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Ownership Structure, Media Visibility and Earnings Management: An Empirical Study in the Moroccan Context

Structure de propriété, visibilité médiatique et gestion des résultats comptables : une étude empirique dans le contexte marocain

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Abstract

The purpose of this paper is to shed light on the effect of ownership structure on earnings management practices in a unique setting: Morocco, where 1) ownership structure is characterized by the presence of a controlling shareholder (often a family), and 2) corporate governance standards and investors' legal system protection are poorly implemented. This study also extends previous research by investigating the moderating effect of media coverage on the relationship between ownership structure and earnings management.

Based on a panel of data from 38 Moroccan listed companies between 2010 and 2018, we use the fixed effect regression model, estimated with robust errors and clustered at the firm levels, to test our research hypotheses. Results show that firms with concentrated ownership are more likely to expropriate minority interests by managing earnings. The linear moderating effect of the number of media items covered about the company on the association between capital concentration, family control and earnings management is not significant. However, we find that media exposure has a significant inverted-U shape moderating effect on the relationship between family control and earnings management.

Keywords: Earnings management; media coverage; ownership concentration; family control; corporate governance.

Résumé

L'objectif de cet article est d'examiner l'effet de la structure de propriété sur les pratiques de gestion des résultats comptables dans un contexte unique : Le Maroc, où (1) la structure de propriété est caractérisée par la présence d'un actionnaire contrôlant (souvent une famille), et (2) les standards de gouvernance d'entreprise ainsi que le système juridique de protection des investisseurs sont peu mis en œuvre. Notre étude prolonge également les recherches antérieures en étudiant l'effet modérateur de la couverture médiatique sur la relation entre la structure de propriété et la gestion des résultats.

Sur la base d'un échantillon de 38 entreprises marocaines cotées à la bourse de Casablanca de 2010 à 2018, nous utilisons le modèle de régression à effets fixes, estimé avec des erreurs robustes et « clusterisé » au niveau des entreprises. Les résultats montrent que les entreprises à propriété concentrée sont plus susceptibles d'exproprier les intérêts minoritaires en gérant leurs résultats. L'effet modérateur linéaire de la couverture médiatique sur l'association entre la concentration du capital, le contrôle familial et la gestion des résultats n'est pas significatif. Cependant, nous démontrons que la couverture médiatique a un effet modérateur significatif en forme de U-inversé sur la relation contrôle familial-gestion des résultats comptables.

Mots clés : Gestion des résultats ; couverture médiatique ; concentration du capital ; contrôle familial ; gouvernance d'entreprise.

Introduction

It could be argued that one of the main information sources that investors, and other stakeholders rely on for assessing the overall entity's economic performance and subsequently, take decisions is financial statements, in particular, income.

Accounting earnings (or income) is a performance indicator that summarizes all operations conducted by the firm and is, therefore, a key measure for capital markets (Graham et al., 2005). In this regard, financial statements need to be of high quality in order to assure credibility, assurance and informativeness of accounting information.

However, the reported accounting income cannot always be a good criterion for assessment models and investment decision-making, since earnings can be subject to manipulation by managers that allegedly try to obscure unpleasant reality in their accounting reports. In fact, giving their strategic position, managers can make discretionary accounting choices that can take the shape of 'earnings management' (EM), within the limits allowed by the Accounting Standards, to produce information that meets the capital market expectations and/or maximize their compensations that are frequently tied to their firms' profits (Dechow & Skinner, 2000).

The topic of EM has attracted a growing attention since the corporate meltdowns in the wake of the financial scandals of large companies like Enron, WorldCom, Adelphia, and Tyco in the early 2000s. These incidences shook the faith of investors in financial statements as an objective representation of the firm's economic performance. Hence, in order to enhance the quality of financial reporting and investors' confidence in the integrity of capital markets, various reforms to promote better corporate governance have been undertaken by both developed and developing countries across the world. For instance, Morocco introduced the Moroccan code of corporate governance in 2008, outlining the principles and the best practices for corporate governance.

Interestingly, the academic literature agrees that effective corporate governance is required to reduce the opportunistic behaviour of controlling shareholders and/or managers to manage earnings and would lead to the improvement in financial reporting quality (Klein, 2002). Ownership structure is one of the most important corporate governance characteristics of listed companies (Hasan & Butt, 2009). Therefore, an investigation on the effect of ownership structure, as a corporate governance mechanism, is required.

Although numerous studies have explored the effect of corporate ownership structure on EM practices in both developed and developing countries (Wang, 2006; Ebrahim, 2007; Jaggie et al., 2009; Hope et al., 2012; Alzoubi, 2016; San Martin, 2018, for a review), the evidence on this topic in the Moroccan context has been scarce. Also, we believe that the governance–EM should be examined along with institutional factors such as media visibility. Indeed, media, as an information intermediary, plays a role in reducing informational asymmetries between outside stakeholders and dominant owners (Bushee et al., 2010; Drake et al., 2014), and, consequently, affect earnings quality. We further argue that, in high media coverage companies, dominant owner /controlling shareholders may engage in less opportunistic EM to preserve their reputation and good image in the society. Hence, media coverage is deemed to be an important external monitoring feature that is likely to moderate the relation between ownership structure and EM.

With that being stated, the aim of this study is to answer the following research inquiries: **Does ownership structure reduce earnings manipulation practices? And to what extent and in what direction the association between ownership structure and earnings management evolves when media visibility is introduced as a moderator variable?**

In order to answer the aforementioned research questions, we develop a sample of 38 companies listed on the Casablanca Stock Exchange during the period spanning from 2010 to 2018 (a total of 342 firm-year). Sample selection was performed with a purposive sampling approach using certain criteria, namely: the company has complete research data; the company was not delisted during the observation period; In addition, we use panel data regression to prove our hypotheses to test research hypotheses.

This study adds to the literature of EM twofold. First, we examine the relationship between ownership structure and EM in a different institutional setting: Morocco. Indeed, the Moroccan context provides an excellent laboratory-style to address this topic. Moroccan listed firms operate in an environment where ownership concentration and family control are well documented. According to the World Bank's study (2010) on corporate governance in Morocco, ownership structure of most Moroccan companies remains concentrated; the three largest shareholders control an average of 75% of the shares. Moreover, unlike common law countries such as the United States or the United Kingdom, corporate governance standards and investors' legal system protection are poorly implemented in developing countries such as

Morocco, making controlling shareholders more likely to engage in self-dealing behaviour. This adds a potentially interesting dimension to the relationship between ownership structure and EM.

Second, this empirical study extends the existing literature by investigating the moderating effect of media coverage on the relation between ownership structure and EM. In this regard, few studies analysed the effects of media coverage on the extent of earnings management practices, but none of them has tested it as moderating variable on this relationship, specifically in the Moroccan context.

The rest of this paper is structured as follows. Section one provides the literature review and hypotheses development, Section Two outlines the research design and sample construction, Section Three includes the results and discussion while the last section provides a conclusion of the study.

1. Literature review and hypothesis development

1.1. Ownership concentration and earnings management

Ownership concentration is the most common feature of ownership structure in capital markets worldwide, as documented by La Porta et al. (1999), Claessens et al. (2000), and Faccio & Lang (2002). In this context, agency problems between controlling shareholders and minority shareholders, where the former may pursue their interests at the expense of the latter (Shleifer & Vishny, 1997), are more crucial than those between managers and shareholders.

The literature on the impact of ownership concentration is divided into two divergent theoretical underpinnings- convergence of interest (also known as the “alignment effect”) and management entrenchment hypotheses. The former states that the presence of a controlling shareholder (i.e. who have a large percentage of voting shares) acts as a good governance mechanism and has the incentives and ability to monitor the managers (Demsetz & Lehn, 1985; Shleifer & Vishny, 1986). The opposing view, which is the entrenchment effect, is based on the argument that management entrenchment is more likely to occur when controlling shareholders’ ownership interest increases (Morck et al., 1988). Indeed, when the controlling shareholders hold an excessively large percentage of shares, they become actively involved in management/boardroom and, thus, are in a position to divert the company's strategy and generate private benefits at the expense of minority shareholders (Morck et al., 1988). Accordingly, EM becomes a likelihood consequence of ownership concentration.

Although a host of empirical studies have tested the relationship between ownership concentration and EM, these studies offer mixed and inconclusive results. For example, the degree of ownership concentration is negatively associated with the likelihood of managing earnings in the Spanish context, as shown by Saona et al. (2019). More recently, utilizing data from three South Asian emerging economies (Bangladesh, India, and Pakistan), Akter et al. (2024) discovered that firms exhibiting higher ownership concentration and managerial ownership significantly reduce occurrences of real earnings management. In contrast, some previous studies have found a significantly positive relationship between concentrated ownership and EM (e.g., Al- Rassas & Kamardin, 2016; Gavious et al., 2012; Kim & Yoon, 2008; Nguyen et al., 2021; Zhong et al., 2007); supporting the argument that management entrenchment is more likely to occur when controlling shareholders' ownership interest increases. Meanwhile, other studies have found no relationship (Abdelkarim & Zuriqi, 2020; Hassan et al., 2022).

Thus, the study of the link between ownership concentration and EM appears complex and leads to non-convergent conclusions. Indeed, many factors such as the proxies of ownership concentration variable, and the context of the study influence the results obtained by previous studies. Opposed to developed countries, the ownership structure in Morocco is highly concentrated. Moreover, Morocco is characterized by less transparent financial reporting, weak corporate governance system and minority shareholders' rights protection. So, in this particular context, EM may be used by controlling shareholders to maximize their private benefits. Thus, we suggest the following hypothesis:

H1: Ceteris paribus, ownership concentration is positively associated with EM.

1.2. Family control and earnings management

Family control is the most common feature of ownership structure in capital markets worldwide (La Porta et al., 1999). Wang et al. (2007) point out that family firms represent about three quarters of the world's corporations and contribute to half of the economic activity and private investments.

In the literature, there are two conflicting viewpoints that might explain the impact of family control on EM. On the one hand, EM is expected to be lower in family-controlled firms because such firms are endowed with unique features that prevent managers from acting opportunistically at the expense of family shareholders. For instance, family shareholders, who are members of the firm by either blood or marriage, tend to hold portfolios with concentrated and undiversified stock holdings (Ali et al., 2007), which give them a strong incentive to monitor managers' actions effectively. Moreover, family-owned firms are more likely to favour a longer investment horizon because the main intention is to pass on the firm to the next generations (Wang, 2006), which makes managers less pressured to meet short-term earnings forecasts, leading to lower incentives to manage earnings (Jaggi et al. 2009). On the other hand, with regard to the agency problem II, the controlling family may have both the incentive and the ability to extract private profits at the expense of minority shareholders. Family control would therefore be associated with a high earnings management level.

Prior empirical studies provide mixed and inconclusive results about the impact of family control on EM practices. Indeed, while some studies provide evidence that family-controlled firms are more likely to have better financial reporting quality (Achleitner et al., 2014; Ali et al., 2007; Cascino et al., 2010; Jiraporn & Dadalt, 2009; Prencipe & Bar-Yosef, 2011; Wang, 2006), others reveal that family control is related to high level of earnings management, which negatively affects the quality of financial statements (Chi et al., 2015; Lisoba, 2016; Murni et al., 2023; The et al., 2017).

Unlike common law countries such as the United States or the United Kingdom, in Morocco, corporate governance standards and legal system protection of investors' rights are poorly implemented, allowing the family to engage in EM practices, either to maximize their own wealth, or to meet debt covenants and investors' expectations. Therefore, the entrenchment hypothesis may be more relevant to explain Moroccan firms. This leads to the following hypothesis:

H2: Ceteris paribus, the family control is positively associated with EM.

1.3. The moderating effect of media visibility

In this study, we add to the debate on the media's role in the capital market by examining whether media attention has a moderating effect on the relationship between ownership structure and EM. Indeed, media plays an increasingly important role in the capital market. According to the agency theory, media can reduce information asymmetry between insiders and external constituents (Bushee et al., 2010). As a channel through which information is disseminated to investors, media can either positively or negatively shape the information that investors have about a company. It does not only lead investors to form an opinion about the performance of the company and those who control the decision-making process, but it also allows them to assess the reliability and the quality of the information available about the company.

Media can play a relevant corporate governance mechanism. In this regard, several empirical studies have found evidence that the media monitors many aspects of firms' corporate governance structure, such as insider trading (Dai et al., 2015), financial fraud (Miller, 2006), and mergers and acquisitions (Liu & McConnell, 2013). Carroll & McCombs (2003) argue that media visibility can influence the public image of firms. So, a high media coverage puts the company in the public spotlight, which increases the risk of revealing any earnings manipulation behaviour. Correspondingly, it can be expected that, in order to maintain a good corporate image and reputation, dominant owners and controlling shareholders will have more incentives to provide accurate and credible information. However, as argued by Dai et al. (2021), media coverage may impose short-term performance pressure on managers, leading them to forgo long-term strategies and innovation projects (Dai et al., 2021). So, in order to achieve short-term earnings goals, particularly when the firm media coverage is high, controlling shareholders/managers are more likely to manage earnings.

Empirical findings that support the media's monitoring role in financial reporting practices remain fairly limited. Chahine et al. (2015) and Qi et al. (2014) report a positive relationship between media coverage and the quality of accounting information in the US and the Chinese context, respectively. Using a large sample of US listed firms between 2000 to 2016, Chen et al. (2021) found that extensive media coverage is inversely correlated with both accrual-based and real earnings management (EM). This finding underscores the significance of media coverage as a crucial external monitoring mechanism on firm financial reporting. Meanwhile, Cahan et al. (2020) find no evidence that the media has a direct corporate governance effect on financial reporting quality. However, the authors found a positive association between media coverage and financial reporting quality that is mediated by audit fees. These findings show that auditors care about their clients' overall media coverage because this latter can magnify the auditor's business risk. More recently, Cedergren et al. (2023) investigate whether media attention compels managers to align with market expectations. Utilizing a comprehensive dataset of media coverage on U.S. public firms, the authors note that instead of deterring, media attention drives managers to manipulate reported earnings, with the goal of reducing management forecast errors.

Based on the discussion above, we expect that, in order to avoid negative media reports that may damage the firm' reputation, controlling shareholders in firms that are in the media spotlight, i.e., with an increasing number of media reports, may have strong incentives to enhance the transparency of their financial statements, and thereby may engage in less opportunistic EM attempts that are brought about by media coverage. The following hypotheses are thus formulated:

H3: Media coverage has a "U" type of moderating effect in the impact of ownership concentration on earnings management.

H4: Media coverage has a "U" type of moderating effect in the impact of family control on earnings management.

2. Research methodology

2.1. Sample selection and data collection procedures

The initial sample includes all publicly listed Moroccan firms in the Casablanca Stock Exchange for the period 2010-2018. Out of 75 listed companies, the financial, real estate and public institutions were excluded because of their unique financial structures, their specificities in terms of governance, accounting rules and presentation of financial statements (which would not be comparable with the other companies in the sample). Further, observations missing financial or ownership data are also discarded from the sample. Therefore, we end up with a sample of 38 companies for which we have nine years of observation (a total of 342 firm-year). The dataset related to corporate governance and ownership variables are hand-collected from companies' annual reports published on the official web site of Casablanca Stock Exchange (www.casablanca-bourse.com) and/or the companies' institutional websites. As for the financial data, it was extracted from companies' financial statements published on the official web site of Moroccan Capital Market Authority (www.ammc.ma) and/or the companies' institutional websites.

2.2. Measurement of the dependent variable

Numerous EM models have been developed in the literature. In this study, we focus only on discretionary accruals (DACC) as a proxy for EM, since cash flow-based earnings management is more difficult to detect. So, we measure DAAC using the performance-adjusted current discretionary accruals (PACDA) model suggested by Kothari et al. (2005).

The advantage of Kothari et al. (2005) model is taking into account the impact of the firm performance (ROA), which enhances the reliability of inferences from EM.

The Kothari model consists of regressing total accruals (TACC) on three variables: the change in revenues (ΔREV) is adjusted for the change in receivables (ΔREC), the level of property, plant and equipment (PPE), included to control the non-discretionary component of depreciation and amortization expense, and the return on assets (ROA). Both variables and the intercept are divided by lagged total assets in order to avoid heteroskedasticity problems. Non-discretionary accruals (NDACC) are the predictions from the ordinary least squares (OLS) estimation of model (1), while discretionary accruals (DACC) are the residuals. We use the absolute value of discretionary accruals (ABSDAC) for our principal regression models (2, 3). The model used is therefore:

$$\frac{TAAC_{it}}{TA_{it-1}} = \alpha_1\left(\frac{1}{TA_{it-1}}\right) + \alpha_2\left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}}\right) + \alpha_3\left(\frac{PPE}{TA_{it-1}}\right) + \alpha_4\,(ROA_{it-1}) + \varepsilon_{it} \qquad (1)$$

Where, TACC = total accruals in year t, calculated as the difference between net income and operating cash flows. TA = total assets at the beginning of year t; ΔREV = change in revenues; ΔREC = change in accounts receivable; PPE = gross property, plant and equipment; ROA= return on assets; i, t = firm and year index.

2.3. Measurement of the independent variables

The independent variables are ownership concentration and family control. Ownership concentration (HERFIN) is measured using the Herfindahl Index. It is the sum of the squares of the percentages of shares held by the top three shareholders. All companies are required to disclose the percentage of shares exceeding the 5% threshold. Some companies report a lower percentage due to their statutory obligations. Family control (FAM) is a dummy variable that takes the value of 1 when the company is controlled by an individual or a family as well as a direct involvement in the management and/or in the board of directors and 0 otherwise.

2.4. Measurement of media visibility and control variables

Consistent with previous studies, we measure media visibility or coverage (MEDIA) as the total number of news items about a particular company in a given fiscal year (Du et al., 2016; Garcia-Sanchez et al., 2014; Zaman et al., 2018). We considered news items that offer information about Moroccan listed companies, excluding news items that do not contain any informative content such as dividend payment announcements or quotations listings.

With reference to variable setting methods applied by previous researchers (e.g. Du et al., 2016; Garcia-Sanchez et al., 2014; Zaman et al., 2018), this paper obtains the number of news reports by using the Google's search engine. So, in order to collect the number of news items, we type in the Google search engine (www.google.com.ma) the name of each company with quotation marks. We then selected the Google tool option "News", which identifies all types of news about the searched company (newspapers and other media channels). Using advanced search tools, we later filtered the results for each year (from 2010 to 2018) and proceed in counting the total number of news items about each company in a particular year. For firm-years with no news items, we set the value of MEDIA to zero.

As argued in previous studies (Du et al., 2016; Garcia-Sanchez et al., 2014; Zaman et al., 2018), this proxy of media coverage has the advantage of allowing to cover all kind of newspapers (traditional, electronic, national, international and local) as well as specialized and non-specialized economic press.

The association between ownership structure and EM is influenced by other relevant variables that should be controlled. The use of control variables is based on the agency theory and the EM previous studies. Thus, 4 control variables related to corporate governance (board size, board independence, board meeting, CEO duality, and audit quality) and 3 firm's financial characteristics (firm size, return on assets (ROA), leverage) are introduced in our regression. Table 1 summarizes the variables used in our model and their measurement.

Table N°1: Definition and measurement of variables

Variable name	Abbreviation	Measure
Discretionary accruals	ABSDAC	The absolute value of discretionary accruals using Kothari model.
Ownership concentration	HERFIN	The Herfindahl Index: the sum of the squares of the percentage of shares held by the top three shareholders.
Family control	FAM	A dummy variable that takes the value of 1 when the company is controlled by an individual or a family as well as a direct involvement in the management and/or in the board of directors; 0 otherwise.
Media coverage	MEDIA	The total number of news items covered about a particular company in a given fiscal year.
Board size	BSIZE	Total number of directors on board
Board independence	BIND	Ratio of number of non-executive independent directors to total number of board directors
Board meeting	BMEET	The number of annual board meetings
Duality	CEO	A dummy variable coded 1 when the board chairman and CEO

		positions are held by one individual, and 0 otherwise.
Firm size	FSIZE	Logarithm of total assets
Leverage	LEV	Total liabilities divided by total assets
Big4	BIG4	A dummy variable coded 1 if the firm is audited by at least one of the big 4, and 0 otherwise.
Operating performance	ROA	Net income divided by total assets

Source: author

2.5. Empirical model

Firstly, based on hypotheses H1 and H2, to investigate how ownership concentration and family control are associated with earnings management, we estimated the model as follows:

$$\mathbf{ABSDAC_{it}} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}\mathbf{HERFIN_{it}} + \boldsymbol{\beta_2}\mathbf{FAM_{it}} + \boldsymbol{\beta_i}\sum \mathbf{Controls_{it}} + \boldsymbol{\varepsilon_{it}} \quad (1)$$

Secondly, based on hypotheses H3 et H4, to explore the moderating effect of media reports, we derived the following models. Model (2) is used to test the linear moderating effect of media coverage on ownership structure-earnings management link; model (3) is used to test the “U-shaped" moderating effect of media visibility.

$$\mathbf{ABSDAC_{it}} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}\mathbf{HERFIN_{it}} + \boldsymbol{\beta_2}\mathbf{FAM_{it}} + \boldsymbol{\beta_3}\mathbf{MEDIA_{it}} + \boldsymbol{\beta_4}(\mathbf{HERFIN_{it}} * \mathbf{MEDIA_{it}}) + \boldsymbol{\beta_5}(\mathbf{FAM_{it}} * \mathbf{MEDIA_{it}}) + \boldsymbol{\beta_i}\sum \mathbf{Controls_{it}} + \boldsymbol{\varepsilon_{it}} \quad (2)$$

$$\mathbf{ABSDAC_{it}} = \boldsymbol{\beta_0} + \boldsymbol{\beta_1}\mathbf{HERFIN_{it}} + \boldsymbol{\beta_2}\mathbf{FAM_{it}} + \boldsymbol{\beta_3}\mathbf{MEDIA_{it}} + \boldsymbol{\beta_4}(\mathbf{HERFIN_{it}} * \mathbf{MEDIA_{it}}) + \boldsymbol{\beta_5}(\mathbf{HERFIN_{it}} * \mathbf{MEDIA^2{}_{it}}) + \boldsymbol{\beta_6}(\mathbf{FAM_{it}} * \mathbf{MEDIA_{it}}) + \boldsymbol{\beta_7}(\mathbf{FAM_{it}} * \mathbf{MEDIA^2{}_{it}}) + \boldsymbol{\beta_i}\sum \mathbf{Controls_{it}} + \boldsymbol{\varepsilon_{it}} \quad (3)$$

3. Results and discussion

3.1. Descriptive statistics

Table 2 presents the summary statistics of the variables used in our regression analysis. The mean of absolute values of discretionary accruals (ABSDAC) is equal to 7% of assets. However, the firms' behaviour in terms of earnings management is heterogeneous, as this variable has a high standard deviation (SD=5.7%). Regarding ownership concentration, Herfindahl Index displays an average value of 0.48, showcasing that the overall level of capital concentration in Moroccan listed firms is high. Furthermore, Table 2 shows that 60.96% of the companies in our sample are controlled by a family. The mean value of media coverage is 6.70 and the median value is 4.25. With respect to the control variables, Table 2 shows that, on average, boards are composed of 7 directors, and 31% of them are independent. This proportion remains largely below the threshold recommended by the best governance practice reports, which is around 50%. The boards of directors meet on average 4 times per year, about one meeting every three months. With regard to the board structure, our statistics suggest that 58.33% of the CEOs are also chairs of the board. The average firm size, as measured by the logarithm of the total assets, is 22.56. The average level of corporate debt is 41%. The operating performance as measured by the ROA indicator shows a low average of 8%. Finally, we observe that, on average, 57.89% of the Moroccan listed companies in our sample are audited by at least one of the "Big four".

Before conducting multivariate analysis, we carried out a correlation analysis in order to assess issues of multicollinearity among the variables and that could affect our regression models. The pairwise correlation matrix (cf. Appendix A1) indicates that that the absolute value of discretionary accruals (ABSDAC) is significantly negatively correlated with MEDIA, BSIZE, BIND and BIG4. These results suggest that EM is lower when firms receive higher media attention, boards are larger and comprise a high proportion of independent directors, and firms are audited by at least one Big 4. In addition, we note that the correlation coefficients between the independent and control variables are all below 0.5 with the highest being 0.423. Also, the variance inflation factor (VIFs) does not exceed the thorough limit of 3, which indicate the absence of substantial multicollinearity problems in our multivariate analysis.

Table N°2: Descriptive statistics

	Mean	**SD**	**Min**	**Max**	**p50**
Numeric variables' descriptive statistic					
ABSDAC	0.07	0.08	0.00	0.39	0.05
HERFIN	0.48	0.22	0.10	0.98	0.36
MEDIA	6.70	4.78	0.00	38.00	4.25
BSIZE	7.16	2.65	4.00	15.00	7.00
BMEET	3.76	1.56	2.00	8.00	4.00
BIND	0.31	0.18	0.00	0.75	0.37
LEV	0.41	0.18	0.06	0.91	0.38
ROA	0.08	0.06	-0.23	0.38	0.09
FSIZE	22.56	1.45	18.24	27.46	21.19
Dichotomous variables'		0		1	

descriptive statistic		
FAM	39.04%	60,96%
CEO	41.67%	58.33%
BIG4	42.11%	57.89%
Note: This table presents summary statistics of the dependent, independent and control variables for the period of 2010-2018		

Source: author

3.2. Regression results and discussion

In this study, we examine the impact of ownership structure on EM and the moderating effect of media visibility. Our regression analysis consisted of two steps. First, the unmoderated regression was estimated with only two predictor variables (capital concentration and family control). Second, the moderated relationship was estimated by adding the product term (MEDIA).

Dealing with panel data, the first step consists of detecting the presence of possible specific effects through the F-test. The null hypothesis of the F-test is that the observed and unobserved fixed effects (ui) are equal to zero, i.e., no individual effects. According to the results of our F-test, the null hypothesis for our two models is rejected. Namely, there is a significant difference among the Moroccan listed companies, i.e., the presence of the panel effect. The second step consists of determining the nature of these specific effects using the Hausman test. The p-value of the test is less than 5% (Prob>chi2 = 0.0000), which allows us to reject the null hypothesis (H_0: the preferred model is random effects) suggesting that the fixed effects model is the most appropriate for our regression models. Finally, the Breusch-Pagan and Wooldridge tests were carried out to detect the presence of heteroskedasticity (the variance of the errors of each individual is not constant $\sigma^2_i \neq \sigma^2 it$) and for serial correlation problems in our data. The results of the said tests confirm the presence of heteroskedasticity and serial correlation in our regression models. Hence, to address ex-ante these issues, we applied the generalized least squares estimator by fitting the variance-covariance matrix of errors. The STATA15 software package is used during the analysis.

Table 3 displays the fixed effects panel regression results of our three models. In the first model (model 1), we only estimated the main effects. In the second and third models, we added the linear and quadratic interaction terms of MEDIA, respectively. The regression results of Model 1 show that HERFIN coefficient is significant (1%) and in line with the expected sign (+), supporting the entrenchment effect hypothesis and suggesting that controlling shareholders are more likely to manage their firms' earnings in order to extract private benefits at the expense of minority shareholders. Accordingly, H1 is supported. Table 3 also reveals that family ownership (FAM) has a significant negative effect (at the 5% level) on earnings management as measured by the absolute value of discretionary accruals. Our hypothesis H2 is thus not supported. This evidence is, however, in line with the stream of empirical studies that has demonstrated the positive effect of family control on earnings quality (e.g. Ali et al., 2007; Cascino et al., 2010; Jirapon & Datalt, 2009; Prencipe & Bar-Yosef, 2011; Wang, 2006). Indeed, due to the weak separation between ownership and control in family-controlled firms, they encounter less severe agency problems, which leads to less incentive to "manage" financial information for opportunistic reasons and thus to better financial statements quality (Cascino et al., 2010; Jiraporn & DaDalt, 2009; Wang, 2006). Moreover, due to the long-term perspective that characterizes family firms, managers face less pressure to meet short-term earnings expectations especially if the firm's control is not contested by the family, as this latter is generally concerned about passing down its heritage to future generations (Cascino et al., 2010).

Meanwhile, we examine the linear moderating effect of media coverage. Model (2) shows that media coverage has a significant negative (at the level 5%) impact on EM, suggesting that firms with high media coverage engage in less accrual-based earnings management, compared to firms with low media coverage. With respect to the linear moderating effect of media coverage, the interaction terms HERFIN*MEDIA and FAM*MEDIA are not significant. These findings show that the linear moderating effect of media coverage is not obvious. The significant quadratic interaction term FAM*MEDIA² in Model 3 confirms that MEDIA moderate the relationship between family control and earnings management in a nonlinear way. The negative sign indicates that the moderating effect has an inverted U-shape (β=-0.0479, t=3.66). Adding this quadratic interaction term significantly increases R^2. Putting the findings together, our study confirms our hypothesis of an inverted U-shaped moderating effect of media coverage in family control-EM relationship. Accordingly, our Hypothesis 4 is supported. Increasing media reports strengthens the link between family control and earnings management to a maximum point ($MEDIA_{max}$=9.72). Beyond this point, increasing media reports weakens the relationship.

In respect to control variables, our results highlight a significant positive relationship between board independence and EM. Although our result is not in line with many studies that have proven the positive effect of director independence on earnings quality (e.g., Bravo &

Reguera-Alvarado, 2017; Chen et al., 2015; Jaggi et al., 2009; Khalil & Ozkan, 2016), it is entirely consistent with the growing doubts about the reality of board independence, and even about the insufficiency of this criterion alone to guarantee the quality of accounting and financial information. Indeed, the independence of some directors may only be formal and have no significant effect because of the implicit relationships between directors and management.

On another note, our results confirm a significant positive relationship between the number of board meetings and EM, suggesting that more frequent meetings would be an opportunity to build relationships that are detrimental to other stakeholders rather than improving the quality of the board's performance. Consistent with the predictions of agency theory, we find a significant positive relationship between CEO duality and the absolute value of discretionary accruals. Therefore, we can infer that the implementation of a control structure that dissociates the functions of management and chairmanship of the board seems to be more efficient, otherwise the reliability of the accounting information is compromised. We also observe a negative impact of leverage on EM as measured by the absolute value of discretionary accruals. This suggests that when highly restrictive covenants are applied, there is less room for opportunistic managerial behaviour, which has a negative impact on discretionary accruals. Our results highlight that audit quality (BIG4) has a significant negative effect on EM, suggesting that firms audited by a Big4 firm (Price Waterhouse Coopers, KPMG, Ernest & Young and Deloitte) are less likely to manage their earnings. A possible explanation is that Big 4 audit firms have more capital, technology, human resources, and experience that enable them to offer higher audit quality than other audit firms. Finally, our results indicate that large firms are more likely to manage their earnings, thus validating the political cost hypothesis (Watts & Zimmerman, 1986).

Table N°3: Regression analysis

	Model 1	Model 2	Model 3
HERFIN	0.067***	-0.058**	-0.045**
	(2.78)	(-2.12)	(-2.09)
FAM	-0.042**	-0.037**	0.028**
	(-2.32)	(-2.26)	(2.02)
MEDIA		-0.0247**	-0.00835
		(-2.15)	(-1.11)
HERFIN*MEDIA		0.00411	-0.0012
		(1.59)	(-1.23)
HERFIN*MEDIA²			-0.0387
			(-1.46)
FAM*MEDIA		-0.0033	0.0175**
		(-1.52)	(2.15)
FAM*MEDIA²			-0.0479***
			(-3.66)
BSIZE	-0.000332	-0.000188	0.000153
	(-0.71)	(-0.52)	(0.41)
BIND	0.0146**	0.0151*	0.0139*
	(2.08)	(1.92)	(1.86)
BMEET	0.0416**	0.0192**	0.0161*
	(2.19)	(2.07)	(1.93)
CEO	0.0338***	0.0120**	0.0107*
	(2.79)	(2.14)	(2.02)
BIG4	-0.0611***	-0.0188*	-0.00692
	(-2.95)	(-2.16)	(-1.12)
LEV	-0.0190**	-0.0183*	-0.0179*
	(-2.17)	(-1.98)	(-1.95)
ROA	-0.0257	-0.0276	-0.0187
	(-1.35)	(-1.46)	(-1.10)
FSIZE	0.0126**	0.0112*	0.0106*
	(2.20)	(1.92)	(1.83)
CONS	-0.316**	-0.282**	-0.267**
	(-2.51)	(-2.24)	(-2.10)
N	342	342	342
R^2	53.6%	55.0%	58.3%
Note: The value in the brackets is T-value; *, **, * indicate significance at the level of 1%, 5% and 10%.**			

Source: author, STATA15

Conclusion

This paper explored the impact of ownership structure on earnings management practices. Additionally, it examined whether media attention influences the ownership structure-EM relationship. Several informative findings are identified. First, highly concentrated capital is positively associated with EM. This suggests that controlling shareholders are likely to manage the reported earnings; thus, the quality of reported earnings of firms with concentrated capital is expected to be low. Second, our results provide evidence that family-controlled firms are less likely to manage earnings.

With respect to the moderating role of media coverage, our results show that EM is negatively and significantly associated with media coverage. This result is in line with the agency theory, which states that media can act as an effective monitoring mechanism. Indeed, firms that are more in the spotlight are often in the eyes of regulators and stakeholders. Thus, those firms need to be more transparent in their actions to avoid any regulatory or monitoring costs. Second, the linear moderating effect of the media coverage on capital concentration, family control and the level of EM is not significant. Conversely, we find evidence of Inverted-U shape type of moderating effect of media visibility on the relationship between family control and EM. These findings highlight that the more the number of the media items about family-controlled firms is, the more the negative effect of family control on EM will be.

The findings of our study have several positive and valuable implications. Firstly, regarding the theoretical implications, our findings provide more deep theoretical understanding of the relationships between ownership structure and earnings management. It also contributes to the literature by providing new empirical evidence to the continuing debate about the role of the media in the capital market from the perspective of earnings management. Secondly, the conclusion of the research is of great practical importance for regulators and policymakers. In fact, our research findings reveal that highly concentrated capital is related to earnings management practices. Thus, Moroccan regulations bodies and Securities Commission should address restrictions on majority shareholders to safeguard minority shareholders' interests and adapt corporate governance patterns to the institution's operational context. Meanwhile, regulators and policymakers need to consider leveraging the role of media as an external monitoring mechanism by implementing disclosure requirements that promote accountability and greater transparency in financial reporting.

Like most studies, ours is also subject to some limitations. First, the validity of our findings depends upon discretionary accruals as proper proxy for EM. It would probably be useful to use other models, or even other indicators of earnings management, to give more validity to the results found. Secondly, with regard to the limitations related to the characteristics of the sample and the scope of our empirical study, we point out that the sample size remains limited. This is a limitation that we could not overcome given the small size of the Moroccan stock market. Third, this paper only focuses on listed companies. The latter, which are more closely scrutinized by the media and investors, may not behave in the same way as the other firms. Future researches can further examine the type II agency problem by increasing the sample scale and taking heterogeneity using a broader sample of unlisted companies characterized by a strong presence of families and a more significant concentration of capital. Finally, in order to enrich the research on corporate governance mechanism involving media supervision, future research can further analyse whether the media's reporting tone (positive/negative) affects the relationship between ownership structure and EM.

APPENDIX

Appendix A1- Correlation analysis of variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	VIF
ABSDAC	1												2.29
HERFIN	0.278***	1											1.71
FAM	0.00844	0.0426	1										2.15
MEDIA	-0.228***	-0.0289	0.159**	1									2.76
BSIZE	-0.258***	-0.212***	0.0955	0.273***	1								1.72
BIND	-0.151**	-0.277***	0.0923	0.0873	0.186***	1							2.23
BMEET	0.289***	-0.144**	0.0982	0.134**	0.116**	0.196***	1						2.55
CEO	0.0337	-0.0492	-0.249***	-0.133**	-0.0626	-0.0941	-0.123*	1					2.11
BIG4	-0.423***	0.139**	0.0232	0.186***	0.434***	0.153**	0.384***	0.00895	1				1.57
LEV	0.0140	-0.162**	-0.00691	0.151**	-0.0735	0.0714	-0.0671	-0.0412	-0.120*	1			1.32
ROA	0.0152	0.0222	-0.0253	0.0258	-0.0820	-0.259***	-0.0961	0.0218	-0.0577	-0.402***	1		1.12
FSIZE	-0.058	0.149**	0.218***	0.385***	0.377***	0.0343	0.325***	-0.191***	0.435***	0.0940	0.027	1	1.53

Note: The value in the brackets is T-value; *, **, * indicate significance at the level of 1%, 5% and 10%.**

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