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Internal and external corporate governance mechanisms and earnings management: an international perspective

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Abstract

Research question: This research aims to: 1. Determine which corporate governance mechanisms are most relevant in constraining earnings management and 2. Explain whether differences in results found in previous literature are attributable to moderating effects related to the legal system (common vs civil law). **Motivation:** One research topic of interest in the last two decades has been the effect of corporate governance mechanisms on earnings management. **Idea:** This research constitutes an extension of the study conducted by Zgarni and Haloui (2016) whose subject matter deals with only two corporate governance mechanisms, audit committee and audit quality, whereas the present paper contribution consists of testing the relevance of the findings achieved by Zgarni and Haloui (2016) after three years of study. **Data:** The study is based on a meta-analysis of 75 studies, the research approach being derived from Hunter *et al.* (1982). **Research Findings:** The empirical results show that the board of directors, the audit committee and audit size are statistically significant in reducing earnings management. Our findings emphasize the need to explicitly consider the influences of legal and institutional settings when analyzing the interactions between corporate governance and earnings management. The issues discussed in this article should be relevant to improve the supervision of companies and mitigating the earnings management. Especially, we provide some interesting insights to stakeholders, government regulators, banks, academics and research professionals.

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1. Introduction

One research topic of interest in the last two decades has been the effect of corporate governance mechanisms on earnings management. Especially after a succession of accounting scandals such as Enron, Arthur Anderson and World Com, we notice that the users' trust in financial statements has been significantly affected. The source of these scandals was found to lie mainly in weakness in corporate governance structures, on the one hand, and in accounting managerial discretion recognized under the concept "earnings management" ,on the other hand. According to Schipper (1989: 92), "Earnings management is commonly understood as intentionally misrepresenting or concealing financial information about the firm's economic position by a manager."

Earnings management is achieved through the actions of management that make it easier to achieve their desired earning levels via accounting choices allowed by GAAP or operating decision (sales, expenditure in research and development etc.) so-called real earnings management (Susanto & Pradipta, 2016 ; Elage & Mard, 2018).

Whatever, the tools used to manage earnings are, a large theoretical disclosure background recommends a negative relation between corporate governance and earnings management. However, at the empirical level, findings present mixed conclusions (Peasnell *et al.*, 2005; Krishnan & Visvanathan, 2008; Sun *et al.*, 2014; Zgarni & Haloui, 2016).

It is generally accepted that an audit committee, board of directors and audit quality ought to improve the quality of financial reporting practices (Chang & Sun, 2009). These corporate governance mechanisms were the most studied in the previous literature. Therefore, we suggest it is important to highlight their effect on constraining earnings management via a meta-analysis.

In this respect, Zgarni & Halioui (2016) focused on the effect of audit quality and audit committee on earnings management. Their meta-analysis included a sample made up of 58 articles. They concluded that the efficiency of the audit committee reduces the need for earnings management. Similarly, a negative relationship has been established between auditor size, specialization and earnings management.

This research constitutes an extension of the study conducted by Zgarni and Haloui (2016) whose subject matter deals with only two corporate governance mechanisms, audit committee and audit quality, whereas the present paper contribution consists of testing the relevance of the findings achieved by Zgarni and Haloui (2016) after three years of study. Seeing the considerable rising number of studies dealing with earnings management and corporate governance around the world **(**Sun *et al.*, 2014; Miko *et al.*, 2015), we think it is interesting to take into account the appearance of a number of new researches dealing with this topic and apropos, a new variable is integrated in our meta-analysis namely board of directors. To resume, the present study extends Zgarni and Haloui (2016) in several ways. First, we take in focus three principal corporate governance mechanisms split into two parts: internal mechanisms (audit committee and board of directors) and external mechanisms (audit quality) whereas Zgarni and Haloui (2016) analyse only two corporate governance mechanisms namely audit committee and audit quality.

Secondly, on a methodological level we improve two principal empirical aspects, the sample size which includes 75 studies in our research rather than 58 in Zgarni and Haloui (2016) one. Moreover, our meta- analysis is inspired by Hunter *et al.* (1982) whereas Zgarni and Haloui (2016) used a meta-analysis based on Wolf (1986). The main difference between Hunter *et al.* (1982) and Wolf (1986) is in the formula used to measure the size effect and in chi-squared test used to test the null hypothesis of no variation in sample correlations.

Our study has a dual purpose. First, we aim to apply a meta-analysis in order to summarize existing research findings dealing with the interactions between corporate governance mechanisms and earnings management quality. It has been established the efficiency of the meta-analysis in explaining mixed results in literature. It is an effective tool "to summarize, integrate, and interpret selected sets of scholarly works in the various disciplines" (Lipsey & Wilson, 2001). To test our hypotheses we conducted several independent meta-analysis. Each one examined the relationship between discretionary accruals (the proxy for earnings management) and one corporate governance variable.

Second, for the purpose of this research, we aim to reconcile the inconsistent study findings and draw a logical link between findings, which seem to be unclear from narrative reviews. Narrative reviews suffer from a lack of acceptable rules to extend the individual results in order to achieve generalized conclusions. Therefore, these limits can guide one to false conclusions because generally, the differences of the significance across researches are approved to the sampling errors.

This research suggests three novel contributions. First, we investigate the relation between the characteristics of the audit committee, boards of directors and substitutes of the audit quality on reducing the earnings management. This contribution could have an added value to the wide literature on this topic (García-Meca & Sánchez-Ballesta, 2009; Lin & Hwang, 2010; Zgarni & Halioui, 2016).

With reference to the study of García-Meca and Sánchez-Ballesta's (2010), we present several distinguishing features. Indeed, both the two previous researches focus on the independence of audit committee and ownership concentration, which are internal corporate governance mechanisms. Whereas Samaha *et al.* (2015) investigate the common effect of the board of directors and the audit committee characteristics. Our study, provides a more complete extension of this line of research by considering both internal (board size, board independence, CEO duality, audit committee size, independence and meetings of its members) and external corporate governance attributes (audit quality). Therefore, we discuss earnings management from two perspectives: Internal and external corporate governance structure.

We also contribute to talk about on the advantages of utilizing the meta-analysis technique, which is the application of statistical methods to a lot of results from existing individual works for the objective of including and evaluating the study findings. Furthermore, a meta-analysis should allow us to gather more conclusions that are significant from literature in order to achieve robust findings concerning the relation between internal and external corporate governance characteristics and earnings management.

Finally, we estimate that this synthesis of literature should eventually help regulators, stakeholders, auditors and boards of directors, who are concerned with improvement of the supervision of company and attenuating the opportunities specified to managers to engage in the earnings management. The mitigated results should attract their attention on the institutional and cultural countries' features to avoid the naive imitation around the world of these practices.

This paper addresses multiple research questions. How important is the overall effect of the corporate governance mechanisms on earnings management? Are independent audit committees or shareholders more effective in reducing managerial accounting discretion around the world? Are empirical findings sensitive to the legal system as a moderator variable?

Relying on previous literature, we suggest to bring some elements of answer to above questions by studying the effect of two major corporate governance pieces, internal (via effectiveness of audit committee and board of directors) and external (via audit quality). The choice of variables is based on the corporate governance mechanisms "most popular" in empirical literature. Some internal and external mechanisms of corporate governance are excluded from our analysis due to the luck of research on such items, which constrains the implementation of a meta-analysis.

Although prior studies have provided some insights into the role of corporate governance, the findings of such researches are often contradictory and are limited to one specific mechanism of corporate governance rather than studying a whole structure of governance. Moreover, we should notice that the luck of studies using meta-analysis method to explore whether inconsistency in research is due to moderator effects, such as the way of measurement of earnings management or the effects of legal system (García-Meca & Sánchez-Ballesta, 2009; Lin & Hwang, 2010). The application of this quantitative review methodology in accounting sciences research should increase investors' confidence to the findings compared to conclusions drawn from narrative analysis (Hunter & Schmidt, 1990).

Our main results show that board independence, board size, audit committee independence and auditor reputation are the most significant variables in mitigating earnings management. Concerning the moderator effect of legal origin, we found that the common law system is negatively associated to earnings management.

This paper is organized as follows. The second section presents an overview of prior studies on the association between board of directors, audit committee and audit quality variables and earnings management. Next, we developed the hypotheses, followed by a description of the research design especially the sample selection and variables used. Finally, we analyze and discuss the empirical findings to end with conclusion section.

2. Corporate governance and earnings management

Board of directors, audit committee and audit quality are considered as centerpieces of corporate governance. In this section, we analyze from theoretical view corporate governance upon three perspectives: board of directors, audit committee characteristics', audit quality.

2.1 Board of directors' effect

The board of directors is a crucial internal control mechanism and still play an important role in reducing agency problems (adverse selection and moral hazard). According to the agency perspective, the ability of the board to act as an effective monitoring mechanism depends on its members' independence (Beasley, 1996).

Several researches have proved the importance of the board of directors in the financial reporting process generally and in reducing earnings management particularly (Dechow *et al.*, 2010). Specifically, a growing literature shows that board characteristics, such as board independence (Bradbury *et al.* 2006), board size (Okougbo *et al.*, 2015), separate roles for the chairman and CEO (Francis *et al.*, 2008) are associated with moderated occurrences of earnings management. In legislative level, the majority of codes of good practicesdefend the following issues: large size, directors' independence and separation in roles for the chairman and CEO. For these reasons, we suggest to give focus on the three following governance attributes: independence, size and duality functions.

2.1.1 Board independence

Agency theory recommends that the existence of independent directors on the board may have an important effect on the effectiveness of board's supervising activities. In the same context, García-Meca and Sánchez-Ballesta (2009) employ the 'domino effect' concept of independent directors to push inside board members to enhance corporate reporting policy.

Previous researches illustrate that independent non-executive directors have a benefit in improving the interests of the shareholders. Beasley (1996) found a negative relationship between the percentage of non-executive members on the board and the likelihood of financial fraud in the USA. Jaggi *et al.* (2007) and Bradbury *et al.* (2006) showed that an upper proportion of independent directors are related to more effective overseeing in reducing earnings management. Similarly, Visvanathan (2008) used pre-SOX data to investigate the relation between board independence and earnings management. He showed that board independence is negatively related to the occurrence of earnings management.

In contrary, Graven (2009) reveals that the boards of directors have no effective contribution in reducing earnings management. In Singapore, Bradbury *et al.* (2006) failed to find any association between earnings management and board independence. The conflicting results in literature can be explained by the differences in measures used to assess the independence of directors (percentage of independent members, dichotomous variable for independence etc.) or even by differences in the institutional contexts and without forgetting the definition, itself of directors' independence should matter.

Therefore, we formulate the following hypothesis:

H$_{1.1}$: *There is an association between board independence and the occurrence of earnings management.*

2.1.2 Board size

The second attribute to assess the added value of the board of directors is its size. Dual contradictory positions prevail in literature: Some authors, such as Hidalgo *et al.* (2011), think that a large board plays a significant role in monitoring function. This opinion is often explained by the fact that a large board offers increasing expertise and experience. In the same perspective, Karamanou and Vafeas (2005) show that a larger board has better updates of management earnings forecasts. Indeed, they suggest that firms with larger boards show a higher quality of financial reporting.

Other authors, such as Xie *et al.* (2003) find that small boards are negatively associated with earnings management. This finding is consistent with Jensen (1993) proposing that small boards are more effective in monitoring mangers' discretionary behavior thanks to good communication and coordination which is difficult to achieve with large boards.

Further, Visvanathan (2008) and Graven (2009) find no significant relation between the size of the board and the extent of earnings management. We can underline that evidence from previous literature is not conclusive and therefore we suggest the following hypothesis:

$H_{1.2}$: *There is an association between board size and the occurrence of earnings management.*

2.1.3 CEO/Chairman duality of the board

CEO/Chairman Duality means that someone acts as a CEO and a chairman of a board at the same time. The functions of a CEO and a Chairman of the board should be separate since this characterizes a large concentration of power and this separation would guarantee that no person has unfettered powers of decision. A combined leadership structure reduces the significance of the separation between decision of management (CEO) and decision of control (chair of the board). Therefore, CEO duality may limit the desired system of checks, balances and compromise the boards' independence in supervising upper management behavior (Cerbioni & Parbonetti, 2007).

Visvanathan (2008) demonstrates that boards that have the same individual in both functions is less likely to be effective overseeing and consequently are less likely to limit earnings management. Further, other studies (Graven *et al.*, 2009) report a non-significant or a positive association between the duality of the board of directors and the occurrence of earnings management. Therefore, we formulate the following hypothesis:
$H_{1.3}$: *There is an association between CEO duality and occurrence of earnings management.*

2.2 Audit committee effectiveness

Audit committees are usually considered a significant instrument of a firm's overall governance mechanism with specific importance on audit quality and supervision of financial reporting (He *et al.* 2008, Baxter & Cotter, 2009). Apart from the advantage that is gained from the creation of an audit committee, previous works propose that the size, independence, expertise, and meeting frequency of audit committee may have an effect on overseeing effectiveness (Carcello *et al.* 2011; Sun *et al.* 2014; Zgarni & Halioui, 2016).

Several empirical studies have shed light on the effectiveness of audit committee independence. For example, Baxter & Cotter (2009) explain that occurrence of earnings management decreases with the independence of the audit committee. Likewise, Yunos (2011) and Sun *et al.* (2014) show that audit committee independence is associated with less discretionary accruals.

In contrast, other authors report an insignificant association between audit committee independence and earnings management (Visvanathan, 2008; Garcia *et al.*, 2010; Adiguzel, 2013). Moreover, the presence of a financial expert in the audit committee is regarded as necessary for the effectiveness of its role. Indeed, knowledge and experience in financial, auditing and accounting linked issues provide a major impact on audit committee efficiency. Thus, this know-how should obviously aid the audit committee members to be more rigorous when dealing with accounting discretion exercised by managers. Several empirical researches establish a positive relationship between the financial expertise of audit committee members' and earnings management (Xie *et al.*, 2003; Choi *et al.*, 2004; Dhaliwal *et al.*, 2010). Contrarily, other studies such as, Ghosh *et al.* (2010) do not find any relationship between financial expertise and earnings management practices.

According to the resource dependence theory, a large audit committee means that the members can bring more resources to the firm, such as experience and expertise, which contribute to the audit committee's effectiveness to overseeing duties. Thus, leading to a high earnings quality. Vafeas (2005) demonstrates that a large audit committee reduced the performance of directors owing to the difficulties of organization and coordination and therefore this is considered as another reason for weak power in monitoring. In contrast, Yang & Krishnan (2005) report that audit committee size is negatively associated with earnings management (using abnormal accruals as proxy for earnings management). This result confirms that a minimum number of audit committee members may be relevant to improve the quality of financial reporting. Nevertheless, Baxter and Cotter (2009) and Adiguzel (2013) find an insignificant association between audit committee size and earnings quality. Krishnan and Visvanathan (2008) revealed that the idea in identifying optimal audit committee size is to have a committee small enough to be controllable but large enough to supervise well. Some researchers suggest an ideal average size of an audit committee between 3 and 4 members (Xie *et al.*, 2003; Vafeas, 2005).

Another attribute to assess audit committee efficiency is meetings frequency of audit committee. From empirical studies, it seems that this attribute provides also mixed results. Visvanathan (2008), Ghosh (2010) and Lin and Wang (2010) showed that firms with a higher number of audit committee meetings, are associated with a lower occurrence of earnings management. These studies recommend that audit committees who meet regularly during the year are more effective in controlling process. The more frequently they meet, the more efficiently they discharge their oversight responsibilities. However, some others studies showed no relationship between frequency of audit committee meetings and earnings management (Bédard *et al.*, 2004; Yang & Krishnan, 2005; Baxter & Cotter, 2009). In their meta-analysis, Lin and Hwang (2010) offer an insightful empirical examination on the influence of audit committees characteristics by analyzing numerous empirical researches published so far. They find that earnings quality is positively and significantly related to independent audit committee members, to frequency of audit committee meetings, to the size of audit committee and to the financial expertise of the audit committee members.

In summary, the above narrative review presented mixed evidence on the value relevance of audit committee characteristics to mitigate the earnings management. Therefore, we propose the following hypotheses for our empirical tests:

H_2: There is a positive relationship between effectiveness of audit committee and earnings management.
$H_{2\text{-}1}$: There is a negative relationship between audit committee independence and the occurrence of earnings management.
***$H_{2\text{-}2}$**: There is a negative relationship between* the audit committee financial expertise and *the occurrence of earnings management.*
***$H_{2\text{-}3}$**: There is a positive relationship between audit committee size and the occurrence of earnings management.*
***$H_{2\text{-}4}$**: There is a positive relationship between audit committee meetings and the occurrence of earnings management.*

2.3 Audit quality effect

Numerous studies illustrate that a higher audit quality (auditor reputation, industry specialization and tenure) reduces managerial accounting discretion (Sun and Liu, 2013). Empirical evidence obtained with regard to these audit quality attributes has been mixed. While many prior works show that the retain of brand name (Big 4/5/6) auditors mitigates the occurrence of earnings management (Francis *et al.*, 1999; Lin *et al.*, 2006), many others do not succeed to confirm such results (Bédard *et al.*, 2004; Davidson *et al.*, 2005). These divergences in findings within research can be explained by the differences in measures retained to assess audit quality.

Concerning the specialization as an attribute for audit quality, Jaggi *et al.* (2012) find a positive association between industry specialization and earnings quality. Likewise, Chi *et al.* (2011) show that industry specialist auditors are related with earnings management. However, some other researchers obtain no significant difference in earnings quality and failed to find a relationship between industry specialist auditors and earnings management (Mascarenhas *et al.*, 2010; Lawrence *et al.*, 2011).

With regard to auditor tenure, Reichelt and Wang (2010) consider that long auditor tenure would reduce the occurrence of earnings management. Whereas, Chi *et al.* (2011) establish that auditor tenure is related to higher occurrence of earnings management. However, Jackson *et al.* (2008) find no relationship between audit tenure and the discretionary accruals.

Since the results related to the effect of audit quality are often heterogeneous, obviously it will be hard to draw substantive conclusions with regard to this corporate governance mechanism.
Therefore, we think it is fruitful to use meta-analysis technique to review, evaluate and synthesize relevant empirical works that examine the relationships between internal and external corporate governance mechanisms and earnings management. Based on the narrative review of the association between audit quality and occurrence of earnings management, we suggest the following hypothesis:

H_3: There is an association between audit quality and earnings management.
$H_{3\text{-}1}$: *There is a negative association between auditor size and the occurrence of earnings management*
$H_{3\text{-}2}$: *There is a negative association between auditor industry specialization and the occurrence of earnings management.*
$H_{3\text{-}3}$: *There is a positive association between auditor tenure and the occurrence of earnings management.*

3. Research design

3.1 Sample selection

The meta-analytical process is essentially based on collection of different empirical researches on a particular topic. We search the desired studies done by downloading from the most popular and academic databases: Science Direct, Springer, JSTOR, ProQuest, EBSCO and Emerald. We use in our searching the following keywords: corporate governance mechanisms, earnings management, board of directors, audit committee and audit quality. We choose our sample based on most relevant articles funded on predetermined criteria and identifying variables that have been examined. Our research of papers leads us to the collection of 75 articles (see Appendix) limited to the effects of corporate governance by investigating (i) the effectiveness of board of directors; (ii) audit committee and (iii) audit quality in order to reduce the magnitude of earnings management.

We eliminate the following studies from our analysis: studies suffering from 1) The luck of empirical methodology, 2) Not English written studies 3) Studies conducted in specific context (crisis period, promulgation of new law etc.). The Selection of studies sample for Meta-analysis is detailed in Table 1.

Table 1: Selection of studies sample for Meta-analysis

	Number of studies	***Percentage***
Initial sample	109	100%
Studies excluded from sample are the following:		
– Studies do not using discretionary accruals as estimator of earnings management (such as real earnings management)	13	12%
– Studies conducted in special context (IPO, financial crisis, promulgation of new law etc.)	8	7.4%
– Studies dealing with other corporate governance mechanisms (such as ownership structure, Bonus plan compensation etc.)	9	8%
– - Studies with quantitative results not transformable into r required in meta-analysis	4	3.6%
Total studies excluded from meta-analysis sample	(34)	31%
Final meta-analysis sample	75	69%

3.2 Meta-analytic procedure

The meta-analysis conducted in our study is by following the method presented by Hunter *et al.* (1982). The author suggest a conversion formula to transform various reported statistics (F-fisher, t-statistics…) of individual studies into a common metric of effect size.
Narrative literature analysis can be misleading because diverse studies may obtain different results about a set of individual research due to disparity in characteristics especially the sample size and the time period (Hunter & Schmidt, 1990).

The meta-analysis method is classic and usually consists of:

1. Converting the effect of individual studies into a common metric namely (r). The Statistical reports (r) will be employed to create collection, integration and evaluation.
2. Utilizing the statistical reports (r) as "size effect". It is the correlation coefficient between the substitute of corporate governance variables and earnings management.
3. If the size effect (r) isn't present, then test-statistics reports will be changed into another (r) via formula process of Lipsey & Wilson (2001) and Hunter &Schmidt (1990), as presented in Table 2.

Table 2. Transformation of Statistical Test to formula to (r)

Statistic Test	Transformation formula to (r)
Statistic F	$\sqrt{F/F+df}$ (t)
Statistic T	$\sqrt{t^2/(t^2+df)}$
P-value	Is converted firstly in t-statistics the nit converted in r
Chi-square	$r=\sqrt{X^2/N}$

Where df is a degree of freedom

The meta-analytic process follows three phases to obtain mean correlation ($\bar{r}$) and estimate of population variance (Schmidt *et al.*, 2004). The first phase is to collect and determine the average correlation coefficient (r), with formula:

$$\bar{r} = \sum(N_i r_i)/\sum N_i$$

Where:
Ni = Number of articles in the study.
ri = Coefficient of Pearson Correlation for study i.
Subsequently, the second phase is to estimate and correct the error variance:

$$(s_e^2) = (1 - \bar{r}^2)^2 k / \sum N_i$$

Where:
K = Number of individuals researches retained in this study.

The calculation of sampling-error variance will be that subtracted from the observed variance, leaving the residual variance, which offer an unbiased estimation of the population variance:

$$(s_p^2) = (s_r^2) - (s_e^2)$$

Where (s_r^2) total observed variance is calculated by utilizing an average error weighted by sample size:

$$s_r^2 = \sum N_i (r_i - \bar{r})^2 / \sum N_i$$

The third phase is to investigate whether there are moderating variables that could influence the variables' correlations by construction 95% confidence interval and by calculating population mean ($\bar{r}$) and the standard deviation which used to assess the significance of association of interests.

$$[r - S.p\, Z\, 0.975 ,\ r + S.p\, Z\, 0.975] = [r - S.p\,(1.96),\ r + S.p\,(1.96)]$$

If a confidence interval comprises zero, the relevant mean correlation is supposed showing a non-significant population association. A powerful statistical analysis to estimate the moderating effects is to detect whether the observed variance is trivial (homogeneous) or is significantly greater than expected (heterogeneous), is to calculate the X^2 statistic (Hunter *et al.* 1990), with following formula:

$$X^2_{k-1}=N\, s_r^2/(l-\bar{r}^2)^2$$

If Chi-square test result explains insignificant value, it means research's findings examined are homogeneous. It does not give indication of a moderating variable. If Chi-square test illustrates a significant value so we should conclude that there is an heterogeneity that require the existing of a moderated variables. Variations in research results are moderated by other variables. Moderation variables examined is done by grouping (sub-groups) of researches and estimated a correlation coefficient (r) and total observed variance (s_r^2) for every hypothesized sub-groups. The organization is done by a sub-group divergences to measure dependent and independent variables. The purpose of this sub-group is to mitigate heterogeneity and to enhance explanatory power. Prior meta-analysis researches recommend that studies should be gathered according to dissimilarity in the measurement of the dependent and the independent variables to moderate the level of variance in findings. In this study, researchers are sub-grouped based on the disparity in mechanisms of corporate governance measures and differences in legal origin of each country retained in our study.

4. Results

The findings of our meta-analysis concerning the association between internal and external corporate governance mechanisms and earnings management are reported in Tables 3, 4 and 5. In each table, we summarize the results of the over-all meta-analysis then we detail results within sub-groups according features retained for each corporate governance mechanism. This step will allow us to test the hypothesis suggested previously.

Table 3 shows the findings of the meta-analysis of the effect of board characteristics on earnings management. An overall meta-analysis is conducted for the 26 articles that study the association between board characteristics and earnings management. The results reveal a significant negative association with a (*r*) of -0.044 (z = 1.623, p 0.01) and a confidence interval between -0.024 and 0.075 with a moderate degree of homogeneity since the sampling error variance accounts for 69 percent of the total variance. This finding demonstrates that the characteristics of the board may limit the occurrence of earnings management. Furthermore, we establish a significant and negative association between board independence and earnings management with a (*r*) of -0.051 (z = 1.707, p 0.01) with a confidence interval between -0.032 and 0.358.

In terms of CEO duality, table 3 shows that the Chi-square test is non-significant. Thus, we cannot support the hypothesis ($H_{1.3}$) that firms with CEO duality functions are concerned in more earnings management than companies whose CEO is independent of the chairman. These are due to the variance explained by sampling error (78%), and the real correlation between CEO duality and earnings management in the population has not significant effect (r)= 0.029 (z = 2.012, p 0.01). Thus, the homogeneity test is not rejected; we do not look for moderators, since the size of several moderator studies would be too small. Although most corporate practices provides strong evidence that separation between the CEO and chairman functions is preferable as it enhances the effectiveness of the board monitoring role. Although, this finding could be contrary to Jensen (1993) suggesting that the existence of a chairman who is also the chief executive of one firm could override the benefit of having independent directors on the board and the supervising of the CEO by the chairman signals stronger governance and improve a firm value.

The findings of the meta-analysis of 19 studies show a negative and significant effect (r) = -0.062 (z = 1.56, p 0.01) of board size on earnings management. This results support that this mechanism of governance reduces managerial discretion behavior; that is, larger boards are more effective in limiting earning management. While, this result could be contrary to Okougbo and Okike (2015) who showed that small board is more effective in overseeing managers compared to large one. Moreover, as boards become larger, they are likely to comprise more independent directors (Karamanou & Vafeas, 2005) and varied experiences to improve the board's monitory function and subsequently reduce the occurrence of earnings management (Hidalgo *et al.*, 2011).

We study the moderator effect played by the various legal origins (common and civil law). We find that for studies belonging to common law countries, the (*r*) is -0.056 (*Z* = 0.454) so we deduce that common law countries are effective in limiting the occurrence of earnings management. However, from focus within civil law countries, we do not find any significant association with earnings management. However, we should notice that such conclusion is obtained from a little number of correlations in civil law countries (11 studies).

Table 3: Meta-Analysis of the impact of characteristics of board directors on earnings management

Variables	Number of correlation	Mean correlation (r)	Percentage Explained $s_e^{2/} s_r^2$	95 % confidence interval	χ^2K -1	Hypothesis
Board characteristics overall	26	-0.044 *	69.547	-0.024; 0.075	56.322**	
Sub-groups of Board by Characteristics						

Variables	Number of correlation	Mean correlation (r)	Percentage Explained s_e^{2}/s_r^{2}	95 % confidence interval	χ^2K -1	Hypothesis
*****_Board independence_	24	-0.051**	25.321	-0.032;0.358	58.366**	H1.1validated
*Duality of board	18	0.029	78.39	-0.065;0.124	32.144	H1.3not validated
*Size of board	19	-0.062 *	20.36	-0.011;0.208	41.73**	H1.2 validated
Sub-groups of Board by legal origin						
-common law	15	-0.056*	31.02	-0.003; -0.098	46.52**	
-civil law	11	-0.017	27.87	-0.013;0.275	11.36*	

*p < .10; *p < .05; **p < .01; ***p < .001.*

Table 4 displays the findings of the relationship between audit committee characteristics and earnings management. The results of the overall meta-analysis is undertaken for the 47 studies are significant (r) = -0.069 (z = 1.812, p 0.01). Therefore, we can deduce that audit committee characteristics are effective mechanisms of governance in reducing earnings management. Furthermore, When we separate the sample according measures of characteristics of audit committee in order to look for moderators, we find a negative effect (*r*) = -0.026 (z = -1.943, p 0.01) of independence of audit committee on earnings management. These findings show also a significant negative association between financial expertise and earnings management with a (*r*) of -0.063 (*z* = -1.530) and a confidence interval between -0.024 and 0.084 with a moderate degree of homogeneity since the sampling error variance accounts for 33.27 percent of the total variance.

The independence of audit committee is showed to be a major corporate governance mechanism in constraining earnings management. This governance characteristic is likely to supply shareholders with the most protection in preserving the reliability of a firm's financial reporting. Seeing researches included in our meta-analysis, on average, the majority of audit committee members are independent directors. These results confirm both the previous literature and governance recommendations which support that audit committee should contain solely non-executive or independent directors to be efficient. Our results are consistent with Baxter and Cotter (2009); Carcello *et al.* (2011) and Sun *et al.* (2014). Moreover, our results are consistent with Zgarni and Halioui (2016) showed that the independence of the audit committee, its size, expertise and the number of meetings have a negative relationship with earnings management. However, our findings do not corroborate with those of Ghosh *et al.* (2010) and Adiguzel (2013) who find an insignificant relation between independence of audit committee and earnings management.

Moreover, the presence of a financial expert in the audit committee is observed as an important characteristic for the effectiveness of its functions. Really, the experience and knowledge in finance, auditing and accounting play a relevant role in enhancing earnings quality. Our results are coherent with Krishnan and Visvanathan (2008), Dhaliwal *et al.* (2010) and Lin and Hwang (2010).

Since the selected studies are heterogeneous, we extend our analysis to determine moderators' variables. Thus, we test whether the heterogeneity in the selected studies is due to the legal system. Therefore, we split researches retained in our meta-analysis according to two groups: common law countries and civil-law countries. We find that common law countries have a (*r*) of -0.041and a confidence interval between -0.155 and -0.024 and a higher degree of homogeneity since the error variance accounts for 51.32 per cent of the observed variance. Furthermore, studies within civil law countries do not show any significant relationship with earnings management. These findings should be interpreted with caution since there are few researches in civil law countries group (14 researches). These findings seem to be coherent with Garcia-Meca and Sanchez-Ballesta (2009) and Zgarni and Haloui (2016).

Table 4: Meta-Analysis of the impact of characteristics of audit committee on earnings management

Variables	Sample	Mean correlation (r)	Percentage Explained $s_e^{2/} s_r^2$	95 % confidence interval	χ^2K -1	Hypothesis
- audit committee characteristics overall	47	-0.069**	71.24	-0.051;0.011	64.25*	
Sub-groups of audit committee by characteristics						
** independence*	35	-0.038 ***	58.06	-0.036;0.025	57.26	H2.1 validated
** financial expertise*	31	-0.023 *	33.27	-0.022;0.084	40.27**	H2.2 validated
** size*	28	0.022	69.38	-0.045;0.086	29.34*	H2.3 non validated
** meetings*	22	-0.031	71.25	-0.013;0.066	23.98**	H2.4 non validated
Subgroups of audit committee by legal origin						
- common law	23	-0.041**	51.32	-0.155; -0.024	67.05	
- civil law	14	-0.017	64.25	-0.079;0.053	54.37*	

*p < .10; *p < .05; **p < .01; ***p < .001.*

Table 5 provides the findings of the meta-analysis of the association between audit quality and earnings management. The overall meta-analysis of 45 researches does not show any significant association between the variables. In order to limit heterogeneity, we first look for moderators according to the operational definition of audit quality (auditor size, auditor industry specialization and auditor tenure).

The findings of the meta-analysis of 40 studies show a negative and significant effect (r) = -0.141 (z = 0.594, p 0.01) of auditor size on earnings management. This result support that the retained of brand name (Big 4/5/6) auditors mitigates the occurrence of earnings management (Francis *et al.*, 1999; Lin *et al.*, 2006; Zgarni & Halioui, 2016).

Concerning the association between auditor industry specialization and earnings management, we find a non-significant association. However, Zgarni and Halioui (2016) find a negative relationship between auditor specialization and earnings management. Moreover, the effect of the auditor tenure in reducing the earnings management is positive which confirm then $H_{3.3}$ for audit quality. This result supported that long auditor tenure would reduce the occurrence of earnings management (Reichelt & Wang, 2010; Chi *et al.*, 2011; Lin & Hwang, 2010).

Finally, we divide the sample according to the legal origins of countries (common and civil law) in order to find more relevant explanation for heterogeneity. However, this subdivision does not show any significant relationship neither between common law and earnings management nor within civil-law countries.

Table 4 displays the findings of the relationship between audit committee characteristics and earnings management. The results of the overall meta-analysis is undertaken for the 47 studies are significant (r) = -0.069 (z = 1.812, p 0.01). Therefore, we can deduce that audit committee characteristics are effective mechanisms of governance in reducing earnings management. Furthermore, When we separate the sample according measures of characteristics of audit committee in order to look for moderators, we find a negative effect (*r*) = -0.038 (z = -1.752, p 0.01) of independence of audit committee on earnings management. These findings show also a significant negative association between financial expertise and earnings management with a (*r*) of -0.023 (*z* = -1.422) and a confidence interval between -0.022 and 0.084 with a moderate degree of homogeneity since the sampling error variance accounts for 40.27 percent of the total variance.

The independence of audit committee is showed to be a major corporate governance mechanism in constraining earnings management. This governance characteristic is likely to supply shareholders with the most protection in preserving the reliability of a firm’s financial reporting. Seeing researches included in our meta-analysis, on average, the majority of audit committee are independent directors. These results confirm both the previous literature and governance recommendations, which support that audit committee, should contain solely non-executive or independent directors to be efficient. Our results are consistent with Baxter & Cotter (2009), Carcello *et al.* (2011) and Sun *et al.* (2014). However, our findings do not corroborate with those of Ghosh *et al.* (2010) and Adiguzel (2013) who find an insignificant relation between independence of audit committee and earnings management.

Moreover, the presence of a financial expert in the audit committee is observed as an important characteristic for the effectiveness of its functions. Really, the experience and knowledge in financial, auditing and accounting play a relevant role in enhancing earnings quality. Our results are coherent with Krishnan and Visvanathan (2008), Dhaliwal *et al.* (2010) and Lin & Hwang (2010).

Since the selected studies are heterogeneous, we extend our analysis to determine moderators variables. Thus, we test whether the heterogeneity in the selected studies is due to the legal system. Therefore, we split researches retained in our meta-analysis according to two groups: common law countries and civil-law countries. We find that common law countries have a (*r*) of -0.041and a confidence interval between -0.155 and -0.024 and a higher degree of homogeneity since the error variance accounts for 51.32 per cent of the observed variance. Furthermore, studies within civil law countries do not show any significant relationship with earnings management. These findings should be interpreted with caution since there are few researches in civil law countries group (eight researches). Our results seem to be coherent with Garcia-Meca &Sanchez-Ballesta (2009) and Zgarni & Haloui (2016).

Table 5. Meta-Analysis of the impact of characteristics of audit quality on earnings management

Variables	Sample	Mean correlation (r)	Percentage Explained $s_e^{2/} s_r^2$	95 % confidence interval	χ^2K -1	Hypothesis
Audit quality ovrall	45	-0.112	35.254	-0.121;0.278	72.036	
Sub-groups of audit quality by characteristics	39	-0.243**	44.321	-0.025;0.463	53.211**	H3.1 validated
* *auditor size*	24	-0.074	52.211	-0.033;	62.032**	H3.2 not
* *auditor industry specialization*	32	0.152*	47.370	-0.088	27.017**	validated
				-0.096; 0.527		H3.3 validated
**auditor tenure*						
Subgroups of audit quality by legal origin	29	-0.086	62.284		32.214*	
	16	0.014	27.367	-0.023;	59.363	
- *common law*				-0322		
- *civil law*				-0.045;0.023		

*p < .10; *p < .05; **p < .01; ***p < .001.*

Table 5 provides the findings of the meta-analysis of the association between audit quality and earnings management. The overall meta-analysis of 45 researches does not show any significant association between the variables. In order to limit heterogeneity, we first look for moderators according to the operational definition of audit quality (auditor size, auditor industry specialization and auditor tenure).

The findings of the meta-analysis of 39 studies show a negative and significant effect (r) = -0.234 (z = 0.594, p 0.01) of auditor size on earnings management. This result support that the brand name (Big 4/5/6) auditors mitigates the occurrence of earnings management (Francis *et al.*, 1999; Lin *et al.*, 2006). Similarly, Zgarni and Halioui (2016) showed that auditor size has a significant negative relationship with earnings management.

Concerning the association between auditor industry specialization and earnings management, we find a non-significant association. The effect of the auditor tenure on reducing the earnings management is positive which confirm then $H_{3.3}$ for audit quality. These results do not support that long auditor tenure reduced the occurrence of earnings management (Reichelt & Wang, 2010; Chi *et al.*, 2011 and Lin &Hwang, 2010). However, our findings do not corroborate with the results of Zgarni and Halioui (2016).

Then, we divide the sample according to the legal origins of countries (common and civil law) in order to find more relevant explanation for heterogeneity. However, this subdivision does not show any significant relationship neither between common law and earnings management nor within civil-law countries.

5. Conclusion

Using the meta-analysis approach, we reconcile the mixed findings of 75 empirical studies investigating the effect of internal and external corporate governance on reducing the earnings management. Our meta-analysis highlights that a country's corporate governance system significantly influences earnings quality. Especially, we demonstrate that both board independence and board size present a great power to constrain the opportunistic behavior of managers. Further, the findings show that the inclusion of independent and financial experts is very effective in audit committee.

In addition, this meta-analytic review proposes that auditor size can be seen as an effective attribute of audit quality to mitigate the occurrence of earnings management. Therefore, we estimate that the results obtained from this meta-analysis could have several practical issues for both: 1. Regulators to emphasize the requirements for audit committee, board of director’s structures, profile and liabilities of external auditors. Researchers to develop and increase efforts in order to achieve a strong methodological approach to assess earnings management behavior.

Although this meta-analysis contributes to accounting literature, it is subject to several limitations. First, the sample used include only studies published in recognized databases whereas it exists many both non published and published articles in other databases such as universities publications' or congress acts'. Such limit may lead to different findings. Second, this research analyzes mainly studies, which use discretionary accrual proxy to detect magnitude of earnings management. Whereas, we can considered other earnings management tools such as real earnings management. Another limitation is the bias of the sample to civil-law countries.

A fruitful avenue of further researches would be to incorporate real earnings management as the proxy for measurement earnings management. In addition, the new studies would also facilitate us to estimate the moderating functions played by other variables that could affect the effectiveness of corporate governance mechanisms on reducing earning management, such as changes in governance regulation and comparable acts in other countries.

References

Abbott, L.J. & Parker, S. (2000) "Auditor selection and audit committee characteristics", *Auditing:* A *Journal of Practice and Theory*, Vol. 19, No. 2: 47-66

Abbott L.J., Parker S. & Peters G.F. (2003) "Audit committee characteristics and restatements: A study of the efficacy of certain Blue Ribbon Committee recommendations", Auditing: *A Journal of Practice and Theory*, Vol. 23, No. 1: 69-87

Adiguzel, H. (2013) "Corporate governance, family ownership and earnings management: emerging market evidence", *Accounting and Finance Research*, Vol. 2, No. 4: 17-33

Afzal, M & Habib, M.D. (2018) "Corporate governance and earnings management: a model and empirical investigation from Karachi Stock Exchange", *Journal of Finance & Economics Research*, Vol. 3, No. 2: 51-67

Ahsen, H., (2011) "Audit firm industry specialization and audit outcomes: Insights from academic literature". *Research in Accounting Regulation*, Vol. 23, No. 1: 114-129

Alhadab, M., Clacher, I. & Keasey, K. (2013) "Real and accrual earnings management and ipo failure risk", available at SSRN: http://ssrn.com/ abstract=2225411.

Antle, R., Gordon, E., Narayanamoorthy, G. & Zhou, L. (2006) "The joint determination of audit fees, non-audit fees, and abnormal accruals", *Review of Quantitative Finance and Accounting*, Vol. 27: 235-66.

Balsam S., Krishnan J. & Yang J.S. (2003) "Auditor industry specialization and earnings quality", *Auditing: A Journal of Practice et Theory*, Vol. 22, No. 2: 71-97

Bauwhede, H. V. & Willekens, M. (2004) "Evidence on (the lack of) audit-quality differentiation in the private client segment of the Belgian audit market", *European Accounting Review*, Vol. 13, No. 3: 501-522

Bauwhede, H. V., Willekens, M. & Gaeremynck, A. (2003) "Audit firm size, public ownership, and firms discretionary accruals management", *The International Journal of Accounting*, Vol. 38: 1-22

Baxter P. & Cotter J. (2009) "Audit committees and earnings quality", *Accounting & Finance*, Vol. 49, No. 2: 267-290

Beasley, M.S., (1996) "An empirical analysis of the relation between the board of director composition and financial statement fraud", *The Accounting Review*, Vol. 71: 443-465

Bédard, J., Chtourou, S.M. Courteau L. (2004) "The effect of audit committee expertise, independence, and activity on aggressive earnings management", *Auditing*, Vol. 23, No. 2: 13-36

Benkel, M., Mather, P. & Ramsay, A. (2006) "The association between corporate governance and earnings management: the role of independent directors", *Corporate Ownership & Control*, Vol. 3, No. 4: 65-75

Bradbury, M., Mak, Y., & Tan, S. (2006) "Board characteristics, audit committee characteristics, and abnormal accruals", *Pacific Accounting Review*, Vol. 18: 47-68

Bugshan, T. (2005) "Corporate governance, earnings management, and the information content of accounting earnings: theoretical model and empirical tests", P.hd Thesis, Bond University Queensland 4229, Australia

Carcello G. V., Hollingsworth C. & Mastrolia S. A. (2011) "The effect of PCAOB inspections on Big 4 audit quality", *Research in Accounting Regulation*, Vol. 23, No. 2: 85-96

Carcello J., Hollingsworth C., Klein A. & Neal T. (2006) "Audit committee financial expertise, competing corporate governance mechanisms, and earnings management", *working paper*, University of Tennessee, Clemson University, and New York University, available at www. ssrn.com

Carcello J.V. & Neal T.L. (2003) "Audit committee characteristics and auditor dismissals following « new « going-concern reports", *The Accounting Review*, Vol. 78, No. 1: 95-11

Carey, P. & Simnett, R. (2006) "Audit partner tenure and audit quality", *The Accounting Review*, Vol. 81, No. 3: 653-76

Chang J.C. & Sun H. L. (2009) "Crossed-listed foreign firms» earnings in formativeness, earnings management and disclosures of corporate governance information under SOX", *The International Journal of Accounting*, Vol. 44, No. 1: 1-32

Chelogoi, S.K. (2017) "Effect of corporate governance on earnings management of firms listed in Nairobi securities exchange", *International Journal of Economics, Commerce and Management*, Vol. V, Issue 8: 641-644

Chen J. J. & Zhang H. (2014) "The impact of the corporate governance code on earnings management: evidence from Chinese Listed Companies", *European Financial Management*, Vol. 20: 596-632

Chen, C. Y., Lin, H. J. & Lin, Y. C. (2008) "Audit partner tenure, audit firm tenure, and discretionary accruals: Does long auditor tenure impair earnings quality?" *Contemporary Accounting Research*, Vol. 25: 415-45

Chen, K. Y., Lin, K-L. & Zhou, J. (2005) "Audit quality and earnings management for Taiwan IPO firms", *Managerial Auditing Journal*, Vol. 20, no.1: 86-104

Chi W. & Huang H. (2005) "Discretionary accruals, audit-firm tenure and audit-partner tenure: empirical evidence from Taiwan, *Journal of Contemporary Accounting & Economics*,Vol. 1: 65-92

Chi W., Lisic L. & Pevzner M. (2011) "Is enhanced audit quality associated with greater real earnings management?", *Accounting Horizons*, Vol. 25, no. 2: 315-335

Cho, E. & Chun, S. (2015) "Corporate social responsibility, real activities earnings management, and corporate governance: evidence from Korea", *Asia-Pacific Journal of Accounting and Economics*, Vol. 23, No. 4: 1-32

Choi, J., Jeon, K. & Park, J. (2004) "The role of audit committees in decreasing earnings statement: Korean evidence", *International Journal of Accounting, Auditing & Performance Evaluation*, Vol. 1, No. 1: 37-60

Choi, J. H., Kim C., Kim J. B. & Zang Y. (2010) "Audit office size, audit quality, and audit pricing", *Auditing: A Journal of Practice & Theory*, Vol. 29, No. 1: 73-97

Chtourou, S., Bédard, J. & Couteau, L. (2001) "Corporate governance and earning management", working paper, Laval University.

Chung, R., Firth, M., & Kim, J. (2005) "Earnings management, surplus free cash flow, and external monitoring", *Journal of Business Research*, Vol. 58: 766-776

Commerford, B., Hermanson, D., Houston, R., & Peters, M., (2014) "Real earnings management: the auditors perspective", Electronic Copy Available at: http://ssrn.com/abstract=2384525: 1-56, UAS.

Cormier, D. & Martinez, I. (2006) "The association between management earnings forecasts, earnings management, and stock market valuation: evidence from French IPOs», "*The International Journal of Accounting*, Vol. 41: 209-236.

Davidson, R., Goodwin-Steward J. & Kent P. (2005) "Internal governance structures and earnings management", *Accounting and Finance*, Vol. 45: 241-267

Davis, L., Soo B. & Trompeter G. (2009) "Auditor Tenure & the Ability to Meet or Beat Earnings Forecasts", *Accounting Faculty Publications*. Paper 42.

Dechow, P.M., Ge W., & Schrand C. (2010) "Understanding earnings quality: A review of the proxies, their determinants and their consequences", *Journal of Accounting and Economics*, Vol. 50: 344-340

Dhaliwal, V., Naiker & Farshid N. (2010) "The association between accruals quality and the characteristics of accounting experts and mix of expertise on audit committees", *Contemporary Accounting Research*, Vol. 27, No. 3: 787-827

Dhaliwal, D., Naiker, V., & Navissi, F. (2006) "Audit committee financial expertise, corporate governance, and accruals quality: An mpirical analysis" SSRN working paper series.

Dutillieux, W. & Willekens, M. (2009) "The effect of auditor industry specialization on audit pricing in belgium", *Review of Business and Economics*, Vol. 54, No. 2: 129-147

Ebrahim, A. (2001) "Auditing quality, auditor tenure, client importance, and earnings management: an additional evidence", unpublished, Rutgers University, 2001

Elage, A. & Mard, Y. (2018) "Corporate governance code and earnings management: the french case", *Comptabilité - Contrôle – Audit*, Vol. 24: 113-147

Fodio M., Ibikunle J., & Oba V. (2013) "Corporate governance mechanisms and reported earnings quality in listed Nigerian Insurance Firms", *International Journal of Finance and Accounting*, Vol. 2: 279-286

Francis, J. R. & Yu, M. D. (2009) "Big 4 office size and audit quality", *The Accounting Review*, Vol. 84, No. 5: 1521-1552

Francis, J.R. & Wang, D. (2008) "The joint effect of investor protection and Big 4 audits on earnings quality around the world", *Contemporary Accounting Research*, Vol. 25, No. 1: 157-191

Francis, J. R., Maydew, E. L. & Sparks, H. C. (1999) "The role of big 6 auditors in the credible reporting of accruals", *Auditing: A Journal of Practice & Theory*, Vol. 18, No. 2: 17–34

Frankel, R. M., Johnson, M. F. & Nelson, K. K. (2002) "The relation between auditors fees for non audit services and earnings management", *The Accounting Review*, Vol. 35, No. 1: 71–105

GarcÃa-Meca, E. & Sánchez-Ballesta, J. (2009) "Corporate governance and earnings management: a meta-analysis", *Corporate Governance: An International Review*, Vol. 17, No. 5: 59-610

Garcıa Osma, B. & Gill de Albornoz Noguer, B. (2007) "The effect of the board composition and its monitoring committees on earnings management: evidence from Spain", *Corporate Governance: An International Review*, Vol. 15: 1412-1427

Ghosh A., Marra A. & Moon D. (2010) "Corporate boards, audit committees, and earnings management: pre- and post-SOX evidence", *Journal of Business Finance & Accounting*, Vol. 37, No. 9-10: 1145-1176

Graham J., Harvey R. & Rajgopal S. (2005) "The economic implications of corporate financial reporting", *The Accounting Review*, Vol. 80, No. 4: 1101-1124

Graven, (2009) "The effect of board and audit committee characteristics on real earnings management: do boards and audit committees play a role in its constraint", working paper, Culverhouse School of Accountancy, Tuscaloosa.

Greiner, A., Kohlbeck, M., & Smith, T. (2013) "Do auditors perceive real earnings management as a business risk?", working Paper, Florida, Atlantic University, UAS.

Gul, F., Yu Kit Fung, S. & Jaggi, B. (2009) "Earnings quality: some evidence on the role of auditor tenure and auditors industry expertise", *Journal of Accounting and Economics*, Vol. 47, No. 3: 265-287

Gunny, K. A. (2010) "The relation between earnings management using real activities manipulation and future performance: evidence from meeting earnings benchmarks", *Contemporary Accounting Research*, Vol. 27: 855-888

Habbash, M., Salama, A., Dixon, R & Hussainey K. (2010) "The effects of non-executive directors commitment, chairman independence and ownership structure on earnings management", *Journal of Applied Accounting*, Vol. 25: 679-700

Hay, D., W. Knechel, & Wong, N. (2006) "Audit fees: a meta-analysis of the effect of demand and supply attributes, *Contemporary Accounting Research*, Vol. 23: 141-191

He, L. & Yang, R. (2014) "Does industry regulation matter? New evidence on audit committees and earnings management: evidence from China", *Review of Quantitative Finance and Accounting*, Vol. 42, No. 3: 571-597

He, L., Labelle, R. Piot C. & Thornton D.B. (2009) "Board monitoring, audit committee effectiveness, and financial reporting quality: review and synthesis of empirical evidence", *Journal of Forensic & Investigative Accounting*, Vol. 1, No. 2: 2-41

Healy, P. M. & Wahlen, J. (1999) "A review of the earnings management literature and its implication for standard setting", *Accounting Horizons*, Vol. 13, No. 4: 365-383

Hsu, M.F & Wen, S.Y (2015) "The influence of corporate governance in Chinese companies on discretionary accruals and real earnings management", *Asian Economic and Financial Review*, Vol. 5: 391-406

Huang, H-W., Mishra, S. & Raghunandan, K. (2007) "Types of non audit fees and financial reporting quality", *Auditing: A Journal of Practice and Theory*, Vol. 26, No. 1: 133-145

Hunter, J. & Schmidt, F. (1990) *Methods of meta-analysis: Correcting error and bias in research findings*, Beverly Hills CA: Sage

Hunter, J., Schmidt, F., & Jackson, G. (1982). *Meta-Analysis: Cumulating research findings across studies*, Beverly Hills CA: Sage

Hutchinson, M. R., Percy, M. & Erkurtoglu, L. (2008) "An investigation of the association between corporate governance, earnings management and the effect of governance reforms", *Accounting Research Journal*, Vol. 21, No. 3: 239-262

Jackson, A. B., Moldrich, M. & Roebuck, P. (2008) "Mandatory audit firm rotation and audit quality", *Managerial Auditing Journal*, Vol. 23, No. 5: 420-437

Jaggi, B. & Tsui, J. (2007) "Insider Trading, Earnings Management and Corporate Governance: Empirical Evidence Based on Hong Kong Firms", *Journal of International Financial Management Accounting*, Vol 18: 192-222

Jaggi, B., Gul, F. A. & Chiu Lau, T. S. (2012) "Auditor industry specialization, political economy and earnings quality: some cross-country evidence", *Journal of International Financial Management and Accounting*, Vol. 23, No. 1: 24-61

Jensen, M. C. (1993) "The modern industrial revolution, exit, and the failure of internal control systems", *Journal of Finance*, vol. 48: 831-880

Jeong, S. W. & Rho, J. (2004) "Big six auditors and audit quality: the Korean evidence", *The International Journal of Accounting*, Vol. 39: 175-196

Jones, J. (1991) "Earnings management during import relief investigations", *Journal of Accounting Research*, Vol. 29: 193-228

Kang, H., Leung, S., Morris, R. & Gray, S. (2013) "Corporate governance and earnings management: An Australian perspective", *Corporate Ownership & Control*, Vol. 10: 95-113

Kang, S. A. & Kim, Y. S. (2012) "Effect of corporate governance on real activity-based earnings management: evidence from Korea", *Journal of Business Economics and Management*, Vol. 13, No.1: 29-52

Kang, S.A. & Kim, Y.S. (2011) "Does earnings management amplify the association between corporate governance and firm performance?, Evidence from Korea", *International Business & Economics Research Journal*, Vol. 10, No. 2: 53-66

Karamanou, I. & Vafeas N. (2005) "The association between corporate boards, audit committees, and management earnings forecasts: an empirical analysis", *Journal of Accounting Research*, Vol. 43, No 3: 453-486

Kent, P., Routledge, J. & Stewart, J. (2008) "Innate and discretionary accrual quality and corporate governance", *Business papers*, Bond University ePublications@bond.

Kim, Y., & Park, M. S. (2014) "Real activities manipulation and auditors client retention decisions", *The Accounting Review*, Vol. 89: 367-401

Kim, J.B., Chung, R. & Firth, M. (2003) "Auditor conservatism, asymmetric monitoring, and earnings management", *Contemporary Accounting Research*, Vol. 20: 323-359

Kim, K. & Yang, J.S. (2014) “Director Tenure and financial reporting quality: evidence from Korea”, *Review of Integrative Business and Economic Research*, Vol. 3, No. 1: 237-256

Klein, A. (2002) “Audit committee, board of director characteristics and earnings statement”, *Journal of Accounting & Economics*, Vol. 33: 375-400

Knapp, M.C. (1991) “Factors that audit committee members use as surrogates for audit quality”, *Auditing: A Journal of Practice and Theory*, Vol. 10, No. 1: 35-52

Kothari, S. P., N. Mizik, & S. Roychowdhury. (2012) “Managing for the moment: The role of real activity versus accruals earnings management in SEO valuation”, *Working paper*, Massachusetts Institute of Technology.

Krishnan G. & Visvanathan G. (2008) “Does the SOX definition of an accounting expert matter? The association between audit committee directors accounting expertise and accounting conservatism”, *Contemporary Accounting Research*, Vol. 25, No. 3: 827-857

Krishnan, G.V. (2003) “Does big 6 auditor industry expertise constrain earnings management?”, *Accounting Horizons*, Vol. 17, Supplement: 1-16

Larcker, D. F., Richardson, S. A. & Tuna, I. (2007) “Corporate governance, accounting outcomes, and organizational performance”, *The Accounting Review*, Vol. 82: 963-1008

Lawrence, A., Minutti-Meza, M. & Zhang, P. (2011) “Can Big 4 versus Non-Big 4 differences in audit-quality proxies be attributed to client characteristics?”, *The Accounting Review*, Vol. 86, No.1: 259-286

Lenard, M.J. & Bing, Y. (2012) “Do earnings management and audit quality influence over-investment by Chinese companies?”, *International Journal of Economics and Finance*, Vol. 4: 21-30.

Li, Y., Eddie, I & Liu, J. (2010) “Boards characteristics, audit committee, external auditor and earnings management: Chinese evidence”, *Corporate Ownership & Control*, Vol. 8, No. 1: 197-209

Lim, C.Y. & Tan, P. M. S. (2009) “Control divergence, timeliness in loss recognition, and the role of industry specialization: Evidence from around the world”, *Journal of Accounting, Auditing and Finance*, Vol. 24, No. 2: 295-332

Lin, J., Li, J. & Yang, J. (2006) “The effect of audit committee performance on earnings quality”, *Managerial Auditing Journal*, Vol. 21, No. 9: 921-933

Lin, J. & Hwang, M. (2010) “Audit quality, corporate governance, and earnings management: A meta-analysis”, *International Journal of Auditing*, Vol. 14: 57-77

Lin, P., Marion R. H. & Majella, P. (2009) “The role of the audit committee and institutional investors in constraining earnings management: evidence from Chinese firms listed in Hong Kong”, In: Proceedings of Accounting & Finance Association of Australia & New Zealand Annual Conference, pp. 5-7

Lipsey, M.W. & Wilson, D. B. (2001) "Practicalmeta-analysis", *Applied Social Research Methods*, 49.

Liu, G., & Sun, J. (2010) "Director tenure and independent audit committee effectiveness", *International Research Journal of Finance and Economics*, Vol. 51: 176-189

Maijoor, S. J. & Vanstraelen, A. (2006) "Earnings management within Europe: the effects of member state audit environment, audit firm quality and international capital markets", *Accounting and Business Research*, Vol. 36, No. 1: 33-52

Mazzu, M. Monferra, S. & Starita, M.G. (2015) "Does corporate governance affect earnings management? Evidence from the US PC insurance industry", *Journal of Financial Management, Markets and Institutions*, Vol. 3, No. 2: 203-224

Meixner, W. & Welker, R. (1988) "Judgment consensus and auditor experience", *The Accounting Review*, Vol. 63, No. 3: 505-513

Mendez, C. F. & Garcha, R. (2007) "The effect of board and audit committee independence on earnings management in Spain", *Corporate Ownership & Control*, Vol. 5: 372-381

Mitchell, V. Z., Singh, H. & Singh, I. (2008) "Association between independent audit committee members' human-resource features and underpricing. The case of Singapore IPOs from 1997-2006", *Journal of Human Resource Costing & Accounting*, Vol. 12: 179-212

Myers, J. N., Myers, L. A. & Omer, T. C. (2003) "Exploring the term of the auditor-client relationship and the quality of earnings: a case for mandatory auditor rotation?", *The Accounting Review*, Vol. 78, No. 3: 779-799

Nazira, M.S. & Afza, T. (2018) "Does managerial behavior of managing earnings mitigate the relationship between corporate governance and firm value? Evidence from an emerging market", *Future Business Journal*, Vol. 4: 139-156

Nelson, M. W. & George, K.R. (2013) "Corporate governance, firm characteristics and earnings management in an emerging economy", *JAMAR*, Vol. 11, No. 1: 43-64

Okougbo, P. & Okike, O. (2015) "Corporate Governance and earnings management: empirical evidence from Nigeria", *Corporate Ownership and Control*, January, Vol. 12: 312-326

Peasnell, K.V., Pope, P.F. & Young, S. (2005) "Board monitoring and earnings management: Do outside directors influence abnormal accruals?", *Journal of Business Finance & Accounting*, Vol. 32: 1311-1346

Piot, C. & Janin, R. (2007) "External auditors, audit committees and earnings management in France", *European Accounting Review*, Vol. 16, No. 2: 429-454

Pomeroy, B. & Thornton, D. (2008) "Meta-analysis and the accounting literature: the case of audit committee independence and financial reporting quality", *European Accounting Review*, Vol. 17: 305-330

Rahman, R.A & Med Ali, F.H. (2006) "Board, audit committee, culture and earnings management: Malaysian evidence", *Managerial Auditing Journal,* Vol. 21: 783-804

Reichelt, K.J., & Wang, D. (2010) "National and office-specific measures of auditor industry expertise and effects on audit quality", *Journal of Accounting Research*, Vol. 48, No. 3: 647-686

Roychowdhury, S. (2006) "Earnings management through real activities manipulation", *Journal of Accounting and Economics*, Vol. 42: 335-370

Rusmin, R., (2010) "Auditor quality and earnings management: Singaporean evidence", *Managerial Auditing Journal*, Vol. 25, No. 7: 618-638

Saftiana, Y., Putri, K.W & Ika Sasti Ferina, I.S. (2017) "Corporate governance quality, firm size and earnings management: empirical study in Indonesia Stock Exchange" *Investment Management and Financial Innovations*, Vol. 14: 105-120

Schipper, K. (1989) "Commentary on earnings management", *Accounting Horizons*, Vol. 3, No. 4: 91-102

Sharma, V. & Kuang, C. (2014) "Voluntary audit committee characteristics, incentives, and aggressive earnings management: Evidence from New Zealand", *International Journal of Auditing*, Vol. 18: 76-89

Singh, A.K, Aggarwal, A. & Anandet, A. (2017) "The impact of corporate governance mechanisms on earnings management: A case of Indian Stock Exchange listed companies", *Asia-Pacific Journal of Management Research and Innovation*, Vol. 12, No. 3-4: 45-60

Thanasas, G.L, Smaraidos, V. & Filliou. A, (2018) "The impact of corporate governance on earnings management in emerging economies: the Greek evidence", *Australasian Accounting Business and Finance Journal*, Vol. 12, No. 1: 54-75

Sun, A. K. & Kim, Y.S. (2011) "Effect of corporate governance on real activity-based earnings management: evidence from Korea", *Journal of Business Economics and Management*, Vol. 13, No. 1: 29-52

Sun, J. & Liu, G. (2013) "Auditor industry specialization, board governance, and earnings management, *Managerial Auditing Journal*, Vol. 28, No. 1: 45-64

Sun, J., Liu, G. & Lan, G. (2011) "Does Female directorship on independent audit committees constrain earnings management?", *Journal of Business Ethics*, Vol. 9: 369-382

Sun, J., Lan, G. & Liu, G. (2014) "Independent audit committee characteristics and real earnings management", *Managerial Auditing Journal*, Vol. 29, No. 2: 153 -172

Susanto, Y.K & Pradipta, A. (2016) "Corporate governance and real earnings management", *International Journal of Business, Economics and Law*, Vol. 9, Issue 1: 17-23

Tendeloo, B. V. & Vanstraelen, A. (2008) "Earnings management and audit quality in Europe", *European Accounting Review,* Vol. 17, No. 3: 447-469

Vafeas, N. (2005) "Audit committees, boards, and the quality of reported earnings", *Contemporary Accounting Research*, Vol. 22: 1093-1122

Van der Zahn, J.L.W & Tower, G. (2004) "Audit committee features and earnings management: further evidence from Singapore", *International Journal of Business Governance and Ethics*, Vol. 1 (2): 233-258

Velury, U. (2003) "The association between auditor industry specialization and earnings management", *Research in Accounting Regulation*, Vol. 16: 171-184

Visvanathan, G. (2008) "Corporate governance and real earnings management", *Academy of Accounting and Financial Journal*, Vol. 12, No. 1: 9-22

Wolf, F. M. (1986) *Meta-Analysis: Quantitative Methods for Research Synthesis*, Beverly Hills, CA: Sage Publications.

Xie, B., Davidson, W. N. & DaDalt, P. J. (2003) "Earnings management and corporate governance: the roles of the board and the audit committee", *Journal of Corporate Finance*, Vol. 9: 295-314

Yang, J. S. & Krishnan, J. (2005) "Audit committees and quarterly earnings management", *International Journal of Auditing*, Vol. 9: 201-219

Zang, A.Y. (2012) "Evidence on the trade-off between real activities manipulation and accrual-based manipulation", *Accounting Review*, No. 87: 675-703

Zgarni, I. & Halioui, K. (2016) "Audit committee effectiveness audit quality and earnings management: a meta-analysis", *International Journal of Law and Management*, Vol. 58, No. 2: 1-20

Appendix : Sample Studies

	Author(s)	Country	Periods	Dependent variable	Independent variable(s)
1	Afzal *et al.*(2018)	Pakistan	2005-2013	discretionnary accruals	board directors and audit committee
2	Antle *et al.* (2006)	UK	1994-2000	discretionary accrual	Audit quality
3	Balsam *et al.* (2003)	USA	1991-1999	discretionary accrual	Auditor specialization
4	Bauwhede & Willekens (2004)	Belgium	1994-1996	discretionary accrual	Auditor size
5	Bauwhede *et al.* (2003)	Belgium	1991-1997	discretionary accrual	Auditor size
6	Baxter & Cotter (2009)	Australia	2003	discretionary accrual	AC characteristics
7	Benkel *et al.* 2006	Australia	2001-2003	discretionary accrual	AC characteristics
8	Bradbury *et al.* (2006)	Singapore and Malaysia	1993-1998	discretionary accrual	AC independence
9	Carcello *et al.* (2006)	USA	2003	discretionary accrual	AC financial expertise
10	Carey & Simnett (2006)	Australia	1995	abnormal accrual	Audit partner tenure
11	Chang & sun (2009)	USA	2002-2003	discretionary accrual	Corporate governance
12	Chelogoi (2017)	Kenya	2005-2012	Abnormal earnings	board of directors, Audit Committee, Board Independence,
13	Chen & Zang (2014)	China	2000-2006	discretionary accrual	Auditor size & AC
14	Chen et al (2008)	Shanghai and Shenzhen	2001-2006	total accruals	Audit quality
15	Chen *et al.* (2005)	Taiwan	1999-2002	discretionary accrual	Auditor size & specialist
16	Chi & Huang (2005)	Taiwan	1998- 2001	discretionary accrual	Audit tenure
17	Chi *et al.* (2011)	USA	2001-2008	REM	Audit quality
18	Cho &Chun(2015)	korea	2005-2010	REM and accruals	Corporate governance
19	Choi et al (2010)	USA	2000-2005	discretional accrual	Audit Quality
20	Choi *et al.* (2004)	Korea	2000-2001	abnormal accrual	AC characteristics
21	Chung *et al.* (2005)	US	1980–96	abnormal accrual	audit committee & BOD characteristics
22	Cormier & Martinez (2006)	France	2000-2002	discretional accrual	Auditor size
23	Davidson *et al.* (2005)	Australia	2000	abnormal accrual	audit committee characteristics
24	Davis *et al.* (2009)	USA	1988-2006	discretionary accrual	Auditor tenure
25	Dhaliwal et al (2010)	USA	1995-1998	discretional accruals	AC characteristics
26	Ebrahim (2001)	USA	1988-1999	discretional accruals	Auditor tenure and size
27	Elage & Mard(2018)	France	2006-2013	abnormal accruals and real earnings management	Corporate governance
28	Fodio *et al.* (2013)	Nigeria	2007-2010	discretionary accrual	AC and size of auditor
29	Francis *et al.* (1999)	USA	1975-1994	discretionary accrual	Auditor size
30	Frankel *et al.* (2002)	USA	2001	abnormal accrual	Audit quality
31	García et al (2010)	Spain	2003-2006	discretionary accrual	AC characteristics

32	Garyen (2009)	USA	2005-2007	REM	AC characteristics
33	Ghosh *et al.* (2010)	USA	1999-2006	discretional accruals	AC characteristics
34	Gul et al (2009)	USA	000	discretional accruals	Audi quality
35	Habbash *et al.* (2010)	UK	2006-2007	discretional accruals	AC characteristics
36	He et yang (2014)	USA	2003-2008	current accruals	AC characteristics
37	Hsu & Wen(2015)	China	2002-2012	REM and Discretionary accruals	Board of directors
38	Huang *et al.* (2007)	USA	2003-2004	discretional accruals	Auditor size
39	Hutchinson et al (2008)	Australia	2000-2005	discretional accruals	AC characteristics
40	Jaggi & Tsui (2007)	Hong Kong	1995-99	Discretionnary accruals	BOD characteristics
41	Jeong & Rho (2004)	Hong Kong	1995-1999	discretional accrual	Auditor size
42	Kang & Kim (2012)	Korea	2005-2007	REM	Corporate governance
43	Kang *et al.* (2013)	Australia	2001-2003	discretionary accrual	AC
44	Kent et al (2008)	Australia	2004	discretional accrual	AC and audit quality
45	Kim & yang (2014)	Korea	2002-2011	discretionary accrual	Auditor tenure
46	Klein (2002)	USA	1992 -1993	discretionary accrual	AC composition
47	Krishnan (2003)	USA	1989-1998	abnormal accrual	Auditor specialization
48	Krishnan & Visvanathan (2008)	USA	2000-2002	total accrual	AC characteristics
49	Lawrence et al (2011)	USA	1988-2006	discretional accrual	Audit quality (Big N)
50	Li et al (2010)	China	2004-2007	abnormal accrual	Audit committee and auditor size
51	Lin et al (2006)	Hong Kong	2004-2008	abnormal accrual	AC characteristics
52	Liu & Sun (2010)	USA	1998-2005	discretional accrual	Tenure, independent AC
53	Maijoor & Vanstraelen (2006)	France, Germany,UK	1992-2000	discretional accrual	Auditor size
54	Mazzù *et al.* (2015)	USA	1995-2005	reserve error(time horizon)	audit quality board directors
55	Mendez & Garcha (2007)	Spain	2003	discretional accruals	AC characteristics
56	Myers *et al.* (2003)	USA	1988-2000	abnormal accrual	Auditor tenure
57	Nazir & Afza(2018)	Pakistan	2004-2011	Discretionnary accruals	Audit structure, Board structure
58	Nelson & George (2013)	Kenya	2006-2010	discretionary accrual	Independence of AC
59	Okougbo & Okike(2015)	Nigeria	2008	discretionary accruals	CEO duality, board size and audit committee independence
60	Peasnell *et al.* (2005)	UK	1993-1996	abnormal accrual	AC characteristics
61	Piot & Janin (2007)	France	1999-2001	discretional accrual	AC & auditor characteristics
62	Rahman & Ali (2006)	Malysia	2002-03	discretionary accruals	BOD , audit committee char and auditor size
63	Saftiana *et al.*(2017)	Indonesia	2010-2014	Discretionnary accruals	audit committee board directors
64	Singh *et al.*(2017)	India	2005-2016	discretionary accruals	audit committee
65	Smaraidos *et al.* (2018)	Greece	2011-2015	Total accruals	the board of directors and the audit committee
66	Sun & Kim (2011)	Korea	2005- 2007	REM	Corporate governance
67	Sun & Liu (2013)	USA	1996-2010	Total accruals	Auditor industry
68	Sun *et al.* (2011)	USA	2003 -2005	discretional accrual	Independence AC

69	Sun *et al.* (2014)	USA	2007-2010	REM	AC characteristics
70	Susanto & Pradipta(2016)	Indonesia	2011-2014	real earnings management	audit committee meetings, board of directors
71	Tendeloo & Vanstraelen (2008)	European countries	1998-2002	total accruals	Audit quality
72	Van der Zahn & Tower (2004)	Singapour	2000-01	abnormal accrual	audit committee characteristics
73	Velury (2003)	USA	1994-1996	discretional accrual	Specialist auditors
74	Visvanathan (2008)	USA	1996 -2002	REM	AC characteristics
75	Xie *et al.* (2003)	USA	1992-1994	discretionary accruals	AC characteristics

Discretionary accruals, AC: audit Committee and REM: real earnings management.