefficient, then the relationship between earnings management and performance is significant and positive at the 5% and 1% thresholds, which validates the hypothesis of this work. This finding corroborates those of Jiang et al. (2018), Pham (2022), Khraim (2022), and Garfatta et al. (2022). This positive relationship can be explained by the willingness to manage earnings to maintain the trust of the financial market. However, this finding contradicts those of Zang (2012), Goncalves et al. (2022), and Kothari et al. (2015).

These findings indicate that when a firm underperforms, it manages its earnings upward so that it reduces its costs and taxes and hides its poor performance. This implies that managers tend to manage their earnings upward to hide their poor performance using accounting methods.

Weak performance motivates the accounting choices of managers. Since the accounting results before any manipulation are less than certain objectives that managers wish to achieve (manipulation by thresholds). Among these objectives are the zero value and the result of the previous year, the forecasts of the analysts and managers' forecasts. Managers manipulate earnings to maximize their remuneration package. The latter wish to have a psychological result.

This is in line with Aldoghan et al. (2022) who concluded that "Poor performance may motivate accounting choices of corporate managers". Therefore, it can be said that when a company underperforms, it uses more accounting methods to manage their earnings in order to minimize political costs.

Size has no impact on total accruals (the relationship is not significant). This indicates that earnings manipulation in Tunisian firms is not sensitive to firm size. These results contradict previous studies that prove the effect of size on earnings management.

For the relationship between earnings management and financial level, there is a negative and a significant relationship between leverage and earnings management. This result is consistent with those of Bushee (1998), DeFond and Jiambalvo (1994), Ben Othman and Zeghal (2006), and Garfatta et al. (2022). Moreover, this finding indicates that Tunisian listed firms, which often look for bank credit financing, tend to disclose true earnings to meet the concerns of stakeholders, including creditors who focus on firm solvency and information transparency. Leverage limits real earnings management activities, which, in turn, could affect the quality of accounting earnings.

The relationship between managerial ownership and discretionary accruals is negative and not significant. This means that there is no relationship between shareholder concentration and earnings management, since most Tunisian firms are family owned. The majority presence of shareholder managers within the firms constitutes a guarantee of control of financial information, in the same way as quality auditors. This is consistent with the results of Saona et al. (2018) and Goncalves (2022).

Moreover, asset structure and sectoral affiliation decreases earnings manipulation (significance at the 5% and 10% thresholds, respectively), while the variable business risk encourages earnings management (positive and significant at the 5% threshold).

Generally, the findings show, on the one hand, that earnings manipulation in the Tunisian context is mainly explained by the following variables: Tobin's Q, Marris' ratio, leverage, asset structure, growth rate and business risk. On the other hand, the variable ownership structure has no effect on earnings management. Which means the primary objective of earnings management is investment and sustainability. They act on a company's level of diversification and performance.

The Tunisian economy is characterized by small and medium-sized firms, generally family-owned, and since there are few companies listed on the stock exchange, it operates closely with European companies (Hamza, 2012). Also, Tunisia's geographical proximity to Europe makes this country a privileged destination for foreign investors (Saidani & Su 2008). These characteristics lead managers to manipulate results for different purposes than those observed in other contexts.

These reasons are largely related to the financial market. The tools used to manage the results are not limited to modify on accounting tasks in accordance with the working rules and methods but extend to other complex financial tools: The assets sales, financing by leasing and intragroup transactions are the operations most used by Tunisian companies. In particular, Tunisian banks appear to be more real management oriented, following the problem of insufficient provisions reported by international parties. The relations linking a bank to its collection company constitute a field of manipulation. As well as banking specificities associated with earnings management instruments.

CONCLUSION

This study outlines various factors explaining earnings manipulation in a sample of 30 Tunisian non-financial companies listed on the stock exchange and observed during a period of ten years.

The results validate the presence of a strong relationship between earnings management and financial performance as measured by Tobin's Q and Marris' ratio. This implies that managers manage their earnings to convey a good picture of their firm's current financial situation, yet such a picture will fade in the future. Moreover, earnings management is associated with other variables such as financial leverage, asset structure, growth rate, and business risk. On the other hand, the variables of manager ownership and size have no effect on earnings management.

The results confirm and contradict previous research. Managers tend to use accounting methods to manage earnings and choose to hide poor performance. This means that managers with greater power over their business are more likely to entrench themselves and therefore more likely to influence the business in order to increase their private income.

Based on the findings, the contribution of this study can be summed up in the importance of financial performance and firm characteristics in explaining earnings management in a context known by a lack of credibility of financial information due to political change and geopolitical specificities.

This study has helped to clarify the reasons of earnings manipulation in a middle-income country. In particular, Tunisian firms operate in the context where the credibility of accounting and financial information is strongly questioned. Notably, transparency and quality of financial information continues to attract the attention of investors and regulators. The two combined are the source of success and innovation for businesses.

However, this study has limitations that open up avenues for future research. First, the focus of this study is only on Tunisian listed non-financial companies. However, it would be appropriate to study other listed and unlisted financial and non-financial firms. Second, the sample size is small. For the selected variables, it would be important to add governance variables, representing in particular board characteristics.

AUTHOR CONTRIBUTIONS

Conceptualization: Saliha Theiri.
Data curation: Saliha Theiri.
Formal analysis: Naziha Kasraoui, Nesrine Bouzaiene.
Funding acquisition: Naziha Kasraoui, Nesrine Bouzaiene.
Investigation: Saliha Theiri, Nesrine Bouzaiene.
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