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Article

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Independent financial expert members on audit committees, earnings management and the role of female directors

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Abstract

Research Question: What is the impact of the presence of expert and independent members within the audit committee on earnings management? What is the impact of the presence of expert and independent women on the audit committee on earnings management?

Motivation: A number of studies have empirically examined the impact of audit committee financial expertise on earnings management. However, the results have been mixed (Ben Amar, 2014; Zalata *et al.*, 2018). Some studies find a negative impact, while others find no significant association (eg. Yang & Krishnan, 2005). Moreover, examining all of this work allows us to observe an ongoing debate concerning the type of expertise that is most associated with earnings management.

Idea: This paper examines the impact of independent financial expert members on the audit committee on earnings management. Moreover, the presence of female financial experts on the audit committee is necessary for the effectiveness of internal control mechanisms to mitigate earnings management. Hence, the impact of female financial experts on the audit committee on earnings management is also examined.

Tools: This study uses a sample of 280 French non-financial companies listed on the CAC All Tradable index for the period 2008-2018. Feasible Generalized Least Square (FGLS) regression method is used to estimate the econometric models.

Findings: Based on a panel of 3080 French firm-observations from 2008 to 2018 period, a negative effect of the audit committee's financial expertise on earnings management was observed. We also find that the proportion of female independent financial experts on the audit committee is significantly associated with less earnings management.

Contribution: Our findings expand the literature on the relationship between audit committee structure and earnings management and provide guidance for regulatory bodies in some countries, due to the further integration of types of expertise related to audit committee

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members. Thus, regulators need to intensify their efforts on the optimal characteristics of this control mechanism.

Keywords: Earnings management, Audit committee, Financial expertise, Female directors, discretionary accruals, Real earnings management.

JEL codes: M41, M42, M48

1. Introduction

The past few decades have seen a renewed focus on corporate governance, especially due to recent international financial scandals (Al-Dhamari *et al.*, 2018; Al-Absy *et al.*, 2019). Earnings management, which is practiced in accordance with generally accepted accounting principles, is at the center of these financial scandals (Vladu, 2015; Abdullah & Ku Ismail, 2016; Al-Absy *et al.*, 2019). The almost global response has been made by implementing more powerful government mechanisms to limit the opportunistic behavior of managers and consequently improve the quality of earnings. Thus, for several years, new laws (the law of the Sarbanes Oxley Act (2002) in the United States, the law relating to financial security in France (Ln ° 2003-706, of August 1, 2003), the law relating to of the security of financial relations in Tunisia (Ln ° 2005-96 of October 18, 2005)) had been promulgated providing for new rules of good governance. Likewise several reports, guides, recommendations and principles (the principles of corporate governance in the United States, the Hampel report in Great Britain, the Viénot report in France, the High Committee for Corporate Governance in 2013 (HCGE) in France, the AMF Guide published in June 2015) have been published and the main objective of which is to strengthen the control systems within the entities. The board of directors is an important internal control mechanism responsible for representing the interests of shareholders and which has disciplinary power over managers (Jensen, 1993). Thus, with a view to reducing conflicts of interest and preserving their image of neutrality, the boards of directors have surrounded themselves with specific committees such as investment committees, compensation committees, remuneration committees and audit committees (Klein, 1998).

Audit committees are presented as an original mechanism for improving corporate governance (Lin *et al.*, 2006; Saleh *et al.*, 2007; Defond & Zhang, 2014; Alzoubi, 2019). As a result, regulatory bodies in different countries around the world have advocated the establishment of audit committees with the following characteristics: independence, expertise and activity. The most important characteristic of the effectiveness of audit committees is the financial expertise of audit committees. It has captured the attention of standards bodies, researchers and accounting

practitioners in recent years (Griffin, 2016; Chen & Komal, 2018; Zalata *et al.*, 2018).

A number of studies have empirically examined the impact of audit committee financial expertise on earnings management. However, the results have been mixed (Ben Amar, 2014; Zalata *et al.*, 2018). Some studies find a negative impact, while others find no significant association (e.g. Yang & Krishnan, 2005). Moreover, examining all of this work allows us to observe an ongoing debate concerning the type of expertise that is most associated with earnings management. We cite as an example: financial expertise in general, the presence of an expert and independent member, accounting expertise, non-accounting expertise. In addition, some recent work has discussed the role of the presence of women experts in audit committees in prevention versus earnings management. These mixed findings reveal that the impact of financial expertise of audit committees on earnings management remains an open question that requires further exploration (Carcello *et al.*, 2006; Ben Amar, 2014; Chen & Komal, 2018).

The objective of this study is to investigate the impact of independent financial expert members on the audit committee on earnings management. Moreover, the presence of female financial experts on the audit committee is necessary for the effectiveness of internal control mechanisms to mitigate earnings management. Hence, the impact of female financial experts on the audit committee on earnings management is also examined. Specifically, our study examines whether earnings management is affected by the following audit committee characteristics related to financial expertise: financial expertise; auditing and accounting expertise; non-auditing and non-accounting expertise; female independent financial expert members; and female chairman expert members.

Our study contributes to the literature in the following ways. Firstly, to our knowledge, previous work was limited to the study of the impact of a few types of financial expertise on earnings management. Our research extends these works by integrating into the analysis more types of expertise related to audit committees members. Hence, we included more variables related to the effectiveness of financial expertise in the same model. An important contribution of our study is the important role played by women and the audit committee members who are non-accounting and non-auditing experts in the prevention against earnings management. Second, most of the previous work that has focused on the role of women in audit committees has failed to take into account an original feature of independence and financial expertise at the same time. In fact, Ben Amar (2014) point out that financial expertise is not enough to limit the extent of accounting manipulation. Specifically, a member of the audit committee may have the necessary financial expertise, but is not independent. Hence, we extend the extant researches' (Gull *et al.*, 2017; Zalata *et al.*, 2018; Al-Absy *et al.*, 2019) while stressing the importance at the same time of the independence and the financial expertise of women in the audit committees. For

example Gull *et al.*, (2017) underline that the presence of women chairmen on audit committees prevents managers from manipulating earnings under conditions that if we take into account the statutory attributes (the characteristics of the mechanisms of governance such as the independence of the chair of the audit committee) and demographic (the skills, education and experience of the women chairs). Third, generally existing studies are applied in the Anglo-Saxon context and the results cannot be generalized to other countries of the world due to differences in governance systems and legal structures. Our research is conducted in the French context over an extended period of time. The choice of the French context is motivated by the fact that France has companies composed mainly of majority shareholders with a system of governance centered on stakeholders. Managers have the opportunity to engage in aggressive earnings management aimed at maximizing the wealth of the firm to the detriment of other stakeholders in the business. In addition, Lang *et al.* (2006), Gopalan and Jayaraman (2012) and Halaoua *et al.* (2017) underlined that earnings management is more responsive in countries with weak legal protection for minority shareholders. Thus, the objective is not to create audit committees but to focus on the optimal characteristics of this control body. Hence, our study proposes to focus on the expertise and independence of women rather than the decision to appoint women to audit committees.

The rest of the paper is organized as follows. Section 2 presents the literature review with hypotheses development. Section 3 describes the methodology used in this study. Section 4 reports the empirical results. Section 5 concludes our paper.

2. Theoretical background and hypotheses development

2.1 Theoretical background

Good corporate governance is essential to maintain the reliability of accounting and financial information. In this regard, many countries have taken the initiative to put in place extensive corporate governance regulations to ensure the quality of earnings. As a result, several laws have been promulgated since the 2000s following accounting scandals in several countries around the world. The main objective is to reduce agency costs between capital providers (shareholders and financial creditors) and managers. Several theories can explain the important role that women can play in audit committees. We cite, among others, agency theory, resource dependence theory and signaling theory.

By referring to the contributions of agency theory, managers manage according to their interests to the detriment of those of shareholders. Owners cannot observe the levels of leaders who have more information and who tend not to reveal everything (Jensen & Meckling, 1976). Currently, the board of directors of a company is called upon to fulfill a fundamental role in exercising effective control over the financial

reporting process of the company. As a result, the control role assigned to members of audit committees becomes paramount and essential in order to establish an interface between managers and legal audit and consequently reduce agency costs. Based on agency theory, Carter *et al.* (2003) underline that the presence of women on director's boards reinforces its independence because women ask more questions and are more demanding than men. Ammer and Ahmad-Zaluki (2017) put forward the idea that women who occupy positions on boards of directors improve the quality of their work and the control exercised over directors. Terjesen *et al.* (2016) have shown that the presence of women in the audit committee makes it possible to guarantee a better quality of the financial statements.

Resource dependency theory states that external resources influence organizational behavior (Pfeffer & Salancik, 1978). As a result, the use of these external resources is very useful for the strategic management of companies. This theory has implications for the composition of board members and the woman is seen as a resource that brings her expertise to the company (Hillman *et al.*, 2000). Indeed, the woman administrator is the best qualified to provide the necessary resources to the boards of directors and its committees such as: expertise, relations with other stakeholders, legitimacy, etc.

Akerlof (1970) proposes the mechanism known as "signaling". More precisely, the author postulates that an agent emits signs to indicate the quality of his goods to another agent. Signaling theory then predicts that companies use signals to improve their reputation with other stakeholders in the business. In this context, Gul *et al.* (2013) specify that the participation of women on the board of directors constitutes an information signal which influences the decision of the partners of the firm. Indeed, women leaders make decisions that improve the quality of financial reporting.

2.2 Hypotheses development

For several years, many countries have taken the initiative to implement extensive regulations regarding the performance of audit committees. For example, the recommendations of section 407 of the Sarbanes-Oxley Act (2002) specifically require that at least one member of the audit committee must have financial expertise. Moreover, the expertise of audit committee members has aroused major interest in a great deal of research (Ghafran & O'sullivan, 2017; Bilal *et al.*, 2018). Choi *et al.* (2004) classify the expertise of members belonging to audit committees into five categories: financial expertise, accounting expertise, the expertise of current or former university professors, the expertise of current or former employees working in other companies and expertise in law. Dezoort and Salterio (1997) have shown that expertise in accounting, control and auditing is a key element in the effectiveness of the committee. In the same vein, Dezoort and Salterio (2001) find

that the accounting experiences of audit committee members as well as their knowledge of auditing are positively linked with the probability that these members support the auditor in the managerial discussion of the firm. Dhaliwal *et al.* (2006) propose three specific types of audit committee expertise: accounting expertise, finance expertise, and control expertise.

The structure of the audit committee is considered essential to ensure the best possible functioning of such a committee (DeZoort *et al.*, 2002). It is generally accepted that expert members on audit committees have more sophisticated accounting, auditing and finance skills than any other ordinary member. Certainly, they have a more effective understanding and control of the accounting and financial reporting process and perform better in terms of auditing and controlling financial statements, and therefore, can detect earnings management practices. However, the independence of audit committee members is essential to its performance. In fact, the Blue Ribbon Committee (BRC) report sees independence as an essential quality for the audit committee to fulfill its oversight role. Dhaliwal *et al.* (2010) indicate that the control capacity of financial experts depends on their independence, their participation in the share capital, their mandate as external director and their duration. Ben Amar (2014) specifies that independence is not enough to limit the scope of earnings management. Indeed, a member may be independent but not equipped with the necessary expertise to exercise appropriate control over the process of preparing accounting information. Therefore, we suggest that independent members and experts at the same time can play their oversight role in a more efficient way.

H1. The presence of independent financial expert members on the audit committee negatively influences earnings management.

Currently, there is an ongoing debate about the type of financial expert most likely to limit the scope of earnings management: accounting or non-accounting. Some studies have shown that these two types predicted by the literature are useful in reducing earnings management (Carcello *et al.*, 2008; Nelson & Devi, 2013; Kusnadi *et al.*, 2014).

Krishnan and Visvanathan (2008); Carcello *et al.* (2006) point out that members who belong to audit committees and have specialized knowledge in the accounting and auditing professions can promote effective control of the financial report. Based on the above, we present the following hypothesis:

H2. The presence of independent expert members with auditing and accounting experience on the audit committee negatively influences earnings management.

Some researchers put forward the idea that expert members who do not have specific accounting knowledge have a good grasp of other financial and non-financial aspects. Thanks to their skills, they are able to decide on the rational nature of accounting operations when their company is faced with risky economic, industrial

and legal situations (Sultana & Zahn, 2015; Ghafran & O'Sullivan, 2017). Based on the above, the following hypothesis will be tested:

H3. *The presence of independent audit committee members who are non-accounting and non-auditing experts negatively influences earnings management.*

Several studies show that women are distinguished from men by their behavior at work, their risk aversion and their ethical principles (Ben-Amar *et al.*, 2017; Peterson & Philpot, 2007; Li & Li, 2020). Women in audit committees work more diligently and put more effort into overseeing leaders (Adams & Ferreira, 2009). Srinidhi *et al.* (2011) show that female directors are more diligent, demand greater accountability for CEO performance, and are more likely to question traditional CEO practices and strategies. Thus, we formulate this hypothesis.

H4. *The presence of female independent financial expert members on the audit committee negatively influences earnings management.*

Women audit committee chairs tend to perform more rigorous and diligent assessment of internal audits and internal controls of the company, and to hone the audit committee and audit committee monitoring functions, reducing thus financial irregularities. They seek to enhance their personal reputation and therefore demonstrate a greater aversion to risk in financial decisions (García Lara *et al.*, 2017; Ho *et al.*, 2015). In addition, these women presidents maintain a higher level of independence because they do not aim for private profit and more often than not want to comply with ethics and hate corporate fraud (Gao *et al.*, 2017; Krishnan & Parsons, 2008). Adams *et al.* (2010) point out that female manager is more independent and less tolerant of the opportunistic behavior of managers (Adams *et al.*, 2010).

The study by Gull *et al.* (2017) expands the literature on the relationship between gender in the audit committee and earnings management, taking into account the particular characteristics (statutory and demographic) of chairpersons. Referring to the agency theory, statutory diversification indirectly improves the effectiveness of the audit committee in seeking wealth for shareholders while reducing to the lowest the probability of manipulation earnings by managers and reducing the agency cost (John & Senbet, 1998; Dalton *et al.*, 1998).

Furthermore, Carter *et al.* (2003) argue that statutory diversity is not enough to show an effective relationship between audit committee diversity and earnings management. As a result, female presidents are less likely to conspire with executives, but more likely to effectively monitor opportunistic behavior by executives, which limits the propensity and level of corporate financial irregularities. As part of this argument, it is suggested that, for the same level of financial expertise, audit committee financial experts are more likely to have a more pronounced effect on profits than financial experts. Our final hypothesis is therefore established as follows:

H5. The presence of female financial expert chairman on the audit committee negatively influences earnings management.

3. Research design

3.1 Sample selection

Our initial sample includes all French listed firms is from the CAC All tradable index for years 2008-2018. Like (Gull *et al.*, 2017), we have excluded from this sample all financial institutions (i.e. banks and insurance companies), which is explained by the cause of taking into account rules related to the presentation and preparation of financial statements. In addition, other variables were eliminated due to missing data and firms with missing data were not included from the sample. Hence, we restrict our sample from 300 to 280 firms and consequently 3080 firm-observations with full data available were incorporated in this study analyses. The selection procedure for our final sample is presented in table 1.

Table 1: Sample Selection

Sample Selection	No. of observations
Initial population	300
Financial firms	18
Firms with missing data	2
Final sample	280

3.2 Dependent variables measurement

In accordance with previous literature (Collins *et al.*, 2017; Roychowdhury, 2006), we measure earnings management based on discretionary accruals and real earnings management.

3.2.1 Discretionary accruals as measure of earnings management

This paper uses a measure of earnings management based on the modified Jones Model (1995) proposed by Collins *et al.* (2017) which is detailed in equation (1). Collins *et al.* (2017) underlined the need to control the effects of firm growth on non-discretionary accruals by introducing the following variables: ROA, SG and MB. In addition, the authors assume the existence of a non-linear relationship between sales growth and non-discretionary accruals and suggest integrating these variables to account for this non-linearity.

$$ACC_{i,t} = \beta_0 (1/ ASSETS_{it-1}) + \beta_1(\Delta SALES_{i,t} - \Delta AR_{i,t}) + \beta_2 ACC_{i,t-1} + \sum_K \beta_{3k} ROA_IND_{k,i,t} + \sum_K \beta_{4k} SG_IND_{k,i,t} + \sum_K \beta_{5,k} MB_IND_{k,i,t} + \varepsilon_{i,t} \quad (1)$$

Where ACC is total accruals. $ASSETS_{it-1}$ is total assets at the beginning of year. $\Delta SALES$ is changes in sales. ΔAR is the change in net receivables. $ACC_{i,t-1}$ is total accruals from the preceding year. ROA is the return on assets. SG is sales growth. MB is the Market to book ratio. Regression coefficients for the indicator variables: $K = 1, 2, 3$, and 4 : stock splits, stock offerings, stock acquisitions, and percentage of (executive) compensation in stock, $\varepsilon_{i,t}$: Discretionary accruals. Alternative measure of discretionary accruals based on Khotari *et al.* (2005) are used to check the robustness of our results.

3.2.2 Real earnings management as measure of earnings management

We use abnormal level of cash-flow from operations, abnormal level of overproduction costs and abnormal level of discretionary expenses as the measures of real earnings management (Roychowdhury, 2006).

M1: Abnormal level of cash-flow from operations

$$\frac{CFO_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \beta_1 \left(\frac{S_{i,t}}{A_{i,t-1}} \right) + \beta_2 \left(\frac{\Delta S_{i,t}}{A_{i,t-1}} \right) + \varepsilon_{i,t} \quad (2)$$

Where: $CFO_{i,t}$: Cash flows from the operating cycle of company i , in year t , $A_{i,t-1}$: Total assets of company i in year $t-1$, $S_{i,t}$: The sales of company i in year t , $\Delta S_{i,t}$: Change in sales, equivalent to sales of company i in year t minus sales in year $t-1 = (\Delta S_t = S_t - S_{t-1})$, $\varepsilon_{i,t}$: The residual or error term that measures the abnormal level of cash-flow of company i in year t , α_0 : The model constant.

M2: the abnormal level of overproduction costs

$$\frac{PROD_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \beta_1 \left(\frac{S_{i,t}}{A_{i,t-1}} \right) + \beta_2 \left(\frac{\Delta S_{i,t}}{A_{i,t-1}} \right) + \beta_3 \left(\frac{\Delta S_{i,t-1}}{A_{i,t-1}} \right) + \varepsilon_{i,t} \quad (3)$$

Cost of overproduction = cost of goods sales + change in inventories

$$PROD_{i,t} = COGS_t + \Delta INV_{i,t}$$

$$\frac{COGS_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \beta_1 \left(\frac{S_t}{A_{i,t-1}} \right) + \varepsilon_{i,t}$$

$$\frac{\Delta INV_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \beta_1 \left(\frac{\Delta S_{i,t}}{A_{i,t-1}} \right) + \beta_2 \left(\frac{\Delta S_{i,t-1}}{A_{i,t-1}} \right) + \varepsilon_{i,t}$$

Where : $PROD_{i,t}$: Production cost of company i in year t, $COGS_t$: Cost of goods selling of company i in year t, $\Delta INV_{i,t}$: The change in inventories of company i between year t and year t-1 = $(INV_{it} - INV_{i,t-1})$, $A_{i,t-1}$: Total assets of company i in year t-1, $\Delta S_{i,t-1}$: The change in sales of company i between year t-1 and year t-2 = $(S_{it-1} - S_{it-2})$.

M3: Abnormal level of discretionary expenses

$$\frac{DISEXP_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{i,t-1}} \right) + \beta_1 \left(\frac{S_{i,t-1}}{A_{i,t-1}} \right) + \varepsilon_{i,t} \quad (4)$$

Where : $DISEXP_{i,t}$: Discretionary expenses of company i in year t, $A_{i,t-1}$: Total assets of company i in year t-1, $S_{i,t-1}$: The sales of company i in year t, $\varepsilon_{i,t}$: The residual or error term that measures the level of discretionary expenses of company i in year t.

According to Roychowdhury (2006), discretionary expenses include research and development expenses, publicity expenses and selling, general and administrative expenses (i.e., staff training, maintenance and travel).

Like Roychowdhury (2006) and Cohen *et al.* (2008), the sum of the residuals of the 3 models is calculated as a proxy for the dependent variable.

3.3 Audit committee financial expertise related variables

The choice of our independent variables is based on the qualifications listed by the Sarbanes-Oxley Act of 2002 for an audit committee financial expert. These qualifications include “Experience preparing, auditing, analysing or evaluating financial statements”. In addition, according the qualifications listed by SEC, a financial expert can be an expert without auditing and accounting experience (e.g. a member of audit committee that only has work experience in finance positions, as an investment banker, etc.).

Hence, our research models include the following variables related to the Audit committee financial expertise. Audit committee financial expertise (ACFE) is the proportion of independent financial expert members on the audit committee. Audit committee with auditing and accounting expertise (ACAA) is the proportion of independent expert members with auditing and accounting experience on the audit committee. Audit committee with non-auditing and non-accounting expertise

(ACNAA) is the proportion of independent expert members with non-auditing and non-accounting experience on the audit committee. Audit committee chairman female financial expertise (ACCFE) is a dummy variable coded 1 if the audit committee contains a female chairman expert and independent member and 0 otherwise. Audit committee female financial expertise (ACFFE) is a dummy variable coded 1 if the audit committee contains a female independent financial expert member and 0 otherwise (Li *et al.*, 2019).

3.4 Control variables

By following previous studies (Ben Amar, 2014; Sun & Liu, 2016; Ben Amar & Chakroun, 2018), we include in the models firm size and firm leverage as control variables that may affect discretionary accruals. We measure the size of the firm (SIZE) as the natural logarithm of total assets (Ben Amar & Chakroun, 2018) whereas the leverage of the firm (LVRG) is measured as: total debt/total assets.

3.5 Regression models

The impact of independent financial audit committee on earnings management can be estimated through two econometric models.

Model 1:

$$ACC_{i,t} = \alpha_0 + \beta_1 ACFFE_{i,t} + \beta_2 ACAA_{i,t} + \beta_3 ACNAA_{i,t} + \beta_4 ACFFE_{i,t} + \beta_5 ACCFFE_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 LVRG_{i,t} + \varepsilon_{i,t}$$

Model 2:

$$REM_{i,t} = \alpha_0 + \beta_1 ACFFE_{i,t} + \beta_2 ACAA_{i,t} + \beta_3 ACNAA_{i,t} + \beta_4 ACFFE_{i,t} + \beta_5 ACCFFE_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 LVRG_{i,t} + \varepsilon_{i,t}$$

Where:

ACC = earnings management, measured using discretionary accruals;

REM = earnings management, measured using real earnings management;

ACFE = the percent of independent financial expert members on the audit committee;

ACAA = the percent of independent expert members with auditing and accounting experience on the audit committee;

ACNAA = the percent of independent expert members without auditing and accounting experience on the audit committee;

ACFFE = dummy variable coded 1 if the audit committee contains a female independent financial expert member and 0 otherwise;

ACCFE = dummy variable coded 1 if the audit committee contains a female chairman expert and independent member and 0 otherwise;

SIZE = firm size, measured as the nature logarithm of total assets;

LVRG = debt ratio, measured as long-term debt divided by total assets.

4. Empirical results

Table 1 presents the descriptive statistics of the firms in our sample. The average earnings management values measured by the Roychowdhury model (2006) and that of Collins *et al.* (2017) are negative. This indicates that on average, French companies are involved in earnings management aimed at reducing earnings. Indeed, French companies exercise a downward earnings management (conservative accounting) to essentially increase the undervaluation and consequently in order to limit their political visibility. The average value of the variable financial expertise of members of the audit committee (ACFE) is 0.760. This implies that more than half of the audit committees are composed by independent members and have financial expertise. This result is consistent with some recommendations from regulatory bodies that suggest setting up audit committees made up of expert and independent members. In addition, the results of Table 1 demonstrate the alignment of companies towards the participation of women in decision-making on audit committees. The mean value of the variable ACFFE is 0.671, while that of the variable ACCFFE is 0.373.

Table 1. Descriptive statistics

Variables	Mean	Median	Std.dev	Min	Max
ACC	-2.124	-2.438	3.647	-5.036	3.387
	-1.845	-2.097	1.787	-2.768	3.459
REM					
ACFE	0.760	0.8	0.171	0.4	1
ACAA	0.674	0.75	0.212	0	1
ACNAA	0.362	0.25	0.258	0	1
ACFFE	0.671	1	0.469	0	1
ACCFFE	0.373	0	0.483	0	1
SIZE	13.474	13.264	2.523	8.912	18.955
LVRG	0.244	0.209	0.2953	0	0.7446

Table 2 shows the correlation matrix among the independent variables. None of the correlations between independent variables were significantly highly correlated. In fact, all correlation coefficients are less than 0.8 (Kennedy, 1985). In addition, the table 3 indicates that the variance inflation factors (VIF) value is inferior to 10 (Myers, 1990). Thus, multicollinearity does not appear to be a problem in our models.

Table 2. Pearson Correlation Coefficients

	ACFE	ACAA	ACNAA	ACFFE	ACCFFE	SIZE	LVRG
ACFE	1.0000						
ACAA	0.671***	1.0000					
ACNAA	0.1987***	0.3254***	1.0000				
ACFFE	0.1216***	0.1340***	0.0076	1.0000			

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	ACFE	ACAA	ACNAA	ACFFE	ACCFE	SIZE	LVRG
ACCFE	0.2066***	0.2904***	0.0125	0.4857***	1.0000		
SIZE	-0.1027***	-0.1060***	0.1626***	-0.0147	-	1.0000	
					0.2097***		
LVRG	0.0070	0.0291	0.0529***	0.0022	-	0.1120***	1.0000
					0.0329***		

***Signifiant coefficient at 1%

**Significant coefficient at 5%

* Significant coefficient at10%

Table 3. Variance Inflation Factors (VIF)

Variable	VIF	Tolerance
ACFE	1.91	0.522
ACAA	1.90	0.526
ACNAA	1.43	0.699
ACFFE	1.32	0.754
ACCFE	1.13	0.887
SIZE	1.10	0.909
LVRG	1.02	0.978
Mean VIF	1.40	

Since all the regressions used are estimated on the basis of panel data, we checked the existence of Heteroscedasticity problem using the Breusch-Pagan test. As shown in table 4, we conclude that our panel data contains heteroscedasticity problem. Hence, we used the Feasible Generalized Least Square estimation (FGLS) to correct for this violation.

Table 4. Regression results

Variables	Model 1 (ACC)		Model 2 (REM)	
	Coefficient	z-statistic	Coefficient	z-statistic
Intercept	-0.502	-1.04	-0.399	-1.73
ACFE	-1.309	-2.53**	-0.148	-0.6
ACAA	1.969	4.68***	0.354	1.77*
ACNAA	-0.521	-1.99**	-0.143	-1.15
ACFFE	-0.339	-2.15**	-0.186	-2.48**
ACCFE	0.194	1.22	0.248	3.28***
SIZE	-0.150	-5.54***	-0.136	-10.60***
LVRG	1.703	7.71***	1.451	13.83***
No. of observations	3080		3080	

Variables	Model 1 (ACC)		Model 2 (REM)	
	Coefficient	z-statistic	Coefficient	z-statistic
Wald chi2(7)	108.53***		315.49***	
Breusch-Pagan test	2451.29***		27794.92***	

Notes: ***significant coefficient at 1% ; **significant coefficient at 5% ; *significant coefficient at 10%.

The coefficient associated with the ACFE variable is negative and statistically significant. This result indicates that the presence of expert and independent members on audit committees negatively influences earnings management. We note, thus, that the expertise and the independence of the members of the audit committees constitute two fundamental characteristics as regards the performance of such a control body. This result corroborates the work of Ben Amar (2014) in the American context. Likewise, the coefficient associated with the variable ACNAA is negative and statistically significant at a threshold of 5% for the two models. The presence of independent members who have non-accounting expertise has a negative influence on earnings management. However, the coefficient associated with the variable ACAA is positive and statistically significant. The presence of independent members who have accounting and auditing expertise has no influence on earnings management. The results allow us to conclude the need to acquire other expertise (other than in accounting and auditing) in order to improve the control carried out by the members of the audit committees. This type of expertise is essential and allows members of audit committees to fully master the other financial and non-financial aspects (Ghafran & O'sullivan, 2017; Bilal *et al.*, 2018; Dhaliwal *et al.*, 2016; Ben Amar, 2014; Saltana & Zahn, 2015).

The coefficient associated with the variable ACFFE is negative and statistically significant at a threshold of 5% in the two models. Our result shows that the presence of independent and expert women on audit committees negatively influences earnings management. This is consistent with the work of prior authors (Bédard & Gendron, 2010; Srinidhi *et al.*, 2011) who found that women experts play a preponderant role against earnings management. However, the coefficient associated with the ACCFFE variable is positive and statistically significant for both models. The presence of women chairmen on the audit committee does not affect the management of earnings. This evidence contradicts the results of previous studies (Gao *et al.*, 2017; Adams *et al.*, 2010 and Krishnan & Parsons, 2008) which have shown that women chairpersons of audit committees are best placed to reduce earnings management.

Regarding the control variables, we note that the results of table 4 corroborate those predicted by the positive theory of accounting. Indeed, the coefficient associated with the variable SIZE is negative and statistically significant at a threshold of 1%.

In addition, the coefficient associated with the variable DEBT is positive and statistically significant at a threshold of 1%.

Discretionary accruals are often measured with noise (Khotari *et al.*, 2005; Dechow & Divhev, 2002). In order to verify the robustness of our results found above, we measure earnings management based on Khotari *et al.* (2005) model. Table 5 presents the estimation results. It appears that the results already presented remain sufficiently unchanged.

Table 5. Regression results – Alternative Measure Khotari *et al.* (2005)

Variables	Model 1	
	Khotari <i>et al.</i> (2005)	
	Coefficient	z-statistic
Intercept	-0.630	-1.29
ACFE	-1.404	-2.69***
ACAA	1.992	4.68
ACNAA	-0.498	-1.88*
ACFFE	-0.378	-2.37**
ACCFE	0.161	1
SIZE	-0.129	-4.71***
LVRG	1.742	7.81***
No. of observations	3080	
Wald chi2(7)	101.01***	
Breusch-Pagan test	2418.70***	

Notes: ***significant coefficient at 1% ; **significant coefficient at 5% ; *significant coefficient at 10%.

5. Conclusion

Faced with lasting changes in the economic environment, the demands of financial markets and the flexibility of accounting systems, managers will be more motivated to manipulate earnings. To curb any type of manipulation practiced by managers, an audit committee established within the board of directors must play its monitoring role in an optimal manner. The objective of this study is to study the impact of independent financial expert members of the audit committee on earnings management. In addition, the impact of the presence of women experts on the audit committee on earnings management is also examined. We measure earnings management based on discretionary accruals and real earnings management. Based on a panel of 3080 French firm-observations from 2008 to 2018 period, a negative

effect of the audit committee's financial expertise on earnings management was observed. We also find that the proportion of female independent financial experts on the audit committee is significantly associated with less earnings management. In accordance with previous literature, the results show that the financial expertise of the audit committee as well as the presence of women on audit committees negatively influence earnings management (Yang & Krishnan, 2005; Agrawal & Chadha, 2005; Lin & Hwang, 2010; Inaam & Khamoussi 2016, Bédard & Gendron, 2010; Dhaliwal *et al.*, 2010 and Srinidhi *et al.*, 2011).

An important contribution of our study is the important role played by women and the audit committee members who are non-accounting and non-auditing experts in the prevention against the management of the result. This finding should give more confidence to standards bodies as to the presence of members on audit committees without expertise in accounting and auditing. In addition, our findings expand the literature on the relationship between audit committee structure and earnings management and provide guidance for regulatory bodies in some countries, due to the further integration of types of expertise related to audit committee members. Thus, regulators need to intensify their efforts on the optimal characteristics of this control mechanism.

Our study presents a certain number of limitations which may however inspire future research directions. First, our sample is made up only of French companies listed on the CAC All Tradable. This draws the attention to focus on other countries of the world with different governance models and this for a need to draw more conclusions. Second, using a sample consisted only of listed companies makes it difficult to generalize the results to other types of firms. Finally, our empirical reflection is carried out over a period that spans from 2008 to 2018. Thus, it is important to focus on a longer period in order to take into account the effect of the COVID-19 pandemic.

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